
Turning the Page

Environmental Impacts of the Magazine Industry and Recommendations for Improvement

The PAPER Project
Independent Press Association
Conservatree
Co-op America

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An Invitation to Publishers

In order to increase the number of magazines printing on recycled paper, the PAPER Project is working to make it easy for magazine publishers to adopt recycled paper options.

There are several ways in which the PAPER Project can assist magazine publishers who want to begin printing on environmentally preferable papers. We are happy to do any or all of the following:

- ◆ Identify papers that are available in the type, grade, weight and quantity that you need; or, suggest alternatives that might suit your printing and budget requirements.
- ◆ Connect you with a printer, broker, mill or distributor that specializes in environmentally preferable papers.
- ◆ Work with your printer, broker and/or paper supplier to answer questions, work through obstacles, and ensure that the new paper integrates smoothly into your system.
- ◆ Develop personalized strategies to help you meet any cost differential you may experience.
- ◆ Help you publicize your environmental commitment to your readers and the general public.

For advice and assistance, call (415)721-4230 or email paper@conservatree.com. Initial assistance is complimentary for magazines wishing to switch to environmentally preferable paper. Extensive or continuing assistance is available at reasonable hourly consulting rates. All members of the PAPER Project are nonprofit organizations and do not represent any particular brands of paper.

The PAPER Project

Environmental Damage by the Magazine Industry and Recommendations for Improvement

Executive Summary

The magazine industry is a significant contributor to deforestation, dioxin contamination, air pollution (including greenhouse gases) and water pollution. Environmental damage caused by this industry will escalate unless publishers increase their use of recycled-content paper. In its study of the industry, the PAPER Project found:

- ◆ **Magazine production contributes extensively to deforestation.** U.S. magazine production uses more than 2.2 million tons of paper per year, and this number is increasing as some sectors of the industry experience tremendous growth. Magazines are printed almost exclusively on papers made from virgin fiber, resulting in more than 35 million trees being cut down each year. Virgin magazine paper production also uses enormous amounts of energy and water, and produces considerably more pollution than ecological paper alternatives.
- ◆ **Less than 5% of magazine paper has any recycled content,** and even these recycled content papers generally contain only 10-30% recycled fiber. Almost all magazine papers have been bleached with chlorine or chlorine compounds, which produce extremely toxic dioxin.
- ◆ **The vast majority of magazines are discarded within one year, and few of these are recycled.** Approximately 90% of all magazines are discarded within a year of publication, and only about 20% of these are recycled. In 1998, approximately 18,000 magazine titles were published, producing a total of about 12 billion magazines; over 9 billion of these were landfilled or incinerated.
- ◆ **Overproduction compounds the industry's impact.** The magazine industry's impact on the environment is compounded by systems that reward the industry for overproduction of publications. These inefficiencies are particularly apparent in magazines sold on newsstands, versus those sold by subscription. Inefficiencies begin with the publisher deliberately overproducing magazines to maximize advertising rates and are compounded by distributors over-ordering to ensure that no magazine rack is ever empty. Publishers rarely receive the kind of timely and accurate retail sales information needed to improve efficiency, and they have little economic incentive to reduce print runs, as the marginal cost of each magazine is relatively low (about 91 cents on average).

- ◆ **Almost 3 billion magazines on newsstands are never read.** About 4.7 billion magazines are delivered to newsstands each year. As a result of the above wasteful practices, about 2.9 billion of these are never read – enough magazines, placed end to end, to circle the Earth 20 times.

PAPER Project Recommended Solutions

To counter this poor environmental record, publishers need to employ a two-pronged approach that includes introducing or increasing post-consumer recycled content into the paper they use, as well as working with retailers and distributors to achieve higher efficiency levels in terms of the proportion of newsstand magazines that are actually sold to customers.

- ◆ **The PAPER Project finds that high-quality recycled papers are widely available for publications that use both coated and uncoated papers.** In the past, publishers have expressed concerns about the quality and price of recycled papers. However, today's recycled paper is available from top paper manufacturers and satisfies all printing requirements. **Coated magazine-grade papers with 10% post-consumer content and uncoated papers with 30% post-consumer content are readily available.** Recycled paper now:
 - ◆ Meets the same technical specifications as virgin paper.
 - ◆ Successfully runs on even the most demanding printing presses, office machines and copiers.
 - ◆ Offers competitive brightness levels – from moderate to high, with pleasing light reflection and excellent print and color reproduction.
 - ◆ Is available in virtually every grade and through the majority of printers, paper distributors and retail outlets.
 - ◆ Is often priced equivalently with virgin papers, or price differentials are quite small.
- ◆ **A growing number of magazines are already successfully printing on recycled papers.** A number of magazines already are successfully using paper that contains post-consumer recycled content. Magazines including *Blue*, *Discover* and *Outside* have adopted these environmentally friendly papers, and even smaller magazines with limited budgets are successfully using them, too. A survey by the Independent Press Association identified more than a dozen IPA members that print on recycled-content paper, including *Sierra*, *Earth Island Journal*, *Amicus Journal*, *E Magazine*, *Mountainfreak*, *Terrain*, *Orion*, *Orion Afield*, *California Wild*, *Wild Earth*, *World Watch* and *YES!* In addition, several magazines – including *National Geographic*, *Mother Jones* and *Utne Reader* – have pledged to eliminate old-growth fiber from their papers. This PAPER Project report provides profiles of several magazines that have a history of successfully printing on recycled paper.
- ◆ **Publisher concerns regarding recycled papers can be resolved.** Publishers cite many reasons for their reluctance to change to more environmentally responsible papers. The primary perceived barriers are cost, quality and availability. Many of these concerns are based on outdated perceptions of recycled paper, and some are simply myths. This report discusses ways publishers can overcome real or perceived obstacles to switching to recycled papers.

- ◆ **Solutions to newsstand inefficiencies are possible.** To increase newsstand efficiency, associations such as the Magazine Publishers of America and the Audit Bureau of Circulation must work with publishers, retailers and distributors to establish more environmentally responsible management practices. These practices would include:
 - ◆ Better management of newsstand sales, aiming to achieve a 60% sell-through rate.
 - ◆ Improved ratebase calculation protocols that provide financial incentives for greater efficiency.
 - ◆ More efficient inventory systems that provide up-to-date information to publishers on where magazines are sold and in what quantities.

- ◆ **The PAPER Project provides assistance that will make it easier for publishers to switch to recycled papers.** Key PAPER Project resources available to publishers include:
 - ◆ An extensive resource list of recycled-content papers appropriate for a wide range of publications (available at www.EcoPaperAction.org).
 - ◆ Advice on alternative paper purchasing arrangements, such as cooperatives and long-term contracts, to increase availability and reduce costs.
 - ◆ Technical assistance for publishers switching to recycled papers.

Members of the PAPER Project are the Independent Press Association, Conservatree and Co-op America. The mission of this partnership is to reduce the magazine industry's impact on the environment by helping magazine publishers adopt environmentally preferable printing and distribution practices. All three members print their publications on papers that are excellent environmental choices.

SECTION I

ENVIRONMENTAL DAMAGE CAUSED BY MAGAZINE PRODUCTION

The magazine industry is a major contributor to a host of environmental ills, including deforestation, toxic contamination, and air and water pollution. Environmental damage wreaked by this industry will continue until publishers commit to using environmentally sound papers. In 1998, approximately 18,000 magazine titles were published in the United States.¹ Based on interviews with experts in the magazine industry, the PAPER Project estimates that

approximately 12 billion magazine copies are printed annually in this country.

The magazine industry uses more than 35 million trees worth of paper each year.

Currently, magazine production in the United States consumes at least 2.2 million tons of paper each year.² To make this much paper, more than 35 million trees³ are logged annually, many from endangered forests that merit protection

The magazine industry's toll on the environment will continue to grow as the industry expands. Although sales of commercial magazine titles (e.g., *Time*, *Vogue*) have been flat in recent years, controlled circulation publications, including business-to-business titles and trade press (e.g., *Securities Industry News*, *Florists' Review*), have experienced tremendous growth relative to the rest of the industry. "Specialty" titles such as these accounted for at least 80% of the nearly 900 new magazines launched in 1999.⁴

Magazine publishing is one of many industries that relies heavily on virgin wood pulp at a time when increased logging worldwide is causing mounting concerns over the negative impacts of deforestation. According to the Worldwatch Institute, a Washington, DC-based environmental research organization, 16 million hectares (almost 40 million acres) of forest disappear worldwide each year as land is cleared for timber or development. This is equivalent to an area slightly larger than the state of Florida. Deforestation leads to soil degradation and destroys habitat, causing the extinction of plants, animals, birds and insects. It also destroys resources on which many indigenous people depend and contributes to global climate change. This environmental degradation is driven by a growing demand for forest products, and paper use is the fastest-growing segment of the forest products industry worldwide. In fact, global use of paper is

¹ *National Directory of Magazines*, 2000.

² Data from the American Forest & Paper Association, 1999.

³ Calculated collaboratively by Conservatree and Alliance for Environmental Innovation/Environmental Defense. For details, see Appendix B.

⁴ *The Magazine Handbook: A Comprehensive Guide for Advertisers, Advertising Agencies and Consumer Magazine Marketers, 2000-2001*, Magazine Publishers of America, 2000.

five times higher today than in 1950, and consumption is expected to double again by 2010.⁵ Pulp production will soon consume more than half the world's annual commercial timber cut.⁶

The environmental impact of the magazine industry, however, doesn't end with its contributions to deforestation. In the U.S., the pulp and paper industry is the second largest consumer of energy;⁷ uses more water to produce a ton of product than any other industry;⁸ and produces significant amounts of air pollution (including greenhouse gases, particulates and hazardous air pollutants), water pollution and solid waste. According to the World Resources Institute, it is second only to the burning of fossil fuels as a human source of carbon dioxide, one of the major greenhouse gases that contribute to global warming. Additional waste is created when millions of tons of magazines must be discarded each year. In 1998, the most recent year for which data is available, 2.5 million tons of magazines were discarded in the U.S. Approximately 470,000 tons of these were recycled, for a recovery rate of slightly less than 19%.⁹ The remainder of the magazines, more than 2 million tons, was landfilled or incinerated.¹⁰ Approximately 90% of all magazines are discarded within a year of publication.¹¹

The production of magazines also contributes to dioxin contamination in the environment. Even the primarily groundwood papers used by many magazines contain a significant amount of kraft pulp, which undergoes a bleaching process that usually involves adding chlorine or a chlorine derivative to whiten the fibers. When the chlorine is combined with wood, it produces chlorinated organic compounds, such as dioxin and furans, as byproducts. Paper production is a leading industrial source of dioxin, which the Environmental Protection Agency has concluded is a known human carcinogen.¹² Dioxin can contaminate air, soil and water and enters the human food supply by bioaccumulating in the fat of fish, seabirds and mammals as it travels up the food chain. Therefore, even a miniscule amount discharged into the environment can create a significant risk for humans and wildlife. It has been associated with cancers, lymphomas, diabetes, immune system disorders and birth defects.

Magazines tend to be printed on higher-end papers, which use trees less efficiently and require more processing than the lower-end varieties. Therefore, magazine production contributes disproportionately to the environmental problems caused by paper manufacturing. (See Table A.)

In the U.S., the pulp and paper industry is the second largest consumer of energy and uses more water to produce a ton of product than any other industry.

⁵ *State of the World*, Worldwatch Institute, 1998.

⁶ *Taking a Stand: Cultivating a New Relationship with the World's Forests*, Worldwatch Institute, 1998.

⁷ *Paper Cuts: Recovering the Paper Landscape*, Worldwatch Institute, 1999.

⁸ *Ibid.*

⁹ "Municipal Solid Waste Generation, Recycling and Disposal in the United States: Facts and Figures for 1998," U.S. EPA.

¹⁰ *Ibid.*

¹¹ Conservatree interviews with Franklin Associates, 1995.

¹² A 1994 EPA report (cited in "EPA Study Links Dioxin To Cancer", *Washington Post*, 1994) affirmed that dioxin was a probable human carcinogen. A draft of a newer EPA report (cited in "EPA Links Dioxin To Cancer; Risk Estimate Raised Tenfold", *Ibid.*, 2000) concludes that dioxin is a proven human carcinogen.

This report focuses on recommendations for advancing the use of recycled-content paper by the magazine industry, in tandem with a phasing out of all virgin wood pulp from old-growth and endangered forests. However, it is important to note the substantial negative impact of the use of chlorine and chlorine derivatives as well, and to point out that publishers can choose magazine papers that not only have 10% to 30% post-consumer recycled content, but also are processed in chlorine-free bleaching systems. (For more information on bleaching technologies, please visit www.conservatree.com.) The table below summarizes the annual environmental impacts of the U.S. magazine industry.

Table A: Annual Environmental Impact of the Production of 12 Billion Magazines		
Environmental Impact	Annual Amount	Annual Equivalent¹³
Wood Use	5,110,398 tons	Amount of copy paper used by 109 million people (39% of U.S. population)
Energy Use	72,220,086 million BTUs	Enough to power 694,000 households
Greenhouse Gases (CO2 Equivalents)	13,408,395,941 pounds	As much as the emissions produced by 1.2 million cars
Solid Waste	4,917,979,277 pounds	As much as the garbage produced by 1.2 million households
Wastewater	34,241,543,545 gallons	As much as the sewage produced by 352,000 households
Particulate Emissions	23,572,856 pounds	N/A

Source: Alliance for Environmental Innovation/Environmental Defense

¹³ All equivalents are based on figures for average U.S. people, households and cars.

SECTION II

ENVIRONMENTAL IMPACT OF MAGAZINE NEWSSTAND DISTRIBUTION

The magazine industry's impact on the environment is compounded by systems that reward the industry for overproduction of publications. These inefficiencies are particularly apparent in magazines sold on newsstands, versus those sold primarily by subscription. While only 15% of magazines are circulated through newsstand sales (known in the industry as "single-copy sales"), the level of sheer waste in the magazine distribution system is staggering. For every 35 copies sold, approximately 65 copies are discarded without ever being read.¹⁴

Industry analysts estimate that about 3 billion of the approximately 4.7 billion magazines that are delivered to newsstands each year never even reach a reader. These discarded magazines, placed end to end, would circle the Earth 20 times.¹⁵

The waste in the system is driven primarily by magazine publishers' desire to maximize their ratebase. The higher the number of paid readers a magazine can claim, the higher the rate they can charge to advertisers – so, magazine publishers often flood the newsstands with as many copies as possible to ensure that they will capture every possible sale. From their point of view, there is little financial incentive to be more efficient on the newsstand because the cost per copy is very low relative to the potential increase in revenue from a higher ratebase.

The Audit Bureau of Circulation and other agencies charged with ensuring that publications make accurate claims about their readership do not report magazines' sell-through rates, nor do they offer any incentives for greater efficiency. Nothing in the auditing or reporting process encourages magazines to increase the ratio of magazines sold to magazines printed. The fact that competitors are achieving higher ratebases with deliberately inefficient practices might also make publishers reluctant to improve their own sell-through rates.

Waste in the magazine industry is also encouraged by the wholesale distributors that deliver the magazines to the retailers. Since every lost sale of any magazine they distribute is also lost revenue for them, they have no incentive to reduce the total number of titles that they request

About 3 billion of the approximately 4.7 billion magazines that are delivered to newsstands each year never even reach a reader. This many magazines, placed end to end, would circle the Earth 20 times.

¹⁴ Estimated figures for 2000 from *The New Single Copy*, Harrington Associates, March 2001.

¹⁵ Based on 2.9 billion magazines with an average length of 11 inches and a global circumference of 1,577,762,208 inches.

from publishers.¹⁶ Many wholesalers also charge publishers a handling fee for every pound and every copy, which is collected on the basis of the number of copies handled – regardless of the number sold. Thus, the wholesalers also benefit financially from maximizing orders.

Inefficiencies also are caused by the fact that publishers either lack or fail to utilize complete information about how many people want to purchase a particular magazine from newsstands. Magazine retailers do report sales data to publishers, but this information is often delivered too late to be useful for projecting future deliveries. These sales figures are often imprecise to begin with, since many bookstores and newsstands simply count the number of magazines delivered for each magazine title, subtract the number of magazines remaining at the end of the month, and pay for the difference, failing to account for damaged or stolen goods.

The most significant reason for continued overproduction of magazines is that none of the parties involved has any pressing economic incentive to change its practices.

Point of Sale (POS) and Scan-Based Trading systems found at some bookstore chains and many grocery and discount stores can track the overall sales of particular titles over time, but sometimes cannot track sales of a particular issue (i.e., some POS systems track sales of, for example, *Ladies Home Journal*, but cannot track how many copies of the March issue were sold). In other cases, by the time the stores process their data and send it to publishers, it is sometimes months out of date and useless. Some retailers have more efficient POS tracking systems that can generate precise sales data quickly, but they often find that publishers are not interested in using them to improve their newsstand efficiency. (See Section IV for a discussion of better POS systems, such as the one recently adopted by Barnes & Noble.)

The most significant general reason for continued overproduction of magazines, though, is that none of the parties involved has any pressing economic incentive to change its practices.¹⁷ Neither the retailer nor the distributor pays for excess delivery; most of those costs are passed on to the publisher. And because publishers are most interested in maintaining as high a ratebase as possible, and the cost of each magazine is relatively minimal (about 91 cents), they, too, are willing to overprint. Until the incentives to print and distribute a realistic number of copies (that is, a number of copies that publishers could expect to sell) outweigh the incentives that encourage the overprinting, this wasteful cycle is likely to remain solidly in place.

¹⁶ More research is needed to determine what percentage of magazine retailers return unsold copies to publishers for recycling or recycle the unsold magazines themselves. Anecdotal evidence suggests that a significant percentage of unsold magazines is landfilled or incinerated, and the magazine industry could further reduce its environmental impact by working to ensure that a greater percentage of these is recycled.

¹⁷ In interviews at the recent Magazine Retail Conference in Washington, DC, some distributors emphasized that the sheer volume of unsold copies was starting to impose additional costs for handling that have made them consider reducing the amount by which they overship.

SECTION III

THE RELUCTANCE TO USE RECYCLED: A CASE STUDY OF TRAVEL & NATURE MAGAZINES

This section examines the paper usage of travel and nature magazines, which regularly feature articles, photography and advertisements that promote the value of a healthy environment. Compared to other segments of the magazine industry, readers and publishers of these magazines should have a greater awareness of the need to preserve natural places and should understand the connection between using environmentally preferable papers and a healthy environment. Since high-quality recycled paper is increasingly available, often at a competitive cost, and provides obvious environmental benefits, it is reasonable to assume that publications that focus on nature – and therefore depend on a healthy environment to attract readers – would be the most likely to lead the industry in recycled paper use. In order to test this assumption, we surveyed publishers of magazines that feature nature in their content or photos to see if they are taking steps to minimize their use of virgin fibers and reduce their overall environmental impacts. In addition, we surveyed those publishers that print on virgin fiber papers about the barriers they perceive to using recycled papers and the conditions they set for switching to recycled.

The PAPER Project contacted 19 publishers representing 25 travel, outdoors, and nature magazines (magazines were selected to reflect a range of circulations and editorial content in the travel and nature segment of the magazine industry).¹⁸ Thirteen (68 percent) of the publishers, representing 17 publications, agreed to answer questions about the papers they use to print their magazines. The other nine either did not return our calls or were unable or unwilling to share information about their paper choices.¹⁹ Of those thirteen publishers who participated in this research, only two regularly use recycled papers in the text and cover of their travel or nature publications. Rodale Press – publisher of *Backpacker* and *Mountain Bike* – and Disney – publisher of *Discover* – print both their covers and texts on papers that contain 10% post-consumer fiber.²⁰ One publisher, National Geographic, uses recycled paper for only the cover of *National Geographic*.²¹ The remaining 10 publishers print their travel and nature magazines entirely on virgin fiber papers or do not have a policy of selecting

Out of 17 nature and travel publications surveyed, only three regularly print on papers containing post-consumer recycled fiber.

¹⁸ Several travel and nature publications that are on recycled paper – including *Blue*, *Outside*, *Sierra*, and *Amicus Journal* – and which are mentioned in other sections of this paper are not included here, because they were not part of the original research pool of 25 magazines we selected for this section. The PAPER project has also discovered additional magazines in these categories that print on virgin fiber paper.

¹⁹ The nine magazines that did not respond are: *Outdoor Explorer*, *Frontier*, *Outdoor Guide News*, *Outdoor Life*, *Popular Science*, *Travel America*, *Travel Holiday*, and *Vacations*.

²⁰ Information on *Backpacker* and *Mountain Bike* was provided by their publisher, Rodale Press, and verified by the PAPER Project. *Discover*'s publisher considers its paper brand and mill names proprietary information and has a policy of not releasing it to other organizations; therefore, the PAPER Project has not been able to absolutely verify that *Discover* is printed on recycled paper. However, the publisher has stated that the magazine's paper is recycled and described the paper in a manner that supports this statement.

²¹ Based on information provided by *National Geographic*, and verified by the PAPER Project.

recycled-content paper.²² Their travel or nature publications are: *Birder's World*, *Bow Hunter*, *Camping Life Magazine*, *Canoe and Kayak*, *Coastal Living*, *Condé Nast Traveler*, *Fly Fisherman*, *Hooked on the Outdoors*, *Horse and Rider*, *Scientific American*, *Smithsonian*, *Sojourns* and *Travel & Leisure*.²³

Each of these 13 publications could be printed on post-consumer recycled content paper. Based on the information provided by these magazine publishers regarding their paper usage, the PAPER Project has determined that, for each, there is a likely substitute with post-consumer recycled content available from a major mill. A number of large, high-quality paper manufacturers – including International Paper, Mead, Consolidated, SAPPI, Westvaco, and Domtar – make recycled-content coated papers that can easily substitute for the virgin fiber papers currently being used by these outdoor, nature and travel publications. Many of these recycled-content papers are comparable in cost to virgin paper, and those that cost more are only slightly more expensive. For example, Rodale Press publishes several titles on recycled-content paper and several on virgin, and it reports no difference in cost or quality between the two.

Most Common Publisher Concerns about Recycled Paper

When asked which concerns they had about using recycled papers, publishers printing on virgin fiber papers reported the following (with several publishers identifying more than one concern or some reporting no concerns):

- ◆ Quality (55% of those surveyed)
- ◆ Expense (36% of those surveyed)
- ◆ Availability (27% of those surveyed)

Of the 11 publishers, 73% responded that they would definitely consider the switch to recycled paper if their concerns were addressed.

FIGURE 1

Notably, the publishers we surveyed spanned a range of circulation sizes, from less than 100,000 for *Birder's World* to more than two million for *Sojourns*. They used a variety of papers, most commonly 40# to 60# text in coated grades #3 and #5, and a heavier paper for the magazine cover, usually 80# to 100# coated stock. They also reach a variety of readers. Yet, their reasons for not selecting recycled papers were remarkably consistent.

Of the 11 publishers that were not using recycled papers throughout their entire publications, the most common concerns regarding recycled papers were quality (cited by six publishers), availability (cited by three publishers) and expense (cited by four publishers). Eight of these eleven publishers (73%) stated that if their concerns were addressed, they would

consider recycled papers for the covers and text of their publications.²⁴ (Solutions to real and perceived barriers to obtaining recycled papers are addressed in Section VI of this report.) The statements of these publishers, along with other publishers the PAPER Project has contacted or worked with, make it clear that there is a need for information and education, as well as technical support and assistance in helping publishers locate and switch to recycled papers.

²² In all cases, the publishers stated that they were not using recycled paper, and the information provided was verified by PAPER Project staff.

²³ *Bow Hunter*, *Canoe and Kayak*, *Fly Fisherman* and *Horse and Rider* are published by Primedia Publications.

²⁴ However, one publisher stated that she would never be interested in recycled paper, and another stated that he had no reason to switch because he did not think his readers would be interested.

Paper Use in Travel and Nature Publications

Magazines Using Recycled Paper

Only four of the travel or nature publications surveyed regularly include at least some recycled-content paper in their publications:

Cover and Text

- ♦ *Discover* – circulation 1,200,000
- ♦ *Backpacker* – circulation 285,000
- ♦ *Mountain Bike* – circulation 150,000

Cover Only

- ♦ *National Geographic* – circulation 9,025,003

Magazines Using Virgin Fiber Papers

The following travel and nature magazines print their publications on 100% virgin coated paper, despite the financial benefits they derive from featuring the natural environment, and despite the ready availability of recycled-content alternatives:

- ♦ *Travel & Leisure* – circulation 1,002,000
- ♦ *Birder's World* – circulation 69,000
- ♦ *Coastal Living* – circulation 375,000
- ♦ *Condé Nast Traveler* – circulation 762,000
- ♦ Primedia publications
 - ♦ *Canoe and Kayak* – circulation 63,000
 - ♦ *Fly Fisherman Magazine* – circulation 136,000
 - ♦ *Bow Hunter* – circulation 187,000
 - ♦ *Horse and Rider* – circulation 175,000
- ♦ *Camping Life Magazine* – circulation 100,000
- ♦ *Sojourns* – circulation 2,500,000
- ♦ *Scientific American* – circulation 693,000
- ♦ *Smithsonian* – circulation 2,184,000
- ♦ *Hooked on the Outdoors* – circulation 150,000

Magazines Whose Publishers Did Not Respond to the Survey

Outdoor Explorer, Frontier, Outdoor Guide News, Outdoor Life, Popular Science, Travel America, Travel Holiday and Vacations.

FIGURE 2

SECTION IV

ADDRESSING ENVIRONMENTAL IMPACTS IN THE MAGAZINE INDUSTRY

A two-pronged approach can be effective in mitigating the environmental impacts of the magazine industry. First, publishers can substantially reduce the adverse impacts on forests, as well as levels of air and water pollution, solid waste generation, and energy and water consumption by choosing environmentally responsible papers. Second, publishers need to strive for higher efficiency levels in terms of the proportion of newsstand magazines that are actually sold to customers. These two opportunities for reducing environmental impacts are described in greater detail below.

Buy Environmentally Preferable Papers

The most important first step that publishers can take is to commit to purchasing paper with some post-consumer recycled content and then work with their supply chain over time to decrease the amount of virgin wood pulp used in their paper. A number of large, high-quality paper manufacturers – notably International Paper (including its recent acquisition of Champion), Mead, Consolidated, SAPPI, Westvaco, Domtar and others – make recycled-content coated papers that can substitute immediately for the virgin papers currently being used by most magazine publishers. In addition, many of these recycled content papers are identical in cost to virgin paper, and those that do cost more have only minor price differentials.

Twenty years ago, in the early years of modern recycled paper development, corporate and individual consumers expressed a variety of concerns about recycled-content paper. They feared that the quality was inferior to virgin paper, that it jammed machinery, and that it was difficult to obtain. Some also thought the recycled-content paper was less attractive and found it more expensive than virgin paper. As the recycled paper industry matured, these concerns were, to a considerable extent, remedied. Today's recycled paper:

- ◆ Meets the same technical specifications as virgin paper.
- ◆ Successfully runs on even the most demanding printing presses, office machines and copiers.
- ◆ Offers competitive brightness levels, from moderate to high, with pleasing light reflection.
- ◆ Is available in virtually every grade and through the majority of printers, paper distributors and retail outlets.
- ◆ Is often priced equivalently with virgin papers, or price differentials are quite small.

Use of recycled paper has become increasingly prevalent over the past decade. In October 1993, a White House Executive Order established a new standard for uncoated recycled papers, requiring federal agencies to purchase paper with at least 20% post-consumer content – scrap paper that has served its intended end-purpose and has been recycled into a new paper product. In 1999, the post-consumer requirement for uncoated papers rose to 30%. The minimum federal agency post-consumer content requirement for coated papers is 10%. Of course, this Executive Order governs only federal agencies and subcontractors, not private businesses, such as magazine publishers. Nevertheless, its content standards have become the *de facto* industry minimum for recycled paper. As a result, a wide variety of papers are available with 30% (uncoated) and 10% (coated) post-consumer content.

Thus, publishers of periodicals on uncoated paper can reduce their environmental impacts immediately by switching to one of dozens of recycled offset and opaque papers available with 30% and higher post-consumer content. This offers them the opportunity to model corporate responsibility and reap the public relations benefit of being an environmental leader. Publishers can sustain this advantage by working with their suppliers to achieve 50% or higher post-consumer content, which industry experts agree is technically feasible.

Publishers of coated-stock magazines will also find good recycled-content options in appropriate grades available in today’s marketplace. However, these papers most commonly have 10% post-consumer content, rather than the 30% available in uncoated grades, because coated papers have a significantly lower overall fiber content. This means publishers can switch their magazines to papers with 10% post-consumer content now, and work with their supply chain to increase the post-consumer content in the future. As magazine publishers represent a highly visible 8% of the market for fine printing and writing papers,²⁵ there is no question that they can successfully collaborate with paper manufacturers to develop high quality coated papers with at least 30% post-consumer content. Publishers who take these steps to improve their environmental performance will also create a positive public image.

In addition to sourcing paper with post-consumer recycled content, magazine publishers can also demonstrate their commitment to the environment

Benefits per ton of replacing virgin fiber with post-consumer recycled fiber

Switching from virgin to recycled-content paper results in a number of environmental benefits. Research by the Alliance for Environmental Innovation has shown that each ton of recycled fiber that displaces a ton of virgin fiber used in coated groundwood paper (which makes up 75% of magazine paper):

- ◆ Reduces total energy consumption by 27%,
- ◆ Reduces net greenhouse gas emissions by 47%,
- ◆ Reduces particulate emissions by 28%,
- ◆ Reduces wastewater by 33%,
- ◆ Reduces solid waste by 54% and
- ◆ Reduces wood use by 100%.

Figures are for coated groundwood paper; substituting recycled-content paper for other virgin paper (e.g., coated freesheet) will also yield substantial environmental benefits, although the exact figures will differ.

FIGURE 3

²⁵ Conservatree calculation, based on magazine paper production compared to total printing and writing paper production, using 1999 data from the American Forest & Paper Association.

by pledging not to use any old-growth wood pulp that originated in ancient or ecologically sensitive forests. Over 40 corporations, including the publishers of *National Geographic*, *Utne Reader* and *Mother Jones*, have already taken this pledge and begun to audit their suppliers for compliance, thus protecting heirloom forests for future generations.

Even a publisher who isn't ready to switch a magazine to recycled paper can make a significant, positive impact by increasing the recycled content of other business paper products – including subscriber prospecting mailings, magazine inserts, billings, renewal mailings, media kits, letterhead, brochures and copy paper.

While a shift to 10% post-consumer content may sound like a small first step, this adjustment, if adopted industry-wide, would result in approximately 150,000 tons of post-consumer recycled pulp displacing virgin pulp.²⁶ Switching from virgin to recycled-content paper results in a number of additional environmental benefits. Research by the Alliance for Environmental Innovation has shown that each ton of recycled fiber that displaces a ton of virgin fiber used in coated groundwood paper reduces total energy consumption by 27%, net greenhouse gas emissions by 47%, particulate emissions by 28%, wastewater by 33% and solid waste by 54%.²⁷

The following tables illustrate the substantial environmental impact of changes from 100% virgin paper to 10% post-consumer recycled paper and from 100% virgin paper to 30% post-consumer recycled paper.

Table B: Annual Environmental Benefits Resulting From A Switch To 10%/30% Post-Consumer Content For All Magazine Papers (10% post-consumer content for coated papers, 30% for uncoated papers)		
Environmental Impact	Annual Savings	Annual Equivalent²⁸
Wood Use	541,824 tons of trees	Amount of copy paper used by 11.6 million people (population of Ohio)
Energy Use	2,367,341 million BTUs	Enough to power 23,000 households
Greenhouse Gases (CO2 Equivalents)	643,178,305 pounds	As much as the emissions from 56,000 cars
Solid Waste	281,683,859 pounds	As much as the garbage produced by 66,000 households
Wastewater	1,165,616,864 gallons	As much as the sewage produced by 12,000 households
Particulate Emissions	788,749 pounds	N/A

Source: Alliance for Environmental Innovation/Environmental Defense

²⁶ This figure is less than 10% of the weight of magazine paper used annually because only 64-89% of each sheet of paper is wood fiber.

²⁷ Data from Alliance for Environmental Innovation/Environmental Defense (www.environmentaldefense.org/alliance).

²⁸ All equivalents are based on figures for average U.S. people, households and cars.

Table C: Annual Environmental Benefits Resulting From A Switch To 30%/50% Post-Consumer Content For All Magazine Papers (30% post-consumer content for coated papers, 50% for uncoated papers)		
Environmental Impact	Annual Savings	Annual Equivalent²⁹
Wood Use	1,568,594 tons of trees	Amount of copy paper used by 33.5 million people (population of California)
Energy Use	6,751,354 million BTUs	Enough to power 65,000 households
Greenhouse Gases (CO2 Equivalents)	1,862,945,985 pounds	As much as the emissions from 163,000 cars
Solid Waste	815,517,418 pounds	As much as the garbage produced by 192,000 households
Wastewater	3,536,812,592 gallons	As much as the sewage produced by 36,000 households
Particulate Emissions	2,241,648 pounds	N/A

Source: Alliance for Environmental Innovation/Environmental Defense

Note: These tables demonstrate only the impact of switching the magazine paper itself to alternatives with post-consumer content. Switching postcards, mailings and office papers onto recycled-content paper would result in even further reductions in environmental impacts.

Increase Newsstand Efficiency

Currently two-thirds of magazines destined for newsstands never reach an end reader, resulting in an embarrassingly low 35% sell-through rate.³⁰ By managing newsstand distribution more efficiently, publishers can significantly reduce their impact on the environment. A major factor necessary to achieving this goal is for associations such as the Magazine Publishers of America and the Audit Bureau of Circulation to work with publishers, retailers and distributors to establish more environmentally responsible management practices. These practices would include:

- ◆ Better management of newsstand sales, aiming to achieve a 60% sell-through rate.
- ◆ Improved ratebase calculation protocols that provide financial incentives for greater efficiency.
- ◆ More efficient inventory systems that provide up-to-date information to publishers on where magazines are sold and in what quantities.

²⁹ All equivalents are based on figures for average U.S. people, households and cars.

³⁰ Estimated figures for 2000 from *The New Single Copy*, Harrington Associates, March 2001.

The ability of retailers to track individual sales electronically and provide timely information is a critical component of improving newsstand efficiency. Barnes & Noble pioneered the use of Point of Sale (POS) systems to record this kind of data, and the Borders bookstore chain has recently emulated them. Barnes & Noble sales clerks scan each magazine's bar code to record issue-specific data from the sale, and this information enables the publisher to track more accurately how many copies of a particular magazine title should be delivered to an individual outlet. In order for this to work, however, the information needs to be made available to publishers in a timely manner – but this is often not the case, especially for magazines sold in discount retailers and supermarkets. In addition, many independent bookstores, newsstands and smaller chains still lack sophisticated POS systems.

The Barnes & Noble system provides detailed data (such as which issue of the magazine has been sold) and transmits it to the publisher in time to allow the publisher to adapt their printing or shipping plans in response to it. This greatly reduces waste from unsold magazine copies, and the retailer also benefits by being able to determine more precisely which magazine titles are selling well and which aren't. According to unofficial estimates, Barnes & Noble has seen its sell-through rate climb as high as 50% since introducing this computerized inventory system. If publishers were motivated to use this information to regulate their orders for more efficient sell-through, many would be able to reach that same sell-through rate.

Higher newsstand efficiency is feasible, as demonstrated by members of the Independent Press Association. Many of these magazines are not advertising-based and therefore have less motivation to overprint individual editions. They also make a greater effort to receive accurate sales data and print accordingly. On average, IPA member publications achieve a sell-through rate of about 60%, almost double that of the overall industry figure of about 35%. In other words, typically 60% of their magazines on the newsstand are reaching readers, a sell-through rate that is considered relatively high in the industry. (Sell-through rates higher than 60 or 70% may indicate that some newsstands are selling out and the magazine is losing sales, and until the industry makes a concerted effort to revamp its distribution practices, sell-through figures are unlikely to surpass this level.)

SECTION V

THE CASE FOR ENVIRONMENTALLY PREFERABLE PAPERS

The experience of numerous magazine publishers demonstrates that it is possible to print on post-consumer recycled paper successfully. To better understand which factors influence a publisher's experience with recycled paper, the PAPER Project interviewed several publishers who regularly print their magazines on paper that contains at least 10% post-consumer fiber; six of these publications are profiled here. These publications demonstrate that a commitment to purchasing environmentally responsible papers, combined with a reasonable amount of persistence, allows for the regular use of paper with post-consumer recycled content. All of the publications were satisfied with the quality of recycled papers, and several pointed out that costs are comparable to virgin, with one publication paying less for recycled than virgin fiber paper.

A survey of the members of the Independent Press Association found that the magazines that are most likely to print on recycled papers are those with environmentally-focused editorial content. Although these publications generally began using environmentally preferable paper because they knew it was important to their readers, they have discovered that it is possible to obtain post-consumer recycled paper that is comparable in cost and quality to virgin varieties; in fact, many of these magazines are successfully using papers that contain tree-free or chlorine-free fibers and more than the standard amount of post-consumer fiber (the standard amount being 10% for coated paper, 30% for uncoated). The fact that these magazines – which have small to mid-size circulations and do not benefit from economies of scale – can use papers with exceptional environmental characteristics demonstrates that it is possible for all publications to use paper with a standard percentage of post-consumer fiber.

Not all of the magazines printing on recycled paper are small or environmentally focused. *Blue*, *Discover* and *Outside* are examples of mainstream magazines that are successfully using papers that contain at least 10% post-consumer recycled fiber. With their larger circulations, these publications are in the position to take advantage of the cost breaks that often accompany larger paper orders.

In discussing how they successfully use recycled paper, several publishers mentioned the necessity of having one person who is devoted to ensuring that the publication identifies the best and most affordable recycled paper and obtains a continuing supply of it. This person is in charge of contacting different paper suppliers to identify or negotiate the best deals, and often saves the publication money through aggressive bidding. He or she may also implement cost-saving measures, such as reducing paper weight to save postage or bulking paper needs for several titles to obtain volume discounts, that make it possible for the publication to use paper with the most desirable environmental characteristics (tree-free fiber, non-chlorine bleaching and high post-consumer content). Because the PAPER Project is devoted to ensuring that it is possible for all magazines to successfully adopt recycled papers, our staff is willing to fulfill or assist with this function for publications that require guidance in identifying paper deals or cost-saving measures.

Profile of an Eco-Paper Leader: *Mother Jones*

Publication: *Mother Jones*

Description: Monthly investigative news magazine

Circulation: 200,000

Current paper: Cover stock is 80# Somerset Gloss coated #3 from SAPPI; text is 45# Pub Recycled coated #5 from Stora (Repap). Post-consumer recycled content is 10% for both.

Experience with recycled and tree-free paper: *Mother Jones* has printed on recycled paper for several years and made the continued use of recycled paper a mandatory component of a recent redesign.

According to Anita Wong, art director at *Mother Jones* magazine, “The publisher of *Mother Jones* has always been very committed to printing on recycled paper. The magazine has been printed on recycled paper for a number of years. Also, our readers care about what type of paper we use.”

Adds Sara Coppin, production manager: “There’s no excuse not to use recycled paper, since there are so many choices out there, and the volume of paper that gets used to print magazines is so high, it’s unconscionable to use virgin paper. It’s simply a matter of making recycled paper a priority and sticking to that.”

FIGURE 4

Profile of an Eco-Paper Leader: *Blue Magazine*

Publication: *Blue Magazine*

Description: Monthly outdoor adventure magazine

Circulation: 200,000

Current paper: For the text, New Leaf Legacy coated #3 (varying weights – 45#, 55#, 60#) with 15% post-consumer fiber. For the cover, 65# Silverado matte #3 from Plainwell (Shasta) with up to 10% post-consumer fiber.

Experience with recycled and tree-free paper: *Blue Magazine* has used recycled paper since the magazine’s inception in 1997 and has been consistently pleased with its quality since then. Danielle Dagan, production director, states, “It is getting easier and easier for publishers to use recycled paper. The cost continues to decline.”

FIGURE 5

Profile of an Eco-Paper Leader: *Co-op America Quarterly*

Publication: *Co-op America Quarterly*

Description: Quarterly magazine covering environmental and social justice issues

Circulation: 55,000

Current paper: Co-op America has changed papers frequently because it always seeks to find the most environmentally preferable papers. Recently, it used a 50# uncoated paper from Living Tree Paper that is 90% post-consumer fiber and 10% hemp and is processed chlorine free.

Experience with recycled paper and tree-free papers: Co-op America has found that recycled/tree-free papers are competitive in quality and price with other papers available on the market. During the past year, Co-op America has increased the amount of post-consumer content while actually lowering its paper buying costs, thanks to aggressive bidding and other cost-cutting strategies.

Dennis Greenia, publications director, notes that purchasing post-consumer paper is easier than publishers may think it is. "One helpful strategy is to look at all your paper needs for six months to a year, and work with your printers and paper merchants to purchase papers to account for all your needs," stated Greenia. "We used the 90% PCW/10% hemp fiber paper for two of our titles and the postcards in another publication."

FIGURE 6

Profile of an Eco-Paper Leader: *E Magazine*

Publication: *E Magazine*

Description: Monthly environmental reporting magazine

Circulation: 50,000

Current paper: #80 Sterling coated #2 from Westvaco for the cover (now being discontinued in favor of a "new improved" Sterling Ultra), 10% post-consumer content, and #50 Williamsburg Collage Offset (30% post-consumer content) from International Paper for the interior pages.

Experience with recycled and tree-free paper: *E Magazine* has printed on recycled paper since its launch in January 1990. *E Magazine* also uses recycled paper for its office stationery needs, as well as for direct mail, renewal and billing, using "open face" window envelopes that have no plastic material covering the window.

FIGURE 7

Profile of an Eco-Paper Leader: *Mountainfreak*

Publication: *Mountainfreak*

Description: Bi-monthly magazine for adventure travelers

Circulation: 30,000

Current paper: Cover and text is New Leaf's 60# Reincarnation #1 matte finish (100% recycled, 50% post-consumer content, processed chlorine free). In addition, the magazine's extra sections, pullouts, blow-in cards, stationery and other non-publication pieces are on tree-free paper from EcoSource. In-house papers, such as stationery and envelopes, are printed on hemp fiber papers.

Experience with recycled and tree-free paper: According to publisher Hillary White, "We've been using recycled or tree-free paper forever. *Mountainfreak* first started as a black-and-white newsprint magazine printed on tree-free paper back in 1995. We eventually switched to a full-color format and found 100% recycled paper from a mill that took all the waste from paper manufacturers and remade the paper. When that mill went out of business more than a year ago, we switched to the highest-quality matte, highest recycled content we could find – Reincarnation."

"Our experience with recycled paper has been great," says White. "We're very picky about the quality of our print job because we have lots of photos that require high-quality printing. We've also found that the recycled paper is quite close in price to virgin paper."

FIGURE 8

Profile of an Eco-Paper Leader: *Earth Island Journal*

Publication: *Earth Island Journal*

Description: Quarterly magazine covering environmental and social justice issues

Circulation: 17,000

Current paper: Cover stock is New Leaf Opaque Satin (100% recycled, 50% post-consumer content, processed chlorine free); text is IPA Eco-Offset (100% recycled, 100% post-consumer content, processed chlorine free), through New Leaf.

Experience with recycled paper and tree-free papers: *Earth Island Journal* has been using environmentally sound papers since the early 1990s. The *Journal* has used New Leaf recycled papers for the past two years. Recently, they have been able to reduce their costs further by joining the Independent Press Association's paper-buying cooperative.

Commitment to Eco-papers: *Earth Island Journal* has a longstanding commitment to using recycled and other environmentally preferable papers. The spring 1994 edition marked an historic event in magazine publishing. It was the first time in the late 20th century that an American magazine was printed on 100% tree-free paper (kenaf). According to Editor in Chief Gar Smith: "Our printers didn't know what to expect; for all they knew, it would jam the press. But it performed excellently and dried immediately. It's very strong, too. We were pleased to be the publication to let others know this paper was available."

FIGURE 9

SECTION VI

CHALLENGES AND OPPORTUNITIES

As with any purchasing decision, the choice to use post-consumer recycled, tree-free or chlorine-free paper must address issues of cost, quality and availability. Below are some concerns frequently cited by magazine publishers who have considered using recycled paper. Most of these concerns can be traced back to the 1980s, when recycled paper was just coming onto the commercial market and still had many problems associated with it. Technological advances introduced since that time have solved problems once associated with recycled paper; however, potential users of recycled paper may still have some questions about its viability. Where concerns exist, perceived barriers to the use of recycled paper can be overcome with appropriate planning and preparation.

Cost

Often, recycled paper costs the same as its virgin counterparts. In some cases, it can be slightly more expensive; in other cases, it's actually cheaper. When recycled paper is more expensive, the cost differential is usually small. Several mills that make a virgin coated #2 or #3 paper will make a recycled version for exactly the same price.

When recycled paper was first marketed in the early 1980s, only a few mills manufactured it and prices were high compared to virgin papers. Now, every major paper company makes at least one recycled product. Increased recycled pulping capacity and distribution of recycled papers through local merchants have made it much more likely that major purchasers will be able to find recycled paper at prices equivalent or very close to virgin paper prices.

The prices that customers pay for paper always depend upon the circumstances of the purchases: when they buy, how much they buy, what kind of paper they want, and which mill or distributor they buy from. These same factors affect the price of recycled paper, and manipulating any of them will change the price. Strategies used by publishers to mitigate additional costs of recycled paper include using a lighter weight paper, buying recycled paper in bulk for several issues or multiple publications, and redesigning the publication to use paper more efficiently.

Quality

Recycled paper available today³¹ meets the same technical specifications as virgin paper. It performs just as well on presses and holds images just as well as its virgin counterparts. The opacity of recycled paper is often higher than the opacity of virgin papers, which means that recycled paper users can buy paper of a lower weight and still avoid images bleeding through.

³¹ Uncoated paper is widely available with 30% post-consumer content, and coated paper is widely available with 10% post-consumer content.

Recycled papers average slightly lower brightness levels than virgin papers, but, even so, there are recycled paper options that have very high brightness levels. In any case, many designers avoid very bright paper, since it tends to be less easily readable.

Reliability of Supply

The same mills that make most of the virgin paper available in the U.S. now make most of the recycled paper, too, so high quality recycled paper is consistently available through virtually all distributors, including some that specialize in it. When recycled magazine paper was first manufactured, it tended to be available only from a few less well-established mills, and that meant recycled paper was harder to obtain. Now many of the larger mills have seen that recycled paper makes economic sense and have started producing it in large quantities. Chances are that a manufacturer from which a customer purchases virgin paper will have recycled options available, too.

The only customers who might experience difficulties in getting the necessary supply of recycled paper are those who order in small quantities or are on an extremely short schedule. If publishers are encountering difficulties with buying small quantities of paper, they can investigate cooperative buying opportunities to ensure that they'll be able to get the paper they need at a price they can afford.

Reader Interest

Some magazine publishers have claimed that readers don't really care whether a magazine is printed on recycled or virgin paper. If readers don't care, magazines may have less of an incentive to change their practices.

Surveys show that Americans are concerned about the loss of natural forests and place a high value on forest conservation. Market research shows that when price and quality are equal, 76% of consumers would switch to a brand or retailer that's associated with a good cause;³² furthermore, the environment ranks as one of the top three issues that consumers most want businesses to work to solve.³³ Switching to recycled paper is a wise move when publishers are selling to an audience whose level of environmental awareness continues to increase. And, since few magazines currently print on recycled paper, magazines that switch now will be recognized as industry leaders. Several magazines that use recycled paper publicize this environmental choice to their readers in order to build loyalty.

³² 1999 Cone/Roper Cause Related Trends Report: The Evolution of Cause Branding.

³³ Ibid.

Paper Switching Process

Magazine publishers also express the concern that, because specifying and printing on recycled paper is a new experience, the switching process will be complicated. Purchasing environmentally preferable paper, though, is similar to the process of purchasing any other kind of paper. Publishers will wish to examine several options and select those that best meet their needs; they may wish to test a paper first by using it on a small run or special insert section, and they will probably negotiate a deal with the paper supplier based on the quantities they expect to purchase.

The PAPER Project does recognize that adopting recycled papers can require some extra effort from staff members who may lack the necessary time or expertise. Therefore, the PAPER Project offers considerable resources to help magazine publishers at every step of the paper buying process. Section VII details the resources that the PAPER Project is making available to publishers and offers additional advice on the process of adopting environmentally preferable papers. Appendix A also offers responses to a variety of other concerns that publishers may have.

**For step-by-step suggestions about how to switch to recycled-content paper, visit
The PAPER Project Web site at www.EcoPaperAction.org.**

SECTION VII

IMPLEMENTING SOLUTIONS: RESOURCES FROM THE PAPER PROJECT

Many publishers want to switch to environmentally responsible papers in order to enjoy the environmental and public relations benefits that accompany recycled paper use. The wide variety of eco-papers currently available means that just about every interested publication can take this environmental step. The PAPER Project understands that the process of selecting and integrating an appropriate eco-paper can be complex, though, and that some publishers don't have the staffing or capacity to research and identify the recycled papers that meet their needs. Resources that help simplify the process will make it easier for businesses to adopt eco-papers and become part of the solution to a global environmental crisis.

The PAPER Project offers not-for-profit resources that will make the process of switching to recycled-content paper, and the actual use of the paper, easier. Three key components of the project's magazine industry support are the resource list of recycled-content papers, the Project's technical assistance program and the paper purchasing cooperative, each of which is described in greater detail below.

Resource List of Recycled-Content Papers

Conservatree has created a comprehensive list of available eco-papers (including post-consumer recycled, tree-free and chlorine-free options), along with descriptions of each paper's best uses. This list can be useful both to a publisher, who can take it to the printer to discuss recycled paper options, and to the printer, who then can spend less time researching paper options. This list is available to any interested business, organization or individual at both www.EcoPaperAction.org and www.conservatree.com.

Direct Technical Assistance

The PAPER Project includes staff with backgrounds in paper sales and brokering, and, therefore, can offer appropriate suggestions for environmental paper alternatives, as well as work with publishers and printers to convert from virgin to recycled paper. Any publisher may request professional technical assistance to identify a source for recycled-content paper and make the transition to it. For additional information about services available from the PAPER Project, including background information about recycled papers and lists of other resources, please visit the PAPER Project Web site at www.EcoPaperAction.org.

Cooperative Bulk Paper Purchasing

The PAPER Project recognizes the potential of bulk purchasing to reduce costs and increase availability of recycled-content paper for smaller publishers. The Independent Press Association already offers its member publications the opportunity to participate in a cooperative that allows

them to enjoy estimated savings of at least a dollar per hundredweight³⁴ on 100% post-consumer recycled, processed chlorine free offset paper. This cooperative is run through a Northern California printer that stores the paper and coordinates printing with magazine publishers; in the future, the PAPER Project intends to expand such cooperative purchasing options to encompass a wide range of papers, including coated options, at locations around the country.

Members of the PAPER Project are the Independent Press Association, Conservatree and Co-op America. The mission of this partnership is to reduce the magazine industry's impact on the environment by helping magazine publishers adopt environmentally preferable printing and distribution practices. All three members print their publications on papers that are excellent environmental choices.

An Invitation to Publishers

In order to increase the number of magazines printing on recycled paper, the PAPER Project is working to make it easy for magazine publishers to adopt recycled paper options.

There are several ways in which the PAPER Project can assist magazine publishers who want to begin printing on environmentally preferable papers. We are happy to do any or all of the following:

- ◆ Identify papers that are available in the type, grade, weight and quantity that you need; or, suggest alternatives that might suit your printing and budget requirements.
- ◆ Connect you with a printer, broker, mill or distributor that specializes in environmentally preferable papers.
- ◆ Work with your printer, broker and/or paper supplier to answer questions, work through obstacles, and ensure that the new paper integrates smoothly into your system.
- ◆ Develop personalized strategies to help you meet any cost differential you may experience.
- ◆ Help you publicize your environmental commitment to your readers and the general public.

For advice and assistance, call (415)721-4230 or email paper@conservatree.com. Initial assistance is complimentary for magazines wishing to switch to environmentally preferable paper. Extensive or continuing assistance is available at reasonable hourly consulting rates. All members of the PAPER Project are nonprofit organizations and do not represent any particular brands of paper.

³⁴ Equivalent to 100 pounds.

PAPER PROJECT PARTNERS

This report and the PAPER Project's Resources are brought to you by the PAPER Project partners:

CONSERVATREE

(415) 721-4230

www.conservatree.com

Conservatree provides cutting-edge information on recycled, tree-free, old-growth-fiber-free and chlorine-free printing and writing papers. The nonprofit organization is dedicated to providing information, tools and technical assistance to help purchasers switch to environmentally sustainable paper options. The Conservatree Web site offers a number of resources, including in-depth information about the environmental impacts of paper and a comprehensive listing of all the environmental papers available in the U.S. and Canada.

CO-OP AMERICA'S WOODWISE PROGRAM

(800) 58-GREEN

www.woodwise.org

Co-op America is a nonprofit organization dedicated to providing far-reaching economic strategies for achieving environmental sustainability and social justice. The WoodWise Program helps consumers and businesses make more forest-friendly purchasing and lifestyle decisions. It regularly publishes the *WoodWise Consumer Guide*, which contains practical tips and a list of resources to help individuals protect forests.

INDEPENDENT PRESS ASSOCIATION (IPA)

(877) INDYMAG

www.indypress.org

The Independent Press Association is an international membership-based organization that represents more than 350 magazines and community newspapers committed to social justice. The IPA provides technical assistance to members and advocates on behalf of the independent press.

APPENDIX A: ENVIRONMENTALLY PREFERABLE PAPER PRODUCTION

In the past, some publishers have expressed concern about whether recycled paper use and chlorine-free bleaching technologies are really better for the environment. The following section addresses questions related to environmental paper production.

Does recycling use a lot of energy?

Even though it requires energy to collect and transport post-consumer recovered fiber, recycling still ends up being much more energy efficient than manufacturing virgin paper. Skeptics who claim that recycling requires extensive materials transport are often forgetting that logs, chips or pulp often have to be shipped long distances to paper mills, which themselves are often located in remote areas. Then the mills' products often must be transported long distances to markets. Most recycling actually occurs near population centers (where much of the paper is recovered), which minimizes transportation.³⁵ So using recycled materials rather than virgin pulp is likely to decrease the energy used to transport materials.

It also takes much more energy to turn trees into pulp than it does to recycle used paper. Because recycled fiber has already been processed before, reprocessing it uses just 10 to 40% of the energy that virgin pulping requires.³⁶ Virgin paper production is an extremely energy-intensive process; in the U.S., the pulp and paper industry is the second largest consumer of energy.³⁷

Is deinking a toxic procedure?

Deinking is primarily a mechanical process, during which machinery washes and beats recovered pulp in order to separate usable paper fibers from dye, ink, toner, adhesives and paper fibers that are too short to be used again. Detergents or other surfactants may be added to bind to these unusable substances and make them easy to remove from the mixture.

The toxic substances involved in deinking come from the recovered paper, which has often had toxic inks or dyes added to it. Once these toxic substances are separated from the fibers, they become part of a sludge that is handled appropriately, according to its contents. Often sludge is landfilled on the mill grounds, or it can be handled as a hazardous material if necessary (although many sludges test non-hazardous). Some systems are also able to skim off the inks to be disposed of separately from the sludge, further reducing the amount of potentially hazardous material to manage.³⁸

This is far better than losing reuse of the fibers. It also reduces environmental impacts that occur when discarded papers with toxic inks and dyes are scattered throughout a landfill or burned in an incinerator, which produces a toxic ash that must still be landfilled (and even the best, state-of-the-art landfills eventually leak into groundwater). In other words, the process of deinking neither uses nor creates any additional toxic substances, and it can actually aid in the safe disposal of toxic inks and other materials that have been added to paper.

³⁵ *Welfare for Waste: How Federal Taxpayer Subsidies Waste Resources and Discourage Recycling*, GrassRoots Recycling Network, 1999.

³⁶ *Paper Cuts: Recovering the Paper Landscape*, Worldwatch Institute, 1999.

³⁷ *Ibid.*

³⁸ *Environmentally Sound Paper Overview: Essential Issues*, Conservatree, 2000 (update).

Can the planet's remaining trees continue to supply us with virgin paper?

Half of the forests that originally covered 46% of our planet's land surface are gone, and only one-fifth of the Earth's original forests remain pristine and undisturbed.³⁹ Yet global demand for wood and wood products is steadily increasing. Paper use plays a big role in forest destruction, since the paper industry uses 42% of the world's industrial wood harvest.⁴⁰ Some of the timber used in paper comes from plantations, but a significant amount of it continues to come from old-growth forests, which may be cut for lumber but also send large volumes of chips and sawdust to paper mills. In the United States alone, less than 5% of the lower 48 states' old-growth forests remain intact.⁴¹

Even if the timber industry planted one new tree for every one it cut down, we would never recover the diverse ecosystems of ancient natural forests that have already been logged past recovery. The habitats that natural forests provide cannot be reproduced by tree farms and plantations, which are associated with a number of environmental problems, including soil depletion and the use of dangerous pesticides. Increasing our use of recycled fiber will ease the strain on forests, reduce the pressure for tree plantations and chip mills, and help solve some of the waste disposal problems caused by our high rate of paper use.

What's the difference between Elemental Chlorine Free (ECF) and Totally Chlorine Free (TCF) bleaching methods?

Standard chlorine bleaching technology (which uses elemental chlorine gas) and ECF bleaching (which employs a chlorine derivative such as chlorine dioxide) both result in the production of organochlorines, which are hazardous substances such as dioxin, an endocrine disrupter and human carcinogen. TCF bleaching, on the other hand, is accomplished with oxygen, hydrogen peroxide or ozone, which do not produce any organochlorines. An average mill employing standard chlorine bleaching technology will release about 35 tons of organochlorines a day; an ECF mill will release 7 to 10 tons; and a TCF mill will release none.⁴² ECF mills are obviously an improvement over standard bleaching technology, but since organochlorines are highly toxic and bioaccumulate in the food chain, even their lower level of release is cause for concern. Environmentally speaking, TCF is the best choice for bleaching technology.

Recycled papers bleached with TCF technology are sometimes described as being "processed chlorine free" (PCF) because while the papers are manufactured without chlorine or chlorine derivatives, the fibers in the recycled pulp may have been bleached with chlorine previously. From an environmental standpoint, the best papers are those that utilize recycled fiber and employ chlorine-free bleaching methods – so look for papers that bear the PCF label or specify that they contain post-consumer fiber and were bleached without chlorine or chlorine derivatives.

³⁹ "Forest Facts," National Resources Defense Council, retrieved 9/6/00 from www.nrdc.org/land/forests/fforestf.asp.

⁴⁰ *Paper Cuts: Recovering the Paper Landscape*, Worldwatch Institute, 1999.

⁴¹ American Lands Alliance, based on research from the National Biological Service, United States Geological Survey, presented in "Endangered Ecosystems of the United States: A Preliminary Assessment of Loss and Degradation," by Reed F. Noss, Edward T. LaRoe III, and J. Michael Scott, 1995.

⁴² *Paper Cuts: Recovering the Paper Landscape*, Worldwatch Institute, 1999.

APPENDIX B: CALCULATION OF THE MAGAZINE INDUSTRY'S ANNUAL TREE USE

Total of 35.4 million trees (the magazine industry's annual tree use) calculated collaboratively by Conservatree and Alliance for Environmental Innovation/Environmental Defense, with the following assumptions:

- 1) 2,225,200 tons (1999 figure) of magazine paper, with a composition of 75% coated groundwood, 21% coated freesheet, 3% uncoated groundwood, and 1% uncoated freesheet (Source: American Forest & Paper Association).
- 2) 24 trees per ton of virgin uncoated freesheet paper, based on a mix of hardwoods and softwoods 6-8" in diameter and 40' tall. (Source: Tom Soder, Pulp & Paper Technology Program, University of Maine, September 1991, as reported in *Recycled Papers: The Essential Guide*, by Claudia G. Thompson, 1992).
- 3) Yield from mechanical pulping is twice that of chemical pulping (Sources: *Pulp & Paper 2000 North American Factbook*, Miller Freeman; American Forest & Paper Association; and Alliance for Environmental Innovation/Environmental Defense Paper Task Force).
- 4) Pulp contents and chemical/mechanical compositions determined by Alliance for Environmental Innovation/Environmental Defense Paper Task Force.
- 5) Recycled contents determined by Conservatree, based on information from American Forest & Paper Association, the Magazine Publishers of America and interviews with mill representatives.