

Green Printing Guidelines

Dale Adams

Each year 4 billion trees in forests around the world are cut down to make paper, and increasingly these harvested trees are coming from endangered ecosystems, such as the Canadian boreal forest and the Indonesian rain forest. In addition, the paper industry is now converting natural forests to monoculture plantations, or tree farms, greatly reducing biodiversity, eliminating wildlife habitat, and requiring heavy use of chemical herbicides and pesticides.

The production of paper is both resource intensive and highly polluting. According to the U.S. Department of Energy, the pulp and paper industry is the third-largest industrial consumer of energy and the fourth-largest emitter of greenhouse gases among manufacturers. According to the U.S. Environmental Protection Agency, the industry is third among industrial sectors in the release of toxic chemicals to air and fourth in the release of toxic chemicals to water. In the United States, environmental regulations are fairly well enforced; such enforcement is not guaranteed in other countries, particularly developing countries, where more and more paper is being made.

Most paper is not recycled and is instead thrown out, making up a third of the municipal waste stream. As the paper deteriorates in landfills, it releases methane, a greenhouse gas with 23 times the heat-trapping power of carbon dioxide. According to the U.S. EPA, municipal landfills are the largest source of human-related methane emissions, and a significant share of these emissions is generated by the decomposition of paper.

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Conscientious publishers will want to do all they can to minimize the harmful environmental effects of publication printing. Aside from simply printing less—which will happen as more publications go digital—publishers should do three things:

- Maximize recycled content
- Maximize use of certified virgin fibers
- Choose greener production

Maximize Recycled Content

The most significant step you can take is choosing paper with recycled content. Maximizing postconsumer recycled fiber (from paper that has reached its end use) in your paper means

- fewer trees cut down for virgin fiber and less pressure for intense forest management, including the conversion of forests to plantations, and for logging in endangered ecosystems;
- less energy consumed to produce the paper, even considering the energy required for the collection of recycled paper and its transportation to pulp mills;
- less pollution, including less carbon dioxide, since the work of extracting the fiber from wood and bleaching it has already been done; and
- less solid waste and thus less methane.

One hundred percent recycled is the ideal, of course, but it may not be possible to achieve this while also meeting budget and print-quality objectives. The consensus standard currently emerging in the publishing industry is based on the U.S. EPA's requirement for federal agencies:

- For uncoated paper: minimum of 30 percent postconsumer recycled content
- For coated paper: minimum of 10 percent postconsumer recycled content

Still, there are publishers keeping to the highest standard and successfully using that fact in their marketing: In 2003 Raincoast Books published the Canadian edition of *Harry Potter and the Order of the Phoenix* on 100 percent postconsumer recycled paper.

Currently, though, recycled fiber makes up only 6 percent of printing and writing papers, so there is considerable room for growth. As more publishers demand recycled content from their paper suppliers, the result will be a more functional recycling infrastructure, more and better paper choices, and lower paper costs.

Maximize Use of Certified Virgin Fibers

So, how can you be sure that the nonrecycled virgin fibers in your paper come from forests that are not endangered and that are sustainably managed? The paper you buy should carry the label of a certification program, preferably the Forest Stewardship Council.

Forest certification verifies, usually through third-party auditors, that forests are being managed according to a set of standards for sustainability. These are the main forest certification programs:

- *The Forest Stewardship Council (fscus.org)*: A nonprofit organization certifying forests internationally, FSC was created in the early 1990s by environmental groups concerned about deforestation and unsustainable logging and developed with input from both industry and nonindustry stakeholders.
 - *The Sustainable Forestry Initiative (sfiprogram.org)*: Certifying forests in the United States and Canada, SFI was created by the American Forest and Paper Association for its members but is now a separate nonprofit organization with more independence from the timber and paper industry.
 - *The Canadian Standards Association forest certification program (csa.ca)*: CSA does not itself set forest performance standards but allows them to be defined in local forest management plans, which may or may not go beyond minimal Canadian and provincial legislative requirements.
 - *The Programme for the Endorsement of Forest Certification schemes (pefc.org)*: PEFC simply endorses national and regional forest certification schemes—such as SFI and CSA—so weaknesses in those programs also apply to PEFC.
- When you buy paper labeled by any of these programs, you can be assured that the trees were harvested legally and that the forests were managed according to basic sustainability standards. However, only FSC is endorsed as the best-practice standard in forest management by the major environmental groups, including Greenpeace, the Natural Resources Defense Council, the National Wildlife Federation, the Sierra Club, and World Wildlife Fund. These are the main reasons why:
- FSC provides adequate protection of endangered and high-conservation-value forests.
 - FSC maintains biodiversity and landscape integrity according to the highest standards.
 - FSC does not allow conversion of natural forests to plantations.
 - FSC has stricter limits on clear-cut sizes and chemical use.
 - FSC has a transparent certification process, through which findings and corrective action requests are made public, and gives stakeholders opportunities to challenge forest management.
 - FSC calls for consensus solutions when logging affects indigenous communities.
- Because paper will be made with fibers from various forests, FSC also calls for *chain-of-custody certification*, which verifies that paper mills,

distributors, and others handling fibers along their course keep track of those fibers—thus ensuring that the final products can confidently receive an FSC label. For paper, FSC has three on-product labels:

- **FSC 100%:** All fibers come from FSC-certified forests.
- **FSC Mixed Sources:** Fibers come from FSC-certified forests, recycled paper, or *company-controlled sources*, which are forests where harvesting is legal, where high conservation values are not threatened, where civil and traditional rights are protected, where genetically modified trees are not grown, and where there will be no conversion to plantation or to nonforest use. The label may indicate the percentage of postconsumer recycled fiber.
- **FSC Recycled:** All fibers come from postconsumer recycled paper. With this label, you can be assured of recycled content.

If you wish to print an FSC label on your publication or print any claim regarding the publication's FSC content, the paper you use must carry an FSC label and the printer must be FSC certified. That printer will provide you with the correct label or with proper wording for a claim regarding FSC content.

You will be showing responsibility by using paper with any of these labels, but as with choosing recycled paper, it may not always be possible to choose FSC-labeled paper. You cannot choose paper with a percentage of FSC-certified fibers, as you can with recycled fibers, so you need to aim for a percentage of all paper purchased. The Green Press Initiative recommends an annual aggregate average of at least 20 percent FSC-labeled paper.

Choose Greener Production

Besides maximizing recycled- and certified-fiber content, you can also make sure that you support paper manufacturing and publication printing processes that are as green as possible. Suggested steps include choosing environmentally responsible

paper manufacturers and printers and spec'ing print jobs to minimize environmental issues.

Some paper manufacturers do more to protect the environment, using the most advanced technologies, the most efficient mill operations, and the most effective environmental management systems. There is no comprehensive ratings program for the paper industry, so you'll need to do some research before choosing a paper company and a paper product. These sites will help:

- **Conservatree (conservatree.org):** Conservatree's Web site offers a comprehensive listing of environmental papers of all grades—from tissue to newsprint to printing and writing—with data for each brand on recycled content, FSC and other certification labeling, and bleaching process used.
- **World Wildlife Fund's Paper Toolbox (panda.org/paper/toolbox):** WWF's Paper Toolbox site offers *The WWF Guide to Buying Paper* and a Paper Scorecard that you can submit to paper companies. The site also lists European paper companies that have completed the Scorecard and have had their responses verified by a third-party auditor.

To choose a responsible printer, you can go to the Sustainable Green Printing Partnership's sgppartnership.org site, but the organization is relatively new and has certified only a small number of printers. You'll likely need to ask printers directly about their recycling, pollution-control, and energy- and resource-conservation efforts. Most will have a prepared data sheet ready for this request. Among the items on that sheet should be a description of an environmental (or sustainability) management system, such as one meeting the requirements of ISO 14001.

Your printing-job specs will include recycled-content and FSC requirements, but these specs will also help:

- **Bleaching:** The paper should come from pulp whose bleaching was preferably either *totally chlorine free* (if virgin fiber) or *processed chlorine free* (if recycled fiber), but it should at

least be *elemental chlorine free* (because dioxin is a byproduct, elemental chlorine bleaching has been phased out in the United States, but it still makes up 20 percent of kraft pulp bleaching worldwide).

- **Inks:** Vegetable-based inks contain fewer toxic compounds than do petroleum-based inks.
- **Coatings:** The fewer coatings, laminates, and adhesives, the easier the recycling of the publication.
- **Trim sizes:** Trim sizes closer to standard paper sizes mean less trim waste.
- **Basis weights:** Lower basis weights mean fewer fibers used in making the paper. Higher-bulk papers can maintain thickness.
- **Print quantities:** Smaller printings will avoid the production of extra copies that remain unsold and must be disposed of.

Your specs communicate your immediate goals to your printer and ultimately paper manufacturers, but you should also periodically meet with your vendors to lay out future goals. As suppliers recognize the demand for higher recycled content, FSC-labeled paper, and cleaner paper manufacturing and publication printing, the industry will respond.

More Information

Green Press Initiative (greenpressinitiative.org): GPI helps publishers and other stakeholders in the book and newspaper industries minimize social and environmental impacts. The Web site offers tools and resources for publishers, including supplier listings, toolkits, and sample environmental policies.

Green America Better Paper Project (magazinepaper.org): This project helps magazine publishers implement environmental stewardship policies and purchasing practices—and promotes those that do. The Web site offers discussion forums, webinars, reports, and other resources.

Environmental Defense Paper Calculator (papercalculator.org): This Web-based calculator shows the environmental impacts of different papers across their life cycles, allowing variables of paper grade, quantity per year, and recycled content.

The State of the Paper Industry: Monitoring the Indicators of Environmental Performance by the Steering Committee of the Environmental Paper Network (available at environmentalpaper.org): This comprehensive report addresses fiber sourcing, recycling, consumption, paper production, and the paper industry's impact on communities and the climate crisis.

Handbook on Book Paper and the Environment by the Association of American Publishers (available at publishers.org): This guide assists publishers in navigating the confusing and often arcane issues relating to the development of environmental sustainability practices within the book publishing industry.



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