INFORMING THE DIALOGUE:
FACTS ABOUT MAIL AND THE ENVIRONMENT

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Basic Mail Facts and Figures

1. How much mail is there and how much does it weigh?

In Fiscal Year 2007, there were slightly over 212 billion pieces of mail. This mail weighed 25.6 billion pounds, or almost 12.8 million tons.

Information Sources:

USPS, 2008. *Cost and Revenue Analysis (CRA) Report-FY 2007.* Available from http://www.usps.com/financials/rpw/welcome.htm

USPS. *Revenue, Pieces, and Weight by Classes of Mail and Special Services for Government Fiscal Year 200*7. Available from http://www.usps.com/financials/rpw/welcome.htm.

2. How are mail volumes predicted to change in the future?

Although many observers have predicted large declines in aggregate mail volumes, these have not materialized as the economy and the population both grow and as mailers continue to find value in and new uses for the mail. In its FY 2008 Integrated Financial Plan (IFP) presented to the Board of Governors on September 26, 2007, the Postal Service predicted a 0.1 percent volume increase for FY 2008 as compared to FY 2007. However, mid-year results show that first-half actual volumes for the year had decreased by 3.3 percent as compared to last year.

Information Sources:

EMA Foundation for Paper-Based Communication, 2006. *First-Class Mail and the United States Postal Service – Future Strategies for this Time Honored Medium*. Available from http://www.emafoundation.org/file_depot/0-10000000/0-10000/2518/conman/First-Class+Mail+and+USPS.pdf

Fouad H. Nader, F.H., and M. Lintell, 2008. *Mail Trends Update – The Future of Mail*. Background Paper No. 2008-1. February. Available from http://www.postinsight.pb.com/files/MAILTRENDS_final_2008_v10-1.pdf

Jiminez, L.A., 2006. *Mail has a Future in Multi-Channel Communication* in Postal Insight. March 31. Available from http://www.postinsight.com/files/Issue1_single.pdf

USPS, 20007. *FY 2008 Integrated Financial Plan*. Presented at Board of Governors' Meeting Open Session, September 26. Available from http://www.usps.com/financials/_pdf/FY2008_IFP_Open.pdf

Walker, H.G., 2008. *Financial Review*. Presented at USPS Board of Governors' Open Session, 7 May. Available from http://www.usps.com/financials/_pdf/050708_Open_BOG_Public.pdf

3. How sensitive are mail volumes to price changes?

In general, mail volumes are not extremely sensitive to price changes. An economist would say that mail demand is fairly inelastic, meaning that any give percentage change in price induces a smaller change in volume. In a rate case regime under PRA, the Postal Service regularly filed testimony showing how sensitive volumes were to price changes. In the new PAEA environment, the Service will continue to file elasticity estimates with the PRC.

Information Sources:

Docket No. R2006-1, USPS-T-7, Direct Testimony of Thomas E. Thress on Behalf of the United States Postal Service. Available from http://www.prc.gov/Docs/48/48717/USPS.T.7.pdf

USPS Econometric Demand Equation Tables for Market Dominant Products as of November, 2007, Prepared for Postal Regulatory Commission.

4. Who sends mail and who gets it? How do people feel about it? How much is spent on marketing through the mail as compared to other media? What are the trends? What is in the mail?

Almost everyone receives and sends mail. In FY 2007, there were 212 billion pieces of mail. Of these, households received 150.9 billion pieces – or about 71 percent - of the mail. The balance of the mail was received by business, governmental, and non-profit entities. Households also sent 21.1 billion pieces of mail with the balance of the mail being sent by non-households. (2007 Household Diary, Executive Summary page 1.)

Although the members of relatively few households in America would like to receive more advertising mail, most find some of it interesting. About 48 percent of households usually read this mail while an additional 33 percent scan it. Only 19 percent of households do not look at this mail (2006 Household Diary, page 42). Finally, as the Household Diary notes "Ultimately, advertisers send direct mail because it works – household members read and respond to it."

In 2007, advertisers spent a total of $284 billion to promote and market their goods and services. Of this, $61 billion was spent on direct mail, $42.9 billion on newspapers, $66.2 billion on television, $18.6 billion on radio, $13.7 billion on magazines, $10.9 billion on the internet, and $70.5 billion on a number of channels aggregated as "all other." (Source McCann-Erickson as cited in the 2007 Household Diary Study, page 37.) And direct mail's share of the advertising market has remained fairly stable over the last several years.

Mail is used for many purposes including correspondence, transactions, advertising, and delivering periodicals and packages.

Information Source:

NuStats, 2007. *The Household Diary Study: Mail Use & Attitudes in FY 2007*. March 2008 Prepared for USPS, Demand Forecasting and Analysis. Contract No. 102592-02-B-1502 Available at http://www.usps.com/householddiary/_pdf/USPS_HDS_FY07_web.pdf

5. How much of the mail cannot be delivered as addressed (UAA Mail)?

In FY 2004, the most recent year for which comprehensive data are available, almost 10 billion mail pieces were undeliverable-as-addressed. Of these, almost 2 billion were forwarded, 1.6 billion were returned to the sender, and 6.1 billion were treated as waste. Overall, this UAA mail comprised 4.7 percent of the mailstream. (Christensen, Table 2.1)

Information Source:

Christensen Associates, 2007. *Summary Report, Volumes, Characteristics, and Costs of Processing Undeliverable-As-Addressed Mail and Personal-Knowledge-Required Mail.* May.

6. What happens to UAA mail? What is the Postal Service doing to recycle more of the UAA mail that it throws away?

What happens to UAA mail largely depends upon its class. Most First-Class UAA mail is forwarded or returned, while most Standard UAA mail is handled as waste. Overall, about 6.1 billion pieces of UAA mail are handled as waste.

The Postal Service is increasingly recycling this wasted mail. One approach to encouraging recycling of UAA mail as well as other waste is to consolidate contracting and use economic forces to promote recycling. Servicing responsibilities for all trash and recycling contracts have been consolidated at a single procurement center. As they expire, trash removal contracts are being converted to Total Solid Waste Management contracts through a negotiation process. Consolidation of waste removal and recycling contracts has reduced the number of suppliers needed to serve 254 facilities from 51 to nine and will reduce annual waste removal costs. In some locations, recycling revenue has totally offset trash removal costs.

Information Source:

USPS, 2006. *Strategic Transformation Plan 2006-2010, 2006 Annual Progress Report.* Available from http://www.usps.com/strategicplanning/2006apr.

7. How much mail do people throw away? What happens to it? How does this compare to other things they throw away? How does this compare with other major paper streams?

According to the United States Environmental Protection Agency (EPA), 251.3 million tons of wastes were generated in the municipal solid waste stream in 2006, reflecting an overall increase of 13 million tons, or 5.5 percent, since 2000. Given that the total volume of mail weighed 12.8 million tons in fiscal 2007 (and that almost a quarter of this was in packages, most of which were products that are not discarded), it is likely that the total quantity of mail discarded was less than ten million tons, or less than 3.8 percent of the total.

In terms of post-consumer management, a substantially greater quantity of paper (including mail) is recycled and recovered than any other constituent of the municipal solid waste stream. In 2006, 44 million tons of paper and board, representing 51.6 percent of the total generated, was recycled. The next greatest quantity of recovered material was yard trimmings, at 20.1 million tons, followed by metals at 6.95 million tons, and glass, at 2.88 million tons. Greater percentages of paper and board are recovered than of any other material except for yard trimmings (which are commonly composted) and certain non-ferrous metals.

Within the paper waste stream itself, it appears that about 40 percent of mail is recycled, based upon the two mail categories tracked by EPA (magazines and Standard Mail). The quantities and percentages recovered, however, have been growing rapidly. Recycling of Standard Mail has increased from 5.2 to 38.7 percent from 1990 through 2006, and recovery of magazines has increased from 10.6 to 40.5 percent over the same period. These rates of increase are far greater than the overall recovery rate of the solid waste stream overall, which increased from 16.2 to 32.5 percent from 1990 through 2006, or of all non-durable waste stream components (16.9 to 33.6 percent).

Recovery of other paper components of the solid waste stream also has increased in recent years. Since 1990, recovery of newspapers, office-type papers, books, and directories has increased by a factor of about 2.5 (38.0 to 87.9, 26.5 to 65.7 percent, 10.3 to 25.7 percent, and 8.2 to 19.1 percent, respectively), while recovery of the remaining paper category track by EPA (other commercial printing) has increased at a much lower rate overall (15.7 to 21.1 percent) and has actually declined for brief periods of time.

Information Source:

U.S. EPA, 2007. *Municipal Solid Waste Generation, Recycling, and Disposal in the United States: Facts and Figures for 2006,* and supporting data tables.

8. Can mail be recycled in most communities?

At least 67 percent of Americans live in communities with access to recycling for magazines and 61 percent live in communities with access to recycling for direct mail, according to the most recent available survey data (reflecting 2007).

Information Sources:

R.W. Beck, 2008. *2007 AF&PA Community Survey Executive Summary.* Available from http://www.paperrecycles.org/news/exec_summ.html.

SLS Consulting, 2006. *The Potential for Greater Fiber Recovery from Magazines, Catalogs, and Direct Mail.* Prepared for Direct Marketing Association, Inc., Envelope Manufacturers Association, Inc., and Magazine Publishers of America, Inc. 15 December.

9. What are the recent trends regarding recycling and recovery of mail?

Recent trends suggest that the substantial increases in recycling and recovery of mail documented during the past 15 years or so will continue. There are several reasons for this, including greater recycling capacity and public awareness of this capacity, the resurgence of the environment as a prominent public issue, and strong markets for recovered paper fiber. In addition, several industry organizations have brought a renewed focus to paper recovery efforts, both from a broad perspective (National Recycling Coalition) and specific to certain types of mail. Examples of the latter include the “Please Recycle” campaign recently launched by the Magazine Publishers of America (MPA) and the Envelope Manufacturers Association (EMA) and the very similar “Recycle Please” campaign recently initiated by the Direct Marketing Association (DMA). Finally, the Postal Service recently has begun to reinvigorate its internal recycling programs, and expects to substantially increase the quantities of recovered UAA mail in the years ahead.

Information Sources:

Direct Marketing Association, 2008. *Launch of DMA'S Recycle Please Campaign Gains Momentum* (press release). 19 June. Available from http://www.the-dma.org/cgi/disppressrelease?article=1172

Envelope Manufacturers Association (EMA), 2008. *Please Recycle*. Available from http://www.envelope.org/page/105467/.

Magazine Publishers of America, 2006. *Magazine Publishers of America Please Recycle This Magazine*. 26 October. Available from http://www.magazine.org/environment/21345.aspx

R.W. Beck, 2008. *2007 AF&PA Community Survey Executive Summary.* Available from http://www.paperrecycles.org/news/exec_summ.html.

USPS, 2007. *2007 Comprehensive Statement on Postal Operations.* Available from http://www.usps.com/financials/cspo/welcome.htm.

Mail and the Environment

10. What is the environmental footprint of mail?

This is a complex question, for which there is no simple and unambiguous answer at this time. To date, there has been no comprehensive, publicly available analysis of the total environmental footprint of the U.S. mail system. There are, however, several ongoing initiatives that will speak to this question. One is a life cycle inventory being conducted by the Postal Service of the four major mail classes, which has been completed and is now undergoing internal review. The other is a multi-party initiative facilitated by the Aspen Institute, which seeks to assemble the first full life cycle analysis of the mail. Results are not expected until 2009, at the earliest.

Several studies have been published, however, that address particular mail life cycle stages, endpoints (e.g., greenhouse gas emissions), or inputs (e.g., paper and plastics). These are listed below. The remainder of this entry addresses individual types of environmental aspects and media.

Information Sources:

Barone, J., 2008. *How Big Is DISCOVER's Carbon Footprint?* DISCOVER (online edition). Available from http://discovermagazine.com/2008/may/21-how-big-is-discover.s-carbon-footprint. 21 April.

H. John Heinz Center for Science, Economics, and the Environment. 2006. *Following the Paper Trail--The Impact of Magazine and Dimensional Lumber Production on Greenhouse Gas Emissions: A Case Study*. Washington, DC.

Mangmeechai, A. and H.S. Matthews, 2007. *Life Cycle Analysis of energy and Greenhouse Gas Emissions of Ground Shipping in the United States: Case Study of the U.S. Postal Service.* 20 March.

Oregon Department of Environmental Quality, 2004. *Life Cycle Inventory of Packaging Options for Shipment of Retail Mail-Order Soft Goods*. April.

Pitney Bowes, Inc., 2008. *The Environmental Impact of Mail: A Baseline*. June. Available from: http://www.postinsight.pb.com/files/Environ_Impact_Mail_.pdf

Air pollutant emissions

Air pollutant emissions from pulp and paper mills have been strictly regulated for many years under federal Clean Air Act authority. In response, the pulp and paper industry has made many improvements to its process technology that have resulted in emissions reductions. Since 1980, the U.S. paper industry has reduced emissions of air pollutants such as nitrogen oxides by 37 percent and sulfur dioxide by 68 percent.

In addition, the trend toward use of more recovered paper fiber from recycling has further reduced the overall air pollutant emissions profile of the industry. Making paper from recycled fiber further reduces contributions to air pollution -- by as much as 95 percent on a finished ton basis, according to the National Recycling Coalition.

Information Sources:

American Forest & Paper Association (AF&PA), undated. *Environmental Stewardship.* Available from www.paperrecycles.org/issues/environmental_stewardship.pdf.

National Recycling Coalition's "Recycling Calculator." Available at http://www.nrc-recycle.org.

Water effluents and consumption

While significant quantities of water are required to produce pulp and paper, all of this water is treated to remove pollutants prior to discharge under existing federal and state laws. Hence, this water is not removed from the system and is available for other uses. Assuming appropriate treatment following use, water is essentially a renewable resource. Today's U.S. pulp and paper mills use advanced technology to ensure that the water they use is treated in accordance with all legal limits prior to release to the environment and use by others. U.S. paper mills reuse a large portion of the water they use in the pulping and papermaking process. The process of cleaning and reusing water is commonly called "closing the mill." Overall water consumption rates have declined by more than 65 percent over the past 30 years, and emissions of major water pollutants such as biochemical oxygen demand (BOD) have been reduced by more than 70 percent during the past 20 years, even though total paper production has increased more than 50 percent.

Information Source:

Gale Encyclopedia of American Industries, 2005. *Pulp Mills*. Available from http://www.answers.com/topic/pulp-mill.

Climate change potential

As stated above, a complete and definitive estimate of the greenhouse gas emissions attributable to the U.S. mail is not available at this time. A new study has, however, reported a range of greenhouse gas emissions attributable to letter mail that have been developed by or for an array of Posts in other countries (principally in Europe). These estimates range from 7.6 to 36 g CO_2 per letter, with an overall average of about 20 g. Note that these estimates are described as covering Postal operations only, hence do not include upstream and downstream life cycle stages.

Work performed for the USPS on conducting its life cycle inventory of the mail strongly suggests that the paper and paper board manufacturing phase of the mail life cycle is the most significant in terms of CO_2 emissions.

U.S. Department of Energy (DOE) data show that the pulp and paper industry overall has the fourth-largest CO_2 emissions among U.S. industrial sectors. These data also show, however, that on a relative basis, this industry has the lowest unit CO_2 emission rates (CO_2 emitted per unit of energy consumed) among the six major industry groups profiled. In fact, the unit CO_2 emission rate in the pulp and paper industry is 26 percent less than the overall average, and almost 50 percent less than in sectors such as primary metals and food processing.

In the United States, improved forest management practices and the regeneration of previously cleared forest areas, along with timber harvesting and use, have resulted in net uptake (i.e., net sequestration) of carbon in each year from 1990 through 2005. The addition of almost 400,000 acres per year in new forested land in the U.S. each year from 2000 through 2005 means that more than 14.5 million additional tons of carbon (more than 53 million tons CO_2) have been sequestered during this period due to new forest growth.

The forest industry plays an increasingly important role in reducing greenhouse gas emissions by replanting more trees than it harvests. Trees are vital in removing carbon dioxide. According to the Society of American Foresters, “For every ton of wood a forest grows, it removes 1.47 tons of carbon dioxide from the air and replaces it with 1.07 tons of oxygen.” Also, the wood and paper products that come from forests store carbon dioxide and keep it out of the atmosphere. When these products are recycled, carbon dioxide storage is prolonged, and the carbon dioxide is kept out of the atmosphere for a longer period of time.

Information Sources:

American Forest & Paper Association, undated. *Harnessing the Carbon Cycle for Progress on Climate Change.* Available from http://www.afandpa.org/Template.cfm?Section=Environment2&template=/TaggedPage/TaggedPageDisplay.cfm&TPLID=6&OriginalID=265&InterestCategoryID=269&ExpList=265).

Pitney Bowes, Inc., 2008. *The Environmental Impact of Mail: A Baseline*. June.

Society of American Foresters, http://www.safnet.org/aboutforestry/facts.cfm, cited on Abundant Forests Alliance, “Environmental Myths & Facts.” Available from http://www.abundantforests.org/press_eiq_facts_3.html.

U.S. DOE, 2006. *Energy-Related Carbon Dioxide Emissions in U.S. Manufacturing* Report No. DOE/EIA-0573(2005). November.

U.S. Environmental Protection Agency, undated. *Land Use, Land-Use Change, and Forestry.* Available from http://epa.gov/climatechange/emissions/downloads06/07LULUCF.pdf

U.S. Environmental Protection Agency, undated. *Carbon Sequestration in Agriculture and Forestry*. Available from http://www.epa.gov/sequestration/rates.html

Additional Information Sources Addressing Particular Mail Life Cycle Environmental Aspects:

European Commission, 2001. *Integrated Pollution Prevention and Control (IPPC) Reference Document on Best Available Techniques in the Pulp and Paper Industry.* December. Available from http://eippcb.jrc.ec.europa.eu/pages/FActivities.htm..

USEPA, 2002. *Flexographic Ink Options: A Cleaner Technologies Substitutes Assessment*. Design for Environment Program; Doc. No. EPA 744-R-02-001A, February.

U.S. EPA, 2006. *Solid Waste Management and Greenhouse Gases: A Lifecycle Assessment of Emissions and Sinks*.

U.S. EPA, 2006. *Waste Management and Energy Savings: Benefits by the Numbers*. Available from yosemite.epa.gov/oar/globalwarming.nsf/UniqueKeyLookup/SHSU5C3J2J/$File/energy.pdf.

USEPA, 2005. *Emission Facts: Average Annual Emissions and Fuel Consumption for Gasoline-Fueled Passenger Cars and Light Trucks*. Office of Air and Radiation, Office of Transportation and Air Quality, EPA420-F-05-022. August.

USDOT, Bureau of Transportation Statistics, 2007. *National Transportation Statistics* (tables). Available from http://www.bts.gov/publications/national_transportation_statistics/

UPDATE (April 30, 2007): *eGRID2006* Version 2.1. Available from http://www.epa.gov/cleanenergy/egrid/index.htm.

11. Does discarded paper or incinerated paper pose a threat to the environment?

There do not appear to be any recent studies quantifying the potential human health or environmental risks associated with municipal landfills or combustors. The U.S. EPA has developed and implemented comprehensive management and performance standards that apply to these facilities. The documents supporting these standards suggest that risks from facilities that comply with EPA standards pose negligible risks to human health and the environment. Moreover, paper is an innocuous material that, with the exception of very small quantities of certain inks, does not contain any toxic constituents.

Information Sources:

Federal Register, Volume 56, No. 196, October 9, 1991, pp. 50984-50985.

Ontario Ministry of the Environment, 1999. *Environmental Risks of Municipal Non-Hazardous Waste Landfilling and Incineration: Technical Report Summary*. July.

12. What are some of the claims that have been made about mail and its impact on the environment? What is the factual basis of these claims?

To state the obvious, the claims that have been made about mail's impact on the environment are uniformly negative. Most of the more critical claims about these impacts have been made by public advocacy groups, particularly those focused on reducing the flow of mail, either through promoting Do Not Mail legislation or through individual action. These groups are identified and described below.

Some of the environmental claims made by these groups are briefly summarized here. All information presented here has been retrieved from the web sites of the identified organizations.

Catalog Choice has projected environmental "impacts" of catalog use. These estimates were all developed using the Environmental Defense Fund paper calculator, assuming an annual catalog volume of 19 billion.

- Number of trees used – 53 million
- Pounds of paper used – 3.6 million tons of paper
- Energy used to produce this volume of paper – 38 trillion BTUs, enough to power 1.2 million homes per year
- Contribution to global warming – 5.2 million tons of carbon dioxide emissions, equal to the annual emissions of two million cars, and
- Waste water discharges from this volume of paper – 53 billion gallons of water, enough to fill 81,000 Olympic-sized swimming pools.

Among the claims made by **Center for a New American Dream** on its web site under the heading "Bad for our Energy Security, the Environment and Government Budgets," the site makes the following assertions, all of which cite an information source but have no supporting calculations:

- Direct mail consumes more than 100 million trees each year, a number equivalent to deforesting the entire Rocky Mountain National Park every four months
- In 2005, 5.8 million tons of catalogs and other direct mailings ended up in the U.S. municipal solid waste stream – enough to fill over 450,000 garbage trucks, and less than 36 percent was recycled
- Production and disposal of direct mail consumes more energy than 3 million cars
- Citizens and local governments spend hundreds of millions of dollars per year to collect and dispose of all the bulk mail that doesn't get recycled, and
- California's state and local governments spend $500,000 each year collecting and disposing of AOL's direct mail disks alone.

Under the heading "Incredibly Popular with Industry, Not with Citizens," are the following:

- One study says Americans throw away 44% of bulk mail unopened, yet still spend 8 months per lifetime opening bulk mail, and
- Fifty-five percent of Americans "dislike" and 26% "despise" getting internet disks in the mail, while 1.9% "really appreciate" them.

At least some of these assertions are consistent with information from official sources, though the interpretation of certain facts differs substantially from positions held by USPS and the mailing community.

To promote its message and service, **41pounds.org** makes the following assertions on its web site:

- Most direct mail goes directly into the trash can or recycling bin
- The majority of household waste is junk mail, and paper takes up about 40% of landfill space
- To produce and process 4 million tons of junk mail a year, 100 million trees are destroyed, 28 billion gallons of water is wasted, and energy equivalent to 2.8 million cars is spent, and
- $320 million of local taxes are spent to dispose of junk mail each year.

ForestEthics' Do Not Mail web site (www.donotmail.org) states that 89 percent of Americans support a Do Not Mail registry. Several other assertions are made on this site and a page entitled "The Facts." A few examples follow.

- "[J]unk mail in the United States accounts for one-third of all the mail delivered in the world. Even though 44% of that mail goes to the landfill unopened, we still spend 8 months of our lives dealing with it all."
- "More than 100 million trees a year are cut down and made into paper for junk mail. Those trees come from Endangered Forests like Canada's Boreal and Indonesia's rainforests…"

Interestingly, the site uses statistics from the USPS Household Diary Study to quantify the flows and characteristics of marketing mail, but rather than use the accompanying data on mail recipient attitudes and behaviors, it instead reflects data referenced to either other NGOs (e.g., 41pounds.org) or an unpublished study that, presumably, was commissioned by ForestEthics.

Also, according to ForestEthics, "less than 8% of Canada's Boreal Forest is protected. It is being logged at a rate of 2 acres a minute, 24 hours a day. The United States consumes more than half of all the trees logged in the Boreal—many in the form of catalogs and junk mail." However, the ForestEthics site does not appear to have any data to support these assertions and states (elsewhere on the site) that there is no large-scale logging at present in the northern boreal forest.

In July 2008 ForestEthics published a document entitled, "Junk Mail's Impact on Global Warming," in which numerous additional claims are made regarding the adverse environmental effects of direct mail. In the document, Forest Ethics (FE) estimates that about 51.4 million MT – 492 grams per piece – of greenhouse gas (GHG) emissions are released in the complete life cycle of Standard Mail. It is difficult to evaluate the numbers and supporting calculations in this document because the information provided on underlying methods, calculations, and data sources is far from complete.

Close to half of the GHG emissions in the FE estimate are from "forest carbon balance." FE assumes that trees harvested to produce paper for mail reflect carbon storage that is foregone, both in the wood fiber itself and in the capacity to sequester (capture) new carbon on an ongoing basis. Further, FE asserts that carbon stored in forest soils is rapidly and irreversibly released following tree harvesting. None of these assumptions appear to be consistent with typical LCI modeling practices as they are applied to the paper value chain or with what has been reported in the scientific literature regarding carbon fluxes in managed forests.

GHG emissions resulting from "Black Carbon" are another large source, comprising almost 11 percent of the estimated life cycle emissions – about 5.6 million MT, according to FE. Black carbon, commonly known as "soot," consists of particles released from biomass and fossil fuel combustion from both natural (e.g., forest fires) and human (e.g., agriculture, paper making) activities. The FE report attributes GHG emissions from black carbon at more than half those of paper production itself. This finding seems particularly suspect, given that industrial emissions from paper mills are both covered under Clean Air Act regulations and unlikely to be in the form of "soot." Furthermore, while most GHG are long-lived in the atmosphere, large particles such as black carbon are not: they precipitate out quickly. The rate at which they do so varies widely from location to location depending on myriad factors. For this reason, there is wide uncertainty and variation around the warming potential of Black Carbon. For all these reasons it is not often accounted for in LCI analysis.

In sum, while some components of the results reported by FE appear to be in general accordance with other published studies of the carbon footprint of particular mail or paper products, others are substantially different and are based upon assumptions that are of questionable validity. As suggested above, however, it is difficult to evaluate the FE results in depth due to the limited information provided in the document.

One additional issue that may be of interest is FE's claim that production of marketing mail has compromised the integrity and long-term viability of endangered forests. FE claims in its report that "[i]n the [Canadian] Boreal alone, the equivalent of over 220,000 acres of forest are destroyed every year to make junk mail in the United States. U.S. junk mail makes up almost 10% of all the timber harvested in the Canadian Boreal, by volume as well as by harvest area."

No references are provided for this claim or similar claims that endangered forests in such places as Indonesia, Brazil, and Chile are exploited to make paper used in advertising mail. The available data suggest that most trees harvested to make paper used in the U.S. are in the U.S. and to a lesser extent, Canada. Because the total volume of wood in U.S. forests, net of annual harvests, has been steadily increasing in recent years, the claim that trees, forests, or carbon stored in trees are declining because of U.S. tree harvesting for paper production does not seem credible. The claims made regarding trees harvested in Canada and other geographies for paper production are not supported in the FE document, but cannot be dismissed without further substantive research.

Information Sources:

41pounds.org, 2008. *Junk Mail Facts*. Available from http://www.41pounds.org/impact/default.asp

Butler, B.J., and Leatherberry, E.C., 2005. *USDA Forest Service, Forest Inventory & Analysis National Woodland Owner Survey: 2004 Preliminary Results.* 27 July.

Catalog Choice, 2008. *Environmental Facts*. Available from http://www.catalogchoice.org/environmental-facts

Center for a New American Dream, 2008. *Just the Facts: Junk Mail Facts and Figures.* Available from http://www.newdream.org/junkmail/facts.php

Ford, J. 2008. *Climate Change Enclosed! Junk Mail's Impact on Global Warming*. Prepared for ForestEthics. San Francisco. Available from http://forestethics.org/downloads/ClimateReport.pdf.

ForestEthics and Donotmail.org, 2008. *The Facts*. Available from http://www.donotmail.org/article.php?list=type&type=3

13. What are some of the advocacy groups that have identified mail as an important environmental issue? What do they advocate? Which mail classes would be affected if the policies they promote were to be adopted?

There are several public advocacy groups that have either formed specifically to focus on mail and the environment, or have programs or initiatives targeted on this issue. Many of the latter are pre-existing environment-oriented non-governmental organizations (NGOs) having a mission centered on forest preservation. Prominent groups include the following:

- CatalogueChoice.org
- Center for a New American Dream

- ForestEthics
- GreenDimes
- Stopthejunkmail.com
- 41pounds.org

Catalog Choice (www.CatalogueChoice.org) is a sponsored project of the Ecology Center, a Bay-area non-profit, and is supported by foundation grants. Catalog choice offers a free service whereby individuals can opt out of cataloguer mailing lists. Using an online search function, users identify the catalogs that they do not want, and then Catalog Choice contacts them to request that the users' names be removed from the mailing lists. To date, the organization claims an enrolled member base of 960 thousand, who collectively have opted out of more than 12.6 million catalogs.

On its web site, the **Center for a New American Dream** states that it "helps Americans consume responsibly to protect the environment, enhance quality of life, and promote social justice." It "work[s] with individuals, institutions, communities, and businesses to conserve natural resources, counter the commercialization of our culture, and promote positive changes in the way goods are produced and consumed." The organization questions both the wisdom and long-term sustainability of current attitudes about growth and consumer consumption, and encourages less emphasis on accumulation of "stuff" and more consideration of non-material values in both the production and consumption of goods. New American Dream has instituted a number of ongoing public campaigns, addressing such topics as bottled water, energy consumption, and responsible purchasing, among others.

Their web site also has a link entitled, "Declare your Independence from Junk Mail," which leads one to a page showing the organization's partnership with another organization, 41pounds.org, which will promise to remove a subscriber from up to 95% of mailing lists by contacting each organization from which s/he receives direct mail and/or catalogs. The cost of this service is $41, which apparently is split, more or less evenly, with New American Dream.

New American Dream advocates a national "Do Not Junk" registry to be enacted by statute, and has established an ongoing electronic petition to gather signatures. The apparent aim is to present the petition to the chairs of the Congressional committees having responsibility for postal oversight.

41pounds.org is a direct service provider within the Do Not Mail movement. The organization states on its web site that "the average adult receives 41 pounds of junk mail each year. Our service stops 80-95% of unwanted catalogs and junk mail for you." It states further that "stopping junk mail benefits the environment by greatly reducing deforestation and the consumption of other resources used to produce junk mail – reducing global warming." As indicated above, this non-profit organization collects $41 from its subscribers and contacts, on their behalf, 20 to 30 direct mailers and induces them to cease mailings. The fee covers the service for five years. According to the web site, a significant portion (more than one-third) of the fees collected is donated to other non-profit environmental and community organizations.

In similar fashion, **Stopthejunkmail.com** offers a service, for $9.95 per year, through which the subscriber can remove his/her name from mailing lists. The organization's web site states that this service has been offered since 2001. Stopthejunkmail.com is a wholly owned subsidiary of Harman Research Inc, an Information Technology Consulting Services company. The company claims a mail reduction rate of 90 percent, and offers a web-based tool through which the user can unsubscribe to various mailing lists. Unlike many of the other sites profiled here, the principal benefit espoused by the company is the personal time savings resulting from the reduction in direct mail. Environmental aspects of the mail are not described, nor is any advocacy.

ForestEthics was founded in 1994, and is a nonprofit environmental organization whose mission is to protect Endangered Forests. The organization uses a specific approach in pursuit of its mission, which is captured in the following statement: "Corporate power can be used to destroy forests--or protect them." In practice, ForestEthics operates by mounting public (and often, very visible) pressure campaigns designed to embarrass and constrain companies that they seek to influence, and by convincing important commercial customers (e.g., office supply chains) to demand conformance to the group's positions. These positions are uniformly presented as being important to protect vital natural resources or environmental attributes.

The group's activities are not focused on forests and forest use generally, but on endangered forests, which they define as having the following attributes:

- Wilderness forests and intact forest landscapes
- Remnant and restoration values
- Forests that are ecologically critical for the protection of biological diversity, such as naturally rare forest types, high endemism, or the habitat of focal conservation species.

ForestEthics operates a number of campaigns, several of which are focused on particular forests or forested regions. They include, however, a Do Not Mail campaign with its own dedicated web site (donotmail.org), as well as separate campaigns focused on catalogs and (until recently) the catalog mailer *Victoria's Secret*.

In addition to a general affinity for the views of other members of the environmental NGO community regarding direct mail, it appears the ForestEthics' strong interest in the issue is motivated by concerns about the Canadian boreal forest. The Canadian boreal is widely recognized as both a large, important, and relatively intact, forest resource and a regulator of atmospheric carbon emissions.

ForestEthics' campaign addressing catalogs takes the same general form as the more general one addressing direct mail, but includes direct pressure on major catalog mailers, which the organization recently rated by name according to the perceived environmental soundness of their paper management practices (use of recycled and FSC-certified content, no use of fiber from endangered forests, and paper use reduction). (Note: companies not responding to ForestEthics' periodic survey receive failing grades for all criteria.)

The most public use of the organization's confrontational tactics involves specific focus on *Sears/Lands End* and *Victoria's Secret*. The latter attracted its own initiative, which included full-page advertisements in the *New York Times* and elsewhere. According to the ForestEthics web site, the Victoria's Secret campaign recently has achieved success in bringing about the changes desired by the organization, which is now devoting its energies to a similar confrontation with the corporate parent of *Sears* and *Land's End*.

In similar fashion to the campaign being waged by New American Dream, donotmail.org solicits the web site visitor to add his/her name to a petition calling for national Do Not Mail legislation. This variant of the petition is addressed to the Speaker of the House and Senate Majority Leader, and to this point, reportedly has more than 53,000 signatures. The site also has an "opt-out" tool by which one can limit future mailings, but it appears that the site user must first sign the petition before gaining access to the tool.

GreenDimes is a direct service provider in the mold of 41pounds.org and stopthejunkmail.com, but appears to offer more options and features to the interested user. With its free service, the user can download information and do the actual work of having his/her name removed from mailing lists, using the lists of catalog mailers and pre-written form letters available from the web site. Those who buy memberships ($20 and $36) get the organization to "automatically" have household names removed from mailing lists, and also received regular monitoring reports and assorted "gifts" (e.g., tee shirts, children's books). These are one-time fees, and the web site explains that the mail suppression activities that GreenDimes undertakes should be effective for three to five years. The organization's web site claims that it can produce a 90 percent reduction in the volume of marketing mail received, and that it has assisted nearly 290,000 people eliminate 9.5 million pounds of mail.

In contrast to most of the other participants in the Do Not Mail movement, GreenDimes' web site seems to have no information on the nature and magnitude of the perceived problem posed by marketing mail, implying that it is self-evident that people would choose to have less mail.

GreenDimes is a for-profit corporation, and is a program of "TONIC Generation," which appears to be an enterprise that sells fashion merchandise and uses portions of the proceeds to support social causes.

Finally, the recently launched **Pulpwatch.org** is a web site sponsored by a coalition of some of the groups profiled above plus other environmental NGOs. It claims to provide objective, unbiased information on the environmental and social performance of individual paper mills around the world for use by paper purchasers. The environmental criteria used to assign mill ratings are 1) use of fiber from endangered forests, 2) bleaching technology employed, and 3) forest certification. Mills are rated green, yellow, or red according to each criterion (including an additional "social conflicts" criterion), and receive an overall rating that is then displayed on a map, so the site visitor can see where the "best" performers are located, or (implicitly) find the top-rated mills that are in closest proximity. The site states that "mills with red ratings pose a risk to buyers of products from the mill in terms of their own environmental footprint," and more generally are not in alignment with the "Common Vision" of the Environmental Paper Network.

The four criteria used to establish the overall ratings reflect the judgments of the site's sponsors regarding the indicia of good performance. These criteria are heavily oriented toward extensive stakeholder consultation, avoidance of chlorine-based pulp bleaching technologies, and use of a favored forest certification scheme. The latter is drawn particularly narrowly, giving credit only for certification to the Forest Stewardship Council (FSC) program and not recognizing conformance to other analogous programs (e.g., CSA, SFI, PEFC). (Note: all of these programs are described below.)

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Center for a New American Dream, 2008. *Junk Your Junk Mail.* Available from http://www.newdream.org/junkmail/index.php

Donotmail.org, 2008. *Do Not Mail*. Available from http://www.donotmail.org/

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Paper and Forests

14. Where does the paper come from that goes into mail in America? What kind of wood and how much is used to make this paper?

Only 14 percent of the wood harvested throughout the world each year is used for paper production (about 40 percent of the wood removed from forests is used to provide heating and cooking fuel). In the United States, approximately 42 percent of the wood harvested annually is used to make paper and paperboard products. This figure includes harvested roundwood (whole tree trunks) and residue (wood chips and trimmings from sawmill operations used to make lumber and other wood products). Historically, almost all wood used to make paper used in the U.S. came from U.S., and to a lesser degree, Canadian, forests. In recent years, however, imports (largely from Finland, South Korea, Germany, China, Japan, and Sweden) have accounted for more than 25 percent of coated paper shipments, though U.S. producers still dominate the uncoated freesheet market.

According to the U.S. Forest Service, fully two-thirds of wood harvested to make pulp and paper each year (4.4 billion cubic feet in 2006) comes from relatively small, family-owned wood lots. Family forests total more than 261 million acres in the U.S., which is 67 percent of U.S. forested land that is not owned by federal, state, or local governments. The vast majority of these family forests are less than 50 acres in size.

Most trees harvested to make paper are small (about 8 inches in diameter), because it is more cost-effective and productive to use larger trees for lumber or pole production. Indeed, pulpwood is classified and purchased as trees of 6 to 10 inches in diameter. Larger trees may also be used if they are not suitable for other purposes or are dying from old age or disease. In addition, tree tops and culls from forest harvest operations comprise a substantial but unknown percentage of the total wood fiber removed from forests to make paper. These materials have no alternative commercial use and would otherwise be left on the forest floor.

At one time the industry almost exclusively used softwoods, such as pine and cedar, to make paper because softwood fiber is longer than hardwood fiber (on average 3 mm versus 1 mm). The paper industry has found, however, that some hardwood species, such as cottonwood, birch, and aspen, can be used to manufacture printing and writing papers and has made a transition over the past 15 years or so to much greater use of these tree species. As a result, today, most "virgin" paper produced in the US contains about 60-70% hardwood and 30-40% softwood. Such papers generally are produced using chemical pulping techniques and are called "freesheet."

The coated groundwood paper used in periodicals contains softwood kraft pulp and groundwood pulp. Coated freesheet, which is also used in periodicals and catalogs, contains bleached kraft hardwood and softwood pulp.

Information Sources:

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15. Does the production of paper used in mail threaten sensitive forests in the U.S. and elsewhere?

Production of the mail does use substantial amounts of paper and paper board, but the paper products used do not contribute in any significant way to either depletion of forests in the U.S. or to threats to the future viability of sensitive forest ecosystems (e.g., old growth forests). Some concerns have been raised about Canadian sources, however, as much of the wood harvested from Canada's boreal forest reportedly is used in pulp and paper products exported to the United States, some of which are used to produce letters, catalogs, periodicals, and other mail.

At a more general level, it is important to recognize that trees are a crop--a renewable resource—and therefore are unlike many other natural resources (fossil fuels, metal ores) that exist in limited amounts and cannot be replaced. Each year, the forest products industry more than makes up for what it harvests by planting more than 600 million trees, or about 1.7 million trees per day. Moreover, most of the paper produced in America today comes from trees that are grown on small, private land holdings that contain regenerated trees, as well as smaller percentages of trees grown as managed crops for that specific purpose. Most of the trees harvested for wood pulp are small-about eight inches in diameter on average. And only 62.5 percent of the fiber used in paper production is provided by harvested trees, tree tops and culls from saw timber and wood pole production, and wood chips; the remaining 37.5 percent is provided by recycling and recovery of used paper.

Information Sources:

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16. What assurance is there that harvesting wood to make paper does not damage our forests?

Use of paper requires continual harvesting of trees to provide new wood fiber. While recycling and recovery of used paper increasingly is being employed in the production of various grades of new paper, recovered paper can only be recycled a relatively few times (less than ten) before the paper fiber is degraded to the point at which it no longer has sufficient strength.

Accordingly, trees are harvested on an ongoing basis to provide the required supplemental new fiber. As stated above, most trees harvested to make paper are softwoods of relatively small size (about 8 inches in diameter). Harvesting practices vary widely, and there is no comprehensive set of laws or regulations that governs tree harvesting *per se*.

Nonetheless, there are established requirements to protect surface water quality that have the effect of promoting a variety of sound forest management practices, as described briefly here. Best Management Practices (BMPs) have been defined pursuant to the federal Clean Water Act, as amended, by the U.S. Environmental Protection Agency (EPA) for many industries. BMPs in a forest management context address a wide range of practices that are designed to limit erosion and other related threats to surface water quality. As with most federal pollution control laws and their provisions, full delineation and deployment of BMPs occurs at the state level. In practice, BMPs have been developed and are overseen by the pertinent state forestry department or agency within each state, and reportedly are now in place in all U.S. states having significant forest resources. They are, however, voluntary in many states, because exemptions have been inserted into state-level implementing regulations for agricultural and/or silvicultural activities, and/or for small land holdings. BMPs are implemented at the forest tract level and are highly site-specific, but typically address important factors and activities: forest road construction and maintenance, streamside management zones, harvesting, skid trails, chemical and fertilizer use, site preparation, reforestation, waste disposal, and fire lines. In states in which they have been fully implemented without major exemptions, BMPs define the minimum legal requirements that apply on the ground to how forested lands are managed in the U.S.

In addition, over the past fifteen years or so, in response to concerns about the impacts of industrial-scale forestry practices on forest ecosystems, formal programs to define and implement sustainable forest management systems have been created and deployed in North America and in many regions in which forest resources are substantial. Over time, these programs have evolved into sets of rigorous standards that include formal certification processes and a number of other provisions.

These forest certification systems are a means of promoting responsible forestry practices by establishing forest management standards and evaluating forestry practices against those standards. Forest management standards are generally designed to promote the long-term health and productivity of forests for timber production, wildlife habitat, and soil and water quality protection. Among other provisions, these programs generally require or strongly encourage full compliance with BMPs. Most also require or encourage independent third-party evaluation of forest management practices. There is now widespread recognition that these programs play a crucial role in helping forest products companies and their employees and customers, landowners, scientists, government agencies, members of local communities, and other stakeholders to understand, manage, and communicate about how best to manage particular forests to meet ongoing demands for wood fiber in ways that do not sacrifice the important environmental, social, and economic benefits provided by healthy forests, and are sustainable for the long term. More than one billion acres of forested lands in 80 countries reportedly are now certified to one or more of these programs, and there is reason to believe that more acreage will become certified as these programs are deployed in more regions of the world. Certification also is likely to become more prominent as paper and other forest product markets become even more global, and as concerns about trans-boundary environmental issues (e.g., climate change) increase, which appears probable.

There are a variety of forest certifications in use in North America, and in some cases, there is overlap among them. At the international level, there are two major competing programs, operated by the Forest Stewardship Council (FSC) and the Programme for Endorsement of Forest Certification Schemes (PEFC). Each of these programs is implemented at the national level, often with modifications to suit local conditions. FSC and PEFC individually certify, endorse, or are affiliated with a substantial number of these national-level programs, which include the three largest forest certification programs currently in use in North America. The FSC has developed and certified a program for U.S. forests (FSC-US), which in turn has developed a series of nine regional variants. The PEFC has certified two programs in North America applicable to industrial-scale forestry, one developed in and applicable to Canada by the Canadian Standards Association (CSA), and one having applicability across the U.S. and Canada, the Sustainable Forestry Initiative® (SFI) program.

In parallel, there are several programs designed for application on smaller, and in many cases, family-owned, tracts of forested land. The FSC has, at the international level, issued forest certification requirements for "small or low intensity managed forests (SLIMFs)," which in the U.S. is called the Family Forests Program. This program provides for some relaxation of program elements (e.g., for auditing and stakeholder consultation) for the small landowner but is otherwise identical to the program for industrial forests. Founded in 1941, the American Tree Farm System (ATFS) claims to be the world's oldest forestry and certification program, and is expressly targeted at the small, private landowner. While they are separate and independent organizations, ATFS and SFI® have a common lineage and share many program attributes. ATFS also is a member of PEFC and has recently received PEFC certification. The third significant, though much smaller, U.S. certification program oriented toward the small forest landowner is the Green Tag program formed by three not-for-profit associations.[1] It also should be noted that the SFI program places substantial emphasis on providing outreach and training to the small landowner, to provide greater assurance that the wood fiber secured by industrial forestry operations from small forest tracts is sourced from sustainably managed forest lands.

In addition, several of the programs active in the U.S. actively though unofficially support Master Logger Certification (MLC) and similar programs designed to increase the knowledge and professionalism of the individuals and companies that perform timber harvesting and other intensive management methods on the ground in forests. There is now a nationwide Master Logger Program (MLP) administered by the American Loggers Council. MLP has endorsed programs in nine states and the Atlantic provinces of Canada.

Information Sources:

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[1] These organizations are the National Forestry Association, the Association of Consulting Foresters, and the National Woodland Owners Association.

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The Trust to Conserve Northeast Forestland, 2004. *Master Logger Certification Program (MLC)*. Fort Kent, Maine.

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17. How much of the forests in America and Canada are certified?

Despite the significant market acceptance of forest certification in North America, the global penetration of this concept stands at only about eight percent (294 million hectares of 3,952 million hectares global forest area). Market penetration of certification among North American pulpwood producer is, however, substantially higher; an estimated 25 percent (387 million m³) of total global industrial roundwood produced in 2007 will come from certified forests. Given that there are 512.6 million acres of designated timberland in the U.S, the percentage of U.S. forest land certified to one of or more of these programs could in theory be as high as 22.5 percent of the total (115.2 million acres/512.6 million acres), but is likely quite a bit less. Nevertheless, recent trends suggest that these numbers may increase during the next few years, as awareness of certification programs increases and international efforts to standardize and promote certification continue. That said, the limiting factor will likely continue to be the willingness of the small landowner to incur the costs of certification in the absence of any tangible financial incentive (i.e., through higher wood price received) to do so.

Information Sources:

PEFC Council International., 2007. *A brief Introduction.* Available from www.pefc.org.

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18. Who owns the forests in the U.S? How much forest land is there? Is there more forest land in America or less as compared to the past?

As of 2003, forested lands in the United States encompassed about 749 million acres, or 33 percent of the total national land mass. Public entities (federal, state, county, and municipal governments and government agencies) own or have jurisdiction over 336 million acres (45 percent), with the other 55 percent being held by private (including tribal) owners. The USDA Forest Service manages the most substantial share of public forest, roughly 44 percent of the total. About 10 million non-industrial private forest owners (NIPFs) hold title to approximately 46 percent of the Nation's forested land, which represents 84 percent of all privately owned forests. These private landholdings are mostly very small; 90 percent are 100 acres or less in size. Forest products companies owned about nine percent of forests in the United States and controlled 16 percent of all private forests as of 2003. As discussed below, however, the ownership profile of large privately owned forests in the U.S. is changing dramatically.

In Canada, the national and provincial governments own the vast majority of forested lands (94 percent), and this is unlikely to change in the future.

In the U.S., the amount of forestland is actually about the same as it was over 100 years ago, despite the fact that our population has tripled and consumption has grown substantially. In fact, the "forest inventory" in the US has grown by 39 percent since 1953, according to the US Forest Service. This growth in forested area continues, even as our population and the economy expand; the U.S. has increased its forested land by an average of nearly 400,000 acres per year on a net basis from 2000-2005.

Information Sources:

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19. How much of our forested land is owned by commercial interests? Is this changing?

The past 20 years or so have witnessed profound changes in the ownership structure of non-public industrial forests in the U.S. Historically, domestic forest products companies acquired and maintained holdings of forested lands of 75-80 million acres beginning in the 19th century. Traditionally, these vertically integrated firms owned the timberland as well as the pulp and paper mills that produced finished paper, paper board, and wood products.

In recent years, however, the U.S. forest products industry has encountered difficult economic times, which exert pressure for them to increase their profitability and return on investment. In parallel, new categories of financial investors have emerged for whom forested land can be attractive investment alternative, including major pension funds. These financial investors often pool their resources to be dedicated to forest lands in partnerships managed by dedicated timberland investment management organizations (TIMOs). In addition, real estate investment trusts (REITs) also have become active purchasers of forest land in recent years. Financial investor entry into the forest industry began in earnest in the late 1980's and has been growing exponentially ever since. In combination, financial investors had accumulated U.S. timberland holdings of more than 18 million acres worth $14.4 billion by the end of 2002. Nearly all financial investor purchases have involved large tracts of forest land, and most sellers are the (previously) integrated forest products companies, though transactions between financial investors also are now occurring. In some major wood producing regions, the transition from industrial ownership to financial investor ownership is nearly complete, as the pace of transactions involving large landholdings has increased substantially during the past five or so years.

The results of this transition are striking. In 1981, publicly traded forest industry companies held 58 million acres of U.S. forested land, but by 2005 they held only 21 million acres, a reduction of 60 percent. It seems likely that recent trends will continue.

Information Sources:

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Hagan, J.M., Irland, L.C., and A.A. Whitman, 2005. *Changing Timberland Ownership in the Northern Forest and Implications for Biodiversity*. Brunswick, ME: Manomet Center for Conservation Sciences, Report No. MCCS-FCP-2001-1.

20. How much new wood fiber, trees, and other resources go into the mail each year? How much of the mail is from virgin forest and how much is from recycled paper?

Total U.S. pulpwood removals in 2006 were about 4.4 billion cubic feet, according to U.S. Forest Service data. If we assume that a typical tree harvested for pulpwood is 8 inches in diameter for 40 feet of usable length, then such a tree would contain 24,127.4 cubic inches of wood fiber, or 13.96 cubic feet. If we assume that all trees removed for pulpwood were of a similar diameter, and that these trees provided half the pulpwood mass removed,[2] this would imply that 157,341,193 trees were harvested for pulpwood in 2006.

The most recent available data for use of pulpwood and chips and subsequent production of paper are for 2005. In 2005, total U.S. production of pulpwood and chips was 229.5 million tons. During this same period, 34.2 million tons of recovered paper was used to produce a total of 91.2 million tons of paper and board products, a utilization rate of 37.5 percent. The balance was the wood pulp made from harvested trees, which by difference was about 57 million tons.

Assuming that the 2006 USFS and 2005 industry data are reasonably comparable, we can make derive some estimates using these different data sources. If we then make the simplifying assumption that cross-boundary (e.g., between the U.S. and Canada) transfers of pulpwood and pulp were roughly in balance, we can relate the amount of pulp in paper produced to the tonnage and number of trees harvested. Using these assumptions, each ton of paper and board produced in 2005/6 contained an average of 0.62 tons of wood pulp, 2.52 tons of pulpwood and chips delivered to the pulp mill, 48.2 cubic feet of harvested pulpwood, and about 1.7 trees.

At this time, there is very little "virgin" forest remaining in the contiguous United States, particularly in the major papermaking regions of the southeast and northeast. So essentially, no virgin forest is harvested in the U.S. That said, it has been asserted that non-trivial amounts of coated paper used in the U.S. (e.g., for catalogs and magazines) contains softwood pulp produced from the Canadian boreal forest. The boreal forest extends from just north of the U.S. border in some portions of Canada (e.g., the Great Lakes) to the arctic and spans that country from coast to coast. In the aggregate, the 956 million hectares of boreal forest covers a substantial portion (35 percent) of Canada's total land area and 77 percent of its total forest land. As might be expected, portions of the boreal forest have been harvested for timber and paper production for many decades. It appears, however, that virtually all areas of the boreal forest on which timber harvesting has been conducted to this point are in its more southern regions. It is unclear whether any pulpwood harvested from the boreal forest could be considered "virgin," in that the most accessible forest land is most likely to have been harvested previously.

[2] The remaining half would have consisted of tree tops and culls from saw timber and pole harvesting, and chips and sawdust from mill operations.

What is clear is that the total area of forested land harvested annually in Canada is about 800,000 hectares, most of which is not in the boreal forest. This means that about 0.03 percent of the boreal forest is harvested for timber and pulpwood in a typical year. Harvesting also can be compared with other disturbances such as forest fires, which burn about 2.8 million hectares annually, or insect damage, which affects more than 18 million hectares.

Information Sources:

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U.S. Forest Service, 2007. *2007 RPA Resource Tables*. Available from http://www.fia.fs.fed.us/program-features/rpa/default.asp.

21. What are current paper recycling rates? How can these be increased?

According to AF&PA, overall U.S. paper recovery rates set an all-time record of 56 percent (54.3 million tons) in 2007. This equals nearly 360 pounds for each man, woman, and child in America. The industry recently established a new goal of 60 percent recovery by 2012.

As stated above, within the paper portion of the municipal solid waste stream, it appears that about 40 percent of mail is recycled, based upon the two mail categories tracked by EPA (magazines and Standard Mail). The quantities and percentages recovered, however, have been growing rapidly. Recycling of Standard Mail has increased from 5.2 to 38.7 percent from 1990 through 2006, and recovery of magazines has increased from 10.6 to 40.5 percent over the same period. These rates of increase are far greater than the overall recovery rate of the solid waste stream overall, which increased from 16.2 to 32.5 percent from 1990 through 2006, or of all non-durable waste stream components (16.9 to 33.6 percent).

AF&PA and a number of partner and other organizations, including non-profit groups, state and municipal governments, the Postal Service, and paper and waste management companies are all carrying out an array of activities intended to increase recycling of mail and paper more generally. Many of these take the form of public education and awareness raising because, as discussed above, the infrastructure is in place in most residential and commercial settings to recycle and recover used paper. Market conditions are such that used paper is in high demand and commands a positive, non-trivial price ($25 to $125 per ton) in most U.S. markets.

Accordingly, several industry organizations have brought a renewed focus to raising public awareness of the benefits of recycling, both from a broad perspective (National Recycling Coalition) and specific to certain types of mail. Examples of the latter include the “Please Recycle” campaign recently launched by the Magazine Publishers of America (MPA) and the Envelope Manufacturers Association (EMA) and the very similar “Recycle Please” campaign recently initiated by the Direct Marketing Association (DMA). In addition, the Postal Service recently has begun to reinvigorate its internal recycling programs, and expects to substantially increase the quantities of UAA mail in the years ahead.

Information Sources:

American Forest & Paper Association, 2008. *Facts About Paper Recycling*. Available from http://www.afandpa.org/Content/NavigationMenu/Environment_and_Recycling/Recycling/Facts_About_Paper_Recycling/Facts_About_Paper_Recycling.htm

Moore, B. and P. Engel. (2006) *Trends, Challenges and Opportunities in Recovered Paper Markets.* Presented at Forest Products Association of Canada (FPAC) Corporate Forum on Paper and the Environment, Washington, DC. 21 September. Moore & Associates, Atlanta, GA.

22. Can paper be recycled forever?

Wood is the primary raw material source for most grades of pulp and paper. Fiber from trees is not only needed to produce virgin paper products, it also is important for making paper recyclable over and over again. In fact, on an overall basis, about 37 percent of the fiber used to make new paper products in the United States comes from recycled sources. Regular addition of virgin fiber to the pulping process is necessary because a certain percentage of the fibers in recycled paper are broken during use and recovery and hence, not usable in making new paper. In the case of printing and writing papers, the yield from recovered paper is typically only 70 percent, meaning that 30 percent of the incoming mass is removed and discarded during the repulping process. Accordingly, fresh fiber from tree-based sources (chips, shavings, sawdust) must be added to make up the balance. In addition, use and management of paper further weakens the fiber in the paper, and the more times the fiber is recycled, the weaker it becomes. These factors place an upper bound on the number of times that paper can productively be recycled—typically four to nine times.

Care also should be exercised in rushing to a judgment that use of recycled paper is always the environmentally beneficial choice. Many factors affect the overall life cycle environmental aspects of finished paper production, including transport distance, the quality of incoming wood fiber material (including the presence of contaminants) relative to the intended use of the finished paper product, production costs, and local and regional pricing dynamics. In practice, these factors are interrelated, and generally favor use of recycled fiber in producing grades of paper with less demanding quality specifications, such as paper towels and napkins, rather than fine writing papers. Producing higher paper grades with recycled content can often be accomplished, but may require additional special equipment and/or more processing, which can increase haul distances and lead to greater consumption of materials and energy, thereby off-setting at least some of the environmental benefits of recycling in the first instance. For this reason, it is important to exercise caution in making blanket statements about the environmental benefits of recycled versus virgin content paper products. That said, recycling and recovery of paper is worthwhile on its own merits, if for no other reason than recovered paper sold for export (particularly to China) has the effect of reducing harvesting pressure on some of the world's most vulnerable and important forests (e.g., in South America and South Asia).

Information Source:

American Forest & Paper Association (AF&PA), undated. *Paper: The Everyday Wonder*. Available from http://www.afandpa.org/Content/NavigationMenu/News_Room/Printed_Materials/Paper_groupFINAL.pdf.

Metafore, Inc., 2008. *The Paper Fiber Life Cycle*. Available from http://www.metafore.org/index.php?p=Metafore_Paper_Fiber_Life_Cycle&s=570.

Metafore, Inc., 2006. *The Fiber Cycle Technical Document-Metafore Summary Report*. March. Available from http://www.metafore.org/index.php?p=Metafore_Paper_Fiber_Life_Cycle&s=570.

23. What are forest product "labeling" programs, and why are they important?

Over time, forest certification programs have evolved from a sharp focus on preventing deforestation and improving forest health to a broader scope. One manifestation of this broader interest is the development of labeling schemes within many forest certification systems, including CSA, FSC, PEFC, and SFI. Proponents of these programs seek to apply consumer preferences and market power to the decisions that are made about how to manage forest resources. They also seek to expand the forest acreage that is certified as needed to fulfill growing demand for labeled paper, lumber, and other forest products.

All of these labeling systems make use of chain of custody (COC) certification to ensure that the products bearing a label (or defined percentages thereof) really were produced using sustainable forest practices and have been tracked, in concept, from "the stump" to the sawmill, paper mill, furniture or maple syrup factory (or other manufacturing facility), wholesaler, and retailer in an unbroken chain. Generally, all intermediate entities in the supply chain (e.g., wholesalers) must be audited and certified, in addition to the forest management entity. Also, assessment of the chain of custody must be undertaken by an independent third party operating in accordance with relevant ISO guidelines. A complete chain of custody allows the product consumer to be assured that by buying a labeled product, he or she is doing business with companies across the supply chain that are supporting the labeling scheme (and management practices) espoused by a particular certification body. In practice, as described below, the content of some labeled products has been fully tracked throughout the production process, while others (percentage certified content) contain or are likely to contain wood fiber that has been tracked from stump to marketable product as well as other fiber that has not.

Establishing a complete chain of custody for paper is particularly important because the fiber used in paper often originates from more than one forest and one land owner. Paper manufacturers combine different types of fiber to produce desired characteristics. Further, as noted above, the majority of new wood fiber entering the paper production process in the U.S. is harvested from relatively small, non-industrial forests, which may or may not be in a forest certification program. This wood fiber is purchased on the stump or as roundwood, rather than managed in an unbroken chain by the same company from the stump to ultimate end use.

Information Sources:

SLS Consulting, Inc., 2008. *Forest Certification in North America: Review and Analysis.* Prepared for Magazine Publishers of America. June.

Labeling Program Documents

CSA: Forest Products Group, CSA, 2003. *CSA International's Forest Products Chain of Custody Qualification and Marking Program - Specifications for Use of the CSA SFM Mark.* February.

Forest Stewardship Council International Center, 2004. *FSC Chain of Custody Standard for Companies Supplying and Manufacturing FSC Certified Products* (FSC-STD-40-004 V1-0 EN). September.

PEFC, 2007. *Normative Documents: Chain of Custody of Forest Based Products – Requirements (Annex 4) and PEFC Logo Use Rules* (Annex 5). 17 June, 5 October.

Sustainable Forestry Board, 2006. *The Sustainable Forestry Initiative® Program: Requirements for Fiber Sourcing, Chain of Custody, and Product Labels.* October.

24.	To what extent are labeled forest products used to create the mail?

It is very difficult to determine the degree to which major mailers are using labeled certified paper to create their mail pieces. While labeling programs have been existence for several years and have undergone revision and improvement, it is fair to say that they are at a relatively early stage of uptake and adoption within the paper consuming community. The wood fiber content of labeled paper must originate, at least in part, from certified forests under most of these labeling schemes, so the supply of labeled paper cannot outstrip the capacity of certified forests to provide the necessary raw material. In addition, because of the exhaustive chain of custody verification that is required for a product to bear a label, there is an associated lag in getting all supply chain participants independently audited and certified. That said, the number of suppliers of labeled paper and other forest products has been growing rapidly in response to growing demand and consumer interest.

At present, only a relatively small fraction of U.S. paper mills manufacturing the types of paper comprising the mail produce certified papers. A scan of a supplier data base maintained by the Forest Certification Resource Center of forest policy non-profit Metafore on 24 July 2008 yielded the following information. FSC has certified 176 companies operating 227 locations in the paper/paper products category, while SFI has certified 44 companies operating 329 locations. Within the coated papers line, FSC has certified 14 companies operating 16 locations, and SFI has certified nine companies operating 26 locations. Some of these are, however, paper distributors/wholesalers, printers, and other users of the paper rather than manufacturers of the paper itself. FSC has certified eleven paper mills producing coated papers operated by seven companies, and SFI has certified 22 mills operated by five companies. A similar situation exists with respect to printing and writing papers. FSC has certified 56 locations operated by 53 companies in this segment, while SFI has certified only seven locations operated by 4 companies. Of these seven locations, three are paper mills operated by one company (Boise). FSC has certified eight paper mills that produce printing and writing paper operated by five companies as of July 2008, according to the Metafore web site.

A more recent (19 September 2008) review of information on the web sites of the individual certification programs revealed updated information. The SFI program web site includes an interactive data base that can be searched by product type and other criteria to yield the specific companies and locations having SFI and/or PEFC chain of custody (CoC) certifications. Searching this data base produced a total of 44 companies operating 185 locations that manufacture or process paper and/or paper products. Within the categories of interest here, however, the numbers are far smaller. A total of four companies operating 21 paper mills produce SFI-certified coated paper, two companies operating 13 mills produce uncoated digital and/or offset paper, and only one company operating three mills produces printing and writing paper. In addition to its chain-of-custody certification provisions, the SFI program includes as a component of its labeling program a “sourcing” label, which may be used by mills certified to the fiber procurement requirements[3] of the SFI program. This label does not contain numeric percentages of certified content. In addition to the paper mills of interest here that have achieved full CoC certification, as many as 27 mills operated by ten companies[4] have achieved this SFI sourcing certification, according to information posted on the organization’s web site. So in total, it appears that approximately 17 companies operating 54 mills produce one form of SFI-labeled paper or another that may be used within

[3] Specifically, objectives 8-13 in the SFI 2005-2009 SFI Standard, and/or Annex 1 in the SFI Requirements for Fiber Sourcing, Chain of Custody and Product Labels document.
[4] The data provided by SFI are in somewhat aggregated form and are organized by company and types of paper product. It is possible that not all of these 27 mills produce the specific types of paper products used within the mailing industry.

the mailing community. It should be noted that the SFI program has very recently revamped and simplified its labeling program, with the transition to the new labels occurring until the end of 2009. Theses program revisions reduce the number of labels in use from ten to three.

The FSC web site does not have an interactive database, but does contain a list of FSC-certified U.S. paper manufacturing locations updated as of 15 August 2008. This list contains 88 locations operated by 65 companies. Product types are not specified. Based upon further review of individual company web sites, however, it appears that a minority of the companies and mills listed by FSC produce paper products used in the mail. A total of 23 companies operating 28 mills have FSC certification and manufacture products used in the mail. A majority of these mills produce printing and writing paper and/or other grades of uncoated freesheet, with smaller numbers specializing in coated papers. Many of these companies are small, specialty paper producers operating a single mill.

It is not apparent what share of segment capacity is accounted for by these mills, but it may be relatively small. Moreover, it is likely that at least some of the certified mills, particularly those making chain-of-custody labeled certified paper, produce non-certified papers as well. Accordingly, it is possible that current capacity to fully supply the producers of most of the mail (major printers and publishers) with certified paper is less than complete. Given, however, that new locations are receiving certifications to one of the programs (or both) seemingly every month, it is likely that labeled products will be available from an increasing number of different sources going forward.

It is not entirely clear, however, that proportional increases in the amount of certified wood on the stump will be forthcoming. As discussed above, most wood harvested to make paper in the U.S. comes from small family owned forests. At present, such landowners have little or no financial incentive to undertake the effort or incur the costs to obtain and maintain forest certification. This situation is likely to continue unless and until the forest owner receives a price premium for certified wood. This means that even though the number of paper mills and distributors that can produce or sell certified labeled paper may increase in the coming years, the output and supply of certified labeled paper will not increase unless greater numbers of small forest owners seek and obtain certification for their lands.

Information Sources:

Florian, F., Mater, C. and T. Owari, 2008. *Chapter 10: Biomass for energy and plantations – new certification driver: Certified forest products markets, 2006-2007*. in UNECE/FAO, Forest Products Annual Market Review, 2006-2007. Available from http://www.unece.org/trade/timber/mis/cfp.htm.

FSC-US, 2008. *Paper Manufacturers with FSC Chain-of-Custody Certification.* Available from http://www.fscus.org/paper/.

Metafore, Inc., 2008. Forest Certification Resource Center. Available at http://www.certifiedwoodsearch.org/SearchProducts.aspx

SFI, Inc., 2008. *SFI® Inc. Launches New On-Product Labels* (press release). Available from www.sfiprogram.org.

SFI, Inc., 2008. *SFI Labels and Claims.* Available from http://www.sfiprogram.org/labels-and-claims.php
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U.S. Postal Service

25. How large is the USPS vehicle fleet and how much fuel does it use each year?

In 2007, the US Postal Service Vehicle Inventory comprised 219,522 vehicles, according to the 2007 Comprehensive Statement on Postal Operations. The fleet traveled 1.2 billion miles and averaged slightly over 10 miles per gallon in fuel efficiency.

The Postal Service also contracts for air, truck, and ship transportation. Its energy cost for transportation was $1.74 billion.

Information Source:

USPS, 2008. *2007 Comprehensive Statement on Postal Operations.* Available from http://www.usps.com/strategicplanning/cs07/cs2007.pdf.

26. How many buildings do they have, how many square feet, and how much energy do they use to heat, light, cool, ventilate, and run the mail processing equipment?

In 2007, the Postal Service oversaw 34,318 properties totaling about 323.8 million square feet. The Service spent about $610 million to purchase this energy.

Information Source:

USPS, 2008. *2007 Comprehensive Statement on Postal Operations.* Available from http://www.usps.com/strategicplanning/cs07/cs2007.pdf.

27. What is the U.S. Postal Service Doing to improve its environmental performance?

In its 2007 Update to the Strategic Transformation Plan, the Postal Service provides a discussion of the activities it is undertaking to enhance its environmental sustainability. Among other things, the report discusses (1) the leadership position of the Service in recycling and reducing waste, redesigning its Priority and Express Mail packaging to achieve Cradle to Cradle certification, and its reconstituting the Greening the Mail Task Force, and (2) how it is reducing energy use in transportation, utilities, and facility and equipment design.

And in May of 2008, the Service announced the appointment of Sam Pulcrano as the organization's first Vice President of Sustainability, "responsible for coordinating energy and environmental programs across all departments of the Postal Service. One of Pulcrano's first goals will be to complete an inventory of greenhouse gas emissions and create an action plan to reduce emissions" according to the press release.

Information Sources:

USPS, 2008. *Postal Service Reinforces Commitment to Greener Future: First vice president of sustainability announced at National Postal Forum. Available from*
available at http://www.usps.com/communications/newsroom/2008/pr08_057.pdf

USPS, 2008. *2007 Comprehensive Statement on Postal Operations.* Available from http://www.usps.com/strategicplanning/cs07/cs2007.pdf.

USPS, 2007. *Strategic Transformation Plan 2006-2010, 2007 Update.* December. Available from http://www.usps.com/strategicplanning/_pdf/STP07RevisedFinal12_31_07.pdf

Mailing Community Activities

28. What are mailing industry trade associations doing to better understand and reduce the adverse environmental effects of their members?

Most of the major organizations that represent companies active in the mail value chain have long-standing involvement in environmental activities, and several have launched initiatives over the past decade or more to help improve the environmental performance of their member companies. These take a number of different forms, ranging from adoption of voluntary standards and codes of conduct (e.g., AF&PA's Sustainable Forestry Initiative-SFI[5]) to guidance and tools for identifying environmental issues and defining systems and strategies to manage them, to public outreach campaigns. A few examples of the more recent initiatives follow.

- In addition to continuing a wide array of programs to ensure compliance, implement environmental management systems, prevent pollution, and enhance worker health and safety, USPS has initiated a number of recent initiatives that reflect a renewed focus on the environment within the broader context of a move toward sustainability. These include reinvigorating existing internal recycling programs, launching a new certified eco-friendly packaging service, quantifying the organization's overall carbon footprint in conformance to the California Climate Registry requirements, performing an end-to-end life cycle inventory analysis of the mail, and many other activities.

- DMA released in May 2007 a statement calls upon DMA members worldwide to implement and benchmark a set of 15 eco-friendly business practices called "The Green 15." These 15 practices are organized around several major topics: Paper Procurement and Use; List Hygiene and Data Management; Mail Design and Production; Packaging; and Recycling and Pollution Reduction. In general, these guidelines encourage direct marketers to procure paper and other materials from certified or otherwise environmentally responsible sources, eliminate waste and excess material consumption through improved efficiency, and reuse, recover, and recycle. The DMA Board is to establish goals relative to the Green 15 in 2008.

- DMA also recently created and online planning tool and environmental policy generator through which members can evaluate and select relevant policy commitments for their organizations. The planning tool provides a list of ideas and strategies to consider when developing internal environmental goals and/or policies. It can be used to create and/or evaluate prospective internal policies and goals for continual environmental improvement, in balance with financial performance. The policy generator can be used to create customized environmental vision statements, goals, and/or policies, and contains scores of potential commitments addressing the Green 15 and many other environmental issues.

- Within the past year, MPA has updated its Environment Handbook, first published in 1996, and also has commissioned studies of forest certification and (in collaboration with DMA and EMA) the potential for greater post-consumer recycling of catalogs, magazines, and direct mail. These studies

[5] The Sustainable Forestry Initiative, discussed above, is now administered by an independent organization and is no longer a program (or requirement) of AF&PA.

include findings intended to inform MPA members and support sound business decision making regarding environmental performance improvements by magazine publishers.

Information Sources:

DMA, 2007. *Environmental Planning Tool and Optional Policy & Vision Statement Generator*. Available from http://www.the-dma.org/envgen/#3

MPA, 2008. *Environment*. Available from http://www.magazine.org/environment/index.aspx

USPS, 2008. *Greener Choices with the U.S. Postal Service*. Available from http://www.usps.com/green/

USPS, 2007. *2007 Comprehensive Statement on Postal Operations.* Available from http://www.usps.com/financials/cspo/welcome.htm.

USPS, 2006. *Strategic Transformation Plan 2006-2010, 2006 Annual Progress Report.* Available from http://www.usps.com/strategicplanning/2006apr.

29. What are trade groups doing to promote recycling?

At a national level, the National Recycling Coalition (NRC) is operating several programs to increase residential recycling in the U.S., some of which are national in scope while others are more targeted. These include leading the National Recycling Partnership (NRP), a coalition committed to improving recycling programs and reinvigorating recycling among consumers. This involves grocery, food, and beverage producers and retailers in two major initiatives: consumer communication and development of best practices in residential curbside collection programs. Under the former, the Partnership will test and deploy new recycling iconography and messages, with the goal of bringing consistency to the use of recycling symbols and terminology across all sectors, and thereby increasing consumer understanding of what product packaging is recyclable. This will be followed by a consumer outreach campaign to re-energize participation in recycling programs.

NRC is also continuing with its "ReMix" program ("Recycling Magazines is Excellent"), in which targeted outreach within a particular metropolitan area is used to increase awareness that magazines can be recycled. The latest area in which ReMix is being applied is New York City, where Mayor Bloomberg launched the program on 30 January.

DMA, MPA, and EMA have joined to promote the recycling of mail by reaching out to their own memberships and the general public. MPA's campaign is called *Please Recycle*, which includes both public outreach and guidance to its member companies regarding the use of a new logo specific to this campaign.6 MPA requests that is publishers prominently display the *Please Recycle* in every issue of their magazines. The Envelope Manufacturers Association (EMA) also is conducting a Please Recycle campaign by encouraging its members to use the logo on envelopes and other materials that can be recycled, as well as on their web sites and in other communications media.

[6] The logo has two versions, because some magazine publishers include inserts that may interfere with paper recovery operations. Publishers of such magazines are encouraged to use a modified logo that also asks that the magazine reader remove any samples or other inserts prior to recycling the magazine.

DMA's campaign is called Recycle Please. It was launched in the summer of 2007 and in its first year had been adopted by 80 member companies, which now include the "Recycle Please" logon their catalogs and other mailings.

Information Sources:

Direct Marketing Association, 2008. *Launch of DMA'S Recycle Please Campaign Gains Momentum* (press release). 19 June. Available from http://www.the-dma.org/cgi/disppressrelease?article=1172

Envelope Manufacturers Association (EMA), 2008. *Please Recycle*. Available from http://www.envelope.org/page/105467/.

Magazine Publishers of America, 2006. *Magazine Publishers of America Please Recycle This Magazine*. 26 October. Available from http://www.magazine.org/environment/21345.aspx

National Recycling Coalition, 2008. *Programs.* Available from http://www.nrc-recycle.org/programs.aspx

Mail and the Economy

30. What are the revenues of the USPS?

In FY 2007, total Postal Service revenues were $74,972,813,000, a three percent increase over the previous fiscal year's total of $72,817,497,000. Operating revenues increased from $69.9 to 72.6 to 74.8 billion over the period from FY 2005 through FY 2007. Unfortunately, operating expenses have increased more rapidly than revenues, causing the Postal Service to report a loss of $ 5.1 billion during the most recent fiscal year. Domestic mail accounted for 92 percent of FY 2007 revenues, with First Class ($37.6 billion), Standard ($20.8 billion) mail accounting for the majority of revenues and mail volume.

Information Sources:

USPS, 2008. *Revenue, Pieces, and Weight by Classes of Mail and Special Services for Government Fiscal Year 2007*. Available from http://www.usps.com/financials/rpw/welcome.htm.

USPS, 2007. *United States Postal Service Annual Report 2007.* Available from http://www.usps.com/financials/ar/welcome.htm.

31. What role does marketing play in the U.S. economy?

In general, marketing conveys information to consumers about product attributes, availability, and prices. Most economists believe that it is critical to a well functioning, efficient economy. As one economist put it,

"An important mechanism for disseminating information about product benefits in a market economy is advertising. The ability of sellers to advertise spurs competition among alternative products and alternative providers. The ability to advertise tends to reduce prices in markets for consumer goods and services as well as in markets for prescription drugs. Moreover, advertising tends to improve the product alternatives available to consumers and to produce better matching between individual consumers and the best product to serve their needs."

Also, most studies show that price advertising leads to lower prices.

Information Sources:

Beales, J.H., 1994. *FDA Regulation of Pharmaceutical Advertising: Economic Analysis and the Regulation of Pharmaceutical Advertising*, 24 Seton Hall Law Review, 1370.

Kaul, A. and D.R. Wittink, 1995. Empirical Generalizations about the Impact of Advertising on Price Sensitivity and Price. *Marketing Science*, Vol. 14, No. 3, Part 2 of 2: Special Issue on Empirical Generalizations in Marketing, pp G151-G160.

For a description of the benefits of marketing and advertising pharmaceuticals to consumers as well as a general overview of the benefits of marketing, see *Comments Regarding Competition Law and Policy & Health Care (Sept. 30, 2002) [Submitted by James R. Cregan to Federal Trade Commission]*

32. What about jobs and mail?

According to a recent study, 8.3 million jobs in the U.S. are directly attributable to the mail value chain. Of this total about 2.1 million jobs are in firms that deliver mail or parcels, produce mail, or supply the firms that do. An additional 2.5 million jobs are in mail-related occupations in firms that are not classified in an identifiable mail-related industry (e.g., manufacturing, health care, financial services, real estate). The remaining 3.8 million jobs are in the estimated total are in the firms that use the mail, and reflect positions such as catalogue (and non-catalogue) based sales, sales of direct response magazine ads and advertising inserts, and miscellaneous publishing jobs. These estimates were developed through analysis of U.S. Bureau of Labor Statistics and Department of Commerce data, as well as an examination of the results of Direct Marketing Association research.

Information Source:

EMA Foundation for Paper Based Communications, 2008. *2008 Economic Job Study Final Report*. Alexandria, VA. June. Available from http://www.emafoundation.org/file_depot/0-10000000/0-10000/2518/conman/IPS+2008+Jobs+Study+Final_Report1.pdf

33. What Do Americans Feel and Know about the Environment and about Mail and the Environment?

Americans care deeply about the environment. In a recent DMNews/Pitney Bowes poll, 22.9 percent of Americans ranked environmental conservation as their top concern among world hunger and poverty (12.0 percent), healthcare reform (312.5 percent), the Middle East (21.0 percent) and other (12.6 percent.)

Notwithstanding this concern, they seemed to have misinformation on the topic of mail and the environment. While advertising mail represent just over 2 percent of all total municipal waste according to the survey, almost half of all consumers believed it accounted for more than half of the waste.

Information Source:

DMNews, 2007. *The Power of Perception*. Pp. 16-21. Available from http://media.haymarketmedia.com/Documents/1/DM_PB_Survey_525.pdf.

Regulation of Green Advertising in the United States

34. What regulations, limitations, or requirements apply to green advertising?

In the U.S., advertising claims are subject to regulation by the Federal Trade Commission (FTC), pursuant to authorities provided by the Federal Trade Act (FTC Act), which stipulates that a "reasonable basis" is required to support such claims. More specifically, Section 5 prohibits claims or advertising that are "unfair" or "deceptive." FTC has issued a policy statement to clarify what is meant by "deceptive;" essentially, a claim is deceptive if it is material and misleading to consumers who are acting reasonably. Similarly, claims are "unfair" if they are substantial, not reasonably avoidable, and impose costs in excess of their benefits on or to the public.

The FTC has issued a rule and accompanying guidance regulating advertising claims related to the environment or the environmental attributes or performance of products and services. These are commonly known as the "Green Guides." The guides were originally issued in 1992 and have been revised several times, most recently in 1998.

Within the past year, the FTC has decided to accelerate its regular review and revision process for the Green Guides because of the recent upswing in public interest in the environment and the accompanying proliferation of environmental claims made by sellers of many types of products and services. The FTC believes that the Green Guides must reflect the recent changes in the marketplace to remain useful and meet the needs of their constituencies.

The FTC has held several public workshops in 2008 to further explore the issue, each of which was focused around a particular topic or market segment. These included carbon offsets and renewable energy certificates (held 8 January 8), green packaging claims (held 30 April), and green building and textiles (held 15 July). It is unclear at this time how the FTC will proceed with the Green Guides revision process, though it is highly likely that an updated and expanded version will be forthcoming during the next year or two.

Information Sources:

Federal Trade Commission, 2008. *Green Guides Review*. Available from http://www.ftc.gov/bcp/edu/microsites/energy/about_guides.shtml

Federal Trade Commission, 1999. *FTC Facts for Consumers: Sorting Out'Green'AdvertisingClaims. April.* Available from http://www.ftc.gov/bcp/edu/microsites/energy/about_guides.shtml

Federal Trade Commission, undated. *Complying with the Environmental Marketing Guides.* Available from http://www.ftc.gov/bcp/edu/microsites/energy/about_guides.shtml.

U.S. Code, 1998. *Part 260 – Guides for the Use of Environmental Marketing Claims.* Available from http://www.ftc.gov/bcp/grnrule/guides980427.htm.

Appendix
Pertinent Web Sites

Organizations

41pounds.org: www.41pounds.org.

American Forest and Paper Association (AF&PA): www.afandpa.org.

American Tree Farm System (ATFS): www.treefarmsystem.org

Business for Social Responsibility: www.bsr.org

Canadian Forest Service: www.nrcan-rncan.gc.ca

Canadian Standards Association International (CSA): www.csa-international.org

Canadian Sustainable Forestry Certification Coalition: www.certificationcanada.org

Catalog Choice: www.catalogchoice.org.

Center for a New American Dream: www.newdream.org.

The Coalition for Environmentally Responsible Economies (CERES): www.ceres.org

Confederation of European Paper Industries (CEPI): www.cepi.org.

Donotmail.org: www.donotmail.org.

Food and Agriculture Organization of the United Nations (FAO): www.fao.org.

ForestEthics: www.donotmail.org.

Forest Products Association of Canada (FPAC): www.fpac.ca

Forest Stewardship Council-International: www.fscoax.org.

Forest Stewardship Council (FSC)-United States: www.fscus.org.

Gravure Association of America (GAA): www.gaa.org

GreenDimes: www.greendimes.com.

International Council of Forest & Paper Associations: http://www.icfpa.org/index.php

International Organization for Standardization: www.iso.org

Keep America Beautiful: www.kab.org

Mail Moves America: http://www.mailmovesamerica.org

Metafore, Inc.: www.metafore.org

Postal2020: http://www.postal2020.com

The Montreal Process: www.mpci.org

National Recycling Coalition (NRC): www.nrc-recycle.org

NatureServe: www.natureserve.org

The Paper Industry Association Council (PIAC): http://www.paperrecycles.org/

Paper Recycling Association: www.pppc.org/en/2_0/2_4.html

Printing Industries of America/Graphic Arts Technical Foundation (PIA): www.pia.org.

Programme for the Endorsement of Forest Certification Schemes (PEFC): www.pefc.org

Pulp and Paper Products Council: http://pppc.org

Pulpwatch.org: www.pulpwatch.org

Stopthejunkmail.com: www.stopthejunkmail.com.

Sustainable Forestry Initiative (SFI): www.aboutsfi.org

Technical Association for the Pulp and Paper Industries (TAPPI): www.tappi.org.

United Nations Economic Commissions for Europe-Timber Committee:
http://www.unece.org/trade/timber/Welcome.html

United States Department of Agriculture Forest Service (USDA Forest Service): www.fs.fed.us/

United States Department of Energy (DOE): www.doe.gov

Energy Information Administration: www.eia.doe.gov

United States Department of Transportation: www.dot.gov

Bureau of Transportation Statistics: www.bts.gov

United States Environmental Protection Agency: www.epa.gov

United States Federal Trade Commission: www.ftc.gov

United States Postal Service: www.usps.com

World Business Council for Sustainable Development: www.wbcsd.org

Programs

Environmental Performance Track: www.epa.gov/performancetrack.

Paper Recycling Association: www.pppc.org/en/2_0/2_4.html

Printers' National Environmental Assistance Center: http://www.pneac.org