

## Glossary of Environmental Terms

### A

**\*Acid Free:** Made in a neutral pH process that increases the longevity of the paper.

**Alternative Fibers:** Fibers produced from non-wood sources for use in paper making.

**Ancient Forest:** A forest that is typically older than 200 years with large trees, dense canopies and an abundance of diverse wildlife.

### B

**\*Biodegradable:** Waste material composed primarily of constituent parts that occur naturally, are able to be decomposed by bacteria or fungi, and are absorbed into the ecosystem. Wood, for example, is biodegradable, while plastics are not.

**\*Biodiversity:** A large number and wide range of species of animals, plants, fungi, and microorganisms. Ecologically, wide biodiversity is conducive to the development of all species.

**\*Biomass:** In the energy production industry, biomass refers to living and recently living biological material, which can be used as fuel or for industrial production. Most commonly, *biomass* refers to plant matter grown for use as biofuel, but also includes plant or animal matter used for production of fibers, chemicals, or heat. Biomass may also include biodegradable wastes that can be burned as fuel.

**\*Boreal Forests:** Forests found in the northern parts of North America, Europe, and Asia, consisting mostly of coniferous trees.

### C

**Carbon Dioxide (CO<sub>2</sub>):** A naturally occurring greenhouse gas in the atmosphere, concentrations of which have increased as a result of humans' burning of coal, oil, natural gas and organic matter (e.g. wood and crop wastes).

**\*Carbon Footprint:** The total amount of greenhouse gases produced (measured in amounts of carbon dioxide) by a particular human activity.

**Carbon Neutral:** When a person's or an entity's carbon emissions are matched by an equivalent amount of activities designed to offset those emissions (e.g. planting trees).

**\*Chain of Custody:** The process of documenting the source for fiber used in a specific manufacturing run paper all the way back to the forest or forests where the trees were harvested.

**\*Chlorine-free Product (CFP):** Any product produced without the use of chlorine chemistries, including elemental chlorine gas, chlorine compounds, and chlorine derivatives. See also Elemental Chlorine Free, Totally Chlorine Free, and Processed Chlorine Free.

**\*Controlled Wood:** A term used by FSC to refer to the non-FSC-certified portion of fiber in an FSC mixed-label product.

**\*CSA:** Canadian Standards Association is a not-for-profit group that has developed standards for many different industries. CSA's sustainable forest management standard was developed with the participation of government, academic, environmental, business, and other stakeholder groups. It is particularly suited to Canada, where much of the wood used by the forest-products industry comes from government-owned lands and where forest-products companies have been granted management and harvesting licenses.

## D

**\*De-inking:** The process by which ink is lifted off used paper, which is then broken back down into fibers to be recycled into new paper.

## E

**\*Ecology:** A branch of science concerned with the interrelationship of organisms and their environment.

**\*Ecosystem:** An interconnected and symbiotic grouping of animals, plants, fungi, and microorganisms that sustains life through biological, geological, and chemical activity.

**\*Elemental Chlorine Free (ECF):** Virgin paper processed without elemental chlorine but with a chlorine derivative such as chlorine dioxide. A postconsumer paper would be a greener choice than an ECF paper.

**Energy Conservation:** Using energy efficiently or prudently; saving energy.

**Energy Efficiency:** Technologies and measures that reduce the amount of electricity and/or fuel required to do the same work, such as powering homes, offices and industries.

**\*Environmental Footprint:** For an industrial setting, this is a company's environmental impact determined by the amount of depletable raw materials and nonrenewable resources it consumes to make its products, and the quantity of wastes and emissions that are generated in the process. Traditionally, for a company to grow, the footprint had to get larger. Today, finding ways to reduce the environmental footprint is a priority for leading companies.

**\*Environmental Impact:** Any change to the environment, whether adverse or beneficial, wholly or partially resulting from human activity, industry, or natural disasters.

**Environmental Management Systems (EMS):** Systems implemented at manufacturing plants to track compliance and measure raw material inputs and waste streams to increase efficiencies.

**\*Environmental Restoration:** The act of repairing damage to a site caused by human activity, industry, or natural disasters. The ideal environmental restoration, although rarely achieved, is to restore the site as closely as possible to its natural condition before it was disturbed.

**\*EPA:** U.S. Environmental Protection Agency publishes guidelines for minimum recycled product content for use by federal agencies for purchasing standards. Most U.S. state and local governments, as well as businesses and organizations, have also voluntarily adopted these content standards. Further, EPA advocates source reduction practices, and other aspects of environmentally sound products, such as reduced toxics, energy savings, and biomass projects. In addition to providing guidance on environmental products, EPA regulates many aspects of paper industry production, including emissions (air, water, land) and solid waste management.

## F

**Forest Certification:** A process of labeling wood that has been harvested from a well-managed forest.

**\*Freesheet:** Groundwood-free, freesheet paper is made from a chemical pulping process in which all the lignin is removed from the pulp. Freesheet paper has more longevity than groundwood paper such as newsprint, which contains lignin and may yellow rapidly. The chemical pulping process (usually a kraft process) requires less energy than groundwood pulping, but uses a lower portion of the tree so that more trees are used to produce a ton of pulp than with groundwood paper.

**\*FSC:** Forest Stewardship Council is an independent, international, environmentally and socially oriented forestry certification organization. It trains, accredits, and monitors third-party certifiers around the world and works to establish international forest management standards. FSC considers itself as having established credibility with the major environmental and social organizations worldwide.

## G

**\*Global Warming:** A process that raises the air temperature in the lower atmosphere because of heat trapped by greenhouse gases, such as carbon dioxide, methane, nitrous oxide, chlorofluorocarbons (CFCs), and ozone. It can occur as the result of natural influences, but the term is most often applied to the

warming predicted to occur as a result of human activities (i.e., emissions of greenhouse gases).

**\*Greenhouse Effect:** The warming of earth's surface and lower atmosphere as a result of carbon dioxide and water vapor in the atmosphere, which absorb and reradiate infrared radiation.

**\*Greenhouse Gases:** Gases that absorb sunlight and trap the heat in the atmosphere. The buildup of greenhouse gases has led to concerns about global warming.

**\*Greenwash:** Disinformation disseminated by an organization intended to present an environmentally responsible public image.

**\*Groundwood:** Paper made from pulp that was produced using a partially or entirely mechanical process in which the entire tree is ground up. Heat and chemicals may be used in this process as well, but all groundwood pulp retains lignin. It thus yellows and deteriorates more rapidly than groundwood-free paper. Groundwood pulping processes use more energy than the totally chemical processes that produce freesheet, but groundwood pulping uses more of the tree; it therefore requires few trees per ton of paper produced.

## H

**\*Harvesting:** Cutting down trees in a forest, but also managing the forest so that it will be replenished with new trees (either naturally or through replanting).

## I

**\*Integrated Mills:** Mills that manufacture pulp as well as paper.

## J

## K

**\*Kraft Process:** A chemical pulping process that cooks down the tree to remove lignins, retaining the fibers for papermaking. Freesheet papers are made in a kraft process.

## L

**\*Lignin:** The "glue" that binds the cells of the tree and creates its structure. Approximately one-third of the tree is lignin.

## M

## N

## O

## P

**\*Postconsumer Material:** Paper that has reached its intended end user before being discarded. For example, paper recovered from curbside collections is considered postconsumer, but paper scraps from a print shop are not. The print shop is not the "intended end user," but is adding value to the paper that will eventually reach the end user.

**\*Postconsumer Recycled Content:** A product composition that contains some percentage of material that has been reclaimed from the same or another end use at the end of its former, useful life.

**\*Postconsumer Waste Fiber (PCW):** Same as postconsumer material. Note that papers containing a percentage of PCW are a "recycled" option.

**\*Preconsumer Fiber:** Includes manufactured waste such as dry paper and paperboard from the cutting process.

**\*Processed Chlorine Free (PCF):** Recycled paper in which the recycled content is unbleached or bleached without chlorine or chlorine derivatives. Any virgin material portion of the paper must be TCF.

**Pulp:** Raw materials made from trees used in producing paper products.

## Q

## R

**\*Reclamation:** Restoration of materials found in the waste stream to a beneficial use that may be other than the original use.

**\*Recovered:** Scrap paper collected for remanufacturing into recycled paper. EPA's definition for "recovered," which is most widely accepted, does not include scrap created in the initial papermaking process, but it does include scrap created in a mill after the paper comes off the paper machine.

**\*Recycled:** Paper made, at least in part, from recovered scrap paper. There is no universally accepted definition for "recycled," and legal requirements vary. EPA requires postconsumer content in "recycled" papers bought by federal agencies, but FTC does not require postconsumer content in papers labeled "recycled." Most U.S. state and local governments and companies use EPA's standards, but European producers do not isolate postconsumer content.

**\*Recycling:** Process by which materials that would otherwise become solid waste are collected, separated, or processed and returned to the economic mainstream to be reused in the form of raw materials or finished goods.

**\*Renewable Resources:** A resource that can be replenished at a rate equal to or greater than its rate of depletion — i.e., solar, wind, geothermal, and biomass resources.

**\*Resource Conservation:** Practices that protect, preserve, or renew natural resources in a manner that will ensure their highest economic or social benefits.

**\*Reuse:** Using a product or component of municipal solid waste in its original form more than once.

## **S**

**Second-growth Forests:** Forests that have grown back after being logged.

**Soy Inks:** Inks that are soy (vegetable) based instead of petroleum based. Usually, such inks are not entirely soy based, but contain a percentage of soy.

**Sulfur Dioxide (SO<sub>2</sub>):** A heavy, smelly gas, which can be condensed into a clear liquid; used to make sulfuric acid, bleaching agents, preservatives and refrigerants; a major source of air pollution in industrial areas.

**\*SFM:** Abbreviation for the generic term *sustainable forest management*, which is generally construed to mean a set of forest management practices intended to preserve the long-term health and viability of forest ecosystems. Economic, social, and environmental sustainability are promoted by forest certification systems intended for working forests. Most forest certification systems claim to be SFM systems.

**\*Sustainability:** Practices that would ensure the continued viability of a product or practice well into the future.

**\*Sustainable Development:** An approach to progress that meets the needs of the present without compromising the ability of future generations to meet their needs.

## **T**

**\*Totally Chlorine Free (TCF):** Virgin paper that is unbleached or processed with a sequence that includes no chlorine or chlorine derivatives. TCF papers are a better choice than any paper that contains chlorine.

## **U**

**UV Inks:** Inks that are imprinted using ultraviolet light. They have no solvent whatsoever and therefore have no emissions of VOC's.

## **V**

**\*Virgin:** Paper made the first time, most often from wood pulp.

**Volatile Organic Compounds (VOC's):** Harmful to the environment. Inks generally contain some VOC's in the solvent, which evaporates as part of the drying process. As a result, responsible manufacturers have switched to low VOC inks and pollution controls to limit the environmental impact.

**W**

**X**

**Y**

**Z**

\*The definitions noted with an asterisk are reprinted from the *AAP Handbook on Book Paper and the Environment*, February 2008, with permission from the Association of American Publishers.