

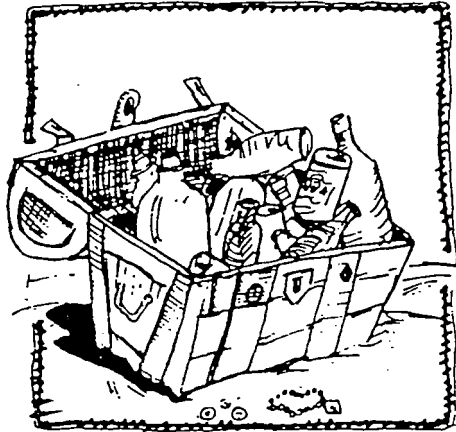
# Recycling

*This fact sheet was prepared with the assistance of the Institute for Local Self-Reliance. Neil Seldman, President of the Institute for Local Self-Reliance, is a member of Earth Day 1990's Environmental Advisory Council.*

## Why Recycle?

Recycling saves energy, natural resources and landfill space. In 1990, it is projected that Americans will throw away over 1 million tons of aluminum cans and foil, more than 11 million tons of glass bottles and jars, over 4 and a half million tons of office paper, and nearly 10 million tons of newspaper. Almost all of this material could be recycled, cutting down on the environmental damage caused by mining, logging, and manufacturing raw materials, while decreasing the amount of garbage being dumped. The average American generates 3.5 pounds of garbage every day for a national total of over 160 million tons per year. Over 80 percent of this waste could be recycled using existing technologies.

Global warming, acid rain, and oil spills are problems directly related to our extravagant use of energy. Three percent of our nation's energy is used to produce packaging materials, such as bottles and cans. By recycling alu-



minum it is possible to save 95 percent of the energy that it would take to manufacture new products from raw materials. In other words, throwing away an aluminum can wastes as much energy as if the can were half full of gasoline. Americans throw away about 35 billion aluminum cans every year — enough to rebuild our entire commercial airfleet four times over. If all these cans were recycled, we would save an amount of energy equal to 150 Exxon Valdez oil spills every year. In 1988, Americans set an all time high by recycling 42.5 billion cans — 54.6 percent of the total. This alone saved enough energy to supply power for the city of Boston for one full year.

For every ton of paper that is manufactured from recycled pulp, 17 trees are saved and 3 cubic yards of waste paper avoid being landfilled. Since paper comprises over 40 percent of our municipal waste stream, recycling could extend the lives of our existing dumps considerably. For recycling to work, however, it is important that there is a market for the new product. The U.S. uses about 40 percent of the world's newsprint supply, yet only 14 percent of this paper is made from recycled fiber. Recycled paper uses up to 64 percent less energy to manufacture than virgin paper and produces only one-quarter the air pollution.

At present, more newspapers are recycled than recycled newsprint bought, causing a glut in the market for recycled newsprint. Barriers to increased recycling include federal subsidies to the timber industry that make the price of virgin paper artificially low. A tax credit for those manufacturers who use recycled materials could offset this perverse incentive for using virgin materials. A worldwide paper shortage is creating opportunities for community economic development through small scale paper manufacturing plants located near the source of supply for waste paper. For every million Americans who recycle, some 1,500 manufacturing jobs are created.



**We are recycling not only to protect the environment, but for economic reasons as well. Disposal is simply too costly and too dangerous. The challenge is to redirect the flow of raw materials going to landfill into strengthening our declining local economies. The solution to pollution is self-reliant cities and counties.**

*-Neil Seldman, President, Institute for Local Self-Reliance*

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## What You Can Do

- Cut down on your energy consumption by using energy more efficiently. Some utility companies offer free home energy audits and may even provide cost-free installation of energy efficient devices.
- To conserve energy, buy products in recyclable containers and recycle or reuse them.
- Plant at least one tree per year and nurture it until it is able to survive on its own. Trees absorb carbon dioxide and shade buildings.
- Urge your local government to come up with a plan to encourage public transportation, carpooling, biking and walking.
- Write elected officials urging them to support legislation promoting energy efficiency and renewable energy (solar, wind and geothermal).
- When purchasing an oven or furnace, consider a model that operates on natural gas.
- Prevent CFCs from being released into the atmosphere by immediately repairing leaks in your refrigerator and car air conditioner and making sure the CFCs are recycled when the units are serviced or scrapped.
- Promote family planning worldwide.

## Energy Conservation Tips

### TRANSPORTATION:

- Use public transportation, carpool, bike or walk.
- Purchase a car with high gas mileage (at least 35 mpg).
- Keep your car tuned up and running well.
- Cut down on unnecessary driving by living close to your place of work, calling ahead before shopping and consolidating errands.

- Avoid "drive-through" lines where your car engine must idle for long periods.

### IN THE HOME:

#### *Heating and Cooling (70% of typical energy use in single-family residences):*

- Insulate and weatherstrip your house.
- Install a "time-of-day" thermostat to avoid unnecessary operation.
- Install double-paned windows and draw curtains at night. In colder climates install storm windows and insulating shades or shutters.
- Close doors to rooms seldom used and turn off the heat or air conditioning in these areas.
- Plant trees on the southern side of your house to provide shade and lessen the need for air conditioning.

#### *Water Heater (20% of household energy):*

- Insulate hot water heater and storage tank, including piping.
- Set water heater no higher than 120 degrees F. Most dishwashers need 140 degrees F, so you may need a preheater.
- Minimize hot water use (for example, take showers rather than baths and use water-efficient showerheads).
- Install a solar heating system.

#### *Appliances (10% of household energy):*

- Turn off appliances when not in use.

- Replace incandescent bulbs with screw-in compact fluorescent bulbs.
- When purchasing an appliance, compare energy-use information and shop for efficiency.
- Wash clothes in cold water.
- Dry clothes in the sun.

## For More Information

- World Resources Institute  
1709 New York Ave., NW  
Washington, DC 20006  
(202) 638-6300
- Environmental Defense Fund  
257 Park Ave. S  
New York, NY 10010  
(212) 505-2100
- Friends of the Earth  
218 D Street, SE  
Washington, DC 20003  
(202) 544-2600
- National Audubon Society  
950 Third Ave.  
New York, NY 10022  
(202) 832-3200
- National Wildlife Federation  
1400 16th St., NW  
Washington, DC 20036  
(703) 790-4321
- Natural Resources Defense Council  
122 E. 42nd St.  
New York, NY 10168  
(212) 727-2700
- Sierra Club  
730 Polk St.  
San Francisco, CA 94109  
(415) 776-2211
- Union of Concerned Scientists  
26 Church St.  
Cambridge, MA 02238  
(617) 547-5552
- Worldwatch Institute  
1776 Massachusetts Ave., NW  
Washington, DC 20036  
(202) 452-1999
- World Wildlife Fund  
1250 24th St., NW  
Washington, DC 20037  
(202) 293-4800
- Zero Population Growth  
1400 16th Street, NW, Suite 320  
Washington, DC 20036  
(202) 332-2200



# Facts about recycled paper

EARTH CARE PAPER INC. MADISON, WISCONSIN

## What is recycled paper?

Recycled paper is made from waste paper pulp instead of virgin wood pulp. The paper or "secondary" fiber used to make recycled paper comes from several sources. Waste from manufacturing operations such as the trim from a book, magazine, business form or envelope is called pre-consumer waste. Post-consumer waste includes newspapers and mixed papers taken to community recycling centers by individuals and businesses.<sup>1</sup>

## How is recycled paper different from virgin paper?

The quality of recycled paper is equal to paper made from virgin wood pulp. Recycled paper often has qualities which make it superior to non-recycled paper, such as being more opaque, dense and flexible. It is often chosen over non-recycled paper for these properties.<sup>2</sup>

## How does recycled paper benefit the economy?

Recycling adds to economic stability by creating new material resources (waste paper), by reducing a tremendous tax burden (trash disposal), and by reducing our use of energy (imported fossil fuels). The recycling industry creates many new jobs. Harvesting waste paper in cities creates five times as many jobs as does harvesting the raw material from the forest.<sup>3</sup>

## How does recycled paper protect the environment?

### TREES:

It takes 17 trees to make one ton of paper. The Institute of Scrap Recycling Industries estimates that over 200 million trees are saved each year due to current recycling efforts. Paper products consume 35% of the world's annual commercial wood harvest. This figure is expected to increase to 50% by the year 2000. Forest harvest exceeds replacement.<sup>4</sup>

### ENERGY:

The energy required to produce a ton of paper from virgin wood pulp is 16,320 KWH compared to 5,919 KWH for producing a ton of paper from waste paper. That is an energy savings of 64%. If you consider that the paper industry is the third largest consumer of energy in the U.S. and the largest single user of fuel oil, the energy savings of 64% from use of recycled fibers becomes even more meaningful.<sup>5</sup>

### AIR POLLUTION:

74% less air pollution is produced from the manufacturing of recycled paper compared to paper from virgin wood pulp.<sup>6</sup>

### WATER POLLUTION:

35% less water pollution is produced from the manufacturing of recycled paper compared to paper from virgin wood pulp.<sup>6</sup>

### SOLID WASTE:

Disposal of solid waste is the nation's third largest domestic expenditure. Americans spend \$6 billion annually to collect and dispose of our trash. We create enough garbage each day to fill the New Orleans Superdome twice. Half of that waste is paper.<sup>7</sup>

### WATER CONSUMPTION:

Recycled paper production uses 58% less water compared to virgin paper production.<sup>4</sup>

## How much paper is used in the United States?

Each year Americans use over 67 million tons of paper, or 600 pounds per person.<sup>8</sup> The U.S. is the largest consumer of paper in the world. Most of our paper goes directly to landfills. Paper consumption has doubled since 1965.<sup>4</sup>

## How much paper is recycled?

Recycling is increasing, but only slightly faster than the increase in paper consumption. In 1965, 20% of all paper products in the U.S. were recycled. In 1985 that figure had increased to 27%; approximately 75% was made into cardboard products, 17% was made into newsprint and tissue, and 8% was made into printing and office paper.<sup>8</sup>

## How much do other countries recycle?

Denmark recycles 60% of its waste. Japan recycles over half the paper it uses. The U.S. can increase the amount of recycled paper used and produced; for example, during World War II, 43% of all paper was recycled.<sup>9</sup>

## Why isn't more paper recycled?

The American Paper Institute, the U.S. Environmental Protection Agency, and the Institute of Scrap Recycling Industries all cite *lack of consumer demand* as the main factor limiting the recycling of paper. In other words, more recycled paper would be produced if the public demanded it. Earth Care Paper is trying to increase demand through education and by making quality products readily available.

## About Earth Care Paper

Earth Care Paper provides individuals, organizations, and businesses with easy access to recycled products. Our papers are equal in quality to non-recycled papers. We provide a full line of products including printing paper, photocopy paper, computer paper, envelopes, notecards and stationery. If you are concerned about reducing waste, saving energy and protecting forest resources, then we encourage you to choose recycled paper. Write for our free catalog.

*printed on 100% recycled paper*

## Footnotes

*(and sources of further information)*

1. Pulp and Paper Manufacture. Volume 3, Secondary Fibers and Non-Wood Pulping, TAPPI, Technology Park/Atlanta, Box 105113, Atlanta, GA 30348
2. Institute of Scrap Recycling Industries (formerly National Association of Recycling Industries), "Recycled Paper Products," 1627 K Street NW, Suite 700, Washington, DC 20006
3. Neil Seldman and Jon Huls, "Waste Management: Beyond the Throwaway Ethic," *Environment*, November 1981. Neil Seldman is with the Institute for Local Self Reliance, 2425 18th Street, NW, Washington, DC 20009
4. William U. Chandler, "Converting Garbage to Gold—Recycling Our Materials," *The Futurist*, February 1984. Bill Chandler is with Worldwatch Institute, 1776 Massachusetts Ave. NW, Washington, DC 20036
5. Institute of Scrap Recycling Industries (formerly National Association of Recycling Industries), "Recycling, Combating the High Costs of Energy," 1627 K Street NW, Suite 700, Washington, DC 20006
6. Cynthia Pollock, "Mining Urban Wastes: The Potential for Recycling," Worldwatch Institute, 1776 Massachusetts Ave. NW, Washington, DC 20036
7. Arthur H. Purcell, "The World's Trashiest People: Will They Clean Up Their Act or Throw Away Their Future?," *The Futurist*, February 1981
8. Franklin Associates, Ltd., "Waste Paper, the Future of a Resource," American Paper Institute, 260 Madison Ave., New York, NY 10016
9. Dennis Moore, "Recycling: Where Are We Now?," *New Shelter*, February 1981
10. National Recycling Coalition., 1101 30th Street, NW, Suite 305, Washington, DC 20007

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Madison, WI 53704  
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## Taking Your Recyclables to the Collection Center

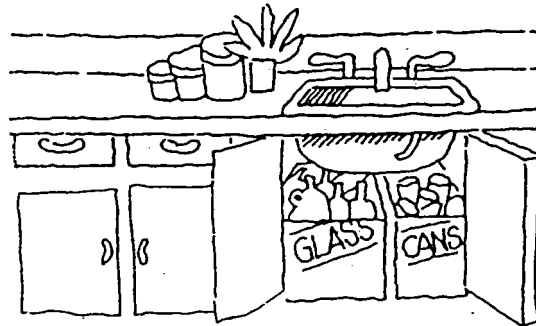
Most people who recycle go to a collection center every month. It takes very little time and can be combined with other trips. If you need to know where the closest center is call your local Keep America Beautiful program listed on the back of this brochure.

## Quick Facts on Recycling

- Recycling can earn you money.
- Recycling can reduce your disposal costs.
- Recycling saves resources.
- Recycling saves energy.
- Recycling reduces the size of disposal sites.
- Recycling reduces litter.
- Recycling takes little time.
- You can make 20 recycled aluminum cans with the energy it takes to make one new aluminum can.
- There are approximately 23 cans to one pound of aluminum.
- It takes 3 tons of recycled newspaper to make one ton of paper.
- Paper made from waste papers instead of virgin wood requires 61% less water and results in 70% fewer air pollutants.
- A foot of newspaper tightly twined = 30 pounds.
- Sixty-seven one-foot bundles of newspaper = one ton.
- Eleven six-foot stacks of newspaper = one ton.
- Nature can recycle a tin can to dust in 100 years, and an aluminum can in 500 years, but a glass bottle takes one million years.

# Recycling in Alabama

## What To Recycle/How To Prepare It



### Glass

#### Returnable/Reusable Beer & Soft Drink Bottles

Rinse, clean & return in original cardboard container.

Refillable bottles are sterilized and refilled; most other glass is melted down and re-made into new containers.

#### All Other Jars & Bottles—Clear, Green & Brown Glass

Remove any metal caps or rings & rinse clean. Do not break.

### Paper

#### Newsprint

Stack one foot high and tie both ways with strong twine.

#### Hi-Grade or Ledger

Box or bundle. No carbon staples or non-paper items.

#### Mixed or Scrap Paper

Box, bag or bundle. no wax or plastic-coated paper or non-paper items.

#### Cardboard

Break down flat. Must be clean.

Paper is pulped and re-made into new paper or used in products like egg cartons, roofing, insulation and cattle feed.

### Aluminum

Rinse, flatten cans. Bag or box foil, pie plates, etc.

Materials that can be recycled vary in different communities. Check with your local recyclers for specific information.

**SOME MATERIALS RECYCLE BETTER THAN OTHERS**

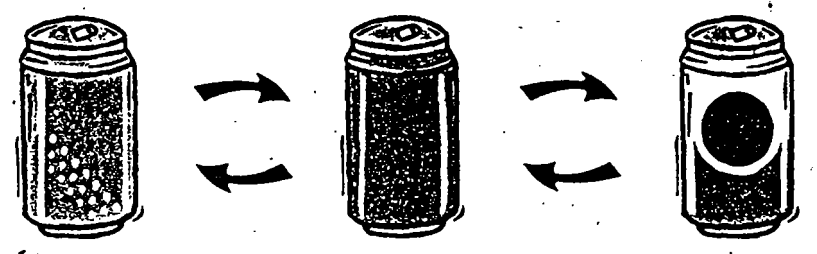
**GLASS**

Glass containers are 100 percent recyclable—they never have to reach a landfill. At least 30 percent of the glass on store shelves is recycled glass.



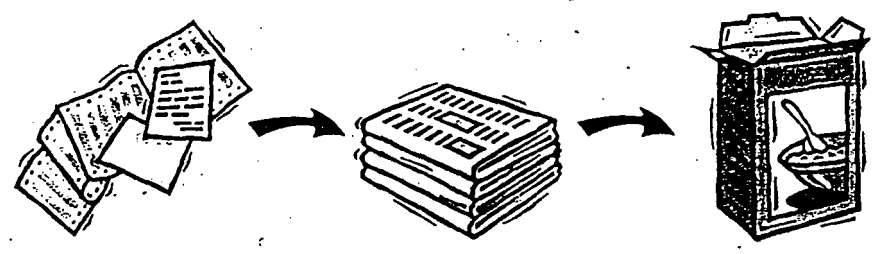
**ALUMINUM**

Aluminum can also be endlessly recycled; using recycled instead of raw materials saves 95 percent of the energy needed to produce new cans.



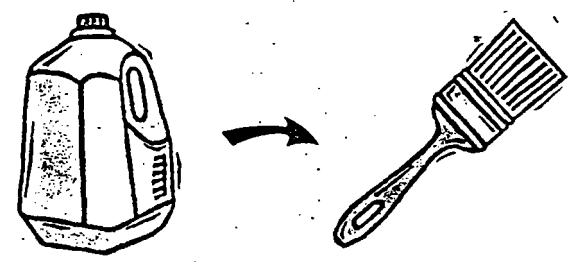
**PAPER**

As paper is recycled, its quality degrades slightly, and eventually, the paper may end up in a landfill. But one ton of recycled paper saves 17 trees.



**PLASTICS**

Recycling plastic gives it an extra "life," turning a milk jug into a paint brush handle or park bench. But even recycled plastic may end up in a landfill.



## Why?

Recycling materials instead of discarding them has always been practiced at some level. Today, the world's resources are in danger of being exhausted, while consumption of these resources has continued to increase at an alarming rate. Increased consumption means increased waste. Every American discards an average of 5 pounds of material per day. As a nation we discard almost 250 tons of solid waste annually.

The responsibility of the consumer does not end when the trash can is emptied. He cannot merely "throw it away" for there is no "away." He is responsible for the problems of solid waste disposal and can contribute to the solution of that problem.

One way to prolong our resources is by recycling. After reducing our discard to a minimum by reuse of materials, we should recycle what we do discard. Why recycle...

### Recycling Conserves Energy

Recycling household discard helps conserve energy. For example, one ton of aluminum from ore requires 16,000 kilowatt-hours of electricity while one ton of aluminum from recycled metal only requires 187 kwh. Recycling of other house-hold discards such as paper, cans and glass all contribute to energy conservation.

### Recycling Saves Natural Resources

The possibility of today's landfills being tomorrow's metal mines is no longer laughable. Ore deposits throughout the world are being rapidly depleted. Much of this nation's metal ore needs are supplied by foreign countries. It is obvious that continual reuse and recycling will delay the depletion of existing resources and decrease our dependence on imports.

We can also preserve the quality of our environment by practicing recycling. It is often said that recycling one ton of paper saves 17 trees. Many industries producing products from recycled materials cause less air and water pollution than industries producing equivalent products from raw materials.

### Recycling Helps Solve the Solid Waste Volume Problem

Much of the solid waste generated each year ends up in landfills. This causes many problems, the most serious of which is leachate. Leachate is formed when water percolates through waste, picking up contaminants. This eventually pollutes surrounding land and water for many years. Landfill space is rapidly filling up and adequate replacements are difficult to find. While recycling will not eliminate the use of landfills, it does

divert the material from landfills resulting in longer use of materials which are not recyclable.

Recycling is not a cure-all for solid waste problems. There are many and various ways to conserve energy, save resources, and help solve the solid waste volume problem. Recycling is only one step. But it is a significant one which we should all engage in, for we only have one Earth.

## What?

**Glass** It is best to reuse glass containers as much as possible. Canning, storing and decorative uses are all possible reuses of glass containers. Various beverages are sold in returnable containers and, when recycled, contribute to energy and resource conservation.

Glass for recycling should be washed and all metal caps and rings removed to be recycled with metals. Glass which is recycled is broken down into cullet which is melted and used in making new bottles and jars.

**Paper** For recycling purposes paper is classified into various grades.

### Newsprint

Any newspaper which is not bound by a glued edge is recyclable newsprint. Newsprint is often the largest part of waste from a household and is the easiest to recycle. It merely needs to be stacked and tied both ways in manageable bundles. Recycled newsprint is used for a wide variety of purposes such as insulation, packing materials, fiber pipes, roofing materials and newspaper.










### Corrugated Cardboard

This has two layers of heavy cardboard with a ribbed section in between and is commonly used for heavy-duty cartons. Plastic coated or tar-lined

## PLASTICS IDENTIFICATION

One of the projects that we suggest your students take part in involves collecting various types of plastic products. The Society of the Plastics Industry has developed a resin-coding system to help separate plastic resins for recycling. Plastics are now stamped with the numbers one through seven. Numbers one and two are frequently recycled; the other, higher, numbers are not. Perhaps you have already noticed the arrows-chasing-arrows recycling emblem with a number in the middle and capital letters underneath. The letters are abbreviations for the name of each resin.

NUMBER	NAME	ABBREVIATION	EXAMPLES
	Polyethylene terephthalate	PET, PETE	soft-drink bottles
Frequently recycled			$\left[ \begin{array}{c} \text{O} \\ \parallel \\ \text{---C---} \end{array} \text{---} \begin{array}{c} \text{C}_6\text{H}_4 \\ \text{---} \end{array} \text{---} \begin{array}{c} \text{C---} \\ \parallel \\ \text{O} \end{array} \text{---OCH}_2\text{CH}_2\text{O---} \right]_n$
	High-density polyethylene	HDPE	milk & detergent jugs
Frequently recycled			$\left[ \begin{array}{cc} \text{H} & \text{H} \\   &   \\ \text{---C} & \text{---C---} \\   &   \\ \text{H} & \text{H} \end{array} \right]_n$
	Polyvinyl chloride	PV, V	shampoos
Rarely recycled--burning produces toxic gases			$\left[ \begin{array}{cc} \text{H} & \text{H} \\   &   \\ \text{---C} & \text{---C---} \\   &   \\ \text{H} & \text{Cl} \end{array} \right]_n$
	Low-density polyethylene	LDPE	plastic film & wrap
Rarely recycled			$\left[ \begin{array}{cc} \text{H} & \text{H} \\   &   \\ \text{---C} & \text{---C---} \\   &   \\ \text{H} & \text{H} \end{array} \right]_n$
	Polypropylene	PP	food lids, containers
Rarely recycled			$\left[ \begin{array}{cc} \text{H} & \text{H} \\   &   \\ \text{---C} & \text{---C---} \\   &   \\ \text{H} & \text{CH}_3 \end{array} \right]_n$
	Polystyrene	PS	food containers, foam burger boxes, hot drink cups, plates
Occasionally recycled from schools, cafeterias, restaurants			$\left[ \begin{array}{cc} \text{H} & \text{H} \\   &   \\ \text{---C} & \text{---C---} \\   &   \\ \text{H} & \text{C}_6\text{H}_5 \end{array} \right]_n$
	Mixed resins	---	all other resins
Rarely recycled			