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ABSTRACT

This guide, designed for both students and adults, is intended for individuals who feel they might be interested in establishing a recycling depot. The guide includes such pertinent information as deciding how to set up a depot, markets and transportation, preparation of materials, where to place the depot and when to operate it, publicity and education, types of containers and special equipment needed, how to get extra help, legal requirements and recycling, the keys to recycling, and how to go about closing down a recycling depot. Also included in this guide is a Recycling Handbook. Each page of this handbook describes one type of recyclable material such as glass, "tin cans," aluminum, newspapers, magazines, cardboard and ledger paper, motor oil, car bodies, and plastics. After a description of each item, the industrial processes used to recycle it and the importance of recycling the item are clarified. A presentation of the politics of recycling concludes this handbook. (BT)

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Portland, OR 97209
RECYCLING SWITCHBOARD: 229-5555

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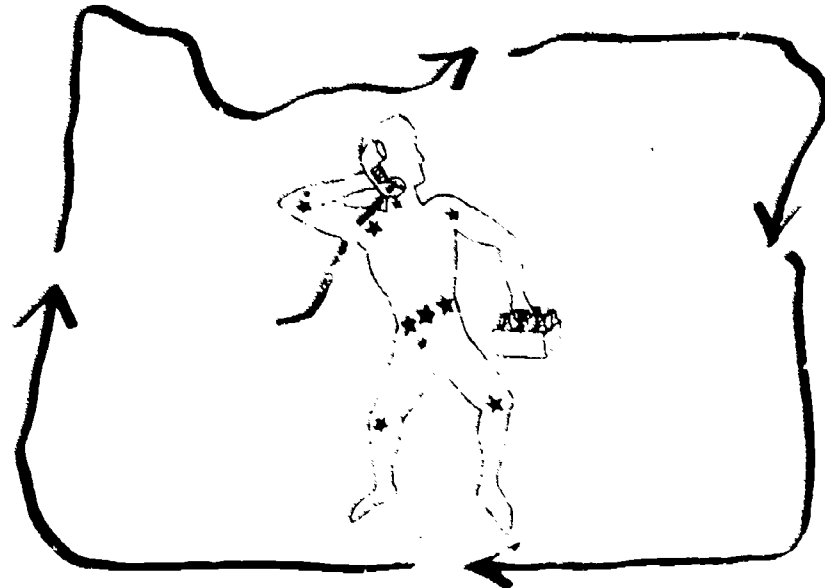
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A GUIDE TO RUNNING A RECYCLING PROJECT



Prepared by O.R.I.O.N.
Oregon Recycling Information and
Organizing Network,
an educational project of the
Oregon Environmental Council
2637 S.W. Water Avenue
Portland, Oregon 97201
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INTRODUCTION

Why should we--Americans--Oregonians--recycle? The phrase "the richest nation in the world" has been used to the point where we now ask "why?" and "so what?" We import goods, use them, throw them away. It never occurred to our predecessors to conserve for the day when we would run low on resources or low on dump sites; now we realize this threat. Recycling and reuse are practices which must become second nature to us, replacing our one-time-use habits which waste both energy and material resources.

In this sense, a recycling depot--a middle-man position between the consumer and recycling industries--is a community service and an educational tool. If the depot is convenient and well-run, it will save the community money and resources now (garbage and grocery bills) and in the future (resource supply). Recycling is an educational experience for each participant in their own resource recovery, aiming to change peoples' way of thinking about household by-products from "waste" to "reusable resources."

You may find this booklet negative in tone. This is not to discourage you, but to warn you of problems to avoid, and to encourage the development of good, stable recycling centers and markets.

DECIDING TO SET UP A DEPOT

If you think you might want to set up a recycling depot, you should decide whether the project is to be a service first and money-making project second, or vice versa. Recycling is a hard way to make money and often will end up without really dedicated recyclers, thus bogging down when markets are slow. A recycling center can become a large-scale operation, often requiring heavy equipment, ample space, and trucks. Don't do it alone if possible and don't hesitate to ask for donations of time, equipment, advertising space, and so on. Accept the recycling project for what it is: an honorable and important undertaking, and one which succeeds because of people who are willing to look beyond their garbage cans and into the future.

Many recycling depots get started as club projects or as non-profit corporations. Money can be made for clubs when you have donated trucks and labor. Non-profit corporation status allows you to pay for wages and other services, but not to pay for corporation officers, stock, or dividends. They are tax exempt and sometimes tax deductible.

Commit your project to a time period, so that you will not give up and quit because of problems in your first month of operation.

The success of the various successful groups suggests that you start with a small market, e.g., glass. Then expand to other materials as you get on. Glass usually brings in the most money per ton of scrap. The all-purpose or full-line depot is likely to be the most expensive for your labor as a glass depot, but the most profitable. All recyclables is a real public service, but it is more expensive for people using it than a limited service. If you know of any such depot in Portland, "many people" would like to know how to bring everything to one place. The depot that is so handy to home makes the difference between different kinds of depots to see what level of service might help you decide.

MARKETS AND MARKETING

After you have decided, with, deciding what material(s) you want to collect, you should check into marketing if your aim is to make money. An alternative is to donate your collection to another group or depot which would then have the task of marketing it. Some companies (especially paper companies) will accept used containers and/or transportation.

Marketing is a part of your business; the following is a list of places to check to the Recycling Switchboard as of February 19, 1974. Before making any decisions, however, check with the depot as to hours they will accept materials, quantity, quality, etc., and tell them if your material is clean and well-prepared, you may get a higher price.

Unless otherwise noted, addresses are in Portland.

GLASS:

Owens-Illinois Glass Co., 5535 N.E. 101st, 254-7331.
All container glass.

United Glass, 331-142 S.E. Morrison, 235-4214.
Gallon and half-gallon containers unbroken.

METALS:

Alaska Junk Co., 2750 S.W. Moody, 224-9900.
Aluminum (no cans), auto scrap (all tin, glass, cloth removed), non-ferrous metals.

American Can Co., Industrial Way, Salem.
Tin cans.

C & J Steel, 2224 N.W. 21st, 227-2224.
Clean steel scrap, at least 1/16" thick.

Calbag Metals, 2495 N.W. Nicolai, 226-3441.
Aluminum and other non-ferrous scrap, car batteries, radiators.

METALS (cont'd):

Continental Can Co., 10200 N. Lombard, 286-4421.
Steel ("tin") and bimetal (steel sides, aluminum top)
cans. Pays only non-profit groups.

Dell's Tires & Batteries, 7500 N.E. Killingsworth, 254-
6551. Car batteries. (You pay to dispose of tires.)

Eugene Salvage Yard, Eugene.
Scrap metals.

National Can Co., 2601 N.W. Lower River Road, Vancouver,
Portland telephone number: 285-7729.
Steel ("tin") cans. Pays only non-profit groups.

Reynolds Aluminum, on Sundial Rd. near Troutdale Airport,
Troutdale, 665-9171.
All types of aluminum, but cans should be kept separate.

Schnitzer Industries, 4200 N.W. Front, 224-9900.
Non-ferrous scrap metal, clean auto bodies, as-is or clean
metal appliances.

PAPER:

Arnel's Inc., 2330 S.E. Harney, 236-8540.
Clean newspaper.

Astoria: Harold Campbell, 325-4622.
Corrugated, high grades.

Baker Salvage, Albany.
Cardboard.

Bird & Son, 6350 N.W. Front, 222-1300.
Bundled newspaper (may be wet), corrugated cardboard.

Clayton Ward, 907 Front St. N.E., Salem.
Various papers.

Consolidated Fibers, 1700 N. Columbia Blvd., 285-0458.
Newspaper, IBM output, cardboard, high quality office paper.

Corvallis Disposal Co., Corvallis, 752-3496.
Corrugated cardboard.

Independent Paper Stock, 1315 N.W. Overton, 227-2811.
Newspaper, scrap paper (glossy, cereal boxes, etc.), mag-
azines, all cardboard, no wet strength.

Malarkey Roofing, 3131 N. Columbia Blvd., 285-8331.
Newspaper.

McGraw-Edison, Corvallis.
Newspaper.

Medford: Gene Kezer (near dump), 664-3732.
Corrugated.

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[Faint, mostly illegible text, possibly a letter or report body]

...to be... materials, ...loading docks... will... and... (indoors)...

You... to... But... mak-...

...is a... depot, ...of each month... with at... may... might... This can also... You can... for example, have it... for several... The store will usually hold you... hauls the van away when...

...help when you run a... advantage of not having... eye-sore of the 24-hour depot, this... works well in home, school,...

If you live in an area where people take their own garbage to the dump, you might set up a depot near the dump.

...advantages to this system. You are essentially open only the hours you are picking up. You can

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HOW TO HANDLE COMMON RECYCLABLES

Material, what it is	approximate market value	approximate net weight	How to prepare	safety considerations
<p>Glass: any container (no plate or Pyrex glass)</p>	\$20/ton	<p>A 55-gal barrel full weighs: 100# uncrushed 400# hand broken 540-700# by glass crusher.</p> <p>A 5-gal paint can full weighs: 10-50#.</p>	<p>Remove metal caps, rings. Rinse out containers. Sort by color: clear, green, brown. May be broken or whole. Paper labels may be left on.</p>	<p>Use caution in breaking glass. Care in lifting heavy barrels. Food particles cause odor, nuisance.</p>
<p>Tin cans: steel cans ("tin") or bimetal cans (steel + aluminum). Sort out 5¢ Oregon deposit cans.</p>	\$10-\$20/ton only to non-profit groups at present.	<p>55-gal barrel holds 160#.</p> <p>44" x 24" x 24" holds 700#.</p>	<p>Clean. Remove paper labels. Crush (may be done by removing only label on can).</p>	<p>Watch for sharp edges. Be careful in lifting heavy barrels. Food particles cause odor, nuisance.</p>
<p>Aluminum: keep cans separate from other aluminum. Sort out 5¢ Oregon deposit cans.</p>	\$200/ton	<p>Handled in large plastic bags holding 35#. 55-gal barrel holds 35#.</p>	<p>Clean. Crush.</p>	<p>Food particles cause odor, nuisance.</p>
<p>Newspaper: newsprint. No bound books, not crumpled.</p>	\$3-\$17/ton	<p>1' stack tightly bundled weighs 35#. Van loaded 39x7x6' holds 39,000 - 44,000#. 12x6x4' truck bed full weighs 3 tons.</p>	<p>Bundle with twine or put in large grocery sacks.</p>	<p>Cut off in lifting heavy containers.</p>

HOW TO HANDLE COMMON RECYCLABLES

Material, what it is	approximate market value	approximate net weight	how to prepare	safety considerations
Mixed scrap paper: may include office paper, chipboard, junk mail, envelopes, magazines*, phone books*, kraft paper*. No carbon paper, newspaper, staples, wax or plastic coating.	\$5/ton	5x5x6' bin weighs 1000#. 12x6x7' truck bed full weighs 2 tons.	In any container.	Caution in lifting heavy containers.
Magazines*: no catalogs or phone books*.	\$5/ton		bundle.	Caution in lifting heavy containers.
Kraft paper: brown paper (such as grocery sacks, wrapping paper) and corrugated cardboard.	\$5-\$17/ton	2x2' bin full weighs 1000#. 12x7' truck bed full of unknotted corrugated = 2000#.	Knives, shears and rollers. Some corrugated require machine baling.	Caution in lifting heavy containers.
High quality office paper: may include mixed typing, notebook, binder, mimeo, ditto paper, envelopes. No wax or plastic coating, carbons, cellophane, glossy magazine paper, newspaper.	\$25-\$40/ton	12x7' truck bed full weighs 2 tons.	Make arrangements with buyer.	Caution in lifting heavy containers.
IBM cards and printout paper.	\$25-\$75/ton		Make arrangements with buyer.	Caution in lifting heavy containers.

* Some companies ask that magazines, kraft paper, phone books be separate, and others will accept these papers combined as mixed scrap. So check with the buyer for their specifications.

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...different uses by

...throw away two million pounds of
...this tremendous waste of our labor and
...rears money away. Call the
...and find out how you can
..."

...prefer to read
...rather play a taped recording.
...taped, videotaped, or picture
...are 10, 20, 30, or 60
...broadcast free of charge.

...with a school, infor-
...with the students along with
...to work on publicity, leaf-
...site.

...

...the following sizes
...transport materials:

...steel drums (fiber barrels
...uses).

...cardboard boxes, or wooden

...Reynolds Aluminum will dump the
...sack if you take them there in
..."

...covered wooden drop box.

...weighs anywhere from 15 to 90
...about 5 pounds.

...steel drums can be obtained free or for a small
...depots or companies which
...Suggestions:

...small charge.

...free when available.

...chemical companies, janitorial companies,
...construction companies.

...gallon paint cans can be obtained from commercial painters.

...bakeries (shipping clerk),
...bakery thrift stores, chemical companies.

...larger recycling operations may want to go to roll-on
...roll-off containers that sit at the depot until full, then roll
...onto the transporting truck.

Oregon Recyclers is trying to get a 4x4x8' tall hand-built container into common use for storing and transporting tin cans. It is made from 1/2" exterior plywood, supported by steel bands. The boxes are built with a trap door at the bottom of one side, to let the material out. They can hold 700-1600 lbs of cans. Contact Eco-Alliance or E.R.I.N.G. for more information.

SPECIAL EQUIPMENT FOR THE DEPOT

Following are suggested tools that you will need in handling different types of recyclables.

General	first aid kit brooms, dustpans, gloves handtruck for moving full barrels recycling information handouts pallets and forklifts for moving large amounts of material, if necessary pick-up truck or larger vehicle for transporting
Glass	for safe glass breaking, a wooden barrel cover with hole in the center. This works like a butter churn, with a sledge hammer. nippers or hook-type can opener to remove metal rings from bottle necks long-handled sledges to crush glass and cans safety goggles (from high school science teachers?) gloves
Cans	can openers long-handled sledges to crush cans and glass
Newspaper	twine and scissors for bundling newspaper

EXTRA HELP

Your appeals through public service announcements and neighborhood canvassing may have brought in volunteers.

Local Boy Scout troops or similar organizations might work on a service project which would serve to spread the word of your collection to surrounding school attendance areas. The experience of one Portland depot is: "One of our avid supporters is a 5th and 6th grade Camp Fire Girls leader. Her group decided to put collection boxes in each of our (grade) school rooms, educate the students and teachers as to what was "scrap paper" and once every two weeks the girls and their mothers gathered all the scrap and took it directly for sale or gave it to our collection."

Chambers of Commerce, Kiwanis, and other local service clubs might donate space and labor.

LEGAL REQUIREMENTS AND RECYCLING

In starting a recycling depot certain legal considerations should be taken, just like with any other business. Recycling depots may fall under regulations covering solid waste management. Before you start to operate a depot you should check with local officials to see:

1. if you need a license and/or zoning variance to run a depot.
2. if you are in compliance with fire, safety, health, and nuisance abatement ordinances.
3. if you pick up materials, are you infringing on a collection franchise? However, you should be able to reach an agreement with your local collector on this point.

Do not overlook these simple legal requirements. Many a recycler has had his depot closed down because he failed to attempt to comply with local ordinances.

On the other hand, don't be discouraged with the seemingly unending requirements. Many types of organizations--especially civic, nonprofit groups--are exempt from some requirements, and a little investigation will often prove that many others don't apply to your special case.

Setting up a depot in a private home is usually no problem if the site does not become a public nuisance. Setting up in public places (e.g. store parking lot) outside a city's limits usually presents no problem either. You might be required to have a metal rather than wooden building if storing newspaper inside a city's limits. There may also be ordinances regulating your use of signs, etc., which you should check.

If you are setting up in an abandoned gas station, for instance, and have to get a zoning permit, your fate depends on the local planning commission and public support. Your operation might be classed as a junk and salvage yard which would prevent you from moving into a residential neighborhood. This matter has come up in Portland, and our arguments in favor of having depots IN residential areas have been:

1. The recycling center is unlike a junk or salvage yard in several ways:
 - a. it is a public service, not a retail or wholesale business.
 - b. it is a place through which recyclable materials move, where they remain long enough to be sorted for quality and occasionally bundled or crushed.
 - c. the "treating, storing, and processing" of materials is minimal compared to that done by a junkyard, or some other similar operation such as the waste paper broker or the glass manufacturer which buys materials collected and sorted by the recycling center.
2. A recycling center, because it is a community service,

last year... barrels and as much else as he can get into... they can bring their... early, as they are going to be... and so we nearly always have... barrels on collection day.

...WST be done, and it is not a... money-raising project or not... but the important point is... as possible to encourage recycling... established by householders, then worry later about... our view that unless you have proper... and handling equipment, the hauling and thus the... with the tremendous effort.

...materials being prepared properly... than the best prepared goods last year to begin... especially the cans were a headache. Slowly we would... staff, for we were there to catch each... on the spot as to how to... we asked the person to stay there right... clean up his materials. Repeated offenders were... Some got mad and probably were lost... but it is my feeling that we are not going... and a month garbage dump, as so many 24-hour... Most of the people were quite willing to improve... and we printed and handed out several times... to stay long enough to... and have plenty of twine and scissors there.

...quite as eye-opening as being a volunteer at... to ring home the huge problem we have in the... to see what tremendous amount... in other words purchased by... but not being reused or returned.

HELPING THE RECYCLING PROJECT

Some thoughtful things you might do:

- * Tell ORION and the Recycling Switchboard.
- * Try to find some group to take over.
- * Tell people at the depot site where the nearest depot is, leave a sign for pick-up service, give the Recycling Switchboard phone number or number of another pick-up project.
- * Remember that people come to depend on you. Expect things to be left long after the project ends and check the place periodically.

YOUR FURTHER QUESTIONS MAY BE ANSWERED BY:

Portland Recycling Team
1207 S.W. Montgomery
Portland, Oregon 97201
228-6760

Eco-Alliance Recycling
c/o Memorial Union
Oregon State University
Corvallis, Oregon 97331
754-2101

B.R.I.N.G. Recycling, Inc.
P.O. Box 885
Eugene, Oregon
746-3023

Oregon Recycling Information & Organizing Network (ORION)
c/o Oregon Environmental Council
2637 S.W. Water Ave.
Portland, Oregon 97201
222-3952

ABOUT ORION:

Oregon Recycling Information and Organizing Network is a federally funded (Office of Environmental Education, Department of Health, Education, and Welfare) educational project of the Oregon Environmental Council through June of 1973. We are hoping for further funding so that we can continue to operate the Recycling Switchboard; spread information about recycling to government, industry, and the public; and to try to get recycling incorporated into the American way of life.

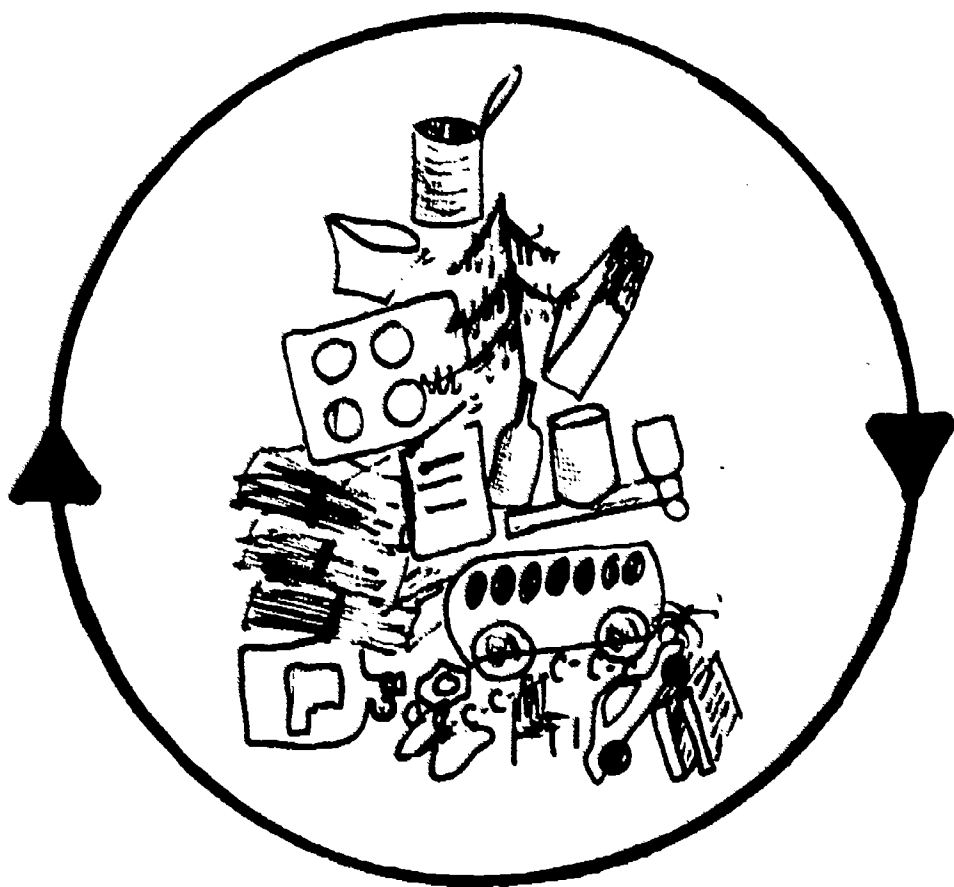
Our resources are available to anyone who needs them. Our publications include the "ORION Bulletin," a bi-monthly newsletter about recycling which concerns mainly the Portland area. In the future we hope to be able to serve the rest of the state in as great detail as we serve the Portland area now.

Other printed materials available:

- "There's No Such Thing as Garbage" 1 page
- "Recycling Handbook" 16 pages
- "RECYCLE! Some recycling projects" 1 page (updated periodically)

* Please send your comments on this booklet to ORION at the *
* above address. *

recycling handbook



Prepared by O.R.I.O.N.
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an educational project of the
Oregon Environmental Council
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Portland, Oregon 97201
Illustrations by Poo Studios



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Our lives are everywhere shaped by the circle. The invention of the wheel, the voyages of Columbus and discoveries of Galileo, the motions of the heavenly bodies and minute atoms, our calendars and clocks, electricity and television, are all rooted in the cyclical nature of time and space.

Today we begin to understand what we could have known all along, that the Earth has always recycled. Everything alive today, including ourselves, has been built by and from the things that have lived before us. In this system there is no waste, no trash, no discards.

Recycling is not a new idea; instead it is the oldest idea which at last we are bringing to our industry and technology. If the world were flat and resources endless, we could afford to throw our trash off the edge. But the world is round and resources limited.



The project presented or reported herein was performed pursuant to a Grant from the U.S. Office of Education, Department of Health, Education, and Welfare. However, the opinions expressed herein do not necessarily reflect the position or policy of the U.S. Office of Education, and no official endorsement by the U.S. Office of Education should be inferred.

INFORMATION OFFICE
Department of Environmental Quality
1234 S. W. Benson, Room 431
Portland, OR 97205

RECYCLING SWITCHBOARD: 229-5555

Each page in this booklet describes one kind of recyclable (in most cases) material. You will find a description of the item, what processes are used by industry to recycle it, and why it is important to recycle the item.

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RECYCLING SWITCHBOARD 222-3952
for the addresses of nearby recycling depots,
drives, drop boxes, and industries.

Additional copies of "Recycling Handbook" are available. For those who are able, we would appreciate a donation of up to 8¢ per booklet, which is our preparation cost, plus the cost of shipping them to you.

Items may be reprinted without permission;
credit would be appreciated.

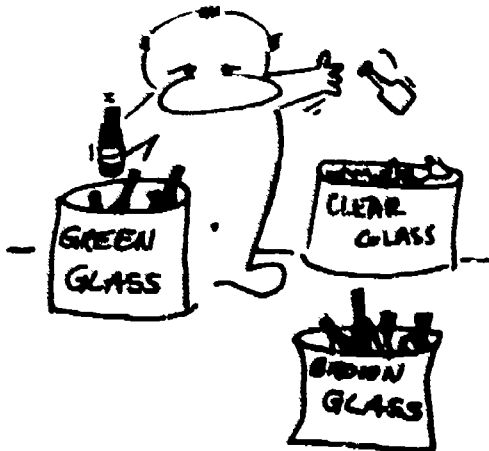
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glass

WHAT: Any glass container--with all metal caps and rings removed (the metal melts into the glass making it unusable).

HOW IS GLASS RECYCLED? Reusable bottles are returned to the bottler--there, labels are removed, the glass is sterilized, and the bottles are re-filled. At Owens-Illinois, non-reusable containers are crushed, melted in large, very hot furnaces, and molded into a variety of new bottles and jars.

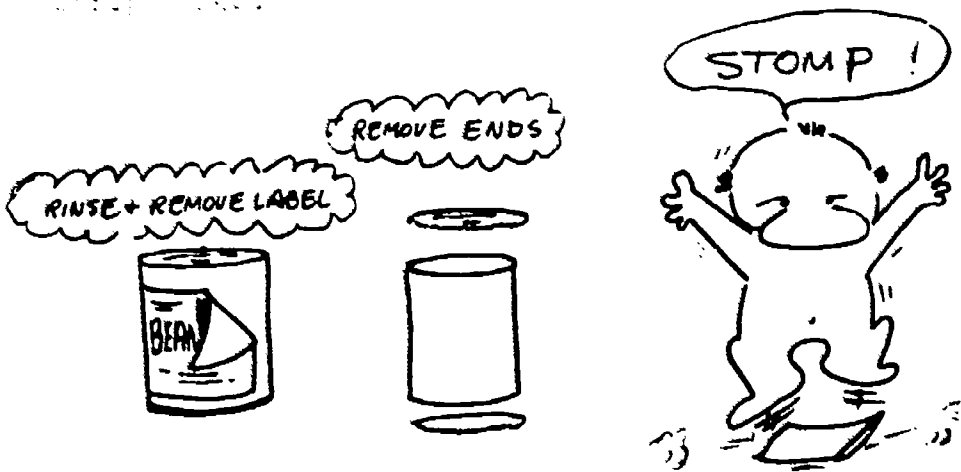
IS GLASS RECYCLING EFFECTIVE? Returnable, reusable bottles, being heavier and more sturdy than non-reusables, can be filled up to 40 times before they reach a glass recycling center or are discarded. Owens-Illinois in Portland produces 10,000 tons of glass containers each month. Thus, each Owens-Illinois bottle currently is composed of an average of 5% recycled glass; up to 25% recycled glass may be used in new containers at the Owens-Illinois plant. The sand for glass is mined in Ione, California.



tin cans

WHAT: There are two varieties: The typical food can is steel with tin plating and an enamel coating; it has a welded or soldered side seam and ends which can be removed. The bi-metal can, often used for soft drinks, has steel, seamed sides but indented, non-removable aluminum ends. Both types of cans are recycled as "tin cans."

The typical food can is made of steel. A purely steel can is a good thing for steel recovery--the cans are the same metal, from start to finish. In the past, more than a million cans were shredded and used in a process for making low grade steel for electric pipes. After use in this process, the cans are then discarded as fill in steel plants.



IS CAN RECYCLING EFFECTIVE? The cynics among us consider can recycling as it is most commonly practiced to be at best a publicity stunt of the can industry and at worst encouragement of bad mining practices. The scarce resource in cans is the tin (40% of the tin used in the U.S. goes into cans) and little is recovered for recycling. We encourage you to save and recycle tin cans. At the same time, pressure the can industry to genuinely recycle their product by choosing other containers over cans whenever you have an alternative.

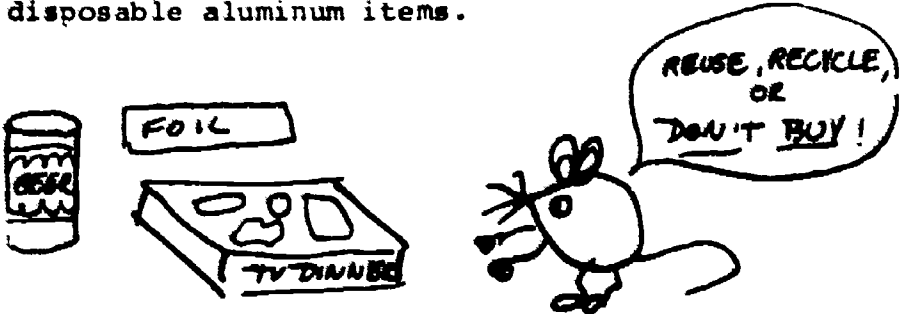
aluminum

WHAT: All-aluminum cans are molded, without side seams. They are soft with a rounded base and indented top. Any other all-aluminum items, such as TV dinner and foil pie plates, foil, and lawn furniture are also recyclable. Permanent-use aluminum (such as lawn furniture, molding, etc.) should be kept separate from cans and foils because they are composed of a different alloy.



HOW IS ALUMINUM RECYCLED? Aluminum is easily recycled by melting down the article and re-molding.

WHY IS RECYCLING ALUMINUM SO IMPORTANT? Although aluminum is made from bauxite, a non-renewable resource, it is aluminum's demand on energy production that makes recycling it so vital. The conversion of 4 tons of bauxite into 1 ton of aluminum uses 16,000 kilowatt-hours of electricity. Only 17% of the energy is required to produce aluminum from the recycled metal. Here in the Pacific Northwest, where electricity is cheap, aluminum producers use 40% of the power sold by Bonneville Power Administration. It is said that one aluminum plant uses the same amount of electricity in a year as does the entire city of Portland. ORION recommends that you avoid buying disposable aluminum items.



newspaper

WHAT: Any newsprint, but no phone books or other bound newsprint, no crumpled paper.

How to Recycle Newsprint: There are many ways to recycle newsprint--but there are few which are as easy as recycling newsprint. Newsprint is a highly recyclable material, and it is recycled into a wide variety of products, including newspapers, books, and many other products. Recycling newsprint is a simple process, and it is one of the most effective ways to reduce the amount of waste that is sent to landfills.

WHAT IS THE ENVIRONMENTAL IMPACT OF RECYCLING NEWSPAPER? Newspaper is often the large part of waste paper from an average household. The Oregonian and Oregon Journal alone consume about 1,156 tons of newsprint every week; in all of Oregon 1,650 tons of newsprint per week is consumed. In Portland there are at least seven markets for newspaper, but several of these markets buy only 7 or 8 tons per day. The demand for used newspaper fluctuates, the price varying from \$4 to \$14 per ton. If recycling can establish a large and stable source of old newspaper, a newsprint recycling plant could survive in this area.



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magazines

WHAT: Do not include cellophane, newsprint, wax- or plastic-coated paper.



HOW ARE MAGAZINES RECYCLED? The first way to recycle magazines is to share them--with neighbors, friends, nursing home and hospital patients, schools, waiting rooms. Since magazine paper usually contains coatings and fillers to make it slick and easy to read and because magazines are bulky, recycling presents problems. However, in Oregon, magazines are sold for making high quality paper, molded paper containers (egg cartons, for example), chipboard, and roofing materials.

WHAT IS THE PROSPECT FOR MAGAZINE RECYCLING? The market is just opening and in Portland at least two companies accept the material. Although only a few magazines use recycled paper in their printing, more and more are considering it--encourage them.

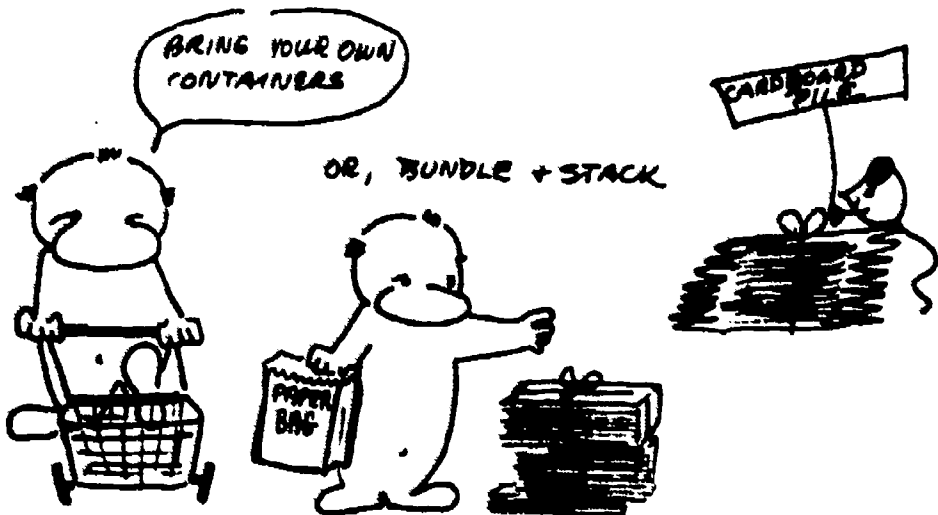
kraft paper & cardboard

WHAT: Brown paper (such as grocery sacks, wrapping paper) and corrugated cardboard (this has two layers of heavy cardboard with a ribbed section in between and is common for heavy cartons).

HOW IS KRAFT PAPER RECYCLED? Unlike most other waste papers, kraft paper and cardboard is recycled back into paper products of the same material.

HOW CAN RECYCLING KRAFT PAPER AND CARDBOARD AFFECT THE ENVIRONMENT? Kraft papers make up a large percentage of the paper produced for disposable packaging in the United States, but little is currently recycled. Their weight and bulk make them a solid waste problem as well. We encourage you to begin recycling kraft papers because they are locally recycled and are simple to separate from other papers.

CHIPBOARD (PAPERBOARD) is another kind of cardboard which is also easy to recycle back into its original form. It is the kind of thin, gray-colored cardboard used for paper rolls, food boxes, tablet backings, and many common boxes. Be sure to keep it separate from kraft paper as it is of a lower grade. Tear it down and bundle, box or bag it. Along with kraft papers, chipboard makes up more than 50% of the paper produced in the U.S.



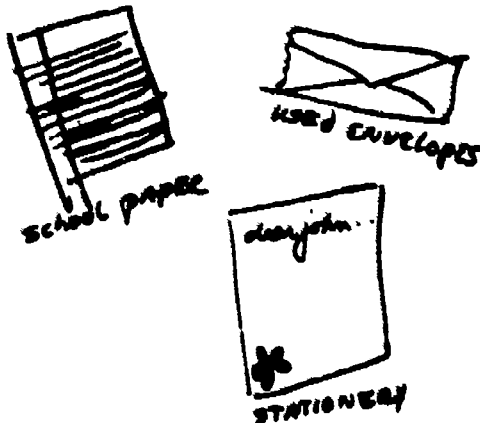
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ledger paper

WHAT: Typing, mimeo, notebook or binder, ditto and writing paper. Do not include plastic or wax coating, carbons, cellophane, newspaper or glossy magazine paper. Paper must be bleachable--a few drops of laundry bleach should whiten the paper; if the paper yellows upon application of bleach, it is not acceptable. Note that this does not include...

HOW IS LEDGER PAPER RECYCLED? It is first graded, sorted, and baled by the paper broker. At the recycling plant, it is then shredded, re-pulped, and de-inked (ink, fillers, dyes, etc., are chemically removed). The waste paper may then be introduced into the normal paper-making processes, for the production of bond, tissues, wrapping paper, and fine paper. Ledger of mixed grades is used for roofing materials and chipboard.

HOW CAN RECYCLING LEDGER PAPER AFFECT THE ENVIRONMENT? Paper is read once, then thrown away. A tree can be appreciated for hundreds of years. Waste paper is a weighty garbage problem--in the Portland metropolitan area alone, we dump 900 tons of paper every day which, if recycled, would be worth from \$2 to \$70 per ton! To increase the demand for waste ledger paper, buy recycled paper and to increase the supply of recycled paper, collect and sort the used paper in your home and office.

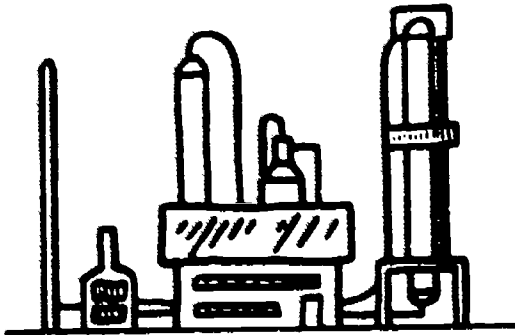


motor oil

WHAT: Drained oil, in any container or barrel.

HOW IS MOTOR OIL RECYCLED? Impurities accumulating in motor oil are moisture, dirt, gasolines, solvent, sludge; these are removed in processes involving filtering, heat, and acid. The remaining oils are then distilled and separated.

Because it must be labeled "re-refined," there is a certain public aversion to buying used oil. However, the price is one-half to one-third that of new oil, and it is as good as or better than new oil.



HOW DOES RECYCLING OIL AFFECT THE ENVIRONMENT?
Oil re-refiners perform a dual service to society: (1) the re-use of oil helps relieve the strain on our dwindling oil reserves, and (2) the re-refining of waste oil keeps it from being dumped in the sewers, on the land, or in our rivers.

car bodies

WHAT: This means just the bodies, and in some cases, parts of the body (not car parts); a few scrap metal dealers specify that the bodies must be delivered "stripped down," with all glass, plastic, fabric, rubber removed from the steel.

HOW ARE CAR BODIES RECYCLED? Cars are crushed and shredded, contaminants removed, and then recycled back into steel for reinforcing bars and girders for buildings and bridges. The 1% copper content of a car makes the resulting metal unsuitable for recycling back into car bodies.

WHAT IS THE IMPACT OF RECYCLING CAR BODIES? The greatest environmental impact of sending old cars to the steel refinery is visual--abandoned cars are grim and symbolic reminders of our environmental carelessness. Even now, only the ferrous (iron) metal in cars is being recycled, with the non-ferrous scarcer metals usually discarded (approximately 200 pounds in a 3,000 lb. car). However, note that car radiators, batteries, generators, and many other parts can be salvaged for repair and metal recycling.



plastics

WHAT: Plastics fall into two categories according to their use:

1. Disposable packaging such as plastic bags, bottles, wrapping.
2. Permanent articles such as furniture, roofing, pipe.

The disposable items are our present target for recycling. Common types of both disposable and "permanent" plastics are: polyethylene, propylene, polystyrene, polyvinyl chloride (PVC), teflon, vinyl, acetate, nylon, plexiglass, polyurethane, polyesters.

CAN PLASTICS BE RECYCLED? The only way that plastic disposables can currently be recycled in Oregon is by reusing them--refill containers, use them for arts and crafts projects. Occasionally plastic containers are returnable (gallon milk bottles, for instance).

Plastics are organic (being made from petroleum products), but they don't decompose--at the landfill or in a compost pile--because of their peculiar molecular structure. Many of them burn instead of melt when heated and therefore cannot be molded into new containers. Current Food & Drug Administration regulations do not permit the manufacture of food containers from post-consumer waste.

Efficient incineration or pyrolysis are the most practical methods of disposal at this time, except for polyvinyl chlorides (one of their combustion products--hydrochloric acid--corrodes incinerators). However, we must consider what effects the rapidly growing use of plastics has on our natural resources. The plastics industry in 1967 was growing at a rate of 20% per year, and in the U.S. polyethylene was our most heavily used plastic, followed by polyvinyl chloride. The raw materials for plastics come from petroleum and were once waste products of that industry. But now the future of today's plastics is no more certain than the supply of fossil fuel.

Until the "formidable technical barriers" to plastics recycling are overcome, we would recommend caution in accumulating more plastic packaging than you can re-use yourself.

composting

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The simplest way to compost is to mix organic
garbage and lawn trimmings into a pile in an
unused corner of the yard or garden. Additional
wastes are mixed in as they become available.
This period requires ten to six months for com-
plete decomposition. The pile may be made more
attractive by placing it in a stack bin, barrel,
or other hermetic enclosure, and covering to
prevent vermin. The process may be speeded
up by shredding or grinding the organic mat-
ter and mixing them with lime, fishmeal,
manure, or other sources of available nitrogen.
One should use extreme caution when using a
lawn mower or other power shredder to
grind materials. The powerful whirling blades
can throw objects or inflict a serious injury.
The pile should be turned and mixed every week
or so to ensure even decomposition. One to two
months should be sufficient time. The result-
ing compost can be used as mulch around shrubs
and trees, or worked into the garden to improve
the soil.

A concise booklet explaining domestic composting
in more detail is "Ecology of Compost." It is
available for 10c from The Office of Public Ser-
vice and Continuing Education, State University
of New York, College of Environmental Science &
Forestry, Syracuse, New York 13210

the politics of recycling

At the state level, the Oregon Department of Environmental Quality has been working with the Legislature on the following:

At the state level, the Oregon Department of Environmental Quality has been working with the Legislature on the following: 1. The Bottle Bill, which requires that all beverage containers be recycled. 2. The Solid Waste Act, which requires that all solid waste be recycled or incinerated. 3. The Recycling Act, which requires that all recycling programs be approved by the Department of Environmental Quality.

At the county level, the Oregon Department of Environmental Quality has been working with the Legislature on the following: 1. The Bottle Bill, which requires that all beverage containers be recycled. 2. The Solid Waste Act, which requires that all solid waste be recycled or incinerated. 3. The Recycling Act, which requires that all recycling programs be approved by the Department of Environmental Quality. These bills and the committee are open to the public, and the process is receptive to recycling, but we need your comments and ideas.

At the city and county level, solid waste management plans are being prepared for the approval of the Legislature. In early 1973 public meetings will give you an opportunity to voice your views and concerns about recycling.

City and county governments hold the reins over recycling's future too. Zoning laws, garbage collection franchises, nuisance ordinances, fire and sign codes can affect recycling projects. *Look into local regulations with an eye to how they might affect recycling and work with officials to insure that recyclers are encouraged.

The 1973 Oregon Legislature may consider bills covering such issues as the 1975 closure of Portland's only landfill, challenges to the Bottle Bill, and recycling tax incentives. *Write or call your legislators and ask their views on recycling, voice yours, and follow solid waste legislation.

*Influence public opinion by telling your friends about recycling and distributing ORION literature and posters. Call 222-3952 for more information.

WHAT IS ORION?

ORION (Oregon Recycling Information and Organizing Network) is a federally funded environmental education project of the Oregon Environmental Council. It aims to popularize recycling throughout the state and make recycling easier and more effective for both the householder and the recycling project organizer. We have found that people are eager for information on what, where, and how to recycle their garbage and that they understand recycling's importance as a means of saving valuable resources and of reducing our growing piles of wasted garbage.

ORION functions as a communications center for the recycling movement--

through the Recycling Switchboard, we answer questions from the public about local recycling opportunities

through the ORION Bulletin, we share our information and ideas with organizers of recycling projects

through fact sheets, brochures, radio and TV spots, posters and press releases, we encourage the practice of recycling and spread information about specific recycling issues

through meetings with recycling project organizers, visits to recycling industries, and conferences with solid waste officials, we work to give recycling a greater environmental, political and financial impact in Oregon.

WHAT IS THE OREGON ENVIRONMENTAL COUNCIL?

The OEC is a statewide coalition of people and organizations concerned about the environment. The OEC is an action organization. For example, in the field of solid waste, it (1) designed and lobbied for the Oregon Bottle Bill, (2) has a member on the DEQ's Solid Waste Citizens' Advisory Committee, and (3) is responsible for the Recycling Switchboard and ORION.

The OEC is active in the fields of city planning, wilderness and wildlife preservation, air and water quality, energy sources and consumption, environmental education, and natural resources.

Membership in the OEC is open to individuals, families, and non-profit organizations with an interest in conservation.