

The Harmony Foundation of Canada

Home & Family Guide

Practical Action for the Environment



ROYAL BANK

Message from Robert Bateman

I have a great deal of respect for Ansel Adams. A man of great talent, he made a lasting impression with his striking black-and-white photographs, which earned him a place as one of the world's foremost photographers.

But I respect Adams for another reason, one for which he is not as well known. Adams was not only dedicated to his art; he was also dedicated to the natural world. His reverence for the beauty and mystery of nature is apparent in his work, but it also extended beyond the camera.

You see, Ansel Adams had a vow, a pact with the earth. He promised he would do one thing, each day of his life, to help preserve the planet.

I share Adams' reverence and concern for the natural world, and so I have been inspired by his example. Consciously, over the years, I've altered my habits and lifestyle so that I might tread more gently on the earth.

It's not an overnight achievement, by any means, but by doing things like switching to recycled paper, disposing carefully of my painting supplies, and supporting environmental and wildlife groups, I hope that I am contributing to environmental solutions.


I challenge you to follow Adams' example too. You don't have to be an artist or environmentalist to be inspired to act or to share your appreciation of - and concern for - the natural world. And you don't need to get into "the great outdoors" to know what it's all about and to do something about it. Right in your own home, in almost everything you do, you can begin to make changes.

Whether you've been involved for years or are just starting today, we need everyone working in the campaign to protect the environment. The time has come when the very survival of the planet demands conscientious action and commitment from each and every one of us. And that means you and me.

The ideas in the following pages will provide direction along the way. They will help you to see how your efforts, plus mine, added to the efforts of everyone else who uses this *Guide*, can make a big difference.



Honourary Chairman
The Harmony Foundation of Canada



FOREWORD

The environment affects the quality of life and well-being of all Canadians and there is increasing awareness that more must be done to improve the air we breathe, the water we drink and the land we live on.

For some time now, the Royal Bank has been looking at ways in which we can contribute to a better, healthier environment. We are very pleased to support the Harmony Foundation and its education programs to help Canadians take positive steps to protect the environment.

So that individuals can make their own contributions to environmental solutions, we are proud to sponsor Harmony's *Home & Family Guide*.

I hope you will read this *Guide* and learn from it. The future of our environment depends on the positive action we take now.



Allan R. Taylor
Chairman and
Chief Executive Officer,
The Royal Bank of Canada



Home & Family Guide

Practical Action for the Environment



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The Harmony Foundation
of Canada



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INTRODUCTION

This we know:
the Earth does not
belong to humankind.
Humans belong to the
Earth.

This we know:
all things are con-
nected, like the blood
that unites one family.
All things are con-
nected. Humans did
not weave this web of
life. We are merely one
strand in it. Whatever
we do to the Earth, we
do to ourselves and
every other living
thing on it.

This we know.

Chief Seattle (or Sealth)
Duamish tribe

It's a Friday afternoon in the summer. Or maybe it's winter. You're at home relaxing in your favourite chair with the newspaper. The headline is something about the "greenhouse effect." But what should you do about it? Recycle the newspaper and pick up *Home & Family Guide: Practical Action for the Environment*.

If you don't have a convenient recycling program in your community. Don't panic. Read on...

Our aim in writing this *Guide* is to give clear, practical information on how to tackle environmental issues in your day-to-day life. We want to help you make sense of the problems, and show you how to contribute to the solutions.

Every day we are reminded by our newspapers, radios and televisions that we are harming the earth's environment: acid rain, global warming, Chernobyl, Bhopal, Love Canal, vanishing wildlife, rain forest destruction, toxic waste, the garbage barge. These are human creations and the solutions must and can be ours too!

We don't for a minute believe that the role of government and business in environmental action should be minimized. They must contribute through improved regulations and practices.

But there is no denying that individuals also have a significant role to play. All of us together create a vast environmental effect by the way we live. And all of us together can have a vast influence for the good of the environment – and the good of ourselves, our children, and the rapidly disappearing natural world.

We can start today, right in our homes, using *Home & Family Guide* to incorporate sound environmental practices into everything we do. The real risk to the quality of our lives is in failing to act now.

It's time to translate our environmental concern into action.

Using the Guide is easy

The *Guide* will get you started on your own strategy for environmental action. We designed it so that the first half gives you the background knowledge you need to bring environmental concerns into your daily activities. The second half gives you the practical skills you need.

The first section is divided into four sections – energy, hazardous products, waste and water. We summarize the environmental concerns in these areas and discuss general goals for households and individuals.

The first chapter is about energy. It discusses the topics of using less energy, using renew-

able sources of energy and using less polluting sources of energy. The second chapter on hazardous products covers the use of alternatives to hazardous products and the safe disposal of hazardous waste. Chapter three covers waste reduction by rejecting, re-using, recycling and repairing. In the final chapter of the first part of the book, we emphasize water conservation and protecting water quality. Each chapter includes a references list and some product ideas.

The second section goes through every room in the house giving practical tips, a few product ideas and criteria for choosing products and practices. Chapters on the garage, the lawn and garden and companion animals are also included. The content of each chapter is conveniently summarized in a chart at the beginning. Myths and misconceptions about biodegradable plastics, ozone-friendly products, and other insights, are discussed.

Each chapter in the second section has been divided into four main sub-headings: saving energy, alternatives to hazardous products, reducing waste, and using less water. Other specific tips and helpful hints are also provided.

If you are interested in one particular subject, by all means go to the chapter for that specific issue or room first. In fact, we suggest that you start with the things that are most interesting to you and the easiest for you to apply.

If you are a gardener, your first project may be to start a compost pile to improve your garden and to reduce waste. If you are a parent, you may want to begin by switching to alternative cleaning products and eliminating hazardous products, for the safety of your children as well as the environment. If you are a student, try to take your lunch to school in re-usable containers.

Sources and Contacts and Suggested Reading sections are included at the end of the *Guide*. There is also a **Glossary** for terms that may be unfamiliar or require more technical explanation. If you want to get at a specific topic like "fireplaces," "pesticides," or "diapers," the **Index** will give you the relevant page references.

Speaking up and speaking out

Recently, a major detergent and soap manufacturer started selling pouches for refilling empty bottles, thus significantly cutting down on the waste generated from their products. They made this move in response to public demand and environmental concern.

Lobbying can be a strong tool for environmental change. One person may feel powerless to affect industry and government action on environmental policies. But when many of us speak up, we do have an impact. The example of the refillable pouches is only one of the many new goods and services that are appearing on the market in response to public demand. In the area of environmental issues, public concern has typically run ahead of legislation and

Energy



Hazardous products



Waste reduction



Water conservation



Poison



Flammable



Explosive



Corrosive



Alternatives to hazardous products



corporate policy. It has become our role to ask for better legislation and the enforcement of existing laws in order to encourage industries, municipalities, schools, offices and individuals to accept responsibility for protecting the environment we all share.

And it's as simple as writing a letter or making a telephone call! Remember that positive feedback is just as important as criticism. Suppose your municipality has started a new program to compost leaves in the autumn. You may want to write or call your alderman, offer congratulations and your support for any expansion of municipal composting. Or perhaps you buy an energy-saving light bulb that has been packaged in five layers of plastic. Write and tell the producer that, while you like their product, you are concerned about the packaging. Encourage the company to continue helping solve our shared problems through further improvements to their products and services.

Different levels of government play different roles. Municipal governments make decisions to set up hazardous waste collections, but the provincial government may provide funding and enact the laws under which waste collection is governed. The federal government is responsible for the labelling laws which mark hazardous products. Call or write the office of your Member of Parliament or your provincial representative for help in identifying which level of government is responsible for the issue you are concerned about and also ask them to represent your concerns.

Reference Canada provides information and referral to federal programs and services: check your telephone book. Also make good use of our **Sources and Contacts** section at the end of the book.

Express your preferences and let your needs be known. Get involved in the effort to find and use constructive solutions to environmental problems.

Image or substance? How organizations respond to environmental demands

The race is on for government, businesses and communities to respond to public demands for environmental protection.

Some products and programs provide significant improvements and the initiating organizations should be supported and congratulated.

Unfortunately, not every one is committed to environmental progress, or understands the seriousness of these issues.

As consumers, we need to carefully distinguish between serious efforts and useless or harmful ones. Some well-intentioned attempts will fail because they have not been carefully thought out. The beneficial effects of some products are not only unclear, the effects may actually be harmful – for example, biodegradable plastics or so-called ozone-friendly containers.

And environment-friendly products should be available to everyone for a fair price. We should encourage environmental protection by helping to create a demand for these products. Damaging products and practices should be penalized, not responsible behaviour. And incentives are needed to encourage and allow companies and other organizations to do more.

One new government initiative trying to help is Environment Canada's Environmental Choice Program. Its goal is to identify products, with a three-dove ecosymbol, that cause less environmental damage. Product categories to date include re-refined motor oil, products made with recycled plastic, paper and rubber and low-pollution water-based paint.

Remember, environmental initiatives are more than just new products and services. Communities need to look at waste reduction programs, not waste management plans. Curbside recycling and home and community-wide composting programs need to be part of an overall effort, including business recycling. Household hazardous waste collections need to be organized and expanded and information provided on alternatives to hazardous products.

Environmental protection is important to everyone ... keep yourself informed.

About the products mentioned in the Guide

The Harmony Foundation, The Royal Bank of Canada and the other sponsors, supporters and contributors to this *Guide* do not endorse the products listed in the pages of this book.

Names and addresses of manufacturers and suppliers of products serve as sources of information about a few alternative products that may be helpful in reaching environment-friendly goals. These products are not necessarily favoured over others, but they are listed as examples of the types of products that are available.

We have relied on information provided by manufacturers and encourage you to satisfy yourself before purchasing any product that claims to offer environmental advantages or improvements. Staff members and volunteers use some of the products in their own homes and have provided comments concerning packaging, instructions, ease of use, or other environmental concerns.

The list of products is not meant to be exhaustive. It is impossible to list all items because the marketplace is changing quickly through the initiative of manufacturers and retail stores, public preference and government programs. Consumer choices also play an important role. Our decisions should be well informed and conscious of the need for significant improvements. Make sure that the claims and benefits of any product can be substantiated. (Prices listed in the *Guide* are subject to change by the manufacturers and suppliers; confirm prices at the time of purchase.)

Recycle



What can I do?



*Environmental
Choice*



Air



Energy-saving tips

There are many ways to reduce energy use and its impact on the environment. Here are several areas where reductions are reasonably simple to achieve and which apply throughout your house or apartment.



Reduce energy used for lighting

Lighting accounts for as much as 25% of our home energy consumption. Here are some general hints that apply to all the rooms in your house or apartment.

- Turn off lights when not in use.
- Reduce wattage on bulbs to the minimum required to do the job.
- Replace regular light bulbs with compact fluorescent bulbs. These come with an adaptor to screw into regular sockets and use 70 to 80% less energy than standard bulbs and may last as long as 10 years each. Since the initial cost is fairly high (starting at \$15 for one bulb), you may want to spread the expense over a period of time. These bulbs are designed for continuous long hours of operation which enable their efficiency to offset the initial high cost.



(continued)

Energy



Our favourite things

"Cars that are powerful and lawn mowers to ride on, Taking hot showers and leaving the light on, A fancy new gadget that whistles and sings, These are a few of our favourite things..."

The environmental problem

Our society is infatuated with almost any new gadget that promises to make life simpler and our tasks quicker and easier to accomplish. Take as a case in point the fact that spending by Canadians on microwave ovens, VCRs and computer equipment and supplies tripled between 1982 and 1986. And so much of what we buy demands that we consume more energy. But, how often do we stop to ask ourselves how much of the energy we consume is "essential"? How much is for comfort? How much is wasteful or frivolous? How much is just habit? What damage are we doing by consuming so much energy?

We don't normally ask ourselves these questions, unless faced with a crisis. Typically, incentives to conserve energy rise and fall with price—for example,

when prices rise at the fuel pumps, as they did in the aftermath of the oil price shocks of the middle and late 1970s. Then, many people upgraded home insulation, turned the thermostat down and bought smaller cars. But, when the crisis receded, our appetite for fossil fuels returned to wasteful levels.

Adding up the not-so-hidden environmental costs

The total environmental cost of exploration, production, development, transportation and use of all energy sources is considerable. And it is becoming clearer that using energy more efficiently brings both environmental "savings" and economic rewards.

But, if the energy crisis of earlier years is really over, what's the concern? The real crisis is our use of energy, not its price or availability. On a grand scale, the earth maintains a balance between the sources of carbon dioxide and its capacity to process it. An imbalance, called the "greenhouse effect" or global warming, has resulted.

What's causing this imbalance? Burning fossil

fuel releases carbon dioxide into the atmosphere which holds in the heat reflected from the earth's surface, much like the glass in a greenhouse.

At the very same time that the burning of fossil fuels is increasing, forests are rapidly disappearing. Friends of the Earth reports that carbon dioxide emissions are responsible for at least one-half of all global warming.

And Canadians contribute to this problem in many ways; in fact, to the tune of more than 4000 kilograms (9000 pounds) of carbon dioxide per person a year, second only to the Americans! Although governments and industries must work toward carbon dioxide reductions, individual action is clearly very important.

Our dependence on private auto transportation consumes non-renewable energy resources and contributes significantly to the carbon dioxide added to the atmosphere each year. The Worldwatch Institute reported in *The State of the World 1988* that "...the average American car pumps its own weight in carbon into the atmosphere each year." Canadians, according to Statistics Canada, use more than 2000 litres (440 gallons) of gasoline per person a year even though the fuel efficiency (litres per 100 kilometres) of our cars has been rising. Clearly, we must do better!

To most of us, energy consumption is taken to mean only the energy we use directly to heat and light our homes and operate our cars, lawnmowers and household appliances. Yet we have numerous other opportunities to reduce our energy consumption.

Considerable energy is used in the manufacture and transport of all the products we buy. Air and water pollution are also often by-products of production, but they should not be considered the responsibility of industry alone. Each of us buys manufactured products and our choices influence business decisions on the products that are provided and how seriously the environment is considered in their design and manufacture.

Personal action

• **Use energy more efficiently in our homes for heating, cooling, lighting and appliances.** Energy use at home can be reduced without discomfort or major expense. In fact, most expenses are recovered through savings in fuel bills and in a very short period of time!

Much has been written about energy conservation for the homeowner. For example, the experts tell us that draft-proofing (sealing drafts from doors and windows) is a low-cost, yet effective, way to begin improving energy efficiency and comfort.

• **When buying new lighting – buy fluorescent.**

Health caution: Some studies suggest that artificial lighting inhibits vitamin D production and, during the winter, certain people experience depression (seasonally affected disorder) if they don't get enough natural light. You may want to choose full-spectrum fluorescent bulbs (see *A few product ideas*).

• **Make the light shine on the task or work area – on your desk or kitchen counter – rather than lighting the whole room.**

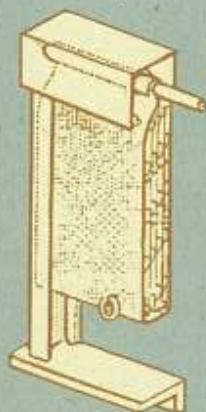


Consider low-energy methods of cooling

- **Exterior shading with awnings and trees will effectively reduce overheating by preventing the sun from penetrating the window glass.**
- **Landscaping with deciduous or broad leaf trees provides shade in summer and lets winter sun shine through.**
- **Shade curtains hung outside balcony doors will effectively block the sun from entering and, thus, reduce the heat.**

(continued)





•Roller blinds or heavy curtains are particularly good on the west and south sides of the house. Close early in the morning to block out solar heat; open blinds and windows in the evening to promote air circulation. (See *A few product ideas.*)

•There's no doubt that air conditioners provide relief from the heat and humidity. But the environmental costs are high — both because of the ozone-destroying chemicals used as coolants and the high energy use. If you do run an air conditioner, make its use more efficient by drawing heavy drapes or using reflective film to reduce the sun's heat entering your home. Service regularly and tell the company you want to ensure that chlorofluorocarbon (CFC) coolants are not vented into the atmosphere but are recaptured and re-used.

Fans provide relief. But remember, they cool you, not the room — so turn them off when you leave the room.



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The details of their advice on such things as upgrading insulation, caulking, window replacement, and much more, can be gleaned from the references cited at the end of this chapter and at the back of the book.

Here are a few goals that can be achieved by a large number of people which will result in considerable energy and dollar savings.

•**Use more energy-efficient modes of transportation.** Use your cars less frequently. Walk and bicycle wherever you can. Then consider public transportation. Try to use your car as a last resort. If you have to use the car, keep it tuned and get into the habit of car pooling.

•**Weigh the energy factor into your purchasing decisions.** Make energy efficiency a top priority when you choose new appliances and machines. Weigh consumer choices carefully based on both cost savings to you and environmental protection.

For example, heating with natural gas creates less air pollution than burning oil and, in many parts of Canada, natural gas is the cheaper fuel. However, to a consumer concerned

equally about cost, energy efficiency and environmental protection, it is better to upgrade home insulation and turn down the thermostat

than to install a new furnace to save money in the short-term.

You can choose to buy a product made in a local factory or store and, thus, lower energy costs for transportation; support a company that has installed energy-saving measures; and carefully choose what products to buy or not to buy.

Consider choosing hand-powered tools rather than electric- or gasoline-powered ones.

Purchase an energy efficient car or switch to an alternative, cleaner burning fuel such as propane.

•**Use renewable energy sources.** In an overall energy strategy, conservation and increased use of alternative sources of energy, such as solar power, make good environmental sense, but the subject is too complex to discuss here. See the **References** section at the end of this chapter for suggested readings on this subject.

Of course, there is one very easy way to use solar energy: Dry your clothes outside on a line (they smell incredibly fresh that way, too).

What more can I do?



It's important that our strategy for personal environmental action includes speaking out for change. To help achieve a 20% reduction in carbon dioxide emissions during the

next 15 years: You can write to encourage the federal government to (1) boost education and research on energy conservation methods; (2) maintain and improve the Energiguide sticker program for appliances; (3) increase energy efficiency and emission standards for appliance and auto manufacturers; and, (4) create incentives for the research and development of renewable energy technologies.

You can write to encourage manufacturers to make energy efficiency a priority for their plant and office operations as well as for the appliances, cars, or electrical products they manufacture.

Lobby both the federal government and national building associations to (1) set higher insulation standards for new homes to include hot water pipe insulation, low-flow shower heads, etc.; (2) increase public awareness of the R-2000 energy-efficient home program.

Write and ask your provincial government to (1) ensure that provincial electrical utilities increase energy conservation as a priority; (2) set energy conservation goals for industry.

Talk to your elected representatives and influence municipalities to (1) expand public transit systems; (2) ensure all future property development is designed to maximize energy requirements (such as, windows oriented to make maximum use of passive

solar energy; appropriate landscaping to reduce solar heat in summer); (3) provide incentives for car-pooling and public transit use.

A few product ideas

Lighting

• **Philips PL and SL lamps:** Fluorescent replacement lights come in a variety of sizes and shapes and range from 5 to 18 watts. The actual light produced ranges from 50 to 75 watts.

• **Circlite 60:** Circular fluorescent bulb with screw-in adapter for lamps or ceiling fixtures; uses 22 watts (brightness of a 60-watt bulb); lasts up to 10 years; re-usable adapter (\$15). Check your local hardware store or write to GE Canada, 165 Dufferin Street, Toronto, Ontario, M6K 1Y9.

This is a heavy bulb; be certain the lighting fixture can hold the extra weight.

EnviroWarning Packaging needs improving. Foam packing inserts could easily be replaced by recycled paper "egg carton" packing.

• **Durotest Canada's Vita-Light™:** Full-spectrum fluorescent light. Available in garden centres, or call 1-800-387-3902.

• **Window Warmers:** Window blinds made with layers of aluminum, fiberglass, cloth or vinyl from department stores. A 102 cm x 188 cm (40" x 74") blind costs

Reduce energy used for heating

• **Turning your furnace thermostat down from 22°C (72°F) to 20°C (68°F) during the day and to 17°C (63°F) at night saves as much as 15% of your energy bill (\$90 on a \$600 fuel bill).**

• **Turning the heat down when everyone leaves in the morning will save even more.** A thermostat with a special timer allows you to wake up to warm temperatures in the morning; decreases the temperature after you have left for work or school, and warms the house again for your return in the evening.

• **Reduce the temperature slowly by a degree a week over a period of four weeks.**

• **Carry out simple draft-proofing measures, such as caulking around windows and doors. Reduces energy consumption by 20%.**

• **Have your heating system cleaned and tuned every year.** Furnace filters trap dust before the heated air is circulated throughout the house. Disposable fiberglass filters can be replaced with pleated fabric filters. These filters need to be replaced twice a year. (See **References** and check the **Yellow Pages** under "Filters - Air, Gas & Oil.")

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Insulation

• To save energy, you can insulate your home with rigid foamboard, glass fibre and cellulose loosefill for walls and attics, and expanded foams for use around window frames, on the basement sillplate, and other hard-to-fill spots.

EnviroWarning It is possible that in trying to save energy, which has long-term environmental benefits, we end up using insulation products that are themselves environmentally damaging. Chlorofluorocarbons (CFCs) used as a foaming agent in insulation contribute to stratospheric ozone depletion. Many foams now use hydrochlorofluorocarbons (HCFCs, referred to as soft CFCs) which, although not known ozone destroyers, are greenhouse gases contributing to global warming in the same manner as carbon dioxide.

• To avoid CFCs or HCFCs, choose glass fibre or cellulose insulation. Cellulose can be sprayed, blown or poured into wall and ceiling cavities.

Reduce your hot water consumption

More than 40% of the water we use in our homes is heated and the amount of energy needed to heat the water is second only to the energy required for space heating. There are several ways to reduce this energy drain.

(continued)

about \$50. For added energy efficiency, construct a valance and "flaps" to seal the edges.

Plans for do-it-yourself Window Warmer insulating roman shades available from Ecology House, 12 Madison Avenue, Toronto, Ontario, M5R 2S1. Plans sold alone or with hardware and insulation. About \$47 for a 102 cm x 188 cm (40" x 74") blind. Does not include decorative fabric.

Insulation

• **Glasclad:** A rigid insulation board made from glass fibre. Fibreglas Canada Inc., 4100 Yonge Street, Toronto, Ontario, M2P 2B6.

• **Fibreglas®:** Pink: Glass fibre batts. Fibreglas Canada Inc., same address as above.

• **Cellulose:** Look for the Environmental Choice logo on products made from 100% recycled paper. Expect these to appear on the market this year. Before us-



ing cellulose insulation, check with the building regulations in your province.

• **Hot water tank insulation kit:** Purchase a kit or use fibreglass batt insulation that has a vapour barrier attached. Refer to the Energy, Mines & Resources booklet, *Keeping the Heat In*, listed in the **References** section, for instructions for safely insulating the hot water tank and pipes.

• **Hot water pipe insulation kit:** Slip-on tubes.

EnviroWarning Some are made of closed-cell polyethylene foam and may contain CFCs or HCFCs.

• **Mastercraft fibreglass pipe wrap:** With a vapour backing. Canadian Tire Inc., Toronto, Ontario, M1P 2V8.



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Keeping the Heat In: How to Insulate and Draft Proof Your Home to Save Energy and Money (and Be More Comfortable, Too) (1988).

Energuides 1988-89 for clothes dryers, clothes washers, dishwashers, freezers, ranges and refrigerators.

Valance



- Turn the thermostat on the hot water heater down to 49°C (120°F). Maintaining this temperature ensures that bacteria won't grow in the tank and, at the same time, lessens the risk of family members scalding themselves.

- If you have an automatic dishwasher, manufacturers usually recommend temperatures of 60°C (140°F). (A water temperature booster on the appliance allows you to reduce the temperature as above.) Let the dishes air dry to save more energy.

- Use warm wash-cold rinse or cold-cold for the laundry

- Insulate the hot water tank and the pipes to reduce heat loss (see *References* and *A few product ideas*). You



save energy by retaining the heat in the water as it sits in the tank and the pipes; less energy is, therefore, required to maintain the water at the thermostat-set temperature.

Ottawa region households clean-up

During two household environmental clean-up weekends in the Ottawa-Carleton region in 1989, 4200 residents dropped off the following for safe disposal:

- More than 30,000 gallons of paint. (One gallon of paint is equal to about 4 litres.)

- 1300 car batteries

Fifty-five 45-gallon drums of pesticides, herbicides and fungicides. (One 45-gallon drum holds about 205 litres.)

- Two hundred and three 45-gallon drums of solvents, petroleum products, etc.

- Thirty-four 45-gallon drums of household cleaning products (bleaches, drain cleaners, etc.)

- Eighteen 45-gallon drums of acids (muriatic, sulphuric, etc.)

- Thirty-two 45-gallon drums of old pharmaceutical prescriptions

- 180 gas cylinders (9 kilograms or 20 pounds and larger).

Source:
Regional Municipality of
Ottawa-Carleton

Hazardous Products DANGER

Alternatives and Disposal

The environmental problem

Hazardous products and hazardous wastes are not only an industrial problem. Many are commonly found in our homes.

Hazardous materials are defined and federally regulated under the Hazardous Products Act administered by Consumer & Corporate Affairs. Health & Welfare Canada plays an advisory role. These products are classified in four hazard categories:



Corrosive
(such as acids);



Flammable
(burns easily);



Reactive
(explosive or produces deadly vapours);



Toxic
(poisonous to humans).

The degree of hazard to human health and safety is assessed and classified into three hazard classes: dangerous, warning and caution needed.

However, despite the hazards, instructions for environmentally safe disposal are not required on labels. The consumer, manufacturer, municipal and provincial waste management agencies and federal regulatory authorities should all share the responsibility for ensuring the proper disposal of residues and containers. But how does the consumer get this information? Some materials, for example, paint, are not marked as potential hazardous waste.

Some of these products require special precautions for use and disposal. For some, safe disposal methods do not exist. Many communities do not have proper disposal facilities, thus making it impossible for individuals to safely dispose of hazardous wastes.

DANGER



WARNING



CAUTION



Provincial departments and local municipalities responsible for disposal have an enormous task. As a result, they may suggest throwing "small" amounts of hazardous materials in the garbage. They tend to be more concerned with the control of large industrial sources of pollution at manufacturing plants. But, "small" household wastes, taken together, amount to a considerable environmental effect. For example, during two household environmental clean-up weekends in Ottawa in 1989, more than 30,000 gallons, or about 136,300 litres, of paint were collected, material which would otherwise have been unwisely discarded in the landfill.

Why we should avoid hazardous products

Some hazardous products are tested on live animals, often by "lethal dose" for both toxicity and corrosiveness. The only reason for testing is that the products pose a potential or unknown health hazard to humans. But how much is too much? Do we need another brand of oven cleaner on the market? Should a limit be imposed on the number of products introduced to the market which require such testing or pose such risks?

Secondly, using hazardous materials and products requires taking special health precautions such as wearing rubber gloves to prevent skin contact, venti-

lating the work area, avoiding mixing with other chemicals, and not inhaling the fumes.

If hazardous wastes are not disposed of properly, they end up in the regular garbage, poured down the drain or buried. All of these disposal methods cause environmental damage and are potential health hazards to everyone.

However, proper disposal is an expensive solution. It has been reported to cost \$80 to destroy one can of paint collected at a household hazardous waste depot and, typically, nearly three-quarters of the material collected is paint. Therefore, the best solution is to avoid using these harmful products and, if you must, to buy only what you need for the job.

Alternatives usually are available that are safer for human health and, at the same time, cause less environmental damage during their manufacture, use and disposal.

In some cases, products that are relatively safe for the environment may pose health and safety concerns for people. Conversely, something may not be hazardous to humans but may be harmful to the environment. These products do not carry a hazardous product symbol (latex paint is one example). The references at the end of this section will help you sort out all of these categories to help you make environmentally sound decisions.

Check list of hazardous products & waste to look for in your home

If you do have a household hazardous waste depot in your community, here are some materials that should be taken there. Check with the environment department in your province for more information (see the Sources and Contacts section at the back of the book). In every case, you should avoid or minimize the use of these products, and seek out safe alternatives.

- ☒ paints, varnishes, stains
- ☐ paint thinner/stripper
- ☐ car batteries
- ☐ pesticides (fungicides, herbicides & insecticides)
- ☐ aerosol containers
- ☐ wood preservative
- ☐ acids
- ☐ lighter fluid
- ☐ oven cleaner
- ☐ drain cleaner
- ☐ turpentine, solvents
- ☐ glues
- ☐ transmission fluid
- ☐ anti-freeze
- ☐ photographic chemicals
- ☐ fibreglass resins, epoxy resins
- ☐ moth balls
- ☐ disinfectants
- ☐ window cleaners
- ☐ pool chemicals
- ☐ old pharmaceutical prescriptions



MYTHS & OTHER MISCONCEPTIONS

"They wouldn't sell all those products if they weren't safe."

Like the term "non-toxic," "safe" is a subjective term. Safe to whom or what, under which circumstances, for what use?

"I don't worry about poison control, my kids never touch cleaning stuff."

In 1982, 80,000 cases of poisoning were reported in Canada — one-half of these cases involved children under four years and nearly one-half of the products involved were intended for household use. Soaps and detergents account for a large number of accidental poisonings. By buying fewer cleaning products, and by choosing the least toxic products, you take fewer risks with the health and safety of the whole family as well as the environment.

"I always open the window when I use oven cleaner."

Opening a window is not adequate ventilation. Fine mists, even from a non-aerosol product, can be inhaled and absorbed into the bloodstream. Half-empty containers of these cleaners are hazardous waste and should not be disposed of in the regular garbage. Choosing less toxic alternative cleaning methods is by far the best way of avoiding these risks.

Do we need to redefine our understanding of the environment? Isn't it time we recognized that we, our homes, the trees and air are all part of the same environment? Environment is not some place we go for holidays. It is where we live and work every day.

Personal action

• **Ensure environmentally sound disposal of hazardous products and hazardous wastes.** Dispose of hazardous waste properly. Check with your municipality for a household hazardous waste depot or community clean-up day. Be persistent.

• **Use hazardous products carefully.** Buy only what you need for the job. Put an extra coat of paint on one wall, rather than dispose of one-quarter of a can of leftover paint. Or give the leftovers away.

• **Use fewer hazardous products. Buy alternatives.** Be aware of what you're buying. Look for the warning symbols and precautions for use (see the discussion of arts and hobbies in the **Living Room** chapter in the second part of the book).

• **Reject products that display hazard symbols.** These are not only potentially harmful to you, but also to the environment.

• **Clean as you go.** While house-cleaning, house-painting, etc., practice preventative maintenance. Avoid creating difficult

cleaning jobs that may require you to use hazardous products.

• **Substitute safer products.** Even if it means you'll spend five more minutes doing a chore. Isn't it worth it for the environment, your health and your peace of mind? (See the **Water** chapter in part I of the book for details on cleaning materials.)

What more can I do?

Write to manufacturers and

(1) ask them to provide alternative, less hazardous products for home use; (2) tell them

why you're not buying their products that are labelled "hazardous;" (3) ask them to support disposal programs.

Encourage municipal and provincial governments to establish household hazardous waste collection programs. Call your elected municipal officials and let them know your concerns.

Lobby government and manufacturers (1) to print instructions on product labels for sound environmental use and disposal; (2) to suggest that Environment Canada be involved in helping to regulate the Hazardous Products Act.

Push federal and provincial governments to (1) regulate environmentally sound disposal of pharmaceuticals by drug stores and doctors' offices; (2) provide strong regulations



Hazardous Products Symbols

	DANGER	WARNING	CAUTION
Corrosive (such as acids);			
Flammable (burns easily);			
Reactive (explosive or produces deadly vapours);			
Toxic (poisonous to humans).			

on the transportation and disposal of industrial hazardous wastes and stiff penalties for violations.

References

Controversial Chemicals, A Citizen's Guide. Edited by P. Kruus and I. M. Valeriote, (Multiscience Publications Limited, Montreal, Quebec, 1984).

Guidelines on Toxic and Hazardous Chemicals Used in Educational Institutions. (Health and Welfare Canada, catalogue number 81-EHD-74, July 1980).

The Household Pollutants Guide. Center for Science in the Public Interest, (Anchor Books, 1978).

Household Hazardous Waste Wheel (US\$5). Lists hazardous ingredients, alternatives and tips for waste management for auto and house products, pesticides and paints all together on a handy reference wheel.

For copies, write to: *Environmental Hazards Management Institute*, P.O. Box 932, 10 New Market Road, Durham, New Hampshire, 03824.

Also available from: *Ecology Action Centre*, 3115 Veith Street, Halifax, Nova Scotia, B3K 3G9 (\$4.50).

Ontario Public Interest Research Group, University of Ottawa, 631 King Edward Avenue, Ottawa, Ontario, K1N 7N8 (\$4.25).



MYTHS & OTHER MISCONCEPTIONS

The biodegradable myth
"Biodegradable" plastics made a big splash when they first appeared on the market. But do they really help alleviate our garbage problem?

These so-called biodegradable plastics are held together with an organic binding material, such as cornstarch, and are designed to break down in landfills; photodegradable types break down when exposed to sunlight.

They may break down, but plastics will not disappear. "Degradable" plastics simply disintegrate into smaller pieces or plastic dust as the binding material breaks down. Another drawback is that containers made of biodegradable plastics can't be added to the recycling stream and they cause problems when they are included.

Does it make sense to throw plastic packaging, empty paint cans and plastic-coated milk containers into a biodegradable garbage bag?

By conscientiously rejecting, re-using, recycling, repairing, refilling and composting, the amount of garbage left to carry to the dump decreases considerably.

(Continued)

Waste



Mountains of Things

"Consume more than you need,

*This is the dream
 Make you pauper
 Or make you queen
 I won't die lonely
 I'll have it all
 pre-arranged.*

*A grave that's deep and
 wide enough
 For me and all my
 mountains of things."*

Tracy Chapman,
 WEA Records, 1988

The environmental problem

In the industrialized world, we've already done a pretty thorough job of filling up holes with our mountains of things. Now we're learning that there are few new holes deep and wide enough to do the job and many of our old ones are leaking hazardous substances.

One federal government study claims we generate up to 1.8 kilograms (four pounds) of garbage per person daily as compared to 1.6 kilograms, or about 3.5 pounds, for the United States and 0.8 kilograms (approximately 1.8 pounds) for Norway. However, many studies lump residential and industrial waste together – so mining wastes,

for example, would certainly increase the Canadian figure. Another study, for Ontario, suggests that about three kilograms (more than six pounds) per person is produced.

The best information available is that more than 50% of all solid waste collected in Canada is household garbage – and at least one-third of that is packaging! (Some estimates range as high as 60%.)

There is no "away"

A number of environmental problems relate directly to this growing mound of garbage:

- We're running out of places to put it, and landfill sites are becoming increasingly expensive. Cities that truck their garbage to landfill sites in rural communities are facing intensifying conflicts over land use.

- Incineration to reduce garbage volumes is a controversial process, due to concerns about air pollution, associated health risks and the problem of the disposal of toxic ash. Incineration is more a technique for managing waste than reducing it.

Take a few minutes to go through your garbage

Recyclers in Ontario save 1.5 million trees annually. 80 million trees could be saved if all the paper Canadians throw away is recycled.

Canadians consume more than their own weight in plastic every year.

If all the polystyrene that North Americans throw out in a year were made into coffee cups, it would make 900 million cups that, loosely packed, would fill 100 75-storey office buildings.

Every refillable glass bottle is used approximately 15 times before being melted down to make new bottles.

About one-third of our waste is organic: kitchen scraps, leaves, grass clippings. It all could be composted instead of being thrown out.

Canadians throw out 175 million spray cans a year.

1.5 million tonnes of packaging is discarded each year in Ontario alone — approximately 40% of all household garbage.

Canadians throw out close to 300 million litres of motor oil, 160 million batteries (not including car batteries) and 250,000 tonnes of soiled diapers each year.



- Landfills and dumps are home to numerous hazardous substances which leak out and contaminate soil, lakes and rivers.

- Recycling is only a partial solution. We also need to find more ways to use recycled materials and, of course, to reduce waste in the first place.

The problems sometimes seem overwhelming. They demand that we look at the sources of waste and how to eliminate waste **before** it has been created instead of afterward. It's the preventative approach that should be our ultimate goal.

Packaging: How much is too much?

Packages serve many purposes. They are used to preserve products and to protect them from breakage. They also usually carry instructions for the preparation or use of a product.

But consider this fact. Between 33 to 60% of domestic garbage is packaging, making a substantial contribution to the volume of waste and the accompanying costs. Yet packaging costs in many other ways too.

Consider the entire life cycle of a package in order

to determine the true costs — including the environmental ones. Consider the resources and energy used during manufacture, transportation and disposal; the pollution created during the manufacturing process; the litter and waste created and the associated problems in landfill sites. You can help reduce waste by carefully choosing products that avoid excess packaging.

How much is too much? In some cases, for example, plastic fast-food containers, a fair amount of energy and resources goes into a product that has a useful life-

Put the garbage outside for collection in re-usable garbage pails. If you don't have curbside service, it's just as easy to take pails to the dump and return with empty ones. Use ordinary plastic or paper bags in the house to collect garbage.

"There is no garbage problem - all we have to do is burn it. And we'll get energy in the process."



Air

Incineration and "energy-from-waste" schemes are much more complex and controversial than that.

Incineration is very expensive and not always reliable. Incinerators may emit carcinogens such as dioxins and furans, as well as mercury and other toxic substances. Acid gases are released, contributing to acid rain.

New technologies have greatly reduced toxic emissions from smokestacks, but many toxins are now concentrated in the incinerator ash.

And, despite improvements, there is concern about the very philosophy of incineration, which encourages continued wastefulness, discourages recycling and other waste reduction methods and does nothing to preserve the earth's natural resources.

(Continued)

time of about five minutes. Its "useless lifetime" - in a landfill site - could be hundreds of years.

Personal action

Do it "R" way.

Waste reduction by the 4 Rs sounds like a song off the hit chart. It is, in fact, a quick way to judge each purchase. Ask yourself, before buying or throwing away an item, "Can I reject, re-use, recycle, or repair it?"

Reject

Do you really need the item? Can you do without it, or substitute another product that has less of an impact on the environment? For large items like power tools, could you rent or share with a neighbour or friend? Why buy the paper every night if you have no time to read it? Even with newspaper recycling, this kind of buying is wasteful.

Avoid over-packaged items, ones that are "more packaging than product." This includes blister packs, single-serving sizes, microwaveables, T.V. dinners, and aerosol cans. Have you ever wondered why a plastic bottle of shampoo has to be packed in a cardboard box as well? If this kind of over packaging bothers you, choose another product and express your concerns to the manufacturer of the rejected item.

Reject polystyrene and disposable items (plates, napkins, paper towels, cutlery). Often, baked goods are packed on polystyrene. Can you buy straight from the bakery instead and avoid the extra packaging?

Re-use

Once a product has outlived its immediate usefulness, can you use it in another way or give it away? This category includes plastic bags, clothes, half-cans of paint and children's toys.

Refuse plastic bags when shopping. Take along your own cloth or string bag or a backpack. Re-use those plastics you can't avoid, for example, bread bags, yogurt containers, etc. Take extra bags to second-hand stores and places where artisans sell their works.

Buy returnable/refillable and recyclable containers. For beverages, refillables are preferred. Glass pop bottles, used

about 15 times, are then crushed and melted into new glass.

Recycle

Is it an item that can be collected and reprocessed? Is there a curbside service or a local depot to collect the items? (It's no good buying recyclable items if they go in the garbage anyway!) Use recycling services wherever possible.



What are the hidden costs of packaging?



**NON-REFILLABLE
disposable container**
(e.g., many types of
plastic)



**REFILLABLE
recyclable container**
(e.g., glass)

Litter

- often ends up as litter

- many have refundable deposit which reduces litter

Reduces disposal \$\$

- landfill or incineration costs

- little — avoid disposal by refilling or recycling

Pollution

- may emit toxic chemicals during production & disposal

- very little

Natural resources used during manufacture Recyclable?

- petrochemicals and additives

- sandstone, limestone and soda ash

- yes — plastics can be recycled once

- yes — indefinitely

Refillable?

- no

- yes — used 15 times before being melted down for new bottles

Energy used during manufacture

- low

- high (heat energy) but 30% energy savings over made from new material

Energy used during transport

- reduced because of low weight

- weight and shape make it energy-expensive to transport

Information adapted from "Package Pollution," Canadian Living, March 1989, page 20. Used with permission.



Work for one if none exists in your community.

The money a municipality saves by recycling rather than adding to landfills can offset the price of the recycling service and the benefits will be greater as disposal becomes more expensive. (And that could do nice things for your tax bill!)

Repair

Even before buying an item, ask yourself whether it's likely to break down or be damaged. If so, can it be repaired at a reasonable price. For example, don't buy a wristwatch that can't be repaired (or is so inexpensive that it is

cheaper to replace it than repair it).

Buy durable products that will last for the long-term, not "throwaway" or disposable items, like lighters, razors, and cameras. They're some of the least "disposable" items once they're in a dump. Instead, buy durable products that can be repaired. We have enough problems without these easily avoidable ones.

What more can I do?



Write and tell manufacturers (1) to contribute to more permanent solutions to the garbage crisis by designing products with minimal amounts of packaging,

from materials which can be re-used and recycled and which are long-lasting; (2) send back the packages, addressed to the Chief Executive Officer — you can usually find the address on the label. Enclose a note saying their product is over packaged. Be polite, but persuasive, and they will get the message.

Urge your provincial government to pass legislation to reduce the use of disposable, non-recyclable packaging.

Ask your municipal and provincial governments to start or expand recycling programs and community composting as part of total environmental waste reduction strategies.

"Aerosols are convenient and they don't contain ozone-destroying chemicals anymore."

In 1980, freon, the CFC propellant linked to stratospheric ozone depletion, was banned in hairsprays, deodorants and anti-perspirants in Canada. By now, almost all aerosols, except for some medicinal ones, will be CFC-free. But we don't know the impact of replacement propellants.

As well, aerosols are wasteful packaging and are not recyclable. The propellant itself takes up more than half the space in the can, leaving less room for the product, which means you, the consumer, have to replace it much sooner than if you'd bought it in a non-aerosol form. And that adds up to more expense for you as well as more garbage in landfills.

Environment-friendly/ ozone-friendly

Be cautious about accepting products labelled "environment- or ozone- friendly" without question.

Some of these products merely replace ones that should be avoided in the first place. Throwaway picnic plates advertised as ozone-friendly are made without CFCs (ozone-depleting chemicals), but they are still disposables! In addition, the impact of CFC-replacement chemicals on the environment is not clear.

References

Excess Packaging in the Supermarket. Ontario Public Interest Research Group (OPRIG).

Excess Packaging, Strategies for Waste Reduction. Proceedings from a forum held at the University of Waterloo, June 10, 1988, by the Waterloo Public Interest Research Group (WPIRG) and the Citizens Network on Waste Management. Order by sending cheque or money order for \$2 a copy plus 10% postage (\$.50 minimum) to: WPIRG, University of Waterloo, Waterloo, Ontario, N2L 3G1, (519) 884-9020.

"Package Pollution," *Canadian Living Magazine*, March 1989.



Portrait of an environment-friendly family

Once a week, the garbage collectors approach the home of Michelle and Michael Tomichich (of Maple Ridge, British Columbia), shake their heads, and drive by - empty-handed. Why? In 1988-89, this couple and their children accumulated all of three bags of refuse - three for the whole year! Everything else was recycled. At the Tomichich home, there's no need for weekly garbage service!

To Michelle, recycling is a duty, something we should all be improving upon as our personal contribution to the environment. This personal philosophy is best explained in Michelle's own words:

"...recently, I was watching the 11:00 news and became totally overwhelmed with the problems of the world. What could one small person do to make a difference? We were close to extinction. Suddenly, I realized I'm powerful when I deal with the problems in my family, in my home, in my community. I lose all power when I try to cope with the world as a whole....The saying goes: Think globally, act locally. I think locally and act locally. That's all I can manage and remain sane..."

Excerpted from *Organic Oracle!*, published by Jack Emberry, Maple Ridge, British Columbia.



Water

"Water is regarded as a free good, and users...tend to use it wastefully. Excessive use creates a need for additional supplies, which leads to higher costs and added pressures on resources. Citizens bear both the financial and environmental costs in one way or another, though the burden is not distributed among them according to the resources they use...."
Currents of Change.
 Final Report, Inquiry on Federal Water Policy,
 September 1985.

The environmental problem

Without clean water, the earth would, of course, be uninhabitable. But how often does that thought occur to us as we go about our daily lives?

Most of us take for granted the water we use to wash the car, to shower, to water the lawn, cook and flush our wastes away. We do half-loads of laundry, ignore a dripping tap and run the water while brushing our teeth. Used motor oil, solvents, paints and a great variety of household cleaners are dumped down the drain, causing detrimental effects on water quality and the lives that depend on it.

In fact, it seems that we treat lakes, oceans, rivers

and streams more like part of our sewer system than our life-support system.

Whether or not there will always be water fit for drinking and lakes and rivers clean enough for swimming, and whether or not fish and other aquatic life survive, depend on our success in understanding – and changing – these attitudes and actions.

Water conservation begins at home

Each of us uses up to 260 litres (57 gallons) of water on average every day. A family of four uses an average of 1160 litres (255 gallons) each day. Compare this with the tank for an oil-burning furnace, which holds about 909 litres (close to 200 gallons), and multiply this demand by the population in your city or community. The demand is enormous.

On top of that, add the water used outside our homes in manufacturing products and in producing food for us to eat. And don't forget the implications of product manufacturing for water quality.

How does production relate to water quality? For example, manufacturing

The price of your water

Municipalities across Canada charge varying rates for water, but Canadians do not pay the "real" cost of waste treatment and water delivery. About 75% of Canadians pay water rates that do not promote conservation.

Environment Canada calculates the average monthly family consumption as 35 m³ (35,000 litres or 7700 gallons).

- The installation of meters has led to permanent reductions in water use of 10 to 40%. Per capita water use fell by 23% when Durham Region in Ontario installed meters and added a surcharge for sewers.

- Residents of Edmonton, which is fully-metered, consume half as much water as residents of Calgary, which is only partially metered despite southern Alberta's water problems.

- Ottawa residents pay for the water they use and another 140% for sewerage to pay for upgrading the sewage treatment plant.

- The sole source of water for the Regional Municipality of Waterloo in southwestern Ontario (population in excess of 300,000) is groundwater. Conservation is an integral part of the region's water supply strategy. A rebate program offers a \$75 cash rebate for each new residence in which water-efficient plumbing fixtures are installed. A Water Efficient Fixtures Catalogue assists builders and plumbers in choosing fixtures approved for the rebate. (See **References.**)

Alternative all-purpose cleaners

The following recipes for alternative cleaners are simple and inexpensive, protect water quality by replacing hazardous products and reduce packaging waste. Many of these cleaners can be used for more than one purpose.

Instead of paper towels, use rags for cleaning cloths (launder when necessary). For mirrors or windows, use newspaper crumpled into a ball.

All-purpose spray cleaner

Mix half water, half white vinegar in a spray bottle. No need to rinse. Use for toilet, windows, woodwork, mirrors, countertops.

Floor washing

Vinegar and water. Or mix 45 ml (3 tbsp.) of washing soda in 1 litre (4 cups) of water. (You may need to use vinegar and water to rinse.) Washing soda (sodium carbonate) is a non-phosphate water softener. Slightly alkaline, it boosts the cleaning power of plain water and is used as a laundry detergent additive. Available in the laundry product section at the grocery store.

Scouring and deodorizing

Use baking soda as you would scouring powder (works for cleaning the toilet bowl, removing greasy fingerprints from light switchplates, and for cleaning the tub and sink, too). Rinse.

(Continued)

plants and energy-generating facilities produce the emissions responsible for acid rain—killing lakes and wildlife. And your weekend newspaper doesn't only represent trees, energy and water—it also represents effluent discharged into waterways from pulp and paper mills. Each of us, when we buy a product, bears part of the responsibility for its environmental costs.

The solution to pollution is not dilution

Acids, chlorine, petroleum distillates, caustic soda and lye. Every day small amounts of these chemicals and others, ingredients of common cleaning products, end up in sewers, septic tanks, lakes and rivers.

Some people claim that cleaning products are diluted in the water, posing no threat to water quality. Large quantities of some of these products are considered hazardous wastes. Hazardous wastes dumped down the drain end up in our drinking water supplies. In rural areas, they may seriously damage the operation of a septic tank system. Other chemicals interfere with natural biological processes.

For example, phosphates are used in laundry detergents and cleaners to soften the water.

But treatment does not entirely eliminate the phosphates, so they end up in lakes and rivers where they encourage the growth of algae which seriously affects water quality.

A complete ban on detergent phosphates was proposed back in 1970 and never fully implemented. Regulations did reduce the phosphate content of laundry detergents in Canada to 5% (from as high as 45%) in 1973. However, phosphate content in other cleaners is not restricted. For example, dishwasher detergent may still contain up to 30% phosphate. (*Protect Yourself*, September 1985.) Non-phosphate products are just as effective.

Many people put faith in the efficiency of sewage treatment to remove contaminants. It may come as a shock to learn that 1985 statistics showed that less than 60% of Canadians lived in communities with sewage treatment. Almost one-third of the population was served by sewers but had no treatment facilities. Instead, the waste water was discharged directly into waterways.

But even sewage that is treated before being discharged is not free of contaminants. Furthermore, the sludge removed during treatment may contain metals and other toxic substances and most are not adequately treated before disposal. "Disposal" may mean incineration, in which



case the toxins are released into the air, or the sludge may be sold to farmers to spread on fields, where the toxins may be taken up by food crops.

Personal action

➤ **Conserve water at home.** Use less water by investing in water-saving devices and appliances.

➤ **Protect water quality.** Help eliminate the problem of phosphates by choosing products without them. Check the bathroom, kitchen, laundry and living room sections for alternatives to phosphate-containing and other hazardous cleaners.

➤ **Minimize your use of hazardous products.** Dispose of them properly when you must use them. **Before dumping something down the drain, ask yourself if you want that substance in your drinking water or food.** Check the kitchen, bathroom, workshop and garage sections for information on alternatives to hazardous products. (See **References** in the **Hazardous Products** chapter.)

➤ **Practice good drain maintenance to cut down on chemical use.** When a drain becomes clogged, the first thing to try is a plunger or plumber's helper (see **A few product ideas** below)

A "snake" (see **A few product ideas**) can help break up the blockage. Finish the job with the plunger.

A mild chemical reaction might work for a sluggish

drain. Pour 50 ml (1/4 cup) of baking soda down the drain. Pour 125 ml (1/2 cup) of vinegar in the drain. Quickly cover with a rag. Let the bubbly reaction work on the clog for about 30 minutes, then pour boiling water down the drain (preferable to toxics!).

➤ **Avoid peak demand periods** Water supply utilities most often face shortages during peak use periods, especially in summer months when lawn and garden watering is common. In fact, 50 to 75% of water utility investment goes to meet peak demands. (Similar trends are seen in electrical utilities.) So, besides reducing overall water and energy consumption, we can help alleviate demand by spreading use throughout the day rather than concentrating it in the peak morning and dinner hour periods and by finding additional ways to reduce our demand in peak seasons (see the **Lawn and Garden** and **Garage** chapters for details).

What more can I do?



Write to individual manufacturers and tell them (1) you want phosphate-free cleaning products; (2) urge manufacturers to produce alternative products for home use that reduce and preferably eliminate environmental hazards. Write to manufacturers' associations with the same concerns.

Give it a fair trial! Expect to scrub a little harder than with a commercial scouring powder. A plastic "bun" scrubber is a great help.

Why baking soda? It is inexpensive. It is not overpackaged (the box is biodegradable, may be made of recycled paper, and/or may be recyclable), and can be bought in bulk (further reducing packaging waste). It is non-phosphate, contains no chlorine*. And it will not scratch surfaces.

(*It has been known for some time that chlorine reacts with organic material to form toxic compounds. It has been noted in chlorinated sewage plant effluent and, in 1989, toxins found in the effluent from pulp and paper mills and in finished paper products were attributed to chlorine bleaching of the pulp. We can contribute to environmental protection by eliminating use of chlorine in our homes. The small amounts we use add up!)

Rug & carpet cleaners

Sprinkle cornstarch on dry carpets or rugs to absorb dirt and grease and, after five minutes, vacuum thoroughly.

Rug deodorizer

Sprinkle dry rugs or broadloom generously with baking soda. Leave for about 20 minutes and then vacuum thoroughly.

Mild antiseptic

Mix 125 ml (1/2 cup) of borax with 1 litre (4 cups) of hot water.

Criteria for evaluating cleaning products

Here's a check list to help you evaluate cleaning products. Is it:

- ☐ non-aerosol and minimally packaged
- ☐ non-poisonous
- ☐ non-toxic
- ☐ non-corrosive
- ☐ inexpensive (an added bonus!)
- ☐ phosphate-free
- ☐ all-purpose
- ☐ re-usable (e.g., plunger, hair trap, cleaning cloths)

- ☐ available in bulk

Not every product will meet all of these criteria, but they're good reminders.



ANOTHER MYTH

A biodegradable cleaning product is not necessarily phosphate-free. The term "biodegradable" does not refer to phosphate content. Check labels carefully or write to the manufacturer to find out about phosphate levels. (Remember phosphate content is regulated in laundry detergent only.)

Urge the federal government's Environmental Choice Program to create guidelines for a water-saving device category.

Tell your municipal government that water conservation is critical. Tell them to carry out aggressive public awareness campaigns and introduce water and sewage rates which will promote water conservation and appreciation.

A few product ideas

- **Murphy's Oil Soap™.** A vegetable oil, all-purpose cleaning soap. Available in grocery and hardware stores. The Murphy-Phoenix Company, P.O. Box 22930, Beachwood, Ohio, 44122.

- **Nature Clean 100% Organic Concentrated Cleaning Lotion.** No animal or petroleum products and no phosphates. Available in health food stores. Frank T. Ross & Sons (1962) Ltd., P.O. Box 248, West Hill, Ontario, M1E 4R5.

- **Ecover products.** A range of home cleaning products that do not contain phosphates, bleaches or petroleum-based detergents. Available at grocers and health food stores. Canadian distributor: Purity Life Health Products, 100 Elgin Street South, Acton, Ontario, L7J 2W1.

Alternative products:

- **Borax** (sodium borate) used as a water softener, mild antiseptic and deodorizing compound. (See A few product ideas in

Laundry Room chapter in Part II.)

- **Baking soda** (sodium bicarbonate) used in cooking and as a deodorizer and slightly abrasive cleaner.

- **Washing soda** (sodium carbonate) used as a water softener. (See A few product ideas in Laundry Room chapter in Part II.)

- **Plastic Scrubber.** Comes in a variety of shapes—some as "buns" with plastic or wooden knobs to grasp.

- **Drain clean (Snake)** by Aqualine. A coil contraption that you 'snake' through the pipe to dislodge a clog. About \$8.50. Toll-free help-line listed on package.

References

Analysis of Energy Conservation Options. Anne Beamish, (Canada Mortgage and Housing Corporation, 1981).

Clean House, Clean Earth, How to Clean with the Environment in Mind (\$3 including postage). An attractive poster of alternative cleaners put together by Friends of the Earth volunteers. Write to Friends of the Earth, 701-251 Laurier Avenue West, Ottawa, Ontario, K1P 5J6.

Cottage Country, Environmental Manual for Cottagers. Environment Ontario, 135 St. Clair Avenue West, Suite 100, Toronto, Ontario, M4V 1P5, (sixth edition 1989). List of detergents tested as phosphate-free, 1% and 5% phosphate.

Currents of Change. P.H. Pearse, F. Bertrand and J.W. MacLaren. Final Report, Inquiry on Federal Water Policy, (Environment Canada, September 1985).

Energide Directories for clothes washers and dishwashers. (Energy, Mines & Resources, 1988-89).

Municipal Water Rates in Canada, Current Practices and Prices. (Environment Canada 1989).

Non-toxic and Natural, How to Avoid Dangerous Everyday Products and Buy or Make Safe Ones. Debra Lynn Dadd, (Jeremy Tarcher Inc., Los Angeles, CA., 1984).

The Algal Bowl, Lakes and Man. Jack R. Vallentyne, (Fisheries & Oceans Canada, miscellaneous publication No. 22, reprinted 1980).

To the Last Drop. Michael Keating, (Macmillan of Canada, Toronto, 1986).

Water Efficient Fixtures Catalogue, (Regional Municipality of Waterloo, 1988). Limited distribution. They prefer to supply a reference copy for a community library.

Write to: Ben A. Benninger, Water Conservation Coordinator, Operations Division, Regional Municipality of Waterloo, Marsland Centre, Waterloo, Ontario, N2J 4G7.

Water: The Potential for Demand Management. David B. Brooks, Roger Peters, (Discussion Paper, Science Council of Canada, June 1988).



Quiz

Find out how much you know about your water consumption.

Choose one correct answer for each (your choice of litres or gallons).

1. Each toilet flush requires about:

- | | | | |
|----|----|----|---------|
| 15 | 20 | 30 | litres |
| 3 | 4 | 7 | gallons |

2. A clothes washer uses between:

- | | | |
|-------|-------|---------------|
| 10-25 | 30-60 | litres/cycle |
| 2-6 | 7-13 | gallons/cycle |

3. A dishwasher load requires:

- | | | | |
|----|----|----|---------|
| 15 | 25 | 35 | litres |
| 3 | 6 | 8 | gallons |

4. Every half hour of watering the lawn takes about:

- | | | | |
|-----|-----|-----|---------|
| 100 | 300 | 500 | litres |
| 50 | 70 | 110 | gallons |

5. A tap leaking at one drop per second wastes about:

- | | | | |
|-----|-----|------|---------------|
| 550 | 795 | 1000 | litres /month |
| 120 | 175 | 220 | gallons/month |

(It also wastes energy if it's hot water.)

- Answers:
 1. 20 litres; 4 gallons;
 2. 30-60 litres/cycle; 7-13 gallons/cycle;
 3. 35 litres; 8 gallons;
 4. 500 litres; 110 gallons;
 5. 795 litres; 175 gallons

MYTHS & OTHER MISCONCEPTIONS

"Soap isn't strong enough to clean the toilet."

We've been sold on the need for a different product for every cleaning chore. We can buy more than 20 kinds of different products and we have a choice of three or four different brand names for each. Regular cleaning is the answer, not stronger cleaners that can threaten our health and the environment.

Water-saving tips

- Turn the water off when brushing your teeth and shaving.

- Put the plug in the sink and put in a few splashes of water to wash – instead of leaving the water running.

- Fix leaky faucets. They waste water and money. (Refer to a "do it yourself" home maintenance or plumbing book for instructions. See References.)

Bathroom

Flushing the toilet and bathing or showering account for about 75% of our daily water use. Water and energy savings are easily made here. You can protect water quality using alternative household cleaners to replace hazardous products. Personal care products (shampoos, cosmetics, deodorants) raise environmental



concerns because of the packaging and testing of these products on live animals.

Disposable diapers are another environmental problem and we take a look at alternatives.

Saving Energy and Water



Check the first chapter in the first part of this book for window insulation ideas and

information on energy-efficient lighting. In the bathroom, large energy savings can be made by using less hot water. (Don't forget to turn the thermostat down on the hot water heater to 49°C or 120°F).

What energy-eaters are often found in the bathroom? Blow dryers, curling irons, electric toothbrushes, electric manicure sets, water piks. Is the environmental cost worth the convenience?

GOAL	WHEN, WHERE	HOW
Saving energy	<ul style="list-style-type: none"> • Window insulation • Bathing/Showering 	<ul style="list-style-type: none"> -refer to Energy -install a low-flow shower head
Saving water	<ul style="list-style-type: none"> • Bathing/Showering • Flushing 	<ul style="list-style-type: none"> -install a low-flow faucet aerator -install bottles or a toilet tank dam -install low-flow toilet during renovation or construction
Protecting water quality	<ul style="list-style-type: none"> • Cleaning and drain maintenance 	<ul style="list-style-type: none"> -use alternative cleaners, alternatives to hazardous products
Reducing waste	<ul style="list-style-type: none"> • Personal care products • Diapers 	<ul style="list-style-type: none"> -buy recyclable, refillable minimally packaged -safe waste disposal: flush solid waste

Since nearly half of the water we use in our homes is heated, and most of our water use is for flushing the toilet and showering, we have combined practical advice on energy and water conservation in this section.

Using water savers in the toilet and shower can cut your daily water consumption in half.

Bathing and showering

How much water do you use every morning? Time your shower. Multiply the time by 18 litres a minute (4 gallons per minute), assuming normal water pressure.

To reduce the amount of water used, you can spend less time in the shower and turn the water off between soaping and rinsing. If the room is cold – work fast!

Water-saving or low-flow shower heads or shower head inserts effectively use less water to give a good spray action and can save up to three-quarters of the water used by conventional shower heads. These shower heads use between 5 and 8 litres a minute (1.1 to 1.7 gallons per minute). Choose the type that allows you to turn the water on and off while showering without having to readjust the temperature. (Turn the water on to get wet and off to soap and shampoo, then on again to rinse.)

Some of these products are sold as “energy savers.” We think the water savings

are just as important.

Low-flow shower heads and shower control inserts are available for a range of prices from plumbing supply, hardware and department stores. The inserts fit between the wall pipe and the shower head. Make sure the insert is made for your shower head.

You will recover your money on these small purchases in the cost of water heating alone and save water as well (see **A few product ideas**). Typical savings: A four-minute shower using a conventional shower head will use at least 72 litres (16 gallons). A low-flow shower head might use a maximum of 36 litres or 8 gallons for a four-minute shower. Water consumption is cut in half.



A four-minute shower each day for a month:

Conventional shower head (water cost of \$15.75/35 m³) = \$0.97

Low-flow shower head (same water cost) = \$0.48

A \$10 low-flow shower head is paid back in one year! And in less time, when you consider energy savings and the environment, too.

Washing in the sink

It's simple for you to install a low-flow faucet aerator on most bathroom sink faucets. These aerators cut the flow from 11 to 13 litres per minute (2.4 to 2.9 gallons per minute) in conventional faucets to 7 litres per minute (1.5 gallons a

minute) or less. (See **A few product ideas**.)

Get into the habit of using cold water to wash your hands.

Flushing less water

Each flush of a conventional toilet requires about 20 litres or just over 4 gallons of water. There are several ways you can reduce this water use without affecting flushing performance:

➤ Put one or two plastic bottles weighted with stones in the toilet tank to displace up to 4.5 litres (one gallon) of water. Try using a small vinegar bottle, a one-litre juice bottle or a plastic ketchup bottle. Make sure the bottles don't interfere with the mechanical parts in the tank. **Bricks aren't recommended—they will eventually dissolve.**



➤ A toilet tank dam is another solution to save water. It does not displace water, but retains some of the clean water in the tank at the end of the flush, so that the pressure remains high for flushing efficiency. Other devices stop the water flow by closing the flapper valve faster.

A water-saving device might cost between \$5 and \$10. Flush efficiency is not affected and the device is

worth the small cost. Typical savings: 8 litres (1.8 gallons) per flush, based on 16 flushes per day, and at a water cost of \$0.45/m³, the yearly savings is about \$20. Additional savings are made if your municipality charges a sewerage surcharge on top of your water bill.

➤ Another obvious solution often overlooked is to repair toilets which "run on" or drip after flushing. (see **References** for a plumbing repair book)

➤ When renovating or building a new house, tell the plumbing supply store you want a low-flow toilet. Ask to see the manufacturer's specification sheet for flow rating.

Some low-flow models are available that use about 13 litres (2.9 gallons) or less per flush.

Using Alternatives to Hazardous Products



Cleaning materials

See the section on all-purpose cleaners and criteria for choosing cleaners on pages 24-26.

Check with the manufacturer of acrylic bathtub inserts to see if they will recommend baking soda, borax or washing soda. If they won't, ask if they've ever tested it against the products they do recommend. Encourage them!

Drain maintenance

Prevention is the best medicine! For tubs and

sinks, an inexpensive hair trap (see **A few product ideas**) catches hairs to prevent clogging. If your family showers most of the time, the pop-up drain in the tub can be removed and the hair trap inserted. Some hair traps come with a stopper.

When a drain does become clogged, the first thing to try is a plunger or plumber's helper. A mild chemical reaction might work for a sluggish drain (see page 25). These are safe solutions.

Reducing Waste



Diapering

Use cloth diapers, either laundered at home or by a diaper service. Even taking into consideration the water, energy and laundry detergent required to launder cloth diapers, they still win over disposables. But keep in mind your goals of using less water, saving energy and switching to non-phosphate laundry detergents. (See **References**.)

By washing full loads of laundry using phosphate-free detergent, the total environmental impact is less than buying plastic and paper diapers which are used once and thrown into the garbage. The plastic lasts for years, the amount of paper is sizeable and human waste ends up in landfill sites. (For discussion on "biodegradable" plastics, see the chapter on **Waste** in part I).

Using disposables while travelling may be an un-

avoidable compromise even for the environmentally concerned person (see **A few product ideas**). Remember: Flush solid waste before throwing the diaper in the garbage.

Re-usable baby wipes

Imagine the waste produced by "disposable" baby wipes. They are also costly and can irritate baby's skin. Alternative: cut 8" squares of an old terry towel or flannel receiving blanket. They're soft and re-usable, just launder with diapers. (Thanks for the tip from Mrs. A. Downey-Franchuk of Winnipeg.)

Feminine sanitary products

If you buy disposable pads or tampons, choose the ones with the least packaging. Individually wrapped pads aren't necessary. Carry a re-usable cloth bag in your purse or briefcase.

An enterprising and concerned women's cooperative in Arkansas makes re-usable pads of cotton (see **A few product ideas**). Natural sea sponges for use as tampon substitutes are also available in health food stores. (It's important to get detailed instructions before using these.)

Other paper products

It's important to teach children at an early age to be frugal with toilet paper and tissues. These good environmental habits will last a lifetime! Do you need to check your own habits to set a good example?

Very rarely do we consider the environment when facing a plethora of shampoos, hair conditioners, soaps, deodorants, toothpastes, moisturizers, cosmetics, etc. Our goals are to choose the product that we think will improve our appearance the most, facilitate grooming, cost the least, or is familiar. But environmental choices should play as major a role at the cosmetic counter as anywhere else.

There are a number of environmental concerns about the beauty and personal care industry, including the health and safety of these products, the use of ingredients obtained from animals, the testing of products on live animals and the enormous variety of products in throwaway containers, often wrapped in layers of wasteful material.

Labelling laws for cosmetics and personal care products in Canada are confusing. For example, anti-perspirants – as opposed to deodorants – must have the active ingredients labelled (under the Food and Drug Act). Deodorants, on the other hand, are considered cosmetics and ingredient labelling isn't required (under the Consumer Packaging and Labelling Act).

If we don't know what is in a product, it's difficult to avoid ingredients that are of concern for health or environmental reasons.

So, think before you buy! Evaluate your buying hab-

its and preferences. How many personal care products do you buy and why? Find out about the manufacturer's environmental record and animal testing policies (see **References**).

At least one-third of all the garbage taken from your home is packaging and, for some personal care products, it may cost more for the packaging than the product itself! Ask these questions about how the product is packaged. Is the packaging minimal, returnable for recycling, refillable, or made of recycled material?

Aerosol hairsprays, deodorants and anti-perspirants haven't contained CFCs since 1980, but the containers are still a big garbage problem.

Select alternatives to aerosols, such as pump sprays, liquids, roll-on applicators or creams. (Pump spray bottles, when empty and cleaned, can then be used for your home-made cleaning products.)

Consider alternative cosmetic and personal care products that:

- Avoid aerosols and other wasteful containers and packaging (for example, witch hazel is not over packaged in a box and plastic wrap);
- Are simple products with the fewest possible ingredients;
- Are not "new" products (each new product on



Disposal of old prescriptions & pharmaceuticals

If you ask your doctor or pharmacist what to do with old prescriptions, chances are they'll tell you to flush them, rather than throwing the pills in the garbage. But both are hazardous choices.

Currently, the best option available is to save these for household hazardous waste collection. For the elderly, this may not be too helpful: It may be difficult to get to the depot and storage of old prescriptions may be dangerous. Pharmaceutical manufacturers and pharmacies should take responsibility or be required to ensure proper disposal of this waste.

the market undergoes tests – many of them on live animals);

• Allow you to avoid ingredients of questionable health or environmental safety.

Try these alternatives:

Astringent: Use witch hazel. Apply with a washable applicator. Splash on for after-shave lotion.

Bath salts: Add 50 ml (1/4 cup) baking soda to your bath water.

Tooth cleaner: Put baking soda on a dampened toothbrush. Brush as usual and use floss. (Fluoride used in toothpaste may be obtained from the aluminum industry or the phosphate fertilizer industry. Both industries have heavy environmental costs. Excessive fluoride may damage personal health as well. With many communities fluoridating water supplies, this question has been asked many times, "How do we know how much fluoride is too much?")

Bath powder: Use cornstarch.

Deodorant: Yet another use for baking soda.

A few product ideas

Shower heads

• **SuperSaver®:** The manufacturer claims it uses less than 9 litres (2 gallons) of water at 45 psi (pounds per square inch). Teledyne Water Pik Canada, Rexdale, Ontario, M9W 5R1.

• **Econo-Flo ENER-JET** Energy and Water Saving

Shower with On-Off valve: Uses 9 litres per minute (2 gallons a minute at 50 psi). Great North Conservation Products, Box 505, Markham, Ontario, L3P 3R1. Mail order.

• **Low-Flow Faucet Aerators:** AeratorPlus® by Aqualine Inc., Toronto, Ontario, L4W 1H7. About \$3.

• **Low-Volume Faucet Aerator:** Uses about 7 litres per minute. Great Northern Conservation Products Inc., Box 505, Markham, Ontario, L3P 3R1.

Low-flow toilets

• **Plebe Water Saver,** Model AF-2132-WS, 11 litres (2.4 gallons). American Standard, 80 Ward Avenue, Toronto, Ontario, M6H 4A7.

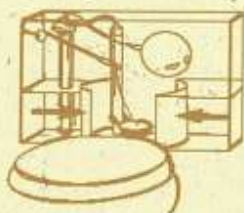
• **Radcliffe,** Model 3-143: 13 litres (2.9 gallons): Crane, 5800 Côte de Liesse Road, Montreal, Quebec, H4T 1B4.

• **Trent Model 101:** 11 litres (2.4 gallons): Waltec Bathware, 805 Boundary Road, Cornwall, Ontario, K6H 5T3.

Note: These toilets are available from plumbing wholesalers. Check References below.

Water-saving toilet devices

• **Toilet Tank Dam:** Reduces water consumption by 9 litres (1.9 gallons) per flush. Great Northern Conservation Products Inc., Box 505, Markham, Ontario, L3P 3R1. COD orders accepted. \$12 plus \$3.50 postage. Ontario sales tax.



Toilet tank dam

(Packaging: cardboard box.)

• **Automatic Water Savers:** Three different models to fit different toilet styles. Manufacturer claims the device reduces total household water consumption by as much as 25% (replaces six to nine bricks). Available at department and hardware stores. About \$5.50 each. Aqualine, Toronto, Ontario, L4W 1H7. **EnviroWarning** Packaging is plastic bubble-pack.

Drain maintenance

• **Decor Hair Trap:** Houseware Products. About \$2. **EnviroWarning:** Packaging is plastic bubble-pack.

• **Hair-Snare®:** Includes drain cover. Aqualine, Toronto, Ontario, L4W 1H7. About \$2.50

• **Toilet and Drain Plunger:** About \$6.

• **Drain Clean (snake):** About \$8.50 for 1/4" x 15' or \$6 for 1/4" x 8'. Toll-free Help Line listed on package. Aqualine, Toronto, Ontario, L4W 1H7.

Diapering

Write for catalogues on various diapering alternatives to: Babysnibbs, Alpel, P.O. Box 203, Dept. HF,

Chambly, Quebec, J3L 4B3, (514) 658-6205.

- **Baby Love Products:** 5015-46 Street, Camrose, Alberta, T4V 3G3, (403) 672-1763

- **The Indisposable Cotton Diaper Co.,** 491 Pacific Blvd., Vancouver, British Columbia, V6B 5G6, (604) 685-8125. Telephone or write for a list of independent distributors across Canada.

- **Angel brand diapers:** Multi-Marketing, 120 West Beaver Creek Road, Unit 1, Richmond Hill, Ontario, (416) 731-7172.

- **Regular cloth diapers:** Snugabye™ Kendall Canada, 64 Colgate Avenue, Toronto, Ontario, M4M 1N7. Available in department stores and specialty shops.

- **President's Choice™ GREEN Environment Friendly Products:** Sunfresh Ltd., 22 St. Clair Avenue East, Toronto, Ontario, M4T 2S8. Disposable Diapers. Uses non-chlorine bleached fluff pulp.

Miscellaneous products

- **NATURE CLEAN products:** Frank T. Ross & Sons (1962) Limited, P.O. Box 248, West Hill, Ontario, M1E 4R5.

- **Tom's of Maine Inc.,** Kennebunk, Maine, 04043, (207) 985-2944.

- **Seventh Generation,** 10 Farrell Street, South Burlington, Vermont, 05403, (802) 862-2999.

- **Red River Menstrual Pads:** Arco Iris, Tonca, Arkansas, 7260.

- **The Compassionate Consumer,** P.O. Box 27, Jericho, New York 11753, (718) 445-4134.

- **The Body Shop:** Skin and hair care preparations. Produced and tested without cruelty to animals. The Body Shop, 15 Prince Andrew Place, Don Mills, Ontario, M3C 2H2, (416) 441-3202. Return containers to your local Body Shop for recycling.

References

For a comparison of diapering options, write for *Alternatives in Diapering*, c/o 5015-46 Street, Camrose, Alberta, T4V 3G3, (403) 672-1763. (\$1 for postage and handling).

Cosmetics: What the Ads Don't Tell You. Carol Ann Rinzler, (Thomas Y. Crowell Co., New York, 1977).

Jeanné Rose's Herbal Body Book: The Herbal Way to Natural Beauty for Men and Women. (Grosset and Dunlap, 1976).

Non-toxic and Natural. How to Avoid Dangerous Everyday Products and Buy or Make Safe Ones. Debra Lynn Dadd, (Jeremy Tarcher Inc., Los Angeles, California, 1984).

Sunset Basic Plumbing. By the Editors of Sunset Books and Sunset Magazine, Lane Publishing Co., Menlo Park, California, 1983.

The Non-toxic Home: Protecting Yourself and Your Family

From Everyday Toxics and Health Hazards. Debra Lynn Dadd, (Jeremy Tarcher Inc., Los Angeles, California, 1986).

Water Efficient Fixtures Catalogue. Regional Municipality of Waterloo. 1988. (Distribution preferably limited to supplying a reference copy for a community library.) Write to: Ben A. Benninger, Water Conservation Coordinator, Operations Division, Regional Municipality of Waterloo, Marsland Centre, Waterloo, Ontario, N2J 4G7.

Write to the following companies or associations for information on animal testing of products and packaging:

Animal Testing and Cosmetics. The Body Shop, 15 Prince Andrew Place, Toronto, Ontario, M3C 2H2, (416) 441-3202.

Cruelty-Free Shopper's Guide. The Canadian Federation of Humane Societies, 30 Concourse Gate, Suite 102, Nepean, Ontario, K2E 7V7.

Shopping for a Better World, A Quick and Easy Guide to Socially Responsible Supermarket Shopping. Rosalyn Will, et al., (Council on Economic Priorities, 30 Irving Place, New York, NY 10003). Available at some bookstores. Or order directly from CEP for \$4.95 plus \$1 postage.



Personal care products & animal testing

Some perfumes, cosmetics and personal care products are manufactured using ingredients from animals. For example, lanolin is extracted from sheep's wool. Musk is extracted from the gland of a musk deer. And many of these products are tested on live animals. Points to remember:

- Animals do suffer in these tests, sometimes die and are eventually killed;
- There are alternatives to animal testing and these methods could be used more widely. Other new ones are needed and should be developed as a priority;
- There are many cosmetic companies that don't test on animals;
- Using ingredients for cosmetics derived from animals for vanity products seems pointless.



Bedroom

Some of the basic issues of every other room are discussed here. The bedroom is also the place we keep our clothing, which is often not thought of in connection to the environment. Yet there are more than a few environmental costs to keep in mind when clothes shopping.

Saving Energy



See the Energy chapter in part I for general suggestions for lighting and window insulation. Turn the thermostat down during the night to 17°C (63°F) in the winter. Add blankets or a duvet to suit your personal needs for keeping warm – but not an electric blanket! Flannel sheets are warmer than regular sheets.

Alternatives to Hazardous Products

Alternative cleaners



Use simple, alternative cleaners to reduce the number of hazardous products in your home and protect water quality. For a list of all-purpose cleaners and criteria for choosing cleaning products, see the Water chapter in part I.

Moth repellent

In a small square of cheesecloth or fine cotton, mix equal parts of cloves, cinnamon, nutmeg, mace and caraway seeds with an equal amount of orris root (from health food stores). Sew the edges of the cloth and suspend from a hanger. (Probe Post, August 1986).

GOAL	WHEN, WHERE	HOW
Using less energy	<ul style="list-style-type: none"> • Window insulation • Lighting • Fans 	-refer to Energy, part I
Avoiding hazardous products	<ul style="list-style-type: none"> • Cleaners • Closet deodorizers 	<ul style="list-style-type: none"> -make your own, purchase non-toxic cleaners -use cedar chips or a spice mixture
Reducing waste	<ul style="list-style-type: none"> • Clothing exchange • Personal care products 	<ul style="list-style-type: none"> -buy good quality clothes -repair; buy used; exchange -buy recyclable, refillable, minimally packaged products

Closet deodorizers

Place cedar chips, dried herbs or spices of your choice on a small piece of scrap cloth. Tie up the ends of the cloth and hang in the closet.

For carpet care and furniture cleaning, see the *Living/Family Room* chapter.

Reducing Waste



Clothing

Buying clothes can be very expensive! A casual outfit of a T-shirt, cotton jeans and jogging shoes can easily cost \$100. But what are the environmental costs?

Cotton is a preferred fabric for clothing, often seen as the "natural" choice over synthetics. This may be true, but cotton production involves the heavy use of pesticides and irrigation, and leaves the soil depleted of organic matter.

On the other hand, polyester, acrylic and nylon are plastics made from petroleum, a non-renewable resource which involves environmental risks to extract, transport and process. Rayon is made of wood pulp, so it is derived from an industry — logging — which poses many environmental concerns. The "permanent press" fabrics we take for granted are treated with chemicals to keep clothes wrinkle-free.

Since the production and processing of all kinds of fabric have environmental costs, what does the consci-

entious consumer do? Go naked? Well, not in public at least! Instead, he or she minimizes the accumulation and waste of clothing. This means choosing clothes carefully, repairing them, exchanging them when they are no longer wanted, and buying used clothing. In total, these steps help lessen the environmental impact of fibre production and fabric and clothing manufacture, as well as reducing the volume of discarded clothing going to the garbage.

Personal action

➤ **Choose quality.** Styles change, but good quality clothing can be altered and you can create your own style.

➤ **Choose clothes that can be washed at home.** The solvents used in dry cleaning are hazardous.

➤ **Repair clothes.** If a zipper breaks, replace it, or have a tailor or alteration service do it for you.

➤ **Give away clothes you no longer want.** Locate a neighbourhood service or have a clothing exchange with friends, a church or day-care centre group. It's a great way to save money and have a good time too! Someone hosts the party and everyone brings clothes they no longer want. Don't overlook a garment that can be altered. Take leftover clothing to a church or neighbourhood service (these sell rags to cleaning companies so that even the

most worn-out clothing can be put to use and thus further lower environmental pressure.)

➤ **Cut clothing into pieces to be used for cleaning rags** when you've really worn it out and it's beyond rescue. Or, neatly squared and hemmed, they can be made into dish towels, dinner napkins or handkerchiefs. Why not use as gift wrap too? Or your pet's homemade flea collar (see *Companion Animals*).

➤ **Update clothing with do-it-yourself dyes**

EnviroWarning Try natural dyes — the ingredients in ready-made dyes are not listed but they may be coal-tar based. These are carcinogenic and the residue ends up going down the drain.

References

Living More With Less. Doris Janzen Longacre, (Herald Press, Kitchener, Ontario, 1980).



Kitchen



Jason's no-waste lunch

He makes his own lunch and takes only what he likes to eat, so leftovers aren't a problem. To school, he takes a sandwich in a re-usable container, carrot sticks in a margarine container, an apple and cookies. Juice in a re-usable 150 ml glass bottle. Everything is packed in a washable canvas bag. Back home again, the apple core, packed in the sandwich container, goes to the compost pile. The containers and juice bottle are washed for use again. The bag is also washed regularly.

Lessons from the cottage

"We're really conscious of the water we use at the cottage," writes Mrs. W. from Cloyne, Ontario. "We don't have a water purifier or a hot water heater. Washing the dishes requires boiling the water for five minutes to make it safe to use. Then we pour hot water and soap in one side of the double sink for washing the dishes, and hot water for rinsing in the other. We've learned to make do without running the rinse water continually and have taken our good habit home!"

Most activities in the kitchen centre around food issues. That includes packaging, buying, preparation, cooking and storage, as well as eating and washing up! There are important opportunities for improvements in energy and water use, waste management and water protection.

Food (purchased from stores for home preparation and from restaurants) is the second largest expense after shelter for most Canadians.

When we talk about food, we're really getting down to basics. Most of us are aware that the type of food we eat significantly affects our health. But what impact does our food have on the health of the natural environment?

From the field, through the factory, travelling to your dining table and into the garbage bin, our food has a considerable impact on the environment. Here are some things to keep in mind to minimize that impact.

Saving Energy



Getting there and back: How far do you drive for groceries?

Do you find yourself regularly hopping in the car for a couple of items you've forgotten? Is it worth driving to the other side of town to use a coupon worth 50 cents? Advance planning will help to minimize shopping trips.

Buying locally: Buying straight from local growers, at farmers' markets, cuts down on packaging, on price, on pollution and on the fuel consumed by transporting goods long distances.

Growing your own: How can you beat the taste of sun-ripened tomatoes just plucked from the garden? Growing some of your own food makes the route from the field to the table even shorter.

Organically grown: Organic food is produced without synthetic chemical pesticides and fertilizers, growth regulators or



hormones. Pesticides, fertilizers, and other agricultural chemicals not only cause health and environmental problems, but their production uses considerable energy.

Dishwashing: Dishwashing manufacturers recommend temperatures of 60°C (140°F). A water temperature booster on the machine allows you to reduce the temperature on the hot water heater to 49°C (120°F). Let the dishes air dry to save energy. When handwashing dishes, don't leave water running to rinse. With a double sink, put soap and a few inches of water in one and rinse water in the other.

Appliances: Do some homework before buying a new, major appliance. First, can the old appliance be repaired? Finding a part for a 1959 refrigerator is not impossible – parts suppliers list universal devices that fit most years and models.

Second, check *Energuide Directories* for ranges, dishwashers, freezers and refrigerators **before shopping** (see **References**). These directories rate energy use per month for each model. (Don't forget – energy consumption has environmental impacts that won't



GOAL	WHEN, WHERE	HOW
<i>Saving energy</i>	<ul style="list-style-type: none"> • Food storage • Food shopping • Windows lighting appliances • Dishwashing 	<ul style="list-style-type: none"> -make sure appliance size fits needs -combine shopping trips -buy locally -buy organically-grown products -see Energy chapter -buy energy-efficient dishwasher -choose air-dry cycle
<i>Using alternatives to hazardous products</i>	<ul style="list-style-type: none"> • Dishwashing, cleaning • Drain maintenance 	<ul style="list-style-type: none"> -use alternative cleaners -non-toxic, preventative measures
<i>Reducing waste</i>	<ul style="list-style-type: none"> • Food shopping • Food preparation • Cleaning • Coffee-making • Packaging 	<ul style="list-style-type: none"> -take your own bags -choose items with minimal packaging -collect peelings, etc., for composting -use washable cloths -use newspapers for shining surfaces (instead of paper towels) -use a French Press coffee-maker or a re-usable filter -use nylon bags or lunch boxes & plastic re-usable containers (instead of plastic wrap & wax paper)
<i>Saving water</i>	<ul style="list-style-type: none"> • Food preparation • Dishwashing 	<ul style="list-style-type: none"> -steaming (preserves nutritional value) -install a faucet aerator

show up in your electricity bill.)

Third, make sure the appliance fits your needs. For example, if you already own a chest freezer, perhaps your new fridge doesn't have to have a freezer compartment. These models use less energy.

Empty space in a refrigerator means wasted energy. For one or two people,

a fridge of about 340 litres (12 cubic feet) should be enough. For three or four people, consider a unit of 395 to 480 litres (14 to 17 cubic feet). Similarly, why buy a four-slice toaster if you only toast two pieces at a time?

See the **Energy** chapter in part I for energy-saving blinds and lighting.



CERTIFIED ORGANIC

When you are looking for organically grown fruits and vegetables, you may notice different stickers and symbols. Organic food is certified by various organizations across Canada following regulations of The Organic Food Production Association of North America (OFFANA). Look for the "Certified Organic" sticker. It's more than a guarantee of pesticide- and artificial fertilizer-free products since it also regulates the post-harvest treatment of food. For instance, irradiated food will not be certified because of the controversy about the effects of irradiation on food nutrition and on the environment.



Food factories

When we examine our treatment of the earth we should also examine our relationships with other living things, such as the animals we eat. Mass-production farms have been likened to factories, where animals living in restricted quarters are given antibiotics and hormones and will be confined until slaughter.

If these conditions concern you at all, cut veal out of your diet first! These male calves may be kept in crates and otherwise deprived until slaughtered. As well, look for stores that carry products such as "free-range eggs", from chickens which are not permanently caged up.

Energy-saving tips



Save energy, water and vitamins when cooking vegetables by using a steamer with a small amount of water and a tight-fitting pot lid.

For stews, roasts, vegetables and many other dishes, a pressure cooker cuts down greatly on cooking time.

A microwave uses less than half the energy of a conventional oven for most cooking jobs. Savings are greatest with small to medium quantities of food that would normally be heated in the oven. Follow the manufacturer's instructions to get maximum performance. For example, it's wasteful to defrost food in the microwave rather than in the refrigerator.

A convection feature on a conventional oven or microwave can be an energy saver.

Try shutting off the oven a few minutes before the food is completely cooked. The heat in the oven will be enough to complete the cooking.

When using a conventional oven, cook a number of dishes at once.

Except for baked goods, preheating the oven isn't necessary.

Don't fill the kettle every time you boil water – boil only as much as you will need.

Avoid using electrical gadgets – can openers, knives and coffee grinder (even corkscrews!!) – when manual appliances will do the trick. Often these gadgets are hard to repair and end up in the garbage after a limited time of use.

Keep refrigerator coils free of dust. Leave adequate air space around the appliance. Check the book supplied by the manufacturer. If you haven't got an instruction book, call an appliance store and ask for a recommendation for your make and model.

Alternatives to Hazardous Products

Chemical-free food



Chemical pesticides, herbicides and fertilizers used in food production are a well-

known source of environmental and health problems. First of all, their production (from petroleum), transportation and application consumes considerable energy. Secondly, while boosting short-term production, over time they deplete the soil of nutrients, and also pose a threat to water supplies. As well, they kill indiscriminately – "pests" and non-pests alike – and they upset the ecosystem. Have you noticed that birds have abandoned those neighbourhoods where chemical lawn treatments are common?

You could look for organically grown food in

your area, either at supermarkets or farmers' markets. Be sure that it is certified organic! Or grow your own produce without synthetic pesticides or fertilizers (see the **Lawn and Garden** chapter).

Cleanliness is next to healthiness: For you and the environment?

Families spend an average of \$200 a year on cleaning supplies. Although more than half of this amount is spent on laundry supplies, the supply of cleaners in the under-the-sink kitchen cupboard is usually quite large and diverse, often typically with a different product for every cleaning need.

Simple alternatives to cleaning products are suggested to protect water quality and reduce waste in the section on saving water in this chapter. (See also the **Hazardous Products and Waste** chapter for a list of hazardous kitchen products and the **Water** chapter for alternative cleaning products.)

Reducing Waste

According to one source, for each \$1000 of sales in the average supermarket, 100 pounds of corrugated cardboard and 65 pounds of other packaging are thrown out. Or, for a weekly grocery bill of \$150,

almost 25 pounds of packaging garbage are thrown out and wasted!

The average household's garbage is at least one-third packaging and one-third food waste. Just think of all those fruit and vegetable peelings, meat bones and scraps, skins, cereal boxes, peanut butter jars, margarine containers, soup tins and more! There are many opportunities in the kitchen for reducing waste.

Packaging

Some grocery stores have bulk food sections so you can use plastic or paper bags. (Bring along your own re-usable one, too.) Shop at a store that does not use unnecessary packaging, such as fruits and vegetables on trays covered in clear wrap.

Smaller grocery stores and health food stores will gladly accept returned egg cartons, and some let you use your own containers for goods like bulk peanut butter and honey.

Can you buy your milk from an outlet with a returnable jug program? (These aren't refilled, but made into other products.) Is there a dairy near you that still uses refillable glass bottles?

When buying soft drinks, choose returnable bottles. A glass bottle can be sterilized and re-used up to 15 times before being crushed and re-processed into glass.

If there is a choice in packaging, choose glass. Jars can be re-used for a

variety of things: dry food storage, jam making, workshop storage.

Convenience foods are more packaged than other products. Single-serving units, boil-in-a-bag dishes and T.V. dinners contain more packaging than food. Try to buy in bulk and to buy the large size whenever possible. Two small boxes create more waste than one large box. Make your own yogurt! (See recipe in this chapter.)

Two-thirds of all plastic packaging is used for food. Yet few plastics are recycled, they do not break down in landfill sites and they are derived from a non-renewable resource (oil). There is also concern about the by-products created in plastic incineration. Instead of plastic containers, look for glass, steel or aluminum.

Buying disposables is buying garbage. Kick the habit! Here are a few ideas to help you:

Earthbags are sturdy, 100% cotton bags with an artistic flair, designed to hold a lot and to fold flat. Order from:



Nikki Coulombe, P.O. Box 6730, Station J, Ottawa, Ontario, K2A 3Z4. \$6 and up plus postage and tax.

For making coffee (don't forget to save the grounds for the compost), buy a coffee-maker with a permanent basket filter for drip



Yogurt recipe

Make your own yogurt without an electric yogurt maker. You'll need a candy thermometer, an insulated



camping cooler, several large glass containers with lids, milk, and yogurt starter (store-bought yogurt with live bacterial culture.)

Heat 1 quart of milk to 82°C (180°F). Use a candy thermometer and watch closely so it doesn't boil over. Cool milk to 43°C (110°F).

Stir in 50 to 75 ml (1/4 to 1/3 cup) yogurt into 250 ml (1 cup) of prepared milk, then add this to remaining warm milk and stir or shake briskly.

Pour milk into scalded jars and fasten lids loosely.

Incubate the mixture by setting the jars into a camping cooler. Fill with warm water 43° to 48°C (110° to 120°F) to top of jars. Cover. Add warm water as needed within next few hours to keep temperature up.

Check consistency. Yogurt should not be moved while it is setting. Check in 2 to 3 hours. Usually 3 to 6 hours is needed for junket-like consistency. Refrigerate. Save 50 ml (1/4 cup) to start next batch.

Recipe adapted from *More-With-Less Cookbook*. Doris Janzen Longacre, (Bantam Books, 1981).

drip coffee, a percolator or a "French Press" coffee-maker.

• Use a one-cup permanent filter and holder in one (Check at coffee specialty shops or write to: Brew-A-Cup, Inc., P.O. Box 5613, San Jose, California 95150).

• Use and re-use a nylon filter. Available for about \$2 in some department, hardware or specialty kitchen shops, or write to: G. Rosenthal Import Ltd., Montreal, Quebec, H8T3E6 for distributors. This works just as well for an automatic drip coffeemaker as for a manual drip one. (Take one to the office, too.)

• Using paper lunch bags, wax paper and plastic film add up to a lot of lunchtime waste. Replace with cloth or nylon lunch bags or lunch boxes and re-usable sandwich and food containers.

• A glass bottle or an insulated vacuum flask is a good alternative to throwaway boxed drinks which can't be recycled. The flask or bottle can be washed at home and refilled with beverage from a larger container.

• Do you buy paper towels out of habit? What cleaning chores do you use them for? Could washable cloths do the same work?

What can you re-use?

• One-litre milk bags, well-washed and sliced open on one end, make super sandwich bags or freezer bags.

• Yogurt, margarine and

sour cream containers can be re-used to store food and for other uses like painting, organizing the workshop, gardening, etc. Choose products in containers with snap-on lids (rather than peel-off foil or paper) so that they can be re-used. Choose large sizes and fill small containers to pack in lunches.

• Save leftover food in a re-usable container rather than disposable plastic wrap or foil. Or store in the pot or casserole, ready for reheating. Try to eat it in the next few days; but, if it goes bad, toss it in the compost pile.

What can you recycle?

If your community doesn't have curb-side pick-up for recyclable materials, you'll have to look for the closest depot, or work to get one established. Many communities do have recycling programs but, as discussed in

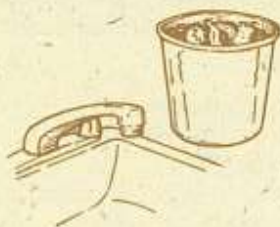


the Waste chapter in part I, recycling is only one waste reduction strategy.

Composting

No waste decomposes easily in a landfill site because the oxygen-poor, compacted conditions are not favourable. Yet backyard composting is so simple, it's almost magic! And composting is not just for organic gardeners. It's much more....

About one-third of our weekly garbage is organic kitchen and garden materials that can be composted at home. Home composting reduces the amount of garbage going to overburdened landfill sites and provides organic matter and nutrients for garden soil, producing healthy plants without chemical fertilizers and pesticides. (See the **Lawn and Garden** chapter.)



Create a kitchen compost bin by keeping a plastic container on the counter next to the sink (a 2 litre ice cream container is about the right size). As you prepare fruits or vegetables for dinner, chop up the peels or outer leaves and put into the container. Add apple cores, coffee grounds, leftovers past their prime, eggshells, etc. Every few days, empty the container into the compost pile outside, and wash the counter-top container for use again. (See the **Lawn and Garden** chapter for details on backyard or balcony composting).

Water-saving tips

Don't run the tap to get a cold, cold glass of water. Keep a pitcher of water in



TO MEAT OR NOT TO MEAT?

Many people on vegetarian or meat-reduced diets are motivated not only by health concerns but also by the belief that raising meat takes too great a toll on the earth. Raising food animals such as cattle uses considerably more land, energy, water and other inputs than growing grains or vegetables. From four to 10 pounds of grain are needed to produce one pound of beef (combined feedlot and range fed).

There are other links, too. The devastation of the tropical rainforests is partly caused by clearing land to raise beef cattle. One often-quoted estimate is "55 square feet of rainforest is cleared for every quarter-pound hamburger." As well, the cattle population explosion is responsible for increasing methane emissions, which contribute to global warming, and produces other wastes which can cause contamination.

And then there are personal health concerns about the hormones, antibiotics and other chemicals present in commercially produced meat products.

Instead of stocking up on meat, have some fun experimenting with new dishes using whole grains, tofu, nuts and other non-animal sources of protein.

Try this simple recipe:

Savory rice loaf

Grease loaf pan (9x5x3").
Line bottom with waxed paper.
Toss together lightly in mixing bowl:

- 3 eggs, slightly beaten
- 375 ml (1 1/2 c.) cooked rice
- 375 ml (1 1/2 c.) grated cheese
- 125 ml (1/2 c.) fine dry bread crumbs
- 50 ml (1/4 c.) chopped celery
- 30 ml (2 tbsp.) chopped onion
- 30 ml (2 tbsp.) chopped parsley
- 30 ml (2 tbsp.) chopped green pepper
- 5 ml (3/4 tsp.) salt
- 250 ml (1 c.) milk
- 50 ml (1/4 c.) melted margarine

Pour into loaf pan. Place pan in baking dish which contains 1" hot water. Bake at 175°C (350°F) for 1 hour or until loaf is set in centre. Loosen loaf around edge with spatula; turn out onto platter. Remove paper.

(From *More-With-Less Cookbook*. Doris Jauzen Longacre, Bantam Books, 1981).

Served with a green salad, this loaf provides complete proteins and lots of other tasty nutrition!

Other interesting cookbooks

Diet for a Small Planet. Frances Moore Lappé, (Ballantine Books, New York, 1975).
Moosewood Cookbook. Mollie Katzen, (Ten Speed Press, Berkeley, California, 1977).

The Enchanted Broccoli Forest. Mollie Katzen, (Ten Speed Press, Berkeley, California 1982).

Non-aerosol, no-stick cooking

Make an easy-to-use, low-cal, non-stick cooking coating at home. In a blender combine:

50 ml (1/4 cup) liquid lecithin (available at health food stores).

50 ml (1/4 cup) vegetable oil (buy oil in a glass bottle).

50 ml (1/4 cup) vodka (this is necessary to emulsify the lecithin and oil; the alcohol evaporates when heated).

Blend at high speed.

Pour into an empty dish detergent or lotion squirt bottle (well washed, of course). Squirt or spray a small amount onto cooking surface and spread evenly. Use a light coating on muffin tins, bread pans, cookie sheets.

(Thanks for the idea from Chris Bloomfield, Ottawa)

the fridge for that purpose.

☛ Use leftover cooking water (e.g., from boiling eggs or steaming vegetables) for making soup or for watering houseplants! Cold leftover tea, in moderation, is good for houseplants too.

☛ If you have a double sink, put a few inches of water in each – one with soapy water for washing, the other for rinsing.

☛ A dishwashing soap-wand is inexpensive and can help reduce water use. Check in hardware, department and grocery stores. You dilute liquid dishwashing detergent with water and pour into the handle of the wand. Soap is automatically dispensed through the sponge or scrubber end (these are replaceable) as you wash the dishes. Don't leave the hot water running as you scrub. Turn the water on to rinse the dishes.

☛ Run the automatic dishwasher only when it is full. You may need extra dishes so you'll still have some clean ones to use when the washer's nearly full! Large pots, roasting pans or mixing bowls take up a lot of room in the dishwasher. Rather than run the dishwasher twice, wash a few large items by hand.

☛ When changing your pet's drinking water, give a houseplant a watering!

Home-made cleaners: Recipes for change

For all-purpose cleaners and criteria for choosing

cleaners, see the chapter on Water in part I.

Automatic dishwasher cleaner

Many commercial brands contain from 18 to 31% phosphate (*Protect Yourself*, September 1985). Since 1977, the number of households across Canada with automatic dishwashers has almost doubled. In one cottage area in Ontario, an estimated 30% of cottagers own dishwashers. This adds a considerable phosphate load to our lakes and rivers.

Phosphate-free automatic dishwasher detergent

Mix 250 ml (1 cup) of borax with 125 ml (1/2 cup) of baking soda. Fill the machine's detergent dispenser as usual. (Borax, or sodium borate, is a mineral salt. It is used as a degreaser, deodorizer, mild antiseptic and water softener. Look for it in the laundry section of the grocery store.) For best results, rinse dishes – especially mugs and cups – with cold water before stacking in the dishwasher.

You might also look for President's Choice™ GREEN Environment Friendly Products: 100% phosphate-free automatic dishwasher detergent.

Garbage pail cleaner

A mixture of borax and water will clean and deodorize garbage pails.

Oven cleaner

Dampen the inside of the oven with water. Sprinkle

liberally with baking soda. Leave overnight. In the morning scrub with a plastic or steel wool scrubber (a razor scraper sold for scraping paint from windows works well on tough spots. Keep the scraper flat to avoid scratching the enamelled surface.)

Or mix 30 ml (2 tablespoons) dishwashing liquid and 15 ml (1 tablespoon) borax in a spray bottle. Fill the bottle with warm water. Use when the oven is still warm, but turned off. Scrub with a plastic or steel wool scrubber.

Note: These alternatives work poorly if the oven hasn't been cleaned for two or three months! Clean regularly. The spray solution is handy to use and, while it's not caustic like regular oven cleaner, make sure to label spray bottles clearly and keep out of the reach of children.

Deodorizing the refrigerator

Clean the inside of the refrigerator with 45 ml (3 tablespoons) baking soda dissolved in warm water.

Cleaning coffee stains

You can use baking soda to clean coffee and tea stains from china mugs.

Drain maintenance

Chemicals used to dissolve clogs produce hazardous wastes and can cause skin burns and produce irritating fumes. A little preventative maintenance goes a long way in elimi-

nating the need for such poisonous products.

Don't dump grease and scraps down the drain. Pour fat into a container to solidify; scrape the fat into the garbage and wash and reuse the container. Catch food scraps in the basket strainer, then empty into the compost container. (Don't add meat or bones to the compost.)

References

Clean House, Clean Earth – How to Clean With the Environment in Mind (\$3 including postage). An attractive poster with recipes for alternative cleaners for every room in the house. Compiled by Friends of the Earth volunteers, 701-251 Laurier Avenue West, Ottawa, Ontario, K1P 5J6.

Excess Packaging, Strategies for Waste Reduction. Proceedings from a forum held at the University of Waterloo, June 10, 1988. Waterloo Public Interest Research Group and the Citizens Network on Waste Management. 1988.

Organic Agriculture Directory: National Directory to Organic Food (\$8 including postage). Lists suppliers and growers. Ontario Federation of Food Co-operatives and Clubs Inc., 22 Mowat Avenue, Toronto, Ontario, M6K 3E8. Toll-free number: 1-800-387-0354.

Organic Food Supply and Demand in the National Capital Region. David Taillefer, (Friends of the Earth, February 1989).

Q: What does an environmentally concerned person choose?

☐ paper towels made from 100% recycled paper

☐ paper towels made from 100% recycled paper, produced without chlorine

☐ ordinary paper towels

☐ none of the above

A: a and b are better than c, but d is the best answer. Disposable paper towels may easily be replaced with washable cloths for clean-ups and hand drying. Newspapers can be used for shining mirrors and windows, for wiping greasy hands, and for paint clean-up.

Laundry

Laundry detergents account for half the amount each household spends annually on cleaning products. These are a major source of water pollution and present an easy opportunity to reduce our impact on the environment. The laundry room is also a place to reduce water and energy use. Simple drain maintenance and clog prevention avoid the need to use hazardous products.

Saving Energy



According to Consumer & Corporate Affairs Canada, cold-water detergents are as effective as hot-water detergents provided the water is 15°C (59°F) and above. However, they also report that hardly any community in Canada has cold water above 15°C in the dead of winter. (*Ottawa Citizen*, April 5, 1989)

A warm-water wash/cold-water rinse uses two-thirds of the energy needed for hot wash/warm rinse. Try cold/cold too, keeping the winter caution in mind.

Drying clothes outside is an environmentally sound choice in contrast to a clothes dryer which uses a lot of energy. (It's the easiest way we can use solar energy, too!) Outside drying weather may extend from May to October depending on where you live.

Water

Laundry products

Many laundry products contain phosphates which contribute to excessive algae growth in lakes and rivers. As the algae dies, the water becomes depleted of oxygen and life cannot

be sustained. (Refer to the **Water** chapter for more information on phosphates).

Soap and non-phosphate detergents contain less than 1% phosphate and are just as effective for cleaning as regular detergents. (Refer to *Cottage Country: Environmental Manual for Cottagers*, published by Environment Ontario, for a list of these detergents.) Ivory Snow is rated as the best of 25 detergents for stain removal and brightened clothes. (*Canadian Consumer*, April 1986.) Soap is made from animal fats, vegetable oils and a caustic component such as lye.

When switching from detergent to soap, wash your clothes in cold water with 75 ml (1/3 cup) of washing soda to remove the detergent film, otherwise your clothes may go yellow or dingy in the switch.

Softening your water

The first step before switching to alternatives is to test water hardness. Put about 500 ml (2 cups) of warm water in a jar, add 15 ml (1 tsp.) of soap flakes and shake hard. If you get lots of suds that last for several minutes, you don't need to add water softeners and powdered laundry soap will work effectively.

Borax and washing soda are mineral salts used to soften the water and act as cleaning boosters. If your water is hard, these additives will help clean the laundry.

Using alternatives



Experiment with the amount of soap or detergent needed to get the best results. Use the smallest amount necessary to do the job. Add the

GOAL	WHEN, WHERE	HOW
<i>Saving energy</i>	•Drying laundry	-hang to dry outdoors, or in basement -use dryer timer; keep lint trap clean -insulate hot water tank and pipes -use cold water rinse
<i>Saving water</i>	•Washing laundry	-buy a suds-saver washer -wash full loads only
<i>Protecting water quality</i>	•Washing laundry	-use soap or non-phosphate detergent
<i>Alternatives to toxics</i>	•Drain maintenance	-make a lint filter for washer

soap, borax or washing soda to the empty machine, then dissolve the cleaners in warm water before adding clothes. Rinse in cold water. For hard water or heavily soiled clothes, add 125 ml (1/2 cup) borax or 75 ml (1/3 cup) washing soda to the wash water.

Fabric freshener: For diapers and baby wear, wash in hot water with detergent and 125 ml (1/2 cup) borax. Pre-soak for extra tough stains and odour in 125 ml (1/2 cup) borax or baking soda and leave for two hours.

Fabric softener isn't necessary if you use soap. *Canadian Consumer* reports that a small amount of soap residue is left on clothes and softens the fabric. If you use a non-phosphate detergent, try adding 50 ml (1/4 cup) white vinegar to the final rinse cycle.

Stains: Most stains can be removed with a paste of soap flakes and water, or scrub with plain bar soap. This is not magic — you spot the stain and mechanically scrub it! Then launder as usual.

Static cling: Take the clothes from the dryer while they are still slightly damp. Or hang the clothes on a line or clothes horse.

Using less water

On some washers, you can select the water level to fit the size of the load. Full loads make the maximum use of the energy needed to run the machine. Doing two half loads in a week consumes double the energy of a single full load. Soaking and handwashing a few items may be necessary from time to time to avoid

using the washing machine.

Several manufacturers make "suds-saver" clothes washers. The water from the first load is pumped into the laundry tubs, the dirt settles, and the water is pumped back into the machine for the second load. Energy consumption is slightly higher in some models. (See **References**).

Wringer washers, of course, use the same wash water for several loads, and the rinse water in the laundry tubs may also be used for a couple of loads.

If your washing machine doesn't have a lint filter, make one to prevent lint from clogging the laundry tub drain and so that you can avoid using hazardous chemical drain cleaners. Use an old nylon stocking or knee high. Secure the nylon to the drain hose with a wide elastic band. After several loads, remove the nylon, turn it inside out and pull the lint off.

A few product ideas

Washing machines

- Kenmore Suds Saver. Sears Canada Inc., 22 Jarvis Street, Toronto, Ontario, M5B 2B8. About \$700.

Laundry products

- 20 Muleteam Borax. The Dial Corporation, Surrey, B. C., V3T 5B6.

- Arm & Hammer Super Washing Soda. Church & Dwight, 75 The Donway West, Suite 704, Don Mills, Ontario, M3C 2E9.

- Ecover Products. Non-phosphate. Available at some grocers and health food stores. Purity Life Health Products, 100 Elgin Street South, Acton,

Ontario, L7J 2W1.

- Ivory Snow. Proctor & Gamble Inc., 411 Yonge Street, Toronto, Ontario, M2N 6K8. Toll-free number: 1-800-668-0151.

References

Clean House, Clean Earth (\$3 including postage). An alternative cleaners poster compiled by Friends of the Earth volunteers, 701-251 Laurier Avenue West, Ottawa, Ontario, K1P 5J6.

Cottage Country, An Environmental Manual for Cottagers. Environment Ontario, Public Information Centre, 135 St. Clair Avenue West, Toronto, Ontario, M4V 1P5 (sixth edition, 1989). Includes a list of laundry detergents tested at no phosphate, less than 1% phosphate and 5% phosphate.

Energide Directory for clothes washers (1988-89). Energy, Mines & Resources. Product ratings give tub capacity (this isn't the total water consumption), temperature selection and energy consumption based on 34 loads per month.

Energide Directory for clothes dryers (1988-89). As above.

"Laundry Detergents", *Canadian Consumer*, Vol. 16, No. 4, April 1986.

Non-toxic and Natural, How to Avoid Dangerous Everyday Products and Buy or Make Safe Ones. Debra Lynn Dadd, (Jeremy Tarcher Inc., Los Angeles, California, 1984).



Woodburning tips

- Follow the operating instructions for any wood-burning appliance. By achieving efficient burn rates you will reduce emissions and improve safety.

- Don't forget to turn the furnace off or turn off the room thermostat when the woodstove or fireplace insert is operating. Otherwise, the family room may overheat while the rest of the house is cold and the furnace may come on. If you need a way to move the warm air, running the furnace fan may help.

- Where does your wood come from? Does the company or woodlot owner replant trees, practise selective cutting and chip twigs and small pieces for mulch? Is the wood transported a long distance? (The farther away the supply, the greater the transportation effects the environment).

- Woodlot owner or customer, make sure your wood is managed in an environmentally sound way. (See *References*.)

- Most experts suggest using dry wood (aged at least six months) because part of the heat energy of wet

(Continued)

PRACTICAL GUIDES

Living Family room

As a centre of leisure in most homes, the living room or family room is associated with home entertainment and hobbies.

Many hobby materials are hazardous and, while user-safety precautions are fairly well documented, the environmental safety of these materials is not clear. We offer suggestions for safe art material for children, as well as alternative cleaners for furniture, rug and upholstery. This room is often the location of a fireplace or woodstove. The environmental costs of woodburning are, therefore, also discussed.



Saving Energy



Fireplaces and woodstoves

Ah, a fireplace. Flames cast a comforting glow over the room, set the scene for quiet reflection, intimate moments...and what else? Wasted heat, added pollution, and more!

While it's very pleasant to sit by a roaring fire in an open fireplace, most of the heat goes up the chimney. The radiant heat produced close to the fireplace does not compensate for the loss of heated air drawn up the chimney from the rest of the house.

There is also concern about the emissions that result from burning wood, particularly from poorly designed and improperly maintained appliances.

GOAL	WHEN, WHERE	HOW
<i>Saving energy</i>	<ul style="list-style-type: none"> • Fireplaces • Woodstoves • Fans, lighting 	<ul style="list-style-type: none"> -see Energy -ensure efficient operation -see Energy
<i>Using alternatives to hazardous products</i>	<ul style="list-style-type: none"> • Arts & crafts • Cleaning • Entertainment 	<ul style="list-style-type: none"> -safely dispose of toxics -use alternative cleaners -operate radios, tape recorders, games, etc. off AC current instead of batteries; or buy rechargeable batteries

The production of carbon dioxide and particulates resulting from burning wood contribute to air pollution. The more efficient the woodburning appliance, the less carbon monoxide produced (an air pollutant) and the less carbon dioxide released into the atmosphere. Remember that carbon dioxide is a "greenhouse gas" contributing to global warming. As for natural gas fireplaces, although natural gas may emit the least carbon dioxide of all the fossil fuels, an open natural gas fireplace, like a conventional wood-burning one, is still an inefficient heat source.

The U.S. Environmental Protection Agency (EPA) has introduced standards aimed at reducing particulates released by new woodstoves and airtight fireplaces. These will lead to a 25% savings in fuel wood and a 50% reduction in emissions for high performance stoves. With few exceptions, new woodstoves made in Canada will meet new EPA standards (Gordon Flager, *Harrowsmith*, No. 82, November-December 1988).

Efficient burning also reduces the amount of tiny particulates called POM (polycyclic organic matter) which contain carcinogens. This reduction is a plus for human health. Creosote build-up in the chimney is also decreased, thereby lessening the chance of chimney fires and reducing the frequency of cleaning necessary.

Certification by the Canadian Standards Association (CSA) or the Underwriters' Laboratories of Canada (ULC) indicates that the stove or fireplace has met minimum standards for fire safety and operation, but not for energy efficiency or pollution. For safety reasons, be sure to follow the operating instructions provided with a woodstove or fireplace insert. The Canadian Wood Energy Institute can provide information on wood heat safety.

Choosing to burn wood

If you choose to burn wood to heat your whole home or as a source of supplemental heat, the first step is to make sure your home is well-insulated and draft-proofed. Whatever fuel you use, the less fuel used to heat your home, the less carbon dioxide you add to the atmosphere.

Through energy conservation, you will also contribute less to the negative environmental impact of exploration, processing, and transportation of energy to your home, whether it's natural gas, furnace oil, electricity or wood.

Upgrading your fireplace

An insert is a special woodburning appliance fitted directly into the fireplace opening. The controlled burn inside the appliance increases the efficiency by as much



wood is consumed while the water is being vaporized; less warmth is, therefore, produced. Don't use ocean driftwood either – the salt will corrode the stove.

- Painted wood from home renovation projects (especially pre-1977) may have a high lead content and should not be burned.

- Green "wolmanized" lumber, creosote-soaked wood or lumber treated with other preservatives release harmful pollutants when burned.

- Do not burn chipboard or particle board – the glue may contain formaldehyde.

- Ashes are helpful. Mix them in the compost pile. They neutralize acidic soil.

- Many people use a fireplace or woodstove to burn garbage – light cardboard, advertising flyers, etc., whether for heat or to reduce garbage volume. This practice is not recommended. Printing inks and package coatings could emit pollutants and contaminate the ash, making it unsafe for composting.

Remember: The most environmentally sound way to operate a woodstove or fireplace insert is at its maximum efficiency.



Art and hobby material requiring special disposal

(Check with your provincial government or municipal waste management agency for instructions.)

Pigments: Lead (flake white, lead white and lead chromate-chrome yellow); cadmium (and those containing chromates - zinc, strontium and lead); pigments containing cobalt, manganese and mercury and toxic contaminants such as lamp black.

Solvents: Varnishes, turpentine, mineral spirits, lacquer thinners containing toluene, xylene or glycol ethers; methyl alcohol (methyl hydrate); methylene chloride (methylene dichloride or dichloromethane); dry cleaning and degreasing fluids (chlorinated solvents such as carbon tetrachloride, perchloroethylene, trichloroethylene, ethylene dichloride).

Acids: Hydrochloric, muriatic, zinc chloride.

Clays: Silica, talc, asbestos.

Copper sulphate, silver nitrate.

Electroplating and electroforming techniques: Cyanide and acids; colouring compounds - arsenic and lead.

as 50% compared to the heat loss of an open fireplace.

There are two types of inserts. One is mounted flush with the fireplace and the other is a special stove that sits just in front of the fireplace opening.

If you aren't going to buy an insert and, if the damper (the metal plate which swings down to close or open the draft) does not adequately seal, cold air will steal your heat. Make an insulated fireplace plug. Decorated with fabric or wallpaper, it is an attractive and practical heat saving addition. Don't use the plug to close the fireplace opening while embers are still glowing.

Chimney cleaning

Chemical cleaners don't reduce the need for regular chimney maintenance, according to the Canadian Wood Energy Institute. Inspect the chimney regularly, operate the appliance properly to reduce creosote build-up, and hire a certified chimney cleaning company (they will be required to follow disposal regulations for creosote which is a toxic and hazardous material).



Alternatives to Hazardous Products



Art, crafts and hobbies

Many books and reports have been written about the health and safety aspects of arts and crafts materials (see **References**). These sources caution that many activities should be carried out in separate, well-ventilated rooms away from other family activities.

Refer to *The Safer Arts* for a discussion of more than 10 art activities and the materials used in each. Several hazardous materials of concern to children are listed: paint, ink or glazes that contain lead, turpentine, xylene (found in magic markers); solvents containing toluene, methyl alcohol, turpentine, products containing asbestos and silica, epoxy glues, formaldehyde, and nickel and dichromates.

As well as the information in the above source, specific product information may be available from suppliers or the manufacturer in the form of Material Safety Data Sheets (MSDSs). These sheets include product identification and information on the use, fire and explosion hazards of the product, toxicological properties and first-aid measures.

What about the environmental safety of these materials (from manufacture to use and disposal)? Instructions for environmentally sound disposal of left-

over products and containers are **not** included on labels or on MSDSs.

For example, a solvent containing toluene is a hazardous product and wastes must be disposed of properly. In total, this product is hazardous to make, to transport, to use and to dispose of. (See the **Hazardous Products and Waste** chapter in part I for further discussion.)

Choosing arts and crafts materials

☛ Know as much as possible about the product or process you are using and their health implications for you and your family (see **References**).

☛ Learn if there are less toxic alternatives available. Not only do these products have a lower environmental impact during use, but usually their total impact (from production to disposal) is also reduced. (Check **A few product ideas**).

☛ Learn the most environmentally responsible disposal procedures. Contact the hazardous waste management branch of your provincial environment department. (See **Sources and Contacts**).

☛ For children's art supplies use simple products such as wax crayons and home-made alternatives so that you know the ingredients. *The Safer Arts* lists alternatives to children's harmful art supplies. (See **References**).

Alternatives to toxic cleaners

Carpet care:

Vacuum regularly. To deodorize a rug or broadloom, sprinkle liberally with baking soda. Leave at least 15 minutes and vacuum thoroughly. For carpet shampoo, see the list of alternative all-purpose cleaners in the **Water** chapter in part I.

Furniture cleaner:

Dampen a clean soft cloth with plain water or with a weak solution of mild soap. Wipe with the grain of the wood. Dry with a piece of soft, clean cloth rubbing with the grain.

Furniture polish:

A mixture of 30 ml (2 tablespoons) olive oil with 15 ml (1 tablespoon) white vinegar and 1 litre (4 cups) of water makes a furniture polish. Spray lightly and dry with a clean cloth. Or use beeswax.

Upholstery cleaner:

Vacuum upholstered furniture regularly. To clean dirty upholstery, mix together in a clean container: 90 ml (6 tablespoons) soap flakes, 500 ml (2 cups) boiling water, 30 ml (2 tablespoons) borax. Cool. Shake vigorously and apply suds only with a soft brush or cloth in a circular motion on a small area. Wipe soiled suds off with a damp cloth.

Reducing Waste



Buying only what you will use automatically reduces waste!



Arts and crafts and ecology

The following art materials for children contain non-hazardous ingredients and can be stored in clean jars or plastic food containers.

Modelling clay: 250 ml (1 c.) flour, 125 ml (1/2 c.) salt, 30 ml (2 tbsp.) cream of tartar, 30 ml (2 tbsp.) oil, natural colouring (beet juice, blueberry juice, other natural colours).

Glue: Mix 45 ml (3 tbsp.) cornstarch, 60 ml (4 tbsp.) cold water to make a smooth paste. Boil 500 ml (2 c.) water and stir in paste. Continue to stir until mixture becomes translucent.

Fingerpaint: 125 ml (1/2 c.) cornstarch, 188 ml (3/4 c.) cold water in a saucepan. Soak 1 envelope gelatin in 63 ml (1/4 c.) cold water. Add 500 ml (2 c.) hot water to cornstarch mixture and cook over medium heat until it comes to a boil and is clear, stirring constantly. Remove from heat, stir in gelatin, add 125 ml (1/2 c.) soap flakes, stir until thickened and soap is dissolved. Tint with natural dyes (as above under modelling clay).

Adapted from *Everything Natural*, May-June 1987. This newsletter is no longer being published. Back orders from *Everything Natural*, P.O. Box 1506, Mill Valley, California, 94942.

• If you find time to read the newspaper only on Fridays or weekends, then buy the paper on those days only. Recycling is a great idea, but it's not an excuse to waste.

• Consider sharing magazine subscriptions with friends. Recycle magazines by taking them to hospitals, senior citizen drop-in centres, or hostels. Schools and daycare centres are often happy to receive magazines, too.

• AC beats DC! Battery-operated equipment is convenient at times. But an AC adapter will allow most tape recorders, radios, and games, to run on house current when portability isn't needed. Choose equipment that offers a choice between AC and DC. Remember to unplug the AC adapter from the electrical outlet when equipment is not in use. When batteries are not being used, wrap in heavy paper or a plastic bag and store in the freezer to make them last longer.

• Rechargeable batteries: Ordinary dry-cell batteries are considered hazardous waste because of the small amounts of mercury and cadmium they contain. These small amounts add up to tons of cadmium and mercury going to landfill sites each year. A few communities collect these batteries for recycling but most do not. Rechargeable batteries reduce the problem of disposing of spent batteries, and lower the overall cost, too! Remember to

recharge as many batteries at one time as possible.

A few product ideas

Arts and crafts materials

• Livos Plant Chemistry Canada, P.O. Box 92, Apohaqui, New Brunswick, E0G 1A0, (506) 433-3455. \$2 catalogue lists natural arts materials: crayons, children's water colours, modelling clay, fingerpaints. All ingredients are listed. Other non-toxic paints & home products as well.

• Teekah Inc., 5015 Yonge Street, North York, Ontario, M2N 5P1, (416) 229-4199. \$2 catalogue. Plant colours for painting and modelling: artist's plant watercolours, children's water-colours and modelling wax. Other natural glues, lacquers, varnishes, waxes, cleansers and polishes.

• Water-based markers. Various manufacturers.

Wood heating

• Many products claim to reduce emissions. Buy woodburning devices that give the highest performance standards. Look for the EPA rating and consult your local dealer for details.

• STRAWLOGGS™: Manufacturer claims these logs, made of straw, produce 30% less carbon monoxide than burning wood. No creosote. Agrowe Holdings Ltd., RR 2, Bradford, Ontario, L3Z 2A5, (705) 458-4297. Available in hardware and grocery stores.

References

Arts and crafts

A Personal Risk Assessment for Craftsmen & Artists. Ontario Crafts Council, 346 Dundas Street West, Toronto, Ontario, M5T 1G5. Risk assessment based on principles of industrial hygiene. Helpful resource list.

Canadian Centre for Occupational Health & Safety, 250 Main Street East, Hamilton, Ontario, L8N 1H6, (416) 523-2981. Information on occupational hazards of specific materials.

Center for Occupational Hazards, Arts Hazards Information Center, 5 Beekman Street, New York, NY, 10038. List of arts products that are safe to use with children. A non-profit organization which asks for donations to cover mailing costs of information.

Guidelines on Toxic and Hazardous Chemicals Used in Educational Institutions. (Health & Welfare Canada, 1980). Publication No. 81-EHD-74. Hazard rating and disposal for more than 400 chemicals.

Health Hazards in Arts & Crafts. (The Lung Association, 1987). Check your local or provincial Lung Association office.

The Safer Arts: The Health Hazards of Arts and Crafts Materials (1988). Health & Welfare Canada. 39-page report (including a reference list) and posters. Topics include Pottery & Ce-

ramics; Photography; Painting & Printmaking; Dyes & Fabrics; Jewellery; Holoware & Enamelling; Glassblowing and Stained Glass; Wood; Sculpture; and Metalworking. For free copies, write to: Communications Directorate, Brooke Claxton Building, Tunney's Pasture, Ottawa, Ontario, K1A 0L2, (613) 957-2991.

Wood heating

Canadian Wood Energy Institute, 85 West Wilmot Street, Unit 5, Richmond Hill, Ontario, L4B 1K7, (416) 886-9247.

Residential Wood Heating. A Homeowner's Guide. (Energy Mines & Resources, 1987). Write to Energy, Mines & Resources, Renewable Energy Branch, 588 Booth Street, Ottawa, Ontario, K1A 0E4.

Successful Forestry. A Guide to Private Forest Management. (Canadian Forestry Service, 1989). Step-by-step instructions for planting seedlings, removing brush and harvesting timber. Well illustrated.



PAPERMAKING

Equipment:

Scrap paper
Plant and vegetable scraps
Staples, tacks or water-proof glue
2 wooden frames
(suggested dimensions
20 cm x 15 cm)
Nylon fly screening
Kitchen cloths
(at least 2)
A wash basin
Blender
Sponge
Iron

1. To make paper, you must first make a "paper mould," a wooden frame with a nylon fly screen stapled tightly to it. You can use a second wooden frame (deckle) without the fly screen to help make your paper more even.

2. Take some scrap paper, remove any plastic or staples, tear it into small pieces (about 2 cm square) and soak it in hot water for half an hour.

3. Take a handful of the soaked paper and put into a blender about half full of warm water. Blend at moderate speed until you no longer see pieces of paper. (If you have problems, take out some of the paper.) To this mixture (pulp), you can add small amounts of vegetable material like organic peels, carrot tops or flowers, and blend again.

Colouring the pulp: If you want coloured paper, you can add fabric dye to the pulp. Make sure the dye is non-toxic.

4. Pour the mixture into a large plastic bin, half-full of warm water. Increasing or decreasing the amount of the pulp will affect the thickness of your paper.

5. Place the deckle on top of your screen. With both hands, dip the mould into the basin and scoop up some of the pulp. Gently shake the mould back and forth to get an even layer of fibres on the screen. When the water has drained through, place the mould to one side and carefully lift off the deckle, leaving the just-formed sheet on the screen.

6. To remove the paper from the screen, lay a clean kitchen cloth on a flat table, then take the screen and lay it face down on the cloth. Soak up any extra water from the back of the screen with a sponge. Very gently lift the screen- the paper should remain on the cloth.

7. To dry the paper quickly, cover it with another cloth and iron at a medium-dry setting. Once dry, pull gently on either side of the cloth to stretch it- this helps loosen the paper from the cloth. Gently peel the paper off.

8. *A clean-up note:* When you've finished, collect the leftover pulp in a strainer. Be careful **not** to pour pulp down the drain- it might block it. The strained pulp can be thrown out or kept in a plastic bag in the freezer for the next time.

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Workshop



The products we use for house maintenance range from paints to glues to pesticides and insulation products. Health and safety precautions are very important. Sound handling of these materials and their containers is also crucial.

Saving Energy



See the **Energy** chapter in part I for energy-efficient lighting and **energy-saving tips**.

Choose equipment carefully with a view to energy use. Rent or borrow equipment that you only occasionally need to use.

Hazardous Products and Waste



Both producer and user must take responsibility for the safe production, use and disposal of hazardous materials and their leftovers and containers. Product labelling needs to be improved, perhaps by attaching separate instructions. For example, paint manufacturers should provide clean-up instructions.

Information about safer alternatives is also very

important. Improved practices are crucial too! Perhaps changes in attitudes are needed as well. At household hazardous waste days in communities across Canada, typically 60% of the material collected is paint. This is a good example where a change in attitude leads to less wasteful behaviour.

Painting

There are two important points to consider — disposal and reducing waste. Paint must be collected and disposed of properly or it ends up in sewers and landfill sites, along with other hazardous materials such as pesticides, solvents, brake fluid, etc. Take unused paint, solvents and turpentine to a household hazardous waste depot. We can also find ways to cut

down the tendency to waste in the first place.

First choice is water-based

Latex paint or other water-based paints are preferred paint choices as they do not require hazardous solvents for clean-up. However, even water-based paints contain solvents which release hydrocarbons into the atmosphere.

The Environmental Choice program has established a category of low-pollution, water-based paints that contain minimum amounts of mercury, formaldehyde, lead and other heavy metal pigment content as well as chlorinated solvents. (Approved paints should be appearing on the market by the end of 1989 with the Environmental Choice logo.)

GOAL	WHEN, WHERE	HOW
<i>Saving energy</i>	• Equipment	-choose equipment carefully
<i>Reducing hazardous waste</i>	• Painting, woodworking	-safe disposal of glues, paints, etc. -proper paint brush clean-up
<i>Avoiding hazardous waste</i>	• Pest control	-alternatives to pesticides
<i>Protecting water quality</i>	• Reduce hazardous waste	-select alternative products -see above

There are some applications for which latex-based paints are not appropriate: for example, the constant moisture in a bathroom demands alkyd or enamel paint. Buying only the amount needed and carrying out proper clean-up is essential for each type of paint.

Estimate the quantity to buy using the coverage guideline listed on the paint can and then buy only the amount needed. For example, if you need 2 litres of paint, buy two 1 litre cans — don't buy a 4 litre can. It makes more environmental sense to dispose of two empty cans than of the extra paint.

Clean-up steps : Latex or water-based paints

1. Scrape as much excess paint as possible from rollers and brushes onto newspapers (use the paint stir-stick and an inexpensive wishbone-shaped roller cleaner). Let the paint dry before throwing the newspapers into the garbage.

2. Wash the roller and brush in warm soapy water.

3. Rinse with as little water as possible.

Alkyd or oil-based paints

- Follow step 1, as above.
- Clean the paint from the roller tray using newspapers.
- Pour paint thinner into the roller tray and clean the brush and then the roller. Squeeze excess solvent from

the brush and roller into the tray.

- Shake excess solvent onto newspaper or into a paper bag.

- Pour the used solvent from the tray into clean containers such as coffee cans or glass jars (not the sink or drain).

- Repeat the process using clean solvent until the roller and brush are clean.

The paint settles to the bottom of the used thinner. Cap tightly and store safely. It's ready to re-use for the next paint clean-up—just decant the solvent (pour off the liquid without disturbing the sediment) into your cleaning container. The sludge which builds up on the bottom of the storage containers is eventually disposed of at a hazardous waste depot (or thrown in the garbage if you have no alternative.)

Unused paint

Never pour paint down the drain — even latex paints. Clean-up for these paints is safer because the solvent used is water, but pouring paint down the drain damages the environment.

Share leftovers. Find someone who can use leftover paint; ask neighbours, a church, hostel, theatre company or social service organization. Organize a paint exchange. Use leftover paints for recommended uses only (for example, don't use exterior paints indoors).

Marine and auto body paint may contain lead. Check the label carefully. Limit the use of these paints and use for the recommended applications only. Dispose of leftovers at a household hazardous waste depot. No hazardous waste service? Get involved and organize one (check **Sources and Contacts** for your provincial government department). What about asking paint companies to help deal with the waste? In the meantime, the best option is to evaporate small amounts of latex paint (less than 1 litre) by leaving the can open outside the house.

You can solidify alkyd or oil-based paints by mixing with kitty litter or sawdust. Discard in regular garbage. This solid is less likely to escape from the landfill.

Paint stripper

Avoid products which contain methylene chloride. It's a hazardous chemical and leftovers must be discarded at a household hazardous waste depot. With present labelling laws, it is not required to state all product ingredients and it may not be obvious which products to avoid. Ask for



product information at the store or directly from the manufacturer.

Sanding will work for many projects; wear a dust mask to protect your health. If you take furniture to a commercial paint stripper, ask what kind of chemical is used and how the paint sludge, waste water or solvents are handled. Find a company that cares about the environment!

Woodworking tips

Glue: Water-based or natural glues eliminate the need for hazardous cleaners or thinners.

Plywood: Plywood and particle board may contain formaldehyde-based glues. Wear a dust mask when cutting this wood and work outside if possible. Don't burn this wood in the fireplace or woodstove.

Wood preservatives: These chemicals protect against insect and water damage. Avoid preservatives containing pentachlorophenol, arsenic compounds and creosote. These are both health and environmental hazards. Use a water repellent or sealant instead, or choose rot-resistant woods such as redwood and cedar. **Enviro-Warning:** Be aware of concerns about the survival of cedar and red wood forests.

Pest control

Common household pesticides not only kill pests but are also health hazards

to people. Many of these products are packaged as aerosols (the propellants are of concern) and unused portions are hazardous waste.

What exactly is a pest? Is it something that poses a danger to our health? Something that makes us squeamish if we see it in the house? Or something that will cause an embarrassment if it crawls across the kitchen floor when a neighbour is in for coffee?

Roaches, silverfish, ants, flies and mice are considered unwelcome visitors inside the house. What about a spider or ladybug or moth? Or a bat that mistakes your darkened, open doorway for a roost? Couldn't these be gently removed and put outside instead of being exterminated? (See sidebars and **References** for some alternatives to pesticides.)

A few product ideas

Paint

- Choose water-based paints. (Look for the Environmental Choice logo).

- The following manufacturers advertise non-toxic paints:

- **LIVOS Plant Chemistry Canada.** Mail order catalogue \$2, P.O. Box 92, Apohaqui, New Brunswick, E0G 1A0, (506) 433-3455.

- **Teekah. Natural Surface Finishes.** Mail order catalogue \$2. 5015 Yonge Street, North York, Ontario, M2N 5P1, (416) 229-4199.

- **Canadian Old Fashioned Milk Paint Company.** 111 Jarvis Street, Toronto, Ontario, M5C 2H4, (416) 364-1393.

Paint stripper

- **SAFEST STRIPPER.** 3M Home Products Division, P.O. Box 5757, London, Ontario, N6A 4T1, (519) 451-2500. Paint and varnish remover. (3M advertises that this stripper contains no methylene chloride). Available at hardware and paint stores.

Glues

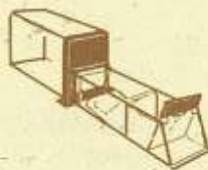
- **Lee Valley** water-based contact cement. Cleans up with water. Mail order catalogue. Lee Valley Tools, 1080 Morrison Drive, Ottawa, Ontario, K2H 8K7, (613) 596-0350.

- **Auro** natural glues. Mail order catalogue \$2. Teekah Inc., 5015 Yonge Street, North York, Ontario, M2N 5P1, (416) 229-4199.

Pest control

- **Borax.** See **Laundry Room** chapter.

- **Live mousetraps.** Check at hardware and department stores.



- **Diatomaceous earth.** See **Lawn and Garden** chapter.

References

Canadian Home Builders Association, 200 Elgin Street, Suite 502, Ottawa, Ontario, K2P 1L5. Technical bulletins on formaldehyde, asbestos, wood rot. Geared to new home builders, but offers useful information for renovators.

Household Hazardous Waste Wheel. Produced in the United States by Environmental Hazards Management Institute. See **References in Hazardous Products** chapter.

Pest or Guest (\$5). Society Promoting Environmental Conservation, 2150 Maple Street, Vancouver, British Columbia, V6J 3T3.

"Paint and Varnish Removers," *Canadian Consumer*, Volume 16, Number 9, September, 1986, pp. 19-24.

Protecting the Ozone Layer: What You Can Do. A Citizen's Guide to Reducing the Use of Ozone Depleting Chemicals. (Environmental Defense Fund, New York, 1988).

The Citizen's Guide to Lead. Uncovering a Hidden Health Hazard. Barbara Wallace and Kathy Cooper, (NC Press Limited, Toronto, Ontario, 1986).

The Safer Arts. The Health Hazards of Arts & Crafts Materials. (Health & Welfare Canada, 1988).

Think Before You Spray (\$3). (Pollution Probe, 1983).



Alternative pest control methods



Non-pesticide insect control takes persistence (and the will to avoid the lure of chemical pesticides which are readily available), but don't let those little "bugs" over-ride your good judgement in protecting the environment.

Little red ants in the food cupboard:

This isn't fun at all. To discourage them keep the cupboards clear of crumbs and grease so they don't find a feed store. **After the invasion:** If you're too late, find out where they are entering the house — under a window frame, baseboard or gap in the flooring, and:

- Sprinkle borax (that's the versatile detergent booster powder) at the entry spot (adding icing sugar to the borax will help attract the ants, and the borax kills them);

- A solution of borax and water in a spray bottle will kill any scouts.

- Cayenne pepper, vinegar, and cucumber peelings are other deterrents. A solution of walnut leaf tea is also recommended, but don't drink it yourself — it's poisonous to you.

Silverfish: These quick-moving little grey insects are harmless, but annoying. To avoid them, vacuum likely hiding places (for example, heating vents and under baseboards). **After the invasion:** Attract with a trap made of 1 part molasses, 2 parts vinegar in a shallow dish. Or treat baseboards and cupboards with cucumber juice or diatomaceous earth.

Roaches: Water, grease and crumbs, or moist and dark hiding places are an open invitation to cockroaches. Plug holes around drain pipes and under the sink with latex caulk. Keep under-the-sink cupboards dry and clutter free. **After the invasion:** There are several non-toxic solutions to try.

- Diatomaceous earth (see the **Lawn and Garden** chapter). The microscopic shards harm the insect's outer shell and repel roaches from an area.

- Pyrethrin (see the **Lawn and Garden** chapter). Dusted into hiding places, it flushes cockroaches out.

- Roach balls

Mix:

250 ml (1 cup) borax

50 ml (1/4 cup) sugar

50 ml (1/4 cup) chopped

onion

15 ml (1 tbsp.) cornstarch

15 ml (1 tbsp.) water

Make a paste. Roll into little balls. Place two or three balls into a small plastic bag and leave the top open. The onion scent attracts them to the bait and the borax clogs their breathing passages. The roaches will eat the balls and die. ("Getting the Bugs Out," *East West Journal*, May 1989).

Mice: Clean up likely food sources. Buy a live mousetrap or use other humane methods.



Garage

A car with a fuel efficiency of 14 litres per 100 kilometres (about 20 miles per gallon), driven for 18,000 kilometres (11,250 miles), will cost about \$1300 for fuel (at 55 cents per litre). But the environmental costs are not reflected in the price we pay at the pump. (See the *Energy* chapter in part I for further discussion.) And energy costs are only one part of car ownership.



Shelter and food are the two largest expenses in our budgets, followed by private transportation — that familiar car, van or truck that is both a source of pride and pollution.

The environmental costs of the energy we use for our private wheels, the use and disposal of hazardous materials, used tires and car batteries are also important considerations.

Curbing our dependency on the car may be the greatest and most challenging environmental necessity of the next decade.

Using Less Energy



The automobile — ticket to freedom, status symbol, mirror of our

ambition and desires....

The automobile — creator of smog, consumer of farmland, threat to the environment....

Many believe the automobile to be one of the most serious causes of pollution and one of the industrialized world's greatest dependencies. While ways of reducing this dependence are being debated, ways to reduce the environmental impact must be found and implemented — immediately.

Here are some ways of reducing the negative environmental impact associated with the automobile.

Cutting down

Most of our daily trips are less than 10 kilometres

GOAL	WHEN, WHERE	HOW
<i>Saving energy</i>	• Reduce	-use car less, bicycle, walk -use public transit, car pool
<i>Hazardous products</i>	• Safe disposal	-take oil to drop-off, local garage or curbside recycling -take brake fluid, etc., to hazardous waste depot -use unleaded gasoline
<i>Hazardous waste</i>	• Safe disposal of waste	-save oil for refining
<i>Saving water</i>	• Save water	-use less for car washing
<i>Other</i>	• Ozone protection	-ensure freon is recovered from air conditioners

(about six miles). Short trips of less than five kilometres are an inefficient use of energy. Using the car less and less often means burning less non-renewable fuel and creating fewer air pollutants.

Changing habits

We need to seriously consider alternative modes to achieve the same ends. To get to school, work, and shopping we can sometimes walk, bicycle, and take the bus or other public transit. Public transit corridors, underground or overhead systems and special traffic lanes support increased and efficient travel by public transit. These suggestions have an urban bias, but car pooling works anywhere and saves energy.

Commuters in Washington, D.C., use a designated highway traffic lane to encourage car pools and reduce rush hour traffic. The added bonus is the reduction in fuel use, and the resulting decrease in air pollution.

Fill 'er up

Unleaded gasoline should be used for all cars made after 1971 in North America. For foreign cars, consult a dealer or owner's manual. Use unleaded for all lawn mowers, snowmobiles, motorcycles and boats where the owner's manual indicates this choice is acceptable.

Regular maintenance

According to Transport Canada, a properly main-

tained vehicle saves fuel and reduces emissions.

New car?

Choose a fuel-efficient car. To help you choose, most manufacturers voluntarily provide a fuel consumption label on each new vehicle. Check Transport Canada's *Fuel Consumption Guide* too (see **References**).

Winter starts

A block heater for cold winter starts may be a necessity in our climate, but it doesn't need to be on all night! Save electricity with a timer which sets the heater to come on two hours before you plan to start your car.

Hazardous Products

Motor oil

There are two things to think about when having your oil changed — the used motor oil and the replacement oil.

According to Environment Canada, Canadians dispose of about 425 million litres of used oil from automobiles every year. Twenty-five per cent is re-refined, but more than 300 million litres are carelessly discarded.

Used motor oil contains heavy metals and is a hazardous waste. If you change your own oil, ask your local garage to take the oil and add it to their tank which they sell for recycling. Some community recycling programs accept oil. Or store the oil until a household hazardous waste day.



The Car Economy Book offers these 10 commandments and more!

- Inflate your tires to maximum recommended levels.
- Check your tire pressure at least twice a month.
- Keep your car engine well tuned.
- Share rides instead of driving alone.
- Maintain posted highway speeds. (Most cars use about 10% less fuel when driven at 90 km/hr instead of 100 km/hr.)
- Use flow-through ventilation whenever possible instead of open windows or air conditioning.
- Avoid traffic jams by planning your route ahead of time.
- Don't make several trips when one will do.
- Anticipate stops and avoid "jack-rabbit" starts to save gas and reduce wear on brakes and tires.
- Fuel-efficient driving is safe and sensible.

For a free copy of "The Car Economy Book," write to the Communications Branch, Energy, Mines & Resources Canada, 8th floor, 580 Booth St., Ottawa, Ontario, K1A 0E4.

Never burn used motor oil in any kind of furnace to avoid releasing toxic pollutants into the air.

Oil made by re-refining used oil is becoming more widely available because of the Environmental Choice Program. The guidelines for this category ensure environmental considerations are met during the re-refining process. Look for the logo next time you buy oil.

Batteries

Another hazardous waste is a car battery, which contains lead. When you buy a new battery, dispose of the old one at a hazardous waste depot or return it to the dealer.

Other hazards

Brake fluid, automatic transmission fluid and anti-freeze are some of the common hazardous products used in car operation. While it may not be possible yet to replace these products with less hazardous ones, make it a high priority to dispose properly of leftovers or used materials. Dispose of them at household hazardous waste collection depots.

Reducing Waste



Tires

Find out where to take tires for recycling. Look

for the Environmental Choice logo on products manufactured with recycled rubber, including rubber matting, carpet undercushions, muffler hangers, retreaded tires and shingles. This will help re-

cycle some of the 30 million scrap tires that are disposed of annually. Many municipalities are refusing to take them at landfill sites. Shouldn't we, as consumers, urge tire manufacturers to take some responsibility for this major waste disposal issue?

Using Less Water



Car washing

Part of regular car maintenance (to make the car last longer) is washing it during the winter to remove road salt. How much summertime washing is really necessary?

Cool and dangerous

Car air conditioners use freon, a chlorofluorocarbon (CFC), as a coolant. CFCs are linked to the depletion of the ozone layer, and CFC use is being phased out. Canadian General Motors dealers are installing compact recycling machines to recover freons from air conditioners during servicing. Instead of venting the freon into the air, the refrigerant is captured and used again. By June 1990, more than 800 dealerships will have the machines. (*Globe & Mail*, August 7, 1989.) Encourage other dealers to do the same.

Remember that using an air conditioner increases your car's fuel consumption. The most environmentally sound approach is to keep cool without an air conditioner. For example, when buying, choose a car

with a light-coloured exterior and interior. Invest in a windowshade to place in the front window while the car is parked.

References

1989 Fuel Consumption Guide. Public Affairs Branch, Transport Canada, Ottawa, Ontario, K1A 0N5. New cars, light trucks and vans rated for both city and highway (rather than a combined fuel consumption rate). This is very helpful, because consumption depends upon where you do the majority of your driving. The booklet also includes a helpful section on factors affecting fuel consumption.

The Citizen's Guide to Lead, Uncovering a Hidden Health Hazard. Barbara Wallace and Kathy Cooper, (NC Press Limited, Toronto 1986).

Lawn & Garden

Our gardens and yards have long been a source of inspiration, exercise, relaxation and pleasure, not to mention delicious fruits and vegetables and beautiful flowers.

Since the late 1940s, use of synthetic pesticides and fertilizers in home gardens has increased dramatically. These chemicals leach into waterways and have proven toxic to birds and wildlife. They are also a public health concern. As well, synthetic fertilizers boost plant growth over the short-term while killing soil organisms such as earthworms which help maintain healthy soil.

To make the switch to a chemical-free yard, one of the first steps is to change our attitudes toward weeds and insects, many of which

are harmless or even beneficial. Manual removal of weeds, careful soil maintenance, using compost and an integrated approach to pest control are components of environment-friendly gardening.

Using less water and carefully choosing gardening implements are also important.

Using Less Energy



Choosing lawn and garden equipment

Choose lawn and garden equipment carefully. Every electric or gas-powered implement has an environmental cost for energy production and use. Use lead-free gasoline only.



GARDENING TIPS

Lawn watering—don't! It wastes water, time and money. Many grass varieties will withstand a dry summer to become lush again in the fall. Aerate your lawn, add a thin layer of compost and don't mow it too often—these steps make your lawn healthy and able to spring back!



• Give young plants a good, strong start in dry weather. Use empty plastic food containers and poke a small hole in the side between 1 or 2 cm (about 1/2 inch) from the bottom, or use unglazed clay flowerpots (plug the hole). Dig small holes throughout the garden and bury the containers or pots to the rim. Fill with water. The water drips slowly out and keeps the roots moist. As an added bonus, the containers will serve as traps to drown unwanted insects. (From *Mother Earth News*, "Household Hints Almanac," 1981, Vol. III, and Harrowsmith, "A Movable Oasis," Number 80, July-August 1980).

(Continued)

GOAL	WHEN, WHERE	HOW
<i>Saving energy</i>	• Soil preparation and maintenance • Implements • Tools	-choose hand-operated equipment over power tools
<i>Avoiding hazardous products</i>	• Pest control	-rejecting synthetic pesticides & fertilizers -practising ongoing soil maintenance, integrated pest control
<i>Reducing waste</i>	• Feeding plants	-making compost from organic matter and using it as a soil conditioner
<i>Saving water</i>	• Watering	-trickle or soaker hose irrigation



☛ *The spice, ginger, is an excellent snail and slug repellent. Buy in bulk and spread as a border around susceptible plants.*

☛ *Earwigs are a nuisance in some areas. Dust diatomaceous earth on susceptible seedlings. Make tubes of wet newspaper and lay in the garden overnight. In the morning, shake the insects into a bucket of water.*

☛ *Tent caterpillars? They're easy to see—pull the nests off the trees as soon as you notice them. Evening is best when the insects return from foraging. Dunk the tents in a pail of water.*

Lawn care

Carefree groundcover is probably the first choice — it doesn't need cutting. Groundcovers include woody plants such as horizontal junipers, red-osier dogwood, and herbaceous or soft-stemmed plants such as periwinkle and fragrant herbs like camomile and thyme. These herbs require minimum maintenance, can tolerate a certain amount of trampling and create an attractive, fragrant, low maintenance lawn alternative.

The next choice is to have a regular grass lawn but use a push mower to cut it. You'll produce less local air pollution and noise pollution with an electric mower than with a gas



mower. Gas mowers should be well-maintained and only operated on unleaded gasoline.

You can easily trim edges with hand clippers. Electric and gas-powered edgers, in addition to the unnecessary energy use, usually cut the grass too short leaving space for weed invasion.

Other common garden products

Build a homemade garden shredder from an old push-type lawn mower. Use it for coarse garden trash such as dried flower stocks, cucumber and pea vines (Refer to *Harrowsmith*, Number 66, March-April

1986, for instructions.) For twigs and shrub cuttings, consider buying an electric or gas-powered shredder in cooperation with neighbours. Using this material for mulch enhances your soil maintenance program while reducing garbage.

Using Alternatives to Hazardous Products



Proper soil maintenance and the use of compost replaces the need for synthetic fertilizers.

Integrated pest management (see below) is an alternative approach to using chemical pesticides. Pesticides and fertilizers are replaced with non-chemical approaches to lawn maintenance.

Soil maintenance

The key to productive and healthy lawns and gardens lies at our feet — the soil. The soil is the source of essential nutrients, water, and oxygen required by plants for growth.

The soil is not a static system, but a constantly changing mini-ecosystem teeming with activity and adaptable to change. By adding organic nutrient amendments to the soil, we can improve its fertility; adjust the acid-alkaline (pH) balance; increase its water-holding capacity and generally improve its texture and productivity.

pH soil test

An inexpensive home soil testing kit can be used to determine your soil's pH

(see **A few product ideas**). A simple bioassay test is to grow plants and observe for any growth abnormalities. If none are observed, it's not necessary to test the soil.

Most garden plants prefer slightly acidic to neutral soils (pH 6.5 to 7.0 — pH 7.0 is neutral). Add lime and wood ashes to increase the soil's pH (make it less acid). Flowers of sulphur or peat moss help neutralize alkaline soils (make it more acidic).

Fertilizers are only recommended when nutrient levels in your soil are out of balance. Check the books listed in **References** for more information on this subject. We recommend using compost.

Reducing Waste

 Compost is made from decomposed organic matter and is a terrific way to recycle materials, reduce your weekly garbage and produce an excellent substitute for synthetic fertilizers.

Many municipalities are encouraging home composting — pilot curbside collections of all compostable materials are being undertaken. Some cities have started curbside leaf collections.

Why? Compost is easy to make and improves soil fertility and structure by increasing water-holding capacity, aeration, essential soil microbes and earthworms.

What? A modest collection of leaves, grass clippings, kitchen scraps (fruit and vegetable peels, egg shells, coffee grounds, tea bags), hair clippings, and garden leftovers yields dark, nutrient-rich humus. If you are interested, check **References** for mention of carbon/nitrogen ratios of different materials.

Don't add:

- Meat or bone scraps — they attract animals.
- Companion animal feces — potential disease/parasite carriers.
- Walnut leaves or walnut shells — they tend to break down into toxins.
- Diseased plants or those prone to disease (such as raspberry canes, peony leaves) — omit unless you can be sure of very high heat in the pile.
- Coloured newsprint — because of toxins in the ink.

How? Pile ingredients into layers (including thin layers of soil). Air, moisture and a balance of materials high in carbon and nitrogen are needed to maintain the right temperature to aid decomposition.



COMPOSTING

• To speed up decomposition of composting matter, chop up material or put it through a shredder before composting. This creates more surface area on which soil micro-organisms feed. And the more organisms that can be supported, the faster a batch of compost will be completed.

• If you don't have the time to shred the organic materials or to occasionally turn the pile, your finished product will take longer. Simply layer the materials, including some soil, provide some initial moisture and cover the pile with soil and/or a canvas tarp and just let nature do its work. It will probably take two to four months for decomposition to take place.

• If space is a problem, compost in a black plastic bag. Fill a plastic bag with shredded kitchen scraps, add a few cups of topsoil and tie the bag. **Do not** add more material to the bag (close it — and start another one). Place it in a sunny location outdoors (a patio or balcony will do). Compost will be ready in approximately three weeks. If you live in an apartment and you can't use the compost for house plants, give it to friends or family or your building superintendent for landscaping.

• Always remember to add a small amount of soil (as a sprinkling) when composting. Soil micro-organisms do the work by decomposing the organic material.

A high temperature maintained in the compost pile for several days will destroy weed seeds and most disease-causing organisms.

Mix it from time to time to keep the process going and to speed it along. A properly layered compost pile will not produce unpleasant odours.

When? Mix finished compost (dark brown material with a rich earthy smell) into your garden in early spring before planting or in the fall. Throughout the growing season, add it as a side-dressing (dig in shallowly close to plants) or a top-dressing to gardens, lawns and trees. In both cases, the compost slowly releases nutrients into the soil.

Compost material breaks down slowly even in cold, winter temperatures. For convenience, you might want to compost in a large garbage pail during the winter. Drill air holes in the sides of the pail and keep handy to the back door. When the material thaws in spring, empty the pail's contents in the location of your new season's compost pile, add a thin layer of soil and turn the pile over several times before summer.

Integrated pest management

The key to avoid using chemical pesticides is an integrated approach. (See **References**). If you follow some basic preventative principles listed below, you

should be able to avoid most problems that plague gardeners:

- Maintain healthy soil (see section on soil maintenance);

- Select pest- and disease-resistant seeds;

- Grow varieties which are best suited to your climate;

- Rotate your vegetable crops from year to year;

- Companion planting is the inter-planting of different kinds of plants in your garden to help repel certain insect pests and to enhance the growth of the plants growing together. Or plant a protective border of repellent herbs and/or flowers. These include such plants as tansy, yarrow, borage, nasturtium, pyrethrum daisy, or members of the mint family.

Garden pest control

There are numerous ways to avoid unwanted guests in your garden.

- Use diatomaceous earth (see **A few product ideas**).

- Use non-toxic insecticidal soaps for soft-bodied insect pests such as aphids, soft scale, whiteflies, mealybugs and thrips as well as spider mites and earwigs. Repeat sprayings until insect infestation is gone (see **A few product ideas**).

- Make your own insect repellent sprays. Chop or grind 1 garlic bulb and 1 small onion. Add 15 ml (1 tablespoon) cayenne pep-

per, 1 litre water (4 cups). Let steep 1 hour, then add 15 ml (1 tablespoon) liquid soap (makes the solution cling to plant leaves). Store in a tightly covered jar in the refrigerator up to one week. Spray liberally on plants. (From *The Natural Formula Book*, see **References**.)

- Introduce predatory and parasitic insects into your garden. Ladybugs, praying mantis, and trichogramma wasps can be introduced into your garden by purchasing live insects or eggs. (See **A few product ideas**).

- Try microbial control. One of the most commonly used microbes is the bacteria *Bacillus thuringiensis* (Bt) which is usually sold under the name Thuricide. This spray kills caterpillar pests by infecting them with a digestive disease. Follow application directions carefully.

- Encourage insect-eating birds by placing bird feeders near your garden and by planting flowers which attract them, such as sunflowers, marigolds and portulaca.

- Try insect traps. There are many ways to trap insects and prevent damage to garden plants. These traps include saucers of beer to trap slugs and a sticky band around the trunks of trees and shrubs to prevent crawling insects such as caterpi

- Use botanical insecticides, such as rotenone,



pyrethrum and ryania, which are derived from specific plants found to be poisonous to insects. For example, pick, dry, and crush pyrethrum daisy flowers to make a dust or a strong "tea" to spray directly on the insects.

• To protect fruit trees, dormant oil sprays can be used. It is important to apply in winter or very early spring while the tree is dormant (before 6 to 7 mm or 1/4 inch of green is showing on the buds). (See *The Natural Formula Book* for a homemade recipe). **EnviroWarning** Not all commercial dormant oil sprays are alike. Do not buy sprays containing arsenate of lead, Bordeaux mixture or lime sulphur. These chemicals are hazardous.

• An innovative barrier to insects is a floating fabric bed cover sold under the trade name of Reemay. Put on the vegetable beds immediately after planting and weigh the edges down with earth. Reemay allows air, sunlight and water to penetrate without removal. The material lasts for two or three years of use.

Animal garden pests

* Most prevention against animal damage consists of physical barriers (e.g., fences or steel posts), scarecrows for birds, expendable lure crops, or just plain overplanting to allow for some loss. Refer to *The Natural Formula Book* for details including cat and dog repellent, mole repellent and rabbit control.

Repellents are more humane than traps. Buy cayenne pepper in bulk and sprinkle it around to keep cats or dogs out of your flowerbeds.

Lawn maintenance

Normally, the "quick-fix" chemical practice for reducing weeds is to apply herbicides. This approach does not correct the underlying cause of weed growth and the weeds return. A not-so-obvious first consideration is to plant a low-maintenance alternative to grass which discourages weed growth and doesn't need cutting!

Weeds

Tolerate a few weeds and hand dig as necessary. Hire someone to help. If this weeding has left bare patches, you can top-dress the lawn with compost mixed with grass seed.

Aerate your lawn at least twice a year (spring and fall). Lawn aeration prevents compaction and is a very important component of lawn care. Compacted soil kills the roots of lawn grasses and allows weeds to colonize. You can rent a lawn aerator or hire a lawn company to do it for you. (See **A few product ideas.**) Try to avoid gasoline-powered equipment.

Maintain the fertility of the soil by applying a thin layer of compost in the spring and mid-summer. Use a sieve to eliminate large pieces of material. Apply 45 kilograms per 93 square metres (about 100 pounds per 1000 square

feet). If your grass is patchy in spots, you can add pest-resistant grass seed with the compost.



De-thatch your lawn in the fall if necessary. Thatch is a dense layer of decomposed leaves, stems

and roots at the soil surface restricting the movement of water, air and nutrients into the soil. If your lawn is prone to thatch, always remove grass clippings after mowing. You can use a heavy thatch rake or a verticutter (these are available from equipment rental stores).

Don't mow your lawn too short or too often or the leaf area above the ground is unable to provide enough food for the development of a vigorous root system. Weeds more easily compete with the weakened plants. Set your lawn mower blade at 6 to 7.5 cm (2 to 2 1/2 inches). Allow the grass to grow at least 2.5 cm (about one inch) before cutting it again.

Lawn service

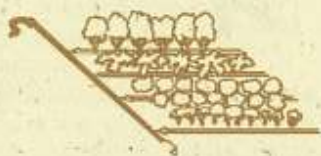
If you prefer commercial lawn care, pick one that has a chemical-free program. Many companies are now offering these options and encourage them to expand the service.

Water

Drip irrigation

The most effective and water-efficient watering system for the garden consists of trickle or drip irriga-

tion. There's no spectacular display of spray, no whirring of sprinkler blades, little waste from evaporation and no waste from watering the driveway or sidewalk. The hose



can be run along the surface or in a shallow trench to drip water directly to the roots. Uses 50% less water than conventional watering sprinklers. (See **A few product ideas**).

A soaker hose similarly saves water by spraying thin streams of water along its length. But the foliage does get wet which can be particularly damaging for young plants.

Take care to make garden hoses last. Don't store them in the sun or drag them across the driveway. Consider buying a hose made with recycled rubber. (See **A few product ideas**.)

Hand-watering vegetables and flower gardens is a better solution than leaving a sprinkler on. Foliage is not soaked and the water gets where it does the most good—to the roots of the plants.

Collect rainwater from the eaves of your house in a large garbage pail or wooden barrel. Use a dipper to fill a watering can. Or use the water for washing the car or the dog! (Place

the barrel so that the overflow doesn't leak down the foundation of the house.)

Mulching

Mulching helps to retain soil moisture while crowding out weed plants. Organic mulches such as leaves, grass clippings, straw, seaweed, compost or sawdust are recommended because the slow release of nutrients occurs as the organic matter decomposes.

A few product ideas

Composters

- **SOILSAVER™**. 12 cubic foot size. Available from many gardening centres. Or write to: Barclay Recycling Inc., 75 Ingram Road, Toronto, Ontario, M6M 2M2, (416) 736-1476.

- **AIR-POST™** bag composter. Inexpensive air diffuser post to make compost in plastic garbage bags. **COM-POST™** Aerators for composting in ordinary garbage cans. Available from: **COM-POST Div. Environment Inc.**, P.O. Box 272, West Hill, Ontario, M1E 4R5.

Insect control

- **Diatomaceous earth**: **Fossil Flower**, 4 Wilkinson Road, Unit 1, Brimley, Ontario, L6P 4M3, (416) 450-0111. Available from many garden centres, mail order catalogues, and hardware stores.

- **Reemay™** insect barrier. Available from garden supply houses and many mail order houses.

- **Insecticide soap**: **Ivory**

Liquid. Mix 100 ml per 4 litres of water (about 1/2 cup to 16 cups of water).

- **Safer's Soap**. Available in many hardware, grocery and garden centre stores.

- **Microbial control**: **Bt** (*Bacillus thuringiensis*). Tradename **Thuricide**. Available from many garden supply houses and mail order seed companies.

- **Predatory and Parasitic Insects**. **Better Yield Insects**, P.O. Box 3451, Tecumseh Station, Ontario, N8N 3C4.

- **Applied Bio-Nomics Ltd.**, P.O. Box 2637, Sidney, British Columbia, V8L 4C1.

Watering and irrigation

- **Trickle Irrigation**. **VIAFLO** trickle irrigation kits available by mail order starting at \$20 from **Stokes Seeds Ltd.**, 39 James St. P.O. Box 10, St. Catharines, Ontario, L2R 6R6. Visa or Mastercard orders call (416) 688-4300.

- **IRRIGRO®** trickle irrigation kits begin at \$20 for a 10' x 25' garden, including tubing and connectors. **International Irrigation systems**, P.O. Box 1133, St. Catharines, Ontario, L2R 7A3, (416) 688-4090.

- **RAINDRIP™** drip watering. Available from **Classic Plant Service**, 15952-109 Avenue, Edmonton, Alberta, T5P 1B7 and **Sprinkler System Canada**, RR 2, Site 5B, Comp 27, Chase, British Columbia, V0E 1M0.

- **Soaker Hoses**. Check at garden centres, hardware and department stores.

•Garden hoses. Look for the Environmental Choice program logo on rubber garden hoses. Must contain 95% by weight of post-consumer rubber.

•Hand-held sprayers. Choose a durable pistol grip sprayer. Turns the water on/off quickly, thus minimizing waste.

Lawn maintenance

•Lawn aerators. A pair of lawn aerator sandals can be purchased for \$20 plus \$5.50 shipping and handling from The Added Touch, 132 Trafalgar Road, Oakville, Ontario, L6J 9Z9. Toll-free number 1-800-387-7991. These sandals simply strap over your shoes — exercise and aerate your lawn at the same time, while destroying white grubs, too.

•Sod Corer. Removes two 1/2" plugs with every step down on the foot plate. About \$25. Weall and Cullen Gardeners Supply.

•Aerators. Available to rent, either manual and gas powered.

Soil test

•About \$15. Weall and Cullen.

•Soil testing. Check with your provincial agriculture department or Canadian Organic Growers Source List. (Ask if organic analysis is available).

Selected sources for supplies

•Weall and Cullen Gardeners Supply, 400 Alden Road, Markham, Ontario,

L3R 4C1. Mail order catalogue.

•William Dam Seeds, Box 8400, Dundas, Ontario, L9H 6M1. Mail order catalogue.

•Purity Life Health Products Ltd., 100 Elgin Street South, Acton, Ontario, L7J 2W1. Mail order catalogue.

•Nutrite Fertilizers, Box 160, Elmira, Ontario, N3B 2Z6. Telephone (519) 669-5401.

•Richter's, Box 26, Goodwood, Ontario, L0C 1A0. Catalogue \$2.50.

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Blueprint for a Green Planet. J. Seymour and H. Girardet, (Prentice Hall, 1987).

Carrots Love Tomatoes, Secrets of Companion Planting for Successful Gardening. L. Riotte, (Garden Way Publishing, 1975).

City Farmer information sheets, 801-318 Homer Street, Vancouver, B.C., V6B 2V3. City Farmer has information sheets available on a variety of organic gardening topics.

"Composting for Gardeners", *Canadian Organic Growers (COG)*. Four-page fact sheet, \$1. "Non-Toxic Lawn Care", No. RS3/89 \$1. COG, Box 6408, Station J, Ottawa, Ontario, K2A 3Y6.

Composting Kit. Special newsletter, brochures, bumper sticker \$7.50. Ecology Action Centre, 3115 Veith Street, Halifax, Nova

Scotia, B3K 3G9, (902) 454-7828.

"Groundcovers", *Harrowsmith Gardener's Guide.* J. Bennett, (Camden House, Camden East, Ontario, 1987).

Ecological Agriculture Projects (EAP), P.O. Box 191, Macdonald College, 21-1111 Lakeshore Road, Ste-Anne de Bellevue, Quebec, H9X 1C0. Publications list includes composting, companion planting and natural pest control.

Harrowsmith Northern Gardener. J. Bennett, (Camden House, Camden East, Ontario, 1982).

How to Get Your Lawn and Garden Off Drugs. C. Rubin, (1989). 97 pages. Available for \$12.95 plus \$2 postage from Friends of the Earth, 701-251 Laurier Avenue, Ottawa, Ont., K1P 5J6.

Let It Rot. The Home Gardener's Guide to Composting. Stu Campbell, (Garden Way Publishing, Charlotte, Vermont, 1975).

Organic Plant Protection. R.B. Yenson Jr., (Rodale Press Inc., 1976).

Taylor's Guide to Groundcovers. (Thomas Allen & Sons Ltd., Markham, Ontario, 1986).

The Chemical Free Lawn. The Newest Varieties and Techniques to Grow Lush, Hardy Grass. Warren Schultz, (Rodale Press Inc., 1989).

The Natural Formula Book for Home and Garden. D. Wallace, (Rodale Press Inc., 1982).

Companion Animals



When walking Fido, stoop and scoop, take it home and flush it! Do you find this disagreeable? Stop to consider that in an urban area the size of Ottawa (human population: 600,000), it has been estimated that as much as 45 tonnes (50 tons) of poop is produced by pets each year. If even a fraction of this is dumped on the streets and parks, it's a lot of mess and a possible health and environmental problem. Everyone should do their part in cleaning up after their pets!

Many people enjoy the company of one or more companion animals. But having pets brings responsibilities for their well-being, as well as the necessity of being considerate to neighbours and the environment.

Alternatives to Hazardous Products



Fleas: Unwelcome companions of our companions

The key to flea control is to take preventative measures that are simple and non-toxic and replace toxic flea powder and flea collars.

Most commercial flea collars kill fleas with powerful nerve gases such as organophosphates and carbamate compounds. These

toxins can be absorbed into the bloodstream — of both pets and people. **Children are especially at risk.** (It is difficult to make children understand they must wash their hands each time they touch the collar.) If you've dusted the dog with a flea powder containing a pesticide, when is it safe for you and your children to touch the pet?

Natural flea control

The first step is to rid the animal of any existing fleas using a flea soap (see **A few product ideas**). Natural flea powders containing pyrethrum (from the pyrethrum daisy) are available. You can make your own flea powder from pulverizing dried pyrethrum daisy flowers or chamomile flowers,

GOAL	WHEN, WHERE	HOW
<i>Alternatives to hazardous products</i>	• Flea control	-preventive measures -using alternatives to products containing toxics such as organophosphate carbamate compound
<i>Waste reduction</i>	• Food packaging	-buying in bulk; avoiding individual foil packages
<i>Other concerns</i>	• Proper disposal • Population control • Food nutrition • Food source • Respect for living things	-disposing of feces in toilet or in a poop pot in the garden -neutering pets -keeping pets healthy

Flea powder recipe for cats and dogs:

56 grams (2 ounces) dried pennyroyal
28 grams (1 ounce) dried wormwood
28 grams (1 ounce) rosemary
large dash cayenne

Check at health food stores for the ingredients. Buy herbs in powder form or pulverize them into powder and mix well. Store in a dry container and use when necessary.

(From *The Natural Formula Book for Home and Yard*. Rodale Press Inc., 1982.)

Wash the animal's bedding. Vacuum everything thoroughly and dispose of the vacuum bag.

Prevention

If fleas are a problem, there are natural and non-toxic flea collars made from extracts of herbs such as pennyroyal and citronella. You can make your own collar too! Soak a cord in oil of pennyroyal and wrap it in fabric. To recharge this collar, remove fabric and add a few drops of oil of pennyroyal

every two to three weeks during the flea season.

A cushion stuffed with one or a combination of the following ingredients will perfume the dog or cat bed and repel fleas: cedar chips (available from pet supply houses as small animal litter), chamomile, pennyroyal leaves or rue.

A pet powder for fleas and ticks containing diatomaceous earth can also be used (see **A few product ideas**). Work into the pet's fur — follow product directions very carefully. Be especially careful not to get into the animal's eyes.

Another preventative method is to mix brewer's yeast and/or garlic daily into your pet's food. For a dog, 15 ml (1 tablespoon) for each 22 kilograms (50 pounds) of weight and, for a cat, 5 ml (1 teaspoon) of brewer's yeast plus one or two cloves of crushed garlic. (You'll have fun too!)

Reducing Waste (Packaging)



For large dogs, dry foods can be bought in 25 kilogram (55 pound) bags to help cut down on the packaging. Store in a cool, dry and closed container, such as a garbage can. Other products such as dog biscuits and rawhide chews can be bought without packaging.

Choose alternatives to individual foil pouches of cat food, for example. Fortunately, most pet foods are packaged in paper, cardboard and cans (recycle when possible).

Other Concerns

Stoop and scoop

Yes, the temptation is to turn your head and look the other way, but animal wastes can't be ignored! Proper disposal means

flushing the solid wastes down the toilet so that they can be properly treated at the sewage plant or in a septic tank.

An easy alternative for backyard disposal for the waste of a small animal is to start a separate compost pile. (It is not recommended to add animal feces to your regular compost pile since parasites and/or diseases may make the compost unsafe to use on food plants.)

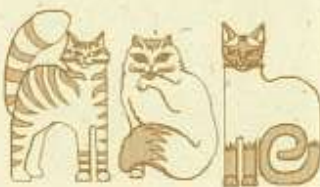
Cut the bottom out of a plastic bucket (a nursery plant container works well). Punch holes in the sides of the container. Dig a hole in the flower garden or behind a small shrub, leaving a generous air space trench around the container. Top off with a lid made of scrap wood.

If your pet has roundworm or is being treated for roundworm, it's important that the feces be flushed down the toilet.

Cat litter box

Clean out the solid waste daily and flush down the toilet with the least possible amount of litter (clay type litter might scratch the porcelain).

Baking soda is an excellent deodorizer for the cat box. Cover the bottom of



Exotic Animals

The wild population is put at risk because many animals are killed during capture and transport. For every exotic animal that makes it alive to a pet shop or home, scores of others have died.

If these animals escape, they compete with, and may displace native species.



Protect wildlife everywhere

One of the saddest testimonies to the serious environmental damage we have caused is the disappearance of so many wild plants and animals and the wilderness areas they depend on. Terrible enough when our populations and food production cause extinction and tragic when it arises from thoughtlessness or selfishness. Illegal and legal trade in wildlife takes its toll. Don't buy wild animals or give gifts of ivory, skins or other wildlife products. Never harass animals in the wild or in captivity. Actively protect wildlife in Canada and around the world.

the litter pan with one part baking soda and cover with cat litter. If your cat will tolerate an added scent, mix in dried mint with the baking soda, 20 ml (4 teaspoons) mint per 500 gram (16 ounce) box of baking soda. This deodorizer will allow you to go longer between complete changes in litter, especially if you remember to aerate it by stirring once a day.

The strong odour and chemical reaction of cat urine necessitates putting used litter in the garbage. But garbage can be reduced by careful choice of kitty litter. Experience shows that the clay type is more absorbent and lasts longer.

To neuter or not to neuter?

In North America, thousands of unwanted cats and dogs are destroyed each year. The only humane and environmentally responsible decision is to neuter your pet to help control the animal overpopulation. Some municipalities wisely support neuter/spay clinics to help pet owners deal with this responsibility.

Pet food and the environment

There are many reasons to be concerned about food for our pets. Contact the Canadian Veterinary Medical Association (CVMA) for information on nutrition standards for commercial pet food. Sometimes the source of your pet food can raise environmental concerns. For example, tuna is often an ingredient of cat food. Japan



catches tuna in drift nets which entangle and indiscriminately kill dolphins and seabirds.

The label won't say where the fish is imported from, write and ask the manufacturer.

Respect for wildlife

- Don't capture wildlife, even for study.

- Prevent pets from chasing wild animals.

- Try to become more tolerant in sharing your environment with urban wildlife.

- As a last resort, try non-toxic repellents to keep wildlife out of the garden. (Check *The Natural Formula Book for Home and Garden*. D. Wallace, (Rodale Press Inc., 1982.)

Boa constrictors and other exotic pets

We realize that many other kinds of animals are kept as pets. But is this an acceptable practice? Here are a few thoughts to keep in mind about exotics.

The wild population is put at risk because many animals are killed during capture and transport. For every exotic animal that makes it alive to a pet shop or home, scores of others have died.

If these animals escape, they compete with, and may displace native species. Starlings in North America are only one example.

Disease transmittal to people can also be of concern.

A few product ideas

- **Safer's Flea Soap.** Check at health food, pet and garden centres. Or write to Vesey's Seeds Ltd., York, Prince Edward Island, C0A 1P0.

- **Herbal Rechargeable Flea Collar.** About \$4.95 plus shipping from Purity Life Health Products Ltd., 100 Elgin Street South, Acton, Ontario, L7J 2W1. Use Herbal Oil Concentrate to recharge the collar. Herbal Pet Powder and Herbal Pet Shampoo. Also available from Purity Life.

- **Fossil Flower products** containing diatomaceous earth. Sold in many stores (grocery, health food and hardware) or write to 4 Wilkinson Road, Unit 1, Brimley, Ontario, L6P 4M3, (416) 450-0111. Fossil Flower also recommends using their Cockroach and Silverfish Killer in the pet's sleeping quarters and on infested rugs.

- **Pennyroyal, pennyroyal leaves, orris root powder and chamomile** are available from health food and specialty stores.

- **Cedar chips.** Available from pet supply houses as small animal litter.

- **Ever Clean Cat Litter.** According to the manufacturers, you just scoop out soiled litter (urine forms balls in the litter). Top up level of litter when neces-

sary. Canadian distributor: Pet Nutritional Services North Inc., P.O. Box 174, Chambly, Quebec, J3L 4B3, (514) 447-1204.

EnviroWarning This product is packaged in plastic jugs.

References

Canadian Veterinary Medical Association, Pet Food Certification Program, 339 Booth Street, Ottawa, Ontario, K1R 7K1, (613) 236-1162. A commonsense guide to feeding your dog and cat and a list of CVMA certified pet foods.

Dr. Pitcairn's Complete Guide to Natural Health for Dogs and Cats. Richard H. Pitcairn, D.V.M. and Susan H. Pitcairn, (Rodale Press Inc., 33 East Minor Street, Emmaus, Pennsylvania, 18049, 1982).

Looking at the Environment. David Suzuki with Barbara Hehner, (Stoddart Publishing Company Limited, Toronto, 1989). A sensitive look at the environment for children.

The Healthy Cat and Dog Cookbook. Joan Harper, (Richland County Publishers, Richland Center, Wisconsin, 53581, 1976).



RESPECT FOR WILDLIFE

- Don't capture wildlife, even for study.

- Prevent pets from chasing wild animals.

- Try to become more tolerant in sharing your environment with urban wildlife.

- For their sake and yours, don't keep exotic animals as pets.

Dear Occupant: Is unsolicited mail bugging you?

• The volume of unsolicited mail is often overwhelming.

The Post Office can't help you. It is their job to deliver their customers' mail. "No junk mail" signs posted on your mailbox won't have any effect. But, the following steps will help reduce the pile at your door.

• When making a donation to an organization for the first time, indicate that you wish to receive only one mailing a year asking for donations. When you do receive that mailing, and you feel the organization is worth your continued support, be sure to make your annual donation and remind them of your request.

• Should you no longer wish to support the organization, return the unwanted mail package with a note asking that your name be removed from their donor list.

• Most importantly, inform the organization that you do not want your name exchanged with any other organizations.

• Similarly, when subscribing to magazines or associations, ask that your name be excluded from their trading list.

• Write to the Canadian Direct Mail Marketing Association, 1 Concorde Gate, Suite 607, Ontario, M3C 3N6. Tell them you don't want your name on mailing lists.

• Write the people that produce coupon books, flyers and other advertising and encourage them to print on recycled paper or, at the least, on paper that can be recycled.

Other Tips

Everything we do has an influence on the environment. In many cases obvious alternatives exist. Here are some miscellaneous tips. We'd like yours, too!

Using Alternatives to Hazardous Products



Insect repellents

Avoid repellents containing toxic chemicals such as diethyltoluamide (DEET).

Use protective clothing and netting instead of repellents or use natural repellents with ingredients such as citronella and pennyroyal.

Try dipping a cotton ball in some vinegar and rub on exposed skin.

Eat "garlicky" food!

Basil planted outside your door will prevent mosquitoes from coming in, and you'll have an end-

less supply of this delicious herb.

A few product ideas

• Buy citronella oil from health food stores. (Skin-so-soft Bath Oil by Avon reportedly repels mosquitoes. Has anyone tried this?)

• The Bug Jacket. Nylon jacket has hood with face mesh; elastic cuffs. Children or adult sizes. Jackets range in price from \$16.50 to \$42.50. Pants are \$21 to \$24. Write to: Pro Safety, Unit 8, 181 Rutherford Road South, Brampton, Ontario, L6W 3P4, for order form.

Reducing Waste

Paper and stamps

Use the back of flyers or letters as writing, drawing, draft computer print-out or typing paper.

A tip from Sandra

GOAL	WHEN, WHERE	HOW
Avoiding hazardous products	• Bug repellants	- buy a bug jacket - natural repellants
Reducing waste	• Stamps & envelopes • Paper • School outings	- save for Oxfam - use blank side - get your name off mailing lists - remind children to take only flyers or pamphlets they will use
Recycling	• Paper	- buy recycled paper - take to office

Niessen in Edmonton: Don't remove the perforated edges from computer paper so it can be run through on the reverse side for a draft copy.

If your office has a paper recycling program, bring paper from home.

Save envelopes with stamps for OXFAM, 301-251 Laurier Avenue West, Ottawa, Ontario, K1P 5J6. This is a great project for schools, churches, offices or individuals.

Buy paper and envelopes with recycled fibre content. The Paper Source, Fallbrook, Ontario, K0G 1A0, (613) 267-7191. The Paper Choice, 2659 Trinity Street, Vancouver, British Columbia, V5K 1E5, (604) 253-4611. Earth Care Paper, P.O. Box 3335, Madison, Wisconsin, 53704, (608) 256-5522. Fraser Inc., Thorold Division, P.O. Box 1046, Thorold, Ontario, L2V 3Z7, (416) 227-5271 (a source of Canadian recycled paper).

Get children into the habit of taking only what "free" flyers and posters they will use.

Buy labels that enable you to re-use envelopes. See The Paper Source and Earth Care Paper (above).

Outdoor recreational activities.

Parks and natural areas protect important places and we should, too, when we visit.

Use muscle power instead of motor power! For example, in the winter, cross-country ski rather

than snowmobile and, in the summer, canoe and swim rather than water ski.

If you pack it in — pack it out. Empty containers damage the environment when left behind.

Respect wildlife. Don't feed, disturb or harass wild animals.

In all your activities, avoid trampling plants.

Avoid using hazardous products such as barbecue fluid. Also, use only non-phosphate detergents. If you do bring in harmful products, don't throw leftovers into the water or bushes. Take what's left home with you.

Buy a piece of rainforest by sending \$25 to The World Wildlife Fund, 60 St. Clair Avenue East, Suite 201, Toronto, Ontario, M4T 9Z9.

Dining out

Restaurants and fast-food outlets produce a great deal of waste. Find out who is actively recycling and reducing waste.

Sticky tape

Buy sticky tape in a refillable dispenser, either a desk dispenser or plastic snap-together one. (Look for refills packaged in a simple cardboard box.)



Gift-giving

• **Make gifts at home.** For example, Hazel Ward-Whate of Oshawa, Ontario, sews and knits beautiful gifts for her family each year and gives them in special boxes, too. The lids and bottoms of large gift boxes have been wrapped separately. Each family member has a box and, each Christmas, a new outfit goes into the box and another bow is added to the outside!

• **Give re-usable cloth shopping bags,** such as Earth-bags (see *A few product ideas in the Kitchen chapter*).

• **Give a charitable donation** to a community or environmental organization.

Use re-usable gift wrap, such as Rerap, a colourful square of cotton fibre. Write: Rerap, 126 Dundas Street East, Suite 301, Toronto, Ontario, M5R 1B5.

• **Beautiful Place © 1981.** A cooperative ecology game for children four to seven. Bilingual. (\$9.50 including shipping. Ontario residents add 8% sales tax.) Write to Family Pastimes, RR 4, Perth, Ontario, K7H 3C6 for their sales catalogue of games for children of all ages.

• **Looking at the Environment.** David Suzuki with Barbara Hehner, (Stoddart Young Readers, Toronto, 1989). A sensitive introduction to the environment for children. For example, after watching worms at work in a jar, children are encouraged to "let them go again where you found them." Includes a list of 28 things to do right now to save the environment.

• **Highly recommended periodicals for children.** Chickadee (ages three to nine) and Owl (ages eight to 12). Write to 56 The Esplanade, Suite 304, Toronto, Ontario, M5E 9Z9.



GLOSSARY

Algae: Simple marine plants that thrive in phosphate-polluted waterways.

Alternatives: Actions and products that can be substituted for environmentally harmful and hazardous ones.

Aeration: Air ventilation of soil that enables bacteria and fungi to break down organic matter; essential for healthy plant growth.

Aerosols: Product under pressure in a can; CFC propellants have been linked to ozone-depletion; environmental effect of replacement propellants unclear.

Biodegradable: Capable of being broken down by bacteria into basic elements and compounds. "Biodegradable" plastics only disintegrate into smaller pieces or plastic dust.

Canadian Standards Association (CSA): Non-profit product certification, testing and inspection organization; certifying agent for Environmental Choice Program. (See description below).

Chlorofluorocarbons (CFCs): Chlorine-based compounds used as aerosol propellants, coolants in refrigerators and air conditioning, in fire extinguishers, as solvents and in the production of insulating foam packaging; contribute to ozone layer depletion.

Companion planting: Interplanting of different kinds of plants to help repel certain insect pests and to enhance plant growth.

Composting: Natural breakdown of organic matter producing a soil-like product rich in slow-release nutrients (see **Humus**).

Conservation: Activities designed to increase the efficiency of using a resource or to protect it; may refer to energy and water conservation, and wildlife protection.

Convection feature: On a microwave or conventional oven, a feature that blows the heated air around inside the appliance.

Diatomaceous earth: Fossilized microscopic water organisms such as diatoms and other algae.

Drip irrigation: Water slowly released from micron-size holes (too small for soil to clog) in hoses; supplies plant roots with steady moisture.

Ecosystem: A self-sustaining and self-regulating community of organisms interacting with each other and the environment.

Environment: Combination of external conditions influencing the life of an individual or population.

Environment-friendly products: Products that have less negative impact on the environment than others; should include consideration of production, packaging, use and disposal.

Environmental Choice Program: Initiative of Environment Canada to establish categories, set guidelines, test products (see **Consumer Standards Association**), and grant the use of its ecologo; helps consumers identify products that maximize energy-efficiency, use recycled or recyclable materials and minimize use of hazardous substances.

EnviroWarning: Some products are clearly hazardous and others may help in some ways while contributing to other problems. These warnings in the text give examples and illustrate the need to be well-informed about the goals of environment-friendly products from production through to use and disposal.

Fluorescent light: A glass tube filled with a mixture of gases at low pressure. Emits ultraviolet radiation converted to light by the fluorescent coating inside the tube; energy efficient.

Fossil fuels: Remains of prehistoric plants and animals; examples include oil, gas and coal (see **Non-renewable energy source**).

Global warming: See **Greenhouse effect**.

Greenhouse effect: Increased levels of gases such as carbon dioxide that trap heat in the earth's lower atmosphere; potential cause of global climate change.

Green consumerism: "Green" is a term coined in Europe to refer to a particular politics and lifestyle; green consumerism involves making consumption decisions based on environmental concerns; implies a rejection of wasteful consumption.

Hydrocarbons: Organic compounds containing carbon and hydrogen; they often occur as air pollutants from unburned or partially burned gasoline and evaporation of industrial solvents.

Household hazardous waste depot: A short-term or permanent receiving site for hazardous wastes to allow treatment rather than landfill disposal. Check the **Sources and Contacts** list for the provincial

departments responsible and call your municipality, too.

Hazardous products: Products marked with a hazard symbol require special health precautions and safe disposal (see list in part I, **Hazardous Products, Alternatives and Disposal**).

Hazardous waste: Materials that are hazardous to the environment — human health and safety, water, air and wildlife, etc.

Humus: Complex mixture of decaying organic matter and inorganic compounds in the soil that serves as a major source of plant nutrients and increases the water absorption capacity of soils.

Hydrochlorofluorocarbons (HCFCs): One of the replacement chemicals for chlorofluorocarbons (CFCs); ozone-depleting potential only a fraction of CFC-12, but is a suspected greenhouse gas (see **Greenhouse effect**).

Incineration: A waste disposal process by which combustible wastes are burned and changed into gases.

Integrated pest management: Pest management that uses a combination of natural, biological and chemical controls.

Landfill: Garbage dump; usually a pit into which waste is dumped and periodically covered with soil; ground and surface water pollution is often a problem around the site.

Lobbying: Effort to influence government, business, and other organizations by means of such activities as letter writing, petitioning or telephoning official representatives.

Mulching: Process of spreading organic material such as wood chips, leaves, or compost over the soil surface to

control weeds and retain soil moisture.

Non-renewable energy sources: Sources that are used up and cannot be replaced; includes coal and petroleum which have taken millions of years to form (see **Fossil fuels**).

Organically grown food: Food grown without chemical fertilizer, pesticides and herbicides; techniques include crop rotation, natural pest control and use of natural fertilizers such as compost and manure.

Ozone (stratospheric): Layer of gaseous ozone in the stratospheric atmosphere that protects life on earth by filtering out harmful ultraviolet radiation from the sun.

Ozone - friendly products: The term industry uses for products no longer containing ozone-destroying CFCs. Yet chemicals substituted for CFCs may still deplete the ozone layer or have other negative environmental properties. See **Chlorofluorocarbons (CFCs)** and **Hydrochlorofluorocarbons (HCFCs)**.

Packaging: Materials such as plastic, foam, and paper that are used to package products.

pH: Symbol used to express acidic or alkaline content in soils and water.

Phosphates: Essential plant nutrients; can cause serious water pollution in excessive quantities.

Pollution: Undesirable change in the physical, chemical or biological characteristics of the air, water or land that can harmfully affect living organisms.

Polystyrene: A type of plastic foam used in disposable food containers such as coffee cups, plates, fast food and egg cartons.

Product life cycle: Complete cycle from manufacture, packaging, transportation, use and disposal.

R-2000: Cooperative program of the Canadian Home Builders' Association (see **Sources and Contacts**) and Energy, Mines & Resources; energy efficiency cuts heating costs by up to 70% compared to a conventional structure while providing superior air quality.

Recycling: Collecting materials such as glass, rubber, tin, aluminum and newspaper for remaking into new products.

Renewable energy source: Sources that potentially can be replaced continuously such as solar energy, wood, straw, and ethanol.

Resources: Often used to define raw natural resources such as ores, water, forests, petroleum, etc.

Sludge: Solid matter settling to the bottom of sedimentation tanks in a sewage treatment plant.

Toxic substances: Substances that can cause serious illness or even death.

Waste: Materials no longer of use to a specific user; often are valuable resources which end up in landfill sites.

SUGGESTED READING

Books

Blueprint for a Green Planet. John Seymour and Herbert Giradet, (Prentice Hall Press, New York, 1987).

Choices: A Family Global Action Handbook (\$6) and *Global Thoughts, Local Actions* (\$5). David McConkey. For copies, write to The Marquis Project, 107-7th Street, Brandon, Manitoba, R7A 3S5.

Ecology for Beginners. Stephen Croall and William Rankin, (Pantheon Books, New York, 1982). A thorough and entertaining introduction to ecology.

Living More With Less. Doris Janzen Longacre, (Herald Press, Kitchener, Ontario, 1980).

Living More With Less Study/Action Guide for Groups. Dolores Histan Friesen, (Herald Press, 1981).

Our Common Future: A Canadian Response to the Challenge of Sustainable Development. Proceedings of the National Forum at Trent University, Peterborough, Ontario, August 18-21, 1988, (The Harmony Foundation of Canada).

Our Common Future. Report of The World Commission

on Environment and Development, (Oxford University Press, 1987).

Shopping for a Better World, A Quick and Easy Guide to Socially Responsible Supermarket Shopping. Rosalyn Will, et. al., (Council on Economic Priorities, 30 Irving Place, New York, NY 10003.

Available at some bookstores. Or order directly from CEP for \$4.95 plus \$1 postage. Companies are rated in 10 areas including charitable giving, women's advancement, animal testing, community outreach and environment.

The Earth Report. The Essential Guide to Global Ecological Issues. Edward Goldsmith and Nicholas Hildyard, general editors, (Price Stern Sloan Inc., Los Angeles, 1988). Six essays and 400 shorter articles arranged alphabetically.

The Green Alternative, Guide to Good Living. Peter Bunyard and Fern Morgan-Grenville in association with The European Group for Ecological Action, (Methuen London Ltd., London, England, 1987).

Voluntary Simplicity: Toward a Way of Life That Is Outwardly Simple, Inwardly Rich. Duane Elgin, (William Morrow and Co., Inc., 1981).

Well Body, Well Earth. Mike Samuels, M.D., and H. Zina Bennett, (Sierra Club Books, San Francisco, 1983).

Some interesting periodicals

Between the Issues. Ecology Action Centre, 3115 Veith Street, Halifax, Nova Scotia, B3K 3G9. With \$25/year membership.

Green Teacher Magazine (\$25/year). Green Teacher, 95 Robert Street, Toronto, Ontario, M5S 2K5. For teachers and educators for the environment.

Harrowsmith Canada's Magazine of Country Living (\$19.95/year). Harrowsmith, 7 Queen Victoria Road, Camden East, Ontario, K0K 1J0.

Probe Post, Canada's Environmental Magazine (Quarterly for \$10/year). The Pollution Probe Foundation, 12 Madison Avenue, Toronto, Ontario, M5R 2S1.

Utne Reader. The Best of the Alternative Press (\$29/year in Canada). Utne Reader Subscriber Services, P.O. Box 1974, Marion, Ohio, 43306-2074.



Enviromental Choice

vation devices, cloth diapers, re-usable envelope labels, etc.)

Recycling Council of Alberta
3415 Ogden Road S.E.
Calgary, Alberta T2G 4N4
(403) 262-4542

Environment Council of Alberta
8th Floor, Weber Centre
555 Calgary Trail South-
bound North West
Edmonton, Alberta T6H 5P9
(403) 427-5792
"What I Can Do For the
Environment" database in-
formation.

Provincial government
Alberta Energy
Energy Conservation Branch
10010-106 Street, Highfield
Place
Edmonton, Alberta T5J 3L8
(403) 427-5200

Alberta Environment
14th Floor, 9820-106 Street
Edmonton, Alberta T5K 2J6
Publications Centre:
(403) 427-6312;
Recycling Branch:
(403) 427-5838

British Columbia

Non-profit organizations
BC Environment Network
c/o Nora Layard
952 West 21st Street
Vancouver, B.C. V5Z 1Z1
(604) 733-2400

SPEC Society Promoting
Environmental Conservation
2150 Maple Street
Vancouver, B.C. V6J 3T3
(604) 736-SPEC
Composting, energy & water
conservation, hazardous
waste management, solar
energy,
organic gardening.

Environmentally Sound
Packaging Coalition
(same address as SPEC
above)
(604) 736-3644

Recycling Council of
British Columbia
(see SPEC (604) 731-7222)

B.C. Medical Association
115-1665 West Broadway
Vancouver, B.C. V6J 5A
(604) 736-5551

Healthy Environment
Leaflet Program
B.C. Public Interest
Research Group
TC 304, Simon Fraser
University
Burnaby, B.C. V5A 1S6
(604) 291-4360
*Recycling Reader: A Guide to
Setting Up A Fine Paper
Recycling Program on Your
Campus* and other publica-
tions.

Provincial government
B. C. Ministry of the
Environment
810 Blanshard Street
Victoria, B.C. V8V 1X5
Hazardous waste disposal
(604) 387-9953;
Recycling (604) 387-9970

Manitoba

Non-profit organizations
Manitoba Environmental
Network
P.O. Box 3125
Winnipeg, Manitoba
R3C 4E6
(204) 943-1290

Biomass Energy Institute Inc.
1329 Niakwa Road East
Winnipeg, Manitoba R2J 9Z9
Publishes *Bio-Joule* six times
a year.

Provincial government
Manitoba Department of the
Environment
Building 2, 139 Tuxedo Ave.
Winnipeg, Manitoba R3N
OH6
Recycling Coordinator
(204) 945-7034; Environ-
mental Information 945-5763
for pamphlets and other
educational material; also
Communications Branch
945-4742 (1020-330 St. Mary,
Winnipeg, Manitoba, R3C
3Z5).

Energy Information Centre
Manitoba Energy and Mines
500 Portage Avenue
Winnipeg, Manitoba
R3C 0V8
(204) 944-4154

New Brunswick

Non-profit organizations
Conservation Council of
New Brunswick
180 St. John Street
Fredericton,
New Brunswick E2B 4A9
(506) 458-8747

Provincial government
New Brunswick Department
of the Environment, Box
6000
Fredericton, New Brunswick
E3B 5H1
Hazardous waste disposal
(506) 453-2861; recycling
(506) 453-2861, energy con-
servation, New Brunswick
Department of Natural
Resources and Energy
(same address),
(506) 453-4279

Newfoundland & Labrador

Non-profit organizations
Jane Harding Wilderness
Society of Newfoundland &
Labrador
P.O. Box 5625
St. John's, Nfld. A1C 5W8

Provincial government
Newfoundland Information
Services
Confederation Building
St. John's, Nfld. A1C 5T7
(709) 576-3610

Northwest Territories

Non-profit organizations
Ecology North
P.O. Box 2888
Yellowknife, NWT X1A 2R2

Territorial government
Department of Renewable
Resources
Government of the North-
west Territories, Box 1320
Yellowknife, NWT X1A 2L9
Pollution Control Division:
Hazardous waste disposal
and recycling; Energy
management; Energy
conservation.

SOURCES & CONTACTS

Federal government

Write to the Ministers of federal government departments at the House of Commons, Ottawa, Ontario, K1A 0A6. You don't need a stamp when the House is sitting. Send a copy of your letter to your Member of Parliament.

Agriculture Canada,
Canada-wide toll-free
pesticides hotline
1-800-267-6315.

Energy, Mines & Resources
558 Booth Street
Ottawa, Ontario K1A 0E4
(613) 995-3065

Energide Directories to major
appliances; other energy
conservation publications.

Environmental Choice
Program
25 St. Clair Avenue West
Toronto, Ontario M4T 1M2
(416) 973-1979

Environment Canada regional offices

Atlantic Region
45 Alderney Drive, 5th Floor
Dartmouth, Nova Scotia
B2Y 2N6

Hazardous waste disposal
(902) 426-6141; energy con-
servation (902) 426-3593
*What Atlantic Canadians Can
Do For Their Environment* and
other publications.

Quebec Region
C.P. 10100
Ste.Foy, Quebec G1V 4H5
(418) 684-7204

Ontario Region
555 St. Clair Avenue West,

7th Floor
Toronto, Ontario M4T 1M2
(416) 973-6406

Western & Northern Region

Twin Atria 2
4999-98 Avenue, 2nd Floor
Edmonton, Alberta T6B 2X3
(403) 468-8075

*Saving the Environment: A
Practical Family Kit On Saving
Resources, Saving Money* and
other publications.

Pacific & Yukon Region

800 Burrard Street
Vancouver, British Columbia
V6Z 2G7
(604) 666-5902

Non-profit groups

Human Ecology Foundation
Marg Lamothe
RR 5, 10 Oak Ridge Drive
Georgetown, Ontario
L7G 4S8

*Human Ecology Foundation
Source List* is a list of selected
products for the ecologically
ill or environmentally
hypersensitive.

Friends of the Earth
701-251 Laurier Avenue
Ottawa, Ontario K1P 5J6
(613) 230-3352

Canadian Environmental
Network
P.O. Box 1289, Station B
Ottawa, Ontario K1S 5B6
(613) 563-2078

Canadian Organic Growers
Association
P.O. Box 6408, Station J
Ottawa, Ontario K2A 3Y6
*The Directory of Organic Agri-
culture.* (Les Editions Humus
Inc., Montreal, and Canadian
Organic Growers, Ottawa,
1989). Information on
certified organic food. More
than 500 detailed listings of
suppliers. French and
English.

Canadian Standards
Association
178 Rexdale Boulevard
Rexdale, Ontario M9W 1R3
(416) 747-4000

Pollution Probe Foundation
12 Madison Avenue
Toronto, Ontario M5R 2S1

(416) 926-1907
Publications and products
(energy & water conserva-
tion, etc.).

Harmony Foundation of
Canada

19 Oakvale Avenue
Ottawa, Ontario K1Y 3S3
Environmental education

Greenpeace
578 Bloor Street West
Toronto, Ontario M6G 1K1
(416) 538-6470

Information from manufacturers

Canadian Manufacturers'
Association
One Yonge Street
Toronto, Ontario M5E 1J9
(416) 363-7261

Canadian Chemical
Producers' Association.
Toll-free information service
1-800-267-6666

Proctor & Gamble. Product
information: 1-800-666-0151
For more information, check
*Sources: The Directory of
Contacts for Editors, Reporters
and Researchers* (1989).



*A list of some provincial
government and non-
government organizations,
arranged by province,
follows. Check with the
environmental network in
your region for the names of
other groups.*

Alberta

Non-profit organizations

Alberta Environmental
Network Write to: Environ-
mental Resource Centre
10511 Saskatchewan Drive
Edmonton, Alberta T6E 4S1
Organic gardening, conser-
vation in the home, earth
care products (water conser-

Nova Scotia

Non-profit organizations

Atlantic Environmental Network (same address as Ecology Action Centre; (902) 454-2139

Directory. \$15 non-profit/individuals; \$20 public sector; \$25 private sector; add 10% for postage.

Ecology Action Centre
3115 Veith Street
Halifax, Nova Scotia B3K 3G9
(902) 454-7828

The Clean Nova Scotia Foundation
P.O. Box 2528, Station M
Halifax, Nova Scotia B3K 3G9
(902) 424-5245

Provincial government

Nova Scotia Department of the Environment,
P.O. Box 2107
Halifax, Nova Scotia B3J 3B7
(902) 424-5300
Energy conservation.

Ontario

Non-profit organizations

Ontario Environment Network
P.O. Box 3125, Station P
Toronto, Ontario M5S 2Z7
(416) 588-3843

Directory. \$6 non-profit/individuals; \$10 public sector; \$25 private sector; and add 10% for postage.

Ontario Public Interest Research Group (OPIRG)
Provincial Office, Room 201
455 Spadina Avenue
Toronto, Ontario M5S 2G8
(416) 598-1576. Pamphlets and other publications.

Recycling Council of Ontario
Box 310, Station P
Toronto, Ontario M5S 2S8
Ontario-wide information number 1-800-387-5479

Provincial government

Ontario Ministry of the Environment
135 St. Clair Avenue West
Toronto, Ontario M4V 1P5

Public Information Centre
(416)-323-4321;
Waste Management
(416) 323-5200;
Ministry of Energy
(416)-965-3246

Ontario Hydro
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Toronto, Ontario M5G 1X6
Energy conservation information 1-800-263-9000

Prince Edward Island

Non-profit organizations
Environmental Coalition of Prince Edward Island
c/o Gary Schneider
RR 6, Cardigan,
P.E.I. C0A 1G0

Provincial government
Department of the Environment
P.O. Box 2000
Charlottetown, P.E.I. C1A 7N8

Hazardous waste disposal
(902) 368-5031;
Recycling (902) 368-5033;
Energy Corporation (energy conservation) (902) 368-4220

Quebec

Non-profit organizations
Quebec Environmental Network
Réseau Québécois des Groupes Ecologiques
C.P.1480, Place d'Armes
Montreal, Quebec H2Y 3K8
(514) 384-9778

Canadian Ecology Advocates
15 Horatio Walker
St. Petronille, Quebec G0A 4C0
(418) 828-9086

Provincial government
Ministre de l'Environnement
3900, rue Marly
Ste. Foy, Quebec G1X 4E4
(418) 643-8806

Saskatchewan

Non-profit organizations
Saskatchewan Environmental Society, P.O. Box 1372

Saskatoon, Sask. S7K 3N9
(306) 665-1915
Composting, energy conservation, solar energy, recycling, organic gardening.

Provincial government
Saskatchewan Government Information Services
Legislative Building, Room 3
Regina, Sask. S4S 0S1
(306) 787-6281

Saskatchewan Power Corporation
2025 Victoria Avenue
Regina, Sask. S4P 0S1
(306) 566-3166
Energy conservation.

Yukon

Non-profit organizations
Environmental Network
Nornet, Box 4163
Whitehorse, Yukon Y1A 3T3
Yukon Conservation Society
P.O. Box 4163
Whitehorse, Yukon Y1A 3T3

Territorial government
Public Affairs Bureau
Government of the Yukon Territory, P.O. Box 2703
Whitehorse, Yukon Y1A 2C6





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