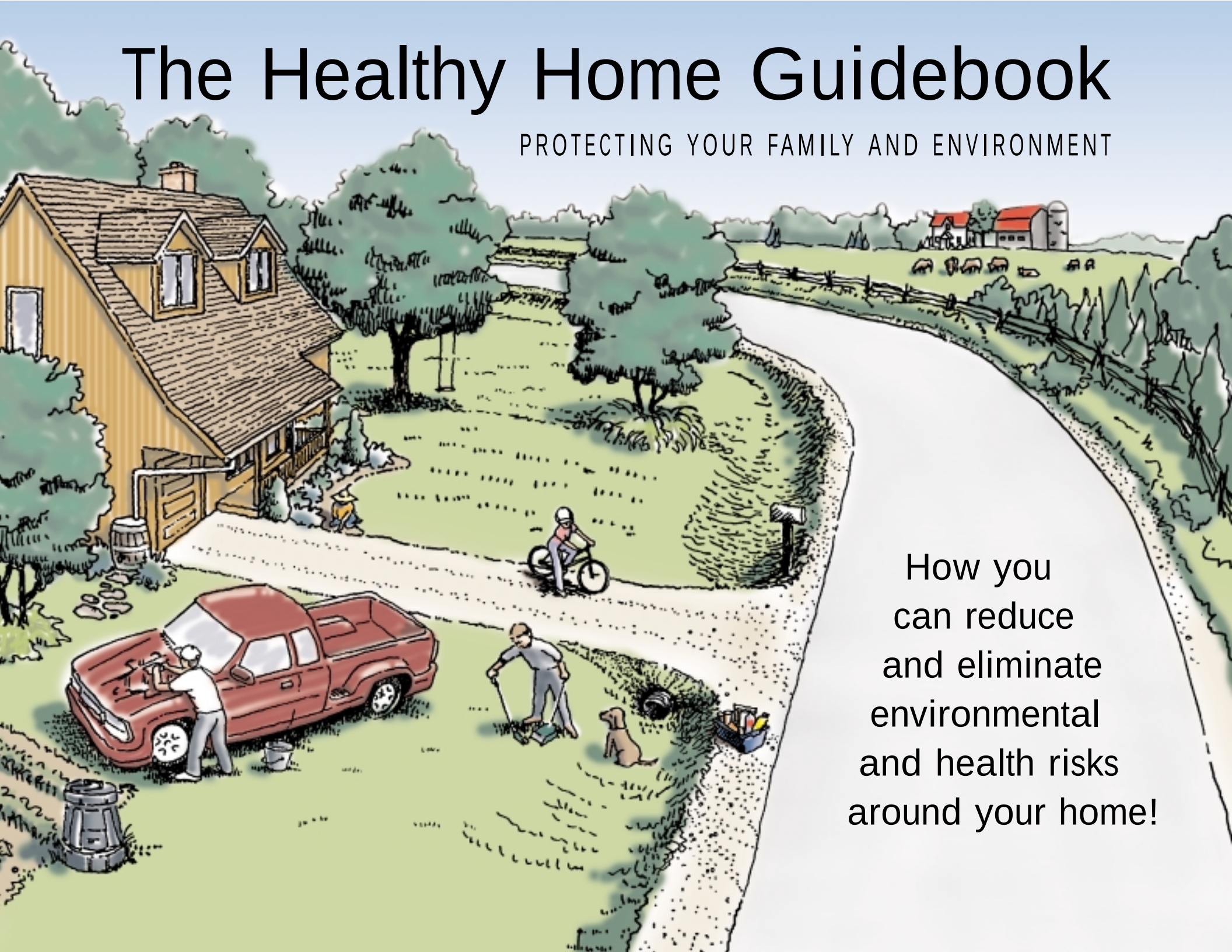
The Healthy Home Guidebook

PROTECTING YOUR FAMILY AND ENVIRONMENT



How you
can reduce
and eliminate
environmental
and health risks
around your home!

The Healthy Home Guidebook

PROTECTING YOUR FAMILY AND ENVIRONMENT

OCTOBER 2002

Coordinated by Carrie Laflamme
Produced by the Dundas Environmental Awareness Group
and
South Nation Conservation
with funding from
The Ontario Trillium Foundation

Dundas Environmental Awareness Group

THE ONTARIO TRILLIUM FOUNDATION
LA FONDATION TRILLIUM DE L'ONTARIO

SOUTH NATION CONSERVATION
DE LA NATION SUD

Thanks!

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What's Inside

Welcome to the Healthy Home Guidebook – filled with practical information, tips, tricks and tools to help you protect your family and the environment.

Whether it's air quality, the right cleaning product, alternative energy sources or lessening our impact on the environment, this guide will help you discover ways to live safely and creatively!

Think Globally, Act Locally

How This Book Came About

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As Chairman, and on behalf of, The Dundas Environmental Awareness Group (DEAG), I am pleased to make the Healthy Home Guidebook available to the residents of Dundas county and Eastern Ontario as part of our ongoing activities in support of the environmental initiatives of local residents. DEAG is a local grass-roots organization, formed in the spring of 1990 when a group of Dundas County residents got together to discuss environmental issues and what they could do locally to help conserve, protect and improve the environment. Members of that ad hoc group went ahead and enacted By-Laws for their fledgling organization in January 1991 and have been active in promoting a healthy environment in Dundas County for over 10 years.

Through out the 1990's DEAG undertook projects to preserve, protect, restore and improve the natural resources and environment of Dundas county. As volunteers, the group worked hard to find funding to support a variety of projects. Earlier highlights included an active role in establishing the Blue Box recycling program throughout Dundas county, as well as spearheading the campaigns for a Household Hazardous Waste Day and a permanent Household Hazardous Waste Facility.

DEAG has long recognized the global significance to the environment of local initiatives in protecting the environment, and has continually sought out opportunities to provide people in Dundas County with both the opportunity and information that they need to make environmentally sustainable decisions. Research undertaken for earlier projects convinced DEAG that there was a need for information on what rural homeowners could do to improve both their health and that of the environment. The Healthy Home Guidebook is the result, and outlines what people can do locally on an individual/family basis. By making the information available, DEAG is empowering local residents to undertake steps which will not only help improve their own health and environment, but will contribute in a positive way to improving the overall environmental situation on this planet.

It is therefore with great pleasure that I invite you go through this Handbook and look for opportunities to not only improve your own environment, but play a role in creating a better environment overall. Thank you for your interest, and I hope that you will find this book both informative and useful.

Karen Switzer-Howse
Chairman, DEAG

Home Safe Home

THE HEALTHY HOME

What is a Healthy Home Guidebook?

The Healthy Home Guidebook is designed especially for you, the rural homeowner, to rate how your activities affect both the environment and your family's health. Each chapter explains possible risks based on a household topic and why you should be concerned. By completing the assessment in each chapter, you will become aware which of your activities are good home care practices and which activities need changing.

Why should you be concerned?

Many people do not realize there are possible risks in and around their homes, which can affect their family's health, their home environment and the quality of their drinking water. Knowing about the risks today may help prevent costly cleanups, repairs and legal troubles in the future. In addition, taking steps to cut back on water usage, energy and other resources, can save you money in the long run.

Taking care of your home in an environmentally sensible way has a bigger impact than you might think. Your home occupies only a small piece of land, but add up all the homes across the country, and you've suddenly covered a lot of ground. That means your home care activities, along with everyone else's, can have a big impact. Taking care of the environment begins in your own home!

Explore some unique ways you can enhance your environment. Make a commitment to doing things differently to improve your well-being!

Here's what you can do!

Good water quality and a healthy environment are the result of responsible home management choices. What you do in your backyard makes a difference. The key is always you, the individual citizen and your commitment to seeing a healthy environment for your family and future generations.

By working together, we will achieve improved water quality for a healthy environment, a healthy home and family – and that's good for everyone!

Studies currently estimate that 33% of the estimated one million household sewage systems in Ontario are failing to adequately protect the environment.

Have fun using this guidebook!

Take your time to complete the assessment in each chapter, either one at a time or all together. Then refer to the "How did you rate" quiz to determine your results. In some cases, you will discover easy ways to make a change, while others may be more difficult, and could involve additional costs (i.e. upgrading your well or septic system). If you find yourself in this situation, please contact your local health unit or conservation authority to see if grants are available to protect water quality. Keep your guidebook handy to record your maintenance practices in the ledger located at the back, or use the reference section to obtain more specific information and assistance. Our goal is to ensure that the assessment is a useful and practical document for you and your family in both short- and long-term home management planning.

Taking the quiz – how did you rate?

In each chapter, you are asked to participate in a quiz. Please refer back to this section to find out how you rate!

Yes ☑

Congratulations, if you answered YES to every question. There are LOW health and environmental risks to your family and home. Keep up the good work!

Sometimes ☑

If you answered SOMETIMES for some of the questions, please be careful…there MAY BE health and environmental risks. Evaluate the risk and determine how you can reduce it. Read the chapter, and check out the reference section to look for ways to improve your situation.

No ☑

WARNING! If you answered NO to any question, there are LIKELY health and environmental risks to your family and home. Action steps are required. Review the chapter for ways to reduce or eliminate the risks. Don't forget to use the reference section for additional information.

Getting To Know Your Land

ASSESSING YOUR PROPERTY

We are all part of a watershed. Why is it important?

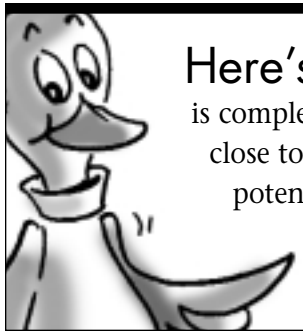
A watershed is an area of land that drains into a lake or river. Rain and snow drain through the soil or run over land into small streams and end up in major rivers. Everyone lives in a watershed. Our watersheds provide water for drinking, irrigation and industry. Lakes and streams are appreciated not only for their beauty, but for boating, fishing and swimming. Wildlife need healthy watersheds for food and shelter. Activities farther upstream may affect the quality or quantity of water that passes in front of your home.

Why assess your property?

Every homeowner's property has its own unique set of natural features that cannot be changed – like soil type and water table depth. Sandy soils will allow rapid water movement. For example, using pesticides or having a failing septic system could result in immediate water quality problems in sandy soils or high water tables, whereas a deep water table may not experience water quality problems for years.

How do you assess your property?

There are two simple steps involved. Complete the assessment questions on the following page to help you determine the natural features of your property, then complete a sketch of your property to show landmark features in relation to your home.



Here's what you can do!

You can adjust your activities once your sketch is completed. Is your fuel tank too close to your well? Have you spread pesticides too close to your well or open water? Is your dog house located too close to your well, with potential animal waste contaminating your drinking water? Your property assessment will be a good reference when planning future activities, and will help in correcting those needing attention.

Evaluate activities on your property. Find out if they affect the quality of your water and your environment!

Eavestrough or sump pump drainage:
Direct these to the lawn or flower bed and away from the foundation and paved surfaces.

Pool drainage:
Direct the water to a grassy area away from surface water. Drain it slowly over a few days.

What soil type do you have? Clay is sticky. Sand is gritty and crumbly. And silt or loam is somewhere in between!

How deep is your soil? Have you had any construction on your property that has reached bedrock? If in doubt, talk to neighbours or the previous owner.

What is the depth to the water table? Your water table will fluctuate throughout the year. You will eventually reach saturated soil the deeper you dig. Again, has construction on your property reached your water table? Review your records.

Circle and tally the conditions that apply to your property, and record your risk on the right.

Natural features	Low risk	Medium risk	High risk	Your risk
Soil type	Clay	Silt or loam	Sand or gravel	
Soil depth to bedrock	over 3.5 metres (12 feet)	1 - 3.5 metres (3 - 12 feet)	less than 1 metre (less than 3 feet)	
Depth to water table	over 6 metres (20 feet)	3 - 6 metres (10 - 20 feet)	less than 3 metres (10 feet)	
Topography or slope	Level	Sloping	Hilly	
Nearness to surface water	over 30 metres (100 feet)	7.5 - 30 metres (25 - 100 feet)	less than 7.5 metres (25 feet)	
Name of watershed you live in?				

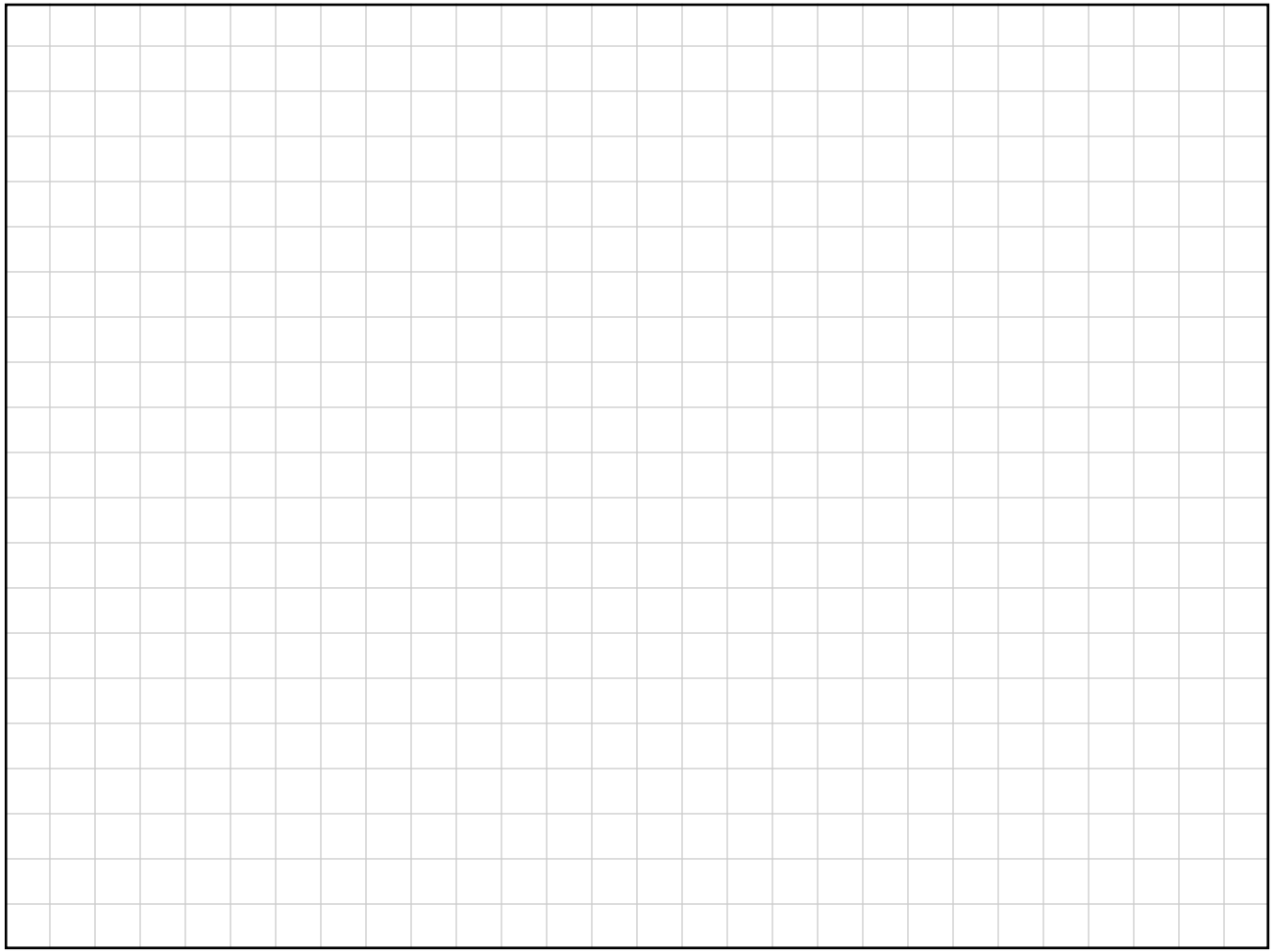
Your rated risks describe situations that could lead to high, medium and low risks to your environmental and your family's health. Do not depend entirely on your property's natural features to protect your water quality and environment.

Do the best you can with these questions. Neighbours or previous owners may be able to help you. Information on your well record may also help. Contact your local Ontario Ministry of Agriculture and Food Office, local municipality or local Conservation Authority for further assistance.

Your Property Layout

⌊⌋ = ___ feet / metres

N



What to include on the sketch of your property

- house and garage
- outbuildings and sheds
- road and driveways
- sewage system drainfield
- all drinking wells
- heating oil or fuel storage tanks
- eavestrough drains
- sump pump drains
- swimming pool backwash drain
- lawn area
- flower and vegetable gardens
- open water
- drainage ditches
- dog house/dog run
- pesticide or herbicide storage
- hazardous products and storage, eg. paints and solvents
- other animals? (cows, chickens, barns?)

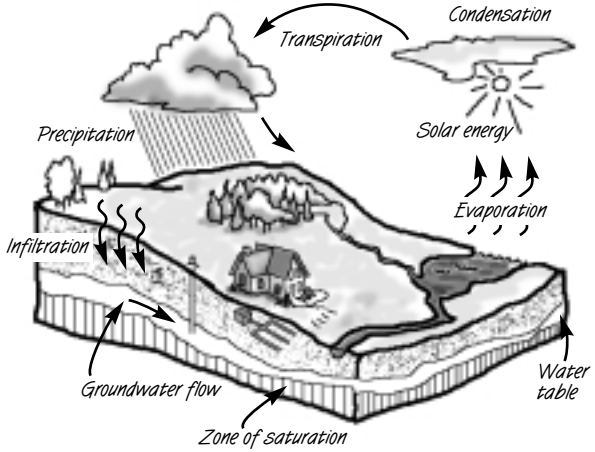
Notes:

How Well Is Your Well

WELLS AND DRINKING WATER

Where does your drinking water come from?

If you live in a rural area, your drinking water probably comes from a well on your property. The well fills with groundwater, which is then pumped into your house. But where does that groundwater originate? And how can you be assured that it's safe for you and your family to drink?



How does the water cycle work?

Groundwater is part of the water cycle. Rain and melting snow runs off into streams and lakes; it seeps into the ground, nourishing trees and plants; it seeps even deeper, collecting in pockets known as the aquifers, where, as groundwater, it fills your well. With the help of wind and sun, water can also evaporate into the atmosphere. It returns to earth again as rain or snow, in the continuous water cycle.

Both seepage and evaporation help cleanse our water, but it's important to remember that all the water that we use – for drinking, cooking, laundry, bathing or gardening – returns to the environment – often to the same source it came from – in poorer condition. Chemicals and other pollutants that we add to our water or dump on to the ground can seriously affect the purity of our drinking water. Sometimes harmful bacteria and other contaminants can leak directly into our wells if they are in poor condition.

Here's what you can do!

When your drinking water comes from your own well, it is up to you to test your water regularly to ensure that it is safe. Contaminated water can cause mild to severe stomach cramps and/or diarrhea. Depending on the contamination, it can even be fatal. Test your well today!

The two most common causes of well water contamination:

1. Failure to properly seal the space between the well casing and the hole in the ground (annular space) with cement or bentonite. A faulty seal allows surface water, which may be contaminated with fertilizers, manure or chemicals, to directly enter the well.

2. Failure to have the casing extend a minimum of 30 cm (12 inches) above ground level or above floor level of well pit. Well casings should never be buried. If they are, contaminated runoff may leak into the well.

Talk to a licensed well contractor to discuss how to upgrade your well!

While the human body can live for weeks without food, it can only survive a few days without water.

Take this quiz to assess potential health and environmental risks in your home!
(Write N/A when a situation does not apply.)

WELL LOCATION

Do you...	Yes	Sometimes	No
- know where your well is located on your property?	◯	◯	◯
- have a copy of your well record?	◯	◯	◯
- know the type of well you have (dug, drilled, bored or sandpoint)?	◯	◯	◯
- know the depth of the well?	◯	◯	◯
- know the depth of the casing?	◯	◯	◯
- *have your well located 15 metres (50 feet) or more away from any source of contamination (applies to drilled wells with a water-tight casing to a depth of 6 metres or 20 feet)?	◯	◯	◯
- *have your dug or bored well located 30 metres (100 feet) or more away from any source of contamination?	◯	◯	◯
- maintain a permanent grassed buffer at least 3 metres (10 feet) around your well?	◯	◯	◯
- know if your well is located in an area that is flood-free?	◯	◯	◯
- ensure that surface water cannot reach your well?	◯	◯	◯

WELL MAINTENANCE

Do you...	Yes	Sometimes	No
- watch for changes in the taste, odour and colour of your water?	◯	◯	◯
- test water for bacteria, starting after spring thaw and repeated every four months?	◯	◯	◯
- test water after any major repairs on your well or plumbing?	◯	◯	◯
- test water for nitrate-nitrogen every three years (more often if there is a baby in your house, or if nitrate is a problem in your area)?	◯	◯	◯
- watch for settling of the ground around the outside of the well casing?	◯	◯	◯
- have the well pump and distribution systems checked regularly?	◯	◯	◯
- take preventive action near your well against spills on the ground (eg. fuels, pesticides)?	◯	◯	◯

WELL INSTALLATION AND UPGRADES

Do you....	Yes	Sometimes	No
- ask to see the license of your well contractor/technician before work begins?	◯	◯	◯
- secure a written contract with the well contractor explaining the work to be performed?	◯	◯	◯
- check that the space between the well casing and the hole in the ground (annular space) is sealed properly with a material such as cement grout, concrete or bentonite?	◯	◯	◯
- *check that the well cap is 30 cm (12 inches) or more above ground level or floor of well pit?	◯	◯	◯
- *ensure the casing below ground on all wells is a minimum of 6 metres in length?			
- check that the sanitary seal and well cap are secure and water-tight?	◯	◯	◯
- mound up the ground around the outside of the well or well pit with clean earth to direct surface runoff away from your well?	◯	◯	◯
- *ensure the well driller supplies you with a copy of the water well record?	◯	◯	◯

WELL ABANDONMENT

Do you...	Yes	Sometimes	No
- *ensure abandoned wells (no longer in use) are plugged and sealed properly by a licensed well contractor?	◯	◯	◯
- avoid disposing of any waste in an unused well, recognizing it will pollute the groundwater?	◯	◯	◯

* Note: Required under Ontario Water Regulations Act 903 – Water Wells for the construction, maintenance and abandonment of water wells.

To find out how you rated and what it means, go to page 6.

Did you know you cannot smell, see or taste most water problems? Water testing is the only sure way to provide safe water for your family!

What type of well do you have?

There are three main types of wells. Drilled, dug or bored, and sand point. You can easily determine the type of well from the well casing. (pipe or tubing installed to support it's sides)

Drilled well
casing size: 10 - 20 cm
(4 - 8 inches)

Dug or bored well
casing size: 60 - 120 cm
(24 - 48 inches)

Sand point well
casing size: 2 1/2 - 5 cm
(1 - 2 inches)

2 good reasons to regularly test your water.

Water is constantly moving – even if your drinking water is fine today, it may not be tomorrow. Seasonal changes in water quality that occur in shallow wells can be quite noticeable. Water testing is the only sure way to provide safe water for your family.

① Do you suspect bacteria? Test for bacteria every four months, and after major plumbing work. The Ontario Ministry of Health provides this testing free of charge. You can pick up and drop off your sample water bottles at your local Public Health Unit in your area. If you're not sure of the nearest location, call the info line at 1-800-268-1153. Directions for how to take samples of your water are included with each sample bottle.

② Are there traces of nitrate and sodium? Nitrates from fertilizers or seepage from a septic tank can contaminate your water. So can sodium if road salt is heavily used in your township. Private laboratories will test for these pollutants. Check the Yellow Pages for labs in your area.

Test results – what they mean, and what you should do.

Possible indicators:

Total coliforms: may indicate that surface water is getting into your well.

E-Coli: contamination by manure or human sewage from a nearby source.

Nitrates: fertilizers or seepage from a septic tank. Infants less than six months old can become sick from drinking formula made with water high in nitrates.

Sodium: water softeners increase the level of sodium. A separate unsoftened water supply should be used for drinking and cooking. Individuals on sodium-reduced diets should consult their physician if the sodium in their well water exceeds 20mg/L.

If test results show your water is unsafe to drink, contact your local Health Unit for instructions on how to disinfect your well. Ask if your water is safe for such other uses as bathing, washing clothes and gardening. Until further testing indicates that your water is safe to drink, use bottled water, or boil it for five minutes.

Prevent contamination and keep your water safe!

Check that your well is constructed to meet all regulations. The Ontario Ministry of the Environment – Ontario Water Resources Act regulates water wells. If your well does not meet these requirements, you should contact a licensed well contractor in your area for an estimate on the necessary upgrade.

Locate potential sources of contamination. Water, and any other runoff, should be able to flow freely away from your well. Check the diagram on the following page.

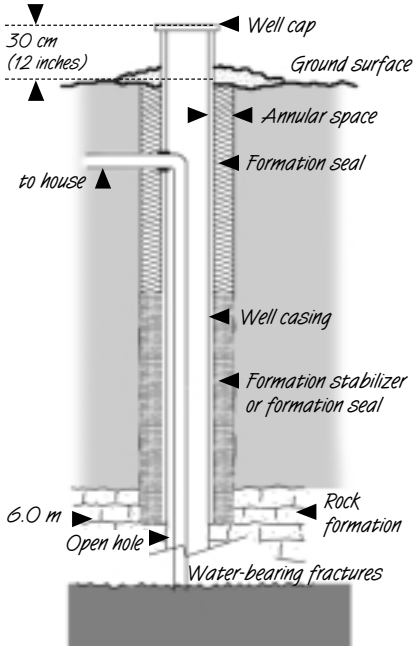
Keep a copy of the well record for each well on your property. It shows valuable information, and can save time and money. Details, including when the well was constructed, information on the construction, the pump setting depth and the capacity of the well, are included in this record. Your well contractor must provide one copy to the homeowner. To obtain a certified copy of the Well Record, call the Ministry of the Environment at 1-888-396-WELL (9355). There is a charge for this service.

Inspect your well annually. Hire a certified well contractor to inspect your well and all its working parts.

Plug abandoned wells. Unused or abandoned wells on your property can contaminate an operating well. You are legally responsible for ensuring that unused wells are properly plugged.

Test your water. Check for bacteria after the snow has melted and every four months thereafter. Testing is also recommended after any major plumbing work is done.

Poorly constructed and/or located wells may never provide safe drinking water.



Current Ontario Regulations Ontario Water Resources Act Regulation 903

- A well must be at least 15 metres (50 feet) from any source of pollution if the casing is watertight to a depth of at least 6 metres (20 feet).

- A well must be as least 30 metres (100 feet) away from any source of pollution if the casing is not watertight to a depth of less than 6 metres (20 feet).

- The well casing must be a minimum of 30 cm (12 inches) above ground level or floor of well pit.

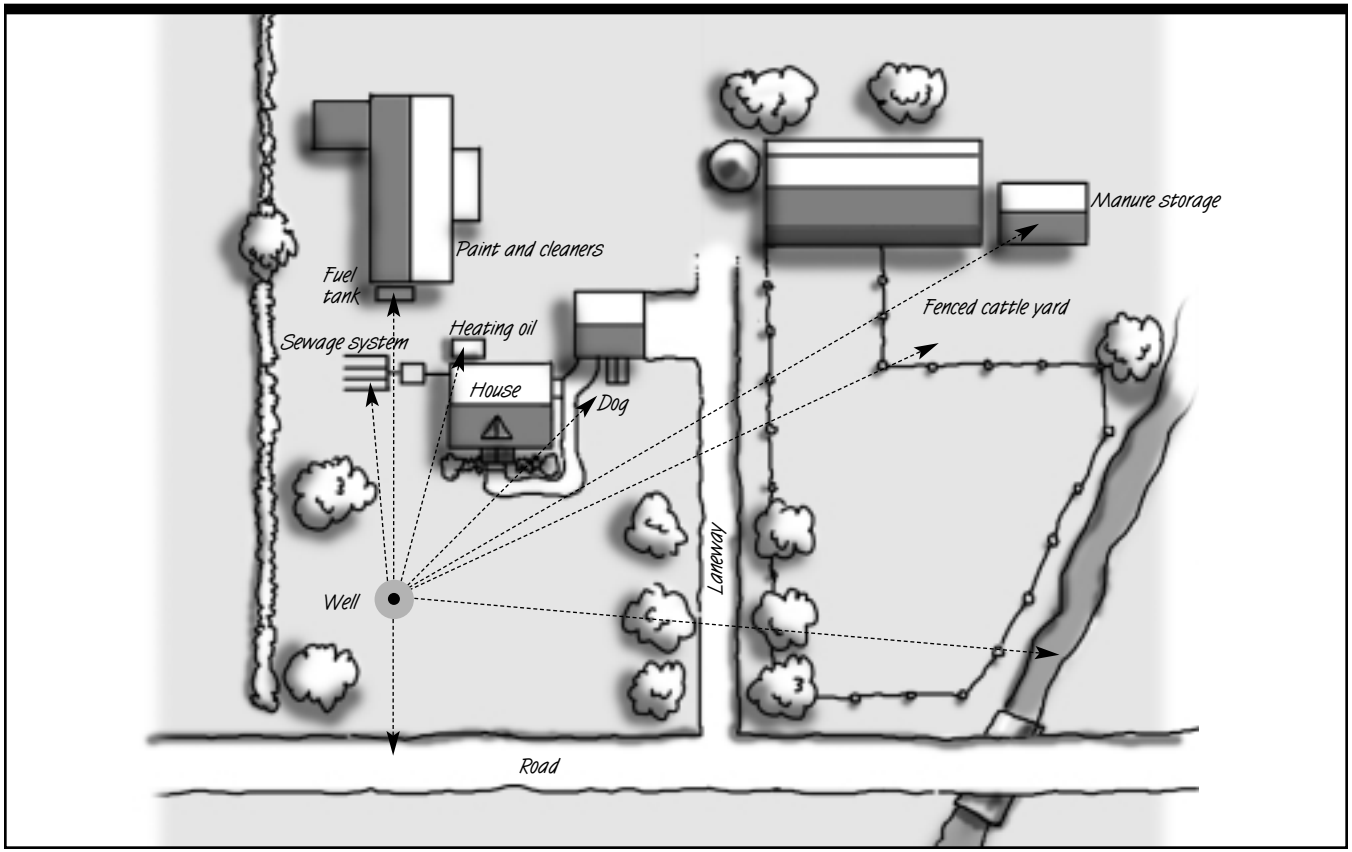
- Casing on a drilled well must be a minimum of 6 metres (20 feet) in length.

- The well contractor must provide the owner with a one-litre sample of well water for visual examination and measure the well depth in the presence of the owner.

- The well contractor is required to test pump a new well for at least one hour and to measure and record results on the Water Well Record.

- The well contractor must complete a Water Well Record for any new well construction and for all well abandonment. Copies must be submitted to the Ontario Ministry of the Environment and the home-owner, within two weeks of completion.

Minimum Separation Distances for Drinking Wells



Check your property layout on page 9. Is your drilled well at least 15 metres, or your dug well at least 30 metres from all sources of contamination? Some possible sources are shown in this diagram.

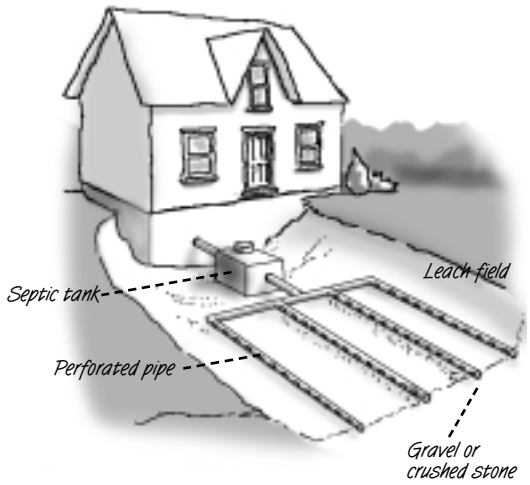
Note: The minimum separation distance alone does not ensure that the well will be safe from contamination.

The Scoop on Poop (and other stuff)

SEWAGE SYSTEM OPERATIONS

What is waste water?

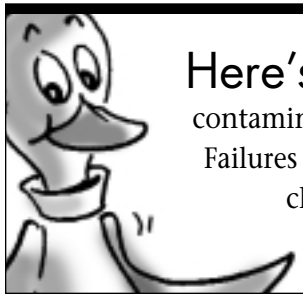
Waste water is the water leaving your house from sinks, tubs, toilets and water-using appliances. Homeowners who live in the country are not connected to municipal sanitary sewers, but instead, they provide their own waste treatment services on their own property using an onsite sewage system.



How does your sewage system work?

The typical sewage system has two basic parts, a septic tank and a leaching bed, both of which are buried underground. Waste and waste water enter the septic tank and settle in three layers:

1) The solid waste layer settles to the bottom where natural bacteria in the tank help to partially breakdown the solids;
2) Grease, fat and soap residues rise to the top and form a scum layer;
3) The liquid waste layer, or effluent, flows out of the septic tank to the leaching bed;
4) The effluent trickles out of pipes in the leaching bed, through the gravel layer and into the soil;
5) The soil naturally filters the effluent before the water enters the underground water table.



Here's what you need to know!

A failed system can leak contaminants into the water table, your drinking well and nearby lakes and streams. Failures are usually due to age, blocked pipes, overuse of water or poor upkeep. This chapter will explain how your sewage system works, and that what goes down your drain affects us all.

Discovering that your sewage system has failed is an unpleasant experience.

Warning signs of a failing system

- toilet, showers and sinks back up or take longer than usual to drain
- areas of lush, green grass over the leaching bed, even during dry weather
- soggy or spongy ground around the septic tank and leaching bed
- foul odours inside or outside
- significant algae growth in or around nearby lakes or water bodies

A conventional toilet uses 22 litres (5 gallons) of water per flush. For a family of four this totals approx. 160,000 litres (35,000 gallons) per year just to flush the toilet!

A water-saving toilet uses as little as 6 - 9 litres (1.5 - 2 gallons) per flush, thereby reducing water usage up to 60 - 70%!

Take this quiz to assess potential health and environmental risks in your home!

WATER CONSERVATION

Do you...	Yes	Sometimes	No
- use water conserving devices on your shower head, taps and appliances?	○	○	○
- check for leaky faucets or toilets – and repair immediately?	○	○	○
- wash your laundry throughout the week, rather than all in one day?	○	○	○

CAREFUL DISPOSAL

Do you...	Yes	Sometimes	No
- avoid pouring grease or oil down the drain?	○	○	○
- direct water softener discharge away from your sewage system?	○	○	○
- refrain from disposing of any hazardous products down your drain?	○	○	○
- refrain from having a sink garbage disposal or grinder?	○	○	○
- avoid using excessive soaps, cleaners, detergents and bleaches?	○	○	○
- prevent basement sump pump connections to your septic tank?	○	○	○
- prevent non-degradable items from entering your septic tank?	○	○	○

MAINTENANCE

Do you...	Yes	Sometimes	No
- have your sewage system inspected every 1-2 years by a licensed contractor to determine the amount of sludge and if pumping is necessary? *(The Ontario Building Code requires septic tanks be pumped when sludge and scum occupy one third of the septic tank)	○	○	○
- check for leaks?	○	○	○
- clean the effluent filter, if one is installed?	○	○	○
- ensure baffles are functioning properly?	○	○	○
- select only "starters" or "conditioners" that have the EcoLogo seal?	○	○	○

SEWAGE SYSTEM LOCATION

Do you...	Yes	Sometimes	No
- know where your septic tank and leaching bed are located?	◯	◯	◯
- plant grass over the leaching bed to prevent erosion and absorb excessive water?	◯	◯	◯
- refrain from paving the leaching bed area with concrete, asphalt, or interlocking bricks?	◯	◯	◯
- keep vehicles, equipment and livestock off your sewage system?	◯	◯	◯
- refrain from planting trees and shrubs over or less than 6 metres (20 feet) from the leaching bed?	◯	◯	◯
- divert all eavestroughs away from the leaching bed?	◯	◯	◯
- ensure no lawn sprinklers or sump pump discharge water in the area of the leaching bed?	◯	◯	◯

AGE AND DESIGN

Do you...	Yes	Sometimes	No
- know the age of your sewage system? (Systems more than 20 years old are at higher risk of not functioning properly)	◯	◯	◯
- know if your system is located according to the Ontario Building Code minimum clearances? (See diagram following page)	◯	◯	◯
- *obtain a permit from the necessary authority, before installing or altering a sewage system?	◯	◯	◯

* Note: Required under Ontario Building Code Regulations

To find out how you rated and what it means, go to page 6.

Remember:
Your septic tank contains deadly gases. Never allow anyone other than a licensed contractor to lean into or enter your septic tank!

Did you know the average septic tank requires a space of about 3 m x 3 m (10 ft x 10 ft)? The leaching bed should be 9 m x 15 m (30 ft x 50 ft) or larger, with an additional area of similar size held in reserve in case of leaching bed failure.

Ask a licensed sewage system contractor about recommended devices to extend the life of your system.

Effluent filters are installed on the septic tank outlet to capture small particles in the effluent. Without the filter, clogs can form in the distribution pipe.

Gas bubbles are produced by the bacteria breaking down the wastes in the tank. A gas baffle installed near the septic tank outlet prevents disturbed sludge from entering the leaching bed.

A back flow valve is installed to prevent backup during floods.

6 ways to improve your sewage system:

① **Pump your tank regularly.** One of the most common reasons for failure is not having the tank pumped out regularly. Depending on the size of your family, water consumption and the size of your tank, pumping should occur every 2-3 years. The septic tank should also be inspected when it is pumped.

② **Spread out the amount of water used.** Sending too much water through the system at one time can result in the water not being separated. Solids can enter and block the holes in the distribution pipes.

③ **Protect your leaching bed.** Keep the immediately surrounding area grassed to avoid erosion. Don't plant trees or shrubs too close, or cover it with a hard surface. Don't drive over it. Divert water from the sump pump, water softener or swimming pool backwash, eavestroughs and runoff from driveways away from the leaching bed.

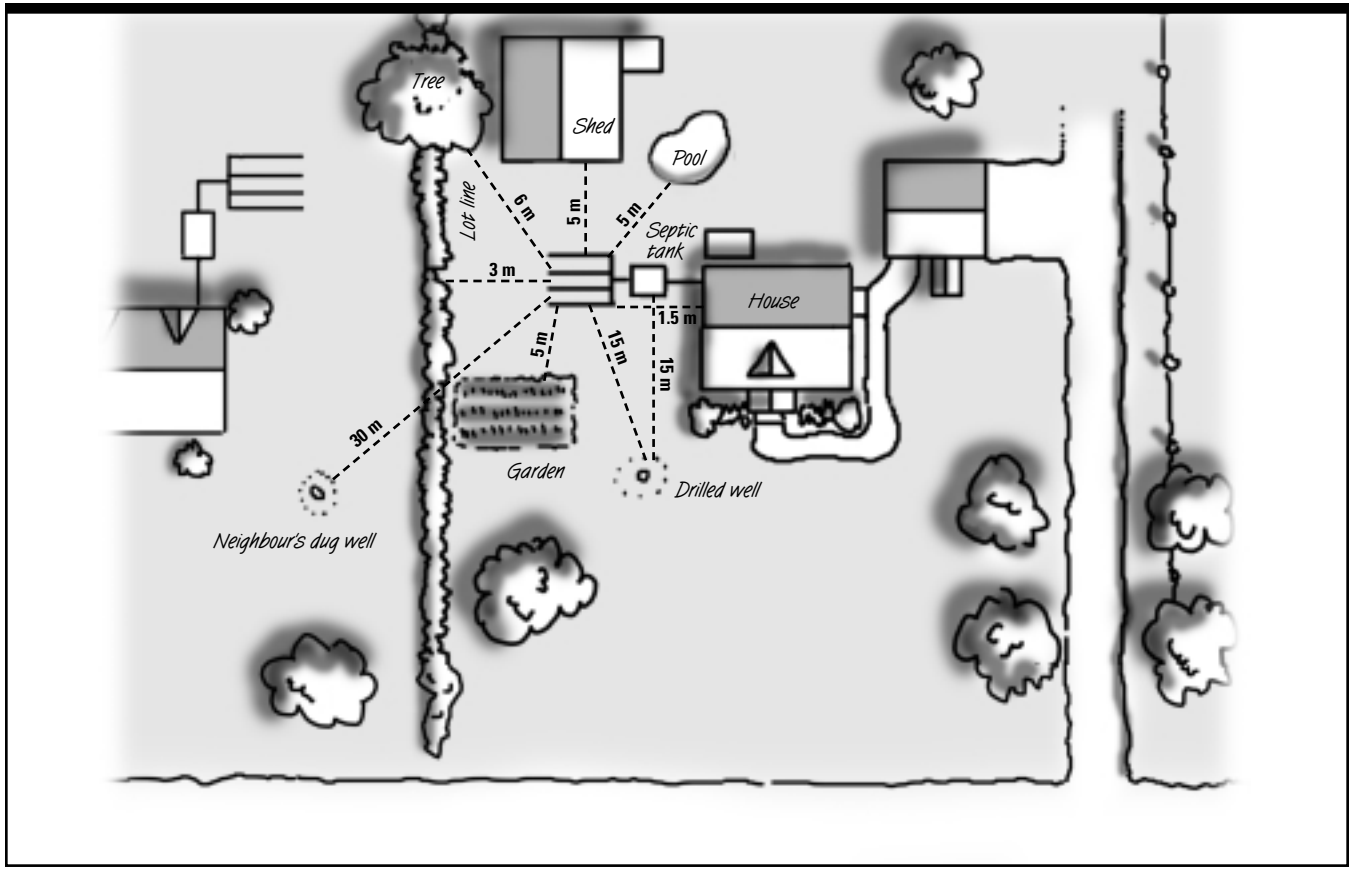
④ **Don't use the toilet as a trash can.** Never put cigarette butts, paper towel, sanitary napkins or tampons, condoms, disposable diapers, baby wipes, coffee grounds, dental floss, bandages, kitty litter, fat, grease or oils, loose hair etc., down the toilet! These do not decompose and can cause clogs.

⑤ **Use environmentally friendly products.** Use phosphate-free soaps and natural cleaning products. Avoid corrosive drain openers, cleaners and bleach. Check for hazardous symbols before you purchase anything.

⑥ **Dispose of chemicals and pharmaceuticals at approved special waste sites.** Never flush chemicals into the septic tank. Your sewage system is not designed to treat chemicals and pharmaceuticals. They will contaminate your groundwater.

Legal Requirements for Planning Your System

Check this diagram to see if your sewage system meets all minimum separation distances.



The Ontario Building Code (OBC) regulates the design, construction and maintenance of sewage systems for family homes.

These minimum separation distances are required to protect your sewage system and to help ensure that waste water from your sewage system cannot reach and contaminate nearby water supplies.

Remember, before construction begins on a new system, or when altering an existing system, a permit is needed from the necessary authority. If you are unsure who that is, check the reference at the end of the book for more information.

If replacing your sewage system or installing a new system, consider one of the growing number of alternate household septic systems. Consult the Ontario Rural Waste Water Centre for more information at www.orwc.uoguelph.ca

Notes:

Waste Not – Want Not

THE WASTE-LESS HOME

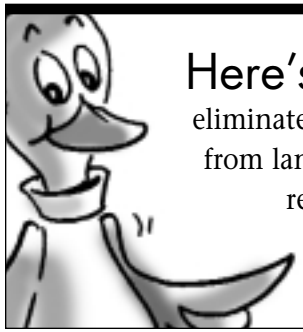
What is waste? Nearly everything we do leaves behind some kind of waste. Households create ordinary garbage. North Americans are the number one garbage producers in the world. The amount of waste we bring into our homes is increasing due to excessive packaging and disposable consumer goods. When it comes to trash, we are slowly learning to reduce the amount we throw away.

Why should you be concerned? There are a number of reasons. The most obvious is that reducing the amount of waste we generate saves valuable land from being used for dumping garbage. It is important to remember that recycling also saves natural resources, energy and water. When recyclable materials are made into new recycled products, fewer virgin natural resources such as trees, oil and minerals are used. For example, 17 trees can be saved by recycling one tonne of newspaper. Not having to extract as many virgin materials saves energy. Often, the manufacturing process for recycled content products requires less energy and water than non-recycled content products. This benefits our climate because fewer greenhouse gases are emitted during manufacturing. For example, 95% of energy is saved by producing a pop can from recycled aluminum rather than from raw materials.

Recycling also creates jobs. A 1994 study by the American Institute for Self Reliance estimates that for every 15,000 tons of solid waste recycled, nine jobs were created. The same amount of solid waste going to landfill creates only one job.

The average Ontario person throws out more than 300 kg (660 lbs) of waste per year.

That means an average family of four throws out over 1200 kg (2640 lbs) per year!



Here's what you can do! Making the best choices to reduce and eliminate household waste can help accomplish the ultimate goal of diverting waste from landfills, reducing the number of landfills needed, and preserving our natural resources. However, energy is still used in the recycling process and it cannot completely replace the need for the raw materials. Let's try to create less waste in the first place!

One of the easiest ways to reduce the amount of garbage going to landfill is to recycle, but not all materials are recyclable.

Check before you buy – for the recycled symbols!

= Products that are recyclable

= Products that contain a percentage of recycled materials

Recycling is only *half* of the cycle. By purchasing products made from materials you put in your Blue Box, you are helping to close the loop on recycling.

Take this quiz to assess potential health and environmental risks in your home!

WASTE ENTERING YOUR HOME

Do You...	Yes	Sometimes	No
- borrow, rent or share items used infrequently?	◯	◯	◯
- use internet and e-mail to receive news, catalogues and other information, as much as possible?	◯	◯	◯
- maintain and repair durable items so they will last longer?	◯	◯	◯
- share a newspaper or magazine subscription with a neighbour?	◯	◯	◯
- plant a garden where possible? (vegetables from your backyard require no packaging)	◯	◯	◯
- make homemade foods which require far less packaging, as often as you can?	◯	◯	◯

ENVIRONMENTALLY FRIENDLY PURCHASES

Do You...	Yes	Sometimes	No
- buy a product that has less packaging than its competitor (when you have a choice)?	◯	◯	◯
- purchase items that will stand up to rigorous use and not need replacing frequently? (ie. kid's toys, furniture, shoes)	◯	◯	◯
- buy the largest possible container to get the best "product-to-package ratio" (ie. buy toothpaste in 150ml rather than 75 ml)?	◯	◯	◯
- ask retailers if they participate in a "Take it Back Program," before replacing an old item?	◯	◯	◯
- check if items are sold unpackaged or individually (eg. nails, wrenches, screwdrivers, etc.)?	◯	◯	◯
- avoid buying disposable items when durable ones are available?	◯	◯	◯
- refuse to purchase items packaged in non-recyclable material?	◯	◯	◯
- consider whether you need a bag when only one or two items are purchased?	◯	◯	◯

REUSING

Do You...	Yes	Sometimes	No
- inquire if yarn and cloth scraps, buttons, wallpaper ends etc. can be used by a school or daycare centre?	○	○	○
- have a book or magazine exchange with friends or donate to a hospital, doctor's office or seniors' home?	○	○	○
- buy good used articles through the classifieds, garage sales or consignment stores?	○	○	○
- carry a travel mug and ask that it be filled rather than use disposable?	○	○	○
- use washable napkins and table cloths?	○	○	○
- use canvas or cloth bags (or reuse old plastic bags) when shopping?	○	○	○
- use containers with lids to avoid the need for plastic wraps?	○	○	○
- take your lunch in reusable containers and bag?	○	○	○
- reduce paper use by printing on both sides?	○	○	○

RECYCLING

Do You...	Yes	Sometimes	No
- check with your municipality to make sure you are recycling all possible products in your local recycling program? (only 11 municipalities in Ontario recycle drinking boxes)	○	○	○
- buy only products whose packaging is recyclable in your municipality? (wax cartons or coloured glasses are not always recyclable)	○	○	○
- buy only rechargeable batteries?	○	○	○
- recycle all motor oil, antifreeze, lead acid batteries and used tires? (in Ontario, it's the law!)	○	○	○
- rinse all containers, remove labels and flatten before placing in your recycling bin?	○	○	○
- recycle where you work? (it is estimated, 70% of fine paper is not recycled in offices)	○	○	○

To find out how you rated and what it means, go to page 6.

It is estimated that 25-50% of our household garbage is compostable! Just think how much landfill space could be saved if everyone composted!

Energy saved by recycling a stack of newsprint 90 cm high is the equivalent of 14% of the average annual household electricity bill.

REDUCE
– think about the amount of waste before purchasing a product

REUSE
– draw on your creativity and use foresight when making purchases

RECYCLE
– make it a common occurrence; it's easier than ever to carry out with roadside recycling programs!

RESPOND
– inform manufacturers and officials you do not support unnecessary waste

Even one person can make a difference!

Every little bit helps. Get your whole family involved to help reduce waste in the environment, while saving money.

Just look at these facts:

Paper accounts for 75% of the materials recycled in Ontario. Years ago, only newspaper and cardboard were recycled, but many municipalities now recycle fine paper, box board (i.e. cereal boxes), telephone books and magazines. Cardboard boxes and box board can contain up to 100% recycled paper products, while fine paper products can be recycled to make tissue, writing and printing paper.

Glass accounts for 14% of the materials recycled in Ontario. It is 100% recyclable and can be used over and over again. It is estimated that over 80% of glass is reused or recycled. When recycled glass is used to make a new glass bottle, enough energy is saved to keep a 100-watt light bulb burning for 4 hours.

Metals account for 6.5% of the materials recycled in Ontario (this includes aluminum and steel). **Aluminum** is the most valuable item in the blue box. It is used for such things as pop cans, food containers, candy bar wrappers and car bodies. It is estimated between 75% - 85% of pop cans end up in the blue box. The average recycled content of a pop can is 51%. Manufacturing aluminum cans from recycled materials saves 95% energy. **Steel** has been recycled for over 100 years. While it is used to make all kinds of material, its main use is for food cans and appliances. Steel cans are made with a minimum of 25% recycled steel.

Plastics account for 3.5% of materials recycled in Ontario. Oil and natural gas are the most important raw materials for plastics production. Each plastic container has a code imprinted on its bottom surface to help recyclers sort the containers by resin type. Soft drink bottles (PETE 1) are the most commonly recycled household plastic. It is recycled into fibre for carpets, blankets, clothing (arctic fleece) and stuffing for ski jackets and upholstery. Plastic margarine and yogurt containers can be recycled into auto-parts, patio furniture or hairbrushes.

Preparing for collection day!

Check with your local municipality for all acceptable materials and procedures.

- **Glass food and beverage bottles and jars:**
  - Empty, rinse and remove lids and labels
  - Remove caps and discard with garbage
  - Place all loosely in Blue Box
- **Newspaper, inserts, magazines, phone books, paperbacks and fine household paper:**
  - Bag and bundle together
  - Place inside or beside Blue Box if full
  - Secure papers so they don't blow away
- **Corrugated boxes:**
  - Flatten and bundle with string
  - Do not include waxed, oily or soiled cardboard
  - Place beside Blue Box
- **Boxboard:**
  - Includes cereal, cookie, cracker, laundry detergent and tissue boxes and egg cartons (most municipalities do not recycle drinking boxes or milk cartons)
  - Remove liners and plastic attachments
  - Flatten and bundle together by stuffing into larger boxboard or tie with string
- **Food and beverage cans:**
  - Empty, rinse and place loosely in Blue Box
  - Cans should be crushed if possible

DO NOT INCLUDE THESE IN YOUR BLUE BOX:

- wax paper
- toys
- light bulbs
- window panes
- ceramics
- drinking glasses or broken glass
- household hazardous waste
- batteries

Plastics - check which plastics your municipality recycles. Rinse, remove and discard plastic caps. Place bottles in your Blue Box.

1 PETE — **PETE** - beverage and food bottles (i.e. 2 litre pop bottles - all municipalities recycle)

2 HDPE — **HDPE** - beverage and food, ice cream or detergent bottles - all municipalities recycle

3 V — **Clear deli** food packaging and vegetable oil bottles are generally not recycled in blue box programs

4 LDPE — **LDPE** - carry-out grocery bags, bread bags, frozen food bags included in many Blue Box programs

5 PP — **PP** - common uses are margarine and yogurt containers, included in many Blue Box programs

6 PS — **PS** - common uses are foam cups, trays and take-out food containers. These are generally not included in Blue Box programs

7 OTHER — **Code 7** - bottles contain several resins. Generally not included in Blue Box programs

Notes:

The Danger Zone

HAZARDOUS PRODUCTS AND LIQUID FUELS

What is household hazardous waste?

Whether you realize it or not, you probably have products like these lurking under your kitchen sink, in the bathroom and laundry room, in your garage or workshop! They include household cleaners, pesticides and garden products, personal care products, batteries, automotive products, paints and paint products, and medicines – just to name a few.

Why should you be concerned?

Household hazardous products are often overused or improperly used and disposed of. These products can contaminate our environment and affect our health. Wastes that are poured down drains end up in our lakes and rivers, and can kill the microbes found in your sewage system that neutralize fecal coliform bacteria. Wastes dumped on the ground or in a landfill can pollute the groundwater that feeds our wells, and may have serious impacts on your family's health.

Some of the most common health problems resulting from improper use or overuse of hazardous products are skin irritations and watery eyes. More serious problems are burns, breathing difficulties, poisoning and even cancer.

3 H's

HALT
– stop and think...do I really need this product?

HEED
– be warned. Use only what you need.

HANDLE
– take care! Recycle or dispose of wastes only through designated programs. Store products in proper and secure ways.

How to read hazardous symbols:

type of hazard:

degree of hazard:

41 litres (9 gallons) of hazardous waste per household are generated annually making them the largest single source of hazardous waste generated in Canada.

(Source: Waste Reduction Week Volunteer Handbook, RCO, 1994)

Take this quiz to assess potential health and environmental risks in your home!

PURCHASING

Do You...	Yes	Sometimes	No
- know the hazardous product symbols and check for them before purchasing products?	○	○	○
- think carefully before buying a product? (check to see if you already have something similar?)	○	○	○
- always read the label to make sure a product will do what you expect it to?	○	○	○
- get just enough to do the job when purchasing a product?	○	○	○
- look for non-hazardous or less hazardous substitutes for each job?	○	○	○

PRODUCT USE

Do You...	Yes	Sometimes	No
- follow the directions listed on the product?	○	○	○
- use only phosphate-free and biodegradable soaps and cleaners?	○	○	○
- ensure the area is well-ventilated?	○	○	○
- take precautions for spills when using products that are hazardous?	○	○	○

STORAGE

Do You...	Yes	Sometimes	No
- make sure containers are not broken and are securely capped and sealed for storage?	○	○	○
- keep unused hazardous products in their original containers in a safe, well-ventilated place? (away from children, pets, and sources of heat until they can be disposed of on a special collection day)	○	○	○
- make sure unused hazardous products are not poured down the drain, storm sewers, in waterways or on the ground?	○	○	○
- make sure not to mix chemical products or their waste?	○	○	○

RECYCLING AND DISPOSAL

Do You...	Yes	Sometimes	No
- know when your community has household hazardous waste (HHW) collection programs, and then participate?	○	○	○
- rinse all hazardous product containers three or four times, with the rinsings being dispersed in the area of application, and then recycle the containers?	○	○	○
- refrain from burning hazardous products, knowing it will create toxins in the air and soil?	○	○	○
- refrain from burying leftover hazardous products or containers in your yard or garden?	○	○	○
- take expired or unused medicines back to pharmacies or HHW depots for proper disposal	○	○	○

VEHICLE CARE

Do You...	Yes	Sometimes	No
- complete regular checkups to ensure your car is not leaking oil, gas or antifreeze?	○	○	○
- take used motor oil, antifreeze and car batteries to service stations, recycling centres or HHW depots?	○	○	○
- wash your vehicle on a gravel or grass area that drains to the yard, away from ditches, municipal drains or storm drains?	○	○	○

To find out how you rated and what it means, go to page 6.

Look before you buy. Products bearing the EcoLogo are made in a way to help reduce hazardous by-products. EcoLogo products also improve energy efficiency, are reusable or provide other environmental benefits.

The most common products collected at most Household Hazardous Waste Collection Depots are paints and paint products.

5 steps to a successful paint project

Don't waste paint or threaten the environment, wildlife and human health.
Before you get started, learn more about how to handle your next paint project safely!

1 BUY THE RIGHT AMOUNT!

Most paint projects require about 1 gallon of paint to cover 400 sq.ft. of smooth surface. Read the label and make sure you take measurements beforehand. You can save money and avoid waste!

2 CHOOSE THE RIGHT PAINT

Latex paint is a better choice than oil based for most projects. Oil based paints and thinners contain toxic, flammable solvents.

3 PAINT SAFELY

Be sure there is adequate ventilation by opening windows and doors or using fans. Wear rubber gloves to prevent solvents absorbing into your skin. A dust mask won't protect you from oil based paints, so invest in a respirator if you frequently use oil.

4 USE ALL PAINT AND RECYCLE

Still have paint left over? Instead of disposing of it, apply another coat, use it for touchups, stencils, give it to friends or community projects, revive your shed or dog house, or use as a primer.

5 DISPOSE OF PAINT PROPERLY

For larger amounts of latex paint (more than 1"), all oil based paints and other solvents such as turpentine, take it to your nearest HHW depot.

PLEASE NOTE: FOR SMALL AMOUNTS OF LEFT OVER LATEX PAINT (1" OR LESS), DRY IT OUT BY OPENING THE CAN AND LETTING THE LIQUID EVAPORATE OUTDOORS IN A SAFE AREA, AWAY FROM KIDS AND PETS. CONTACT YOUR MUNICIPAL WASTE DEPARTMENT FOR PROPER DISPOSAL METHODS FOR PAINT CANS.

Household cleaning products – the old fashioned way!
Get started with basic, environmentally safe ingredients.

Eco-Shopping List:

- **Baking soda**
  All purpose, non-toxic cleaner. It cleans, deodorizes, removes stains, scours and polishes.
- **Borax (sodium borate)**
  Alternative to bleach. It deodorizes, removes stains and odours, and boosts the cleaning power of soap.
- **Lemon juice**
  Cuts through grease, removes perspiration and other stains on clothing, aluminum and porcelain.
- **Pure soap**
  Cleans everything!
- **White vinegar**
  Cuts grease, removes stains, mildew and wax buildup. A great water softener!
- **Washing soda (sodium carbonate)**
  Cleans clothes, softens water, cuts grease and disinfects. It also increases the cleaning power of soap.

Generations ago, families relied on simple ingredients to clean their homes. Today, more and more people are pushing aside harsh commercial cleaners and opting for safer, gentler, homemade or environmentally friendly alternatives. The little amount of extra work is worth it, with savings to your health, your environment, and your pocketbook!

Notes:

On The Greener Side

HEALTHY LAWNS AND GARDENS

What makes a healthy lawn and garden? Most people dream of weed- and pest-free lawns and gardens, with perfect flowers, thick green grass, lounge chairs, and a great spot for playing catch and barbecuing. This is healthy, depending on how it is achieved. Trying to maintain a 100% weed- and pest-free lawn by turning to a quick-fix chemical solution is not the answer. It is estimated that close to 22 million Canadians use chemical herbicides, insecticides and pesticides for their lawn and gardens, and spend $78 million per year on these products.

Why should you be concerned? Some activities can threaten your family's health and your environment. If you apply high nitrogen fertilizers and pesticides at the wrong time or in the wrong amount, you may make conditions worse. Insect and disease problems can increase and damage the soil and the health of your lawn. Rainwater can wash fertilizers and pesticides from lawns into local water ways and contaminate drinking wells. People – especially children – are susceptible when playing on lawns and surfaces that have had pesticides applied. A recent study by the Ontario College of Family Physicians states that Canadian children face 'undeniable risks' from exposure to pesticides. This exposure can be from food and water, or from surface contact from lawn and garden spraying. According to a study by the National Research Council and Academy of Science in the U.S., children whose parents use pesticides in their homes and gardens are six times more likely to get childhood leukemia than in homes with no pesticides used.

A rain barrel placed under eavestrough downspouts will collect water that can be used in your garden.

Watering lawns and gardens makes up more than 30% of our summer water use – when supplies are the lowest and demand is the highest.

Here's what you can do! In this chapter, you will discover alternatives that exist, in order to make informed gardening decisions. Be a homeowner willing to change your habits to include good management practices that will benefit the health of your family and the environment. Not to mention saving time and money!

Pesticides are chemicals that should be handled with care because of the potential for harmful effects if improperly used. Did you know over 27,000 Ontario Farmers are trained in pesticide application and safety through the Ontario Grower Pesticide Safety Course? An Ontario farm business that uses pesticides must have at least one Certified Grower or hire a Certified Pesticide Applicator.

Take this quiz to assess potential health and environmental risks in your home!

FERTILIZERS AND PESTICIDES

Do you...	Yes	Sometimes	No
- have your soil tested before you or a lawn care service company applies fertilizers?	◯	◯	◯
- compost kitchen and yard waste that can later be used as an organic fertilizer on your lawn and garden?	◯	◯	◯
- choose a slow-release, granular, organic fertilizer?	◯	◯	◯
- hand-pick weeds weekly, and over-seed that area afterwards?	◯	◯	◯
- spot spray problem weeds with the proper herbicide at the right time of year (if you must use a chemical)?	◯	◯	◯
- avoid using more pesticide than directed by the label? (Don't be fooled to think twice the amount will do twice the job)	◯	◯	◯
- check the weather to ensure rain is not expected for at least 48 hours, before any fertilizer or pesticide is applied?	◯	◯	◯
- keep children and pets off lawn for minimum 3-4 days (weather permitting), after a fertilizer or pesticide has been applied?	◯	◯	◯
- take protective measures (as directed by the label) when handling pesticides, such as wearing impermeable gloves, long pants, long-sleeved shirts, safety goggles and mask?	◯	◯	◯
- change clothes and wash your hands immediately after applying pesticides or fertilizers?	◯	◯	◯
- teach children that pesticides are poisons, and they should not touch them?	◯	◯	◯
- keep the telephone number of your area Poison Control Centre near your telephone?	◯	◯	◯

LAWN CARE

Do you...	Yes	Sometimes	No
- set the cutting height on your lawn mover at 5-6cm?	○	○	○
- maintain sharp mower blades?	○	○	○
- leave grass clippings on the lawn as mulch?	○	○	○
- compost grass clippings, if grass is very long?	○	○	○
- water only when necessary and water deeply (using a container to ensure only 1 inch of water is being used)?	○	○	○
- use a rake to gently remove thatch in the spring?	○	○	○
- aerate compacted soil in the spring and fall to improve root development?	○	○	○
- over-seed after raking, aerating, or where weeds were removed?	○	○	○
- accept a few weeds in your garden or lawn?	○	○	○
- check that grass seed is suitable to your local growing conditions when making a purchase?	○	○	○

VEGETABLE AND FLOWERING GARDENS

Do you...	Yes	Sometimes	No
- check weekly for pests or bugs (and their eggs), and remove when found?	○	○	○
- use natural methods to deter pests (i.e. soap spray)?	○	○	○
- refrain from using fresh manure on food gardens?	○	○	○
- use aged manure as a fertilizer, applied in the fall and worked deeply into the soil?	○	○	○
- use alternate methods such as crop rotation or companion planting, rather than pesticides to deter pests?	○	○	○
- never use pesticides once the plants have fruited?	○	○	○
- carefully check plants before purchasing to ensure they are healthy and pest-free?	○	○	○
- grow suitable plants? (Native plants are the best choice for trouble-free gardening)	○	○	○

To find out how you rated and what it means, go to page 6.

Pesticides do not address the cause of the problem. Prevention is the key! A healthy lawn can out-compete most weeds, survive most insect attacks, and fend off most diseases – before these problems ever get the upper hand. Simply applying a pesticide may seem to be the easier choice, but remember to think of the safety of your family and environment first.

Gardeners have real power!

Lawns and gardens across Canada make up hundreds of thousands of hectares. Help to do your part by caring for your lawn naturally to enhance its appearance while keeping it environmentally safe. You don't have to be an expert to grow a healthy lawn. Just keep in mind that the secret is to work with nature.

4 easy steps to create a healthy garden in your backyard!

① **Compost your household, yard and garden waste.** Produce your own organic fertilizer and reduce your household garbage by one third! Household organic waste can include fruit and vegetable trimmings, while the garden can contribute leaves, dry grass, plants & weeds without ripe seeds. DO NOT include meat, fish and bones, plastics, fats or oils, dairy products or pet waste.

② **Landscape with native plants.** By choosing native plants suited to your lawn conditions, usually no additional watering will be necessary for them to thrive. Often, they will require little maintenance, and usually no chemical fertilizers or herbicides will be needed. This all adds up to time and cost savings as well as a healthier environment for your family to enjoy!

③ **Control pests by organic means.** Keep the bugs at bay by using a home made spray by mixing ingredients you already have. Combine dishwasher soap and water to create an effective prevention against most insects. A garlic and hot pepper mix is effective against soft bodied insects, while oil, water and soap is better for hard bodied insects.

④ **Rotate your crops and plant companions.** These are two of the most simple ways to deter insects and disease for annual plants and a great way of reducing chemical insecticide use. Check gardening books for the best plant combinations. Keep a notebook of where your crops are planted from year to year, and what is planted with it. This is a sure-fire way to keep your companion planting and crop rotation in line!

Developing a healthy lawn and garden.

Create healthy soil. Healthy soil is the basis for a healthy garden. Have your soil tested to find out what nutrients are missing. Sample kits and submission forms are available from any Ontario Ministry of Agriculture and Food Office, or look in your yellow pages for a lab near you. You can improve your soil by periodically adding organic matter like compost, manure, or grass clippings.

Mow high, often and with sharp blades. Set mowing height at 5 - 6 cm. Long grass blades stay much stronger, prevent weeds from sprouting, shade the roots and prevent drying of soil that encourages longer, healthier roots.

Leave grass clippings on as mulch. This reduces the need for fertilizers by 30%.

Water deeply, but not too often. Watering properly will help your lawn grow deep roots that make it stronger and less vulnerable to drought. Lawns need no more than one inch of water once a week, early in the morning, only during dry spells. You can let your lawn go brown during the hot summer, and it will return to green when the rain returns.

Correct thatch build-up. Use a rake to gently remove thatch in late spring, when the ground is no longer spongy. Sprinkling a thin layer of topsoil or compost over the area and then scatter grass seed.

Fertilize only if needed. Compost and grass clippings make the best lawn food. Additional fertilizers may be added in the fall if desired, but remember high nitrogen fertilizer encourages leaf growth rather than root growth. Nitrogen may also cause water pollution through run-off. To reduce the risk of this happening, look for an evening balanced (i.e. 7-7-7) slow-release formula.

Are you bugged by grubs? Grubs are the June beetle larva. They do not like aerated soil. Did you know starlings feed their young solely on grubs? Their long beaks aerate the soil!

Nematodes (a natural, microscopic organism available from plant nurseries) are an effective control for grubs.

Notes:

The Do-It-Yourself World

RENOVATING AND DECORATING

What should you be aware of when renovating? Each home is unique, with its own set of circumstances. Whether it is a new or old home, health and environmental hazards may be lurking. Renovating and remodeling creates dust and gases from removing old floor tiles, ceiling tiles or woodwork that can contain chemicals dangerous for inhalation. Installing new carpeting, drapes and furniture creates a "new smell" that can be harmful to breathe. Even the quickest and cheapest way to transform a room – painting – can be unsafe if low toxic paints and proper ventilation techniques are not used.

Why should you be concerned? With all the do-it-yourself magazines, T.V. shows and mega hardware stores carrying every type of product and gadget imaginable, many families have at least one room of their home undergoing a transformation. Some homeowners may be replacing old carpeting and repainting, while others are tearing down a wall and adding on. No matter how large or small the job, there are hazards you need to be aware of! The long-term health of your family may be at stake!

There is an increase in childhood disease and illness. For example, asthma rates have increased 160% in the past 15 years in children less than five years old. Scientists and researchers have mounting evidence showing that even low levels of common environmental and chemical exposure can cause permanent neurological effects, attention deficit disorders, birth defects, infertility in men and women, cancer and "sick building" syndrome.

Unlike the crumbly insulation containing asbestos prior to the 1970's, most asbestos-containing products now used in homes (floor tiles and siding) are hard and do not release fibres under normal use. But beware – fibres may be released during renovations when products are cut or damaged.

Here's what you can do! By reading this section, you will discover ways to reduce or eliminate environmental or health concerns within your own home. Since do-it-yourself renovation practices are on the increase, you need to take responsibility for the products you use.

Any home built before 1978 in Canada most likely contains leaded paint. Lead paint in older homes only becomes a concern when it is disturbed. Dust from renovations can be a source of significant exposure and extra care must be taken.

Take this quiz to assess potential health and environmental risks in your home!

LEAD PAINT IN THE HOME

Do you...	Yes	Sometimes	No
- paint over chipped areas with an oil-based primer, (without sanding), then apply a latex-based paint, if you suspect lead paint in your home?	○	○	○
- wipe away lead paint chips with a damp rag rather than using a vacuum?	○	○	○
- refrain from sanding older painted woodwork as lead dust and chips can become lodged in carpets and duct work?	○	○	○
- refrain from using a heat gun to remove old paint from woodwork or furniture, knowing it will produce dangerous lead fumes?	○	○	○
- cover walls with paper or board whenever possible (rather than remove), if lead paint was used?	○	○	○
- discard older furniture (i.e. cribs, toys) that contain lead paint?	○	○	○
- cover bare soil around the perimeter of the house with grass or shrubs? (exterior lead paint flakes can contaminate soil around the perimeter of the house)	○	○	○
- keep children out of a home that is being renovated?	○	○	○
- test for lead, if you are concerned? (lead paint test kits are available at some paint stores)	○	○	○

LEAD IN WATER

Do you...	Yes	Sometimes	No
- check that lead-free solder, copper or plastic pipe and connectors are used for new plumbing and plumbing fixtures? (The Canadian Plumbing Code bans lead pipes and solder from being used in new plumbing or in repairs to plumbing for drinking water supplies)	○	○	○
- use a Brita or PUR water filter that will remove more than 90% of lead and other impurities from drinking water, if you are concerned about lead in your water?	○	○	○
- consult a water specialist to test your drinking water, if you are concerned?	○	○	○
- use water from cold taps for drinking, cooking and especially for making baby formula?	○	○	○

ASBESTOS-CONTAINING MATERIALS

Do you...	Yes	Sometimes	No
- know if your house was built after 1978? (the degree of asbestos containing materials is less)	○	○	○
- know some of the more common household products that contain asbestos?	○	○	○
- keep activities to a minimum in any areas that have damaged materials containing asbestos?	○	○	○
- seal materials you suspect contain asbestos and are in good condition? (i.e. ceiling tiles or textured paints)	○	○	○
- cover materials containing asbestos (soft, crumbly or otherwise damaged) to prevent fibre release?	○	○	○
- refrain from sawing, sanding and scraping asbestos-containing materials?	○	○	○
- clean your work area with a damp cloth or mop?	○	○	○
- install a new floor directly over the old asbestos floor that needs replacing?	○	○	○
- wear an approved face mask and gloves along with protective clothing if you remove or disturb asbestos material?	○	○	○
- shower thoroughly after completing a renovation job involving asbestos?	○	○	○
- seal work areas and keep other people away from that area?	○	○	○

FORMALDEHYDE AND CHEMICALS

Do you...	Yes	Sometimes	No
- ensure there is proper ventilation if toxic substances are used?	○	○	○
- use non-toxic adhesives and caulking?	○	○	○
- ask for low emission carpet, underlay or adhesive when installing new carpeting?	○	○	○
- leave your home during carpet installation, and leave the windows open until the smell disappears?	○	○	○
- buy furniture made of solid wood? (veneers and press board often contain formaldehyde and other chemicals that can cause respiratory problems)	○	○	○
- wash or air out new bedding, drapes, clothes and other fabric items?	○	○	○
- open boxes containing new products outdoors and let the items air out before bringing them indoors? (i.e. flooring tiles, area carpet, veneer furniture)	○	○	○

To find out how you rated and what it means, go to page 6.

If asbestos is so dangerous, why include it in the first place?

Asbestos provides strength, heat insulation and fire resistance. It is combined with a binding material so fibres are not readily released into the air. If it becomes airborne and is inhaled, it can remain in the lungs for years, and may produce health problems later.

A large body of evidence shows that the most common source of lead exposure for children today is lead paint in older housing, and the contaminated dust and soil it generates.

Although formaldehyde affects people differently, it may irritate the eyes, nasal sinuses, throat and lungs, and may trigger asthma. Children and adults have developed allergic reactions (including hives) from exposure to the gas.

3 reasons to be concerned:

① **Lead.** In today's environment, it is practically everywhere. Although our exposure to lead has decreased substantially since the early 1970's (primarily because of the phase-out of lead in gasoline and paint, and the overall reduction of lead in the manufacturing of canned foods), lead is still hazardous. Small amounts of lead can be harmful, especially in infants and young children, and can interfere with the health of an unborn child. Lead poisoning in children may cause reading and learning disabilities.

② **Asbestos.** Asbestos is a natural mineral with unusual qualities. It insulates well against heat, fire, electricity and sound, and can be added to materials as diverse as cotton and cement. These properties make it difficult to find a comparable substitute. Asbestos is generally safe when combined with other materials, as long as the material remains bonded so that fibres are not released. In this case, it poses no health risk. However, remodeling or demolition often causes the release of asbestos fibres when materials are cut, scraped and filed. Once inhaled, asbestos can damage lung tissue and cause cancer years after exposure.

③ **Formaldehyde and chemicals.** Some products are manufactured using many chemicals that can release gases harmful when inhaled. For example, formaldehyde is a harsh smelling, colourless gas used as a preservative and disinfectant. It is used today to bond plywood, particle board, carpets and fabrics, and contributes to that new car smell. Symptoms of overexposure include irritation in the eyes, nose and throat, nausea, headaches, dizziness and breathing difficulties.

Precautions while renovating and decorating:

Plan ahead. Before starting any renovation project, determine the best method to create the least amount of dust.

Seal off the area. When renovating, seal off the area to prevent contaminating the air throughout the home. If it's a large project, consider moving out until the job is complete.

Ventilate! Ensure the area you are working in is well ventilated. Ventilate the house when new carpet or furniture is installed.

Wear protective equipment. Use a respirator whenever there are excessive concentrations of dust, fumes, gases or vapours. Wear eye protection to prevent an injury from substantial dust, flying particles or splashes from liquids.

Purchase low-toxic materials. Select building and construction materials that will not cause indoor air quality problems once installed. Non-toxic adhesives and caulking, water-based paints, low-emission carpet and underlay are recommended.

Choose safe household furnishings. If sensitivity to chemicals and asthma are problems in your family, try to choose products made from solid hardwood. Use gypsum board, plaster or real wood for walls. Wood fibre paneling may emit chemicals.

Call a professional. If you are unsure of the product you are removing, call a specialist trained in removing asbestos, formaldehyde and lead.

Lead Environmental Awareness and Detection (L.E.A.D.) is a non-profit organization dedicated to identifying and preventing pediatric neurotoxicity in Canada, working to reduce children's exposure to lead.

If you're concerned about lead in your home, please visit www.webhart.net/lead for more information.

Notes:

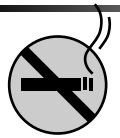
The Air We Breathe

HEALTHY AIR QUALITY

How did our air become so polluted? Over the years, buildings have been made more airtight to conserve energy. This also traps in pollutants from chemicals in cleaning products, carpets, paints, tobacco smoke, mould and mildew, dust and animal dander. Combine this with poor ventilation and elevated moisture levels, and you have the perfect recipe for poor indoor air quality. Outdoors, air pollution is a result of energy use. Heating and cooling buildings, driving vehicles, gas mowers and leaf blowers all contribute to outdoor air pollution, smog, acid rain and climate change.

How does this affect you? There's nothing like going outside for a breath of fresh air. But with the increase in air pollution and smog, sometimes it just doesn't seem that fresh. It's a common misconception that indoors, where the average person spends more than half of their day, the quality of air is much cleaner. Unfortunately, indoor air often contains the same or higher concentrations of hazardous pollutants as outdoor air.

Common symptoms of exposure to air pollutants include headaches, tiredness, dizziness, nausea, eye, nose and throat irritation, as well as respiratory infections. Asthma, other breathing disorders and even cancer are some of the more serious effects. Children, pregnant women, the elderly and those with chronic illnesses are most susceptible to air quality problems. The risk is especially high for outdoor workers such as farmers or road workers, and people who participate in long and vigorous outdoor exercise during high levels of air pollution. Indoor workers that are exposed to chemicals from paint, solvents and strong cleaners regularly, are at high risk.



Signs of Indoor Air Quality Problems

- musty odours caused by dampness and mould growth
- persistent mould
- dust and gases from indoor workshop for pottery, woodworking and painting
- fogged windows most of the winter (poor air circulation)
- high chemical use from cleaners, tobacco smoke etc. Tobacco smoke contains more than 4,700 chemical compounds.

Here's what you can do! It's not too late to change! Follow the tips outlined in this chapter and breathe a little easier with improved indoor and outdoor air quality.

Children are more susceptible to poor indoor air quality, because their systems are still developing. A study by the American Journal of Respiratory and Critical Care Medicine estimates 65% of asthma cases among elementary school age children could be prevented by controlling exposure to indoor allergens and tobacco smoke.

Take this quiz to assess potential health and environmental risks in your home!

INDOOR MOISTURE AND MOULD

Do you...	Yes	Sometimes	No
- use bathroom and kitchen exhaust fans to reduce moisture?	◯	◯	◯
- avoid drying clothes indoors or venting dryer indoors?	◯	◯	◯
- use a de-humidifier in damp basements?	◯	◯	◯
- remove all visible mould in common areas such as windows or bathtubs?	◯	◯	◯
- prevent moisture from seeping in by sealing cracks on outer walls?	◯	◯	◯
- check eaves troughs and down spouts are not blocked and are properly draining away from your house, to prevent moisture in the basement?	◯	◯	◯

ALLERGENS

Do you...	Yes	Sometimes	No
- have a smoke-free home?	◯	◯	◯
- bathe and groom pets often?	◯	◯	◯
- use window shades made of plastic or wood for easy cleaning?	◯	◯	◯
- have smooth surface flooring material such as tile, vinyl or wood in as many areas as possible?	◯	◯	◯
- choose low pile carpets, when carpeting is used?	◯	◯	◯
- store firewood outdoors? (storing it indoors can generate mould spores leading to contamination)	◯	◯	◯

INDOOR HOBBIES

Do you...	Yes	Sometimes	No
- ensure your hobby work area is well-ventilated	◯	◯	◯
- wear respiratory equipment that protects against the specific substance you are using?	◯	◯	◯
- store hazardous products in sealed containers away from the living area?	◯	◯	◯
- use alternatives for hazardous materials (i.e. water based contact adhesives and white glue versus an epoxy glue)?	◯	◯	◯
- avoid using aerosol spray products? (substitute with pump style)	◯	◯	◯

OUTDOOR USE OF SMALL ENGINES

Do you...	Yes	Sometimes	No
- limit your use of power lawnmowers, leaf blowers, snow-blowers and other small engines?	○	○	○
- keep all small engine equipment well-maintained?	○	○	○
- use funnels to fill gas, oil and other fuels, to prevent spills?	○	○	○
- choose low maintenance grasses that grow slower?	○	○	○
- landscape with trees and shrubs so there is less grass to mow?	○	○	○
- use hand powered tools as often as possible?	○	○	○

OUTDOOR OPEN BURNING

Do you...	Yes	Sometimes	No
- recycle and compost rather than burning trash or yard waste? (in most municipalities it is illegal)	○	○	○
- burn less often? (all wood burning activities – stoves or outdoors – add to the total pollution load)	○	○	○
- avoid smoldering fires by using proper burning techniques?	○	○	○
- burn only dry, seasoned wood, and never burn wet, green, painted or pressure treated wood and plastics?	○	○	○

SMOG

Do you...	Yes	Sometimes	No
- schedule outdoor activities in the morning, if the air quality advisory level is high?	○	○	○
- avoid outdoor physical activity when air quality advisory levels are high?	○	○	○

VEHICLES AND TRANSPORTATION

Do you...	Yes	Sometimes	No
- maintain your vehicle according to manufacturer's recommended maintenance schedule?	○	○	○
- make sure tires are properly inflated?	○	○	○
- drive the speed limit?	○	○	○
- join a car pool for work or activities?	○	○	○
- use a bicycle or walk when possible?	○	○	○

To find out how you rated and what it means, go to page 6.

The energy using habits of individual Canadians account for 28% of Canada's total green-house gas emissions.

Find more information at www.driveclean.com to be part of the solution!

In Ontario, smog season lasts from May through September, and because it travels with wind, it can affect sparsely populated areas as well as large urban centres. Burning fuel is a major contributor to smog formation. Reducing your energy use is an important step towards cleaner air. To reduce your exposure to smog, listen for air quality advisory readings in the media, and plan your outdoor activities accordingly.

5 ways to improve outdoor air quality.

1. **Prevent pollution in your own backyard!** Burning plastics, newspapers, coloured paper, painted wood or pressure treated wood indoors in a stove or fireplace or outdoors releases dangerous chemicals into the air. Not only do these activities contribute to air pollution, but some of these chemicals can cause cancer. Check with your local municipality on the open burning by-law in your area.

2. **Limit the use of non-road engines.** Lawn mowers, leaf blowers, snow-blowers, chain saws, and other outdoor power equipment are significant sources of air pollution. The Environmental Protection Agency estimates that non-road vehicles contribute as much as 15-20% of unhealthy pollution across North America. Reduce their use, and keep them well-maintained.

3. **Be fuel efficient.** Make fuel efficiency the main factor when you purchase your next car. Swap gasoline powered engines for human power versions such as bicycles, canoes, sailboats and push lawn mowers.

4. **Drive smart.** Drive at moderate speeds and avoid quick starts and stops – it uses less fuel! Keep your car engine tuned and your tires properly inflated. Driving smart can save up to 20% in fuel consumption.

5. **Be energy efficient.** Maintain your home heating system, insulation and windows. Choose energy-efficient appliances to help keep pollutants out of the air.

Improve air quality inside your home.

Control moisture. Moisture is generated through many daily activities, and provides the ideal environment for mould, mildew and dust mites. Use exhaust fans in the bathroom and kitchen. Check your home for possible cracks where moisture can enter and caulk or seal properly.

Use household products with caution. Cleaning products, personal care products, paints, hobby products and solvents make our lives easier, but these materials are also sources of hundreds of hazardous chemicals. Try to reduce the use of these products. If you must use them, do so outside or in well-ventilated areas.

Improve ventilation. Ventilation is a necessary requirement in a healthy home and it also helps control moisture problems. Consider installing a whole house fan to get things circulating.

Remove all visible mould. Do not cover mould with paint or moisture proof sealer, as it may resurface. Combine one part household bleach, two parts water and a small amount of dishwashing detergent for removal. Wear gloves and a mask to protect your lungs.

Control dust. Keep carpets clean and dry. Vacuum and dust regularly. Dust mites thrive in mattresses, sofas, and carpets. Buying a new vacuum cleaner? Check for one with a HEPA (high efficiency particulate arrestance) filter, which removes more than 99% of dust on vacuumed surfaces.

Poorly maintained air conditioners and humidifiers provide the perfect conditions for bacteria and mould. They are blown from the machine's coils into a room, and can aggravate asthma or allergies.

Notes:

Some Like It Hot

HEATING, COOLING AND ENERGY MISUSE

How does your furnace affect the climate?

When oil, natural gas, coal and wood products are burned, a greenhouse gas called carbon dioxide is released into the atmosphere. Methane, another greenhouse gas, is emitted during the production and transport of natural gas, oil and coal. Scientists believe that an increase in the amount of greenhouse gases in the air will continue to cause the earth's temperature to rise. This is known as 'global warming'. Predicted impacts range from melting ice caps and glaciers, resulting in rising sea levels to changes in precipitation patterns that could lead to wide-spread flooding in some regions of the world, while inflicting drought on others.

In the ozone layer over the polar regions, scientists have found holes believed to be caused by the use of chemicals such as CFC used in air conditioning, refrigeration and aerosol cans. This increase of gases and harmful chemicals in the air also causes acid rain and smog. Smog makes breathing difficult for humans and animals and also causes asthma attacks, bronchitis, coughing, chest pain and can suppress plant growth which affects crop yields, trees and vegetation.

Why should you be concerned?

Canada's warm summers and cold winters require high energy use for home heating and cooling. Add to that, all the energy using appliances in our homes and we are faced with a society with high energy needs. Our energy consumption not only costs us money, but it also contributes to air pollution and climate change.

Here's what you can do!

Learn about energy efficient products and techniques throughout this chapter. Help reduce your energy consumption and get better value for your money!

Signs of Excessive Heat Loss in Homes

- drafts around doors, windows and floors
- difficulty heating rooms
- condensation and frost on windows
- heating bills higher than a home of similar size and climate
- moisture problems in the attic
- pipes freezing
- mice or rodents - if they are getting in, air is getting out
- heating system more than 20 years old
- ice build-up on roof
- single pane windows or cracked windows

Plant shade trees. They will reduce air conditioning costs by 15 to 50 %, and save on heating and cooling costs!

Take this quiz to assess potential health and environmental risks in your home!

HEATING SOURCE AND MAINTENANCE

Do you...	Yes	Sometimes	No
- clean your furnace filter every two months during heating season?	○	○	○
- have your furnace inspected yearly by a heating contractor?	○	○	○
- have your chimney cleaned and inspected every year?	○	○	○
- keep temperatures lower when you are away with a programmable thermostat?	○	○	○
- use kitchen, bath and other ventilating fans wisely by turning them off as soon as they have done their jobs?	○	○	○
- keep the drapes and shades on your south-facing windows open during the day to allow sunlight to heat the interior of your house?	○	○	○
- close the drapes and shades at night to reduce the chill from cold windows?	○	○	○
- keep your fireplace damper closed when it is not in use?	○	○	○
- check that vents, air intakes and chimneys are not blocked with nests or leaves?	○	○	○

COOLING AND AIR CONDITIONING

Do you...	Yes	Sometimes	No
- check for the EnerGuide label when you purchase an air conditioner, and choose the most energy-efficient unit for the size of your area?	○	○	○
- keep your house closed up tight during hot days?	○	○	○
- use awnings, blinds or drapes to keep direct sunlight from entering your living space?	○	○	○
- clean air filters every two months during the cooling season? (dirty air filters reduce air flow and can cause air quality problems)	○	○	○
- keep the condenser clean and free of leaves and other debris?	○	○	○
- check and clean condensate drain holes or tubes that become blocked on window air conditioners?	○	○	○
- have your unit serviced immediately if its performance has deteriorated? (a small loss of refrigerant can cause a significant drop in efficiency, damage the ozone layer and contribute to air pollution)	○	○	○
- use outside ventilating kitchen and bathroom fans?	○	○	○

ELECTRICITY AND APPLIANCES

Do you...	Yes	Sometimes	No
- check for the EnerGuide label when buying new household appliances, and choose the most energy efficient model?	○	○	○
- purchase new energy-efficient appliances if yours are more than 25 years old, if feasible?	○	○	○
- turn off the lights, appliances, television and computer when they're not in use?	○	○	○
- use energy-efficient lighting products (i.e. compact fluorescent bulbs)?	○	○	○
- use a solar powered outdoor light when possible?	○	○	○
- defrost meat in the refrigerator overnight, rather than using the microwave?	○	○	○
- use a clothes line for drying laundry when possible, rather than an electric or gas clothes dryer?	○	○	○
- keep your appliances in good working order? (a malfunctioning appliance is energy inefficient)	○	○	○

HOME IMPROVEMENTS

Do you...	Yes	Sometimes	No
- check that all windows and doors are sealed with caulking or weather-stripping, and replace if coming loose?	○	○	○
- have double or single pane windows with storm windows or plastic covering for winter months?	○	○	○
- check insulation when you renovate and upgrade where needed?	○	○	○
- install a highly insulated hot water tank or an approved insulating blanket on your hot water tank?	○	○	○
- insulate exposed hot water pipes to reduce the heat loss?	○	○	○
- plug, seal and/or remove a fireplace or chimney that is never used?	○	○	○
- install a carbon monoxide detector if you use natural gas, oil, wood, coal or kerosene?	○	○	○
- use the locks on your windows to reduce air leakage?	○	○	○

To find out how you rated and what it means, go to page 6.

Energy efficient lighting products like compact fluorescent bulbs last 10 times longer and use 75% less energy than regular bulbs.

Today's appliances use at least 55% less energy than those built in the 1980's. So just how much are you paying to keep that old beer fridge running?

Totally air sealing your home can result in the creation of carbon monoxide gases. This gas is colourless, odourless, tasteless and poisonous. If you heat with wood, oil, natural gas, coal or kerosene, it is recommended that you have a carbon monoxide detector in your home. Symptoms of low level carbon monoxide poisoning are similar to the flu, and include dizziness, fatigue, headache, nausea and irregular breathing. At high levels, symptoms include confusion, unconsciousness and sometimes death.

4 important facts on energy efficiency:

① Check before you buy – with EnerGuide!

When you shop for a major household appliance or automobile, look to the EnerGuide label to save energy and money. This rating system, managed by Natural Resources, allows consumers to compare the energy-efficiency of different models.

② Don't be fooled by wood heat.

Some homeowners mistakenly believe wood heating reduces their cost and helps the environment by using a renewable fuel. Conventional wood fireplaces are extremely inefficient and release more emissions and pollutants into the air than new units. Advanced combustion wood stoves and fireplaces emit 80-95% fewer pollutants, and are 20% more fuel efficient. Call a heating specialist to have your old unit retrofitted with a new advanced combustion model.

③ Energy efficiency in your home.

Have you ever wondered why the Energy Star on your computer screen was for? It is fast becoming an internationally recognized symbol for energy-efficiency. If you are in the market for a major appliance, home heating or cooling equipment, consumer electronics, office equipment or certain lighting and signing products, just look for the Energy Star mark. In Canada, the international Energy Star symbol is monitored and promoted by Natural Resources Canada's Office of Energy Efficiency.

④ Keep it cool, the easy way.

If it is not record-breaking temperature, you can keep your home relatively cool with a whole house fan and ceiling fans combined with practices to block solar heat gain (i.e. closing all windows and doors during day and opening again in early morning and evenings when weather is cooling down). Whole house fans typically use 1/10th of the energy of an air conditioner, and ceiling fans can use about the same electricity as a 100-watt light bulb. Together, they offer a low-cost alternative to modern air conditioning. That's great news for the environment!

Tips and tools for energy efficiency.

Know what you need. An energy audit is one of the best ways to determine the most cost-effective measures for reducing your energy bills and to help the environment. EnerGuide for Houses, developed by Natural Resource Canada, provides independent advice from licensed organizations. Call 1-800-387-2000 for the EnerGuide agent in your area, or talk to a local heating and cooling specialist or home improvement contractor.

Upgrade your heating source. About 44% of the energy needed to run an average home is used for space heating. If your heating system is more than 20 years old, check with your local dealer on upgrading your heating source to a new energy-efficient system. Financing is often available, and the savings on your heating bill will help offset the cost of the purchase. Energy-efficient units always make economical sense.

Install insulation. It helps keep your house warm during the winter, but also cool during the summer. The type and amount of insulation you choose will directly affect energy costs. Contact your local dealer or home improvement contractor to find out the recommended R-value for your house design and climate.

Improve or replace windows. Single-pane windows are the most inefficient kind, but it is possible to increase their efficiency. Install storm windows to add insulating value and reduce air leaks. Ensure weather-stripping is located at all joints. As an alternative, use heavy-duty plastic film sealed tightly on a frame or plastic taped to the inside of the window frame. Replacing the old windows with new double-pane windows is the best alternative, if your budget will allow it.

Caulking and weather-stripping are relatively inexpensive and easy to apply, and can save you up to15 % on your heating bill.

Your computer uses energy briefly when starting up. It is more cost-effective to turn it off when not in use.

Notes:

Getting Territorial

HEALTHY LAND AND PROPERTY

What are good land management practices? Your everyday activities – inside and out – have an impact on your family's health and the environment. You can use some simple management techniques to improve water quality and erosion control, while at the same time improve fishing and wildlife enjoyment opportunities.

Why should you be concerned? Two of the most important requirements for all living things are healthy habitats and clean water. Some land use and water management practices, once commonly accepted, are now known to cause serious harm – especially to fish and wildlife habitat. The quality of the water on your property, and the animals living in them, directly reflects your land and water management practices – good and poor. Some of these harmful practices include: filling, draining, or dredging wetlands; removing gravel bars or sediment from rivers and streams; clearing trees, brush, and other native plants from river banks, stream banks, and lakeshores; channeling rivers and streams; constructing breakwalls or retaining walls; grazing livestock along rivers and streams; maintaining a lawn or farming to the water's edge.

Habitat is a combination of food, water, shelter and space arranged to meet the needs of wildlife. Even a small yard can be landscaped to attract birds, butterflies, beneficial insects, and small animals. Trees, shrubs, and other plants provide shelter and food for wildlife.

Here's what you can do! Homeowners can take a number of simple and inexpensive steps to protect their property, pets and wildlife, and at the same time have a healthy backyard. The fate of our water resources depends on wise use. A clean, fishable stream or lake will be available for you and your family, and a proud legacy will stand for future generations.

As our homes progressively encroach on wildlife habitat, conflicts between wildlife and people are bound to increase. Animals are attracted to an area for two reasons: food and shelter. The first step in reducing conflicts is prevention – limiting access and removing attractants for unwanted animals. Remedies can be as simple as moving pet food inside, repairing holes in outside walls, or capping the unused chimney.

Take this quiz to assess potential health and environmental risks in your home!

PROPERTY PROTECTION

Do you...	Yes	Sometimes	No
- pest proof your house by capping the chimney, blocking holes, filling cracks and repairing loose siding to keep small animals and rodents out?	◯	◯	◯
- secure garbage cans to deter animals?	◯	◯	◯
- ensure dog or cat food is not left outside?	◯	◯	◯
- make sure your dog or cat has current rabies and distemper shots?	◯	◯	◯
- protect trees with commercial tree wrap or wire mesh?	◯	◯	◯
- fence off garden areas?	◯	◯	◯
- use repellents such as hot sauce or garlic to make garden plants unpalatable to wildlife?	◯	◯	◯

HABITAT PROTECTION

Do you...	Yes	Sometimes	No
- leash your dog and bell your cat to protect birds and small mammals?	◯	◯	◯
- grow trees, shrubs and flowers that produce nuts, berries, fruits, seeds, and nectar for wildlife to feed on?	◯	◯	◯
- provide water in a birdbath or a shallow dish, when water is not provided naturally?	◯	◯	◯
- plant a mix of trees and shrubs for year-round protective cover from weather and predators?	◯	◯	◯
- install your feeders near natural cover or place brush piles nearby so animals can quickly hide from predators?	◯	◯	◯
- remind your children that wild animals may carry rabies and should never be approached?	◯	◯	◯
- leave dead trees standing if not a safety hazard? (these are homes for many creatures and when they decay, they improve the woodland soil)	◯	◯	◯
- contact your local natural resource office before removing a beaver dam?	◯	◯	◯
- use non-lead sinkers and jigs for fishing and non-lead pellets for hunting?	◯	◯	◯

Note: The Fish and Wildlife Conservation Act (Ontario) prohibits hunting, trapping or collecting of any wildlife without the proper license or permit. Contact your local Ministry of Natural Resource Office for information on obtaining one.

SHORELINE PROTECTION

Do you...	Yes	Sometimes	No
- maintain plantings along natural watercourses?	○	○	○
- check regularly for invasive plants and remove them carefully?	○	○	○
- report water quality problems (caused by construction, other residents, logging, farming, or industry) to local water conservation authorities or Ministry of Environment Office?	○	○	○
- resist disturbing, removing or filling parts of the lake or riverbed in front of your property?	○	○	○
- let imported beach sand erode naturally and let native plants grow back?	○	○	○
- leave a minimum 5 metre (16 feet) buffer strip near the cottage water edge?	○	○	○
- use non-motorized watercrafts like canoes or paddle boats as much as possible?	○	○	○
- use a 2 or 4 stroke motor that meets EPA 2006 guidelines?	○	○	○
- maintain your boat motor and practice safe fuelling?	○	○	○
- use oil absorbing bilge cloths, instead of bilge cleaners?	○	○	○
- build a low impact dock (i.e. floats instead of resting on bottom)?	○	○	○
- resist the urge to remove natural debris such as fallen trees, rock rubble and weeds? (you might be eliminating wild creatures homes)	○	○	○
- prevent sump pump or eavestroughs from discharging directly into streams or rivers?	○	○	○
- keep trash, litter and grass clippings out of ditches, creeks and rivers?	○	○	○
- prune trees to obtain a better view, rather than removing them?	○	○	○

To find out how you rated and what it means, go to page 6.

Well vegetated, natural shorelines serve as buffer strips, protecting banks from erosion, safeguarding water quality and providing critical habitat for many fish and wildlife species.

Shorelines are sensitive areas with incalculable value. They need special care.

3 healthy ways to protect your shoreline:

① **Leave it natural.** Do not mow grass to the water's edge. Trees, shrubs and hardy perennial grasses stabilize shorelines with their root systems and protect the ground during heavy rains and wave action. They hold moisture and prevent wind and water erosion. Resist the urge to tidy up. Leave twigs, leaves, rock rubble and weeds in appropriate areas. You will be creating wildlife homes!

② **Learn more about invasive plants, and avoid using them.** Some invasive plants already causing damage in Canada are purple loosestrife, glossy buckthorn, garlic mustard and norway maple. Check regularly for their presence and remove them carefully by replacing them with native, non-invasive plants.

③ **Take care when waterfront is used for recreation.** Minimize the disturbances caused by your presence when fishing, hunting, boating, hiking or picnicking. Respect wildlife and refrain from disturbing nests, lodges and dens. Pick up pop cans, empty hook packages, bait containers, used line, sandwich wrappers and other trash.

Please note: **If erosion is already a problem,** please be responsible and contact your local conservation authority for information to repair the problem, and make sure to get a permit before any work begins. Look for natural methods whenever possible.

Welcome wildlife to your backyard!

Create a backyard habitat. Even a small yard can be landscaped to attract birds, butterflies, beneficial insects, and small animals. Join the tens of thousands of property owners around the country who have put out the welcome mat for wildlife in their backyard!

Assess your yard or garden space. Identify the habitat elements that already exist. You may already be providing some habitat for wildlife! Make a list of all the plants in your yard, so you can plan what is needed and where best to locate your new plant arrivals.

Provide food and water for survival. Choose a mix of plants to provide food for backyard wildlife throughout the entire year. Use feeders as a supplement to natural food provided by native plants. If you're lucky enough to have a natural pond, stream or wetland on your property, make sure to preserve or restore it. These are excellent aquatic habitats. Water can also be supplied in a birdbath, a small pond, a recirculating waterfall or a shallow dish.

Provide cover and a place to raise young. When choosing your plants, make sure to include at least one good clump of evergreen trees and shrubs to provide year-round protective cover from weather and predators. Good choices are juniper, hollies and live oaks, as they provide food as well as cover. Nest boxes can be used for bluebirds, chickadees, wrens, purple martins and many other species.

Leave those dead or dying trees alone! These are excellent habitat features. They are excavated and used by woodpeckers and a multitude of insects and cavity-nesting birds, such as owls, bluebirds, chickadees, and wrens.

The plants you use for food and ground cover will help determine the wildlife species attracted to your backyard. Nesting boxes, feeders, and watering sites can be added to improve the habitat. Install your feeders near natural cover or place brush piles nearby so birds can quickly hide from predators.

Go to the Source

YOUR INFORMATION GUIDE

AGENCY	INFORMATION PROVIDED	WEBSITE	TELEPHONE / EMAIL
Conservation Authorities	Clean Water Initiatives, Permits, Grants and Programs	www.conservation-ontario.on.ca	1-905-895-0751 / info@conservation-ontario.on.ca
Municipal Waste Management Department	Household Hazardous Depot Days. Location and hours Recycling Program		Blue pages of your phone book or on a property tax invoice.
Ontario Ministry Of The Environment (MOE)	Construction, Maintenance and Abandonment of Drinking Wells	www.ene.gov.on.ca	1-800-565-4923
Ministry of Municipal Affairs and Housing	Ontario Building Code – Regulations for sewage systems	http://obc.mah.gov.on.ca/	1-416-585-7041 / mininfo@mah.gov.on.ca
Ontario Rural Waste Water Centre	Proper Septic System Maintenance and Installation	www.orwc.uoguelph.ca	1-613-679-2218 Ex.609
Natural Resources Canada – Office of Energy Efficiency	Energy Efficiency and Ener-Guide	http://oee.nrcan.gc.ca	1-613-943-1590 / general.oee@nrcan.gc.ca
Environment Canada – The Green Lane	Air Quality, Energy Efficiency, Climate Change, Recycling	www.ec.gc.ca	1-800-668-6767 / enviroinfo@ec.gc.ca
Recycling Council of Ontario	Recycling, Composting and Household Hazardous Waste	www.rco.on.ca	1-416-960-1025 / rco@rco.on.ca
Canadian Mortgage and Housing	Lead, Asbestos, Radon and Formaldehyde, Healthy Housing	www.cmhc-schl.gc.ca	1-613-748-2000 / webmaster@cmhc-schl.gc.ca
Health Canada – It's your health series	Lead, Air Quality, Pesticides, Healthy lawns	www.hc-sc.gc.ca	Ottawa - 1-613-957-2991 Provincial 1-416-973-4389
The Ontario Lung Association	Clean Air Now Program / Indoor and Outdoor Air Quality	www.on.lung.ca	1-800-972-2636 / olalung@lon.ung.ca
Local Health Units Ontario Ministry of Health	Well water testing and maintenance of sewage systems	www.gov.on.ca/health/index.html	1- 800-268-1154 / infomoh@gov.on.ca
Composting Council of Canada	Everything you need to know about composting.	www.compost.org	

Go to the Source

YOUR INFORMATION GUIDE

AGENCY	INFORMATION PROVIDED	WEBSITE	TELEPHONE / EMAIL
Ontario Ministry of Agriculture and Food	Best Management Practices (BMP) Series	http://gov.on.ca/OMAFRA	1-613-258-8295 Kemptville / 1-613-679-4411 Alfred
Ontario Federation of Agriculture	Baseline Water Testing Program Well upgrading and abandoning grants	www.ofa.on.ca	1-416-485-3333 / info@ofa.on.ca
Government of Canada	How people's action affect Climate Change	www.climatechange.gc.ca	1-888-622-6232
Environmental Protection Agency (U.S.)	Information on all subjects	http://epa.gov	
Ontario Soil and Crop Improvement Association	Information provided "Mark Cullen Gardening, Wildlife Issues, Environmental Farm Plan"	http://www.ontariosoilcrop.org/	1-800-265-4224
The Living By the Water Program	Shoreline protection and management practices	www.livingbywater.ca	1-613-692-3571 Ext. 122 / shorelines@lrconline.com
Ontario Ministry of Natural Resources	Fish and Wildlife Habitat	www.mnr.gov.on.ca	613-258-8204 Kemptville or 1-705-755-2500 Regional mnr.nric@mnr.gov.on.ca
Ontario Stewardship Councils	Land management practices for land owners	www.ontariostewardship.org	
Green Communities Association	Pesticide Free Campaign	www.gca.ca	sharyn@gca.ca
Urban Agriculture Notes City farmer	Natural Lawn Care	www.cityfarmer.org	
World Wildlife Canada Fund Pesticide Reduction Program	Conservation Programs	www.wwfcanada.org	1-800-26-PANDA / panda@wwfcanada.org
Government of Ontario	Ontario Statutes and Regulations	http://www.e-laws.gov.on.ca	

Note: Information subject to change.

Keep It In Check

MAINTENANCE CHECKLIST

Spring

- ○ Test water for bacteria after spring thaw, usually April
- ○ Test water for nitrate-nitrogen every three years (more often if there is a baby in the house)
- ○ Check well cap and sanitary seal are secure and water tight
- ○ Inspect ground around well-casing is mound up
- ○ Gather materials for first Household Hazardous Waste Depot of the season
- ○ Turn compost pile after sitting all winter
- ○ Prune trees to improve view rather than removing them
- ○ Inspect all off-road vehicles (boats, all-terrain vehicles)
- ○ Inspect all small engine equipment (lawn mower, weed trimmer, garden tiller)
- ○ Spread organic fertilizer or compost on lawn
- ○ Aerate soil
- ○ Clean roof gutters and check downspouts are connected and drain away from foundation and sewage system
- ○ Have an air conditioning contractor inspect and maintain your system as recommended by the manufacturer

Summer

- ○ Have septic system pumped every 2-3 years
- ○ Check ground around drainfield for soggy spongy soil
- ○ Have effluent filter on septic tank cleaned
- ○ Check for invasive plants along shorelines and ditches and remove immediately
- ○ Test well water in August or four months after last test
- ○ Clean air filters every 1-2 months during cooling season on air conditioner units
- ○ Check and clean condensate drain holes and tubes on window air conditioner units

Fall and Winter

- ○ Spread compost over flower and garden beds
- ○ Pest-proof your house to ensure animals cannot get in
- ○ Protect trees with wire mesh or tree wrap
- ○ Check weather stripping on all doors and windows, and replace if old and worn
- ○ Have a heating professional check your heating system every year
- ○ Replace furnace filters every 1-2 months during heating season, allowing heating and cooling systems to operate properly
- ○ Have wood-burning stoves connector pipes and chimneys inspected and cleaned by a certified chimney sweep
- ○ Check carbon monoxide and smoke detectors are in working order
- ○ Gather materials for last Household Hazardous Waste Depot of the season
- ○ Test well water in December or four months after last test

Keep It In Check

MAINTENANCE LEDGER

Testing Well Water

Date	Type of Test (bacteria / nitrogen / sodium)	Results

Pumping Sewage Tank

Date	Contractor	Inspection

Did you know....

...abandoned wells (no longer in use) that have not been properly sealed are a direct link to the groundwater, and can make your drinking water unsafe?

Keep It In Check

TAKING ACTION!

Did you know....

...small actions can have a big impact? Get the whole family involved help make your home a healthy place to live, work and play!

Short term action plan (0-6 months)

Potential risk	Action	Target date	
Contaminants getting in well casing	*Replace well cap*	*November 2002*	✓

Keep It In Check

TAKING ACTION!

Long term action plan (6 months and up)

Potential risk	Action	Target date	
Surface water getting in well	*Extend casing 12 inches above ground level*	*May 2003*	✓

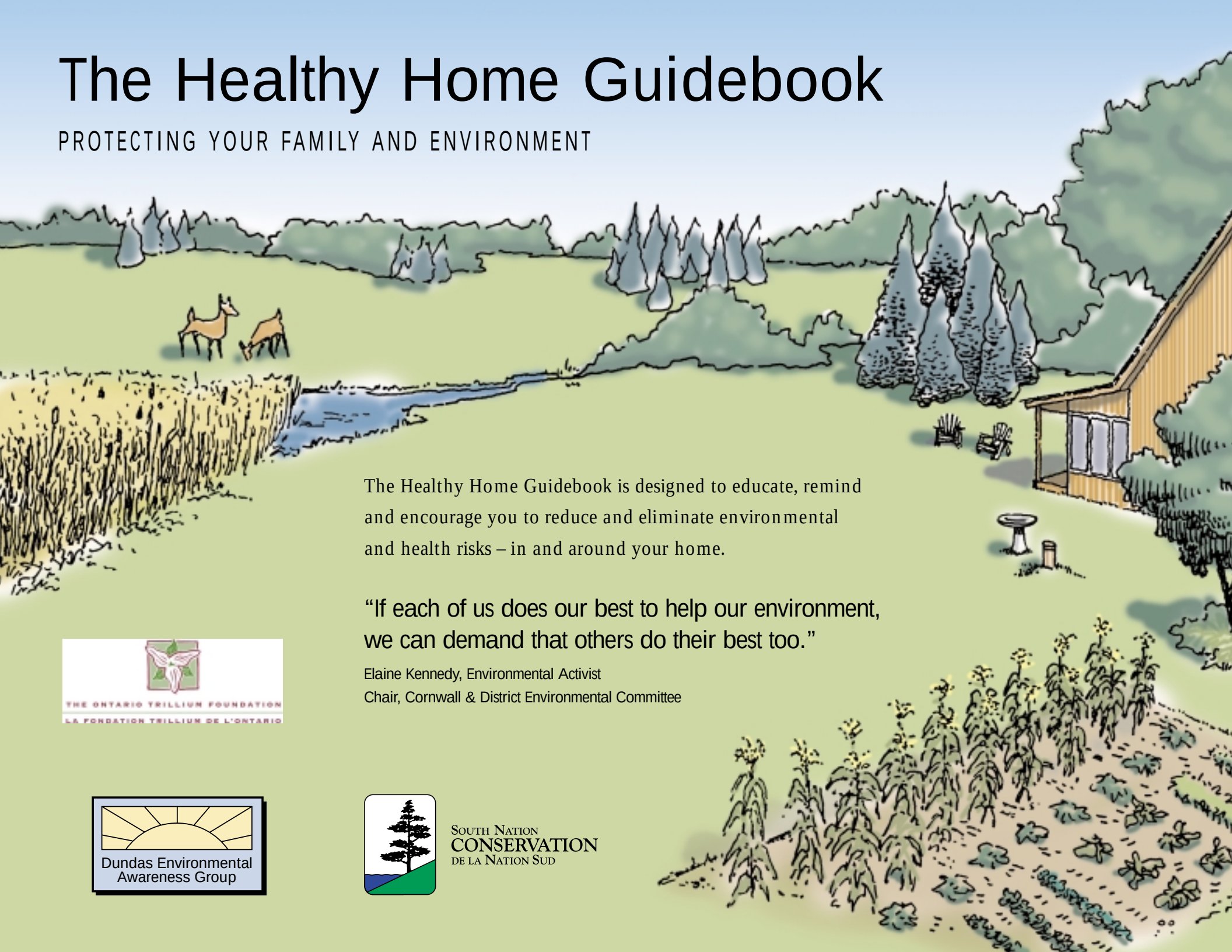
You should always conserve water, but it is especially important when water levels are low. When we have a year of dry weather with little rain or snow, conserving water will help slow the decline of water levels in reservoirs and wells.

Notes

TAKING ACTION!

The Healthy Home Guidebook

PROTECTING YOUR FAMILY AND ENVIRONMENT



The Healthy Home Guidebook is designed to educate, remind and encourage you to reduce and eliminate environmental and health risks – in and around your home.

"If each of us does our best to help our environment, we can demand that others do their best too."

Elaine Kennedy, Environmental Activist
Chair, Cornwall & District Environmental Committee

THE ONTARIO TRILLIUM FOUNDATION
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Dundas Environmental Awareness Group

South Nation Conservation
de la Nation Sud