Groundwater Friendly Techniques for Use at Home and Work

Better Homes and Groundwater

A Homeowner's Guide

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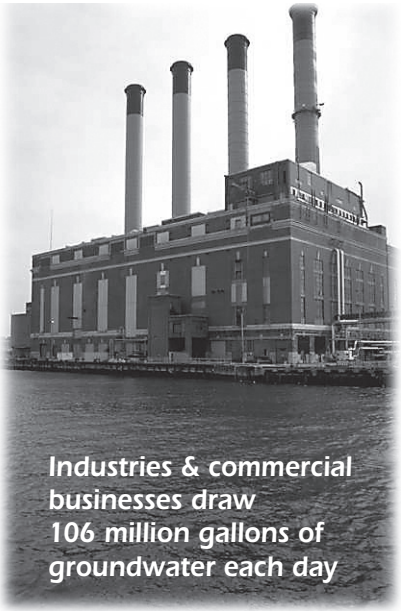
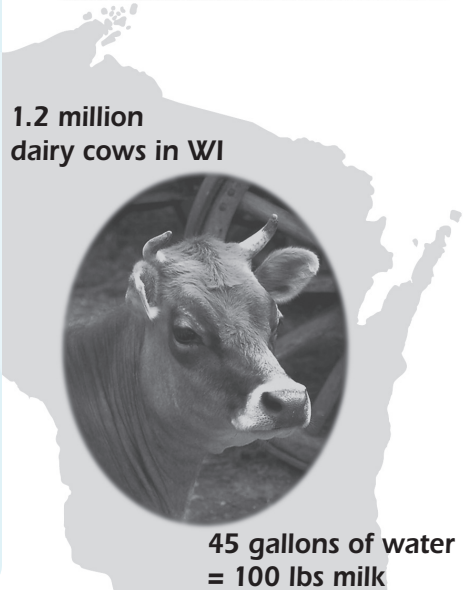
A Homeowner's Guide

Wisconsin Groundwater Facts

- About 1.2 quadrillion gallons of water lie underground in Wisconsin, enough water to cover the state to a depth of 90-100 feet.
- Every day, Wisconsinites withdraw about 986 million gallons of groundwater from private and municipal wells.
- The average person uses 50 gallons of water a day.
- Industries and commercial businesses draw over 81 million gallons of groundwater each day from their own wells and use about 109 million gallons more provided by municipal water systems.
- A dairy cow producing 100 pounds of milk each day slurps 45 gallons of water to wet her whistle; there are more than 1.2 million dairy cows in Wisconsin.
- A meal of a quarter-pound hamburger, fries and a soda takes 1,400 gallons of water to produce; a gallon of gas for your car requires six gallons of water.



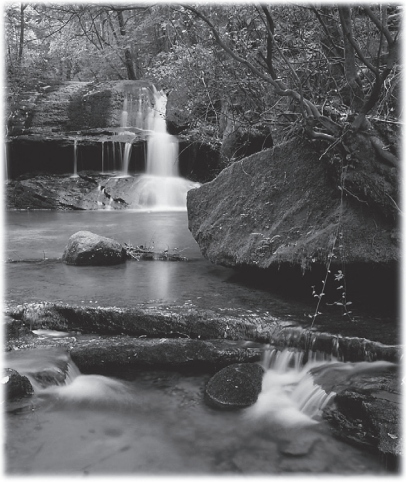


USGS Water Use in Wisconsin, 2005. Open file report 2009-1076, Version 1.1, Nov. 20011 Cheryl A. Buchwald

Why Read this Booklet?

Wisconsin is a water rich state, with high quality lakes, streams, and abundant groundwater. However, many people in Wisconsin are concerned about the quality and source of their drinking water, as well as the status of their favorite stream, spring, or lake. It's no wonder why:

- Wells in some parts of the state are plagued by naturally occurring arsenic, made worse in part by declining water tables.
- Over a third of private wells are estimated to have detectable levels of pesticides or a pesticide breakdown product.
- A recent survey of Wisconsin domestic wells found that 9% DATCP 2007 exceeded the nitrate drinking water standard of 10 parts per million.
- Viruses, antibiotics, and personal care products are being detected in water supplies, often with little information about the potential health effects.
- Some communities are facing water shortages due to declining water tables, increased demand, or poor water quality.



- Stagnant waters, dried up springs, and reduced flows in trout streams have resulted from declining groundwater inputs and levels in some areas.

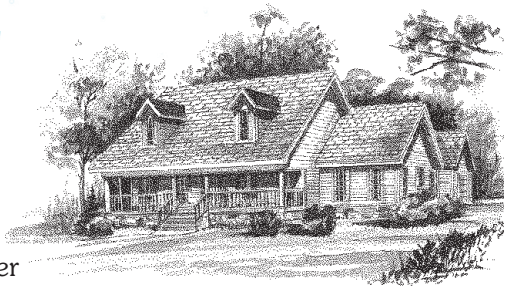
Dealing with these problems "after the fact" can be expensive or technically difficult. Treatment of drinking water adds considerable costs to a local water utility, as does adding more infrastructure to meet rising demands. Some impacts are irreversible. For example, restoring a spring may be impossible after all of the groundwater recharge areas have been paved over or altered by human development.

The best way to prevent these problems is to protect groundwater from being contaminated or used up in the first place! This booklet gives you practical ideas for actions that you can take to protect and conserve groundwater where you live and work.

What Can I Do?

Groundwater protection is not just a concern for farmers, water system operators, or private well owners. We *all* have a stake in protecting the amount and quality of our water. Many people are already trying to be "groundwater smart" – this booklet offers ideas to help you do the best job possible.

Most ideas described here fall under one of three categories:



- **Protect water quality** by preventing harmful substances from entering groundwater or surface water
- **Replenish water supplies** by keeping water local – letting it soak in where it falls
- **Conserve water** by using water wisely – consciously and efficiently

As a homeowner, you will find that groundwater protection is not only the right thing to do – it's also easy and economical. In addition, you'll protect your family from accidental poisoning and exposure to hazardous chemicals; you'll improve habitat for birds and other wildlife; and your home will be more attractive, safer and easier to take care of.

Interested?

Read this booklet and keep it as a handy reference. Try some of the ideas and call some of the phone numbers or look up the websites for more information. Then have a glass of cool, fresh water and take pride in the fact that you're helping to make better homes and groundwater.

Protect Water Quality in the Home

Stop Pollution Before It Starts

Some household products, like drain cleaners, are very poisonous. Many, like laundry stain removers and floor cleaners contain substances classified as priority pollutants by the Environmental Protection Agency (EPA). Septic systems and wastewater treatment plants can't detoxify all of the chemical compounds found in these products and, consequently, some end up in groundwater and surface waters. **Here are some ideas to help you reduce chemical use and protect water quality.**

Shopping: ✔ *Protect* ✔ *Conserve* ✔ *Replenish*

Buy only what you plan to use within one year. This reduces fire hazards and groundwater contamination risk. It also assures that you will have fresh products to use. Some products (like pesticides) deteriorate with age. Others (like brake fluid) absorb moisture from the air. Still others (like latex paint) should not be allowed to freeze.

Storage: Store chemicals over a concrete floor away from your well and furnace and out of the reach of children. If you have a basement well, don't store chemicals in the basement.

Disposal: Many counties and municipalities hold clean sweep programs to collect unused chemicals and other hazardous products. Search the internet for '[name] county clean sweep program' to find dates your community has set aside to collect unused chemicals and other hazardous products. Unused drug drop-off times and locations may also be scheduled. **Never** pour gasoline, oil, paint, or other chemicals onto the ground or into storm sewers. See the "Garbage and Waste Disposal" section on the next page for more details.

Garbage and Waste Disposal

- Recycle
- Flush with lots of water in sanitary sewer (not septic system or storm drain)
- **C** - Save for household hazwaste collection
- Dispose of dried solids in the trash
- **X** - Exchange for reuse (if your community has a waste exchange program)

Household Items

Artist and hobby paint	C
Cleaner w/ammonia*	
Cleaner w/ bleach*	
Disinfectants**	
Drain & toilet cleaners**	
Floor/wax stripper***	C
Household batteries**	C
Metal cleaners	C
Mothballs	C
Oven cleaners**	C
Polish & spot remover**	C
Polish w/solvents***	C
Thermometers (mercury)	C

Home Improvement

Adhesives, glues w/solvents***	C
Concrete cleaner (acid)	C X
Furniture stripper	C
Glaze, spackle	
Glue (water based)	
Latex paint	X
Oil-based paint	C X
Paint remover	C
Paint thinner	C X
Putty, grout, caulk	
Stain, varnish, lacquer	C
Turpentine	C X
Wood preservatives	C

Yard & Garden

Driveway sealer	C X
Empty containers	
Fertilizer w/weed killer	C
Fertilizer (no weed killer)	X
Insect or bug killer	C
Lighter fluid	C

More Yard & Garden

Pool chemicals	C
Rat/rodent poison	C
Weed killer	C

Automotive

Antifreeze	C
Auto batteries	
Brake fluid	C
Carburetor cleaner	C
Degreasers	C
Gasoline, fuels	C
Transmission fluid	C
Used motor oil	
Windshield	

* *Never mix products containing ammonia with those containing bleach.*

** *Some, but not all, of these products need to be saved for collection. Read labels and call your local official for disposal advise.*

*** *Solvent-containing products have the words "Flammable", "Combustible" or "contains petroleum distillates" on the labels. Also, products with acetone, xylene, and methylene chloride should be saved for collection.*

Adapted from DNR PUB-SW-738 95.

Groundwater-Smart Household Products

Following is a list of alternatives to chemical-based household products and common cleaning problems that are effective and safe:

Abrasive cleanser: Mix salt, baking soda and water into a paste.

Bleach: Substitute borax.

Brass cleaner: Mix equal parts flour and salt into a little vinegar.

Carpets: Sprinkle borax and vacuum. For stains, rub borax into dampened area, let dry, vacuum.

Deodorizers: Buy houseplants, use potpourri, candles, cedar shavings (available in pet shops).

Disinfectants: Mix ½ cup borax plus ½ cup rubbing alcohol in 1 gallon hot water. **Do not** mix bleach and ammonia.

Drains: Pour ¼ cup baking soda down drain, follow with ½ cup vinegar. When fizzing stops, flush with boiling water.

Fabric softener: Add ½ cup baking soda to final rinse.

Flea collar: Substitute brewer's yeast in pet's diet.

Floors and tile: Mix 2 tablespoons borax plus 2 tablespoons dish detergent in 1 gallon hot water.

Furniture polish: Mix 1 ounce lemon juice plus two ounces mineral oil. Toothpaste removes water stains.

Hand cleanser: To clean paint and grease off of hands, rub them with baby oil or margarine. Wipe dry on paper towel, then wash with soap and water.

Insects on house plants: Pick off and use mild, diluted dish soap or insecticidal soap available from garden supply stores.

Laundry pre-soak: Soak spot with ¼ cup borax in two cups cold water before washing. For greasy stains, rub with corn meal and water or baby oil, rinse with lemon juice, then wash. Soak perspiration stains with one cup of white vinegar in one gallon of water.

Laundry stains: Use club soda to remove fresh blood stains and chocolate stains. Rub buttermilk into grass stains – wash as normal.

Moth repellent: Use cedar shavings, lavender.

Oven cleaners: Dampen grimy spots and sprinkle with salt while oven is still warm. Scrape after oven cools. Greasy spots can be scrubbed with straight vinegar or a paste of baking soda and water.

Pet stain remover: Rub with ¼ cup dish detergent in ¼ cup vinegar. Blot dry, rinse with water.

Silver polish: Soak in baking soda and buttermilk, brush with toothpaste or boil for 3 minutes in one cup water, one teaspoon baking soda, one teaspoon salt and a piece of aluminum foil. Rinse well in water and dry with a soft cloth.

Toilets: Use borax and a toilet brush.

Tips for the Workshop or Garage:

Absorbent: Always keep absorbent on hand to clean up spills and drips. "Store bought" absorbent works fine, or use cat litter, sawdust or Portland cement. Dispose of used absorbent in a plastic bag in the trash.

Antifreeze: Can be re-used indefinitely! If dirty, strain through a piece of nylon mesh in a funnel and put back in radiator.

Dirty or old gasoline: Filter through a paper coffee filter and mix with fresh gas (5 parts fresh: 1 part old). If old gas contains water, add 3 tablespoons "dry gas" per gallon gas.

Oil filters: Drain thoroughly, wrap in newspaper, place in plastic bag and dispose in garbage. Some municipalities have waste oils and filter disposal stations.

Oil: A gallon of used oil can contaminate up to one million gallons of drinking water. When changing the oil or other fluids, collect the fluids in leak-proof containers and take them to a service station or recycling center.

Paint: Use lead-free paint that doesn't contain mercury or mercuric compounds. Latex or water-based paints are safer than oil-based. If you have extra paint after a project, share with a neighbor, church or community group.

Paint stripper: Use a heat gun rather than chemical strippers. Always follow the instructions when using any paint stripping method.

Sidewalk de-icer: Use sand or cat litter to provide traction on an otherwise icy sidewalk.

For more recipes see: eartheasy.com and search Non-toxic Home Cleaning

Windows: Mix two tablespoons sudsy ammonia plus 3 drops dish detergent in 1 quart water. Or use diluted white vinegar in a spray bottle.

Fuel Storage Tanks

Leaking fuel storage tanks can be a source of groundwater problems for you and your neighbors. Petroleum-based fuels contain toxic compounds that are thought to cause cancer and pose other health risks. Very small amounts of these compounds in drinking water may not produce noticeable tastes or smells, but can have serious effects if ingested over many years. Large spills and overfills can also contaminate nearby surface waters. Proper installation, maintenance, and use of fuel storage tanks can minimize problems.

All tanks: Installation, removal or upgrading of any tank must be done by a state-certified contractor.

Buried tanks: If the tank is not essential, hire a state certified contractor to remove it. If you need to keep the tank, register it with the state of Wisconsin and check it regularly for leaks.

Above ground tanks: These tanks don't need to be registered. Consider installing a diked concrete pad or less expensive plastic containment system under your tank to catch spills and overfills.

Basement tanks: Seal all holes in the basement floor to prevent groundwater contamination in case of leak or accidental overfill.

Leaking tanks: All spills should be immediately reported using the 24-hour toll free hotline (1-800-943-0003). However, if you discover a discharge through analysis of soil or water, fill our and submit the *Notification for Hazardous Substance Discharge (Non-Emergency Only)* form 4400-225 by searching **dnr.wi.gov** for this form name or number.

For More Information

- Department of Safety and Professional Services website: go to **dsps.wi.gov** and search 'petroleum and tanks'.
- See UW Extension publication GWQ030, Farm and Residential Petroleum Storage Tanks, available through your county UW-Extension office.

Protect Water Quality in the Yard and Garden

Fertilizers

Fertilizer usually contains nitrogen, phosphorus (as P_2O_5) and potassium (as K_2O). The numbers on a fertilizer bag indicate the percentages of these three plant nutrients. For example, a fertilizer labeled 10-1-4 contains 10% nitrogen, 1% P_2O_5 and 4% K_2O. **Nitrogen** is the most important lawn nutrient but it can contaminate groundwater with nitrate. **Phosphorus** can contaminate rivers, lakes and ponds, causing excessive weed and algae growth. In many cases phosphorus levels in soils are more than sufficient to sustain a healthy lawn, and additional phosphorus is not needed. **Chloride,** which is often used in fertilizer formulations, can also contaminate groundwater.

If you think that your yard is in dire need of fertilizer, follow these steps:

- Have your soil tested by bringing it to your County Extension Office.
- Choose a fertilizer high in Water Insoluble Nitrogen (WIN). WIN is released slowly and helps prevent "lawn burn" and groundwater contamination. WIN fertilizers cost more, but they're worth it.
- If your soil test calls for potassium, apply it with your fall fertilization. Fall fertilizing promotes deep and healthy roots. Use a fertilizer with high potassium content.
- Unless your soil is deficient in phosphorus, ask for a fertilizer with zero for the middle number.

Watering: If you must water your lawn:

- Water once a week, but skip a watering if it rains.
- Do not apply more than 1 inch of water at a time (use a rain gauge or pan to measure).
- Water early in the morning or at night to minimize evaporation and help reduce high demand for water during daytime.
- New lawns need lighter, more frequent watering, Also be sure to maintain a mulch layer of marsh hay or some other material to minimize erosion, and to hold in soil moisture.
- Plumbing code allows recycling of graywater and storage and use of rainwater for irrigation. Some useful nutrients are available in treated graywater. Talk to your licensed plumber for more information.

Mowing: Mowing too short stresses the lawn and promotes weed growth by allowing sunlight to reach weed seedlings.

- Set your mower blades at 3 inches above the ground to support longer root growth and protect against drought or blade damage.
- Mow your lawn before the grass gets 4 inches tall.
- Leave your clippings on the lawn. They fertilize the soil.
- Use a mulching mower which produces clippings that decompose faster and help fertilize the lawn.
- Sharpen your mower blades when dull, at least once each year.

Weed control: Control weeds by following good mowing, watering and fertilizing practices. If you must use chemicals, spray individual weeds rather than applying a fertilizer/herbicide blend to the entire lawn.

Dandelions: Dig them out. Digging 4–5 inches of the root will kill most dandelions. You may have to dig some a second or third time.

Natural weed killer

Try this safe, easy and effective way to get rid of your weeds.

1 tablespoon of apple cider vinegar

1 tablespoon baby shampoo

1 tablespoon of gin

1 quart of warm water.

Combine all of these ingredients into a bucket and then pour into a hand held sprayer. Drench the weeds to the point of run-off.

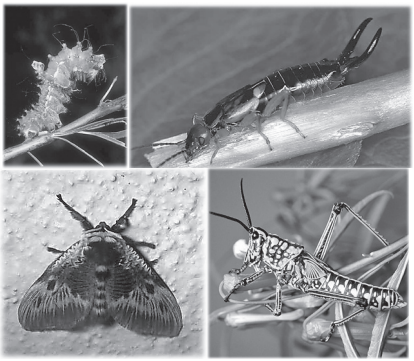
Source:Green Grass Magic, Jerry Baker.

Crabgrass: Keep your lawn tall – at least 3 inches – to shade out crabgrass. Apply crabgrass killer only if you have a noticeable crabgrass problem. Also, don't apply fertilizer in July and August – this tends to grow crabgrass better than it does lawn.

Dormant lawns: Another option is to give your lawn a rest this summer. Don't fertilize your lawn at all, let the grass grow 3-4 inches tall and don't water. You lawn will turn brown temporarily, but it will green up again in September when the rains come again. **CAUTION:** for sensitive grass varieties or lawns with weak root systems, this can be fatal. Try this on a small area first to see how it works for your lawn. Also you may want to over-seed with a less sensitive grass variety.

Gardens:

- Have your soil tested at your County Extension Office.
- Use compost, well-rotted manure or peat moss to increase organic matter in your soil. Locate your compost pile away from your well.
- Use mulch to reduce water needs and weed growth.
- Plant cereal rye or annual ryegrass in the fall and roto-till it into the soil in the spring. This adds organic matter to your soil and the grass roots absorb nitrate in late fall and early spring, keeping it from contaminating groundwater.



- Don't spray just because you see insects eating your plants. Insecticides kill good bugs as well as pests. Identify the problem insect. Wait and see if it gets worse – good insects like ladybird beetles might keep the problem under control. First, pick them off by hand; if you decide you must spray, use a product that says on the label that it is approved for your crop and will kill the insect in question. Consider using insecticidal soaps and microbial sprays.
- **If you decide to spray, read and follow all label directions exactly.**

Good bugs

Groundcovers	Shrubs	Flowers
Shade		
Ferns ✻ Mayapple ✻ Wild Geranium ✻ Virginia Creeper ✻ Violets ✻ Hostas Lamium Sweet Woodruff	Gray Dogwood ✻ American Cranberrybush ✻ Blackhaw Viburnum ✻ Hazelnut ✻ Winterberry ✻	Columbine ✻ Bluebells ✻ Trillium ✻ Wild Geranium ✻ Wood Lily ✻ Skyblue Aster ✻ Shooting Star ✻▼ Anemone
Sun		
Bochre Fern ✻ Bearberry ✻▼ Wineleaf Cinquefoil ✻ Creeping Juniper ✻ Sweet Woodruff	Potentilla ✻ Virginia Rose ✻ Nine Basket Red Twig Dogwood ✻ Grey Dogwood	New England Aster ✻ Coreopsis ✻ Cone flowers Penstemon Mountain mint Butterfly Weed ✻▼ Lupine ✻▼ Pasque Flower ✻▼ Iris Lilies Anemone

✻ **Wisconsin native**
▼ **hard to establish**

Lawn alternatives: Many homeowners are finding that a beautiful yard is not necessarily dominated by a carpet of grass. Try replacing parts of your lawn with low maintenance groundcovers, shrubs and perennial flowers that require little or no fertilizer and water. **Most native plants do not need fertilizer.**

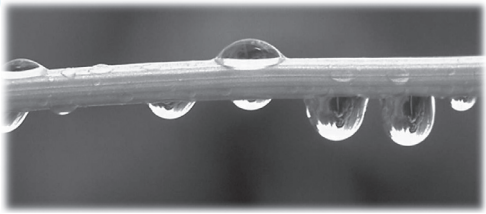
Natural plantings and gardens can often be less work and provide a more beautiful setting to look at and enjoy.

For More Information

- Your County Extension Office
- Your Local Gardening Center
- Order "Yard Care and the Environment" series from your County Extension office.

Replenish Water Supplies

Slow It Down and Soak It Up



During a moderate rainfall, hundreds of gallons of water run off a typical residential roof and into the gutters, often discharging to the driveway, and eventually the street. Other impervious surfaces, such as sidewalks, patios, and hard packed lawns also prevent water from soaking into the ground. As it flows along the ground, storm water picks up contaminants such as fertilizers, pesticides, automotive fluids, pet waste, grass clippings, dirt and debris. Most people don't realize that in most parts of the state, stormwater is not treated – it carries pollutants straight into the nearest waterway. Some simple practices can help capture and filter rain water back into the ground, thus stopping the water's rush to the storm sewers and on to contaminate our lakes and streams.

Redirect storm water: Channel water flow to areas where water will remain long enough to filter into the soil. Move downspouts so they discharge away from paved areas and foundations, toward relatively flat, grassy or well-vegetated areas.

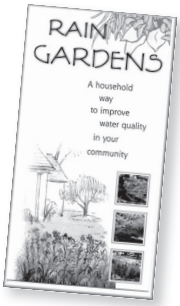
Collect and re-use rainwater: Another way to reduce runoff and ease the strain on groundwater supplies is to use rain water for washing cars or watering lawns and gardens. Alternatives range from simple rain barrels to more sophisticated water recycling systems that allow you to re-use rainwater inside the house for non-potable uses.

Keep paved areas to a minimum: Consider using porous materials that let water move through cracks into the soil instead of concrete or asphalt for patios, paths, driveways, etc. Some examples are bricks or lattice blocks loosely set in sand, stepping stones, gravel or wood chips.

Construct a "Rain Garden": Designed to capture and filter rainwater back into the ground, rain gardens are shallow depressions located near downspouts that contain plants suitable for saturated conditions and root systems that aid in water infiltration. There are several excellent publications and websites available with much detail. Here are a few tips to get you started:

- Test your soil. Different soil types help dictate the size of the rain garden you need and whether the soil is permeable enough to allow rainwater to infiltrate.
- The size of your roof or other impervious surface, such as a driveway, sidewalk, or patio, matters when deciding the size of the rain garden. Your rain garden should equal 25-30 percent of the area of the impervious surface, depending upon the soil type. Sizes vary from 100 square feet to 300 square feet and range from 3 to 8 inches deep. A rain garden of 200 square feet and 3 inches deep is capable of holding 400 gallons of water at a time.
- Make sure the rain garden overflow is channeled to your yard's existing drainage and away from your home. A rain garden should be at least 10 feet away from the foundation of your home with your down spout aimed to the garden.
- Call Digger's Hotline before digging (1-800-242-8511) or visit their website at **diggershotline.com** Also check for privately installed wiring for lights, signs, etc.
- Use native plants. Check with nurseries to find native wildflowers, grasses or groundcovers, and shrubs that are suitable for rain gardens. Once established, native plants need no watering or fertilizer and are already acclimated to the extremes of local weather. Then do a yearly clean-up of your rain garden, remove weeds as needed, and keep the ground covered with mulch.
- If your yard slopes, you will need to create a berm to retain the water. These can be enhanced with stone for a decorative effect.

Be aware that not all yards are suited for rain gardens, and that homeowners need to check for ordinances that may dictate the height of grasses, what is considered a weed, and even whether or not rainwater can be captured.



For More Information

- **DNR Publications:**
  Rain Gardens: A household way to improve water quality in your community, DNR 731-2002

  Rain Gardens: A how-to manual for homeowners, DNR 776-2003
- UW Extension website: go to **uwex.edu** and search 'rain gardens'
- DNR website: go to **dnr.wi.gov** and search 'rain gardens'

Conserve Water

Use Water Wisely and Efficiently

Conservation doesn't mean doing without. It does mean using water wisely. Wasted water, especially heated water, is money down the drain! You and your family are an important part of this effort to make every drop count.

You can use more water efficient plumbing fixtures, devices and appliances as an easy and effective way to conserve water at home. With a flow-limited faucet, shower, or toilet you can be saving water without even thinking about it. Water efficient models are often available for about the same cost as the conventional models. Here are some simple tips to follow – you may be surprised at the results!

Look for leaks: A dripping faucet can waste 10-20 gallons of water a day. A leaky toilet is usually silent, so it's harder to detect, but it can waste tens of thousands of gallons every year. An inexpensive washer from the hardware store is usually all you need to fix a leaky faucet, and toilet leaks can often be stopped by adjusting the float arm or plungerball. To find toilet leaks, drop a little food coloring in the toilet tank. If, without flushing, color appears in the bowl, you have a leak that should be repaired.

Toilet dams and water use: Toilet dams or inserts placed in a toilet tank retain water during flushing and can save up to three gallons per flush. (Check with the manufacturer to see what effect reducing the water consumption might have on your toilet's flush.) New toilets have a smaller reservoir than the conventional toilet and use only 1.6 gallons per flush compared to 5-7 gallons for older models. When you need to replace a toilet, make sure to install an up-to-date "water-conserving" model.

Showering and bathing: With a conventional showerhead, about 4 gallons of water are used for every minute spent showering. A water-conserving showerhead uses only 2.5 gallons per minute without sacrificing the spray from the old water-wasting showerhead. Shorten your shower or turn off the water while soaping up to save even more water. For a tub bath, put the stopper in the drain before running the water, then mix cold and hot for the right temperature. Do not fill the tub too full.

Low-flow faucet aerators: Low-flow faucet aerators mix water with air, and reduce the amount of water flowing from your kitchen and bathroom sinks. These aerators are designed for either inside or outside threaded faucets, and use about 40% less water than a standard aerator.

Teeth brushing and shaving: For every minute water runs unused from your tap, 1-3 gallons of water are wasted depending on your faucet. That's why you should never leave the water running while you brush your teeth or shave. Wet your toothbrush and fill a glass for rinsing. When shaving, fill the bottom of the sink with a few inches of water to rinse your razor.

Automatic dishwasher: A dishwasher uses from 8-15 gallons of water per load, depending on the fill and wash cycles. The dishwasher should be full before each cycle.

Automatic clothes washer: A typical clothes washer uses from 15 to 50 gallons per load, depending on the washing cycle and type of machine. Front-loading models use about half of the water as a top-loading model. The regular cycle uses less water than the permanent-press setting. Always set the fill level to match the size load you are washing. And remember that full loads save water because fewer loads are necessary.

Garbage disposal: Garbage disposals use a significant amount of water and greatly increase the strength and volume of wastewater that goes to the treatment plant or septic tank. Composting food scraps and disposing of other waste in garbage cans are good alternatives.

Car washing: Wash your car in sections, rinsing with short spurts from a hose with a nozzle that shuts off automatically. Wash your car over the lawn rather than on the driveway or in the street. The grass helps decontaminate soaps and prevent runoff into the storm sewers, and will use the phosphorus in detergents as fertilizer. Or consider using a professional car wash facility where the water is recycled and doesn't run into storm sewers.

Garden hoses: Sweep patio and walks rather than hosing them down. When a hose is used and left connected to an outside faucet, don't depend on the hose nozzle to shut the water off. Turn off the faucet instead.

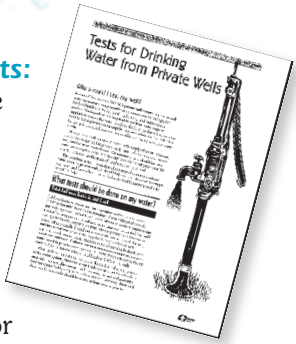
For More Information

- H_2OUSE Water Saver Home website: **h2ouse.net**
- WI Public Service Commission website: **psc.wi.gov** search 'water conservation'

Care for Your Well and Septic System

Residents of rural areas rely on private wells to provide water for their water needs and septic systems to dispose and treat their wastewater. In order to ensure that water from private wells is providing safe drinking water, it is important that wells are properly constructed, maintained, and regularly tested. In addition, a properly constructed and maintained septic system will help to avoid costly repairs, as well as reduce the risk of contaminating groundwater and your well.

Wells



Water tests: If you have your own well, you should have your water tested annually for nitrate and bacteria at a certified laboratory. If it tests unsafe for bacteria, find an alternative drinking water supply until the source of the bacteria is found. If the nitrate-nitrogen level is 10 parts per million (ppm) or higher, it is unsafe for infants; use bottled water for making infant formula. Check the *Tests for Drinking Water from Private Wells brochure* (DNR PUB-DG-023) to find out what additional tests are recommended.

Water treatment: Before buying any in-home treatment device for a health-related contaminant (like bacteria, nitrate or pesticides), find out if the device is appropriate for the contaminant in question and is state approved.

Well construction and maintenance: Every private well owner should know the depth of their well, depth of casing, depth to water, and Wisconsin Unique Well Number if identified. This information can be important when trying to identify sources of many well problems. A free brochure (*You and Your Well,* PUB-DG-002) explains how to ensure your well or water system is providing safe drinking water.

Basement and pit wells: These are subject to contamination and often illegal. They should be replaced with safe, modern wells that meet state and local codes. Call a licensed pump installer to inspect your well for proper code compliance.

Unused wells: Properly seal and unused wells as soon as possible. Consult *Answers to Your Questions on Well Filling and Sealing* (PUB-DG-016) for more information.

Anti-backflow devices: Keep contaminated water from entering your drinking water supply. These devices are available in most local hardware stores and should be installed on outdoor faucets, lawn sprinkler systems and laundry tubs.

Septic Systems

Pumping: Have your septic system inspected every 2 - 3 years. Pump when needed (about one-third full of sludge and scum). A brochure *(Care and maintenance of residential septic systems,* B3583) is available from UW Extension or the UW Environmental Resources Center.

Cleansers: Strictly limit the amount of disinfectants, bleach and cleansers that end up in your septic system. Proper operation of a septic system relies on an active bacterial community to break down wastes.

Toxic chemicals: Don't pour paint thinner, paint, degreasers, pesticides, spot removers, or oil down the drain -these may harm the bacterial community and pollute the environment.

Failing septic systems: If septic liquids are rising to the surface or backing up into the house, get help immediately from your local septic system contractor.

For More Information

- Your County Extension Office.
- DNR publications are available online. To print your copy, go to **dnr.wi.gov** and search for these publications by name or number. To request a quantity of these publications in printed form, call 608/266-0821.
- UW Environmental Resources Center, 608-262-0020, **uwex.edu/erc**

Notes

Notes

Contact Us

Customer Service Staff are here to assist you 7 days a week, 7 a.m. to 10 p.m.

Call Toll Free
1-888-WDNRINFo
(1-888-936-7463)

How may we help you?

Chat available from 7 a.m. to 9:45 p.m.

Call a representative 7 a.m. to 10 p.m.

Email your question.

Toll free hotlines

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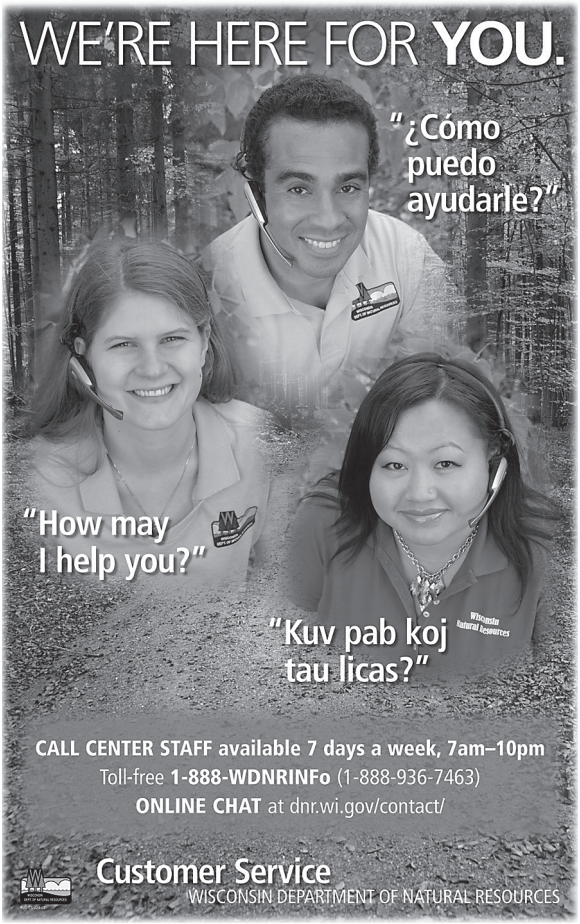
1-888-936-7463
phone

Emergency Spill Hotline:

1-800-943-0003
phone



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