



Living Responsibly in Your Community:

Homeowner's Guide to Protecting our Water Resources



Prepared by:



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Low Impact Development Technical Guidance Manual for Puget Sound - Puget Sound Action Team and Washington State University, Pierce County Extension.

Office of National Drug Control Policy, *www.WhiteHouseDrugPolicy.gov*.

Practically Easy Landscape Maintenance, A Care Manual for Natural Drainage Systems - Fall 2006 – Seattle Public Utilities.

Puget Sound Partnership, *www.psp.wa.gov* and *www.pugetsoundstartshere.org*.

Rain Garden Handbook for Western Washington Homeowners – Washington State University, Pierce County Extension.

The Scoop on Poop...an Island County guide to safe and environmentally friendly pet waste disposal. Brought to you by: WSU/Island County Waste Wise, Island County Public Works and Island County Health Department.

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Water Efficient Lawn Watering Practices, Minnesota Department of Natural Resources.

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Introduction



The quality of surface and ground waters is very important on Whidbey Island. Most of Whidbey Island residents get their drinking water from wells. In fact, approximately 60 percent of our drinking water comes from groundwater sources, which are recharged solely by rainfall. In a mature Pacific Northwest forest, very little rainwater runs off the land. Precipitation soaks into the ground, is taken up by plants and trees, or evaporates. Just one percent of precipitation flows directly into streams and other surface waters. When natural vegetation is cleared and impervious surfaces, such as buildings, roads, driveways, and sidewalks, are added, less rain soaks into the ground. More of the rainwater runs off into our surface waters without treatment, through ditches and storm drains, becoming “stormwater.” As the stormwater travels through developed environments, it collects anything that will float or dissolve, such as litter, oil, gas, fertilizers, and pesticides. Impervious surfaces also effect groundwater recharge. When stormwater cannot filter into the ground, there is the potential to deplete aquifers which can increase the probability of salt water intrusion issues along our coastal communities.

Photo courtesy of: Erickson Photography



Polluted stormwater can affect the quality of water coming from our wells. Shellfish, salmon, and other wildlife are also affected by contaminated stormwater that enters surface waters, such as streams, wetlands, and Puget Sound. This guide will help you understand your day to day impacts on Puget Sound and offers tips and tricks on natural yard care and other tools to utilize runoff or clean it up before it leaves your property.

Low Impact Development (LID) is an alternative approach to managing and treating stormwater run-off. Traditional methods send stormwater run-off into ponds and pipes that dump the water directly into Puget Sound without treatment. LID encourages the use of small, above-ground drainage systems, such as rain gardens and vegetated swales, to slow down and clean stormwater run-off and allow the water to be absorbed back into the ground, mimicking what happens naturally in a forested area. LID can be applied at the parcel scale as well as the subdivision scale, and can also be integrated into the landscape of existing homes and rural homesteads.

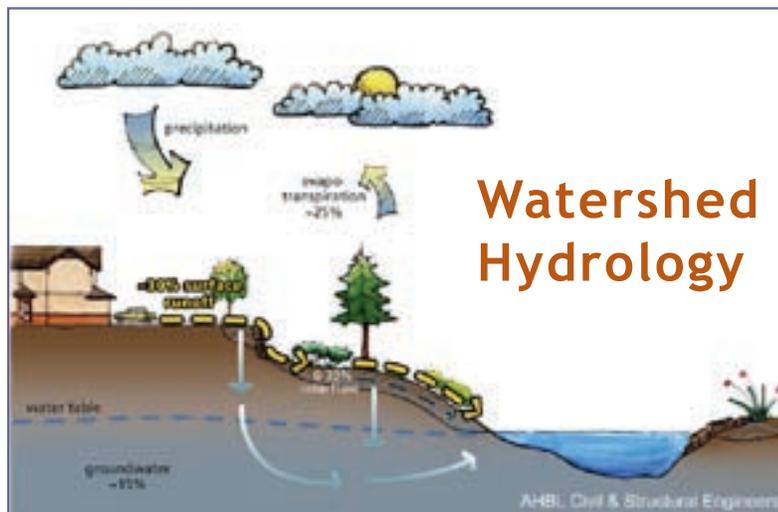


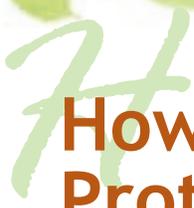
The Highlands, a new community located in Langley, is an example of a development that was constructed to meet the standards of Low Impact Development (LID). In this subdivision, rain gardens and bioswales work to filter and treat runoff and allow it to soak into the ground. In a few areas, underground pipes take any overflow to large infiltration chambers for treatment and infiltration. The swales and rain gardens networked among the streets and homes slow the water down, clean it, and allow it to soak into the ground very much like it would have been treated naturally in a northwest forest. In addition to the drainage features, the majority of native vegetation and soils were left intact. This is one of the most effective and least expensive tools for managing stormwater runoff. For more information on LID and how it can be put to work on your property, see pages 22-24, or contact WICD 360-678-4708 or 1-888-678-4922 or <http://www.whidbeycd.org>.

What Goes on the Ground Goes in the Sound or Comes Out of Your Faucet

On Whidbey Island, some of the rain water that is absorbed into the ground will work its way through the soil to the island's numerous aquifers, and eventually come back to homes through public and private wells as drinking water. Another portion of the island's stormwater runoff will make its way to surface waters and the Puget Sound, which is the home of many wildlife species, some of which we consume, and all of which are important to the health of the Puget Sound ecosystem. Therefore, every resident must exercise care choosing the methods and products we use when maintaining our homes, yards, and gardens.

In taking care of our yards, gardens, homes, and automobiles, we may be inadvertently contributing pollutants and excess water to stormwater run-off. Because we rely on groundwater for our drinking water supply, it is important to use our water resources efficiently and to protect them from contamination.





How to Care for Your Yard to Protect Our Water Resources

Elements of yard care that can affect the quantity and quality of stormwater runoff include: selection of plants for lawns and landscapes, lawn care, irrigation, mulching, composting, fertilizing, controlling pests, diseases, and weeds, managing pet wastes, treating your yard as wildlife habitat, and controlling stormwater.



Red Flowering Currant

Selecting Plants for Your Yard

Selecting plants that grow well in the Northwest and are adapted to the sun, soil, and water available on your site will reduce the time and resources needed to maintain your landscape and result in healthier plants. Consider using native plants where appropriate. Once established, they will require little care. Many native plant species and varieties are pest and disease resistant. Some are “low water use” or “drought-resistant.” Ask at local nurseries or consult with Master Gardeners and other people experienced with growing plants in your area. It is also important not to plant anything with invasive roots too close to your septic drainfield.



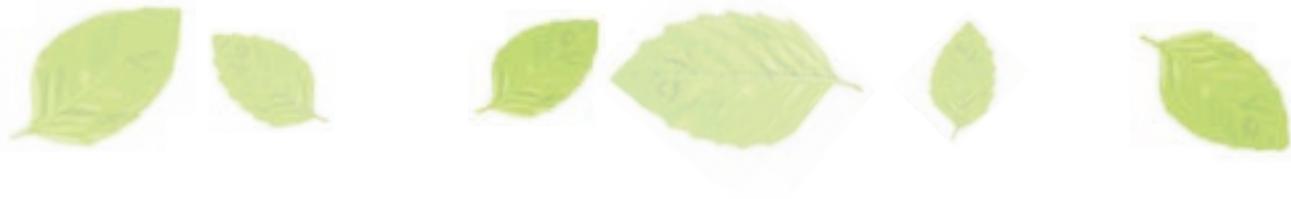
For information on native plants and where to purchase them, contact the Whidbey Island Conservation District at 360-678-4708 or 1-888-678-4922 or <http://www.whidbeycd.org> and sign up for the annual Native Plant Sale (ordering typically runs from October through January, and plants are picked up in February).

Lawn Tips and Alternatives

Lawns take a lot of work and sometimes chemicals to maintain. Learn to live with a few weeds; the “perfect” lawn may be the one that uses the fewest chemicals. Consider minimizing the amount of lawn in your yard, and especially look for alternatives to lawns on steep slopes, shady areas, or near streams, lakes, and wetlands. Grass grows best on level, well-drained soil in full sun or part shade. Alternatives to lawn grasses include yarrow, creeping thyme, and other low-growing, hardy groundcovers. Yarrow can be kept short by mowing about once per month.

Lawn Maintenance and Care

✓ Mow higher (1.5-2.5 inches), mow regularly, and leave the clippings, to improve turf density and health. Professional mulching mowers save 40% of total mowing time by eliminating bagging and disposal.



- ✓ Improve poor lawn areas by aerating, overseeding with a locally adapted grass seed blend, and top-dressing with ½ inch of compost in spring or fall.
- ✓ Hand weeding, fertilizing (use organic fertilizers – see *Fertilizing, page 13*), and raking off leaves in fall are other tasks you can do to keep lawns looking good while protecting our water resources. You can *reduce your need for fertilizer* by up to 1/3 by leaving grass clippings on the lawn.
- ✓ Consider changing turf areas that don't grow well (in shade, slopes, poorly drained soil, etc.) to better- adapted plants.
- ✓ Fertilize, if needed, in the fall with a slow-release, natural organic, or “bridge” (combination) fertilizer. Calcium (lime) improves soil pH; iron limits moss. Base long-term fertilization programs on regular soil testing – rely mainly on soil-building methods.



A simple test for determining if grass needs water is to walk on the lawn and if you leave footprints, it may be time to water the lawn.

Watering Your Lawn

- Apply about 1 inch of water per week at midsummer, less in spring and fall.
- Or let turf areas that don't get heavy wear go brown and dormant until fall – just water deeply once each rainless month to keep growing crowns healthy.
- Turf only needs water if it stays droopy after it cools off in the evening.
- To avoid over-watering, do not use a fixed schedule for the entire season. Over-watering can promote diseases and affect the health of the lawn. Instead, monitor the amount of water provided by summer rains (see *Tips for Determining How Much You Are Watering, page 8*) and irrigate only when it is needed.
- A good soaking once or twice a week is better than watering every day. Allowing the soil to dry between watering will encourage the roots to grow to greater depths, helping make turf more drought tolerant and reducing problems with fungus.





Establishing New Lawns

Guidance from: www.buildingsoil.org

Turf often requires a lot of maintenance and water, so choose other plant groups where turf is not necessary or won't grow well (heavily shaded, sloped, or poorly drained sites). Turf/lawns require at least 6-8 inches of compost-amended soil to get started, whether for seed or sod. Seeding gives better long-term root establishment, hardiness, and drought-tolerance than sod. Single-species sod should be avoided.

For best turf establishment, seed April 15-May 15 or Sept. 15-Oct. 15, and irrigate through the first dry season. Select a blend of Northwest-adapted grasses, plus broadleaf plants like clover and lawn daisies, for durable turf where a few "weeds" won't look out of place. Ask at your local nursery for Ecoturf, Eco-lawn or Ecology Lawn, which are various brands of these seed blends.

Planting Guide for a New, Native, Drought-tolerant Lawn

If you choose to install a new lawn, follow these care guidelines, and plant a native or drought-tolerant seed.

Any of the grasses listed below should work well for a drought tolerant lawn on Whidbey's acidic, droughty, low fertility soils. All lawns need to be managed properly and irrigated the first summer during the establishment period. A light (about ¼ inch) topdressing of compost at the time of seeding will help add nutrients and conserve moisture.

- Turf type Tall Fescue blends
- Creeping Red Fescue
- Chewings Fescue
- Mixture of dwarf perennial ryegrass and chewings fescue
- Mixture of dwarf perennial ryegrass, fescues, bentgrass and white dutch clover
- Creeping or Colonial Bentgrasses
- Tufted Hairgrass
- Redtop

Adding white dutch clover to any of the grasses listed above will help add nitrogen to fertilize the lawn. Specific varieties of the above grasses should be selected that are suitable for lawns. For additional information on using these seeds for a lawn, please contact the Whidbey Island Conservation District or Skagit Farmers Supply.



Treating Your Yard as Wildlife Habitat

Our yards and areas planted with native plants are attractive to local wildlife. Consider not using or at least limiting the use of chemicals to kill weeds, pests, and diseases, or to fertilize plants. Without chemicals, your garden will be healthier and safer for you, your family, and your pets, as well as be full of birds, beneficial insects, and other wildlife to watch and enjoy.

Birds need places to feed, rest, sing, hide, and court. The places they choose can vary from low ground covers to tall tree tops. By supplementing your existing residential landscape with some native plantings, you can support our local native bird population and attract other wildlife. Native plants will attract birds as well as the caterpillars, insects, and earthworms that birds feed upon.

You may also want to consider placing a water source in an area in your yard, such as a bird bath, or large rock with a depression that can collect water. Consider locating a water source in a protected area, shielded by shrubs or trees on several sides.

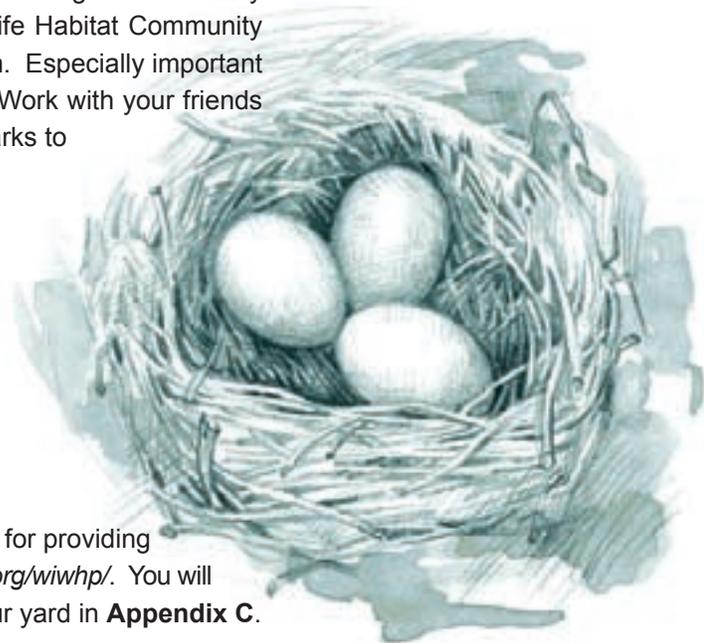


Photo courtesy: Lynn Betts

Join the bigger picture - certify your yard as a backyard wildlife habitat to help with the Whidbey Wildlife Habitat Project. The goal is to certify 500 yards on Whidbey Island, making us a Wildlife Habitat Community through the National Wildlife Federation's program. Especially important to wildlife are corridors connecting their habitats. Work with your friends and neighbors, local churches, businesses and parks to certify consecutive areas of habitat.

To certify your yard you must provide:

- ✓ Food
- ✓ Water
- ✓ Cover and shelter
- ✓ A place to raise young



For more information about certification and ideas for providing for wildlife habitat, visit <http://www.whidbeyaudubon.org/wiwhp/>. You will also find additional tips for attracting wildlife to your yard in **Appendix C**.



Watering Plants

If you have selected the appropriate native plants or those adapted to Western Washington, the plants will need little or no watering after they become established. However, occasional watering may be necessary during prolonged dry periods even after plants are established. During dry periods, watch plants for signs of stress, such as wilting or fading leaves or dull-looking needles.



Water Conservation

It is also important to conserve our water supply. Early morning (4 a.m. to 8 a.m.) watering is best because the sun is not hot enough to evaporate the water before it reaches plant roots. Evening watering isn't preferred because plants that don't have the day to dry out are prone to fungal diseases.

- Make sure outdoor water taps are turned off when not in use.
- Repair or replace leaky hoses.
- Add organic matter (compost) to soil before seeding to help improve water and nutrient retention.
- Only water when you need to. Push your finger into the soil ½" and if it's moist, don't water. Use recommended watering methods (see page 9).
- Only water enough to keep plants alive. For example, lawns turn brown after long periods without water, but they will green up again when it rains.
- Reduce water requirements by using drought-tolerant grass seed and sod, or replace with drought-tolerant trees, shrubs, and ground cover plants.
- Collect rain water from your roof (see page 22).

New plantings will need more frequent watering until their roots become established, which usually takes two to five years. More watering will be

required during warm, dry periods and less during cool, damp periods. The tables at left show a typical watering schedule for perennial plantings the first two years after planting. Small plants and annuals may need more frequent water in hot weather (up to twice a week).

Summer Watering Schedule First Year		
Type of Plant	Amount of Water	Frequency
Tree	5-10 gallons	Once every 1-2 weeks
Shrub	3-5 gallons	Once every 1-2 weeks
Ground Cover	1-2 gallons	Once or twice a week

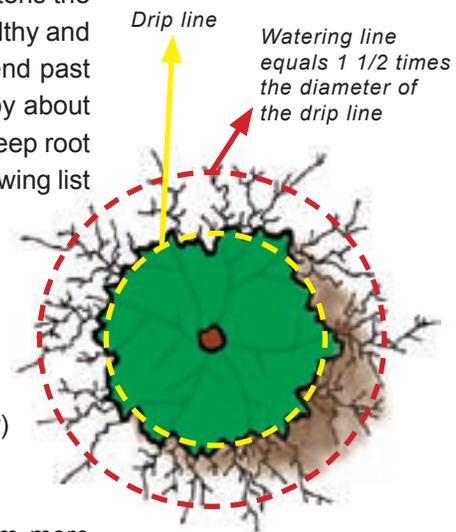
Summer Watering Schedule Second Year		
Type of Plant	Amount of Water	Frequency
Tree	5-10 gallons	Once every 2-4 weeks
Shrub	3-5 gallons	Once every 2-4 weeks
Ground Cover	1-2 gallons	Once every 2-4 weeks

To determine the amount of water to apply, use 1 gallon of water for every gallon of pot size. For example, a plant from a 2-gallon pot needs about 2 gallons of water per watering.



Once plants are established, deep, infrequent watering that moistens the entire root zone of the plants is recommended to keep plants healthy and to promote deep roots. As plants grow, their root zones will extend past their drip line (the outer boundary of the above-ground growth) by about half the distance from the central stem or trunk to the drip line. Deep root systems are essential for developing drought tolerance. The following list shows typical rooting depths for perennial plants.

- ✓ Groundcovers and small perennials – 1 foot
- ✓ Shrubs and small trees – 2 feet
- ✓ Trees – 3 feet (unless impeded by a shallow till soil layer)



Be Careful to Avoid Under-Watering and

Over-Watering — Under-watering stresses plants, making them more susceptible to disease and predation by pests. The following list describes signs of stressed plants in need of water.

- Wilting, fading, or dulling of needles and leaves.
- Problems with disease and pest infestations.
- For lawns, it's time to water when the leaves lose their shine or footprints remain in the lawn.
- Vegetables and other annuals should be watered at the first sign of wilting.
- Perennials only need water if leaves that have wilted during the heat of the day don't perk up overnight.

Likewise, over-watering can also stress plants. Over-watering can literally rot the roots, invite disease, and drown and starve plants because they cannot absorb nutrients from soggy soil. Soggy soil has low oxygen, and healthy soil and plants need oxygen. Signs of stressed plants which are too wet include:

- Plants are wilting even though the soil is moist.
- Plants pull out of the ground readily with few roots attached.
- Plants show visible signs of fungus growth.

Tips for Determining How Much You Are Watering

- Push the point of the screwdriver or other narrow metal rod down into the soil as far as it will go. The depth to which the screwdriver reaches relatively easily is usually the depth to which the soil has been moistened.
- Place tuna cans or other straight-sided containers in a few locations around the yard or garden, and time how long it takes to fill the can with 1 inch of water. In average soils, 1 inch of water will moisten the soil to about 1 foot.
- Dig a hole in the soil to the side of the plants, without disturbing roots, an hour or so after watering, to see how deep the soil has been moistened. Adjust the length of your watering time, or the volume used, as needed to water to the desired depth.



Recommended Methods of Watering



Soaker Hoses

Soaker hoses save water compared to sprinklers for watering plantings. Soaker or leaky hoses slowly release water drops all along their length. Moisture is applied directly and efficiently to the soil and plant root zones. Evaporation is minimized, particularly if the hose is covered with 3 to 4 inches of mulch.

- Snake soaker hoses through planting areas and over the root zones of plants.
 - To water an entire area, space soaker hose loops 12 - 18 inches apart in sandy soils, and up to 24 inches apart in clay soils.
- Start with 40 to 60 minutes of soaking and check that water is penetrating to the desired depth.

Drip Irrigation

Installing a drip irrigation system is similar to a soaker hose but more permanent, and the hoses are laid in straight lines rather than looped around plants. **Water Savings: Up to 60% less water is used with drip irrigation systems compared to sprinklers.**

Spot Watering

Spot watering is simply running a hose (best with a shower-type wand) at the base of a plant or into a 2 to 5-gallon bucket with holes at the bottom. Spot watering takes more time but really helps establish trees and large shrubs, which need more water to reach larger, deeper root systems, or to rescue drought stressed plants at any time.



- ✓ Use a garden soaker or shower nozzle on the hose end to spread out the flow and reduce erosion.
- ✓ Turn the hose on softly (enough to fill a bucket to the 2 gallon/8 liter mark in 1 minute or so) and let it run for 30 seconds to 5 minutes (1/2 gallon to 10 gallons), depending on the plant type and size.
- ✓ Hold hose end or place bucket on the uphill side of the plant.
- ✓ Drill or poke holes in a 5-gallon bucket, place over the root zone of a tree or shrub, fill, and let drain slowly.
- ✓ Time how long it takes to fill a 5-gallon bucket with the hose and nozzle that you normally use, and adjust the watering time accordingly to apply the amount of water desired.



Irrigation Systems

Follow these steps to keep water use of automatic irrigation systems efficient:

- Inspect the system while operating at least once a month for leaks, plugged heads, or overspray.
- Adjust the watering schedule as precipitation and temperatures change.
- Install a rain shutoff device (ask an irrigation expert where to find them).

Sprinklers

Sprinklers are effective at distributing water relatively evenly over the area to be watered and are best for watering lawns. Some of the drawbacks to sprinklers are the loss of water spray due to evaporation and wind and potential overspray of areas that do not need water.

Sprinklers attached to a hose can also be set on a timer device to shut off automatically. (See *Tips for Determining How Much You Are Watering*, page 8.)

Hand Watering (not recommended)

Hand watering wets leaves and the surface of the soil but does not usually apply enough water to soak the soil down to thirsty roots. Consider using the soaker hose watering or spot watering methods described above instead.

Mulching Your Landscape

Mulching can save you time and money. Mulch can help keep the soil moist, replenish organic material, prevent erosion, and discourage weed growth. Mulching planting beds with a 3 to 4-inch layer of organic material such as wood chips or tree trimmings, leaves, bark, or compost retains moisture, keeps roots cool, and discourages weed growth.

Don't be afraid to install a thick layer of mulch initially – as much as 6 to 8 inches of tree-trimming or leaf mulch, or 4 to 6 inches of bark or compost. After settling and composting, the mulch layer will quickly shrink to the recommended 3 to 4 inches. *Be careful to leave plant trunks and stems open to air – burying plants in mulch will rot them.*



Mulching the rain gardens at Freeland Park.



Mulching can be done at any time of the year, but it is best to have it in place before the hot, dry summer months and rainy winter months. Install mulch during fall, winter, or spring. Then sit back, take a summer “vacation,” and enjoy the benefits of a healthier, water-conserving garden.

Mulching Types & Sources



No matter which type of mulch you choose, make sure that it is weed free. Suppliers may state that their products are weed free, but the last thing you want is to make more work for yourself by introducing weeds to your landscaping. It is recommended you take a small sample of the product home in a ziploc bag, moisten the mulch and set aside for a week. If you have any sprouts after a week, there are probably weed seeds in the mulch. Avoid introducing weeds by finding a new mulch source.

- **Wood Chip or Tree-Trimming Mulch:** Often available free from commercial tree services or Island County Public Works (360-679-7331) as a by-product of pruning, tree-trimming mulch is a variable mix of shredded wood (limbs), leaves, and conifer needles. Although it may contain weed seeds, spread disease, and/or grow mushrooms (do not eat!), chipped tree trimmings make an effective, inexpensive moisture-holding mulch that lasts longer and has more structure (woody material) than leaf, bark, or compost mulches.
- **Leaves and Grass Clippings:** Available free from your yard (or from neighbors), fall leaves and grass clippings may be added to planting beds as mulch and allowed to compost in place. Rake leaves off of lawns in the fall, but let leaves lie on planting beds as mulch, or compost leaves and add to planting beds in the spring as a soil amendment. Letting the leaves lie on the planting beds as mulch will help suppress the weeds in your garden and enrich the soil. If you dislike the odor and appearance of composting leaves or grass clippings, compost the materials before putting them on planting beds or cover with a thin layer of other mulch.
- **Bark Mulch:** Use caution with this type of mulch. Available commercially by the cubic yard, bark mulch is a by-product of the timber industry. Consisting primarily of Douglas Fir and Hemlock bark, it comes in course, medium-fine, and fine textures, and is often installed for aesthetic reasons as much as for mulch benefits. Bark mulch may be contaminated with weed seeds and salt. It is naturally waxy and repels rain - all creating poor conditions for plant growth. It can also be tough on hands! Avoid using fine bark, cedar chip, or sawdust products, as they can be especially water-repellant.





Yard Waste

For those not able to compost their own yard waste, three locations on Whidbey Island will accept it:

Coupeville: The transfer station will chip yard waste on-site.

Langley: The water treatment plant will accept yard waste, provided that a ticket for disposal has been purchased at Langley Town Hall.

Oak Harbor: Mailliard Landing, a private business, also will accept yard waste and do the composting for a fee.

Compost

Compost is a recycled product made from aged yard waste, manure, and other bio-solids. Compost provides organic matter that improves soil structure, feeds earthworms and other soil creatures, and helps retain water and nutrients. Compost can be mixed into the soil or a thin layer can be added on top as mulch (topdressing) to improve fertility. It can also be raked into the grass to restore an old lawn. Compost breaks down quickly, meaning more frequent application may be necessary when used as mulch.

Topdressing:

Compost can be applied as topdressing to: established lawns (one quarter inch per application), perennial beds (1 inch per year), and annual beds (1 to 2 inches per year)

Compost is available commercially or free from your own home compost bin. Composting kitchen wastes is a great way to reduce your wastes and have great fertilizer for your yard.

Want to learn how to compost? Visit the Waste Wise website through Washington State University's Island County Extension at: <http://www.wastewise.wsu.edu/>. Note: do not compost pet waste, meat, dairy, diseased leaves, or plants or weeds with seeds.



Food waste tumbler

Compost Instead of Installing a Garbage Disposal

The installation of a garbage disposals or kitchen waste disposers is discouraged due to their affects on the sewer and septic systems. Food wastes and kitchen scraps are best put into a home compost bin or the trash. Adding any of the materials listed below could cause problems in the sewer and septic systems or your pumps. Please do not put any of the following items down the drains or toilets in your home:

glass, metal, goldfish stone, seafood shells, plastic objects (toys, utensils, etc.), sanitary napkins or tampons, diapers, socks, rags or cloth, kitty litter.



Fertilizing



Planting soils that have been amended with compost should not require any other fertilizer, other than re-mulching with compost, leaves, or tree-trimming mulch. If you have selected appropriate native plants for your site, no fertilizing is necessary.

Plants need food to grow, just like us. They make their food from nutrients mostly supplied by the soil (nitrogen (N), phosphorus (P), potassium (K) and a variety of micronutrients). Additional fertilizer is sometimes

necessary for food crops and exotic plants, but unless measured and applied precisely, excess fertilizers are likely to run off into surface and ground water. Lime may be necessary to allow nutrients to be released from the soil.

For a list of safer products, visit the Washington Toxics Coalition web site: www.watoxics.org, and *always* follow application rates on the package.

Make Your Own Organic Fertilizer

Recipe from the Territorial Seed Catalog, originally printed in the "Grow Smart, Grow Safe" publication.

- 4 parts seed meal (such as cotton seed meal) or fishmeal
- 1 part agricultural lime or dolomite
- 1 part rock phosphate or ½ part bone meal
- ½ part kelp meal

(All measurements by volume)

Measure all ingredients with a scoop or measuring cup and place in a large bucket. Mix well by stirring. (Avoid breathing the dust while you do this.) Fertilizer can be used in the garden or on the lawn. It can also be placed directly beneath seeds or seedlings or used as a side dressing for vegetables.

These ingredients can be found at most garden stores. Purchasing in bulk makes this fertilizer much cheaper than commercial organic fertilizer.

Weeds, Pests, and Diseases

Our damp climate provides a great growing environment for powdery mildew, black spot, and other diseases. Roses can be especially vulnerable. Choose disease-resistant and native plants that are meant to grow in our climate (resources listed in **Appendix C**). Most importantly, treat problems individually and naturally rather than using a product that combines ingredients for insects, diseases, and fertilization. Instead of spraying at the first sign of pests or disease, try the environmentally friendly approaches listed below.

Remember that what goes on the ground goes in the Sound. Pesticides and chemical sprays that are used in traditional lawn and garden care get picked up by stormwater runoff and flow directly into the Puget Sound. Consider using less-toxic products, such as soaps, horticultural oils, and plant-based insecticides.

You can also contact the Natural Lawn and Garden Hotline for expert advice on pests and other gardening questions: (206) 633-0224 or email info@lawnandgardenhotline.org or consult with a local Master Gardener.



Preventing Pests and Diseases

- Plant a variety of native, pest resistant species and those that attract beneficial insects and birds. If a plant doesn't do well in the landscape, replace it with one better suited to your yard.
- Nurture healthy soil with compost and mulch. Keep planting beds clean of diseased or dead plants. Pull weeds before they go to seed. Do not put diseased material or weeds with seeds in your home compost bin.
- Use a drip-watering system rather than a regular sprinkler. Sprinklers can splash soil from the ground and water from diseased plants, spreading diseases such as powdery mildew.
- Keep garden pathways clear of weeds and other objects that may harbor pests. Slugs, for example, like to hide under pots, boards, and other objects.
- Select and maintain plants carefully – a healthy plant, suitable to your yard, is less likely to succumb to pest and disease damage.
- Monitor struggling plants for a few days to find out what insect or disease is causing the symptoms. The insect you might see near a damaged leaf might be a beneficial insect devouring the pests. If you're not sure what you are seeing, consult a local nursery, gardening book, or the Internet (see **Appendix C** for sources).

Controlling Pests and Diseases

Attract birds and beneficial insects to your garden, and protect them by avoiding toxic chemicals.

Be patient and live with a little pest or disease damage. Given time, nature may cure the problem without your help, or plants may simply “outgrow” the problem.

Do not expect to kill all pests or to always have picture-perfect plants. Some pests and some damage will always be part of a healthy garden. Low levels of pests keep beneficial species in your yard, such as birds and predator insects, which actively control pest populations.

Once you've identified the bad insects, hand pick (squish) larger pests, prune out infected plant parts, or wash pests off with a strong spray of water from the hose. You can also use traps, lures, and barriers around the most susceptible plants to keep out insects and pests.



Weed Prevention and Control



Weeds will always be a part of our landscapes. Be realistic: don't attempt to eliminate all weeds.

- Improve soil by adding compost, manure, or mulch. Plants will grow better and out-compete weeds, and weeds will be easier to pull.
- Use mulch (see *page 10-11*).
- Cardboard sheets covered in compost can help establish new beds, or can be covered in gravel, stone or wood chip for paths.





Baking Soda Fungicide Recipe* (For controlling powdery mildew)

Mix and keep in a labeled container:
1 teaspoon baking soda
A few drops dishwashing liquid
1 quart water

This recipe can help control powdery mildew on garden plants such as roses. Although the recipe has not received EPA registration, there is a considerable body

of scientific evidence and field experience showing that it is reasonably effective if applied weekly in the spring before disease symptoms appear. To avoid unnecessary use, only treat if previous experience shows that mildew is almost certain to develop. Reportedly, this mixture is not effective on black spot.

*Commercial products based on potassium bicarbonate are similar.

Reprinted with permission from *Grow Smart, Grow Safe*



Traps: sticky traps are available for many different pests, or make your own rainproof traps with insect-specific lures and baits in them, such as beer for slugs.

Barriers: plastic sheeting works for some pests, lightweight row covers for flying insects, copper sheeting, pea gravel, or ground oyster or egg shells work well for slugs.

Slug Tips — handpicking is best done after dark when they are active. Take a flashlight to locate and drop the slugs in a jar of soapy water, which will kill them immediately. Locating and crushing pearly clusters of eggs in the fall to eliminate hundreds of future slugs is highly effective.

In late March, take a flashlight out into the garden around midnight to literally catch root weevils and cut worms in the act, munching new foliage. Pluck and pinch (squish) or snip with scissors to manually remove these pesky critters.



Appendix A contains a list of natural insect control products that are available. These products are non-toxic and will not threaten drinking water sources or Puget Sound.

The Washington Toxics Coalition offers “Pesticide Free Zone” signs for your yard <http://www.watoxics.org>.

Four-Legged Pests

Deer, dogs, cats, rabbits, squirrels, and moles can cause damage and be an annoyance in gardens and lawns. Plant your yard and garden with these creatures in mind. **Appendix C** lists several non-toxic repellants that can be useful in protecting your plants. Washington Department of Fish & Wildlife has a great web site on living with wildlife, including a list of deer resistant plants. www.wdfw.wa.gov/wlm/living



Deer and rabbits - most deer will eat a large assortment of plants, and some deer will eat a plant that other deer won't touch. Your plants are especially vulnerable when they are young and in the winter when food is scarce. Fencing is the most effective control for both deer and rabbits. Individual plants and trees can be protected with strong wire cylinders or other tree protectors available at local nurseries and garden supply stores. Vegetable and flower gardens may also need to be fenced.

The diggers: dogs, cats, and squirrels generally cause damage by digging. Cover newly seeded areas or transplants with a mesh screen, such as chicken wire, until plants are large enough to withstand digging.

Weeding Tips

- Dig or pull out weed roots or they will grow right back.
- Remove weeds before they go to seed!
- For easier weeding, pull weeds when they are small and when the soil is moist.
- Use a sharp pointed trowel or garden fork to loosen soil and dig out weeds and roots.
- Find the source – look around the yard and neighborhood to identify weeds and other plants that may be spreading seeds – remove where permitted and appropriate.
- State-regulated noxious weeds are listed online at: http://www.nwcb.wa.gov/weed_list/weed_list.htm
- Make efforts to contain, suppress, and/or eliminate these regulated weeds.
- For more information on weeds in Island County, please visit the Island County Noxious Weed Control Board website: <http://www.island.wsu.edu/weeds/weedinfo.htm>

For help identifying weeds in your yard, see **Appendix B** and other online resources presented in **Appendix C**. Also review the list of alternative weed and pest control products in **Appendix A**.



Pet Waste

Cleaning up after your pet helps preserve water quality and sets a good example for other pet owners. Waste from dogs, cats, and other meat-eating animals can carry diseases and parasites that make it unhealthy to handle and tricky to dispose of safely.

Please dispose of pet waste properly—scoop it, bag it, and throw it in the trash. Check your local parks and public areas for bags, many areas are now providing bags for your convenience. Picking it up protects water quality by moving waste to the landfill where it belongs. Leaving pet waste out in the open allows rain water to carry disease and bacteria from the waste down into our drinking water supply or Puget Sound.



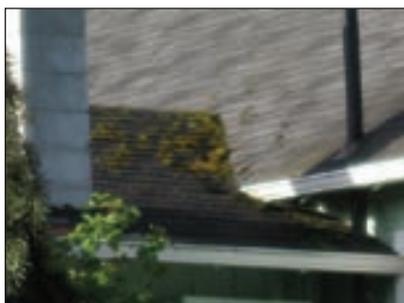
Photo courtesy: Rain Garden Handbook for Western Washington Homeowners



How to Care for Your Home to Protect Our Water Resources

Maintaining Your Home's Exterior

Use only biodegradable soaps and cleaning products and oxygen bleaches to maintain your roof, siding, and deck surfaces. If you are power-washing your house, windows, or other outside surfaces where the soapy water may soak into the ground,



use only biodegradable household cleaning products. Washington Toxics Coalition suggests, when cleaning up mold, it is most important to remove it and not just bleach it. A mild soap solution will work in most cases.

Sweep your walks and driveways to remove leaves, pine needles, and debris. Washing these surfaces with the garden hose sends pollutants into the storm drainage system and ultimately into our drinking water or Puget Sound.

Controlling Moss on Your Roof

Moss on the roof is a very common problem in our climate. Prevention of moss growth and regular cleaning are the most effective means for moss control. This is especially important on the north-facing slopes of your roof and areas shaded by trees and other buildings. Thinning branches that shade the roof will allow your roof to dry more quickly.



Local
Resource!

Disposing of Hazardous Wastes Properly

Never dump unused paint, pharmaceuticals, or other chemicals down your toilets, sinks, or outside ditches, storm drains, wetlands or streams. Paints, solvents, yard and garden chemicals, hobby chemicals, household batteries, used motor oil, and other household hazardous waste may be delivered to any of the Island County-operated drop box facilities for free disposal. Also, think ahead before purchasing toxic materials so you can avoid having to dispose of the leftovers.

Use the list below to find the location nearest to you:

WHIDBEY ISLAND - North

Oak Harbor Recycle Center
2050 NE 16th Ave.
recyclables, some buy-back
(360) 675 9193 • Monday - Friday
10:00 - 5:00, Saturday, 10:00 - 2:00

Christians Auto Recycling
615 Christian Rd.
scrap ferrous and non-ferrous metals
(360) 675 8442 • Monday - Saturday 8:00 - 5:00

Oak Harbor Drop Box Station
3151 Oak Harbor Rd.
limited solid waste, recyclables and
household waste*
(360) 675 6161 • Tuesday, Saturday,
& Sunday, 9:30-5:00**

Navy Whidbey Recycles (360) 257 5481
Mailliard Landing Nursery
yardwaste & sheetrock
(360) 679 8544 • Monday - Saturday 8:30 - 5:00



It is a good idea to clean roofs regularly (once or twice a year), sweeping to remove leaves, needles, moss, and other debris. Wet sweeping will remove most of the moss if it is not too well established. There are soap-based solutions available for cleaning up moss on roofs. However, it is important to physically remove as much of the moss as possible before using any chemicals, regardless of their safety and toxicity.

Please visit the Washington Toxics Coalition's web site for more information on a safe and healthy home, www.watoxics.org.

Washing Windows

Make a great all-purpose window cleaner by combining 1/4 cup vinegar, 1/2 teaspoon liquid soap or detergent, and 2 cups of water in a spray bottle. If you've used conventional glass cleaners in the past, it is recommended you add soap or detergent to the mixture to cut the wax buildup left by commercial products. Shake to blend and spray on your windows! Scrub with newspapers to avoid streaking.

Hot Tub and Pool Tips

Chemicals such as chlorine used in hot tubs and pools are very toxic to fish and other animals. When draining hot tubs or pools, direct the water into the ground or a sewer system. Never drain into streets, storm drains, or septic systems.



Note: *Island Recycling, located in Freeland, is a privately owned recycling business, which does not accept hazardous waste.*

WHIDBEY ISLAND - Central

Island County Solid Waste Complex
20062 SR 20, Coupeville
solid waste, recycling and household
hazardous waste
(360) 679 7386 • Daily 9:30 - 5:00**

Bayview Drop Box Station
14566 SR 525, Bayview
limited recycling, solid waste and household
hazardous wastes*
(360) 321 4505 • Monday, Wednesday, Satur-
day & Sunday 9:30 - 5:00**

WHIDBEY ISLAND - South

Island Recycling
20014 SR 525, Freeland
scrap metals and recycling
(360) 331 1727 • Tuesday - Sunday 9:00 - 5:00
Island Recycling is a privately owned recycling busi-
ness, which does not accept hazardous waste.
City of Langley
prepaid yardwaste collection
(360) 221 4246

CAMANO ISLAND

Camano Island Drop Box Station 75 E. Camano
Hill Road
solid waste, recyclables, scrap metals and
household hazardous waste
(360) 387 9696 □ Open every day 9:30 - 5:00**

* Large quantities may be referred to the Solid
Waste Complex at Coupeville.
** Please call for extended seasonal hours and
holiday closures.



Recycling

Island County encourages and rewards recycling by not charging a disposal fee for most recyclables. Recycling is simply taking one product and turning it into another. The more we recycle, the more we save space in landfills and reduce the consumption of trees, minerals and other resources required to make new products. Find a location near you from the list on pages 17-18, or visit <http://www.wastewise.wsu.edu/recycle.html> for more information on what can and can not be recycled.

Changing Oil and Fluids in Cars, Lawnmowers, and other Equipment

Oil, gas, and other fluids that spill onto the ground get picked up by rainwater and carried into surface waters and ground water and may make their way to drinking water wells. Ideally, have oil and fluids changed at a service center that recycles these fluids responsibly. If you choose to do the maintenance yourself, make sure that no fluids spill onto the ground. All fluids should be immediately transported to a recycling center (*see list on pages 17-18*).



Fix oil and transmission leaks on your vehicles as soon as you notice them, or place a drip tray under the car until the problem can be fixed. **One quart of oil can contaminate 60,000 gallons of drinking water.**

Washing Your Car

Soap, grease, and oil from washing your car can make its way into storm drains and flow directly into Puget Sound, harming water quality and aquatic life. It can also make its way into the ground water and into drinking water wells. Therefore, car washing at your home is discouraged. Instead, patronize a commercial car wash where water is filtered and reused. If a car or other equipment must be cleaned on site, use a minimal amount of biodegradable soap. Wash your car on a permeable surface, such as grass or gravel away from wells.

Local
Resource!

Whidbey Island Car Washes

All Faith Auto Detailing
629 E Crescent Harbor Rd, Oak Harbor
360-675-7597

Woody's Car Wash
436 NE Midway Blvd, Oak Harbor
360-675-3400

Midway Car Wash-Shell
960 NE Midway Blvd, Oak Harbor
360-675-696

Freeland Car Wash
5618 Fish Road, Freeland
360-331-4695

Langley Car Wash
corner Howard Rd & SR 525
(near Hanson's Building Supply)



Properly Dispose of Pharmaceuticals

Pharmaceuticals enter the water when they are flushed down toilets and sinks, put into the garbage, or when humans and animals pass drugs through their bodies. Scientists are beginning to find chemicals from pharmaceuticals in almost every sample taken from surface water, effluent, and drinking water in the US and Canada. Testing has confirmed more than 100 different pharmaceuticals in surface waters, which can adversely affect aquatic life.

Proper disposal (Federal Standards) of pharmaceuticals: Follow any specific disposal instructions on the drug label or patient information that accompanies the medication. *Do not flush* prescription drugs down the toilet unless this information specifically instructs you to do so. If no instructions are given, throw the drugs in the household trash, but first:

1. Take your prescription drugs out of their original containers.
2. Mix drugs with an undesirable substance, such as cat litter, used coffee grounds or sawdust.
3. Put this mixture into a disposable container with a lid, such as an empty margarine tub, or into a sealable bag.
4. Conceal or remove any personal information, including Rx number, on the empty containers by covering it with black permanent marker or duct tape, or by scratching it off.
5. Place the sealed container with the mixture, and the empty drug containers, in the trash.
6. Where available, return unused, unneeded, or expired prescription drugs to pharmaceutical take-back locations that allow the public to bring unused drugs to a central location for safe disposal. Note: At the time of publication no pharmacy in Island County participates in a take-back program.

Did you know? ✓

Conventional wastewater treatment and on-site drainfields are not able to eliminate the majority of pharmaceutical compounds. Researchers suspect that hormones and pharmaceutical compounds in the water may be responsible for effects on wildlife including feminization of male fish, sluggish activity or reduced appetite. Short and long term human health effects are currently unknown.



For more information visit: <http://www.ecy.wa.gov/programs/hwtr/pharmaceuticals/pages/pie.html>

Hosting a car wash fundraiser? Borrow a FREE Car Wash Kit!

The kit uses a hose and electrical pump to redirect car wash water to a treatment plant or onto a grassy strip where the soap, dirt, oils and other pollutants can be naturally filtered out, before the runoff makes its way down into our marine waters.

As an added bonus, groups borrowing the kits can advertise that their car wash is eco-friendly! For a list of preferred sites and to borrow a free car wash kit, please call:

In Oak Harbor: 279-4762

Island County: For more information, email WORKSHOPS@co.island.wa.us (subject line: car wash) or leave a message at (360) 321-5111 x6069, and they'll call you back!



Maintain Your Septic System

Local Resource!

Whidbey Island Septic Systems

76% of homes in Island County are serviced by an on-site sewage (septic) system rather than a sewer. With a continuously rising population in Island County, it is increasingly important that every onsite sewage treatment system is maintained properly.

The longevity of your system depends mainly on its use and maintenance. Under state and county regulations, every system requires reoccurring inspections depending on the type of system. They are follows:

- **Conventional Gravity** (consisting of a septic and dispersal component only): Inspection required every 3 years with a beginning deadline of **July 1st, 2010**.
- **All systems with a pump**: Annual inspection required with a beginning deadline of **July 1st, 2009**.

You may be able to become certified to inspect your own septic system. For information about Island County's Home Owner Septic Training (HOST) program visit: <http://www.islandcounty.net/health/liquid/HOST.htm>

Properly functioning septic systems are of benefit to our water system because they treat wastewater before it recharges our groundwater resources. Proper maintenance and function of these systems is extremely important for our water quality. Chemicals, bacteria, cleaners, and other pathogens we flush can end up leaching out into surface waters and causing irreversible damage. The Island County Public Health web site provides some great resources for understanding and maintaining your system: <http://www.islandcounty.net/health/liquid/Homeowner.htm> You may also call them at: (360) 679-7350.

Each of us must "do our part" in protecting the community and environment from the harmful effects of improperly treated sewage. As you educate yourself and manage your onsite sewage treatment system's health and proper function, you will be protecting the health of you and your family, your neighbors, your community, and the environment.

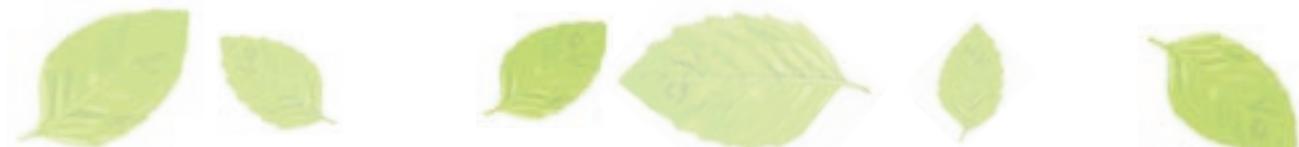
Choosing Less-toxic Household Cleaning Products



Choosing the best "green" or "natural" product for cleaning your home can be challenging and overwhelming. It is important to read the labels and look for products that list all of the ingredients.

Even though most home cleaning products are processed through sewage treatment plants or septic systems, many of the harmful chemicals they contain still end up in our waterways. This also happens when some sewer systems overflow during big storms and heavy rains. Whenever possible, use natural cleaning products to tidy up your home.

For more information on choosing less toxic cleaning products and recipes for making your own, please visit: <http://www.ecy.wa.gov/pubs/0804011.pdf>, or the Washington Toxics Coalition web site: <http://www.watoxics.org/homes-and-gardens/cleaning-products>.



Managing Runoff on Your Property

During the winter months there is other maintenance required on our properties – runoff! Our roofs, driveways, sidewalks, patios, and even our lawn can generate a great deal of runoff during the rainy season. This runoff can be put to good use and saved for summer irrigation or managed and incorporated into your landscaping. Listed below are a few tips and ideas for managing and reusing this precious resource.

Redirect your downspouts to:

- ✓ Rain barrels
- ✓ Rain gardens
- ✓ Drainage swales

By reducing the amount of water flowing through our storm drainage systems and grassy swales, fewer pollutants are picked up and carried down stream to surface waters and Puget Sound.

Rain barrels – rain water collection is a tremendous opportunity! You save money on your water bill or reduce the water used from your well, and your plants are happy because rain water is naturally soft. It's a win-win situation! The amount of water you collect is up to you. A single rain barrel will fill up quickly, typically within one storm event. But not everyone has room for 3 or 4 or more barrels or a cistern. Check out the Local LID Resources List on the WICD web site, www.whidbeycd.org, or contact WICD for ideas and options.

Rain gardens and drainage swales– are shallow depressions with compost-amended soils and native plants or plants that can tolerate a lot of water in the winter and drought in the summer. Water is routed to these areas through a downspout, an underground pipe connected to a downspout, or allowed to sheet flow from a paved area into the depression.

Use caution if considering a rain garden or drainage swale on a bluff property. Adding extra water to the soils can create instability and create slides. If you live on a bluff, consult a geotechnical engineer, the Island County Development Coordinators, or the Whidbey Island Conservation District for recommendations for managing your runoff.



Local
Resource!

Build Your Own!

For more information on designing a rain water collection system, or building a rain garden or swale including a list of plants that are recommended for rain gardens, please contact the Whidbey Island Conservation District or view the *Rain Garden Handbook for Western Washington Homeowners* at the WICD web site: www.whidbeycd.org, or stop by the WICD office for a hard copy (also available from Sno-Isle libraries). You may also visit the increasing number of rain gardens at public sites and commercial centers to get ideas for your home. A list is available at the WICD web site, office, or call 360-678-4708, (toll free @ 1-800-678-4922).



Rain Garden Maintenance

Rain gardens, like any garden area, need maintenance to perform well and look nice. However, a well-designed rain garden needs minimal care or water, especially after 2 or 3 years, once plants have established.

During heavy rainstorms, you may see standing water in the rain gardens and drainage swales. This means the natural drainage features are hard at work, cleaning the stormwater runoff. This water should infiltrate, or soak into the soil, within a day or two.



Basic Maintenance Rules

- Mulch* as needed, to prevent erosion and weeds and keep moisture in.
- Keep inlet and outlet clear of debris and vegetation, and well protected with rock.
- Do not fertilize or use pesticides.
- Water as needed.

Mulch* and Your Rain Garden

Place chipped wood mulch on the sides and around the edges of the rain garden. Chipped wood tends to float easily; coarse compost works best for the bottom of the rain garden. Maintain a layer at least 2-3 inches thick on both the sides and the bottom of the rain garden.

Check the mulch layer each year and, if needed, add shredded or chipped hardwood or softwood to maintain a layer that is about 2-3 inches thick. Mulch can be applied any time of the year, but assuring an adequate mulch layer for the dry summer and rainy winter months is of great benefit.

* Do not use grass clippings as mulch in your rain garden; decomposing grass clippings can be a source of excess nutrients that can harm streams and wetlands if water flows out of the rain garden and into the storm drainage system.

Erosion and Exposed Soils

Sediment flowing into the rain garden can clog the soil mix and slow drainage. Sediment carried out of the rain garden can harm streams and wetlands by transporting pollutants and degrading habitat for aquatic wildlife.

- Check the rain garden for areas of exposed soil in the fall before the wet season begins and throughout the winter months. Cover exposed soils with mulch or compost.
- Mulch areas along the sides and bottom of the rain garden.
- Maintain a healthy cover of plants.



- If sediment is deposited by water entering the rain garden, immediately find the source and stabilize the eroded area.
- If erosion persists, too much water may be flowing into the garden too rapidly. In this case, the slope of the pipe or swale directing water to the garden or the amount of water may need to be reduced.

More You Can Do to Protect Water Quality

Share this info with your family, friends and neighbors! These tips will help clean up the runoff reaching our surface waters and Puget Sound.



Drive Less

Ride a bicycle or the bus, walk or carpool as an alternative to driving. If your car is not on the road, it can't contribute to stormwater pollution! Stormwater transports a mixture of pollutants such as petroleum products and heavy metals from brake pads and other moving parts that shed as they wear out.

Puget Sound is in trouble.
You are the solution.
Together, we can fix it.

In Island County we are extremely fortunate to have a no fare public transportation system. Island Transit (<http://www.island-transit.org/>) provides transit and rideshare services that are safe, efficient, and convenient for all residents and visitors alike. Riding Island Transit is easy and fun — they can get you just about anywhere you need to go between the north and south ends of Whidbey, and all the way to Camano Island! By carpooling or taking the bus, you can do your part to lessen congestion on our roadways and cut air and water pollution. Walking or riding a bicycle to the places you need to go are also great ways to cut down on pollution and congestion — and get some exercise while you're at it!



Eat Local Foods

The average American meal has traveled 1,500 miles before it arrives on a plate. Below are some tips to reduce your "foodprint" to help with water and air quality, reduce the use of fossil fuels for transportation, and support our local economy.

- ✓ Buy direct from the farmer at local Farmer's Markets, Farm Stands, and U-picks
- ✓ Join a Community Supported Agriculture (CSA) farm and receive fresh produce regularly
- ✓ Look (and ask) for local products at your local grocery stores and restaurants
- ✓ Visit a local farm: <http://whidbeyfarmtour.wordpress.com/>



Better yet, grow your own food! Consult with a local Master Gardener to help you get started on a backyard or patio garden.



Appendix A

Recommended Products for Natural Lawn and Garden Care

Adapted with permission from “*Grow Smart, Grow Safe: A Consumer Guide to Lawn and Garden Products*,” May 2006. Safe and effective garden care may require a mix of tactics and products. It is also an evolving science as more and more consumers demand healthy, environmentally responsible products. Undoubtedly, more safe products have been tested and made available since this list was compiled. Remember, the best steps you can take require no chemicals: build good soil, select the right plant for the site, and tolerate a few pests and weeds.

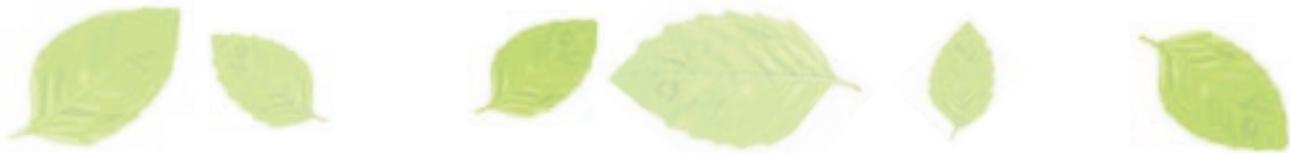
General Pest Control

BRAND NAME	ACTIVE INGREDIENT
Orcon™ Beneficial Nematodes	Live Nematodes
Orcon™ Green Lacewings	Live Lacewings
Safer™ Deluxe Yellowjacket/Wasp™ Trap	Food Bait
Safer™ Gypsy Moth Trap	Pheromone Bait
Safer™ Sticky White Fly Trap	Sticky Glue
Sterling Rescue!™ Yellowjacket Trap	Food Bait
Tanglefoot™ Codling Moth Trap	Pheromone Bait
Tanglefoot™ Red Sphere Traps	Sticky Glue
Tangle-Trap™ Whitefly/Aphid Trap	Sticky Glue
Victor™ Yellowjacket Magnet™ Bag Trap	Food Bait
Victor™ Yellowjacket Traps Disposable	Food Bait
Concern™ Pesticide Spray Oil	Canola Oil
Garlic Barrier™ Insect Repellent	Garlic Water
Oil-Away™ Supreme Insecticidal Spray	Cottonseed Oil
Tree Tanglefoot™ Pest Barrier	Caster Oil, Natural Gum Resins, Vegetable Wax

Mildew, Black Spot and Other Disease Control

To prevent and stop mildew, black spot and other diseases that thrive in our damp, northwest climate

BRAND NAME	ACTIVE INGREDIENT
Cornell Formula Baking Soda Fungicide	Sodium Bicarbonate (recipe on page 16)
Bonide™ Bulb Dust	Cedar oil, Garlic powder and Dried Blood
Bonide™ Remedy	Potassium bicarbonate
Green Light™ Wetttable Dusting	Sulfur
Green Guard™ Plant Growth Enhancer	Harpin Protein
Lilly Miller™ Multi-Purpose Fungicide	Sulfur
Messenger™ STS	Harpin Protein
Monterey E-rase™	Jojoba Oil
Serenade™ Solutions™ Biofungicide	Bacillus subtilis
SoilGard™ Microbial Fungicide	Gliocaladium virens spores



Slug and Snail Control

BRAND NAME

Slug Bar™

Slug Saloon™

The Pit

Snail Barr™

Slug & Snail deFence™

Escar-go!™

Schultz™ Garden Safe™ Slug & Snail Bait

Sluggo™

ACTIVE INGREDIENT

Beer Trap

Beer Trap

Beer Trap

Copper Barrier

Sodium Chloride, Polyethylene

Iron Phosphate *

Iron Phosphate *

Iron Phosphate *

**not enough info available to determine long-term health hazard*

Weed Prevention Products

Note: These will have no effect on existing weeds

BRAND NAME

Dalen™ Landscaping Fabrics

DeWitt™ Weed Barrier

Fabrico™ Landscaping Fabric

Weed-X™ Porous Landscaping Fabric

Concern™ Weed Prevention Plus

Concern™ Weed Prevention Plus 8-2-4

Concern™ Weed Prevention Plus No Phosphate

Walt's Organic Weed Stopper Plus

WOW!™ Pre-emergence Weed Control

SoilGard Microbial Fungicide

ACTIVE INGREDIENT

Fabric Barrier

Fabric Barrier

Fabric Barrier

Fabric Barrier

Corn Gluten

Corn Gluten

Corn Gluten

Corn Gluten

Corn Gluten

Gliocaladium virens
spores

Bird and Mammal Control

BRAND NAME

Dalen™ Bird-Ex™ Protective Netting

Dalen™ Deer-Ex™ Protective Netting

Ross Garden Netting

Chicken Wire or Screening

Victor Live Catch! Mole Trap

Deer A-Tak™ Organic Deer Repellent

ACTIVE INGREDIENT

Fabric Netting

Fabric Netting

Fabric Netting

Steel Mesh

Live Trap

Rosemary oil, Cinnamon oil,
thyme oil





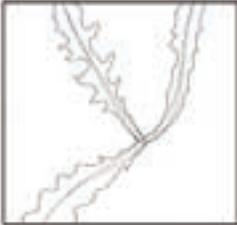
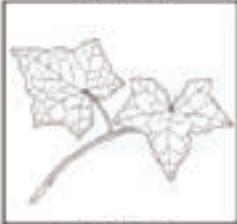
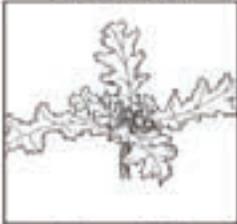
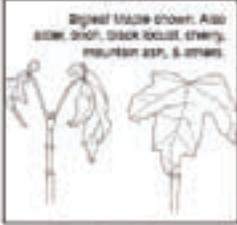
Appendix B

Identifying Common Weeds

Table reprinted with permission from Seattle Public Utilities

Some common weeds:

*State-regulated noxious weeds may also be locally regulated. Make efforts to contain, suppress and/or eliminate these weeds. For more information, go to Washington State Noxious Weed Control Board website at www.wsnwb.org

			
*Bindweed	*Butterfly Bush	*Canada Thistle	*Catsear
			
*English Ivy	*Groundsel	*Herb Robert	*Scotch Broom
			
Clover	Dandelion	Dock	Grass
			
Himalayan Blackberry	Holly	Laurel	Mallow
			
Nightshade	Plantain	Tree Seedlings	Vetch



Appendix C

Online Resources and Publications

COMPOSTING

- WSU/Island County Waste Wise: <http://www.wastewise.wsu.edu/compost.html>
- Seattle Public Utilities' Guide: <http://www.seattle.gov/util/Services/Yard/Composting/index.asp>
- Compost sources and protecting water resources: <http://www.soilsforsalmon.org>
- Workshops & Bin Sales: Check with your local WSU Master Gardeners and Master Composters as well as city or county environmental offices.
- Washington Department of Ecology permitted composting facilities: <http://www.ecy.wa.gov/programs/swfa/compost/>
- Building Soil - Foundation for Success: www.buildingsoil.org
- Improving your soils: <http://www.metrokc.gov/dnpr/swd/soils/index.asp>

IDENTIFYING & ERADICATING WEEDS/INVASIVE PLANTS

- Washington State Noxious Weed Board: <http://www.nwcb.wa.gov/>
- Island County Noxious Weed Control Board: <http://www.island.wsu.edu/weeds/index.htm>
- King County Noxious Weed Board: <http://www.kingcounty.gov/environment/animalsandplants/noxious-weeds.aspx>
- *Grow Smart, Grow Safe: A Consumer Guide to Lawn and Garden Products*. Philip Dickey, Washington Toxics Coalition. Includes product reviews and sources for least-toxic products. Available at: http://savingwater.org/docs/Grow_Smart_Grow_Safe.pdf
- Weeds - Gardening in Western Washington, presented by WSU Extension: <http://gardening.wsu.edu/text/weed.htm>
- *Invasive Species in the Pacific Northwest*, Edited by P.D. Boersma, S.E. Reichard and A.N. Van Buren, University of Washington Press, 2007. (not currently available online)

PLANT IDENTIFICATION AND INFORMATION WEBSITES:

- Seattle Public Utilities – Plant Identification Guide by Pat Breen, Oregon State University http://www.seattle.gov/util/stellent/groups/public/@spu/@esb/documents/webcontent/spu01_002603.pdf
- Landscape Plants – Images, Identification and Information, Oregon State University Department of Horticulture <http://oregonstate.edu/dept/ldplants/>
- Plants Database, United States Department of Agriculture, Natural Resource Conservation Service– search for plants by scientific or common names to see examples, learn their native habitat range and where they'll grow best! <http://plants.usda.gov>
- University of Washington Botanic Gardens, Elisabeth C. Miller Library http://depts.washington.edu/hortlib/resources/hort_web_sites/plant_id.shtml
- Master Gardeners/WSU Extension Island County www.island.wsu.edu or 360-679-7327



SUSTAINABLE LANDSCAPING IDEAS

- Island County Master Gardeners: <http://www.island.wsu.edu/mastergardener/mginfo.htm>
- Thurston County Common-Sense Gardening Program: <http://www.co.thurston.wa.us/health/ehcsg/index.html>
- City of Seattle Natural Yard Care: http://www.seattle.gov/util/Services/Yard/Natural_Lawn_&_Garden_Care/index.asp
- King County Yard & Garden Topics: <http://www.kingcounty.gov/environment/stewardship/nw-yard-and-garden.aspx>
- Ecologically Sound Lawn Care for the Pacific Northwest, Seattle Public Utilities, David McDonald, 1999. http://www.seattle.gov/util/stellent/groups/public/@spu/@csb/documents/webcontent/ecological_200312021255394.pdf
- How to be a Salmon Friendly Gardner
http://www.seattle.gov/util/Services/Yard/Natural_Lawn_&_Garden_Care/Salmon_Friendly_Gardening/SPU03_001902.asp

WATER-WISE/DROUGHT-TOLERANT/NATIVE PLANTS

See lists of recommended plants at:

- Washington Native Plant Society: <http://www.wnps.org/>
- Thurston County Common Sense Gardening: http://www.co.thurston.wa.us/health/ehcsg/pdf/Plant_Lists/CSG_plants.pdf
- Native Plant Salvage Foundation: <http://www.nativeplantsalvage.org/naturescaping.php>
- See “Choosing the Right Plants” and “The Plant List.” http://www.savingwater.org/outside_garden.htm
- WSU Extension Native Plants database: <http://gardening.wsu.edu/nwnative/>
- Native plant gardening tips <http://dnr.metrokc.gov/wlr/pi/go-native/index.aspx>
- The Right Tree Book (Seattle City Light) http://www.seattle.gov/light/printdocs/Right_Tree_Book.pdf



Water Conservation

Saving Water Partnership: <http://savingwater.org/outside.htm>

Obtaining Plants

Whidbey Island Conservation District's Annual Native Plant Sale:
www.whidbeycd.org Native plants are typically pre-sold during October through January and picked up at the end of February.

Lists of Native Plant Nurseries & Other Sources:

<http://www.kingcounty.gov/environment/stewardship/nw-yard-and-garden/native-plant-nurseries-washington.aspx>

www.whidbeycd.org – Local Low Impact Development (LID) Resources List



PEST CONTROL, LIVING WITH WILDLIFE AND DEER RESISTANT PLANT LISTS

- Deer resistant plants: <http://wdfw.wa.gov/wlm/living/deer.htm#landscaping>
- Living with Wildlife: <http://wdfw.wa.gov/wlm/living/>
- Less toxic gardening and pest control: <http://www.govlink.org/hazwaste/house/yard/>
- Photos and descriptions of beneficial insects: <http://www.co.clark.wa.us/recycle/documents/Bugbook2.pdf>
- Washington Toxics Coalition: <http://www.watoxics.org>
- Make friends with your “good bugs”
<http://www.govlink.org/hazwaste/house/yard/problems/goodbugs.cfm> From this site you can order a copy of “Stop Before You Spray: A photo guide to beneficial insects.”

MISCELLANEOUS YARD, GARDEN AND OTHER WEB SITES AND PUBLICATIONS

- Disposal of hazardous wastes: <http://www.islandcounty.net/publicworks/Solid%20Waste/hazard.htm>
- Salmon info (Island County) <http://www.sharedsalmonstrategy.org/watersheds/watershed-island.htm>
- Washington State University Island County Extension <http://www.island.wsu.edu/>
- Low Impact Development (LID): www.lowimpactdevelopment.org OR www.whidbeycd.org
- LID Technical Guidance Manual for Puget Sound
http://www.psp.wa.gov/publications/our_work/stormwater/lid/LID_manual2005.pdf
- National Wildlife Federation – backyard wildlife habitat: <http://www.nwf.org/>





M Notes



New Study Suggests Homes Pollute Up to 50% More Than Past Estimates

“They say there’s no place like home. But scientists are reporting some unsettling news about homes in the residential areas of California. The typical house there — and probably elsewhere in the country — is an alarming and probably underestimated source of water pollution, according to a new study reported in August 2009 at the 238th National Meeting of the American Chemical Society.

In the study, Lorence Oki, Darren Haver and colleagues explain that runoff results from rainfall and watering of lawns and gardens, which winds up in municipal storm drains. The runoff washes fertilizers, pesticides and other contaminants into storm drains, and they eventually appear in rivers, lakes and other bodies of water.

Preliminary results of the study suggest that current models may underestimate the amount of pollution contributed by homes by up to 50 percent. That’s because past estimates focused on rain-based runoff during the wet season. “Use of pesticides, however, increases noticeably during the dry season due to gardening, and our data contains greater resolution than previous studies,” Oki says.”

—The Medical News from www.news-medical.net, August 20, 2009

Use this guide to help reduce pollution from your home and help protect Puget Sound and our drinking water supply.

- Water lawns and gardens more efficiently
- Use alternatives to fertilizers and pesticides
- Wash and maintain vehicles
- Pick up pet waste
- Encourage wildlife habitat
- Manage runoff from your property



For additional information:

**Whidbey Island Conservation District • PO Box 490 • 404 NE Center St • Coupeville, WA 98239
360-678-4708 888-678-4922**