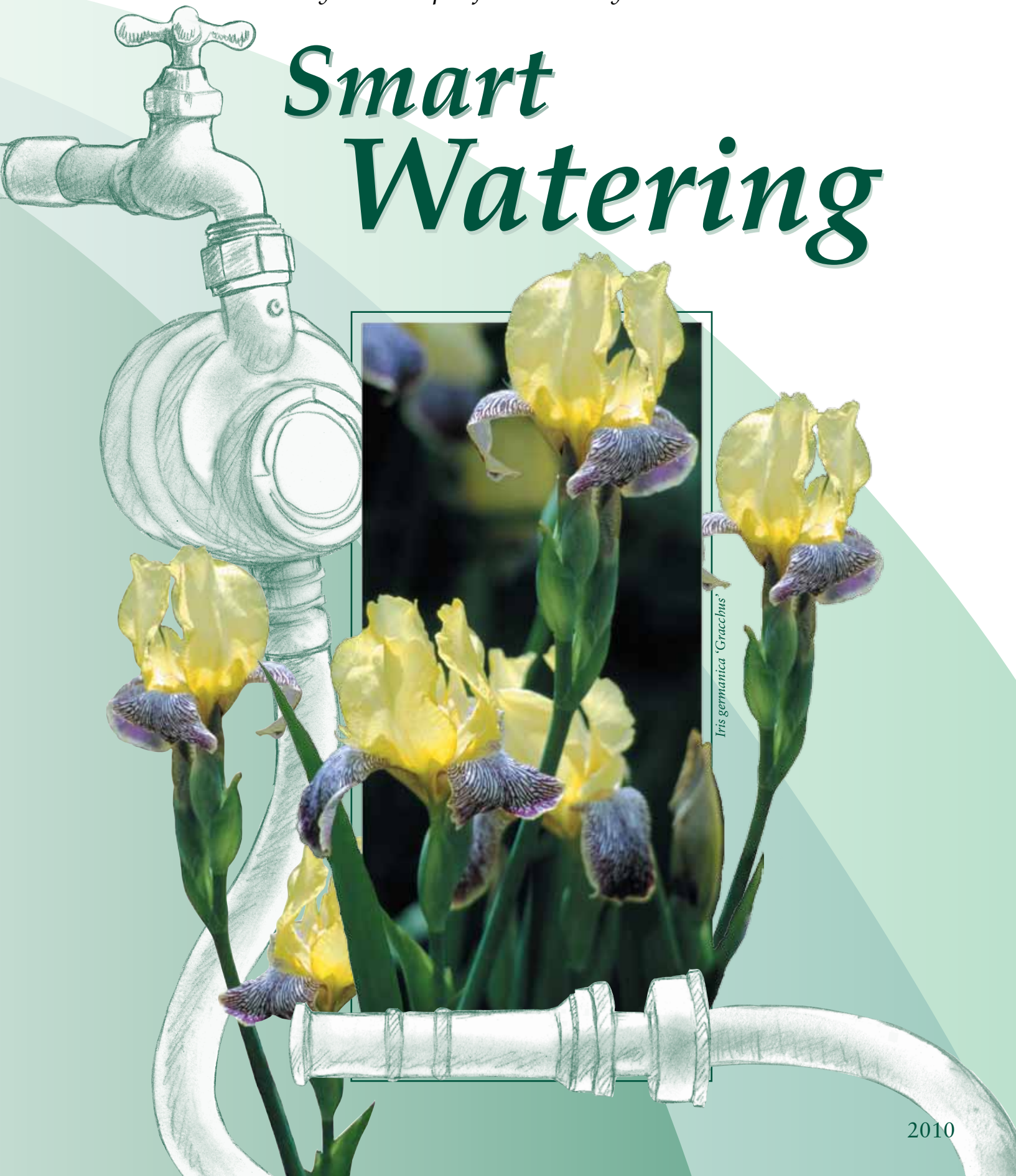
THE NATURAL LAWN & GARDEN

Healthy Landscapes for a Healthy Environment

Smart Watering



Iris germanica 'Gracchus'

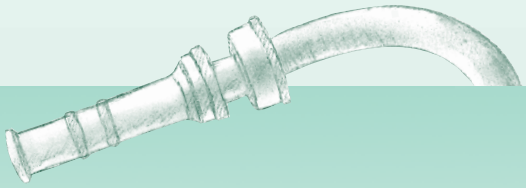
2010

Smart Watering is as Easy as 1, 2, 3

Smart watering means more than just lower water bills. It means healthier gardens. Watering too much or not enough produces weak plants that are susceptible to pests and disease. Learn to give plants the right amount of water for healthy growth, and to apply it so every drop counts. Did you know that many landscapes require very little watering after plants are well established? This only takes 1 to 3 years with good soil preparation and proper plant selection so it pays to do the groundwork.

That's not all. Smart watering promotes a healthier environment for all of us. By helping to keep plants healthier, smart watering practices may decrease the need for pesticide use. Smart watering may also lessen fertilizer and pesticide runoff from landscapes into streams and lakes, where it can affect birds, fish and their food sources. Finally, smart watering conserves water so it can benefit people, plants, fish and other wildlife.

From May through September, water use in our region nearly doubles, primarily for lawns and gardens. Experts estimate that 50% or more of this water goes to waste, due to evaporation, runoff, or simply overwatering.



Start New Plants Off Right*

Smart watering will make a big difference in the long-term health of new plants.

Year 1

(spring through fall, when weather is dry)

When Planting: Water plants as soon as you get them in the ground. Allow the water to soak in, then water again until the soil is thoroughly moistened.

Week one: Water plants daily or every other day. Just-planted roots will be able to absorb soil moisture from only a small area until they begin to grow.

Week two onward: Unless the weather is extremely hot and dry, you may be able to decrease watering frequency to two or three times per week until the fall rains begin.

Years 2 & 3

Water deeply only once or twice per week. Exactly how often and how long you water will depend on your soil and other conditions. Follow the tips in this brochure.

After Year 3

Properly planted and watered plants should be fairly well established and can thrive with less watering than you may expect. Drought-tolerant plants may need no supplemental water, whereas shallow-rooted plants or plants with greater water needs may need water weekly during dry weather. Many plants, when selected for the conditions in your yard, may need watering only once or twice a month in dry weather.

Deeper, less frequent watering will grow plants with healthier and more extensive roots so plants are more resilient to stress and drier conditions.

* Reprinted with permission from City of Seattle Public Utilities from their *Start New Plants off Right* factsheet.

1 Where Your Water Goes Depends On How Your Garden Grows

Plant selection, soil preparation and your watering system's performance all play a role in determining how much water your garden needs, and how easy it is to water efficiently.

Build better soil with compost and mulch. Good soil absorbs water easily, drains well and retains moisture. Mix compost into the soil when planting, and mulch established beds with organic material each year to improve your soil. (See the *Growing Healthy Soil* guide for details.*)

Group plants according to their water needs. Some plants require regular water to do their best. Many others will not need to be watered after the first few years in the garden, if properly selected and sited. Group plants with similar needs together so they all get the right amount of water. (See the *Choosing the Right Plants* guide to select plants that will need only occasional watering after they are established.*)

Plan lawns appropriately. Lawns need more water, more frequently than most other plants to stay healthy and green. Watering other planting areas along with lawn can result in shallow roots, poor growth and disease. Lay out planting areas and irrigation systems to make it easy to water lawn separately. (See the *Natural Lawn Care* guide for more information, as well as for attractive alternatives to lawn.*)

Select the right watering system. Drip irrigation and soaker hoses are the best way to water most plantings except lawns. Drip and soaker systems apply water directly to the soil with minimal evaporation or runoff. They also help prevent plant diseases and make watering gardens easier. See step 2 on pages 4 and 5 for more information about drip and soaker irrigation. If you have an automatically-controlled irrigation system, see How to Use Automatic Sprinkler Systems Efficiently on page 5.

*Refer to the back page for information on how to request additional Natural Lawn & Garden guides.

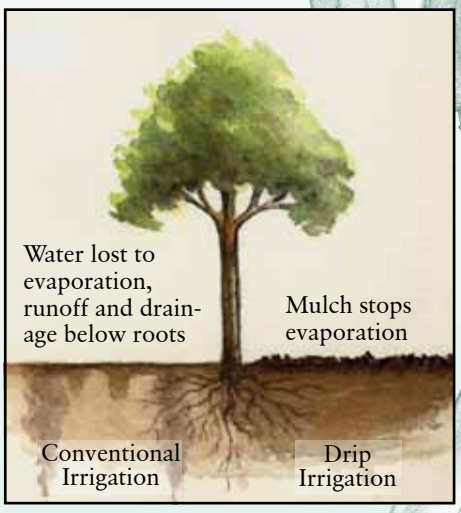
Waterwise Garden by Crooks Garden Design

2 Make Every Drop Count

Watering deeply but less often encourages deep roots and prevents disease. Moistening the soil a little deeper than the roots grow draws them deeper—which is particularly important in the first 1 to 3 years after planting while plants are becoming established. Let the top few inches of soil dry before watering again so roots and soil life can breathe.

Much of the water applied to lawns and gardens never makes it to plant roots. Make the most of every drop by following these simple guidelines:

- Use drip irrigation, micro-sprays or soaker hoses on all plants except lawn.
- Mulch to reduce evaporation from soil surface.
- Choose sprinklers with spray patterns that match the shape of your lawn or garden.
- Use rotating or oscillating lawn sprinklers, not fixed sprays (except for properly designed, installed and maintained automatic irrigation systems).
- Minimize evaporation by watering early in the day or late at night, and when the wind is calm.
- Use sprinklers that apply water slowly enough so soil can absorb it without running off. If puddling occurs, run sprinklers for a short time, then turn them off and allow water to soak in before resuming watering.
- Place sprinklers to avoid watering driveways, sidewalks or walls.
- Use timers to limit watering and make early morning irrigation convenient.
- Adjust sprinklers to prevent fine misting that just blows away.
- Repair leaky faucets and hoses; even small leaks waste lots of water.
- Split watering into two or more applications, a few hours apart, to prevent runoff. This is especially helpful on dry, compacted or clay soils, or hillsides and berms.



Drip and Soak Your Way to a Healthier Landscape

By applying water directly to the soil, drip irrigation and soaker hoses offer several advantages over sprinklers or hand watering. They:

- Help plants grow healthier and save you effort.
- Conserve water by not spraying pavement, mulch, weeds and unplanted areas.
- Reduce plant diseases that spread by splashing soil and wet foliage.
- Save time otherwise spent moving hoses and sprinklers, weeding and controlling disease.
- Prevent erosion and runoff that wastes water and pollutes streams.
- Apply water to large garden areas simply, efficiently and cost-effectively.

Soaker? Drip? What's the difference?

Most gardeners are familiar with **soaker hoses**, which sweat water along their entire length (see soaker hose illustration at right). How does drip irrigation differ? **Drip systems** apply water directly to the soil through tiny outlets called **emitters** or through **micro-sprays** plugged into flexible tubing that is laid on the ground surface or covered by mulch. Tubing can be placed around individual plants, or spaced regularly to soak entire beds in densely planted areas. Drip systems allow more precise watering to match plant needs and soil types, especially in large or sloped gardens where pressure changes make soaker hose output variable.

Drip tubing with emitters can be placed around individual shrubs and trees, in planting beds and even containers. The number of emitters and their flow rates should be selected according to your garden layout and soil type. (See back page for more information.)

Drip tape offers a simple and inexpensive way to thoroughly water closely planted beds or rows. Pre-installed outlets release water at regular intervals (usually 6 to 18 inches), selected depending on your soil and plant layout.

When it Comes to Your Lawn and Garden, Act Naturally

Micro-sprays are low-volume spray heads used to water closely planted ground covers and plants that prefer moist foliage.

Soaker hoses can be used to thoroughly water dense plantings or individual plants. You can also customize a watering system to your garden by attaching soaker hoses to solid hoses. This way, you avoid wasting water in areas that do not need it.

Dripping and Soaking Tips

- Keep your layout simple so it is easy to avoid damage, especially if the system is buried under mulch.
- Cover soaker hoses and drip systems with 2 inches or more of mulch (wood chips or compost) to prevent evaporation and help spread the water flow. Quality drip systems are designed to prevent clogging.
- Soaker hoses will only save water if they are used for the right length of time. As a rule of thumb, a soaker hose may need to run for about 30 to 40 minutes per week to water most annual plantings. For best results, dig into the soil 1 hour after watering to check soil moisture depth. See When to Water and How Much on the next page to help determine the watering needs of other plants. (For more information about soils, see the *Growing Healthy Soil* guide.*)
- Drip systems and soaker hoses are designed to operate within a certain range of pressure. Use a pressure regulator to deliver water evenly and help prevent damage to the systems.
- Use a filter to prevent clogging from within your plumbing system.
- A backflow preventer keeps dirty water or fertilizers from entering drinking water, and is required by Washington State law. Contact your water provider for more information.
- Inform everyone who works in your garden about the system to prevent accidental damage.
- Use pressure-compensating drip emitters—not soaker hoses—for uniform watering of uneven areas, steep slopes or large gardens.
- Refer to page 7 for more information sources.

*Refer to the back page for information on how to request additional Natural Lawn & Garden guides.

Soaker hose

How to Use Automatic Sprinkler Systems Efficiently

Automatically controlled irrigation systems can make efficient watering easier, yet they often waste large amounts of water due to improper scheduling or maintenance. Follow these smart-watering tips:

- Adjust your watering schedule to track weather conditions at least once or twice a month.
- Install a rain shut-off device to prevent watering when it rains. (For sources, check the phone directory business listings under Irrigation Systems and Equipment.)
- Inspect your system a few times during the watering season while it is running. Look for and repair leaking or broken sprinklers, and reposition those that spray unintended areas.
- Hire an irrigation professional to test and adjust your system annually.

Echinacea purpurea

3 When to Water And How Much

Remember, the goal is to get water to the roots of your plants. Wetting the soil surface without penetrating the root zone does nothing for your plants. Overwatering literally drowns plants, rotting their roots and inhibiting nutrient absorption. So how much is right? The best way to find out if plants need water is to watch for signs that they are thirsty. You can also check how well your soil retains moisture by digging into the root zone with a garden trowel. If the soil feels moist, wait a day or two and check again. Use the chart below to determine when and how much to water your plants to keep them healthy.

	Annuals	Trees, Shrubs, Perennials	Lawns
Water where the roots are: *(Roots may be shallower or less widespread if soil is compacted or disturbed.)*	◆ Most roots are in the top 12 inches of soil, spreading just a short distance from the plant. (Recent transplants and seedlings have shallower roots.)	◆ Root systems can go down a couple of feet, and may extend two to five times the branch spread.	◆ Typically 4 to 6 inches deep, and only under areas covered by grass.
Signs it's time to water:	◆ Soil is dry below surface. ◆ Wilted leaves that do not perk up in the evening.	◆ Deciduous leaves turn yellow before autumn. ◆ Evergreen leaves are dull or bronze. (Try not to let plants wilt. Most will be stunted or die if allowed to dry out.)	◆ Dull green color. ◆ Footprints show long after you walk across the lawn. ◆ Difficult to push a screwdriver or trowel into the soil.
When to water and how much:	◆ Check soil often to make sure it stays moist 1 to 2 inches below the surface.	◆ Water needs vary widely by plant and situation; many may not need irrigation a few years after planting in proper conditions. ◆ Refer to gardening books or ask nursery experts about water needs of plants.	◆ Apply no more than 1 inch of water each week during summer, including rain. (See chart below.) ◆ Lawns that are allowed to turn brown recover better if they get a thorough soaking every month in summer.

How long Should You Water?

Planting beds — To determine the delivery rate of your watering system, perform this simple test. When it's time to water (check soil moisture with a trowel first), run sprinklers or drip/soaker lines for 15 minutes, then wait a few hours and dig into the soil to see how deep the water has reached. Repeat until soil is moist as far down as the roots grow. Check the soil every few weeks in summer to keep up with seasonal changes.

Lawns — Most lawns need only 1 inch of water each week to stay green during our Northwest summers, and only half that much in September. To find out how long your sprinklers take to supply this amount, place several short, straight-sided, empty containers (like tuna or cat food cans) on your lawn. Place some near the edges of the spray pattern and some near the center. Turn on the sprinkler(s) for 15 minutes, then measure the water depth in each can with a ruler and determine the average depth. Finally, use the chart below to estimate how long and how often to water your lawn each week.

	Average depth in your cans after 15 minutes				
	1/8"	1/4"	1/2"	3/4"	1"
How long you should water if you have:					
◆ Clay soil (water once per week*)	2 hrs.	1 hr.	30 min.	23 min.	15 min.
◆ Loamy soil (water twice per week)	1 hr.	30 min.	15 min.	11 min.	8 min.
◆ Sandy soil (water three times per week)	40 min.	20 min.	10 min.	8 min.	5 min.

*May need to be split into two or more applications a few hours apart to prevent runoff.

For More Information:

- **Use an online tutorial** for free, step-by-step instructions, tips and techniques on how to set up and operate irrigation systems that meet your garden needs:
  - IrrigationTutorials.com, www.irrigationtutorials.com
- **Pick up a catalog** for drip irrigation equipment at home and garden centers for information about designing and installing drip systems. Or simply request catalogs from mail order suppliers such as:
  - Dripworks (800) 522-3747, www.dripworks.com
  - The Urban Farmer (800) 753-3747, www.urbanfarmerstore.com
  - DIG Irrigation Products, www.digcorp.com
- **Consult a reference book**:
  - *Drip Irrigation for Every Landscape in All Climates* by Robert Kourik, Metamorphic Press, 2009.
- **Contact your water utility** for information on how to use evapotranspiration (ET) rates to match your irrigation to current weather conditions.
- **See a demonstration garden**:
  - WSU Master Gardener Demonstration Garden 600 - 128th Street SE, Everett. Call (425) 338-2400 for directions.
  - Woodinville Water District's Waterwise Garden, 17238 NE Woodinville-Duvall Road, Woodinville. Call (425) 487-4100 for directions.
  - Waterwise Garden at the Bellevue Botanical Garden, 12001 Main Street, Bellevue. Call (425) 452-4127 for directions.
  - Bradner Gardens Park, 29th Avenue South and South Grand Street, Seattle. For directions, visit www.seattletilth.org/directions/bgardens.
- **To learn more about natural lawn and garden care**:
  - Call the WSU Master Gardener Hotline at (425) 357-6010 or e-mail MG.help@wsu.edu or visit WSU Snohomish County Garden Resources at www.snohomish.wsu.edu/garden.htm.
  - Visit www.naturalyardcare.info.
- **For expert advice**, contact a nursery, landscape or irrigation professional, or contact WSU Snohomish County Extension at (425) 338-2400.

For TTY assistance, please call 711.

Photographs by Richard Hartlage
Illustrations by Wilda Boyd

Waterwise Garden by Crooks Garden Design

Waterwise Garden at the Bellevue Botanical Garden

To Request A Natural Lawn & Garden Guide, Contact:

- **Snohomish Conservation District**
  (425) 335-5634, ext. 4, www.snohomishcd.org
- **Snohomish County Public Works, Surface Water Management Division**
  (425) 388-3464, www.naturalyard.surfacewater.info
- **WSU Snohomish County Extension Master Gardeners**
  (425) 357-6010, www.snohomish.wsu.edu

The Natural Lawn & Garden Series

- Growing Healthy Soil
- Choosing the Right Plants
- The Plant List
- Smart Watering
- Composting at Home
- Natural Pest, Weed & Disease Control
- Natural Lawn Care
- Natural Yard Care (summary)

For Additional Information Visit:

www.naturalyardcare.info

Snohomish Conservation District

Washington State University Snohomish County Extension

Puget Sound Starts Here

Snohomish County Public Works Surface Water Management

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