

PLANTING & MAINTAINING YOUR LAWN





DIRECTORY

WATER SUPPLY	2
LOOKING AT LAWNS	3
BENEFITS OF LAWNS	3
PLANTING A NEW LAWN	4
WHAT TYPE OF GRASS TO PLANT	4
Perennial Ryegrass	4
Tall Fescues	5
Fine Fescues	5
Bentgrass	5
Kentucky Bluegrass	6
Waterwise Varieties	6
Ecolawns	6
WHEN TO PLANT	6
PREPARING THE SOIL	7
FERTILIZING	8
WATERING	9





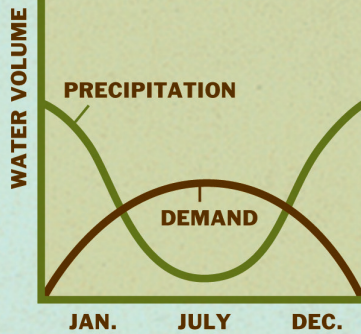
CARING FOR YOUR ESTABLISHED LAWN	9
WATERING	10
How Much to Water	11
Rain Sensor	12
Weekly Watering Number	12
MOWING	13
FERTILIZING	14
CONTROLLING WEEDS	14
CONTROLLING MOSS	14
AERATING & DETHATCHING	15
ALTERNATIVES TO LAWN	16
Groundcovers	16
Perennials and Shrubs	17
Hardscapes	17
RESOURCES	18
WATER AUDIT	18
WEBSITES AND BOOKS	19



WATER SUPPLY

Here in the Portland metro area, water use can double or triple due to outdoor watering. This can be a problem because of the limited storage of our reservoirs and the typical lack of summer rainfall in the Pacific Northwest. By reducing summer water use, utilities can potentially delay building new storage facilities and transmission lines, and developing new sources of drinking water – all costly investments for communities.

ANNUAL WATER SUPPLY/DEMAND



Efficient use of water alone will not eliminate the need to increase our water supply, but it can make a big difference by postponing or reducing our need to build expensive new supply facilities.

LOOKING AT LAWNS

A lawn can be a serene oasis, an open expanse where kids can play and pets can roam, as well as a source of pride. But lawns can also use a lot of water. Lawns typically can use about 2½ to 3 times as much water as many other plants in the landscape. Current research indicates that lawn watering typically results in as much as 30 percent water waste. This can be due to water lost through evaporation, runoff, overspray, and overwatering.

The information in this booklet is designed to help you learn how to properly install and maintain your lawn with the appropriate amount of water and care.

BENEFITS OF LAWN

PROVIDES AESTHETICS - A well-maintained landscape can increase property value and create a sense of community pride. It complements trees and shrubs, and is ideal for foot traffic because it withstands trampling more than any other type of plant.

PROVIDES RECREATION SURFACE - Grass provides an excellent recreation surface for outdoor activities. It is a low-cost safety cushion for sport participants and spectators, a healthy surface for picnics, yard games, and other outdoor activities, as well as a delight to walk on. It is also an ideal surface for dogs and other pets.

REDUCES RUNOFF AND SOIL EROSION - Grass, due to its deep roots, can be effective in reducing runoff and preventing soil erosion. When it rains or when we water, pollutants are moved into the thatch and surface soil levels where they are trapped, preventing them from washing into our water systems. With up to 90 percent of the weight of a grass plant in its roots, it is no wonder that grass is a very efficient erosion prevention device.

PROVIDES A COOLING EFFECT - Research shows that grass can be up to 30 degrees F cooler than concrete or blacktop and up to 14 degrees F cooler than bare soil. The cooling effect of an average lawn can equal over eight tons of air conditioning (the average home air conditioner produces four tons of cooled air). The cooling effect is the result of the evaporation of water within the green leaves. Grass surfaces reduce temperature extremes by absorbing the sun's heat during the day and by slowly releasing it in the evening, thus moderating excess temperatures.

ABSORBS DUST AND OTHER AIR POLLUTANTS - With its extensive and intertwined system of leaves and roots, grass surfaces around the world are estimated to trap some 12 million tons of dust and dirt from the air annually.



CREATE A FUNCTIONAL LAWN AREA

Whether installing a new landscape or redoing all or a portion of an existing landscape, it's important to analyze your needs and expectations. Do you need a large recreational area for your family or pets? Do you want an area in the front of your home to appear green and well-manicured? Or, do you want to increase planting beds and reduce your lawn's size? Are areas you are considering for new lawn easy to water and maintain? For example, is grass the best choice for narrow borders or parking strips? These are just a few of the important questions to ask yourself before making changes to your pre-existing lawn areas or planting a new lawn.

PLANTING A NEW LAWN

Selection of the type of grass to plant depends on your individual aesthetic and maintenance needs. Generally, in the Portland metro area, you want to plant a cool season grass since it is better adapted to our region's climate. Warm season grasses are more successful in hot, dry climates. The following descriptions may help you decide which grass type best meets your needs.

PERENNIAL RYEGRASS

Perennial ryegrass is moderately dark green with good density and fine leaf texture. It is the most commonly planted grass in western Oregon, and is fairly drought tolerant. Lawn experts often recommend perennial ryegrass because it is easy to establish, grows vigorously, and can compete with weeds – therefore, deterring weed growth. This grass type is thatchless, allowing good water penetration. It's disease-resistant with proper maintenance. In a mix with bluegrass and fine fescues it can be shade tolerant. It has a low growth habit, which is best mowed at 1 to 2 ½ inches.

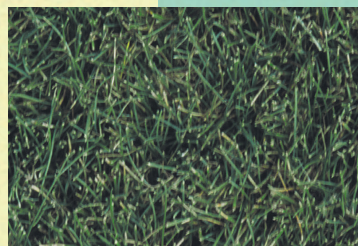


TALL FESCUES

Tall fescue has a medium to dark green color and the deepest root system of grasses, with root system depths from 3 to 6 feet. It will stay greener longer in a drought if watered slowly and deeply. It is somewhat coarser in texture than perennial ryegrass. It also produces little thatch. Optimum mowing height for this grass type is 2 to 3 inches.

FINE FESCUES

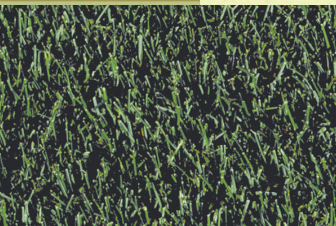
Fine fescues are a deep green color and are often used in mixes with other grasses due to their ability to blend. It is often used in bluegrass mixtures because it grows well in shade or dry soil. Fine fescues will go dormant in summer if water is withheld, but will “green up” quickly once moisture is applied again. Fine fescues do not develop thatch. This grass type does best with a mowing height of 1 to 2 ½ inches or left unmown for the “meadow look.”



BENTGRASS

Bentgrass is usually an “invader grass” and it will take over even the best-maintained lawns planted with other seed types after a few years. It forms very dense, fine-textured patches, which hold the dew longer than other grasses. It dominates other lawn grasses because it grows well in the cool times of the year, tolerates drought by going dormant, requires very little fertilizer, and gets few diseases if it is not over-fertilized. If you don’t want it in your lawn, you’ll need quick removal by chemical means or hand weeding before patches enlarge.

Creeping bentgrass is a specialty grass that requires high maintenance and expert management. It is typically used on golf courses due to its ability to withstand an extremely low cut (prefers mowing heights of 1 to 1 ½ inches) as well as its ability to recover quickly from high traffic and other injuries, e.g., divots.



KENTUCKY BLUEGRASS

Kentucky Bluegrass is a cool season grass with a deep, rich dark green color and does best in cool, humid, and temperate climates. In the past, this type of grass was not widely used in the Pacific Northwest because it could not adapt well to our wet and mild winters. But, improvements have been

made over the years to this grass type, which can make it a good choice for lawns in this area. It is moderately drought tolerant, but does not do well in partial or full shade. It can develop some thatch at higher nitrogen levels. Optimum mowing height is 1 ½ to 2 inches.

WATERWISE VARIETIES

New grass varieties are being developed that, once established, require less upkeep and watering than standard varieties. The Turf Grass Water Conservation Alliance (<http://www.tgwca.org>) is an independent foundation that tests and certifies grass mixture varieties that can survive under reduced or limited water. You can also ask your lawn and garden specialist for recommendations.



ECOLAWNS

An “ecolawn” is an alternative to conventional grass lawns. Ecolawns combine grasses with selected broadleaf plants such as herbs or flowers to produce an ecologically stable mixture of plants that require less maintenance than a typical lawn. Often these mixes take at least two seasons to become established. Check with your local nursery or lawn care professional for a mix you would enjoy.

WHEN TO PLANT A NEW LAWN

The best time to plant a new lawn in the Portland metro area is in the spring or fall so as to take advantage of rainfall and avoid the heat stress of summer. You can choose to either plant seed or install sod. Seeding may not be as effective after mid-October because of cooler temperatures and shorter days, but sod can be laid as late as November if the weather isn't too severe.

PREPARING THE SOIL FOR A NEW LAWN

The key to healthy grass is a deep root system - usually 8 to 24 inches deep. Healthy plant roots can penetrate several inches of topsoil for moisture, and can often go a week or more without water. In contrast, shallow root systems require more frequent watering as their root systems cannot reach the moisture that lies deeper in the soil.

Before putting in new grass or sod it is very important to properly prepare your soil as this will save time and money in lawn maintenance once your lawn is established. For maximum growth and aesthetics, grass needs four essential factors: sunlight, air, water, and nutrients. Three of these four essential factors (air, water, and nutrients) are obtained from soil, but many soils lack the ability to provide these factors. The best soil conditions for lawn are loams, sandy loams, and clay loams (easily crumbled soils) with a pH of 6.0 to 7.0.

Almost all soils can be improved, but you need to know what your soil is comprised of before you can make the improvements. You can test your soil by taking soil core samples from several locations in your yard and have them analyzed by your local County Extension Office or a commercial soil-testing laboratory. Once you know your soil needs, you can then add the recommended amendments to increase its overall health.

If your existing soil is healthy, till it 6 to 8 inches to loosen soil and break up large clods so it can be easily graded. Don't pulverize it, however, as that can destroy the soil structure, reducing infiltration, and increasing compaction potential.

If additional topsoil is needed, till your existing soil to a depth of at least 2 inches, then add 6-12 inches of good topsoil. Be sure that the soil textures and contents are the same (e.g. don't add sandy soils to clay soils). This will encourage the topsoil to bond to the subsoil, and improve root and water penetration.



Smooth, roll, and lightly rake the surface. Water the soil area thoroughly, up to 6 inches deep for best results. Then seed following the rates recommended on the seed package. Divide the grass seed in half and spread over the area twice in perpendicular directions to get consistent coverage. Rake the seed into the soil and roll again to firm and level the seedbed. If installing sod, roll it out after the soil is prepared as described above.

FERTILIZING REQUIREMENTS FOR A NEW LAWN



Fertilize new lawns with a 3-1-2 ratio of nitrogen (N), phosphorous (P), and potassium (K) at the time of installation, if seeded. If sod has not been pre-fertilized, then also fertilize when laying it. Nitrogen is the most important element for successful grass growth. Use 1 lb. of nitrogen per 1,000 sq. ft. at the time of seeding, and again 4 to 6 weeks later. These are the two most important fertilizer applications you will make to your grass. Each grass type, however, has its own requirements for fertilizing. Check with your local lawn care professional or consult the websites provided in the

back of this brochure for more specific information.

HOW MUCH FERTILIZER TO USE

$$100 \div \% \text{ of nitrogen} = \\ \# \text{ of lbs. of fertilizer per 1,000 sq. ft. of lawn}$$

Example

$$100 \div 10 (\% \text{ of nitrogen}) = 10 \text{ lbs. of fertilizer}$$

MULCHING NEW LAWNS

Applying mulch to new seed plantings can provide the following benefits:

- keep moisture near the seeds during germination,
- help speed up germination,
- improve stand uniformity, and
- help to prevent soil erosion.

Mulch should be applied lightly – between $\frac{1}{8}$ and $\frac{1}{4}$ inches deep. Avoid using mulch when temperatures will be high as this can result in overheating of new seeds which can cause disease and/or heat scorch. Finer mulches work better than coarser ones (e.g. fresh sawdust, aged sawdust, compost).

WATER REQUIREMENTS FOR NEW LAWNS

New plantings need to be watered lightly and more frequently than established grass. In dry weather, new plantings should be watered 2-4 times a day until they germinate – usually 5 to 10 days if adequate moisture and optimal temperature. Water for as long as it takes for the soil surface to “glisten” - the length of time will depend on your soil’s texture. Once seeds have germinated, reduce your watering to 2 times per day until the end of the second week when you can reduce watering to 1 time a day. Continue to reduce your watering schedule so that by the third week you are watering every 2nd or 3rd day and by the fourth week 1-2 times per week. After that, water according to the lawn’s needs.



If laying sod, follow within a half hour with at least 1 inch of water. You may need to do this in short time increments to avoid runoff. Water sod daily for the first few weeks. New sod and seed need to stay moist for the first few weeks to allow for successful establishment. For best results, follow the directions of your lawn care specialist until your new lawn is well established.

CARING FOR AN ESTABLISHED LAWN

Established lawns still need some tender loving care. If you practice appropriate maintenance, you will be pleased with the results and your lawn will be green and healthy.

WATER REQUIREMENTS FOR ESTABLISHED LAWNS

The greatest waste of water is watering too much, too often. The type of sprinkler system you select, the time and frequency you dedicate to watering, and the attention paid to your soil and lawn’s needs will help you water more efficiently and will result in a healthier lawn.

Overwatering your lawn can lead to a variety of problems including shallow-rooted lawns, increased leaching of fertilizers and nutrients, and an increased potential for disease problems. Supplying too much water also causes grass to grow faster, which means more maintenance for you!

Establishing a regular watering schedule can help ensure a healthier lawn. Water early in the morning (before 10 a.m.) or later in the evening (after 6 p.m.) when temperatures are cooler, the air is calmer, and evaporation is minimized.

Whatever method you use to water — automatic or manual in-ground sprinkler systems or a sprinkler at the end of a hose — make sure that there is a uniform distribution of water to all areas of your lawn. Choose sprinklers that send large drops of water close to the ground as they are more water efficient than sprinklers that spray a fine mist. If using an automatic system, choose rotor heads over spray heads. They are more efficient at laying down uniform amounts of water in a way that allows the soil to absorb the water without running off in a short period of time.

**YOU CAN TELL IF YOUR GRASS NEEDS WATER
THROUGH A FEW SIMPLE STEPS:**

- 1) Observe its color – grass will turn from bright green to dull blue or grey-green if it needs more water
- 2) If the grass no longer springs back from your weight and you leave foot prints when walking across it, then it needs water

You can also use a soil probe or screwdriver to tell if it is time to water. If the soil probe core shows moisture in the root zone, wait to water. If dry, then water. Similarly, if a screwdriver can easily penetrate the soil beyond 2 inches, there should be enough moisture for the present time. If there is resistance at 2 inches or less, then it's time to water.

Additionally, you can use a soil probe or screwdriver after you water to find out how deeply you've watered. Push the soil probe into the ground, twist it, and back it out. The soil probe should have a 10 inch or longer soil core that shows how wet the soil really is. If the core is moist only 2 inches deep, and roots could easily go down 6 - 12 inches, you need to water longer. If you are using a screwdriver, it will move easily through moist soil but, will stop when it reaches dry soil. If it stops in a few inches or less, you should water a bit longer. If soil conditions are good, 1 inch of applied water should penetrate the soil about 6 inches.



SOIL PROBE

As a rule of thumb, an established lawn requires about 1 inch of water per week – more during the peak of summer and less during spring and fall. To figure out how to measure 1 inch of water with your sprinkler system, try this:

1. Place two watering gauges at two different places within your sprinkler’s spray range. Then run your sprinkler for 15 minutes. *(You may also use a tuna can and a ruler to conduct this test).*
2. Find the average amount of water (in inches) collected in your gauges. To do this, measure the amount of water in each gauge. Add these amounts together and divide by two. This is the average amount of water your sprinkler puts out in 15 minutes.



Watering Gauge

(This will provide you with a good guideline amount. For increased accuracy, repeat steps 1 & 2 several times, placing the gauges at different distances from your sprinkler.)

3. Use this chart to see how much time it will take you to water one inch.

AVERAGE WATER DEPTH AFTER 15 MINUTES	TOTAL MINUTES NEEDED TO WATER 1 INCH
1/8"	120
1/4"	60
1/2"	30
3/4"	20
1"	15

4. Set your watering schedule. We recommend watering 2 times per week, either before 10 a.m or after 6 p.m when temperatures are cooler.

For example, if after 15 minutes your gauges have ½ an inch of water in them, you will need to water a total of 30 minutes per week to get the recommended 1 inch.

Water Schedule Example

	M	T	W	T	F	S	S
Minutes			15			15	

If run-off occurs, you will need to run your sprinkler for a shorter time period so that you are applying only the amount of water that your soil can absorb. Use watering gauges to figure out how much water your system distributes during this time, and then figure out how many times you will have water each week to put down the recommended 1 inch per week. For example, if it takes your sprinkler 40 minutes to water an inch but run off starts occurring after 20 minutes you might opt to water for 20 minutes at 6 a.m., let the water soak into your soil, and then water again for 20 minutes at 8 a.m.

This part of creating your watering schedule may take some trial and error to get it right, so keep repeating this process described in the above example until you have applied water for the total number of minutes you have scheduled without experiencing run off.

MORE WATERING TIPS:

Installing a rain sensor is one of the easiest ways to upgrade any automatic system. Rain sensors are designed to shut off sprinkler systems when rainfall reaches a preset amount, usually $\frac{1}{4}$ inch. Once the moisture level subsides, the sensor re-enables the sprinkler system, resuming the previous watering schedule. Rain sensors should be mounted in an unobstructed area exposed to open sky - minimizing the potential for fallen leaves or other debris from blocking the sensor.

Another key to watering your lawn efficiently is to regularly adjust your watering schedule as the weather changes. If you have an automatic sprinkler system, you will need to program your watering schedule into your sprinkler's controller. To better assist you in establishing a more current and specific watering schedule, you can use the Consortium's Weekly Watering Number to fine tune your system's settings throughout the growing season (The Weekly Watering Number is the amount of water in inches that your lawn will need each week from April-September.) This information can be located at: <http://www.conserveh2o.org/outdoors>.

Smart controllers can help you schedule your irrigation system based on the weather conditions. If you are considering replacing your current controller, look for EPA's WaterSense labeled irrigation controllers which have passed third party testing requirements. These controllers can either have on-site weather information or use a third-party communication tool, (e.g., paging technology, radio, internet, cell phone) to get the most current weather-station information to the controller.

Soil moisture sensors are another type of system that can be used with controllers. Soil moisture sensors work by measuring the moisture in the soil, and enabling or disabling the controller to water, based on the moisture content of the soil.

A well designed watering system will help you use water more efficiently and avoid water waste as long as you regularly check your system for proper programming, scheduling, and maintenance needs. Knowing how much water your plants need, and periodically monitoring and maintaining your sprinkler system, are the keys to saving both water and money.

MOWING REQUIREMENTS FOR ESTABLISHED LAWNS

The rule of thumb is to mow often enough that you never cut more than one-third of the height of the grass blades. If possible, adjust your mower to a higher setting to avoid cutting your lawn too short. A taller grass and can provide shade to its roots and help retain soil moisture so your lawn will require less water. It is also important to keep your mower's blades sharp to prevent tearing and injuring the grass. Lastly, save some time and help your lawn and the environment by leaving short clippings on the grass (where the recycled nitrogen is) rather than sending them in bags to the landfill.



FERTILIZING REQUIREMENTS FOR ESTABLISHED LAWNS

Fertilizing your lawn in late spring and early fall can encourage root development and replace essential nutrients lost through leaching and transpiration. Use the right amount and the right kind of fertilizer for your lawn and be sure to follow the package labels carefully.



There are two types of fertilizers: quick release and slow release. Quick release fertilizers require more frequent applications and are more likely to pollute local rivers and streams; however, they do provide a more immediate response from your lawn than slow-release fertilizers which require less frequent applications and provide more consistent growth and color over time. A mixture of both quick-release and slow-release may produce the best results, but be sure not to over apply the quick release fertilizers, especially right before it rains. Check with a lawn care professional for your particular grass type. Compost, compost tea, and alfalfa pellets are examples of natural slow release fertilizers.

WEED CONTROL

Weeds compete with plants for nutrients, light, and water, so be sure to weed your lawn or landscape frequently. Weed by hand or with a hand tool, making sure that you remove the entire weed, roots and all. Use of chemical weed controls is not recommended, but if they must be used, use spot applications rather than broadcasting them widely, and try to apply them when weeds are small. If overused, chemical weed controls can harm beneficial organisms in the soil and potentially pollute groundwater and surface water. After removing weeds, always overseed the bare soil to help encourage lawn growth for that area.



MOSS CONTROL

Moss is a symptom of compacted and acidic soil, low in organic matter. Moss also likes shade where grasses usually don't perform well. You can help control moss by aerating or if moss has already built up in your lawn try applying iron granules or liquid iron. (if iron is applied, the moss will turn black before it decays into the soil and/or grass grows back). You may also need to increase the pH of your soil by "sweetening" it with lime. Again, always consult with a nursery or lawn care professional for specific questions. After treating moss, always overseed the bare soil to help reestablish the grass.

AERATING & DETHATCHING

Aeration involves making holes in the lawn either by pushing a rod into it or by “coring,” extracting a plug of soil. By aerating your lawn you provide the following benefits to your lawn and its root system:

- Oxygen gets to the roots and the soil allowing it to “breathe”
- Organic fertilizers and nutrients are accessible to the root system
- Water is able to better penetrate the soil and reach the root system
- Tight, compacted soil is loosened up allowing the root system to grow

Regularly aerating your soil in the spring or fall (or both, if possible) can help correct excessive soil compaction which can cause water runoff during watering. Aeration can also promote moisture infiltration into the soil, more efficient use of fertilizers, and enhanced root growth. Deeper root systems provide better insulation from summer hot spells and thus require less frequent watering. Many landscape companies offer an aeration service or you can rent or buy aeration tools to do it yourself. Check with your local nursery or your lawn care professional for more information.

Thatch is comprised of grass stems and roots and other organic matter. Generally, microorganisms will eat the organic matter and provide food for the individual grass plants, but sometimes lawn ecosystems can get out of balance due to too much or too little water or too much fertilizer. This can cause the decay process to decrease resulting in additional thatch build up. When a thatch layer starts getting thicker than $\frac{1}{2}$ inch, it may be necessary to remove some of it and/or improve the condition of the lawn.

Dethatching a lawn can be as simple (and backbreaking) as vigorously raking the lawn or more complex, like vertical mowing. Vertical mowing dethatchers mow the grass vertically with spinning blades, cutting and pulling up thatch to the surface.

Regularly aerating your lawn will help allow water and air into your soil and will help the ecosystem to control thatch. In situations where thatch exceeds $\frac{1}{2}$ inch, a dethatching machine can be used to cut through this layer; removing excess root mass, and promoting its breakdown. When aerating or dethatching, it is also beneficial to top-dress the area with $\frac{1}{4}$ inch of fine compost. This further speeds the breakdown of organic matter while releasing valuable nutrients.



OVERSEED AND TOPDRESS

Overseeding involves spreading grass seed on top of existing grass to promote new growth. Overseed your lawn with a Pacific Northwest lawn seed mix in spring or fall or as-needed by using one-quarter the amount of grass seed recommended for new turf and scattering it over your entire lawn. Then topdress with a high quality weed-free compost by sprinkling a ¼- to ½-inch layer over the whole lawn

REMOVING AN OLD LAWN

If you need to completely remove your lawn, it's best to avoid using chemicals to do this. An alternative method would include covering the lawn with cardboard and/or several layers of newspaper and mulch – at least 2-3 inches. This requires some patience, but within a season your existing grass should be dead and you can replant that area with a new lawn, establish a new planting area for vegetables or waterwise plants, or install hardscaping.

ALTERNATIVES TO LAWN

You may decide that you don't want a large lawn or want to diversify your landscape. If that's the case, the following options might be considered:

GROUNDCOVERS

Groundcovers can make great lawn alternatives, offering much of a lawn's neatness and uniformity but often with less water and maintenance requirements once established. Steep slopes, irregularly shaped areas, and narrow driveway strips are examples of areas where groundcovers could be considered in place of lawn. Many groundcovers offer beautiful colors, interesting textures, and functional durability that can be wonderful, low maintenance substitutes for lawns. Some groundcovers can also offer a soft cushion-like that is easy to walk on, even in bare feet!



PERENNIALS AND SHRUBS

Perennials, shrubs, and trees can provide similar benefits for erosion control, cooling, and pollution absorption as grass. There are many water efficient and low maintenance plants that thrive in the Portland metro area. If you're not sure about what plants will do well in your garden, there are many regionally specific references available, or you can check with staff at your local garden center or a landscape professional for assistance.

HARDSCAPES

Instead of grass, you can select creative hardscape, such as pavers or decking. Decks for example, shade the soil and permit what rain you get to drip down between the boards. They also provide an excellent surface for entertaining, playing, or lounging.

ECOLAWNS

If you would like the look and feel of a lawn, but without the maintenance requirements, you may want to consider planting an eco lawn. Check with your local nursery or lawn care professional for a mix that best suits your needs.





WATER AUDIT

Many local landscape companies are starting to offer landscape water audits. These audits consist of having a landscape professional evaluate your landscape and irrigation system and highlight issues relevant to your yard. The landscape professional typically gives customers a report listing recommendations to improve the landscape or irrigation system efficiency, as well as a watering schedule based on soil make-up and plant types.

Soil Analysis: _____

Irrigation Analysis: _____

Recommendations: _____

RESOURCES

Turf Grass Water Conservation Alliance

<http://www.tgwca.org/>

Information on third-party certified waterwise grass varieties

Lawn Talk

www.urbanext.uiuc.edu/lawntalk

County Extension Office Information

<http://extension.oregonstate.edu/findus>

Turfgrass Producers International

www.turfgrassod.org

The Lawn Institute

<http://www.thelawninstitute.org/>

Turfgrass Resource Center

www.turfgrassod.org/trc

Ortho's All About Lawns

Meredith Books, Des Moines, Iowa; 1999

*Healthy Lawns, Healthy Environment: Caring for Your Lawn
in an Environmental Friendly Way*; EPA (H7506C)

Washington, DC 20460 <http://nepis.epa.gov>

Water Right - Conserving Our Water, Preserving Our Environment

Download at www.lawninstitute.com

The All Seeing All Knowing Lawn Care Manual:

www.unce.unr.edu/publications/sp93/sp9302.pdf

(Publications; Horticulture, Gardening)

WaterSense (an EPA program)

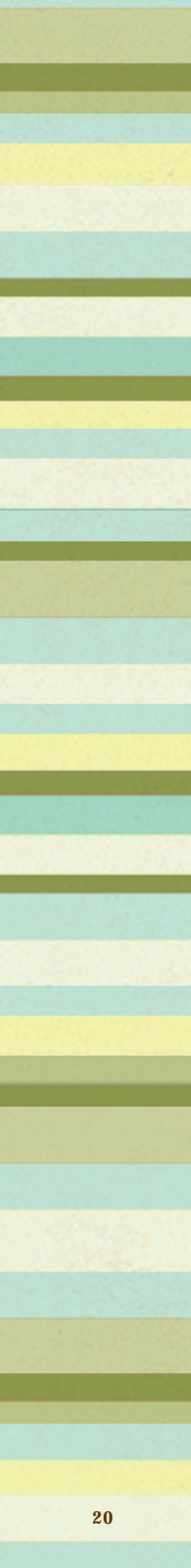
<http://www.epa.gov/watersense/outdoor/index.html>

Oregon Department Of Environmental Quality

www.healthylawns.org

Metro Natural Gardening

www.oregonmetro.gov/garden







The Regional Water Providers Consortium provides leadership in the planning, management, stewardship, and resiliency of drinking water in the Portland, OR metropolitan region. Get more information and resources at www.regionalh2o.org.

