

The Steps *for a* Healthy Lawn

CLARK COUNTY ENVIRONMENTAL SERVICES

NATURALLY BEAUTIFUL BACKYARDS



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The Steps for a Healthy Lawn

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Reconsider how much lawn you really need or want. Think about replacing all or part of it with easily-managed groundcovers or other lawn alternatives. You'll work less and save money, too.

LAWNS ARE A BIG THING IN THE UNITED STATES—LITERALLY. Today, our lawns cover anywhere from 28,000 to 62,000 square miles of land in the United States. These lawns add up, even conservatively, to an area larger than the state of West Virginia.

Our lawns are especially important in and around the nation's cities. In urban and suburban areas, private lawns, excluding public turfs like golf courses and parks, are estimated to take up 23% of the total land. And it's not like these lawns are just taking up space. A healthy

lawn has many ecological benefits. It prevents soil erosion, filters contaminants from rainwater and absorbs many types of airborne pollutants, like dust and soot. Healthy grass is also highly efficient at converting carbon dioxide to oxygen, a process that helps to clean the air.

A lawn is more than just grass. It is an ecosystem, composed of plants, soil and microbes; of insects, earthworms and the birds that feed on them; and of the humans that play on and maintain the turf. These parts compose a dynamic equilibrium, and the better we understand these parts, the more



able we are to make good decisions about our lawn care.

This means creating conditions for the grass to thrive and outcompete weeds, disease and insect pests. It means setting realistic goals for our lawns, whether we or a professional lawn care service will be doing the work. And if we choose to use pesticides,

it means using them with care so as to get the most benefit and reduce any risks.

You don't have to be an expert to grow a healthy lawn. You just have to work with what's already there. This booklet will cover the eight steps toward the healthy lawn that will work for you and the environment.

Rethink Your Lawn



A HEALTHY LAWN BEGINS IN YOUR SOIL. Good soil will provide nutrients, water and physical support for plants, as well as air for plant roots. Since the soil provides the base for plant life, the focus should not be on feeding the plants, but on *feeding the soil*. To determine if your soil needs to be fed, a soil test is a useful place to start.

TAKING A SOIL TEST IS EASY. Take 15 to 20 soil samples from around your yard. Sample your soil from about six to nine inches down, discarding any turf in the sample. Remember to *avoid areas with unusual conditions (e.g. in or near your compost pile)* and to *avoid contaminating the sample by using dirty tools*. Thoroughly mix your samples together and submit the sample according to the soil test's instructions.

A SOIL TEST WILL TELL YOU IMPORTANT INFORMATION ABOUT YOUR YARD. A soil test will describe your soil's levels of major nutrients, like phosphorus and potassium. It will sometimes describe secondary and minor nutrients, like calcium and boron. The test also includes information about your soil's pH level and composition, telling you if you should add lime and how well your soil will perform for plant growth.

YOU'LL FIND OUT WHAT YOUR SOIL NEEDS. The soil test will recommend, based on your plants and the test results, how much and what kind of fertilizer to add each year and when to add it. And no need to take a soil test every year; your lawn should be good for the next three to five years.

TO INQUIRE ABOUT A SOIL TEST IN CLARK COUNTY, contact the Washington State University Extension for recommendations.

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Develop Healthy Soil

IF YOU LIVE IN WESTERN WASHINGTON, YOU PROBABLY HAVE PERENNIAL RYEGRASS IN YOUR LAWN. Because of its durability, ryegrasses are more popular than other grass in this region. They present, unlike other grasses, a comfortable option for your family's feet. Overseeding is also particularly easy with perennial ryegrass. In the spring, apply two to five pounds of ryegrass blends per 1,000 feet. You'll often find it mixed in bags with creeping red fescue seed.

OTHER TYPES OF GRASS TYPICALLY DON'T FARE WELL IN CLARK COUNTY. Some lawns have fescues, which are the most drought tolerant and nutrient efficient of the cool season grasses. However, the fescues haven't caught on due to their thin, barefoot-intolerant blades. Kentucky bluegrasses, which suffer in Western Washington's soil and climate, are present usually in grass seed blends with other species. Colonial bentgrass is also used occasionally but is slower to recover from moderate wear than other species of grass.

KNOW THAT YOUR GRASS WILL GROW BETTER IN SOME SPOTS THAN OTHERS. If grass is consistently difficult to grow in one part of your lawn, don't waste extra time and resources making it grow right. The goal is to work with what you're given, not to waste money on what doesn't work. If you can't stand it, get creative with your lawn. For instance, replace the bad spot with perennial groundcovers.

HAVING ONE KIND OF GRASS SPECIES IN YOUR LAWN ISN'T WHAT'S BEST FOR THE SOIL. Monocultures of grass decrease the biodiversity of your lawn, making it more susceptible to drought, disease and pests. A healthy lawn will have more than one type of grass and other plants growing along with it.

PREVENT MOSS IN YOUR YARD BY ALLOWING MORE SUN IN AND WATERING LESS. Moss grows best where it is damp and shady, and it prefers acidic soil. Grass grows best in sunny, drier conditions with more alkaline soil. To help grass along, take out the shade sources and correct the drainage issues. If these tasks fail, however, you may want to replace the turf with something easier and more to your liking.



Know Your Grass

Understanding a Fertilizer Label

5-5-5
(N) (P) (K)

GUARANTEED ANALYSIS

Nitrogen (N) 5%
1% Ammonium Nitrate
4% Urea Nitrogen

Available Phosphoric Acid
(N₂O₅)..... 5%

Soluble Potash (K₂O)..... 5%

THE N-P-K RATIO is the amount of nitrogen, phosphorus and potassium in a fertilizer. For example, “5-5-5” means the product contains 5 percent of each nutrient.

NITROGEN (N) helps plant foliage grow strong.

PHOSPHORUS (P) helps roots and flowers grow and develop.

POTASSIUM OR POTASH (K) is important for overall plant health.

IF YOU DON'T KNOW WHAT TO USE, CHOOSE A FERTILIZER WITH AN N-P-K RATIO OF 3-1-2.

Lawns growing in typical Pacific Northwest soil will benefit most from a fertilizer with an N-P-K ratio of 3-1-2 or multiples thereof (6-2-4, 18-6-12, etc.)

MORE ISN'T BETTER.

Overfertilizing is a common lawn problem. It can cause plant stress, resulting in pest problems and disease. The extra fertilizer can run off into rivers, groundwater and streams, polluting our water. Never apply more than recommended.

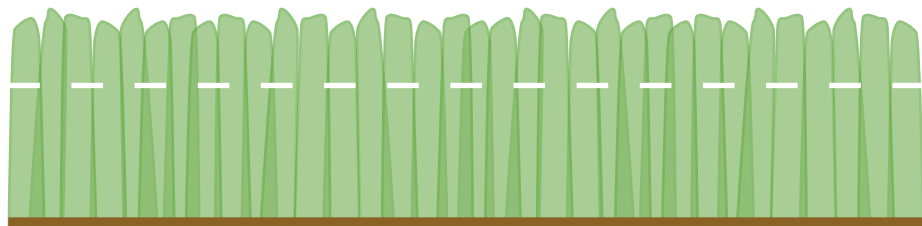
APPLY YOUR FERTILIZERS CAREFULLY. After applying the fertilizer, water it into the soil enough so that it works its way in, but not so much that the material washes away onto sidewalks or other impervious surfaces. *Avoid fertilizing before heavy irrigation or a rainstorm*, so that your fertilizers don't run off your lawn and into storm drains, rivers or lakes. Keep in mind that spring and fall are good times to fertilize lawns.

CHOOSE ORGANIC AND NATURAL FERTILIZERS. They are less likely to overfertilize your lawn than synthetic fertilizers. Organic fertilizers are made from natural products and are typically slow-release, meaning that they are less likely to run off and pollute water. Because they provide a longer, more sustained flow of nutrients than synthetics, organic fertilizers also require less-frequent application.

REMEMBER THAT WEED AND FEED IS MUCH MORE THAN A FERTILIZER. By applying weed and feed over your lawn, you're applying an herbicide and a pesticide over everything—including the areas that don't need to be treated. Pull or spot-treat your weeds instead, and protect your community from water pollution.

Fertilizer: More isn't Better

N 3 - P 1 - K 2



NEVER CUT OFF MORE THAN 1/3 OF THE GRASS LEAF'S SURFACE.

As a general rule, many grass species are healthiest when kept between 2½ and 3½ inches. Of course, your lawn's ideal height will vary with the type of grass, so it's a good idea to determine your lawn's particular species.

MOWING HIGH WILL PRODUCE HEALTHIER, STRONGER GRASS WITH LESS PEST PROBLEMS.

Longer grass has more leaf surface to take in sunlight and shade the soil, helping it to retain moisture and making it difficult for weeds to germinate and grow. Higher grass also grows a deeper root system, which in turn helps the grass survive drought, tolerate insect damage and fend off diseases.

MOW OFTEN FOR MORE CLIPPINGS (FREE FERTILIZER) ON YOUR LAWN.

If you leave your clippings on your lawn (called "grasscycling"), you'll gain a free, natural supply of nitrogen and other nutrients each time you mow. Using clippings, fertilizer needs can be reduced by 20 to 30 percent. And contrary to common opinion, leaving the clippings does not contribute to thatch buildup. Frequent mowing when the grass is dry and proper fertilization are the best ways to avoid thatch buildup. Investing in a mulching mower will save you time, effort and money.



KEEP YOUR MOWER'S BLADE SHARP. Dull mower blades reduce lawn quality by tearing instead of cleanly cutting the grass. These ragged leaf ends are easy gateways for disease. A

properly sharpened and balanced mower blade will reduce mower vibration, lengthen mower life and reduce fuel consumption by as much as 20 percent.

Mow High, Often, and with Sharp Blades

WATER ONLY WHEN THE LAWN REALLY NEEDS IT. When the upper 2 to 4 inches of soil is dry, water your lawn slowly and deeply. This trains the grass roots down. Frequent, shallow watering leaches nutrients from the soil and trains the roots to stay near the surface, making the lawn less able to sustain itself during dry periods.

water mornings

~~midday watering wastes water~~

water evenings

WATER EARLY IN THE MORNING. Especially during hot summer months, water out of the sun to reduce water loss through evaporation. Midday watering wastes up to 50% of the water. Evening watering can work well, too. Your water bill will thank you later.

WATER 1 TO 1½ INCHES EVERY WEEK. If it rains enough in the week, you're in luck. Otherwise, there's an easy way to ensure your lawn's watering needs. Take some empty tuna cans and place them under the sprinkler's arc. When 1 inch of water accumulates in the cans, turn off the sprinkler. Then, an hour later, check the soil 6 inches below the lawn to see if the water has seeped down enough. If so, you have your watering schedule well underway.

1-1½" water per week

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WATCH FOR WATER RUNOFF.

When you see runoff, stop watering and wait for penetration. You might have to water even more slowly. A number of issues can cause soils to become unable to absorb water: dryness, slopes, compacted soils, thatch and high wear areas. These areas might need further renovation—a good aeration and top-dressing, for instance, can do wonders—but stop-and-start or slow watering is one way to deal with these issues.



Water Deeply, but Not Too Often



RENOVATION SHOULD BE CONSIDERED IF WEEDS TAKE UP TO 50% OF THE LAWN, YOUR GRASS IS INFERIOR OR DISEASE-PRONE, OR IF THE SOIL IS TOO COMPACTED. Spring (April to mid-May) or fall (from mid September until mid October) are the best times to renovate your lawn. There are three basic steps to take.

Step 1: Aeration

Aeration removes plugs of soil and thatch to improve water infiltration, drainage, and the oxygen content of soils. The best times to aerate are in the spring and early fall, when soils are naturally moist and grass is growing quickly.

Walk-behind aerators should be rented for most lawns, but some smaller lawns can be treated with a garden fork. Just insert the fork 6 inches deep every 4 to 6 inches and lever back gently. Aeration should be followed by overseeding and topdressing to fill the core spaces with improved material.

Step 2: Overseeding

This is most successful following aeration, but even heavy raking or de-thatching can create the necessary seed-to-soil contact. Spring and fall are again good times to overseed, but doing it in September will help to crowd out the weeds that have dispersed throughout the summer.

Spread the seed at one-half the rate recommended for new lawn establishment. Be sure to follow with at least a light topdressing to cover the seed.

Step 3: Thatch Removal

Thatch is the woody parts of the grass—stems and roots—that accumulate above the soil. It is not commonly seen in Western Washington, but it can become a problem. Thatch is *not* grass clippings. It is the brown, fibrous layer on top of the soil in aeration plugs. A moderate thatch layer is good (1/2 inch), but anything more can be a problem, reducing aeration and water infiltration.

De-thatchers or power rakes can be rented, but they can take an initial toll on your lawn. It's a good toll, though, and it will give you good soil-seed contact with vigorous regrowth. It may be preferable to break down the excess thatch over time with grasscycling, topdressing with thin layers of mature compost in the spring and fall, reduced use of pesticides, and moderate use of slow-release fertilizers.

THESE RECOMMENDED STEPS will help your grass outcompete weeds in your lawn. But if weeds persist, consider taking out the troubled turf or studying more advanced weed control, which is detailed in the next section.



Maintain Your Lawn with Renovation Practices

WEED AND FEED PRODUCTS ARE THE LEAST PREFERABLE METHOD OF WEED CONTROL.

Blanket application of herbicides and pesticides through weed and feed products can harm the microorganisms, beneficial insects and earthworms that are essential for healthy soils and turf. It's not a simple 2-in-1 product. It's often more than necessary for your lawn.

Let's put it this way—it's not economical to have that much fertilizer and that much pesticide. Even if your lawn is 50% weeds, then the other half of herbicide will be wasted; and even if 50% of

your grass is well-fed, then half of the fertilizer's nutrients will leach through the soil or runoff, the grass being unable to absorb anymore.

TRY APPROACHING YOUR LAWN FROM AN INTEGRATED PEST MANAGEMENT PROCESS. In this mindset, you anticipate and prevent most problems through cultural practices and careful observation of both beneficial and pest organisms. The process works includes the following steps:

- Correctly identify problem pests and understand their life cycles.
- Establish tolerance thresholds for pests.

- Monitor to detect and prevent pest problems.
- Modify the maintenance program to promote vigorous grass and discourage pests.
- If pests exceed the tolerance thresholds, use cultural, physical, mechanical or biological controls first; if those prove insufficient, use the chemical controls that have the least non-target impact.
- Evaluate and record the effectiveness of the control, and modify maintenance practices to support lawn recovery and prevent recurrence.

TAKEN WITH WEEDS IN MIND, THIS TRANSLATES TO SOME EASY STEPS:

- Identify which weeds you can tolerate and understand how fast they spread.
- Establish a tolerance threshold for the weed. This is mainly subjective, but accepting weeds like clover will save a lot of work and pesticide exposure.
- Monitor the weeds. Spring and early fall are the best times to look for weeds and monitor soil conditions.

- Modify the maintenance program to promote vigorous grass and discourage weeds. This is the easiest. Healthy grass outcompetes weeds.
- If weeds exceed thresholds, use cultural, physical, mechanical, or biological controls first; if none work, use chemical controls that have the least collateral damage. *Cultural*—create the conditions for grass to outcompete the weeds. *Physical and mechanical*—hand-pull or use garden tools to pull



the weeds one-by-one; use flame weeders or hot water weeders

for weeds around hard surfaces. *Chemical*—choosing more-natural means like vinegar and spot-spraying the weeds; broadcast applications should be avoided and only considered for *extremely* weedy lawns.

- Evaluate and see what worked. Change your maintenance habits to get your lawn back in shape and stop the problem from happening again.

Use Pesticides as a Last Resort

IT COMES DOWN TO YOU AND THE DECISIONS YOU MAKE. Is a perfect putting-green lawn necessary? Or is it okay to let some weeds grow, to water a little less, and to do things like grasscycling?

Remember that a perfect lawn is probably not the healthiest. A weedless lawn is nothing but a monoculture, where one grass species dominates the rest, disturbing the healthy diversity of a lawn ecosystem. A few weeds can be acceptable, and your decision to let a few grow can save you time, money and stress.

Remember that the dark green turf that most desire is actually a sign of high nitrogen levels in the soil. These high levels can decrease populations of earthworms and other invertebrates, increase soil acidity and cause thatch buildup. It's actually healthier for your lawn to include a few other shades of green. This just signifies that the ecosystem is working within its means.

Remember that the bottom line is flexibility. This means working with nature. If a spot of grass consistently won't grow, why not explore other options? At the base

of a tree, for example, you might have better luck with wood chips or shade-loving ornamental plants like Vinca or Pachysandra. Or if you want to be done with your lawn, consider planting a raingarden or growing other perennials. Be creative with what you have.

How you care for your lawn can affect you, your family and your community. It can affect local waterways, food webs and ecosystems. Your decisions about your lawn may be small, but simply starting small, such as choosing organic fertilizers or hand-pulling

weeds, can make a world of difference.

So maybe once a year, stand back for a moment and ask yourself, "What do I want my lawn to look like, and why?" Knowing what you are doing and why you are doing it are the first steps toward a beautiful, healthy lawn.



The Naturally Beautiful Backyards (NBB) program promotes the creation of healthy and productive ecosystems in residential yards and gardens by providing education on earth-friendly gardening techniques.

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Set Realistic Goals

FOR MORE INFORMATION

Online publications and resources: www.nbbackyards.org

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