Controlling Pests and Weeds

Taking an Integrated Pest Management approach to weeds is part of natural lawn care. To do this:

Set action thresholds: Decide how many weeds you can tolerate and what kinds.

Monitor and identify weeds: Check the list of resources for help in identifying weeds. Perennial weeds, such as clover and dandelion, continue to grow from year-to-year. Annual weeds grow, set seed and die within one year.

Prevent problems: Maintaining a healthy lawn will reduce the need for pest and weed control. Examine your yard management practices. Often, weeds are symptoms of a larger problem. Weeds may indicate conditions that are too wet, dry, shady, compacted or low in fertility. If the problem is not corrected, weeds will just re-invade over time.

Use less-toxic weed control:

- **Physical control:** You can use a pincer-type long-handled weed puller or screwdriver to remove weeds without chemicals.
- **Less toxic herbicides:** Herbicides are pesticides that kill weeds. Less toxic alternative herbicides made from naturally-derived ingredients include clove oil, acetic acid (found in vinegar) and pelargonic acid. These products kill leaves and dry out plants to starve the root system. Two to three applications are often required to effectively control tough weeds. These are non-selective and will kill any plant, so they are best-suited to use in mulch beds, sidewalks, and driveways.
- **Use traditional herbicides as a last resort** and then only spot spray weeds. Using herbicides, including "weed and feed" products, on the entire lawn overuses pesticides and increases chances for herbicides to leach into groundwater or runoff into streams. Twenty-three pesticides, including herbicides, have been found in Washington streams.

Use pesticides correctly:

- Herbicides are potentially dangerous to nearby plants as well as to humans and animals. Always follow label directions carefully. Applying more than the label rate is not better – or legal.
- Avoid using combination pesticide/herbicide and fertilizer products, such as "weed and feed" products. Using these products spreads pesticides over the entire yard instead of just where they are needed — on pests and weeds. In addition, weed control products work best on the leaf blade, while fertilizer works best in the soil.
- Buy only as much product as you need.
- Dispose of empty containers in the garbage. Dispose of unused pesticides at household hazardous waste disposal sites.
- If you have to apply an herbicide on a regular basis, there is probably a landscape design or soil problem that needs to be addressed.

Resources

Tacoma-Pierce County Health Department: **www.tpchd.org/naturalyardcare**

Water Conservation Program, Tacoma Water: **www.tacomawater.com**

Washington State University's Gardening in Western Washington: **http://gardening.wsu.edu**

Washington State University's Integrated Pest Management guide: **http://pep.wsu.edu/hortsense**

Puget Sound Clean Air Agency guide to lawnmowers: **www.pscleanair.org/actions/yardcare/mowing.aspx**

Michigan State University weed identification guide: **http://www.msuturfweeds.net/**

Local household hazardous waste disposal: Call the Hazardous Waste Line at (800) 287-6429 for collection sites and events in Pierce County.

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Practicing natural lawn care can help you grow a beautiful lawn that is healthy for your family, the environment, and drinking water supplies.

Natural Lawn Care

Our yards can be great places to connect with the outdoors and many people enjoy a green lawn. However, conventional lawn care practices can take a toll on health and the environment. Experts have found:

- A typical suburban lawn in the U.S. uses 10,000 gallons of water per year;
- Homeowners use 10 times more pesticides per acre than farmers; and
- Gas-powered yard equipment contributes about 13 percent of summertime ozone in the Puget Sound region.

The five main practices involved in producing a healthy lawn are mowing, fertilizing, watering, de-thatching and aerating and controlling pests/weeds.

Lawn Care Practices By Maintenance Style

Maintenance Style	Mulch Mowing	Number of Fertilizer Applications /Year	Time of Year to Fertilize	Watering	De-thatching, Aerating and Pest Control
Very Low Maintenance	3+ inches	None	None	None or 1 inch per month (drought dormant)	As needed
Low Maintenance	2 – 3 inches	1	September	None or 1 inch per month (drought dormant)	As needed
Medium Maintenance	1 ½ - 3 inches (see Mowing section)	2	May September	1 inch per week (including rainfall)	As needed: Aerate and de-thatch in mid-late spring and/ or early fall
High Maintenance	See Mowing section	3-4	April June (optional) September November	1 inch per week (including rainfall)	As needed: Aerate and de-thatch in mid-late spring and/ or early fall

Grass selection

Grass species affects maintenance needs. Perennial ryegrass, Highland and colonial bentgrasses and fine fescues (creeping red fescue, chewings fescue and hard fescue) are the best choices for lawns in western Washington. To find out what kind of grass you have, contact WSU Extension or the Tacoma-Pierce County Health Department.

Type of grass	Nitrogen needs	Drought tolerance	Traffic tolerance	Sun/shade
Perennial Ryegrass	High	Low	High	Sun
Bentgrass	Moderate	Moderate	Moderate	Sun
Fine Fescue	Low	High	Moderate - low	Dry shade

For a more natural-looking lawn that needs little to no fertilizer or water and that is also better suited to steep slopes or shady areas, consider using:

- **Eco-lawn mix**, which contains a variety of drought-tolerant grasses and flower seeds.
- **Kinnikinnik and wild or beach strawberry**, native drought-tolerant groundcovers.
- **Moss**, which can be a good groundcover in shady areas.

Mowing

Mow to the correct height: Grass roots grow in proportion to the height of their leaf blades, so mowing grass at the correct height leads to healthier grass, better root development and reduces the amount of water grass needs to grow well. Remove no more than 1/3 of the leaf blade at one time.

Grass species	Best mowing height
Perennial ryegrass	2 – 2 ½ inches
Fine fescues	1 ¼ - 2 inches
Bentgrass	½ – 1 ½ inches

Mulch mow or "grasscycle": Returning mower clippings to the lawn keeps valuable nutrients where they are needed and provides 1/4 to 1/3 of annual nutrient needs. Mulch mowing does not contribute to thatch. While special mulching mowers produce fine clippings that can be evenly spread and left on the lawn, you can mulch mow with almost any lawnmower:

- **Rotary mower:** insert a fitted plug into the grass catcher chute.
- **Reel mower:** just leave off the basket and let the clippings fly.

Keep your mower blade sharp and mow when grass is dry to produce a clean cut. Dull blades tear grass, providing an opportunity for disease infestation and water loss. Sharpen the blade or reel once or twice annually.

To maintain a natural lawn, leave grass clippings on the lawn, use slow release fertilizers and use the least amount of fertilizer necessary to maintain grass to your expectations.

Fertilizing

Fertilizing your lawn responsibly can ensure healthy plant growth and reduces the chance of fertilizers leaching into groundwater. Obtain a soil test from a soil testing lab every three years to monitor nutrient levels, pH and organic matter. Base inputs on these tests. (See the TPCHD Natural Yard Care website for labs)

Use natural organic and slow release fertilizers. Quick-release fertilizers release nutrients quickly and are more susceptible to leaching into groundwater. Natural organic or slow release fertilizers provide even, prolonged feeding and a more sustainable nutrient supply.

Apply the right amount of fertilizer and use the least amount of fertilizer necessary to maintain grass to your expectations of quality. Mulch mowing reduces the need for fertilizer by 1/4 to 1/3.

- Applying at least 1/2 to 2/3 of the annual amount of fertilizer in the fall will build your lawn's nutrient reserves for winter and the following spring.
- Different grass species have different nitrogen needs for optimum growth. Including nitrogen from mulch mowing, even a high-maintenance, perennial ryegrass lawn should receive no more than 4 to 5 pounds of nitrogen per 1,000 square feet per year. Bentgrass and fine fescue need no more than 2 to 3 pounds of nitrogen per 1,000 square feet per year.
- At each application, lawns should receive no more than 1 pound of nitrogen per 1,000 square feet.
- To apply fertilizers evenly, reduce the application rate of your fertilizer spreader, apply half the fertilizer in one direction and then apply the rest of the fertilizer at a 90° angle from the first.
- Sweep fertilizer off sidewalks and driveways and lightly water fertilizer off leaves into the soil.
- The numbers on a fertilizer bag represent the percent of nitrogen (N), phosphorus (P), and potassium (K) in the product. For example, 18-5-9 indicates the product is 18% N, 5% P^2O5 (phosphorous) and 9% K^2O (potassium). Unless a soil test indicates a phosphorus deficiency, choose a fertilizer where the numbers on the bag are close to a 4:1:3 or 6:1:4 ratio.

How much fertilizer does it take to get one pound of nitrogen per 1,000 square feet?

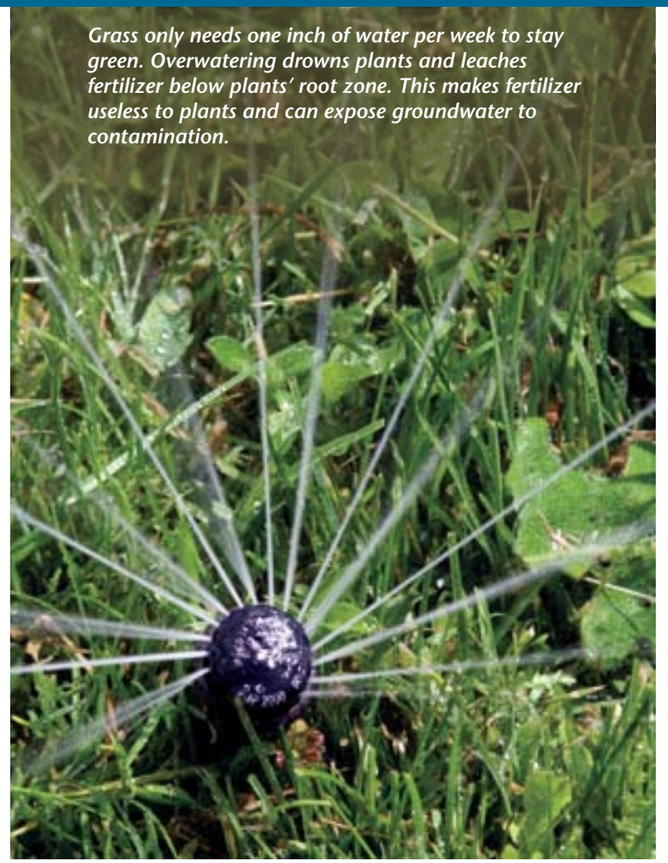
Using an 18-5-9 fertilizer:

$$\frac{1 \text{ lb N}}{.18 \ \frac{\text{lb N}}{1 \text{ lb fertilizer}}} = 5.6 \text{ lbs fertilizer}$$

For a 4,000 ft^2 lawn:

$$\frac{4{,}000 \text{ ft}^2 \times 5.6 \text{ lbs fertilizer}}{1{,}000 \text{ ft}^2} = 22.4 \text{ lbs fertilizer}$$

Thus you would need 22.4 pounds of fertilizer for a 4,000 square foot lawn. Try to apply the correct amount. Remember, more is NOT better.



Grass only needs one inch of water per week to stay green. Overwatering drowns plants and leaches fertilizer below plants' root zone. This makes fertilizer useless to plants and can expose groundwater to contamination.

Watering

Water deeply and infrequently to wet the plant's entire root zone. Grasses do well when the whole rootzone becomes wet and is allowed to partially dry between waterings. Shallow watering will not allow deeper roots to absorb water. To determine whether you need to water, check soil moisture by digging in with a spade or a soil probe, or using a soil moisture sensor.

Grass needs about one inch of water per week (including rainfall) in summer and less April through May and September through October, or when weather has been cool and cloudy. For more information about when to water your lawn and how much water your lawn needs, see Watering Wisely, part of the Natural Yard Care brochure series.

If you do not want to water, bentgrass and fine fescue grasses are well adapted for summer drought tolerance. While these grasses will turn brown during the summer without regular water, as long as they receive one inch of water per month, they will recover when the fall rains return. It is important to reduce traffic on drought dormant lawns.

De-thatching and Aerating

In western Washington, mid to late spring and early fall are the best times to de-thatch or aerate.

De-thatching

Thatch is an intermingled layer of decomposing roots and stems found between the green, growing portion of the plant and the soil. Thatch accumulation can increase with the use of more water and fertilizer.

In general, you should consider de-thatching a lawn when thatch accumulation is more than 1/2 to 3/4 inch thick. De-thatching (also called vertical mowing or power raking) machines slice through the grass and pull thatch to the surface. Bentgrass lawns will likely need to be de-thatched every one to three years. Ryegrass rarely needs to be de-thatched. For sites with more than 1 inch of thatch, de-thatch in two passes at 45° angles.

Aerating

Over time, soil can become compacted due to heavy foot traffic, which can lead to less oxygen in the plant's rootzone and poor grass growth. Water that pools on the soil surface and thin turf due to heavy wear can indicate soil compaction. Compacted conditions can also favor weed species such as knotweed, annual bluegrass, chickweed and white clover. Encourage oxygen exchange between the air and soil by aerating – poking holes, usually 1/2 inch in diameter, in the soil. Many lawn aerators have hollow tines to pull out soil cores and deposit them on top of the ground. Collect the cores or leave them to break down.

Aerating is also helpful before applying soil amendments (such as Pierce County PREP compost or TAGRO) or renovating a lawn that is weak or thin. With aerating, soil amendments can integrate into the upper few inches of soil and seeds can have a protected area to germinate.

To renovate a lawn, aerate, apply a "starter" fertilizer (these have N:P:K ratios of approximately 3:4:1 or 4:5:1) at a rate of 3/4 pounds of phosphorus per 1,000 square feet, overseed, then topdress with about 1/2 inch of TAGRO Mix or compost.

Aerating promotes air circulation and water-holding capacity in soil, as well as root growth.