

Sustainable Lawn Care

Installation & Maintenance Practices for Northwest Professionals

Summary of recommended practices from "Ecologically Sound Lawn Care for the Pacific Northwest" – see that manual for more details and background science, available with "Natural Lawn Care" guide for residents at bottom of web-page: www.seattle.gov/util/ProIPM



Sustainable lawn care practices work with nature to create cost-efficient, healthy lawns. Northwest landscape professionals and scientists have developed and proven these methods on a variety of sites.

Benefits: healthier lawns, happier clients

- Reduced mowing time, water, and fertilizer needs
- Improved turf color, quality, and density
- Enhanced resistance to diseases and weeds
- Improved year-round nutrient availability
- Healthier for people, soil, waterways and wildlife
- Good for business: satisfied customers!

Note: this guide is for soil-based turf. While similar principals apply to sand-based sports turf, practices will differ. Grass species and dates here are for the Pacific Northwest region, west of the Cascades. For other regions, check your local Cooperative Extension publications (see Resources on back).

Key recommendations in this guide

- Realistic expectations: Northwest lawns are a meadow-green color, can have a few weeds, and are thick, wear-resistant and healthy.
- Assess sites to plan practices and soil improvement.
- Choose site-adapted grasses, and maintenance practices.
- Mow regularly: 2-3" on rye/fescue, 1-1½" on bentgrass).
- Mulch mow – leave clippings to improve soil, grass health, drought resistance, and reduce fertilizer needs.
- Test soil every 2-3 years, and correct any deficiencies.
- Fertilize only when needed, with natural organic or slow-release fertilizers – fall is the key time to fertilize.
- Irrigate deeply but less frequently to build deeper roots. Adjust timers for season and weather. Or let low-traffic turf go brown, watering only once each dry month.
- Renovate poor lawn areas with aeration, over-seeding, and compost topdressing. Or fix soil and replant.
- Use Integrated Pest, Weed & Disease Management.

Healthy lawns grow on healthy soil: Northwest lawn assessment

Lawn Care: An Ecosystem Approach

Like forests or prairie grasslands, lawns are dynamic ecosystems: communities of plants, soil, and microbes; insects and earthworms and the birds that feed on them; and humans who mow, water, fertilize, and play on lawns. The interactions of these community members shape the dynamic equilibrium we see as a lawn. Understanding and working within the natural processes that shape the lawn and its soil community can yield a durable, beautiful lawn that is easy to care for. As it turns out, these ecologically sound methods will also help reduce water use, waste, and pollution.

Use nature as your model

Natural systems:

- Recycle everything – water, waste, and nutrients – back into new life
- Are diverse – and therefore dynamically stable (tend to recover from pests, weather, etc.)
- Are defined by the resources (sun, soil, water) available on-site
- Have inherent beauty: elegance, complexity, and balance



Set Expectations and Tolerance Levels

Lawn Color and Weeds: Aim for Healthy Good Looks

Sustainable practices start with educating customers about the value of a healthy, durable, good-looking lawn with:

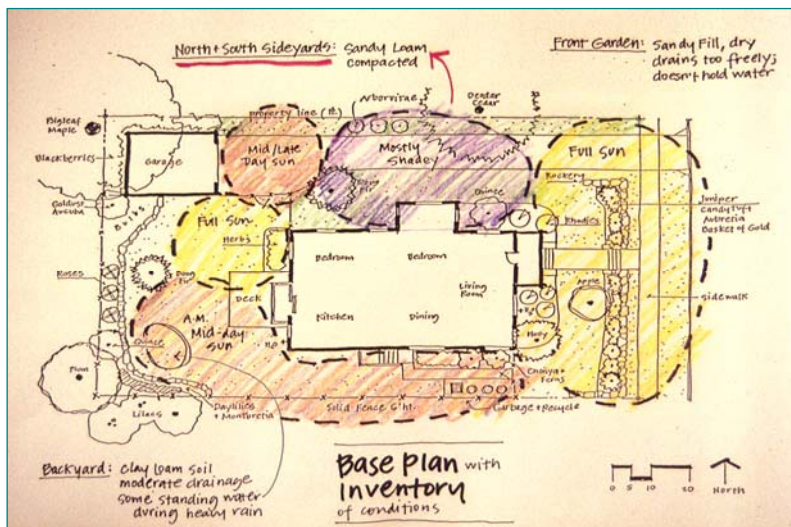
- A meadow-green color. Dark green is a sign of over-fertilization and/or grass species that won't thrive here.
- Some broadleaf plants (aka "weeds"). Customer surveys show that dense healthy turf with 10-15% mow-able broadleaf plants is very acceptable. Clover is a beneficial nitrogen fixer; other plants such as lawn daisies, yarrow, etc. are included in "eco-lawn" mixes. Target the problem weeds; leave the rest.
- Reasonable mowing height. Mowing too short causes shallow rooting and weed invasion.

- **Sun** Most lawn grasses grow best in full sun to moderate shade. Light shade from deciduous trees may reduce summer water needs. Heavy shade from coniferous trees or buildings will never grow dense grass – alternate ground covers work better in heavy shade.
- **Slope** Moderate slopes work best for lawns, providing some surface drainage and a safe slope for mowing. 1%-6% slope is ideal (1-6 ft. drop in 100 ft. run), but up to 12% is mowable. Steep lawns are also difficult to water.
- **Drainage** Successful lawns have both surface drainage (some slope) and subsurface drainage so the soil doesn't stay waterlogged. Soils that stay saturated will never grow healthy grass – install subsurface drains or switch to a more wet-tolerant ground cover.
- **Visual Evaluation** Stand across the street to judge the lawn's overall condition, then move closer noting color or density variations, and problem weed areas.
- **Grass Species** Older lawns may be mostly bentgrass, which requires lower mowing (1-1½ inches) and less fertilizer. Low maintenance lawns may have a lot of annual bluegrass. Newer lawns are usually a blend of turf-type perennial ryegrasses and fine fescues, which should be mowed higher (2-3") and fertilized more.

Assess Your Site to Plan Practices

Site Analysis: Sun, Soil, Drainage, Traffic & Use Zones

Start by drawing the site conditions, noting sun/shade, soil and drainage, and apparent traffic, wear or use patterns. Note zones that need higher appearance or maintenance, such as near entries, formal beds, or high traffic areas.



Example site plan, courtesy of Stenn Design

Zones: Client Use and Appearance Needs

Areas near building entrances and high use areas will often need higher appearance and maintenance levels. Try to match maintenance zones to existing irrigation zones.

Test the Soil

Test soils on new sites and every 2-3 years to identify pH, salt or nutrient problems, and plan fertilizer, lime, water and compost applications. Sample each distinct zone or problem area. Collect several sub-samples in each zone and mix them in a labeled plastic bag (don't use metal containers). Follow sample size and labeling directions from your soil testing lab. Map and label your zones to track changes from year to year. **To find soil test labs, call the Garden Hotline at 206-633-0224.**

Evaluate Soil and Conditions

Pull several core samples from each lawn zone. Healthy soil is brown, crumbly and sweet smelling, showing deep root development and plenty of earthworms. Look for:

- Soil type (texture): sand, silt, or clay. Sandy soils drain well, but hold less water and nutrients so will need smaller, more frequent fertilization and irrigation. Clay and silt soils drain poorly but hold water and nutrients well. Organic matter improves both sand and clay soils.
- Soil color and odor: tan to brown with sweet smell is healthy; light color indicates low organic; blue or grey with sour smell indicates water-logging or poor aeration.
- Organic-rich (brown horizon) extending at least 6" deep.
- Soil structure: crumbly, with plenty of air space.
- Root development extending at least 6 inches deep, with dense branching and healthy (white to tan) color.



Visual evaluation of lawn condition in different areas, combined with probing soil conditions with a T-handled soil core sampler or shovel, will help you determine lawn restoration and maintenance plans, priorities, and costs.

Common Lawn Problems and Solutions

Lawn Signs	Possible Problems	Potential Solutions
Overall yellowish, thin lawn with many weeds	Unhealthy, infertile soil (sometimes also overwatering and mowing too short).	Soil improvement practices include compost topdressing & aeration, mulch-mowing, and organic fertilization.
Yellow or brown patches	Dog urine damage, fertilizer burn, mower scalping, disease or insect damage.	Water, proper fertilization and mowing height will cure the first three. Use IPM approach to verify disease or insect damage.
Shallow roots (less than 6"), weak root development	Over-frequent watering or drainage problems, shallow soils over hardpan or subsoil, compacted soil, excess thatch.	Correct drainage problems and irrigation frequency. Use all the methods in this guide to improve soil health, structure, and reduce thatch.
Standing water, blue or grey soil, heavy clay, abundance of wet-loving weeds such as buttercup	Poor drainage, causing anaerobic (low oxygen) soil conditions that result in poor lawn rooting and growth and invasion by wet-tolerant species.	Correct subsurface drainage by installing drain tile system, or plant a ground cover that tolerates constantly wet conditions. Correct soil drainage with deep-tine aeration through compost topdressing to "open up" heavy soils (improve structure).
Light-colored soil	Low organic matter.	Organic matter provides homes and food for the billions of beneficial soil organisms. Compost amend or topdress soil.
Hard, compacted soil	Heavy traffic, poor soil structure (possibly from overuse of chemicals resulting in loss of earthworms and soil life), "hardpan" soil.	Spread out traffic. Reduce soluble fertilizer and pesticide use. Aerate and topdress with compost spring and fall until turf improves, or tear out lawn to deeply amend soil, then replant.
No earthworms or other beneficial soil organisms	Overuse of pesticides and soluble fertilizers, or very poorly drained (anaerobic) soils.	Soil life will return over 1-2 years with proper management. Earthworms working the soil aerate, improve drainage, recycle thatch and grass clippings, and build soil microbial life that promotes drought/disease resistance and lush lawns.
Excess thatch (fibrous material) build-up at soil surface (more than ½ inch)	Thatch is grass roots, stems, and stolons that haven't broken down, caused by over-watering, over-fertilization, compacted soils. Bentgrass creates thatch when overfertilized, and false crowns when mowed too high.	Change irrigation and fertilization practices as described in this guide. Switch to grasscycling (mulch-mowing) which helps break down thatch. Mow bentgrass at 1 ¼" or below and reduce fertilization. If thatch layer is more than 1" thick, mechanically remove it with a de-thatcher or heavy aeration.
Noticeable brown patches in early spring, with heavy feeding on lawn by birds in winter	European crane fly larvae are ¾" long gray-brown grubs called "leatherjackets". This recent invader is only a problem when numbers exceed 25/sq. ft. in late winter.	European crane fly larvae are the only significant insect problem in Northwest lawns. Birds will get most of them during the winter. Stopping lawn irrigation in August-September kills many of the eggs laid at this time. Fertilize and overseed damaged areas in early spring – the lawn will recover.
Moss in lawn	Site is too shady for grass to compete, and/or soil is acidic, compacted, infertile, and poorly drained or overwatered.	Reduce shading and overseed with more shade-tolerant fescue species (or replace with a more shade-tolerant ground cover). Spread lime to correct pH and provide calcium, and iron products to retard moss and promote grass. Use balanced organic fertilizers to help grass compete.
Various grey, white, or red patches (See IPM, page 5)	Turf diseases are common in sand-based short-mowed turf, but on soil-based turf only appear in lawns that are over-fertilized, over-watered, poor soil, or wrong grass species for this region (except for red-thread, which indicates low soil nitrogen availability).	Grasscycling (mulch-mowing), deeper less frequent watering, moderate fall fertilization with organic or slow-release products, and soil-building with compost: these practices all make it harder for disease organisms to compete with the many beneficial bacteria and fungi in the soil and endophytic mycorrhizal fungi in the grasses.

Maintenance Practices for Healthy Lawns

Maintenance Zones

Identify maintenance zones to match use and client needs. Areas near building entrances often need a higher appearance standard (for instance blowing off clippings after mulch-mowing). High wear areas may also need more attention. Try to match maintenance zones to existing irrigation system zones, adjusting schedules to meet the zone's appearance objectives. Work with clients to identify reasonable expectations for appearance and maintenance standards in different zones (see page 2).

Mowing

Mow higher, mow regularly, and leave the clippings. Mowing higher lets grass grow denser, develop deeper roots, and shade out weeds.

- Rye/fescue lawns: mow at 2-3" (lower will thin the lawn).
- Bentgrass lawns: mow at 1-1½" (above 1¼" bentgrass forms false crowns and grows sideways).
- Slow-growth, meadow, and Eco-lawn mixes are usually mowed above 3" and mowed less frequently, depending on the blend of species.

Mow weekly in spring through early summer, then every 10 days to two weeks through fall. Mow shorter on the last fall mowing (or same time as fall fertilization). Spring growth flush (and thus need to mow more frequently) can be reduced by only fertilizing in the fall, or delaying spring fertilization until May 15.

Mulch mowing builds healthier lawns, saves time and money. Science and northwest professionals' experience agree: mulch mowing ("grasscycling" – leaving the clippings) increases turf density, rooting depth, spring green-up, and summer drought and disease resistance. It saves time bagging and hauling clippings, and saves money by cutting fertilizer needs by 25-50%.

Tips for successful grasscycling:

- Mow when grass is drier, and more frequently in spring.
- Raise mowing heights during the spring growth flush, then lower gradually to normal height in June.
- If clumps appear, mow back over to scatter them – this still saves time over bagging.
- Blow any clippings off lawn surface near building entrances or other high visibility areas, for appearance and to reduce tracking into building. Blow off pavement.
- Reduce fertilization (grasscycling returns at least half the lawn's needs) especially in early spring: wait until May 15.
- **Keep mower blades sharp** for clean turf appearance, lawn health, and mulch-mowing success.



Shopping for professional mulching mowers

Good mulching mowers use a combination of deck design and blades with wavy shape and longer sharp edge to recirculate clippings and chop them finely. They blow the resulting mulch down into the turf so it's not visible and is broken down within days by earthworms and soil organisms, returning nutrients to the grass roots within weeks.



Look for:

- Mowers with 20% more power for the deck size: mulching is extra work. Hydrostatic drives adapt well to changing torque requirements of taller grass areas.
- Mowers meeting Cal EPA pollution standards. 4-stroke engines are cleaner, quieter, with a wider torque range. Professional battery electric mowers also exist.
- Easy adjustment of deck height – raising the deck slightly on the fly if clumps appear is a key strategy for spring.
- Easy conversion to bagging – you may never need it, but if lawns are overgrown, bagging once or twice can help. Bagging is also useful for fall leaf collection (reuse those chopped leaves as mulch on beds to control weeds).
- Best mulching performance, especially in wet conditions. Ask other professionals, read reviews, and then test mowers in wet conditions: the best will leave an almost clean surface even in the rain, whereas some mowers sold as "mulch-ready" actually perform poorly. The best mowers really mulch cleanly, year-round.

Fertilizing for Lawn Health

“Feed the soil, not the plant” – key principles:

- Mulch mowing returns most nutrients needed. It feeds the soil life that creates soil structure and stores and recycles nutrients into plant-available forms when needed, increasing lawn rooting depth and density.
- Fall is the key time to fertilize, to build root reserves during slow fall and winter growth. If also fertilizing in spring, use very low nitrogen with iron for early green-up. Delay N application until growth slows in mid-May. This will reduce spring top growth and mowing time.
- The grass species that grow well west of the Cascade Mountains are naturally a meadow-green color. Don't try to fertilize to a dark green color.
- For healthier lawns, apply just enough nitrogen (for the grass species) to promote dense turf and prevent yellowing. Over-fertilization promotes disease, thatch buildup, and excessive top growth (so more mowing).
- Slow-release fertilizers, either from natural organic or non-soluble synthetic formulations, provide longer, better grass nutrition, and are less toxic to beneficial soil life than soluble “quick-release” synthetics. If soluble products are used, they should be “spoon fed” at low application rates. Slow-release products last longer and don't wash away in the rain, saving \$ and protecting our waterways.
- Soil testing (every 2-3 years) is the basis for defining a sustainable fertilization program. Depending on soil availability, lawns need an N-P-K (nitrogen-phosphorus-potassium) balance of 3-1-2 or 6-1-4.
- Phosphorus is a serious water pollutant, and many western Washington soils are high in phosphorus. So a 2011 Washington law, HB 1489 prohibits application of phosphorus-containing fertilizers to lawns without a soil test within the last 3 years showing phosphorus deficiency. Compost is exempted from this ban, as are fertilizers used for newly planted or overseeded lawns.
- Lawn grasses need calcium (often leached out in rainy regions) and a moderate pH, so liming every three years is recommended – soil tests will indicate amounts.



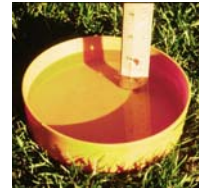
How Much? With grasscycling on healthy soil, rye/fescue lawns will need 1-2 lb. N/1000 sq. ft. per year in a balanced organic or slow-release synthetic fertilizer. High-wear ryegrass turf needs a little more. Most should be applied in the fall, with optional mid-spring application. Bentgrass lawns need 1 lb. or less per year. Adjust fertilization based on soil tests and observing lawn condition. See Calendar on back for dates. Apply with a drop-spreader for accuracy, and sweep fertilizer off pavement to reduce water pollution.

Watering

Irrigating for lawn health: deep, slow, less frequent

Grasses are adapted to intermittent dry-season rains, and develop deeper roots with fewer disease problems when the whole root depth is moistened, and then allowed to almost dry out before watering again.

Check sprinkler uniformity by putting out tuna cans and irrigating until 1 inch of water accumulates – that's how much Puget Sound lawns need each week in the hottest weather. Another option on low-traffic lawns is to let them go brown and dormant, watering deeply only once each rainless month to keep crowns alive.



Check running systems monthly, and repair or redirect heads as needed.

Add rain shutoff devices to sprinkler systems. Adjust schedules to reduce irrigation in the cooler early summer and fall months. Learn about irrigation scheduling and get local evapotranspiration information at www.IWMS.org



Integrated Pest Management: Preventive Health Care for Lawns

Healthy lawns crowd out excessive weed growth, out-grow occasional insect damage, and resist diseases. See page 3 for a few common problems and solutions.

If needed, weed control methods include manual control, spot-spraying with least-toxic herbicides, and application of natural products such as corn gluten which inhibits weed seed germination.

Integrated Pest Management (IPM) includes these steps:

- 1) Correctly identify pests and understand their life cycles.
- 2) Establish tolerance thresholds: accept some pests/weeds.
- 3) Monitor to detect and prevent pest problems.
- 4) Modify maintenance to promote health and reduce pests.
- 5) If pests (weeds etc.) exceed tolerance thresholds, use cultural, physical, mechanical, or biological controls first. If those prove insufficient, use the least-toxic chemical control and application method that has the least non-target impact, at the most effective time.
- 6) Evaluate and record the effectiveness of the control, and modify maintenance practices to support lawn recovery and prevent recurrence.

Learn more about specific weed and disease identification and control strategies in the Pro IPM factsheets and in the manual this short guide is based on, *Ecologically Sound Lawn Care for the Pacific Northwest*, both available at www.seattle.gov/util/ProIPM or see Resources on back.

Renovate: Restore an Old Lawn to Top Condition

Lawn areas that are thin, weedy, or wear-damaged can be renovated to bring them back to health. Renovation practices can fit into the regular maintenance cycle. Renovate in spring (April to mid-May) and/or fall (September to mid-October):

- 1) Aerate** Reduce soil compaction, let in air and water, and make spaces to fill with compost by core aerating. Several kinds of larger, tractor-mounted aerators can be used to break up deeper compaction. Leave the cores for organic matter – drag or mow low to break them up.
- 2) Overseed** Rake to expose the soil surface. Seed-to-soil contact is essential for good germination. Spread a site-appropriate grass type (see page 7) at 50% of the new lawn coverage rate.
- 3) Topdress with compost** Spread $\frac{1}{4}$ to $\frac{1}{2}$ inch of compost to fill aeration holes and cover the seed. On sand-based turf spread a sand/ compost mix. Hand scatter compost, or use a drop spreader or turf topdressing machine. Rake in compost to fill aeration holes, and to stand up the grass blades through compost layer. Many professionals find that aerating, spreading compost, and then re-aerating through the compost will help incorporate more organic matter into the soil.

Thatch removal (optional) Proper mowing, fertilization and irrigation generally prevents thatch buildup. But on lawns with more than a 1-inch thatch layer, mechanical thatch removal with a de-thatcher or aerator can be useful.

Weed control (optional) These renovation practices will thicken lawns, help grasses compete, and reduce weeds over time. But sometimes the client or location dictates a faster improvement. A one-time spot treatment of problem weeds will help the grass fill in. Use a broadleaf selective herbicide applied directly to the weeds 1-2 weeks before the renovation practices above. Never use “weed & feed” combination products – they are less effective, put chemicals where they aren’t needed, damage beneficial soil life, and can wash off easily, harming birds, fish, lakes and streams.



Reasons to Tear Out & Re-install Lawns

Sometimes it's most efficient to re-install a lawn to fix soil problems or other conditions. Reasons to tear out a lawn, amend the soil, and replant include:

- Lawn is over 50% weeds with poor soil conditions.
- Grass species are inferior, not thriving, or disease prone.
- Soil is deeply compacted (more than 2"), low in organic matter, or with hardpan or subsoil within 6" of surface.
- Soil surface is very uneven, or poorly graded for drainage.
- Sub-surface drainage needs to be installed.
- Owner wants and is willing to pay for a rapid improvement.

Installing New Lawns

Size and Location: How Much is Enough?

Lawns only grow well on well-drained, sunny, moderately sloped sites, and they require frequent maintenance. Talk with clients about where they want lawn for play or appearance, and consider other landscape treatments for sites where lawns won't grow well or are not needed.

Site Requirements: Drainage, Slope, & Sun

If the site is poorly drained, re-grade, install subsurface drainage, or choose a more wet-tolerant ground cover. Place lawns in full sun to moderate shade, on moderately sloped areas (ideally 1%-6% slope, 12% maximum).

Soil Preparation

Unless high quality organic-rich soil already exists, plan to amend and prepare soils:

- Minimum amendment is 2 inches of compost mixed into the upper 6-8 inches of soil. A better installation includes 3-4 inches of compost mixed into the upper 12 inches. Buy compost from a US Composting Council "STA" certified (Seal of Testing Assurance) producer, or verify it is weed-free, mature and stable with a C:N ratio of 20:1-25:1 if not an STA supplier. Use somewhat less compost in heavy clay soils, and somewhat more to amend sand.
- Rake out rocks over 1" diameter.
- Roll lightly to settle, and grade surface well so there are no high or low spots that cause mower scalping.
- Purchasing topsoil is usually not needed – the site soil amended with compost will provide a more sustainable long-term growing environment with deeper root development. Where site soil is too rocky for a lawn surface, rake in 1" of imported topsoil to create the final seedbed, mixing it with underlying amended soil.



Seed Selection

Use a blend of fine fescues and turf-type perennial ryegrasses for Northwest lawns, west of the Cascade Mountains. Fescues are more shade tolerant; ryegrasses tolerate wear but need more fertilizer. Buy from a local, reputable seed supplier, and ask about special blends for higher, less frequent mowing, shade, meadows, etc. Some grasses are pre-inoculated with natural mycorrhizal fungi that increase drought and disease resistance.

Seed or Sod: Pros and Cons

Prepare the soil exactly the same way for seeding or sodding. Sod is quick, but seeded lawns on well-prepared soil usually develop deeper root systems.

Seeding and Care of Young Turf

Ideally, seed in spring or early fall to reduce heat stress. Spread seed twice, at half-rate each time, for uniform coverage. Rake in seed, or cover lightly with compost or topsoil. Compost-amended soil will provide all nutrient needs for the first year, so additional fertilizer is usually not needed. Water newly planted lawns daily in dry weather from germination until 1" high, then every 2-3 days until mowing height is reached. Water weekly through the first summer, to establish a deep root system.

Lawn Alternatives

"Eco-lawn" grass-and-broadleaf seed mixes are becoming increasingly popular in the Northwest. First developed at Oregon State University, they include clovers, daisies, yarrow and other mowable plants, and require higher less frequent mowing and lower fertilization. Just including clover (white, strawberry, or other turf-compatible clovers) in a grass seed mix will reduce nitrogen fertilizer needs. Other alternatives include moss lawns for deep shade, and a wide variety of ground covers for sites where grass won't grow because of shade or poor drainage, or where a lower maintenance ground cover is preferred.



Calendar of Recommended Lawn Maintenance Practices for the Puget Sound Region

This calendar presents a range of practices, from the minimal maintenance for a healthy lawn to the extra practices that will maintain a high lawn appearance year-round. Additional practices useful on high wear turf such as soil-based playfields are summarized in the third column. These dates are for Puget Sound – please adapt for use east of the Cascades. Each site is unique. The keys to developing an ecologically sound plan for maintenance are careful observation of grass growth, soils, and site characteristics, and a willingness to experiment, learn, and work *with* the natural processes that sustain the lawn ecosystem.



	Low maintenance lawns	<i>extra practices for</i> Higher appearance lawns	<i>additional practices for</i> High wear turf
Jan. & Feb.	Sharpen mower blades, tune up equipment. Plan spring improvements.	Observe thin or damaged areas of lawn – make plans to repair in spring. Test soils.	Test soils , and use results to plan annual fertilization & amendments.
Mar.	Correct drainage problems, or consider replacing poorly-drained lawn areas with more wet-tolerant plantings. Begin mulch-mowing.	Monitor for crane fly, and red thread disease. Get soil test every 2-3 years to plan fertilization. Apply lime if needed, now or in the fall.	Aerate regularly through use season. Limit traffic on soggy soil. Look for and correct surface or sub-surface drainage problems.
April	Leave clippings on lawn all year. Mow at 2 to 2½ inches on rye/fescue lawns, or 1-1½ inches on bentgrass. Rake thin lawn areas to expose soil and then overseed.	On thin areas, aerate, overseed, and topdress with compost in spring, fall, or both. If thatch is 1 inch or more thick, dethatch. Test and repair irrigation systems.	Overseed thin or weedy areas with each aeration. Locally-adapted perennial ryegrasses stand heavy wear best, but need more fertilizer.
May	Pull (or spot spray) dandelions and other problem weeds to prevent spread.	Fertilize (½-1 lb.N) mid to late May when growth slows. Remove weeds April-June. Use mulching mower year-round.	Mulch-mow as much as possible throughout the whole growing season.
June	Mow regularly (weekly) until lawn goes brown and dormant. Limit wear on dormant lawns.	Mow high (2-2½ inches) and often; leave clippings on lawn. Skip an irrigation cycle when it rains.	Check irrigation systems at season's start, to verify uniform coverage with no runoff. Observe and repair heads monthly.
July	If letting lawn go brown & dormant, water slowly & deeply once each rainless month.	Water deep and slow, 1 inch each rainless week. (Sandy soils need more frequent.)	High wear turf must be irrigated all summer. Aerate if use is heavy.
Aug.	Mow every 2 weeks on dormant lawn to limit dandelion spread.	Set irrigation to run before dawn to limit disease. Let soil dry between waterings.	Adjust irrigation weekly to heat (evapotranspiration) and observed grass need.
Sept.	When rains come, rake & overseed thin areas. Aerate if compacted. Pull weeds.	Fertilize with natural fertilizer (1-2 lb. N /1000 ft ²) Sept. to Oct.15 th . Pull weeds.	Renovate early to mid-fall depending on use (aerate, overseed, topdress).
Oct.	For poor soils/poor lawns, topdress with compost now and/or in April to improve.	Renovate/replace lawns from Sept. 1 st to Oct. 15 th . Aerate, overseed, topdress.	If renovation is not planned, overseed to crowd out weeds, & de-thatch if needed.
Nov.	Fertilize September through Oct. 15 th with natural fertilizers (1 lb. N/1000 ft ²).	Fertilize by Oct. 15 with natural fertilizers; or until Nov. 30 with synthetic slow-release	Continue aerating through playing season.
Dec.	Rake leaves off lawn, or mulch-mow in. Mow down to 1½ inch on last mowing.	Birds feeding heavily on lawn in fall signal need to monitor for crane fly in spring.	Limit traffic on frozen grass or saturated soils.

For more information contact the Garden Hotline: 206-633-0224 help@gardenhotline.org

Resources: WSU Cooperative Extension: <http://www.puyallup.wsu.edu/turf/> and <http://gardening.wsu.edu/lawns/>

Sustainable Landscape Management (2011) by Thomas W. Cook & Ann Marie VanDerZanden

Ecologically Sound Lawn Care for the Pacific Northwest (1999) Manual this summary guide is based on – includes more detail on recommended practices and sources – see link at bottom of page: www.seattle.gov/util/ProIPM

IPM workshops, and factsheets on specific problems and solutions www.seattle.gov/util/ProIPM

Safer products www.GrowSmartGrowSafe.org EnviroStars business certification www.EnviroStars.org

WA Sustainable Landscape Professional certification – search that title at www.wsnla.org

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