Lawn installation and maintenance in Truckee and Tahoe

Location: Lawns do best in 1/2 to full sun and deep, rich, well-drained soils. If there are many trees, you can remove lower branches for more light. In a truly dark spot, lawn may not be the best ground cover. Several hardy perennial groundcovers grow well in deep shade, some tolerate mowing.

When to plant: Successful lawns are planted in Truckee from April-October depending on weather. Spring through early summer is often easiest. Hot weather makes irrigation more challenging but seeds are slower to germinate in cold. It is possible to seed in late fall or in late winter but success varies greatly on natural precipitation.

Soil Preparation: Thorough soil preparation is the same for seed and sod. ("Sod looks good because it's grown from seed"). **This is the most important stage of any Sierra lawn installation.** Time and effort you spend preparing your soil will be repaid thousands of times during the life of the lawn ("good soil preparation is money in the bank, a healthy lawn is the interest"). **You may have your soil tested** however, we have seen 100's of soil tests from Truckee and Tahoe and the reports are remarkably similar. **Our soils are essentially mineral base material or subsoil right to the surface**. Most of us have slightly acidic, silty-loam with adequate phosphorus, potassium and micronutrients. Our soils are crucially lacking in organic material, nitrogen, calcium, and sulfur. Our soils have weak (poor) structure, basically rock in some stage of erosion. Heavy snow and wet conditions compress dense native soils, shrink air spaces, limit gas exchange, inhibit water infiltration, and impede strong roots. A healthy and lush lawn requires deep, rich, well-draining, aerated, and resilient soil that allows oxygen in, to support roots and vital microorganisms. Mature, finished organic composts (Kellogg Gromulch or Amend) and well composted manures incorporated into the existing soils solve many problems. **Humus** is the completely composted (mineralized) organic material that one finds as a part of compost piles and rich meadow soils. It improves nutrient and moisture holding capacities of soil while creating structure that resists compaction and allows better root system expansion.

Mature composts also add and support beneficial microorganisms in soil that aid in disease suppression. **G&B Lawn Fertilizer** will inoculate your soil with millions of microbes that can, essentially, increase the grass' root systems many times over.

If you are planting over an old, or abandoned lawn that is less than 40% bad, you might try thatching and aerating aggressively, top-dressing with **Topper** compost, and then overseeding, in order to revive it. It is sometimes better to remove old sod (if sod) and start over from seed.

Improving most Truckee / Tahoe soils: Spread 4-6" (or even 8") of mature compost - either from your own piles, from MANY bags, or from folks with horses. **Aged (≥2 years) horse manure** is excellent and inexpensive (free) compost. Add calcium (limestone) for bluegrass and clover lawns and if a soil pH test indicates acidity to bring your soil pH to near 6.5 (50 lb/1000 sq ft is helpful). Rototill your soil to a depth of ~8-10" and thoroughly blend the organics with the existing soil. The deeper the soil is prepared, the deeper the water and your grass roots will go and the more resilient your lawn will be.

After tilling, rake smooth and grade. Take care to slope it away from your house and walkways. Continually remove rocks and sticks as they surface. Roll the area with a full roller, then rake and roll again to fill in depressions and smooth bumps. Repeat and repeat again as necessary. If you have varied terrain, remember that water will run off of steep slopes and pool in low areas, creating irrigation challenges and potential winter ice damage. Keep slopes gradual, avoid depressions, and consider ease of mowing.

Notes: If you are planting in "topsoil" or "humus" delivered to your yard, be aware that many manufactured "topsoils" consist of sawmill middens mixed with dirt or road sand and may be infertile and even detrimental to plant growth. Our dump (TTSD) has decent base material, local "topsoil," but it lacks ample organic material. **Mature compost must be added.** Well-aged horse manure compost is a favorite local bulk amendment obtained from nearly anyone with horses (for free or nearly so) if you are willing to pick it up. Horse manure less than 2 yrs. old has more nitrogen but potentially more weed seeds. It is important that you blend any transition area between the lower native soil and the "topsoil" to avoid an interface that discourages water movement (and deep the deeper root growth that follows water movement).

Pre-seeding Weed Prevention: If you have the time, after preparing the soil, lightly fertilize and irrigate your prepared soil for 2 weeks to bring up whatever weed seeds may be present.. (You can do this several times for more complete eradication.) Kill the weeds with your preferred method (plucking, hoeing or "solarization"). One small advantage of sod is that you avoid this step because sod will completely smother any weeds.

Seeding: Apply a slow-release organic fertilizer with ample nitrogen and some phosphorus before planting. **G&B Organic Lawn Food** and **Biosol** are our favorites.

Measure your lawn area (GoogleEarth has an area tool) and choose the varieties of seed you are going to sow (seeding rates vary by species). Use a broadcast spreader. For spot seeding, mix the seed in a bucket with **Topper** compost and cast that mixture. It's best to go over large areas 2 - 3 times in opposite directions for even coverage and to avoid running out of seed.

Lightly cover the seed with 1/16"-1/8" of fine finished compost; **Kellogg's Topper** is screened for this. You can use a cage roller for even distribution of compost. Use a half-full water roller to press the seed into the soil as seed to soil contact is essential. About half of the seed should be barely visible.

Initial Irrigation: **Never let seed or seedlings dry.** The soil must be kept damp but not pooling at all times during the germination period (2 to 4 weeks). **Any lapse in watering that results in dry soil (even for a few minutes) can weaken or kill germinating seeds and seedlings**. Alternatively, seedlings should never be underwater for more than a few minutes if puddles occur. Several light waterings a day may be required, (3-5 times / day in mid-summer is not unusual). Water more on windy or very hot days.

Sod: Sod from Great Basin growers looks good for 2-3 years without trouble. Eastside sod is usually grown in alkaline clay that works well in the Washoe Valley but often struggles in our area. For sod that lasts, don't skimp on soil prep., use organic fertilizers, aerate 1-2 times a year and top-dress with Topper compost every spring, after aerating. We have used excellent sod from sodlawn.com. It is delivered on consolidated trucks from the Central Valley where it is grown in rich riverside sandy-loam.

Mowing: When your grass is more than 3" high, begin mowing. Make sure your mower blades are sharp and that the ground is not so wet that the mower wheels make ruts. Set the mower height to no less than 3" (3 1/2 is better) and never mow more than 1/3 of the grass blade length at one time. In shade, mowing may change with the seasons. More frequent mowing at greater height is best. Use a mulching mower and leave the clippings (soil microbes will "eat" them and improve the soil). Topdressing with finished compost at least once and preferably twice each year helps compost the trimmings and winter straw into the soil much more quickly.

Fertilization: After 3 mowings (~8-10 weeks) you can re-apply **Biosol** and/or **G&B** fertilizers for the long-term health of your lawn. **G&B** inoculates the soil with living beneficial microbes including bacteria and mycorrhizal fungi and gives roots long lasting nutrition. Do not use "weed and feed" type fertilizers (for the first 5 months and, ideally, avoid their use forever). A healthy lawn in good soil may only need one or two fertilizations a year. Some turf managers reduce the amount of fertilizer but increase frequency slightly.

Irrigating Established Lawns: Water wisely. Automatic irrigation systems reduce waste while keeping lawns in good health. Water as infrequently as possible but water deeply when you do irrigate. If your soil is slow to infiltrate or if you have slopes, we recommend three waterings to accomplish one: ***If your lawn requires 30 minutes to obtain a ½" of water, run the sprinkler for 10 minutes, 3 times, consecutively with a few minutes between cycles.*** *The first wets the soil, the second gets water into the soil, and the third pushes the water deeper.* ***DO NOT*** *run it 10 minutes in the morning, 10 at noon and 10 at night; that encourages shallow weak roots.* During the hottest days of late summer on a sunny lawn, a very brief 2-3 minute "syringing" of the lawn in early afternoon cools the turf, increases humidity, and reduces moisture loss. We usually irrigate two times a week in spring and fall; Three times in July and August with brief syringing on a couple of the days between. See also UC•IPM: https://bit.ly/3AMg7sR

Spring Lawn Care: New lawns often need a light re-seeding after their first winter. When the snow has melted and the soil has drained, rake the straw (*it is NOT "thatch"*) out of the lawn, and allow air and light into the grass crowns. The first year, add seed to thin areas during your ***annual spring top-dressing of compost*** (Topper: 2cf./200sf.).

Carbon and Seaweed: Turf loves carbohydrates when emerging from dormancy. **Horticultural molasses** is an easy-to-use natural food that bolsters spring root growth and promotes beneficial soil organisms. **Liquid seaweed** provides natural disease prevention, micronutrients, and hormones that stimulate root growth.

Top-dress: Use Topper compost every spring for reduced thatch, reduced disease, reduced watering, and improved health and vigor of the soil and the lawn.

Animal Pests: Birds, raccoons, ground squirrels, tree squirrels, porcupines, pocket gophers, rabbits, moles, and mice all may occasionally show up to disturb areas of your lawn. The most common problem is caused by voles (meadow mice). **Voles look like hamsters or small gophers and they eat plants.** In winter they tunnel under the snow and above the ground, grazing on everything in their path including lawns, perennials, trees and shrubs.

There are several rodent deterrents and some work well. *(gardeners who use **Biosol** in late fall regularly report drastically reduced winter vole damage on lawns)* Trapping voles with mouse-traps and peanut butter bait before winter helps reduce the local population temporarily.

Castor Oil granules (or liquid spray) deters all tunneling animals, especially moles. **Moles are insectivores (they don't eat your plants) but their abundant tunnels provide homes for voracious herbivorous voles.** Keep out moles with Mole-Max and vole problems are much diminished. **We apply castor oil granules soon after the snow melts and usually once more in mid-summer with excellent results.**

Diseases: Almost all of the major turf diseases are caused by fungi (in hot humid climates). There are some 100+ turf disease causing fungi, and in any sample of soil you are likely to find several potential pathogens. We seldom have disease problems in healthy mountain lawns in our cool dry climate. The beneficial soil micro-flora and fauna compete with the pathogens for space and resources and keep them in check. Topdressing with mature compost suppresses pathogen spores. **Topper compost** and **G&B fertilizer** will introduce armies of beneficial microorganisms into the soil. Disease-affected turf may be raked and immediately top-dressed with a mature compost to boost the populations of beneficial microorganisms and help fight the disease.

Stresses on the lawn or soil can disrupt the balances of power and the pathogens may get an upper hand. Chemical fertilizers, herbicides, and fungicides often enhance disease attacks by destroying the beneficial competitors. Mowing too low, over-watering, or under-watering stresses the plant itself and opens it up for potential attack.

Typhula blight, Gray snow mold, may be our one common lawn disease. It occurs in spring under warm melting snow. Late fall topdressing with mature compost, mowing shorter in fall and bagging late clippings helps prevent disease. *Bacillus amyloliquefacien*s, extract of *Reynoutria sachalinensis,* and seaweed will help plants naturally fight disease and mildew

Fairy-ring is occasionally found when poor quality woody "topsoils" are used and there is no effective treatment.

Insect pests: We have few insect pests of serious concern in our mountain lawns. Again, deep rich soil that encourages a healthy stress-free lawn is less hospitable to many of the serious lawn pests. Aeration of compacted turf soils and dense sod, combined with topdressing with mature compost always helps. Some pests like leafhoppers are more annoying than harmful. Proper watering often solves insect problems. If you find you have a serious problem here are a few natural controls: pyrethrum for leafhoppers, neem (tree oil) for grubs, spinosad (bacterial extract) for a wide variety of insects, *Bacillus thuriengensis* for cutworms and sod webworms. Fermentation of *Berkholderia species* or Spinosad have proven broadly effective against a wide variety of insects and mites.

Autumn Care for All Lawns: Keep your lawn clear of pine needles, sticks and pine cones as much as possible going into winter. Mow one last time to 2" and bag the clippings. Many locals have success deterring voles by aerating their lawns in late fall. Aerating, and then applying **Biosol** and **Topper** topdressing is beneficial to lawn health any time. Add lime to bluegrass every year or two in fall.

Apply a light dose of high nitrogen fertilizer after your final mowing in early November. It seems counter-intuitive but, with cool-season turf, this is the best time to apply a quick-releasing, high-nitrogen lawn feeding. Apply one quarter to one half pound of total nitrogen per thousand square feet of lawn (some recommend up to 1 lb. / 1000 sq.ft.). Water well after applying the fertilizer. It is important to use a quick-release nitrogen source so that roots can consume it before going dormant when the soils freeze. *(.25 lb/1000sq.ft.=1.6 lb [Calcium Nitrate 15.5-0-0] or =1.2 lb.[Ammonium Sulfate 21-0-0]).* Research shows that this late fall fertilization provides huge benefits by increasing carbohydrate storage for winter.

Fertilize with **Biosol** as late as possible, Thanksgiving-ish or after the soils begin to freeze, for vole repellency, carbohydrates, and spring nutrient availability.

Arguments for a Small Lawn

*Lawn is a natural filter, purifying water passing through the leaves and roots and collecting dust and other pollutants.

*Lawns have the cooling effect of air conditioners. *2500 sq. ft. of turf grass releases enough oxygen for a family of 4, daily.

*On hot days, turf areas can be 15-30ºF cooler than decks, patios, shrub beds, driveways, and walkways.

*Bluegrass, in good soil, organically fed, and smartly irrigated can be one of the most sustainable plants in your landscape. No other single plant can provide as many environmental benefits.

On the other hand...

*According to the US Water Resources Council, poor lawn watering, swimming pools and automobile washing activities combined account for 27.5% of household total water usage.

Seed Selection

Kentucky Bluegrass *(3-5#/1000 sq.ft.)* is perhaps the most consistently attractive lawn grass in this area. Given healthy soil, bluegrass will choke-out most weeds and tolerate a variety of growing conditions including some shade. The color is good and the texture is fine. Bluegrass can survive several months of drought by going dormant and then recovering when water returns.

Perennial Rye *(5-7#/1000 sq.ft.)* compliments bluegrass well by germinating quickly and shading the soil while the slower germinating bluegrass sprouts. Many varieties of Perennial Rye actually produce toxins that kill pathogenic fungi and deter insects. We carry a couple of mixtures of Kentucky Blue and Perennial Rye ("80/20" (80% Rye/ 20% Blue by weight, and 50:50 by seed count)

Turf-Type Tall Fescue *(10#/1000 sq.ft.)* is slightly drought tolerant, deeper rooted turf that requires less than average fertilizer and tolerates acid soils. It does not mix as well with other grasses and while its deeper roots allow it to go several days without irrigation, it can die completely after a few weeks of severe drought.

Fine Fescues (see below) have fine texture but are very tough plants. Good addition in shade or may be used together to create a tough, low maintenance meadow.

Fine Fescue Meadow Blend (F.F.M.B.) *(5-7#/1000 sq.ft.)* is our mixture of the four fine fescues that can be used to enhance existing turf, to add to a wild meadow or to mix with our native grass blend to create a mowable (if desired) wild meadow look. A recipe: *3 lb FFMB with 2 lb Sierra Native Grass blend and 1 lb White Dutch Clover and 3 oz. Sierra Native Wildflower seeds create a spectacular 1000 sq. ft. "meadow".*

Creeping Red Fescue (*7-10#/1000 sq.ft.)* grows well in acidic and poor soil and tolerates shade. It does not grow well in wet conditions. It spreads by rhizomes and will form thin sod. (our 60:30:20 Turf Blend of Blue, Rye and Creeping Red is excellent for sun AND shade turf areas)

Chewings Fescue *(7-10#/1000 sq.ft.)* is a red fescue without as much spread but it is more shade tolerant. Chewings fescue is often mixed with bluegrass in shade lawn mixes.

Hard Fescue *(7-10#/1000 sq.ft.)* is a non-spreading clumping fine-textured grass with good color, drought tolerance and minimal fertilizer requirements. Hard fescue is often used in turf mixes and for low maintenance "lawns". (Similar in habit to Sheep and Idaho fescues).

White Dutch Clover (*2-4#/1000 sq.ft.*) adds quick greening in the spring and improves the soil for grasses when used together (recommended rate of 1/4# / 1000 sq.ft. with grass seed). Clover lawns were once a symbol of wealth and are beautiful. They benefit from occasional applications of lime. They should be occasionally mowed to promote lateral growth and to keep a tidy appearance. Lawns with clover have better soil, deeper grass roots and require less fertilization because the soil bacteria that associate with clover convert abundant N2 to NO3, a plant food. We LOVE clover in lawns.

Sierra Native Grasses *(2-3#/1000 sq.ft.)* are a native meadow or turf alternative. This "meadow" lawn alternative can be mown or grazed or left alone. Mix with additional "Fine Fescue Meadow Blend" to increase coverage. White Dutch clover, white yarrow or wildflowers can also be added to enhance the color and general appearance of a meadow. (contains: tufted hairgrass, prairie junegrass, pine bluegrass, mountain brome, Idaho fescue)

White Yarrow (*4oz./1000 sq.ft.*) is a native wildflower that forms dense feathery mats, requires very little water or fertilizer and grows well in poor soil. It is very aggressive. It is used in very low maintenance, extreme drought tolerant mowable meadows. Be sure you want it before planting.

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