

EXTENSION

Alternative "Lawn" Options for New England Landscapes

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Lawns are an integral component of the home landscape. Turf areas contribute recreational space and offer a focus of the landscape design. Grasses also sequester carbon and provide an efficient carbon sink. Nevertheless, large expanses of open lawn areas may serve as surplus in utility and could be transformed for alternate uses. Overtime, reducing the size of the area maintained as a turfgrass lawn can minimize time dedicated to yard maintenance, add an alternative aesthetic look to the landscape, and continue to provide an environmental benefit.



WHY CONSIDER "LAWN OPTIONS?"

Lawns often require significant maintenance and resources to thrive in our climate and soil conditions. While maintained lawn areas have substantial value, they may require a significant level of repeated and repetitive maintenance and expense, including inputs of mowing, irrigation, nutritional amendments (fertilizer, lime), seed for establishment or overseeding, pesticides, and labor. A mown lawn, which lacks flowering, is also unattractive to many native, beneficial pollinators. Outlying areas of a lawn,

not used for recreation, may be repurposed with alternative species, to reduce the amount of maintenance required to maintain the site and provide a benefit to the environment.

Benefits of an "alternative" lawn:

- Adds ornamental interest.
- **Provides a greater diversity of plant species** in the home landscape that provide food and other resources for beneficial wildlife.
- Serves to preserve soil moisture, suppress weeds, protect soil from temperature fluctuation, and provide habitat that hosts a variety of beneficial soil organisms.
- Once established, can serve as a **perennial ground cover** that has the ability to prevent soil erosion in areas where turf maintenance may be a challenge, such as steep banks or slopes.
- Native plants used as turfgrass alternatives create visual change in the character and beauty of the landscape, reflecting a sense of place and providing a variation in aesthetics.



Outlying areas of a lawn, repurposed with alternative species, can reduce maintenance requirements and provide a benefit to the environment.

While there is an initial increase in cost and labor during the transition and establishment of these "alternatives," over time, an established "re-purposed" lawn may provide an opportunity for reduced input and maintenance. Groundcovers that are well-suited to existing site conditions provide a varied look and texture to the landscape compared to traditional turf areas and may require less fertilizer, pesticides and mowing inputs. Reducing fertilizer and pesticide inputs decreases the potential for nutrients or chemicals to leach into stormwater, creating fewer sources of groundwater pollution. Paring down lawn mowing events cuts down on a significant source of air pollution.

ESTABLISHMENT OF AN ALTERNATIVE LAWN AREA: SITE PREPARATION AND PLANTING

The development and preparation of an "alternative" lawn area is similar to the preparation required of a traditional turfgrass lawn. **Correct plant selection, site preparation, and maintenance** may reduce the amount of labor required to transition the space to alternate species. In the beginning years, extra care must be taken

to ensure establishment success. A heavier seeding rate or a closer spacing of plants (plugs), along with timely fertilizer applications, will encourage plant growth and accelerate establishment. Adequate irrigation is essential during the establishment of new plantings (for one or two growing seasons). The areas should also be maintained as weed-free as possible. Reducing open voids on the soil surface is critical to inhibiting weed establishment.

Several strategies can be utilized to remove or kill unwanted existing vegetation within the area to be transitioned. **Time and effort spent on site preparation, to reduce or eradicate competing vegetation, leads to fewer weeds in subsequent years.** Weed seeds can lay dormant in the soil for years. Therefore, soil surface disruption should be minimized whenever possible to prevent germination at the soil surface of weed seeds suddenly exposed to sunlight. Less disturbance to the site also will maintain soil structure.



Reducing lawn mower use cuts down on a significant source of air pollution.

To prepare the area:

- Consider a soil test to determine the pH, existing nutrients and other soil characteristics of the area. For instructions, visit http://www.soiltest.uconn.edu/sampling.php or call the UConn Home and Garden Education Center toll-free (877) 486-6271 or the UConn Soil testing lab at (860) 486-4274. Amend or create conditions, based on soil test recommendations, which favor healthy plant growth.
- **Define the size and perimeter of the planting area** by mowing or staking the perimeter edge. If there is already a lack of vegetation, the outlined shape can be staked with string or marked with field paint.
- Kill or remove the existing vegetation using one of these strategies:
 - 1. If the area was originally turf, the sod can be harvested with a sod cutter and the area can then be prepared.
 - 2. The area can be scalped/mowed at an extremely low height of cut, and the soil can be tilled. However, tilling of the soil will bring dormant weed seeds to the soil surface and expose them to sunlight, which may allow them to germinate and compete with the desired seedlings.
 - 3. Treat undesired existing vegetation in the area with a non-selective herbicide such as glyphosate (Round up). It is always important to apply herbicides, whether synthetic or organic, safely and according to manufacturer instructions. Read all pesticide labels prior to use.
 - 4. Smother existing vegetation with layers of organic materials or black plastic. Best results are seen when plants are covered for at least two months during the summer.
 - Organic materials can include newspaper (multiple layers thick), cardboard, plywood, or a 6 inch layer of seasoned wood chips. Cover newspaper or cardboard with 2-4 inches of weed free mulch or straw, preferably towards the end of spring. This method works well for a small area, but will take time to kill/smother vegetation. It is inexpensive, does not disturb weed seeds, controls erosion, adds organic matter to the soil, and minimizes site disturbance.
 - **Black plastic** can be used in small or medium-sized areas (less than a few thousand square feet) to solarize or kill plants. Disposing of the plastic after the solarization process may be problematic.

Once the area has been prepared, spread the seed or install plants as soon as possible to minimize germination of exposed weed seeds. Any soil disturbance will encourage the germination of weed seeds.

If planting by seed:

- Fall is the preferred time, when temperatures are moderate, soil moisture is more available, and spring and summer weeds provide less competition. If spring seeding, a pre-emergent herbicide should be considered. Check the label to ensure the pre-emergent would not inhibit germination of turfgrasses or "alternatives".
- Ensure good seed and soil contact.
- Incorporate a starter fertilizer to aid in establishment. Slow release fertilizers, whether organic or synthetic, are preferred over quick-release, water soluble fertilizers. Slow release fertilizers provide an extended, consistent release of nutrients over a longer duration of time.
- Warm season grasses and late summer/fall-flowering plants establish with greater success when seeded or planted in late spring. Cool season perennial grasses and spring flowering plants establish best with late summer/early fall seedings, when summer annual grassy weeds are less of a challenge and weather conditions are usually more favorable for establishment.
- **Irrigate appropriately** to encourage germination, establishment, and growth of desired crop.

If planting container plants or plugs:

- In Connecticut, mid-late April or early May is usually the ideal time to plant plugs. Planting in early spring allows a full growing
 - time to plant plugs. Planting in early spring allows a full growing season for plants to establish, mature, and set seed. It is imperative, particularly if irrigation is limited, that plugs be incorporated into the landscape as early in the growing season as possible. It is important to establish root growth before the onset of hot summer weather.
- Typically, two or more plugs/ft.², on 6-8 inch centers, is recommended.

For more information regarding site preparation, planting conditions, and establishment of an alternative plant species into a turfgrass area, see <u>Preparing a Site and Planting a Meadow</u> (<u>ipm.uconn.edu/pa_turflandscape</u>). This document can serve as a resource whether converting lawn areas to native grasses or flowering plants.

PLANT SELECTION: "ALTERNATIVE" LAWN OPTIONS

The two main categories of plants used as groundcovers in an alternative lawn are grasses and broad-leaved plants.

Factors to consider when choosing plants:

Select plants that, once established:

- Require minimal supplemental irrigation to survive.
- Are disease and insect resistant, hardy and tolerant of the heat in this northeast climate.
- Are adapted for the existing sun, soil and moisture conditions.
- Require little to no pruning.
- Meet the desired size requirements for the location. Consider mature size of the plant in the overall landscape design, especially near areas of traffic, walkways, and building entrances or windows.



This fine fescue turf, which requires only infrequent mowing, is well-suited for this steep bank.

Select plants well-adapted to the existing growing conditions, rather than attempting to change site conditions to use mismatched plants.

Another option is to reduce the lawn size in areas where turfgrass growth is challenged. Mulch rings around tree perimeters provide a buffer between woody plants and turf areas, reducing mower and string trimmer damage to trees and shrubs. Using 2-3 in. of shredded bark or other organic mulch material will reduce weeds, retain soil moisture and moderate soil temperatures. Avoid direct contact between mulch and the stems of shrubs and trees.

TURFGRASS OPTIONS

COOL SEASON GRASSES

fine fescues - Festuca spp.

GROWING INFORMATION

- SPECIES: Chewings, Slender/Strong Creeping red, Hard, Sheep.
- NATIVE RANGE: Wide range across temperate regions of Europe, U.S., Canada.
- MATURE SIZE: Height: 2-3 ft.
- GROWTH HABIT: Bunch type or rhizomatous; depends on the species.
- SOIL: Dry, infertile. Can tolerate low fertility.
- EXPOSURE: Can tolerate range from full sun to partial shade.
- MOISTURE: Medium-dry soils.
- PLANTING: Best by seed: 4-6 lb/1,000 sq. ft.
- NOTES: Versatile: can be used in a variety of situations, from nursegrass component of wildflower & tall grass meadows to moderate height of cut (HOC) in low maintenance lawn. Fine fescues are well suited to low maintenance turf areas and can be left unmown or maintained as mown turf at 2-4 in. HOC.

tufted hair grass - Deschampsia cespitosa



- NATIVE RANGE: Native to US, Canada, Europe. Northern temperate regions, including high elevation areas.
- MATURE SIZE: Height: 2-3 ft.
- GROWTH HABIT: Rhizomatous roots. Bunch-type, clump-forming with a mounding habit; semi-evergreen in mild winters.
- SOIL: Grows in average, medium, well-drained soils. Tolerates range of soil conditions. Acid soil, salt, and heavy metal tolerant.
- EXPOSURE: Full sun to part shade. Tolerant of low light levels. Persists well in shade. May not flower well in dense shade. Tolerates full sun if moisture is present.
- MOISTURE: Medium; prefers wet soils (bogs, woodlands).
- PLANTING: Plugs and by seed.
- NOTES: Turf potential: colonizes disturbed sites; tolerant of low fertility sites. Excellent in naturalized areas, in out-of-play areas in golf courses or parks, or as a component in meadows. The flower panicles have delicate, open quality.

WARM SEASON GRASSES

buffalograss -Bouteloua dactyloides



- VARIETIES: Improved turf types (UC Verde, Prestige, Bowie, Bison). Primarily planted as sprigs/plugs; some seeded varieties are available.
- NATIVE RANGE: Native to North America prairies (Texas, Oklahoma).
- MATURE SIZE: Height: .25-.75 ft.
- GROWTH HABIT: When grown as a turfgrass for lawns, mowing is infrequently required. When needed, mow to a height of 2-3 in. tall.



Also may be naturalized without mowing as a 4-6 in. tall grass. Dioecious, spreads by primarily by stolons.

- SOIL: Tolerates wide range of soils; prefers well-draining soils. Adapts to alkaline soils.
- EXPOSURE: Prefers full sun.
- MOISTURE: Dry to medium. Avoid frequent watering. Plants are intolerant of excess moisture, and generally do not perform well in areas with high rainfall.
- PLANTING: May be established by seed, sod, or plugs. Vegetative plugs are preferred here in the northeast.
- NOTES: Very slow to establish here in the northeast. Not frequently recommended for this climate requires a great deal of attention to establish and persist in the northeast.

Sedges - Carex spp.



field sedge - Carex praegracilis



- There are more than 2,000 species of *Carex*, which naturally persist in a wide range of habitats. Sedges can function within or as a traditional mown lawn, unmown, or in a low maintenance setting. They require no fertilizer or chemicals to establish. Some species require less water than many conventional turfgrasses, while other species tolerate wet, moist areas. Many thrive in shade. Appalachian Sedge (*Carex appalachica*) and Field Sedge (*Carex praegracilis*) are found in wetlands, meadows, shorelines & stream banks.
- NATIVE RANGE: Native to US & Canada.
- MATURE SIZE: Height: 2-3 ft.
- GROWTH HABIT: Loose clump. Upright growth habit, spreads by rhizomes. Can tolerate lawn height of cut.
- SOIL: Medium to heavy.

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- EXPOSURE: Full sun to part shade.
- MOISTURE: Medium to wet. Prefers moist soils; good in poorly draining sites.
- PLANTING: Usually planted from plugs, as the production of seed can be a challenge
- NOTES: Tolerates disturbed habitats. Very tolerant of salty/alkaline conditions.

Pennsylvania sedge - Carex pensylvanica



- NATIVE RANGE: Native to Eastern and Central North America from Quebec to Manitoba south to Mississippi and Georgia.
- MATURE SIZE: Height: 2-3 ft.
- GROWTH HABIT: Low growing, cascading. Low sedge with soft, delicate, arching, semi-evergreen leaves (each to 1/8 in. wide). Plants spread by rhizomes. Plants may self-seed in optimum growing conditions. It typically grows in a clump to 8 in. tall.
- SOIL: Medium to sandy.
- EXPOSURE: Part shade to full shade. Tolerates heavy shade.
- MOISTURE: Dry to medium. Tolerates wet soil.
- PLANTING: Plugs are best; this species often does not grow well from seed.
- NOTES: Preferred as groundcover for dry shade, underplanting for shade perennials, or lawn substitute for dry soils in shady areas (forms a turf that never needs mowing or mow 2-3 times per year to 2 in. tall).

BROADLEAF OPTIONS

common bugle - Ajuga reptans



GROWING INFORMATION

- NATIVE RANGE: Europe, northern Africa, southwestern Asia.
- MATURE SIZE: Height: .5-.75 ft.
- GROWTH HABIT: low-growing bugleweed will spread in the garden by stolons (*reptans* means creeping) to form an attractive, mat-like ground cover. Not particularly tolerant of foot traffic.
- BLOOM: Blue; May to June.
- SOIL: Average, well-drained. Avoid planting in wet, heavy soils, provide good air circulation and divide when clumps become overcrowded.
- EXPOSURE: Full sun to part shade. Will grow in full shade, but best foliage color usually occurs in part-sun locations (at least 3-4 hours of sun per day).
- MOISTURE: Medium. Prefers moist soils with good drainage, but tolerates moderately dry ones.
- PLANTING: Space plants 6-9 in. apart for prompt cover. Will fill in large, shady areas where lawns are difficult to establish. May also be planted on banks or slopes, under trees or around shrubs.
- NOTES: Can be invasive. Can tolerate mowing. Plants may be cut back to the ground after flowering, if necessary, to rejuvenate the foliage. Avoid planting near perennial beds or lawns where its spreading nature could pose removal problems. Tolerates rabbit, deer, and black walnut.

chamomile –

Chamaemelum nobile



- NATIVE RANGE: Western Europe.
- MATURE SIZE: Height: .25-.5 ft.
- GROWTH HABIT: Spreading mat; low-growing evergreen perennial.
- BLOOM: White rays with yellow centers; June to September.
- SOIL: Average, well-drained. Best in well-drained sandy soils.
- EXPOSURE: Full sun to part shade.
- MOISTURE: Medium. Tolerates some drought.
- PLANTING: Easily grown from seed. Spreads by creeping stems that root as they go. Can be aggressive in optimum growing conditions. If grown as a lawn substitute, plant seedlings or divisions 6-12 in. apart.
- NOTES: Fragrant foliage. It can be regularly mowed as a lawn, but tolerates only
 minimal foot traffic. A higher height of cut is preferred to allow the plant to flower
 without removing the flower buds.

clover - Trifolium repens



- VARIETIES: Dutch white is the most commonly available clover by seed and is the best suited for lawn-type applications. Microclover (*T. repens* L. var. Pirouette), a dwarf cultivar of the common Dutch white clover, is also a popular option for a lawn alternative. Clover is a legume it fixes nitrogen in root nodules.
- NATIVE RANGE: Europe.
- MATURE SIZE: Height: .25-.5 ft.
- GROWTH HABIT: Low growing; spreads aggressively by stolons (creeping stems).
- BLOOM: White; May to June.
- SOIL: Well-drained. Can tolerate low fertility soils.
- EXPOSURE: Full sun to part shade.
- MOISTURE: Medium: prefers moist soils; tolerates dry soils.
- PLANTING: By seed.
- NOTES: Clover establishes and spreads quickly, choking out other, less aggressive, weeds. It is inexpensive, has an even, bright green color even in the driest parts of summer, and requires little watering or mowing and no fertilizers. Clover is not as wear tolerant as some cool season turfgrasses. A broadleaf plant, it goes dormant in the colder months and disappears from the site, leaving an area of bare soil. During its growing season, its flowers can attract bees. Therefore, it is not recommended for play/school areas where bees are a concern.

moss



- VARIETIES: A large group of plants; wide variety of species.
- NATIVE RANGE: Nearly worldwide.
- MATURE SIZE: Height: .5-1 in.
- GROWTH HABIT: Some mosses have a more upright habit, while others are prostrate, spreading by creeping rhizoids (modified roots).
- SOIL: Mosses grow in a wide variety of soil types, including Loam, clay or richly amended soils. However, soils with a high sand content may make root attachment difficult. Moss will grow in most soil pH conditions.
- EXPOSURE: Part to full shade.
- MOISTURE: Moist, damp.
- PLANTING: Mosses reproduce via spores, not seeds. Plant on a smooth surface to aid in rhizome attachment, which will speed up establishment and then growth. Mosses need rhizoid attachment at their growing edge before they will send out new branching.
- NOTES: Mosses are small flowerless plants that typically grow in dense green clumps or mats, often in damp or shady locations. Slow growing.

stonecrop - Sedum spp.



- VARIETIES: Many.
- NATIVE RANGE: Varies. Most are not native to U.S.
- MATURE SIZE: Height: .25-.5 ft.
- BLOOM: Varies: yellow, white, pink, purple; summer.
- GROWTH HABIT: Creeping, prostrate.
- SOIL: Average to sandy; well-drained is a must.
- EXPOSURE: Full sun.
- MOISTURE: Medium to dry.
- PLANTING: By plugs.
- NOTES: Attracts butterflies. Tolerant of rabbits, deer, drought, and air pollution.

thyme - Thymus spp.



- VARIETIES: Many.
- NATIVE RANGE: Southern, western and central Europe.
- MATURE SIZE: Height: .25-.5 ft.
- BLOOM: Purple; June to September.
- GROWTH HABIT: Prostrate, slow creeping.
- SOIL: Average, well-drained. Tolerates poor soils of somewhat low fertility. Loose, sandy or rocky soils with excellent drainage are best. Dislikes moist to wet soils where it tends to rot.
- EXPOSURE: Full sun.
- MOISTURE: Dry to medium.
- PLANTING: By seed or plugs.
- NOTES: Fragrant, evergreen foliage. Attracts butterflies. Tolerant of deer, drought, shallow-rocky soil, and air pollution.

yarrow - Achillea millefolium



- NATIVE RANGE: Europe, western Asia, North America.
- MATURE SIZE: While normally this species grows to a full height of 2-3 ft., it can
 persist when mowed to a low HOC and maintained as a lawn. Mow as needed with
 rotary mower on high setting.
- BLOOM: White (many cultivars available, in yellow, red, pink); June to September.
- GROWTH HABIT: Rhizomatous, spreading, upright to mat-forming perennial.
- SOIL: Highly adaptable. Best grown in lean, sandy loams. Plants do well in average garden soils and tolerate poor soils as long as they are well-drained.
- EXPOSURE: Full sun.
- MOISTURE: Dry to medium.
- PLANTING: Seed or plugs.
- NOTES: Plants tolerate hot, humid summers, drought, deer, and air pollution. Flowers attract butterflies.

Groundcover Options

In areas of a home property where grass does not grow well, groundcovers may present a solution in many challenging locations. Groundcovers are low-growing plants that spread quickly to form a dense cover. While turfgrass is the most widely used groundcover, it does not grow well in shady locations or in soils high in acidity. Unlike grasses, most groundcover plants are part of the aesthetic design and are not able to serve as a low maintenance lawn (cannot tolerate repeated mowing or wear from foot or other traffic).

Groundcovers are used most frequently for the following locations:

- Shady areas under trees and shrubs. Some groundcovers require less sunlight and less moisture and nutrients than turfgrasses.
- Where it is a challenge to establish turfgrasses due to shade or tree roots.

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• Very wet or very dry locations.

bearberry -

Arctostaphylos uva-ursi

- VARIETIES: 'Massachusetts' is a prostrate, flat-growing cultivar that produces more abundant flowers and fruits than the straight species; has good disease resistance.
- NATIVE RANGE: Native throughout northern parts of North America, Europe, Asia.
- MATURE SIZE: Height: .5-1 ft.
- BLOOM: White with tinge of pink, April to May.
- GROWTH HABIT: Creeping, slow-growing, prostrate, woody evergreen shrub that typically grows to 6-12 in. tall but spreads over time by flexible branching (roots at the nodes) to 3-6 ft. wide or more.
- SOIL: Acidic, well-drained, sandy or gritty.
- EXPOSURE: Full sun to light shade.
- MOISTURE: Dry to medium.
- PLANTING: By plugs or container plants.
- NOTES: Usually grows well in poor infertile soils. Plants should not be fertilized. Drought tolerant once established. Likes exposed open sites. Helps control soil erosion on slopes and hillsides.

bunchberry - Cornus canadensis



- NATIVE RANGE: Greenland to Alaska.
- MATURE SIZE: Height: .25-.75 ft.
- BLOOM: White, May to July.
- GROWTH HABIT: Low growing, spreads in the landscape by creeping rhizomes
- SOIL: Average, well-drained. Prefers moist, organically rich, acidic soils in part shade including sun-dappled conditions in close to full shade.
- EXPOSURE: Part shade.
- MOISTURE: Medium. Avoid dry soils.
- PLANTING: Plugs or container plants.
- NOTES: Leaves are a showy red to purple in fall. Can be difficult to establish. Rabbit and deer resistant. Attracts birds, butterflies.



wild ginger - Asarum canadense



- NATIVE RANGE: Native to U.S. and Canada. Occurs in rich woods and wooded slopes. MATURE SIZE: .5-1 ft.
- BLOOM: Purplish-brown, inconspicuous, April to May.
- GROWTH HABIT: Low mat-forming; Spreads slowly by rhizomes.
- SOIL: Average, well-drained. Prefers acidic soils.
- EXPOSURE: Part shade to full shade.
- MOISTURE: Medium to wet. Prefers constant moisture.
- PLANTING: By plugs or container plants.
- NOTES: Tolerant of heavy shade and wet soil. Provides erosion control.

Glossary:

Bunch-type grasses: have a tufted, upright growth habit. Produce tillers from the crown of the plant, with minimal lateral spreading.

Cool Season Grasses: grasses that thrive in areas with cold winters and hot summers, including Northeast U.S., with optimum growth at temperatures between 60 and 75°F (15.5 to 24°C). Cool season grass species include Kentucky bluegrass, perennial ryegrass, fine fescue, and tall fescue.

Rhizomatous (sod-forming) grasses: produce either rhizomes (underground "stems") or stolons, which extends laterally, enabling the grass to develop a firm sod. Since their growth is often horizontal, their growing points are often low to the ground and avoid removal by defoliation. Rhizomatous-type grasses fill in spots and form a tight-knit web of plants.

Rhizome: an underground, elongated stem (or shoot) that grows horizontally. Adventitious roots arise from the nodes. Stolon: an elongated stem (or shoot) that grows along the surface of the ground, from which leaves and adventitious roots develop at the nodes, filling in as a tight-knit web of plants.

Warm Season Grasses: grass species with optimum growth at temperatures between 80 and 95°F (27 to 35°C). Thrive in southern U.S. Warm season grass species include buffalograss, bermudagrass, St. Augustine and zoysiagrass.

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