

**Low-Maintenance**

# **GRASSES**

**for Revegetating**

**Disturbed**

# **AREAS**

**and**

# **LAWNS**

**by**

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## Abstract

*Low-maintenance species are suited for revegetating areas that cannot be maintained, where water is not available, and where minimal maintenance is desired. Primary consideration should be given to species that provide good soil cover and protection from erosion. Species vary in drought, wetness, and salinity tolerance; therefore, limitations of the site need to be identified before selecting species. Lawn maintenance can be reduced substantially by substituting turf-type or fine fescues for Kentucky bluegrass. By establishing one of the drought-resistant wheatgrasses, maintenance can be eliminated. The following information about species adaptation should assist readers when selecting various sites and uses.*

## Introduction

Construction and landscape activities destroy or disturb the natural vegetative cover around homes, roadways, and other areas. Revegetating these areas will prevent soil erosion due to wind and water and avert the problems associated with airborne and waterborne soil particles. Generally, it is not practical to restore these areas to the original species complex because the seeds of a few species are not available or because certain species are too difficult to establish.

Areas where construction and landscaping have occurred often have limited topsoil, mixed topsoil and subsoil, continual dryness, low fertility, and high erosion potential. These areas may be saline, rocky, or steeply sloping. In some cases, disturbed areas are mostly pure sand with little moisture and nutrient retention ability.

Low-maintenance species are desirable because they can survive with little or no watering, mowing, or fertilization. Some intervention may be needed, particularly in the establishment phase, to improve the chances of obtaining a desirable ground cover on severely degraded or harsh sites. The prime consideration for species selection should be soil conservation; however, other uses of revegetated areas can be considered.

## Species

Successful revegetation involves matching the characteristics of the site with those of potential species. Grasses are the most important species for soil stabilization in Wyoming. If the area is variable, a seed mixture may be appropriate to capitalize on favorable characteristics of each species. In general, rhizomatous species have greater soil stabilization potential than bunch-type species. Several wildflower species can be added to a seed mixture for a more “natural” look. Very few low-maintenance legumes exist; however, several are part of wildflower mixtures. A variety of species will be more attractive to wildlife.

A common trait of low-maintenance species is drought tolerance – meaning that they have the ability to go dormant (turn brown) during drought conditions. This is a survival mechanism. When moisture stress is alleviated, they turn green.

Three low-maintenance grass species deserve prime consideration:

### ***Thickspike wheatgrass***

This native grass has outstanding drought and cold tolerance and is highly rhizomatous. Under favorable conditions, the maximum height is 10 to 12 inches. The improved varieties, Critana and Bannock, were developed for revegetating disturbed sites. They establish

readily and, because of their growth habit, fill in and form an excellent ground cover, making them superior candidates for slopes and highly exposed sites.

### ***Streambank wheatgrass***

This species' name belies the fact that it is one of the most drought-tolerant and widely adapted grasses. Streambank wheatgrass also is a native and a good sod-former, similar to thickspike wheatgrass in ease of establishment. Sodar is the only variety available.

### ***Western wheatgrass***

This native grass takes a bit longer to establish than thickspike or streambank wheatgrass, and the sod is not as dense. Western wheatgrass has a bluish-green appearance, contrasting the typical light green of the other wheatgrasses. Rosana has more seeding vigor than other varieties. Once established, Ariba may have more drought tolerance than other varieties.

All of the above mentioned grasses are native cool-season species. They are good sod formers, capable of filling in. Therefore, they should be used on steep slopes and other highly erosive sites. Sod-forming species also reduce the likelihood of weed invasion.

## **Other cool-season grasses**

### ***Crested wheatgrass***

This is an introduced grass that has been used extensively for re-vegetating disturbed sites because seed is readily available, and the grass is easily established. Fairway and Ephraim are the preferred varieties. Crested wheatgrass has wide soil adaptation, some salt tolerance, and has been used for range seedings because it provides early grazing. Although it is a bunchgrass, crested wheatgrass forms a reasonably dense cover. A rhizomatous type is in development and soon may be available to consumers.

### ***Russian wildrye***

Although it is slow to establish, Russian wildrye is very competitive and keeps out invading species. It is a bunchgrass but, if seeded thickly, provides an adequately dense cover if the soil is not overly sandy or exposed to wind. Russian wildrye is a very desirable species for grazing because it is palatable at all times of the year. Like crested wheatgrass, it starts growth early in the

spring but, unlike crested wheatgrass, it maintains nutritive value through the summer and fall. Dense stands of this grass will be of a relatively short stature (8 to 12 inches) and without seed stalks. Range seedings need to be planted in relatively wide rows to be productive. Russian wildrye should not be planted on sandy soils because it is slow to establish, and wind erosion is more likely to occur on these soils. It has moderate salt tolerance. Bozoisky-Select has shown increased seedling vigor over other varieties.

## **Species for special situations**

### ***Salinity***

High soil salts limit the number of species and the degree of establishment success. A soil test determines the level of salinity: Western wheatgrass has greater salinity tolerance than the other wheatgrass varieties commonly used for lawns. Salinity is a greater problem with seedlings than with established plants and a greater problem during dry years or under conditions where irrigation cannot be used for establishment. Technically, tall wheatgrass has greater salt tolerance than any of the above-mentioned grasses but it is generally not considered for lawns though it can successfully be used in other (high salt) disturbed areas. It has fair drought tolerance even though it is better known for its tolerance to wet soil conditions. Tall wheatgrass has relatively large seeds, can be seeded deeper than other grasses, and is relatively easy to establish. It is coarser in appearance than other grasses and becomes relatively unpalatable once it produces seed heads. Tall wheatgrass is slower to mature than other wheatgrasses and, therefore, tends to remain green several weeks longer.

### ***Wet or poorly drained soils***

Soils with subsoil deposits and/or heavy clay-type soils are often wet for extended periods of time following watering or rainfall. These soils may become dry during certain times of the year; however, Western wheatgrass and tall wheatgrass are better adapted to these soils than other grasses because they tolerate both wetness and drought. Newhy, a recently released wheatgrass hybrid, shows promise as a species similar to western wheatgrass in wet soil tolerance and similar to tall wheatgrass in salt tolerance. It is finer and more palatable to livestock than tall wheatgrass. This species' tolerance to drought has not been adequately assessed.



### ***Sandy soil***

Highly sandy areas pose a problem because they normally are low in organic matter, hold very little moisture, and are subject to severe wind erosion. Indian ricegrass, a native, is often found growing on disturbed sites in Wyoming. A newly released variety, Rimrock, has demonstrated superior stand longevity compared to other varieties.

### **Grazing use**

New seedings must be grazed carefully to avoid negating the conservation value of revegetation efforts. Small plantings are easily overgrazed, resulting in irreparable damage. Thickspike and Western wheatgrass have greater palatability and are, therefore, more useful for grazing livestock and wildlife than streambank wheatgrass. Adding a legume to the mixture, such as sweetvetch, improves palatability and the nutritive value of forage. Adding wildflowers often increase the vegetation's attractiveness to wildlife. To ensure that new seedings are not damaged, it is desirable to avoid grazing until the seeded species form seed heads.

### **Alternatives to bluegrass lawns**

Kentucky bluegrass or mixtures with other species have been the standard choice for lush, green, carpet-like turf. However, many people consider the time and cost associated with maintenance of bluegrass lawns too great. Also, in many locations, water is not adequate. However, Kentucky bluegrass varieties that require less water are now available. Call a local University of Wyoming Cooperative Extension Service educator for locally available and adapted varieties.

### ***Tall fescue***

Turf-type tall fescues are reduced-maintenance grasses with lower water and fertilizer requirements than bluegrass. Turf varieties have finer leaves than varieties grown for forage. Compared with Kentucky bluegrass, this grass has a coarser appearance with wider leaves and a sparse sod. This variety has less ability to fill in gaps to form a carpet-like appearance. Since tall fescue is more resistant than bluegrass to traffic, it is popular for covering athletic fields and other heavy traffic areas.





Photo 3. Durablend is a mixture of two Kentucky bluegrasses and a perennial ryegrass developed for low-maintenance turf. Sheridan R&E.



Photo 4. Kentucky bluegrass after three years of low maintenance at Sheridan R&E.



Photo 5. Mixture of fine fescues (sheep, chewings, hard, and red) of a lawn in Laramie. This lawn was established four years before and is watered, fertilized, and mowed about half as often and much as a Kentucky bluegrass lawn of similar quality.

### ***Fine fescue***

Other alternatives to bluegrass are creeping red, sheep, chewings, and hard fescues. A mixture of these is commonly seeded. These types are related and have the appearance of bentgrass, which is used on golf putting greens. When planted thickly and adequately watered, they have a finer appearance than bluegrass. These fescues become dormant during drought but later recover with irrigation or precipitation. They require more water, however, than wheatgrasses.

### ***Perennial ryegrass***

This grass, which has been used in lawn mixtures for a fast cover, has performed well as a stand-alone species in dryland, no maintenance trials at UW's Sheridan Research and Extension Center. It maintains good color, is wear tolerant and reasonably dense, and yet does not form thatch. This species also has good salt tolerance, and it should be planted in relatively wind-free areas that are not subject to flooding. It is sensitive to winter desiccation. Perennial ryegrass has not been tested for survivability in other areas of the state.

### ***Buffalograss and blue grama***

These are warm-season native grasses that start growing several weeks later than the cool-season grasses and lose green color with the first fall frosts. On native range, buffalograss is found in the eastern Rocky Mountains up to approximately 6,000 feet elevation, and blue grama is found at higher elevations in the intermountain region. These species are generally seeded in a mixture. Although very slow to establish, they are long-lived. They grow 6 inches or less in height. Buffalograss and blue grama have become very popular for low-maintenance lawns in warmer climates; however, in Wyoming there is a long dormant season.

**Table 1.** Characteristics and suitability of low-maintenance grasses for various sites and condition

| Species  | Ease of establishment | Erosion protection         | Growth habitat | Drought tolerance | Water requirements (inches) | Salt tolerance | Wet soil tolerance | Palatability | Plant height <sup>(2)</sup> (inches) |
|--|-----------------------|----------------------------|----------------|-------------------|-----------------------------|----------------|--------------------|--------------|--------------------------------------|
| Thickspike wheatgrass<br>( <i>Elymus lanceolatus</i> )                                     | Good                  | Exc                        | Sod            | Exc               | >6                          | Mod            | Mod                | Exc          | 20-25                                |
| Streambank wheatgrass<br>( <i>Agropyron riparian</i> )                                     | Good                  | Exc                        | Sod            | Exc               | >8                          | Mod            | Mod                | Fair-poor    | 15-20                                |
| Western wheatgrass<br>( <i>Pascopyrum smithii</i> )  | Mod                   | Exc                        | Sod            | Good-Exc          | >10                         | Good           | Good               | Good         | 15-20                                |
| Crested wheatgrass<br>( <i>Agropyron cristatum</i> )                                       | Exc                   | Fair                       | Bunch          | Exc               | >10                         | Fair           | Mod-poor           | Good (early) | 12-18                                |
| Russian wildrye<br>( <i>Psathyrostachys juncea</i> )                                       | Fair                  | Fair-poor<br>(light soils) | Bunch          | Exc               | >10                         | Good           | Mod                | Good         | 24-30                                |
| Tall wheatgrass<br>( <i>Thinoyron ponticum</i> )   | Exc                   | Fair-good                  | Bunch          | Fair              | >15                         | Exc            | Good               | Poor         | 40-50                                |
| Newhy hybrid wheatgrass<br>( <i>Elytrigia repens</i> x<br><i>Pseudoroegneria spicata</i> ) | Good                  | Good                       | Sod            | Unknown           | >13                         | Exc            | Good               | Good         | 24-30                                |
| Indian ricegrass<br>( <i>Oxyzius hymenoides</i> )  | Fast (slow)           | Fair                       | Bunch          | Exc               | >6                          | Mod            | Poor               | Good         | 12-18                                |
| Tall fescue <sup>2</sup><br>( <i>Festuca arundinacea</i> )                                 | Good                  | Good                       | Bunch          | Fair              | >16                         | Good           | Good               | Fair-good    | 12-15                                |
| Fine fescue <sup>3</sup><br>Hard fescue<br>( <i>Festuca ovina</i> )                        | Good                  | Fair                       | Bunch          | Fair              | >14                         | Poor           | Poor               | Poor         | 8-12                                 |
| Buffalograss<br>( <i>Buchloe dactyloides</i> )   | Mod                   | Poor                       | Sod            | Exc               | >6                          | Mod            | Good               | Good         | 3-6                                  |
| Blue grama<br>( <i>Bouteloua gracilis</i> )  | Poor (slow)           | Poor                       | Sod            | Exc               | >6                          | Good           | Good               | Good         | 15-20                                |

<sup>1</sup>Under optimum conditions and including seed stalks

<sup>2</sup>Turf-type varieties should be used, unless primary use is grazing.

<sup>3</sup>Information is limited on other fescues. For this reason, a mixture of fine fescues should be planted.

