



# Colorado MASTER GARDENER

## Water-Wise Gardening: Creating Practical Turf Areas

no. 7.761

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### Select Turf or Non-Turf Options to Fit the Site

As *Colorado Master Gardeners*, we need to be clear with a message about “practical turf areas.” Grass plays a key role in setting aesthetic values and environmental protection in the “people” environment.

The selection of turf types should be based on the needs of the landscape design and reflect the actual use of the site. In many situations, reduced input turf, low input turf, non-irrigated turf options, or non-turf options is the best choice. There are a lot of options besides high-input Kentucky bluegrass, which is so common in our culture.

In other situations, a high-input Kentucky bluegrass lawn may be the aesthetically and environmentally the best choice for the landscape. High-input Kentucky bluegrass is the community standard for attractive green lawns. It creates the best “people space,” is central to the aesthetic value of a property, and builds community pride and appeal. When evaluating turf options, first evaluate the intent of the landscape design and use of the property. Does the design and actual use require a nice green carpet of turf? Or would a reduced input turf that looks green from the distance, but of lower visual quality close up be adequate? Or, would a turf that browns out during summer hot and dry spells be acceptable?

#### During a Drought

Drought occurs periodically in Colorado. When several years go by with less than average snow and rain, water supplies dwindle and residents must reduce water use accordingly.

Reducing water demand during drought is everyone’s responsibility. Residents may be asked to voluntarily cut back on outdoor water use or they may be required to do so by community restrictions. It is possible to maintain a landscape on a limited water budget.

During periods of prolonged drought, it is critical that residents shift expectations on the quality of their landscapes. With reduced inputs, your lawn may not be lush, but it may survive, and you will conserve a substantial amount of water. It may be preferable to allow the lawn to go dormant shifting priorities to higher value large trees.

### Environmental Benefits of Turf

Some xeric messages in the community leave the misconception that lawns are anti-environment. Irrigated lawns, in the right place, are environmentally sound. Let’s briefly summarize some of the environmental benefits of an actively growing turf:

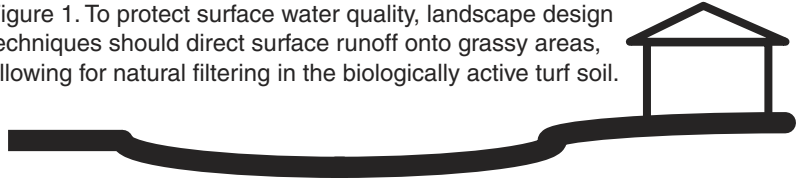
- **Surface run-off impacts water quality** – A key issue in protecting water quality is to minimize surface run-off.



*Putting Knowledge to Work*

- An average golf course (of 150 acres) can absorb 4 million gallons of water during a 1-inch rain.
- A thick turf allows 15 times less runoff than a thin turf.
- A dense turf can reduce runoff to almost zero.
- On a slope with good soil tilth, a dense sod can absorb 7.6 inches rain per hours compared to 2.4 inches/hour on a thin sod.
- When compared to a non-grass area (like a garden or field), grassy areas reduce soil erosion caused by runoff by 84 to 668 times.

Figure 1. To protect surface water quality, landscape design techniques should direct surface runoff onto grassy areas, allowing for natural filtering in the biologically active turf soil.



- **Pollution scrubber** – Grass areas significantly reduce environmental pollutants, including the following.
  - Turf traps dusts and pollens.
  - Turf controls soil wind erosion.
  - Turf reduces noise, summer heat and glare. The reduction in heat has a significant impact on the energy used for summer air conditioning and creating usable “people” space.
  - Soil microorganisms associated with an actively growing turf play a key role in breaking down pollutants (such as air contaminants washed out during a rain storm, pesticides and pollen).
  - It takes 25 square feet of actively growing turf to convert the CO<sub>2</sub> into O<sub>2</sub> needed by a person for a full day.
- **Soil improvement** – An actively growing turf supports soil microorganism activity, which improves soil structure.
- **People space** – Turf is a basic landscape component of “people space,” creating a cooler, dirt-free play space.
- **Landscape design** – To the landscape design, turf gives unity to the design elements and a neutral background to set off flowers and shrubs. It plays a primary role in setting property values and marketability of a house.
- **Fire control** – Mowed lawns are a standard component of urban fire control.

## Advantages and Limitations of Turf Options

No one grass type fits the landscape needs for all sites. Selection should be based on the actual use of the property and needs of the landscape design. Advantages and limitations of Kentucky bluegrass, turf-type tall fescue and Buffalograss are listed here.

### Kentucky Bluegrass

Some xeric messages in the community leave the impression that Kentucky bluegrass lawns are undesirable. This is based on an inaccurate understanding about the benefits, uses and limitations of Kentucky bluegrass.

Kentucky bluegrass is the standard turf for high aesthetic value “people space.” In the semi-arid climate of the west, a thick, green bluegrass carpet requires routine inputs of water and fertilizers. For example, in a typical summer on the northern Front Range of Colorado, a high-input Kentucky bluegrass lawn will need 34 inches of irrigation water (historical average).

However, Kentucky bluegrass does NOT require routine watering and fertilization. Kentucky bluegrass goes dormant without significant damage under

water stress, making it a great choice for reduced irrigation sites. Where the perfect green lawn is not essential to the landscape design and actual use of the property, reduced input Kentucky bluegrass makes a great choice, allowing it to go dormant during summer heat and dry spells. (It's important to reduce fertilizer application on Kentucky bluegrass turf under reduced irrigation.)

Thus, a more accurate Kentucky bluegrass message would be that, in areas where a beautiful green carpet of turf are not essential, water savings can be significant by allowing the bluegrass lawns go dormant in summer heat and dry spells. The issue is not the grass type, but rather expectations about appearance and management options.

When it comes to Kentucky bluegrass, not all varieties and cultivars are created equal. Some are more suitable to high inputs of water and fertilizers, while others are more adapted to low inputs. Drought-tolerant varieties have a 25 percent lower irrigation requirement! These drought-tolerant bluegrass cultivars will use significantly less water than a comparable tall fescue lawn. Refer to the materials on lawn care for additional information.

### **Dormancy During a Drought**

During a drought, allow a Kentucky bluegrass lawn to go dormant. Don't fertilize in the spring. Irrigate to green it up and replace moisture lost during the winter. After it starts to grow, begin to withhold water. It will turn golden brown, like wheat at harvest. Keep weeds under control so they don't steal moisture.

Don't go halfway if you let your lawn go dormant. Either keep it green or let it go brown. The in-between stage is when weeds take over. Restrict traffic, avoid using fertilizer, and don't aerate or de-thatch during summer dormancy.

Although bluegrass is very drought tolerant, it is still a living organism and needs a little water once in a while. During the hottest times of the summer apply 1/2 inch of water on the dormant lawn once every couple of weeks to protect the crowns from dehydration.

Revive the lawn after Labor Day to replenish soil moisture. Grass needs to store food and go into winter dormancy in a healthy state. Apply about 1 inch of water per week. Apply fertilizer and be ready with the lawnmower. As the summer heat relents, cool season grasses (such as bluegrass, rye grass and fescue) will green up. By Halloween, it should be safe to quit watering under normal weather patterns.

### **Turf-Type Tall Fescue**

Turf-type tall fescue is touted as a preferred choice for a lower-water-requiring turf. Actually turf-type tall fescue requires only 10 percent less water than a high input Kentucky bluegrass lawn.

The big difference is rooting depth. Where soil conditions allow and management practices encourage deep rooting, tall fescue possesses a great ability to root deeply reaching a larger supply of water. Thus, it may have a significantly longer interval between irrigation, which allows it to better take advantage of rain events but also requires a correspondingly heavier irrigation to replenish the water supply when rain doesn't occur. This deep rooting characteristic may give turf-type tall fescue an advantage in microclimates where frequent summer rains will water the lawn.

With high inputs of water and fertilizer (comparable to a high input Kentucky bluegrass), a tall fescue lawn will have similar aesthetic appeal to a high-input Kentucky bluegrass lawn. Many tall fescue lawns in the community actually receive as much or more water than the typical bluegrass lawn.

### **Reduced Input Tall Fescue**

A reduced input tall fescue lawn is commonly used in commercial and public sites where a rich green lawn is not essential to the design and use. When

viewed from a distance, it makes a green carpet. When viewed up close, it will be of lower quality than a higher input fescue or bluegrass lawn. On sites where a perfect lawn is not needed, reduced input tall fescue is a good choice.

If it develops a deeper rooting system on the site, it will hold the green color longer between irrigations. However, don't let a tall fescue lawn brown out with water stress; it can't go dormant! Since tall fescue cannot go dormant, it requires at least limited irrigation during dry weather.

Tall fescue is a bunch grass, but makes a nice sod when thick. With reduced input it may be somewhat clumpy. Tall fescue has tougher grass blades, making it a little more difficult to mow and of lower quality as a "play space" for small children. Fescue is more prone to staining clothes.

In summary, reduced input tall fescue makes an excellent choice where the perfect lawn is not a site requirement. However, planting a tall fescue lawn and watering it like a bluegrass lawn does not save water!

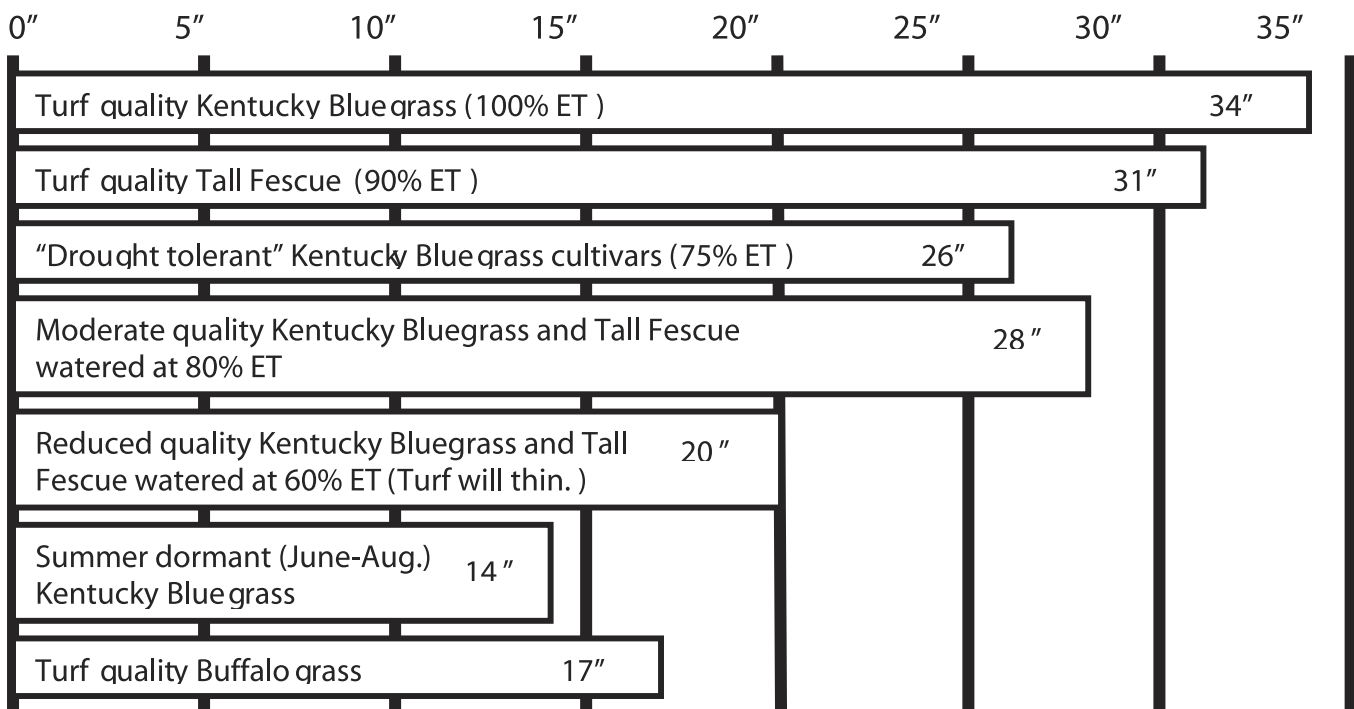
### Buffalograss

Once established, Buffalograss requires no irrigation. Being a warm-season grass, it browns out from the early fall to late spring. Summer color is dependent on the amount of water it receives. If it rains frequently or is watered regularly, it will be green. If it doesn't receive water, it will brown.

A turf-quality Buffalograss lawn uses about 50 percent less water than high-input Kentucky bluegrass (based on season long water need). Part of this water savings comes from it being slower to green-up in the spring and faster to go dormant in the fall. During the summer months, water use of a turf-quality Buffalograss lawn is around 1 inch per week. (By comparison, a high input Kentucky bluegrass would be using 1.5 inches per week.) Like any grass type, it is intolerant of traffic when dormant.

Buffalograss makes a good choice where a green lawn is not the primary objective.

Figure 2. Comparative annual water requirements.



## Small Group Discussion

Discuss turf choice options for the following scenarios.

- Mrs. Brown wants to plant a lawn at her new home on five acres. She has no irrigation water. Is a nice green lawn an option? Explain her options and the aesthetic expectations of each.
- Mrs. Gray currently has an acre of high-input (routinely irrigated) Kentucky bluegrass. She loves the appearance, but is concerned about the heavy irrigation, fertilization and mowing requirements. Will replacing the bluegrass with tall fescue or Buffalograss give a similar quality with lower input? Explain options and aesthetic expectations for each.
- Mrs. Green lives in the city, with a small, irrigated Kentucky bluegrass backyard. She is concerned about the water use, and heard that tall fescue or Buffalograss is a better choice. Will these make a good play area for her small children? Explain the options and aesthetic expectations for each.
- Mr. Red is very proud of his beautiful Kentucky bluegrass lawn and puts a lot of time and energy into make the nicest lawn on the block. With drought-imposed water restrictions limiting irrigation, he is thinking about replacing the bluegrass with tall fescue. Will this give him the perfect lawn with less water? Should the conversion be done during watering restrictions?

*Colorado Master Gardener training is made possible, in part, by a grant from the Colorado Garden Show, Inc.*

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