

Comments Regarding the WaterSense Specifications for New Homes

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Topic: 4.1.1.1 Option 1 – Turfgrass shall not exceed 40 percent of the landscapable area.

Comment: The proposed 40% turfgrass limitation is arbitrary and is not supported by science. We do not support any arbitrary limits on landscape plant material. This national criterion, voluntary or otherwise, is inappropriate and not based on best available science.

Rationale: The one-size-fits-all specification imposes a 40% turfgrass limitation on landscapable areas of new home sites regardless of location in the country. During the EPA WaterSense webinar on June 22, it was stated the 40% turfgrass limitation was taken from legislation that various communities have enacted and is an average, or consensus, based on the various figures that communities across the country have used. There was no discussion of the science or logic used by these communities to reach a specific turfgrass limitation figure nor was any assessment of the community programs that specify turfgrass limitation offered.

We believe in the practice of “the right plant in the right place,” and working closely with the green industry in promoting local and adapted plant materials appropriate for each climate and geographical location. Local geographies, climates and markets should guide the make-up of landscape materials, including species of turfgrass, trees and shrubs.

EPA staff has not provided data comparing the water use of turfgrass, trees, shrubs, and other landscape plant material within climatic zones. Without valid scientific comparisons of water use by plant species, any attempt to limit the use of a specific plant species is ill-fated and raises questions about the effectiveness of the WaterSense program.

Suggested Change (or Language):

The EPA should use best available science to produce a performance-based approach to landscape design criteria and plant selection, rather than an arbitrary prescriptive approach. We urge the EPA to continue the dialogue with all segments of the green industry on best practices and stewardship to determine the best performance-based criteria to implement as part of the new homes specification.

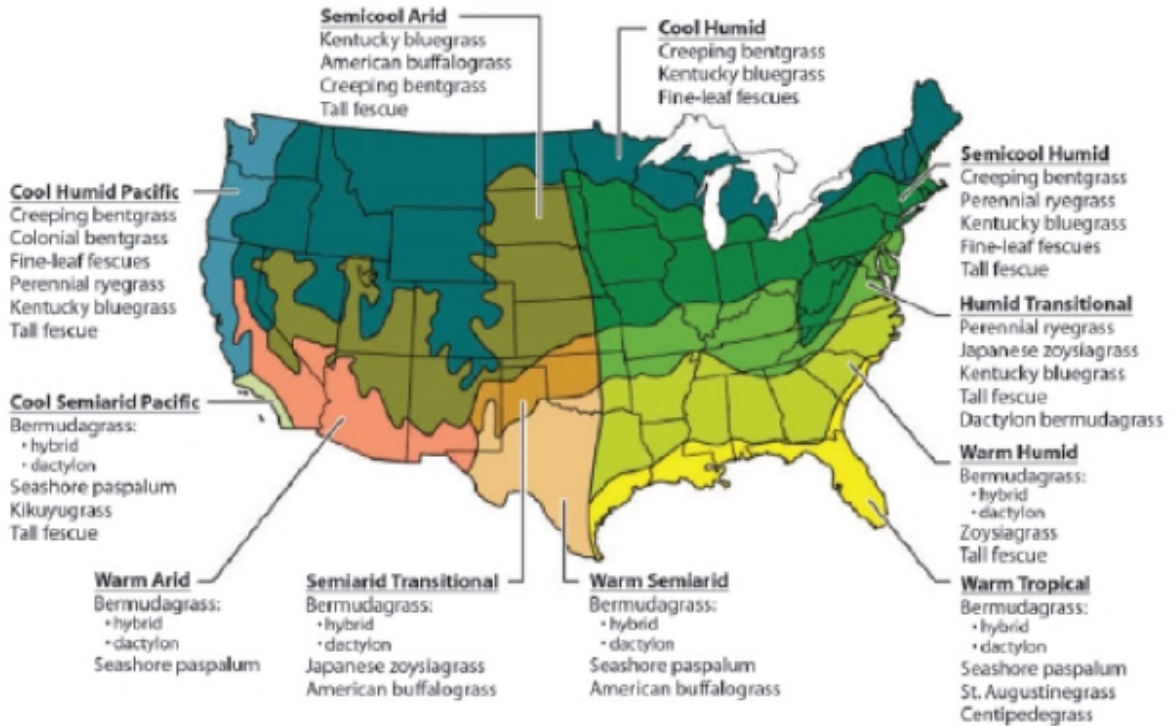


Figure 5.2. Major turfgrass climatic zones and geographic distribution of species in the United States (adapted from Beard 2002).

Topic: 4.1.1.2 Option 2 – Landscape design shall be developed using the water budget tool based on a 70 percent evapotranspiration adjustment factor.

Comment: The best available science dictates that the evapotranspiration (ET) adjustment factor should be based on climate and geography and that a single, nationwide 0.7 evapotranspiration adjustment factor for calculating the water budget is inappropriate for the entire United States.

Rationale: The single, nationwide ET adjustment factor for calculating a water budget is not supported by scientific research. Builders seeking the WaterSense label will avoid the complexities of a water budget and related calculations and simply use the option to limit turfgrass. Furthermore, designating a single ET rate ignores the regional climatic variations and average rainfall levels in different regions of the country.

The ET adjustment factor must take into consideration the need for a leaching fraction when irrigating with a water source with undesirable salinity content. The leaching fraction calls for irrigation above the ET adjustment factor to leach salts from the soil profile and is an established practice in many plant production systems, including turfgrass and landscape maintenance.

Suggested Change (or Language): 4.1.1.2 Option 2 – Landscape design shall be developed using the water budget tool based on percent evapotranspiration adjustment factor determined by the state land grant university cooperative extension program on turfgrass management. Accommodations for a leaching fraction must be included in the water budget tool.

Topic:

4.1.3 Slopes – Plantings other than turfgrass shall be installed on slopes in excess of 4 feet of horizontal run per 1 foot vertical rise (4:1).

Comment:

Turfgrass stands provide considerable benefits to society by controlling erosion and enhancing water infiltration when grown on slopes. We believe that this section is not based on the best available science and that all plant material (turfgrass, trees, shrubs, etc.) installed on slopes in excess of 4 feet of horizontal run per 1 foot vertical rise can be irrigated efficiently, if proper design and installation practices and manufacturer recommendations are employed during installation and best management practices are performed when scheduling and operating irrigation systems. In many areas throughout the United States, turfgrass is used successfully as the primary plant material on four feet of horizontal run per one foot of vertical rise (4:1) slopes in landscapes. Arbitrarily eliminating the planting of turfgrass on these slopes would significantly adversely change the market, without any assurance of less water-use or elimination of run-off. We believe that plant material for 4:1 slopes should be selected based on local climate, geography and markets.

Rationale:

Based on years of research, science and best management practice development, the best applicable science indicates that all plant material, including turfgrass, planted on 4:1 slopes in landscapes can be efficiently irrigated, with little to no increase in run-off.

Soil Erosion Control and Dust Stabilization

Turf protects nonrenewable soil resources from water and wind erosion. Turf's high shoot density and root mass stabilize surface soil, preventing erosion. Mowed turfgrasses are estimated to have shoot densities ranging from 75 million to greater than 20 billion shoots per hectare. During storms, turfgrass' high biomass matrix provides resistance to surface water flow, which slows otherwise potentially erosive water velocities. Quality turfgrass stands modify the overland process of water flow so that run-off is insignificant in all but the most intense rainfall events. Perennial turfgrasses offer one of the most cost-effective methods to control water and wind erosion of soil, reducing dust and mud problems around homes, schools, factories, and businesses. Turfgrass can function as vegetative filter strips that greatly reduce the sediment transported into surface streams and rivers, especially when positioned down slope from cropland, mines, and animal production facilities. The reduction in sediment movement not only protects soil resources, but it also reduces sediment-linked nonpoint surface water pollution in rivers, lakes, and streams. (Beard, J.B. and R. L. Green. 1994. The Role of Turfgrasses in Environmental Protection and Their Benefits to Humans. J. Environ. Qual. 23:452-460.)

Irrigation systems have been and continue to be successfully installed and properly maintained throughout the United States not only on 4:1 slopes (15 degree angle), but also on slopes (of turfgrass and other plant material) at steeper inclines. Any limits of turfgrass and/or plant material on slopes have no scientific or best practice foundation and should not be implemented as part of the final specification.

Suggested Change (or Language):

4.1.3 Slopes – When irrigated turfgrass is installed on slopes in excess of 4 feet of horizontal run per 1 foot vertical rise (4:1), the irrigation system shall be designed, installed and programmed to match the soil infiltration rate and not create run-off.
