

Water-Wise Grasses: Alternatives to Kentucky Bluegrass Turf

By: Montana Native Plant Society (MNPS) Landscaping and Revegetation Committee

Americans are obsessed with manicured lawns, dating back to George Washington's expansive grass landscape at Mount Vernon. What once was the landscaping design of the elite (emulating that of European royalty), is now standard practice for the average homeowner. There are an estimated 63,000 sq. miles of lawn cover in America (D'Costa 2017). In the northern great plains and intermountain region, manicured lawns require 1 to 1 ½ inches of supplemental water per week, 2-3 times the amount of natural precipitation. This paper will discuss the most water efficient method for maintaining standard turf grasses and present water-efficient (drought tolerant) alternative grasses for turf and/or cover.

Ways to make standard turf grasses more water efficient: Grasses considered to be standard turf species in Montana include: introduced species like Kentucky bluegrass (*Poa pratensis*), perennial ryegrass (*Lolium perenne*), and tall fescue (*Schedonorus phoenix* syn. *Festuca arundinaceus*). Another standard turf species, creeping red fescue (*Festuca rubra*) is native to northern Montana but naturalized in the rest of the state from lawn plantings.

- a. Do not begin irrigation in the spring until the grass is beginning to show signs of stress. The roots must be encouraged to seek moisture from deeper portion of the soil profile.
- b. Do not set automatic sprinklers to engage for a short time each day. Frequent irrigation only creates 'lazy roots' that concentrate in the upper 6" of the soil profile. It is more efficient to have longer irrigation periods every week or longer. Wetting the soil profile to a greater depth will encourage downward root development and more drought tolerance.
- c. Irrigate during the evening hours or early morning to avoid evaporation and wind that will disrupt the spray pattern.
- d. Increase the cutting height. As can be seen in the following Figure 1, close cropping decreases root development. Close cropping also increases evaporation and moisture requirements. Mowing heights of 2-3 inches are best.
- e. Do not bag and remove lawn clippings. Clippings help reduce surface moisture loss and returns nutrients to the soil.

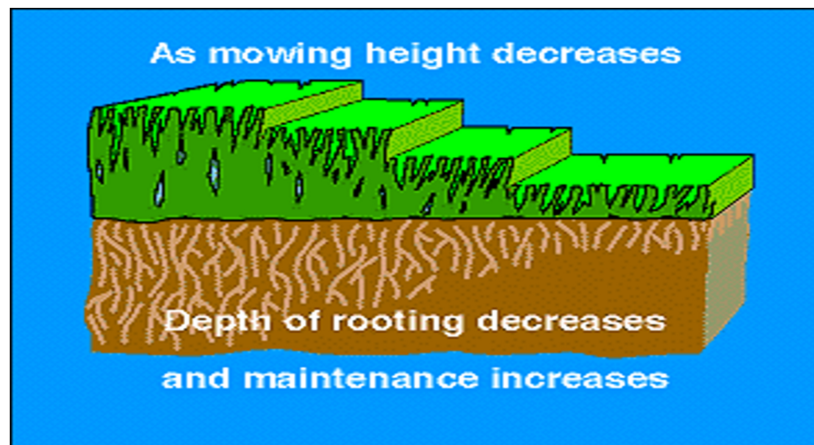


Figure 1. Root development in response to mowing.
University of Minnesota- Sustainable Landscaping.

Alternative water-wise turf/cover grasses

There are two significant studies that have been done in Montana looking at drought tolerant grasses, both native and introduced, that can be utilized for turf and/or low maintenance cover:

Day, Toby R. 2006. Intermountain West Native and Adapted Grass Species and Their Management for Turfgrass Application. Master's Thesis. Montana State University-Bozeman, MT.

A replicated study utilizing 10 single species and 8 mixes with 4 levels of irrigation. Evaluated using turf evaluation standards of the National Turfgrass Association.

USDA-NRCS Plant Materials Center. 2004. Cultural and Establishment Trial of Grasses in a Xeriscape Demonstration. Bridger, MT (unpublished Annual Technical Report).

This was an un-replicated demonstration exhibiting 9 species (5 native and 4 introduced) established and maintained under dryland conditions (12-14" ppt). The emphasis was not on turf qualities, but rather for ground cover and low maintenance under dryland conditions.

Montana State University -Toby Day and Dr. Tracy Dougher

This study was established at the MSU Horticulture Farm (Figure 2). Each single species and each mix were replicated 4 times in 5.5 ft X 35 ft plots. Irrigation was established such that 4 irrigation levels were applied. Total irrigation rates were adjusted for natural precipitation. The 'High' rate plots received an average of 1"/week, 'Medium' .75"/week, 'Low' .33"/week and 'Very Low' .10"/week. The entire area was mowed weekly to a 3" height. Using National Turf Evaluation Program (NTEP) standards, the individual plots were evaluated for **Color, Texture, Density and Quality** utilizing 1-9 ocular ratings (with 9 best). Kentucky bluegrass and tall fescue were used as Standard of Comparison representing the species most commonly used for turf in Montana.



Figure 2. Replicated Turfgrass Study at the Montana State University Horticulture Farm near Bozeman, MT. Photo by: Tracy Dougher

Table 1 summarizes and ranks the species rating for each turf characteristic and Table 2 exhibits minimum irrigation requirements to maintain turf quality and color.

Species and Mixes with Best Turf Ratings

Sheep fescue (*Festuca ovina*): This is a cool-season introduced bunchgrass, but when seeded at a heavy rate will have the appearance of a sod. Its main attribute is its drought tolerance. It is capable of maintaining turf quality with less than half the amount of irrigation required by Kentucky bluegrass. It does not tolerate close cropping. This species is classified as a 'fine-leaf' fescue having narrow rolled leaves with a soft texture.

Buffalograss (*Buchloe dactyloides* syn. *Bouteloua dactyloides*): **This is a warm-season native grass so it will remain dormant (yellow/brown) until late May and turn again in late August.** This grass is stoloniferous (with above ground runners like strawberries) so will naturally fill in to form a sod. It is naturally of very low stature, requiring infrequent mowing, if at all. This grass is drought tolerant, requiring less than half the amount of irrigation required by Kentucky bluegrass. Buffalograss has a very soft texture, very important for turf quality rating. **Warm-season grass sod can eventually be invaded by cool-season species.**

Blue grama (*Bouteloua gracilis*): **This, also, is a warm-season native grass so will be green only from early June to late August.** This is a bunchgrass but will tiller to form a sod. It has a low stature, but not quite as low as buffalograss. It also has a very soft texture.

Buffalograss/sheep fescue mix: This native/introduced species combination makes for a thick sod, with the stoloniferous buffalograss capable of spreading to fill in gaps between sheep fescue tufts. The one draw-back of combining a warm-season grass with a cool-season grass is early season and late season differential color. Sheep fescue will green up early and remain green late in the season, while buffalograss greens up late spring and goes dormant early in the fall.

Other Notable Species and Mixes (fair rating)

Western wheatgrass (*Agropyron smithii* syn. *Pascopyrum smithii*): This is a native cool-season rhizomatous species found growing on lowland heavy soils throughout Montana. It is coarse like tall fescue but is more drought tolerant requiring 25% less irrigation than Kentucky bluegrass to maintain turf color and quality. Mixing western wheatgrass with sheep fescue, blue grama, buffalograss and the native streambank wheatgrass (*Agropyron dasystachyum* var. *riparium* syn. *Elymus lanceolatus* subsp. *riparius*) produced sod with a fair rating. The coarse leaf blades and the fact that the rhizomes do not form a tight sod make this species only a fair turfgrass. **Mixing western wheatgrass (blue-green flat leaf blades) with sheep fescue (green thin rolled leaves) creates a sod with widely varying texture. Mixing western wheatgrass (cool-season) with buffalograss and/or blue grama (warm-season) creates a sod with color differential in the early and late growing season.**

Table 1. Turfgrass Quality and Timing of Color of Native and Adapted Grasses for Turfgrass Application-Bozeman, Montana

Species or Mix	Overall Turf Color	Overall Turf Texture	Overall Turf Density	Overall Turf Quality	Timing of Turfgrass Color
Kentucky bluegrass	good	good	good	good	all season
tall fescue	good	fair	good	good	all season
sheep fescue	good	good	good	good	all season
blue grama	fair	good	good	good	late-May to late-August
buffalograss	fair	good	good	good	early-June to late-August
buffalograss + sheep fescue	good	good	good	good	all season
western wheatgrass	fair	fair	fair	fair	all season
western wheatgrass + streambank wheatgrass	fair	fair	fair	fair	all season
western wheatgrass + streambank wheatgrass + sheep fescue	fair	fair	fair	fair	all season
blue grama + western wheatgrass	fair	fair	fair	fair	all season
buffalograss + western wheatgrass	fair	fair	fair	fair	all season
buffalograss + blue grama+ muttongrass (<i>Poa fendleriana</i>)	fair	fair	fair	fair	early-June to late-August
Canada bluegrass (<i>Poa compressa</i>)	poor	poor	fair	poor	all season
crested wheatgrass (<i>Agropyron cristatum</i>)	poor	poor	poor	poor	all season
streambank wheatgrass	poor	fair	fair	poor	all season
thickspike wheatgrass (<i>Agropyron dasystachyum</i> syn. <i>Elymus lanceolatus</i>)	poor	fair	fair	poor	all season
Canada bluegrass + crested wheatgrass	poor	poor	fair	poor	all season
Canada bluegrass + western wheatgrass	poor	fair	fair	poor	all season

Table 2. Recommended Timing and Minimum Weekly Irrigation for Native and Adapted Grasses for Turfgrass Application-Bozeman, Montana

Species or Mix	Overall Turf Quality	Recommended <u>Minimum</u> Weekly Irrigation Requirements and Timing for Optimum Turfgrass Quality	Recommended <u>Minimum</u> Weekly Irrigation Requirements and Timing to Retain Some Color
Kentucky bluegrass	good	1.00" mid-June to early-September	0.75" early-July to early-September
tall fescue	good	1.00" mid-June to early-September	0.75" early-July to early-September
sheep fescue	good	0.50" early-July to early-September	only during drought periods
blue grama	good	0.50" early-July to mid-August	0.50" early to mid-July to mid-August
buffalograss	good	0.50" early-July to mid-August	0.50" early- to mid-July to mid-August
buffalograss + sheep fescue	good	0.50" mid- to late-July to early-September	only during drought periods
western wheatgrass	fair	0.75" mid- to late-June to early-September	only during drought periods
western wheatgrass + streambank wheatgrass	fair	0.50" mid- to late-June to early-September	only during drought periods
western wheatgrass streambank wheatgrass + sheep fescue	fair	0.50" early-July to early-September	only during drought periods
blue grama + western wheatgrass	fair	0.50" early- to mid-July to early-September	only during drought periods
buffalograss + western wheatgrass	fair	0.75" early- to mid-July to early-September	only during drought periods
buffalograss + blue grama + muttongrass	fair	0.75" mid-June to early-September	only during drought periods
Canada bluegrass	poor	0.50" mid-June to early-September	only during drought periods
crested wheatgrass	poor	0.50" mid-June to early-September	only during drought periods
streambank wheatgrass	poor	0.50" mid-June to early-September	only during drought periods
thickspike wheatgrass	poor	0.50" early-July to early-September	only during drought periods
Canada bluegrass + crested wheatgrass	poor	0.50" mid-June to early-September	only during drought periods
Canada bluegrass + western wheatgrass	poor	0.50" mid-June to early-September	only during drought periods

Species with Poor Turf Ratings

Canada bluegrass (*Poa compressa*): This introduced grass is not very leafy at the base. When cut will leave a stemmy stubble. It also does not form a very tight sod. Thus, this species rates poor in the texture and density categories.

Crested wheatgrass (*Agropyron cristatum*): This very drought tolerant introduced grass has a coarse texture and begins to yellow during mid-season. Ranked poorly in texture and color. Although crested wheatgrass is a bunchgrass, the cultivar 'Roadcrest' is reported to spread by tillering or very short rhizomes.

Thickspike wheatgrass (*Agropyron dasystachyum* syn. *Elymus lanceolatus*) and Streambank wheatgrass (*Agropyron dasystachyum* var. *riparium* syn. *Elymus lanceolatus* subsp. *riparius*): The stems and leaves of these two native species varieties are very tough and when mowed the cutting edge is frayed rather than clean cut, resulting in a whitish hue to the cut edge. This light coloring of the cut edge casts a white/yellow hue over the sod. Thus, the low rating of texture and color for these species rank them poor as turfgrasses.

Water Efficiency of Native and Adapted vs Kentucky bluegrass and tall fescue:

To maintain optimum Turf 'Quality' Kentucky bluegrass and tall fescue required 1"/week of moisture (natural precipitation + supplemental irrigation) while western wheatgrass required .75" and sheep fescue, buffalograss, blue grama, Canada bluegrass, streambank wheatgrass and thickspike wheatgrass, and crested wheatgrass required only .50". To maintain turfgrass color Kentucky bluegrass and tall fescue required .75"/week of moisture, buffalograss and blue grama required .50", and all the other grasses required additional moisture only during drought periods.

Xeriscape Demonstration of Low Maintenance Sod and/or Ground Cover Grasses. USDA-NRCS Bridger Plant Materials Center

This planting was established as a demonstration (non-replicated) of water-wise, non-traditional turf species that could be potential substitutes for the standard manicured Kentucky bluegrass, perennial ryegrass, creeping red fescue and tall fescue lawns (Figure 3). The demonstration site was irrigated during the establishment year to ensure good establishment. During the second to fourth year (1999 – 2001) the annual precipitation was about 13". However, the annual precipitation in 2002 and 2003 was only 9.24" and 6.65" respectively. One supplemental irrigation was applied mid-season each year to keep the planting alive.

Unlike the Montana State University study that used National Turfgrass Standards for evaluation, this demonstration was established to exhibit turf and cover qualities of non-traditional, drought tolerant species maintained with no regular supplemental irrigation. Once the demonstration was established it was decided to try to quantify turf characteristics such as cover, texture (softness), leafiness, and durability (resistance to trampling). The west half of each plot was periodically mowed (3" height), while the east half was allowed to grow to its full mature height. Starting in 2002 a vehicle was driven down the middle of the plots; making one track in the mowed portion and one track in the uncut portion (ten passes every 6 weeks).



Figure 3. Xeriscape sod and ground cover demonstration.
Bridger Plant Materials Center. Photo by Susan Winslow

Ground Cover: Six years after establishment (2003) blue grama still maintained a cover of 80% (unmowed) and 75% (mowed), buffalograss maintained a cover of 80% (unmowed) and 70% (mowed), western wheatgrass 72% (unmowed) and 68% (mowed). Mowing had a negative impact on the cover of all grasses. Canada bluegrass had 75% cover un-mowed but dropped to 50% with mowing. The bunchgrasses like crested wheatgrass, sheep fescue, and introduced Russian wildrye (*Elymus junceus* syn. *Psathyrostachys juncea*) became clumpy as they self-culled to reach an equilibrium with available moisture and nutrients of the site.

Softness: Like in the MSU Turf Study, buffalograss, sheep fescue, and blue grama have the softest turf quality. The shorter stature of blue grama and buffalograss and the multiple fine-textured basal leaves of sheep fescue contribute to the overall softness of these species.

Mowed Cut Edge: The main factor in the cleanness of the cut leaf blade edge is the sharpness of the mower blade. However, the leaves and stems of thickspike wheatgrass and streambank wheatgrass are tough and fibrous, resulting in a ragged, frayed cutting edge. The frayed edges are obvious and reduce the aesthetics of the mowed grass stands.

Table 3. Xeriscape Demonstration Planting of Low Maintenance Native and Introduced Turf Grasses Planted at the Bridger PMC. Established 4/10/1998

Species/Cultivar	Cover Mowed£			Cover Unmowed£			Softness Mowed‡			Cut Edge Mowed‡			Leafiness+			Trampling Mowed‡		Trampling Unmowed‡	
	2001	2002	2003	2001	2002	2003	2001	2002	2003	2001	2002	2003	2001	2002	2003	2002	2003	2002	2003
Crested wheatgrass cultivar Ephraim	42	31	30	47	35	42	5	5	4	4	3	3	5	4	3	80	78	80	74
Blue grama cultivar Bad River	77	73	75	88	81	80	2	2	2	2	2	2	2	2	2	75	64	70	60
Thickspike wheatgrass cultivar Critana	54	44	37	51	44	42	4	3	3	6	4	5	4	3	3	45	40	40	40
Buffalograss cultivar Bismarck	79	68	70	84	81	80	2	1	1	2	2	2	2	2	2	40	42	40	38
Streambank wheatgrass cultivar Sodar	73	53	45	73	59	55	3	3	3	6	4	5	2	3	3	50	55	45	60
Sheep fescue cultivar Cover	75	48	40	77	59	55	2	1	1	3	2	2	3	3	3	60	60	50	65
Western Wheatgrass cultivar Rosana	78	65	68	76	69	72	5	4	4	4	3	3	3	3	2	35	35	35	35
Russian wildrye cultivar Bozoisky-Select	43	38	30	53	40	40	4	5	5	3	4	4	3	3	3	75	70	65	60
Canada bluegrass cultivar Foothills	52	70	50	59	78	75	5	3	3	3	4	3	6	4	3	30	30	30	30

£ Cover=established % basal cover using 5 randomly located 20 x 40 cm frames.

‡ Softness=rating (1-9 1 best) of softness by patting surface with open hand.

‡ Cut Edge=Ocular rating (1-9 with 1 best) or cleanness and smoothness of end of cut leaf blade.

+ Leafiness=Ocular rating (1-9 with 1 best) of leafiness of lower plant (basal vs cauline leaves).

‡ Trampling=estimate of percentage plant loss and reduction of basal cover comparing side-by-side paired trampled and untrampled plots.

Leafiness: The overall leafiness was quite similar with all species. It was noted over time the leafiness of the mowed Canada bluegrass, crested wheatgrass, streambank wheatgrass, and thickspike wheatgrass improved.

Trampling: There was no significant difference between the impact of trampling on mowed or unmowed grasses. Trampling greatly impacted all stands (mowed or unmowed). The most durable species were Canada bluegrass (30% reduction in cover) followed by western wheatgrass (35% loss), buffalograss (average 40%), and thickspike wheatgrass (40%). The stand of crested wheatgrass was damaged the most by trampling.

General Observations and Conclusions:

- blue grama, buffalograss, and sheep fescue are the best candidates for a manicured lawn because of soft texture, cover density, and short stature.
- for a general cover in a non-manicured, low maintenance situation, the best species would be western wheatgrass, thickspike wheatgrass, and Canada bluegrass. These species are commonly used by the Montana Highway Department for roadside cover and stabilization. **Note:** Streambank wheatgrass and thickspike wheatgrass are very similar (now combined into the same species) and can be used in similar situations. Critana thickspike wheatgrass has its origin in Montana and is more vigorous and drought tolerant than Sodar streambank wheatgrass.
- crested wheatgrass and Russian wildrye are two of the most drought tolerant grasses but become very tufted or clumpy as the stand matures. If the use of non-natives is acceptable and your goal is to create cover that will compete with weed invasion, these two species are ideal. Crested wheatgrass tends to spread into surrounding native grasslands and can displace other native species.

Site Preparation and Planting

Remove Existing Vegetation: In preparing to re-establish a grass turf the necessary steps are drastic, but completely necessary. If replacing a Kentucky bluegrass sod, the existing sod must be physically or chemically removed. If chemically destroyed, the root material must be cultivated and allowed to decompose. Planting into a chemically terminated sod will usually not be successful as the dead roots will wick away moisture and physically compete with new seedlings. Site preparation may take 1-2 growing seasons. If planting on a recently disturbed site, make sure to control any weeds or other propagules (seed or rhizomes) that may have been in the topsoil or surface soil material.

Soil Preparation: Add organic matter or topsoil as needed if topsoil is limited or lacking. The surface soil should be firm but not compacted (average person making 1/4" heel depression when walking across site). These alternative grasses do not require additional fertilizer for establishment.

Seeding: If planting to create a tight sod, the grass should be planted at a rate of 400-500 pure live seeds (PLS) per square foot. Once established the grasses will sort out the number of seedlings that the site can support. If planting an area for cover and stabilization, the seeding rates can be much lower (30-50 PLS/sq. ft.). Seeding rates for individual species (turf #/1,000 sq ft, cover #/acre) can be found in the "Creating Native Landscapes" brochure (page 7). If broadcast seeding, it is recommended that the seeding rate be doubled. Broadcast seeded material must be raked or harrowed to cover the seed and to create better seed-soil contact. If possible, the use of a mulch will greatly increase germination and emergence success. Mulching helps keeps the soil surface moist during germination, emergence, and secondary root development. Mulch keeps clay soils from crusting and helps sandy soil retain moisture near the surface. Weed-free lawn clippings or spring power-raking thatch is ideal mulch. Allowing grass clippings to self-mulch and remain on the lawn is another moisture conserving practice.

Larger material such as straw or shredded bark is good but more susceptible to movement by wind. Turf seeding should be done in early spring as soon as possible (April to early-May) (Early-May to early-June for warm-season grasses). Plantings for ground cover and site stabilization can be dormant fall planted (after October 5) or spring planted.

Maintenance: During the first growing season, the site should be periodically irrigated to ensure good establishment. Weed control can be tricky. There are chemicals that can be used for broadleaf weed control on grasses in juvenile stages but can be damaging if not properly applied (follow label on all chemical applications). Mowing can be used to keep annual weeds from going to seed.

Recommended Cultivars Adapted to Montana: (Native (N) or Introduced (I) (Origin)

blue grama (N) 'Bad River' (South Dakota), 'Birdseye' (Wyoming)
buffalograss (N) 'Cody' (Nebraska), 'Tatonka' (Nebraska), 'Bismarck' (North Dakota) (vegetative plugs only)
Canada bluegrass (I) 'Reubens', 'Talon', 'Foothills' (Europe)
crested wheatgrass (I) 'Roadcrest', 'Hycrest', 'Ephraim' (central Asia)
hard fescue (I) 'Durar' (Turkey)
sheep fescue (I) 'Covar' (Turkey)
streambank wheatgrass (N) 'Sodar' (Oregon)
thickspike wheatgrass (N) 'Critana' (Montana)
western wheatgrass (N) 'Rosana' (Montana)

Acknowledgement

The MNPS Landscaping and Revegetation Committee would like to thank the following people for allowing us to utilize their research findings to create this document that will help to inform Montana citizens on the water-wise grasses that can be utilized to conserve valuable water resources.

Dr. Tracy Dougher, Associate Dean for Academic Programs, Montana State University-Bozeman, MT
Toby Day, Master's Thesis, Department of Plant Sciences and Plant Pathology, MSU
Joe Scianna, Manager, USDA-NRCS Plant Materials Center, Bridger, MT

Citations:

D'Costa, Krystal. 2017. The American Obsession with Lawns. Green Thumbery Series. Scientific American.

Plant nomenclature largely based on- Lesica, P. 2012. *Manual of Montana Vascular Plants*. BRIT Press. 771pp.

USDA-NRCS Bridger Plant Materials Center. Creating Native Landscapes in the Northern Great Plains and Rocky Mountains. Montana Association of Conservation Districts and Natural Resources Conservation Service.

MNPS Comments and Recommendations about the Studies

Both studies recommend using warm-season buffalograss and blue grama. A MNPS Landscaping and Revegetation Committee landscape designer has used both warm-season grasses in urban settings. The problem observed over

several years is that cool-season grasses tend to seed into these stands or invade from rhizomes in the soil. To keep the stands cool-season grass free would require regular maintenance including weeding or using chemicals like glyphosate to kill the cool-season invaders. Another alternative is using the warm-season grasses in areas where there is not as much chance for cool-season grass invasion. Nature abhors a vacuum! Monocultures of grasses don't really stay that way over time. MNPS would therefore recommend using mixes of different grasses (see the tables in the studies above).

Warm season grasses do not green up until later in the season-later in May-June and mature early in the fall, so if mixed with cool season grasses the early and late summer color differential might not be aesthetically acceptable.

A MNPS Landscaping and Revegetation Committee member has had better luck with introduced sheep fescue and hard fescue (*Festuca ovina* var. *duriuscula*) mixed lawns for clients that want a more traditional lawn type cover. Hard Fescue is a hardy, drought tolerant introduced bunchgrass with the seed heads growing to a height of 12-24". Even though a bunchgrass, it has a very dense, fibrous root system and therefore it is often used for erosion control and for dryland turf. One cultivar available is 'Durar'. Sheep and hard fescue do not invade native stands aggressively like crested wheatgrass or Kentucky bluegrass.

The second study has interesting results considering there was virtually no irrigation. The grasses must have gone dormant with only one irrigation per season. MNPS advises that this no irrigation treatment is more applicable to suburban areas where homeowners have more acreage and need really tough grasses outside of their more lawn-like area directly surrounding the house. Establishment irrigation may be needed to guarantee results. Three natives, western wheatgrass, thickspike wheatgrass, and blue grama would be a good mix for a drought tolerant mixture on back portions of the lot not requiring a turf look.

Canada bluegrass is not native and can be a weedy grass in many situations without a lot of good attributes as mentioned in the summaries of the first study. However, the Montana Department of Highways uses it a lot in mixtures on granitic soils especially in the Butte and Helena areas on the Boulder Batholith as well as in central Montana. Both thickspike wheatgrass and Canada bluegrass are used in the 10-15 ft zone next to the asphalt because of their short stature and hardiness on coarse soils. Canada bluegrass does not seem to be invading native stands like Kentucky bluegrass and crested wheatgrass.

Recently there have been some extraordinary wildfires moving through suburban and even urban areas. Homeowners should carefully consider how much irrigated turf and fire-resistant landscaping and home-building materials are needed to protect their homes. Keep your home area naturalistic and diverse but also wildfire defensible! This is where some level of irrigation is advisable, and helpful to know from the first study which grasses maintained a lawn like appearance without the typical 1" per week watering regime.

MNPS would like to see the native bunchgrass, Idaho fescue (*Festuca idahoensis*) evaluated in a study where Idaho fescue grows. Cultivars available include 'Joseph' and 'Nez Perce'.

Finally, MNPS would recommend limiting the amount of turfgrass and not disturbing native rangeland on your property if at all possible to make your property defensible from wildfires.