

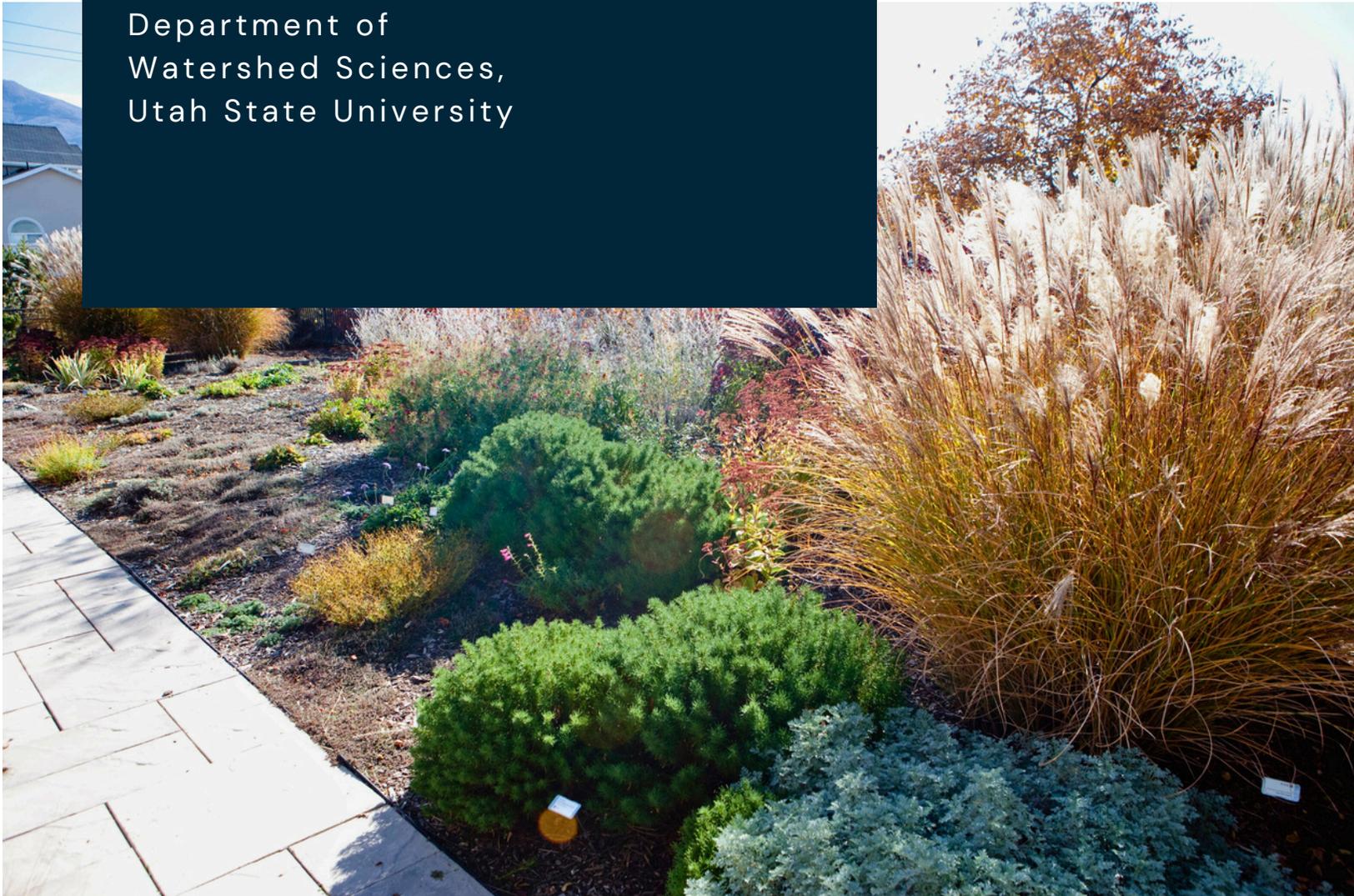
April 2024

APPENDIX 5

# Low-Impact Development Planting Guide

**PREPARED FOR :**  
Master's Degree Project

Department of  
Watershed Sciences,  
Utah State University





# BIORETENTION CELLS

Bioretention cells are shallow bioretention areas with a distinct boundary, such as a curb or wall, designed to retain a predetermined volume of runoff. Retaining stormwater allows it to slowly infiltrate into the soil and gives plants an opportunity to naturally treat the water through nutrient and pollutant uptake. The most effective bioretention cells are aesthetically pleasing, while properly retaining their design volume of runoff.

Designs can include drainage systems or use native or engineered layers of soil, sand, and aggregate to achieve the desired infiltration rate. Soil layers may also provide water storage. It is important for the design to support vegetation and landscape features. Carefully selecting plants for their desired benefits will provide the best opportunity for nutrient and pollutant uptake as well as aesthetic appeal.

Bioretention cells are particularly effective at removing pollutants from stormwater.

Pollutant	Effectiveness
Sediment	High
Nutrients	High
Metals	High
Bacteria	High
Oil/Grease	High

## Primary Functions:



- Bioretention
- Volume Retention
- Biofiltration



## Benefits:

- Reduces and treats runoff from the surrounding area.
- Can be integrated into densely developed urban settings.
- Increases biodiversity & habitat in urban areas.
- Increases green space in developed areas.
- Can be designed to provide traffic calming in residential areas.

## Maintenance Requirements

Table 2. The following table has been remade from the DWQ's bioretention maintenance activity table in their LID manual ("A Guide to LID," 2020, pg. C-14).

Inspection	Frequency	Maintenance Activity	Effort
Inspect for adequate vegetative coverage, and impaired or failing vegetation.	Semiannual (Spring, Fall)	Reseed/replant barren spots. Notify the engineer if failing vegetation persists.	Low
Inspect for trash and debris within basin and at inlet and outlet structures.	Semiannual (Spring, Fall), as needed	Remove and dispose of trash and debris.	Low
Inspect for large deposits of sediment on bottom indicating soil clogging.	Semiannual (Spring, Fall), as needed	Remove and dispose of built-up sediment when buildup causes reduction in size of basin or if buildup results in standing water. Notify the engineer in the case of standing water as it may indicate clogging within the basin's soil layers.	Low
Inspect for standing water within bioretention cell or within observation well.	Semiannual (Spring, Fall)	Notify the engineer for further inspection.	Moderate
Inspect for failure of additional features such as underdrains or irrigation systems.	Semiannual (Spring, Fall)	Repair as needed.	Moderate

## Plant Selection

Bioretention cells are used to increase infiltration and nutrient uptake. A variety of plants can provide these benefits including trees, shrubs, grasses, and other plants suitable for the local climate. This BMP usually receives more stormwater runoff pollution due to being located near roadways. It also receives water from every storm event. Therefore, the best plants for bioretention cells:

- Can tolerate moist to boggy soils.
- Can tolerate salts and urban pollutants.
- Can uptake nutrients well.
- Can neutralize pollutants well.



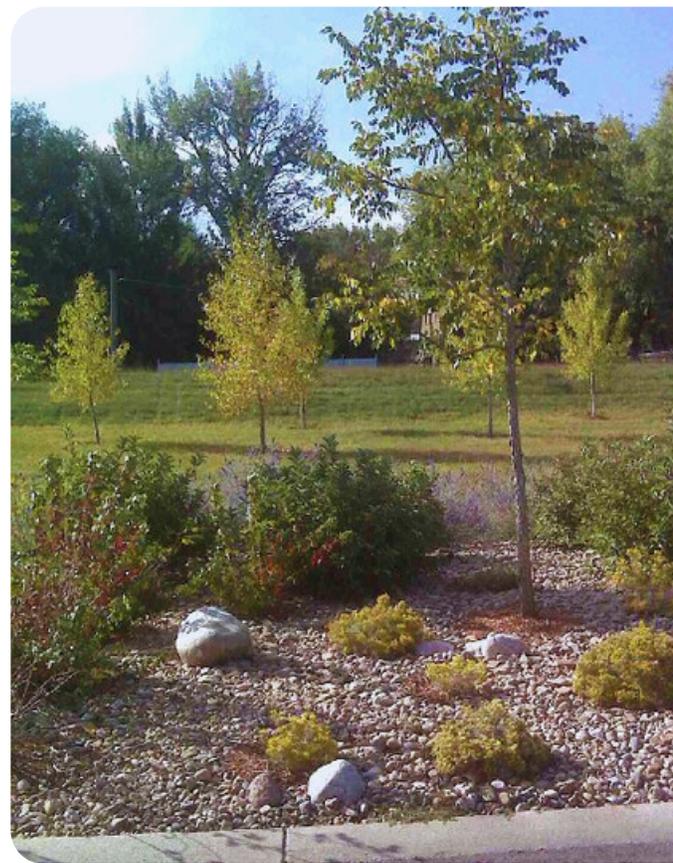
# RAIN GARDENS

Rain gardens are shallow bioretention areas designed to retain a predetermined volume of runoff, allowing it to slowly infiltrate into the soil and giving plants an opportunity to naturally treat the water through nutrient and pollutant uptake. These BMPs differ from bioretention cells because they are not constrained by a definitive boundary. The most effective rain gardens are aesthetically pleasing, while properly retaining their design volume of runoff.

Designs can include drainage systems or use native or engineered layers of soil, sand, and aggregate to achieve the desired infiltration rate. Soil layers may also provide water storage. It is important for the design to support vegetation and landscape features. Carefully selecting plants for their desired benefits will provide the best opportunity for nutrient and pollutant uptake as well as aesthetic appeal.

Rain gardens are particularly effective at removing pollutants from stormwater.

Pollutant	Effectiveness
Sediment	High
Nutrients	High
Metals	High
Bacteria	High
Oil/Grease	High



## Primary Functions:



- Bioretention
- Volume Retention
- Biofiltration



## Benefits:

- Reduces and treats runoff from the surrounding area.
- Native, drought tolerant plants in rain gardens typically require little to no maintenance once established.
- Provides shade and local cooling effects.
- Creates neighborhood greening and aesthetic benefits.

## Maintenance Requirements

Table 3. The following table has been remade from the DWQ's rain gardens maintenance activity table in their LID manual ("A Guide to LID," 2020, pg. C-7-8).

Inspection	Frequency	Maintenance Activity	Effort
Inspect for adequate vegetative coverage, and impaired or failing vegetation.	Semiannual (Spring, Fall)	Reseed/replant barren spots. Notify the engineer if failing vegetation persists.	Low
Inspect side slopes for erosion, rilling, and sloughing.	Semiannual (Spring, Fall)	Regrade side slope if sloughing does not impact slope stability. Notify the engineer if side slope stability has been compromised and is affecting the functionality of the basin.	Low
Inspect for trash and debris within basin and at inlet and outlet structures.	Semiannual (Spring, Fall), as needed	Remove and dispose of trash and debris.	Low
Inspect for large deposits of sediment on bottom indicating soil clogging.	Semiannual (Spring, Fall), as needed	Remove and dispose of built-up sediment when buildup causes reduction in size of basin or if buildup results in standing water. Notify the engineer in the case of standing water as it may indicate clogging within the basin's soil layers.	Low
Inspect for standing water within bioretention cell or within observation well.	Semiannual (Spring, Fall)	Notify the engineer for further inspection.	Moderate
Inspect for failure of additional features such as underdrains or irrigation systems.	Semiannual (Spring, Fall)	Repair as needed.	Moderate

## Plant Selection

Rain gardens are used to increase infiltration and nutrient uptake. A variety of plants can provide these benefits including trees, shrubs, grasses, and other plants suitable for the local climate. This BMP usually receives more stormwater runoff pollution due to being located near roadways. It also receives water from every storm event. Therefore, the best plants for rain gardens:

- Can tolerate moist to boggy soils.
- Can tolerate salts and urban pollutants.
- Can uptake nutrients well.
- Can neutralize pollutants well.



## Plant List Keys

Use these keys to interpret the following plant lists for each LID type.

For the Zone, refer to the [Plant Hardiness Zone map](#).

Each plant's soil needs are classified by type followed by a comma and the specialties.

### Soil types:

Variety  
Sandy  
Clay  
Loam  
Gravel  
Rocky

### Soil specialties:

Rich  
Dry  
Wet  
Humusy  
Peaty  
Acidic  
Alkaline

Each plant's water needs are classified by the amount followed by a comma and the drainage type.

### Water Amount:

Low  
Moderate  
High

### Drainage Type:

Well-drained  
Consistently moist

For the Drought Tolerant, Erosion Control, and Flooding Tolerant columns:

Y = Yes

N = No

### Plant Type:

T = tree  
SH = shrub  
G = grass  
P = perennial  
GC = groundcover  
V = vine  
C = cactus  
SU = succulent

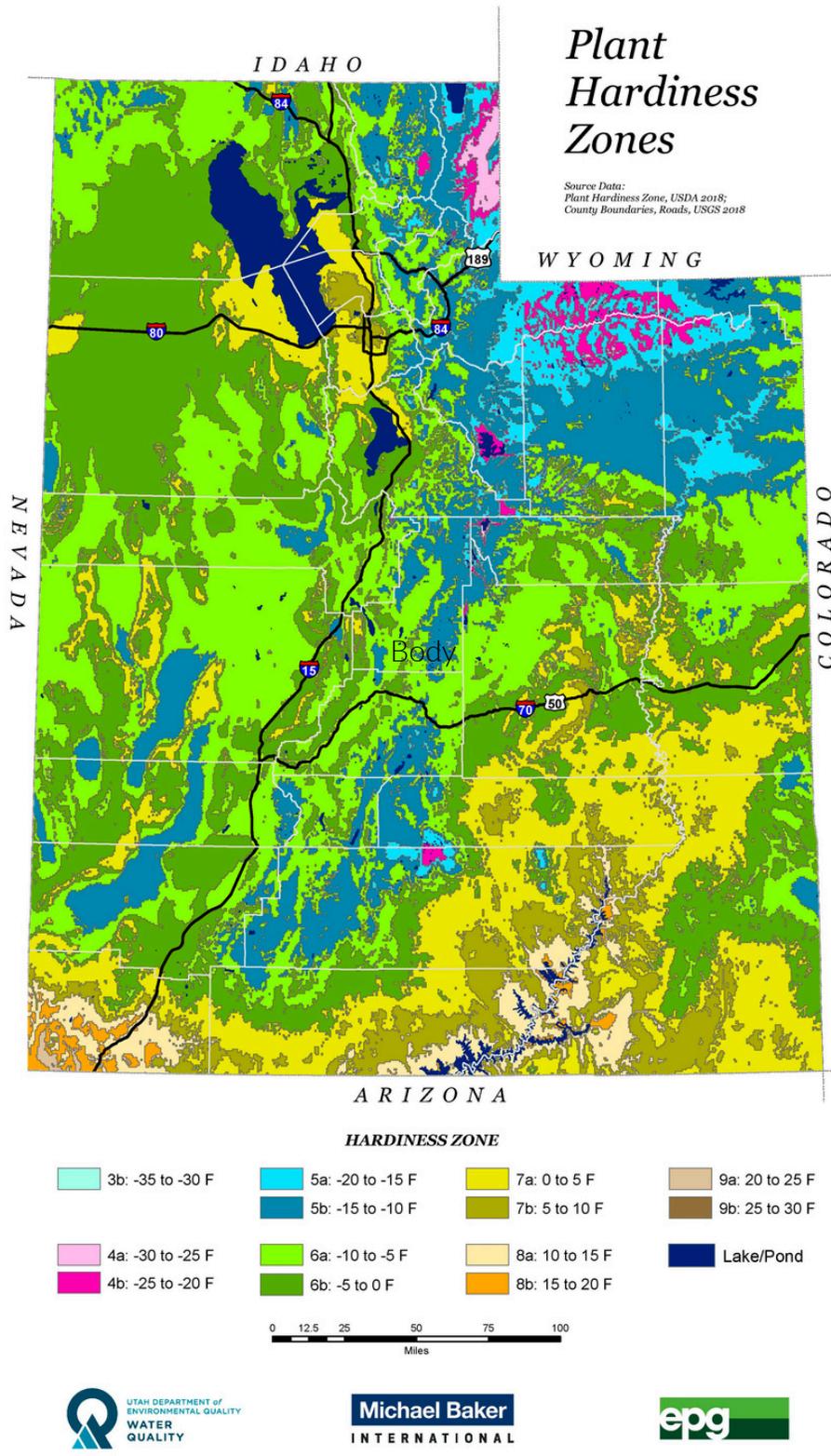
### Growth Rate:

S = slow  
M = moderate  
F = fast

### Light Needs:

○ = full sun  
◐ = full sun to part shade  
● = full shade

# Plant Hardiness Zone Map



Source: Utah Division of Water Quality's "Plant Hardiness Zones" map included in their [LID manual](#) called "A Guide to Low Impact Development within Utah."

Bioretention Cells & Rain Gardens Plants List												
Scientific Name - Common Name	Plant Type	Zone	Drought Tolerance	Flooding Tolerance	Erosion Control	Growth Rate	Mature Size (HxW)	Light Needs	Soil Needs	Water Needs	Native	Benefits
Acer ginnala - Amur Maple	T	3b-8a	Y				H = 15-20' W = 15-20'	○	Clay, rich	Consistently moist	NE Asia, NW United States	
Acer glabrum - Rocky Mountain Maple	T	5a-9b	Y				H = 10-30' W = 10-30'	○		Low	Utah	Adaptable to salt
Acer macrophyllum - Big Leaf Maple	T	6a-7b					H = 40-75' W = 40-75'	○	Variety, acidic	Moderate, well drained	British Columbia, S Alaska to CA	
Acer rubrum - Red Maple	T	3b-9b	Y	Y		M	H = 40-70' W = 30-50'	○	Variety, acidic	Moderate, well drained	E and central North America	Cold tolerant Air pollution tolerant Attracts birds
Acer saccharinum - Silver Maple	T	4a-9b	Y	Y		F	H = 50-80' W = 35-70'	○	Sandy, variety	Moderate	E North America	Adaptable to salt Urban, air pollution tolerant
Acer tataricum - Tatarian Maple	T	3b-8b	Y			M	H = 25-30' W = 25'	○	Variety	Moderate, well drained	SE Europe, W Asia	Adaptable growing conditions Adaptable to salt Urban pollution tolerant
Acer tataricum 'GarAnn' PP 15,023 - HOT WINGS® Tatarian maple	T	4a-9b	Y			M	H = 15-25' W = 15-20'	○	Variety	Moderate	SE Europe, W Asia	Adaptable growing conditions Adaptable to salt Urban pollution tolerant Attracts pollinators Wildlife resistant
Acer x freemanii 'Jeffersred' - Autumn Blaze Maple	T	3b-8b	Y	Y		F	H = 40-55' W = 30-40'	⊙	Acidic	High, well-drained	Cultivated	Urban pollution tolerant Deer resistant
Aesculus hippocastanum - Horsechestnut	T	3b-8b				M	H = 50-75' W = 40-65'	○	Rich	Moderate, well drained	SE Europe, Asia	Rabbit resistant Attracts pollinators
Aesculus x arnoldiana 'Autumn Splendor' - Autumn Splendor Horse Chestnut	T	4a-7b	N			M	H = 35' x 30'	○	Variety	Moderate, consistently moist		Urban pollution tolerant Ornamental Deer resistant Attracts pollinators, wildlife
Alnus sinuata - Sitka Alder	T	4a-5b			Y	F	H = 3-20' W = 6-10'	○	Clay, variety	High, consistently moist	W North America	Nitrogen fixer

Rain Gardens

Betula nigra - River Birch	T	4a-9b	Y	Y	Y	F	H = 40-70' W = 40-60'	○	Variety, rich, acidic	High, consistently moist	E United States	Adaptable to salt Heat tolerant Urban, air pollution tolerant Deer resistant Attracts birds, pollinators
Betula occidentalis - Water Birch	T	3a-5b	Y	Y		F	H = 10-40' W = 10-30'	○	Variety	Moderate, consistently moist	Utah, W North America, S Canada	Adaptable to salt Wind tolerant Ornamental
Betula papyrifera - Paper Birch	T	3b-6b			Y	F	H = 50-70' W = 25-50'	○	Variety	Moderate, well drained	North America	Adaptable to salt Pioneer species Deer resistant
Betula pendula - Silver Birch	T	3b-6b				F	H = 30-40' W = 15-30'	○	Variety, rich	Moderate, well drained	Europe, Asia, W Siberia	Wind tolerant Ornamental Pioneer species Deer resistant
Betula pubescens - White Birch	T	3b-3b		Y		F	H = 30-65' W = 32'	○	Variety, acidic	High, consistently moist	N & central Europe, Russia, Siberia	Wind tolerant Wetland plant Nitrogen fixer Pioneer species Attracts wildlife
Carpinus betulus 'Fastigiata' - Pyramidal European Hornbeam	T	4a-8b	Y			M	H = 30-45' W = 20-35'	○	Variety	Low, well- drained	E, S, & central Europe; W Asia	Urban pollution tolerant
Carya illinoensis - Pecan	T	5a-9b				M	H = 40-100' W = 30-50'	⊙	Variety, humusy, rich	Moderate, well drained	S North America	Heat, cold tolerant Urban pollution tolerant Ornamental Pest resistant
Celtis occidentalis - Common Hackberry	T	4a-9b	Y	Y		F	H = 40-60' W = 40-60'	○	Variety, rich	Low, well- drained	E & central North America	Adaptable growing conditions Adaptable to salt Heat, cold, wind tolerant Urban pollution tolerant Attracts pollinators, wildlife
Celtis occidentalis 'Prairie Pride' - Prairie Pride Hackberry	T	3b-9b	Y	Y		M	H = 50-60' W = 40-50'	○	Variety	Low, well- drained	E & central North America	Adaptable growing conditions Heat, cold, wind tolerant Urban pollution tolerant Attracts birds
Cercis canadensis - Eastern Redbud	T	5a-9b	Y			M	H = 20-30' W = 25-35'	○	Variety, acidic, alkaline	Moderate, well drained	E & central North America	Urban pollution tolerant Ornamental Deer resistant Attracts pollinators, wildlife

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Cercis canadensis 'Forest Pansy' - Forest Pansy Redbud	T	5a-9b				M	H = 20-30' W = 25-35'	○	Variety	Moderate, well drained	E & central North America	Urban pollution tolerant Ornamental Deer resistant Attracts pollinators, wildlife
Cercis canadensis 'Ruby Falls' - Ruby Falls Redbud	T	6a-9b				M	H = 6-8' W = 4-6'	○	Variety, alkaline	Moderate, well drained	E & central North America	Ornamental Deer resistant Attracts pollinators
Cercis canadensis 'The Rising Sun' - Rising Sun Redbud	T	6a-9b	Y			M	H = 8-12' W = 8-15'	○	Variety	Moderate		Adaptable growing conditions Heat, cold tolerant Urban pollution tolerant Ornamental Deer resistant Attracts pollinators
Cotinus coggygia 'Grace' - American Smoke Tree, Grace	T	5a-8b	Y			M	H = 12-15' W = 12-20'	○	Variety	Low, well- drained	Europe to central China	Urban pollution tolerant Ornamental Deer resistant Attracts pollinators
Cotinus coggygia 'Royal Purple' - Royal Purple Smoketree	T	5a-8b	Y			M	H = 10-15' W = 10-20'	⊙	Variety	Low, well- drained	Europe to central China	Urban pollution tolerant Ornamental Disease resistant Deer, pest resistant Attracts pollinators
Crataegus douglasii - Black/ Douglas Hawthorn	T	4a-6b	Y	Y			H = 10-25' W = 10-25'	○	Variety	Moderate, well drained	United States	Wind tolerant Urban, air pollution tolerant Ornamental Wetland plant Attracts birds, pollinators
Fraxinus pennsylvanica - Green Ash	T	3b-9b	Y			F	H = 50-70' W = 35-50'	⊙	Variety, humusy	Moderate, consistently moist	United States, S Canada	Adaptable growing conditions Adaptable to salt Heat, cold, wind tolerant Urban, air pollution tolerant Deer, rabbit resistant Attracts birds, pollinators
Ginkgo biloba - Maidenhair Tree	T	3b-8b	Y			S	H = 50-100' W = 30-60'	⊙	Variety, rich, acidic, alkaline	Moderate, well drained	S China	Adaptable to salt Heat tolerant Urban, air pollution tolerant Ornamental Disease resistant Deer, pest resistant

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Ginkgo biloba 'Fairmount' - Fairmount Ginkgo	T	5a-8b	Y		M	H = 30-50' W = 8-30'	○	Variety	Low		Adaptable to salt Heat tolerant Urban, air pollution tolerant Ornamental Deer resistant
Ginkgo biloba 'PNI 2720' - Princeton Sentry Ginkgo	T	3b-8b	Y		S	H = 40-50' W = 20-30'	⊙	Variety, acidic, alkaline	Low		Adaptable to salt Heat tolerant Urban, air pollution tolerant Ornamental Deer, rabbit resistant
Gleditsia triacanthos 'Impcole' - Imperial Honeylocust	T	4a-8b	Y		F	H = 30-40' W = 25-35'	○	Variety, rich	Low, well- drained	US cultivar	Adaptable growing conditions Adaptable to salt Heat, cold, wind tolerant Urban, air pollution tolerant Deer resistant
Gleditsia triacanthos 'Shademaster' - Shademaster Honeylocust	T	5a-8b	Y		F	H = 45-70' W = 30-50'	○	Variety	Low, well- drained		Adaptable growing conditions Heat, cold, wind tolerant Air pollution tolerant Deer resistant
Gleditsia triacanthos 'Skyline' - Skyline Honeylocust	T	3b-8b	Y			H = 35-75' W = 25-50'	○	Variety, rich	Low	United States	Adaptable to salt Air pollution tolerant Deer resistant
Gymnocladus dioica - Kentucky Coffeetree	T	5a-9b	Y			H = 60-80' W = 40-55'	⊙	Rich	Low	Central United States	Adaptable to salt Air pollution tolerant
Juglans nigra - Black Walnut	T	5a-9b	Y			H = 60-100' W = 50-100'	⊙	Rich	Moderate	United States, Canada	Adaptable to salt Deer, rabbit resistant
Koelreuteria paniculate - Golden Raintree	T	5a-9b	Y			H = 30-40' W = 30-40'	⊙	Variety	Low to moderate	E Asia to N China	Wind tolerant Air pollution tolerant
Liquidambar styraciflua - Sweet Gum	T	5a-9b				H = 60-80' W = 40-60'	⊙	Variety, rich	Moderate, consistently moist	E United States, Mexico, Central America	Wildlife resistant
Magnolia grandiflora - Southern Magnolia	T	7a-9b				H = 60-80' W = 30-50'	○	Rich	Medium, consistently moist	SE United States	Wind tolerant Air pollution tolerant Attracts birds
Magnolia virginiana - Sweet Bay Magnolia	T	5a-9b	Y		M	H = 10-35' W = 10-35'	○	Wet, acidic	High	SE United States	Air pollution tolerant Deer, rabbit resistant
Nyssa sylvatica - Black Gum	T	3b-9b	Y			H = 30-50' W = 20-30'	○	Wet, acidic	High	E North America	Attracts birds

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Platanus occidentalis - Sycamore	T	4a-9b		Y			H = 75-100' W = 75-100'	☉	Humusy, rich	High, consistently moist	E North America	Air pollution tolerant Deer resistant
Platanus x acerifolia - London Plane Tree (American Sycamore)	T	4a-8b		Y			H = 75-100' W = 60-75'	☉	Humusy, rich	High, consistently moist	Europe, North America	Air pollution tolerant Deer resistant
Platanus x hispanica - London Plane Tree	T	4a-8b					H = 75-100' W = 60-75'	☉	Humusy, rich	Moderate, well drained		Deer resistant Attracts pollinators
Populus angustifolia - Narrowleaf Cottonwood	T	3b-8b			Y		H = 45-65' W = 45-65'	☉	Rich	High, well- drained	Utah, W North America, Alberta, Mexico	
Populus fremontii - Fremont Cottonwood	T	4a-6b				F	H = 40-80' W = 30-50'	☉	Rich	Moderate, consistently moist, well- drained	SW United States	Attracts pollinators
Populus tremuloides - Quaking Aspen	T	3b-6b	Y	Y		F	H = 20-50' W = 10-30'	☉	Variety, humusy, rich	Moderate, consistently moist, well- drained	Canada to Mexico	Wetland plant Attracts birds, pollinators
Populus trichocarpa - Black Cottonwood	T	4a-6b	Y			F	H = 30-100' W = 25-30'	☉	Gravel	Moderate, consistently moist, well- drained	North America	Attracts pollinators
Prunus virginiana - Chokecherry	T	3b-7b	Y				H = 20-30' W = 15-20'	○	Loam	Low, well- drained	Utah, Canada, United States	Deer resistant Attracts pollinators
Prunus virginiana 'Scubert' - Canada Red Chokecherry	T	3b-7b		Y	M		H = 20-30' W = 15-20'	○	Loam	Low, well- drained	Canada, United States	Deer resistant Attracts pollinators
Quercus bicolor - Swamp White Oak	T	3b-8b					H = 50-60' W = 50-60'	☉	Variety, acidic	High	United States	Adaptable to salt Attracts birds
Quercus macrocarpa - Bur Oak	T	3b-8b	Y				H = 60-90' W = 60-80'	☉	Loam, variety	Low, well- drained	North America	Adaptable growing conditions
Robinia 'Purple Robe' - Purple Robe Locust	T	3b-8b	Y				H = 30-40' W = 20-30'	☉	Loam, sandy, rich	Moderate	North America	Deer resistant
Salix alba - White Willow	T	4a-5b			Y		H = 50-80' W = 40-70'	○	Loam	Moderate, well drained	Europe, N Africa to central Asia	Deer resistant
Salix amygdaloides - Peachleaf Willow	T	4a-5b	Y		F		H = 13-65'	○	Loam, sandy	High	North America	Attracts pollinators

Rain Gardens

Salix lasiandra - Pacific Willow	T	3b-4b		Y		F	H = 6-37' W = 3-30'	○	Variety, gravel	High, consistently moist	North America	Wetland plant Attracts birds, pollinators
Salix nigra - Black Willow	T	3b-5b		Y	Y		H = 30-60' W = 30-60'	○	Wet	High, consistently moist	North America	
Salix sitchensis - Sitka Willow	T	4a-5a		Y		F	H = 10-23' W = 24'	○	Variety	Moderate	W North America	Wetland plant Attracts pollinators
Salix prolixa - Mackenzie Willow	T	4a-5b				M	H = 16-68'	○	Sandy	Moderate	Canada, W United States	Attracts pollinators
Taxodium distichum 'Shawnee Brave' - Shawnee Brave Bald Cypress	T	4a-9b			Y		H = 15-75' W = 15-20'	⊙	Variety, acidic	Moderate	United States	Air pollution tolerant Deer resistant
Thuja occidentalis - American Arborvitae	T	3b-7b					H = 20-40' W = 10-15'	○	Variety	Moderate, well drained	E United States, E to central Canada	Air pollution tolerant Attracts birds
Tilia tomentosa - Silver Linden	T	4a-8b	Y				H = 50-70' W = 30-50'	○	Variety, loam, rich	Moderate, well drained	SE Europe to Asia Minor	Attracts pollinators
Tilia tomentosa 'Sterling' - Sterling Silver Linden	T	4a-8a	Y				H = 50' W = 25'	○	Variety	Low		Attracts pollinators
Ulmus pumila - Siberian Elm	T	4a-9b	Y		Y		H = 50-70' W = 40-70'	⊙	Loam, rich	Low to moderate	Eastern Siberia, northern China, Turkestan	Adaptable growing conditions Air pollution tolerant
Ulmus 'Homestead' - Homestead Elm	T	3b-9b	Y	Y		F	H = 40-60' W = 30-40'	⊙	Variety, peaty			Urban pollution Deer, rabbit resistant
Juniperus scopulorum 'Blue Arrow' - Blue Arrow Juniper	T	4a-9b			Y	M	H = 12-15' W = 2'	⊙	Variety	Low		Adaptable to salt Urban pollution tolerant Deer, rabbit resistant
Juniperus scopulorum 'Skyrocket' - Skyrocket Juniper	T	3b-8b	Y		Y	F	H = 15-20' W = 2-5'	⊙	Variety	Low		Adaptable to salt Urban pollution tolerant Deer, rabbit resistant Attracts birds
Juniperus scopulorum 'Woodward' - Woodward columnar juniper	T	3b-9b	Y			M	H = 20' W = 4'	○	Variety	Low	Rocky Mountains, North America	Deer resistant Attracts birds
Pinus mugo - Mugo Pine	T	3b-7b					H = 8-20' W = 10-30'	○	Loam, sandy	Low, well-drained	Central Europe to Bulgaria	Adaptable to salt Air pollution tolerant Deer resistant
Pinus mugo 'Carsten's Wintergold' - Carsten's Wintergold Mugo Pine	T	3b-7b				S	H = 12-24" W = 12-24"	⊙	Loam, rich	Low, well-drained		Deer, rabbit resistant Attracts birds

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Pinus mugo 'Jakobsen' - Pinus mugo 'Jakobsen'	T	3b-7b	Y			M	H = 12-18" W = 24"	☉	Variety	Low, well- drained		Rabbit resistant	
Amelanchier alnifolia - Saskatoon Serviceberry	SH	3b-9b		Y	Y	M	H = 10-30' W = 5-10'	○	Variety	Low, well- drained	Utah, central & W United States	Adaptable growing conditions Adaptable to salt Heat, cold tolerant Ornamental Attracts pollinators	
Amelanchier alnifolia 'Obelisk' - Standing Ovation Serviceberry	SH	3b-8b				M	H = 12-15' W = 3-6'	☉	Variety	Moderate, well- drained		Adaptable growing conditions Heat, cold tolerant Ornamental Attracts pollinators	
Aronia arbutifolia 'Brilliantissima' - Brilliant Red Chokeberry	SH	4a-9b		Y	Y	Y	S	H = 5-8' W = 3-5'	○	Variety, peaty	Moderate, well- drained	E North America	Adaptable to salt Urban, air pollution tolerant Ornamental Wetland plant Deer resistant Attracts birds, pollinators
Aronia melanocarpa var. elata - Black Chokeberry	SH	4a-9b		Y	Y	Y	M	H = 5-8' W = 5-10'	○	Variety, peaty	Low, well- drained	E North America	Ornamental Wetland plant Deer resistant Attracts birds, pollinators
Artemisia filifolia - Sand Sagebrush	SH	4a-8b		Y		Y		H = 3-6' W = 3-5'	☉	Sandy, loam	Low, well- drained	Utah, W United States	Adaptable growing conditions Adaptable to salt Heat, cold tolerant Deer resistant Attracts birds
Artemisia nova - Black Sagebrush	SH	3b-6b		Y				H = 10-24" W = 12-24"	☉	Variety, alkaline	Low, well- drained	Utah, W United States	Deer resistant Attracts pollinators
Atriplex canescens - Four-Wing Saltbrush	SH	6a-9b		Y				H = 1-7' W = 3-7"	☉	Variety, alkaline	Low, well- drained	Utah, W United States	Adaptable to salt Ornamental Bioremediation Attracts pollinators
Berberis aquifolium - Barberry	SH	5a-8b		Y			S	H = 3-6' W = 2-5'	●	Variety, rich, acidic	Well-drained	N North America	Ornamental Deer resistant Attracts birds, pollinators
Berberis aquifolium repens - Creeping Oregon Grape	SH	5a-8b		Y		Y	M	H = 12-18" W = 12-18"	☉●	Variety, rich, acidic	Well-drained		Ornamental Deer resistant Attracts pollinators, wildlife
Caragana arborescens - Siberian Peashrub	SH	3b-8b		Y				H = 15-20' W = 12-15'	☉	Loam	Low, well- drained	E Russia, N China	Attracts pollinators

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Caragana arborescens 'Pendula' - Weeping Pea Shrub	SH	3b-5b	Y				H = 6-8' W = 4-8'	○	Variety	Low		Adaptable to salt Deer resistant Attracts pollinators
Celtis occidentalis - Common Hackberry	SH	4a-9b	Y				H = 40-60' W = 40-60'	○	Rich	Low, well-drained	NE & central North America	Air pollution tolerant Attracts birds, pollinators
Cotinus coggygria 'Ancot' GOLDEN SPIRIT - Smoke Tree, 'Golden spirit'	SH	4b-7b	Y				H = 8-15' W = 8-15'	○	Variety, loam	Low, well-drained	Europe to central China	Deer resistant
Cotoneaster adpressus 'Little Gem' - Little Gem Cotoneaster	SH	5a-8b	Y					○		Low		
Cotoneaster divaricatus - Spreading Cotoneaster	SH	4a-7b					H = 5-6' W = 6-8'	○		Moderate		Attracts pollinators
Cotoneaster integerrimus - European Cotoneaster	SH	3b-5b	Y				H = 8-12' W = 12-15'	○	Loam	Moderate		Adaptable growing conditions
Cotoneaster racemiflorus var. soongoricus - Sungari redbead cotoneaster	SH	3b-8b	Y				H = 6-8' W = 6-8'	○	Variety	Low		Disease resistant Deer, pest resistant Attracts pollinators
Acorus calamus - Sweet Flag	G	4a-9b		Y			H = 2-2.5' W = 1.5-2'	○	Variety	High, consistently moist	Europe, Asia, North America	Wetland plant
Acorus gramineus - Grassy-Leaved Sweet Flag	G	6a-9b		Y	Y		H = 6-12" W = 6-12"	○	Variety	High, consistently moist	China, Japan, Korea, India, Thailand, Myanmar, Philippines	Wetland plant
Agrostis sp. - Redtop Bentgrass	G	3b-6b		Y	Y		H = 3-4'	○	Variety		Eurasia	Adaptable to salt Wetland plant
Andropogon gerardii - Big Blue Stem	G	4a-9b	Y		Y		H = 4-6' W = 2-3'	⊙	Variety	Low	E North America	Air pollution tolerant Deer resistant
Andropogon gerardii 'PWIN01S' - WINDWALKER® big bluestem	G	5a-8b					H = 60-72" W = 18-24"	⊙	Variety	Moderate		Ornamental Deer resistant
Bouteloua gracilis - Blue Grama	G	3b-9b	Y				H = 9-24" W = 18-24"	⊙	Variety	Low	W United States	Adaptable to salt Air pollution tolerant Deer resistant Attracts birds
Bouteloua gracilis 'Blonde Ambition' - Blonde Ambition grama grass	G	4a-9b	Y				H = 30-36" W = 30-36"	○	Variety	Low	North America	Deer resistant
Buchloë dactyloides - Buffalo Grass	G	3b-9b	Y		Y		H = 2-5" W = 72"	⊙	Variety	Low	North America, Great Plains	Heat tolerant

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Buchloë dactyloides 'Cody' - Cody Buffalo Grass	G	3b-9b	Y		Y		H = 4-6" W = 72"	☉	Variety	Low	North America, Great Plains	Heat tolerant
Buchloë dactyloides 'Legacy' - Legacy Buffalo Grass	G	3b-9b	Y			F	H = 4-6" W = 72"	☉	Clay, alkaline	Low		Attracts birds
Calamagrostis x acutiflora 'Eldorado' - Eldorado Feather Reed Grass	G	4a-9b	Y			M	H = 4-6" W = 2-2.5'	☉	Variety	Low		Attracts birds
Calamagrostis x acutiflora 'Karl Foerster' - Karl Foerster Feather Reed Grass	G	4a-9b	Y		Y	M	H = 3-5' W = 1.5-2.5'	☉	Variety, rich	Low	Europe, Asia	Air pollution tolerant Deer resistant
Calamagrostis x acutiflora 'Overdam' - Overdam Feather Reed Grass	G	5a-9b	Y		Y	M	H = 3-5' W = 2'	☉	Variety, rich	Low	Europe, Asia	Air pollution tolerant Deer resistant
Calamagrostis brachytricha - Korean feather reed grass	G	4a-9b	Y				H = 24-40" W = 20-24"	○	Variety	Low		Deer resistant
Carex 'Silver Sceptre' - Silver Scepter Sedge	G	5a-9b					H = 9-12" W = 9-18"	●	Variety	High	Japan	Deer resistant
Carex buchananii - Fox Red Curly Sedge	G	4b-9b	Y			S	H = 2-3' W = 2-3'	○	Variety, rich	Consistently moist	New Zealand	Deer, rabbit resistant
Carex lacustris - Common Lake Sedge	G	5a-7b		Y		M	H = 20-50"	○	Clay	High, consistently moist	North America	Wetland plant Attracts birds, pollinators
Cephalanthus occidentalis - Buttonbush	G	5a-9b		Y	Y		H = 5-12'	○	Humusy	High	North America	Attracts pollinators
Cynodon dactylon - Bermuda Grass	G	7a-9b	Y		Y	F	H = 24" W = 20"	☉	Variety	Low to moderate	Europe, Africa, Australia, Asia	Heat tolerant
Decodon verticillatus - Swamp Loosestrife	G	3b-9b		Y			H = 6-8' W = 6-8'	○	Clay	High, consistently moist	E & central North America	Wetland plant
Deschampsia cespitosa 'Northern Lights' - Northern Lights Tufted Hair Grass	G	4a-9b			Y	M	H = 1-3' W = 1-3'	○	Variety, acidic	Moderate, consistently moist		Air pollution tolerant Deer resistant Attracts birds
Deschampsia cespitosa var. vivipara - Tufted Hair Grass	G	4a-9b					H = 2-3' W = 1-2'	○	Variety, rich	High, consistently moist		Air pollution tolerant Attracts birds
Elocharis palustris - Creeping Spike Rush	G	3b-8b		Y			H = 2-4' W = 1-2'	○	Wet	High, consistently moist	United States, Canada, Europe, Asia	Wetland plant
Elodea canadensis - Canadian Waterweed	G	4a-9b		Y			H = 3" W = 12-36"	☉	Wet	High, consistently moist	North America, S Canada	Wetland plant

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Eriogonum caespitosum - Mat Buckwheat	G	4a-9b					H = 4" W = 3'	○	Rocky		W United States	Cold tolerant Attracts pollinators
Festuca spp. - BioMeadow Fine Fescue Mix	G	4a-9b					H = 8-12" W = 6-8"	○		Moderate		Adaptable to salt
Festuca arundinacea - Dwarf Tall Fescue	G	5a-8b					H = 24-36" W = 12-18"	○	Clay	Moderate		Adaptable to salt
Festuca arundinacea 'Bolero' - BioTurf Dwarf Fescue Mix	G	5a-8b	Y			S	H = 2-3' W = 12-18"	○	Clay	Moderate		Heat tolerant Deer resistant
Festuca arundinacea 'Bonsai' - Bonsai Dwarf Tall Fescue	G	5a-8b					H = 24-36" W = 12-18"	○	Clay	Moderate		Deer resistant
Festuca glauca - Blue Fescue	G	4a-9b	Y				H = 9-12" W = 12-18"	⊙	Variety	Low, moderate		Air pollution tolerant Ornamental
Festuca glauca 'Boulder Blue' - Border Blue Fescue	G	4a-9b	Y				H = 6-15" W = 6-12"	⊙	Variety	Low		Air pollution tolerant Ornamental Deer resistant
Festuca glauca 'Elijah Blue' - Elijah Blue Fescue	G	4a-8b	Y			F	H = 9-12" W = 9-12"	⊙	Variety	Low		Air pollution tolerant Ornamental Deer, rabbit resistant
Glyceria striata - Fowl Manna Grass	G	3b-9b		Y			H = 2-4'	⊙	Variety, rich	Moderate, consistently moist	North America	Wetland plant Deer resistant Attracts birds, pollinators
Helictotrichon sempervirens - Blue Oat Grass	G	4a-9b	Y			M	H = 2-3' W = 2-3'	⊙	Variety	Moderate		Adaptable to salt Air pollution tolerant Deer, rabbit resistant
Hibiscus laevis - Halberd-Leaved Rose Mallow	G	4a-9b		Y		F	H = 4-6' W = 3-4'	○	Variety, acidic	High, consistently moist	SE Canada, central & E United State	Heat tolerant Wetland plant Attracts pollinators
Imperata cylindrica 'Rubra' - Japanese Blood Grass	G	5a-9b	Y				H = 2-4' W = 2-4'	○	Variety	Low	Korea, Japan, China, India, E Africa	Air pollution tolerant Ornamental
Juncus effusus - Common Rush	G	4a-9b		Y	Y		H = 2-4' W = 2-4'	○	Wet	High, consistently moist	Britain, E & S Africa, Australia	Wetland plant
Koeleria macrantha 'BarKoel' - Turtleturf Prairie Junegrass	G	4a-9b					H = 4-18" W = 4-8"	○	Variety	Moderate		
Miscanthus x giganteus - Giant Chinese Silver Grass	G	4a-9b	Y			F	H = 10-13' W = 5'	⊙	Variety	Moderate	Hybrid of Asian species	Heat, wind tolerant Ornamental Deer, rabbit resistant Attracts birds

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Miscanthus 'Purpurascens' - Flame Grass	G	4a-9b	Y				H = 4-5' W = 2.5-3'	○	Variety	Moderate, consistently moist	Africa, E Asia	Heat tolerant Air pollution tolerant Ornamental
Miscanthus sacchariflorus - Silver Banner Grass	G	5a-9b		Y	Y		H = 5-8' W = 3-4.5'	○	Wet	High, consistently moist	Japan, Manchuria, Korea, N China	Heat tolerant Air pollution tolerant Ornamental
Miscanthus sinensis 'Adagio' - Adagio Maiden Grass	G	5a-9b	Y		Y	F	H = 3-5' W = 3-4'	○	Loam	Moderate	Japan, China, Korea	Heat tolerant Air pollution tolerant Ornamental Deer resistant
Miscanthus sinensis 'Cabaret' - Cabaret Japanese Silver Grass	G	5a-9b	Y		Y	F	H = 6-7' W = 3-5'	○	Loam	Moderate, well drained	Japan, China, Korea	Heat tolerant Air pollution tolerant Ornamental Deer resistant
Miscanthus sinensis 'Gold Bar' - Gold Bar Maiden Grass	G	5a-9b	Y				H = 4-5' W = 3-4'	○	Variety	Low, well- drained	Japan, China, Korea	Heat tolerant Air pollution tolerant Ornamental
Miscanthus sinensis 'Gracillimus' - Gracillimus Maiden Grass	G	5a-9b	Y		Y	M	H = 4-8' W = 3-6'	○	Variety	Moderate, consistently moist	Japan, China, Korea	Heat tolerant Air pollution tolerant Ornamental Deer resistant Attracts birds
Miscanthus sinensis 'Graziella' - Graziella Maiden Grass	G	5a-9b	Y				H = 5-7' W = 3-4'	○	Variety	Low, well- drained	Japan, China, Korea	Heat tolerant Air pollution tolerant Ornamental
Miscanthus sinensis 'Silberfeder' - Silver Feather Maiden Grass	G	4a-9b	Y				H = 6-8' W = 4'	⊙	Variety, rich	Low, well- drained	Asia	Adaptable to salt Deer, rabbit resistant Attracts birds
Miscanthus sinensis 'Strictus' - Porcupine Grass	G	5a-9b	Y			M	H = 4-9' W = 2-6'	○	Variety	Moderate, well drained	Japan, China, Korea	Heat tolerant Air pollution tolerant Ornamental Deer resistant Attracts birds
Miscanthus sinensis 'varigatus' - Variegated Maiden Grass	G	5a-9b	Y		Y	M	H = 5-9' W = 4-5'	○	Loam	Low, well- drained	Japan, China, Korea	Heat tolerant Air pollution tolerant Ornamental Deer resistant Attracts birds

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Miscanthus sinensis 'Pünkchen' LITTLE DOT - Little Dot Maiden Grass	G	5a-9b	Y					H = 4-7' W = 4-6'	○	Variety	Low, well-drained	Japan, China, Korea	Heat tolerant Air pollution tolerant Ornamental Attracts birds
Miscanthus sinensis 'Morning Light' - Morning Light Maiden Grass	G	5a-9b	Y		Y	M		H = 4-6' W = 2.5-4'	○	Loam	Low, well-drained	Japan, China, Korea	Heat tolerant Air pollution tolerant Ornamental Deer resistant Attracts birds
Miscanthus sinensis 'Yaku Jima' - Yaku Jima Maiden Grass	G	5a-9b	Y					H = 3-5' W = 3-5'	○	Variety	Low, well-drained	Japan, China, Korea	Heat tolerant Air pollution tolerant Ornamental
Miscanthus sinensis 'Zebrinus' - Zebra Grass	G	5a-9b	Y					H = 5-8' W = 4-6'	○	Variety, rich	Moderate, well-drained	Asia	Deer, rabbit resistant Attracts birds
Panicum virgatum 'Dallas Blues' - Dallas Blues Switch Grass	G	5a-9b	Y	Y	Y	M		H = 4-6' W = 2-3'	○	Sandy, clay	Low	Utah, North America	Air pollution tolerant Deer resistant Attracts birds
Panicum virgatum 'Cloud Nine' - Cloud Nine Switch Grass	G	5a-9b						H = 5-7' W = 2-3'	○	Variety	Moderate	Utah, North America	Adaptable to salt Attracts pollinators
Panicum virgatum 'Heavy Metal' - Heavy Metal Switch Grass	G	5a-9b	Y	Y	Y	F		H = 4-5' W = 1-3'	○	Sandy, clay	Low	North America	Air pollution tolerant Deer resistant Attracts birds
Panicum virgatum 'Prairie Sky' - Prairie Sky Switch Grass	G	4a-9b	Y		Y			H = 4-6' W = 2-3'	○	Sandy, clay	Low	E North America	Air pollution tolerant Attracts birds
Panicum virgatum 'Rotstrahlbusch' - Red Switch Grass	G	5a-9b	Y	Y	Y			H = 4-5' W = 2-3'	○	Variety	Low	E North America	Air pollution tolerant Attracts birds
Panicum virgatum 'Shenandoah' - Shenandoah Switch Grass	G	5a-9b	Y		Y	F		H = 3-4' W = 3-4'	○	Sandy, clay	Low	Utah, North America	Air pollution tolerant Deer resistant Attracts pollinators
Panicum virgatum 'Strictum' - Upright Switch Grass	G	4a-9b	Y			M		H = 4-6' W = 2-3'	⊙	Variety, dry	Low	Utah, North America	Attracts pollinators
Pennisetum alopecuroides 'Little Bunny' - Little Bunny Dwarf Fountain Grass	G	6a-9b	Y					H = 12-18" W = 18-24"	○	average, medium to wet soils	Moderate, consistently moist	E Asia	Adaptable to salt Air pollution tolerant Ornamental Deer resistant Attract birds
Pennisetum alopecuroides 'Moudry' - Black Flowering Fountain Grass	G	5a-9b	Y					H = 24-30" W = 18-24"	○	Sandy, clay	Low		Deer resistant
Pennisetum orientale 'Karley Rose' - Karley Rose Oriental Fountain Grass	G	5a-8b	Y		Y	M		H = 2-4' W = 2-4'	⊙	Variety	Low, well-drained	Asia	Air pollution tolerant Deer resistant

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Poa pratensis - BioBlue Kentucky Bluegrass Mix	G	5a-8b					H = 6" W = 4"	☉	Wet	High, consistently moist		
Schizachyrium scoparium - Little Bluestem	G	5a-9b	Y		Y		H = 2-4' W = 1.5-2'	☉	Variety	Low, well- drained	North America	Heat tolerant Air pollution tolerant Ornamental Deer resistant Attracts pollinators
Schizachyrium scoparium 'Blaze' - Blaze Little Bluestem	G	4a-9b	Y		Y		H = 2-3' W = 1.5-2'	☉	Variety	Low, well- drained	North America	Heat tolerant Air pollution tolerant Ornamental Deer resistant Attracts pollinators
Schizachyrium scoparium 'Prairie Blues' - Prairie Blues Little Bluestem	G	4a-9b	Y		Y		H = 32-36" W = 12-15"	○	Variety	Low, well- drained	North America	Heat tolerant Air pollution tolerant Ornamental Deer resistant Attracts pollinators
Schizachyrium scoparium 'Standing Ovation' - Standing Ovation little bluestem	G	3b-8b	Y		Y	F	H = 3-4' W = 1-2'	☉	Variety	Low, moderate	North America	Air pollution tolerant Ornamental Deer resistant Attracts birds
Spartina pectinata - Prairie Cordgrass	G	4a-8b		Y			H = 20-30" W = 20-30"	☉	Clay, loam, wet	High, consistently moist	North America	Wetland plant Deer resistant
Sporobolus airoides - Alkali Sacaton	G	4a-9b	Y				H = 4' W = 3'	○	Variety	Low, well- drained	North America	Adaptable to salt Deer resistant
Sporobolus wrightii - Giant sacaton	G	5a-8b	Y		Y	M	H = 5-7' W = 3-5'	○	Variety	Low	SW United States	Deer resistant
Sporobolus wrightii 'Windbreaker' - Windbreaker Giant Sacaton	G	5a-9b	Y				H = 8-10' W = 6'	☉	Alkaline	Low, well- drained	New Mexico	Adaptable to salt Wind tolerant Deer resistant
Aquilegia caerulea - Rocky Mountain Columbine	P	3b-9b					H = 1-2' W = 1-2'	○	Variety	Moderate, well drained	Utah, W North America	Deer, rabbit resistant Attracts birds
Aquilegia formosa - Western Columbine	P	3b-9b					H = 24-36" W = 18"	○	Sandy, loam	Moderate, well drained	Utah, W North America	Rabbit resistant Attracts pollinators
Aquilegia McKana Group - McKana Hybrid Columbine	P	3b-9b					H = 2-2.5' W = 1-1.5'	○	Variety	Moderate, well drained	N Hemisphere	Deer, rabbit resistant Attracts birds
Armeria maritima 'Bloodstone' - Bloodstone Thrift	P	3b-9b	Y		Y	M	H = 6-8" W = 12"	○	Sandy, loam	Low	North America	Deer, rabbit resistant

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Armeria maritima 'Cotton Tail' - Cotton Tail Thrift	P	3b-9b	Y		Y	M	H = 4-6" W = 4-6"	☉	Sandy, loam	Low	North America	Deer, rabbit resistant
Armeria maritima 'Düsseldorfer Stolz' - Dusseldorf Pride Thrift	P	3b-9b	Y				H = 6-12" W = 6-12"	☉	Variety, dry	Low, well-drained		
Armeria maritima 'Rubifolia' - Red Leaf Thrift	P	3b-9b	Y		Y	M	H = 8-10" W = 12"	☉	Sandy, loam, dry	Low, well-drained		Deer, rabbit resistant
Armeria maritima 'Splendens' - Splendens Common Thrift	P	3b-9b	Y		Y	M	H = 6-12" W = 6-12"	☉	Variety, dry	Low, well-drained		Deer, rabbit resistant
Asarum caudatum - Wild Ginger	P	7a-9b	Y				H = 3-6" W = 6-18"	●	Variety, humusy, acidic	Moderate, consistently moist	W North America	Deer resistant
Iris virginica shrevei - Blue Flag Iris	P	5a-9b		Y			H = 1.5-2' W = 1.5-2'	☉	Sandy, acidic, wet	High, consistently moist	E United States	Wetland plant Deer resistant Attracts pollinators
Typha latifolia - Broadleaf Cattail	P	3b-9b		Y			H = 4-6' W = 4-6'	○	Wet	High, consistently moist	Utah	Wetland plant Bioremediation Deer resistant
Verbena hastata - Blue Verain	P	3b-8b	N				H = 2-6' W = 1-2.5'	☉	Variety, wet	High	W North America	Deer resistant Attracts pollinators
Asclepias speciosa Torr. - Showy Milkweed	P	5a-9b	Y			F	H = 1-3' W = 1-2'	○	Variety	Low, well-drained	Utah, W North America	Attracts wildlife, pollinators
Diachondra repens - Diochondra	GC	7a-9b	Y				H = 2"	○	Variety	Low, well-drained	Australia	
Juniperus horizontalis 'Bar Harbor' - Bar Harbor Juniper	GC	3b-8b	Y		Y		H = 18-24" W = 5-6'	☉	Sandy, dry	Low	Alaska, Canada, N United States	Adaptable to salt Air pollution tolerant Deer resistant
Juniperus horizontalis 'Hughes' - Hughes Juniper	GC	3b-9b	Y				H = 1-9'	☉	Variety	Low, well-drained	North America	Urban pollution tolerant Deer resistant
Nepeta racemosa 'Walker's Low' - Walker's Low Catmint	GC	4a-9b	Y				H = 2-2.5' W = 2..5-3'	○	Variety	Low, well-drained	Caucusus, N Iran	Adaptable to salt Air pollution tolerant Deer, rabbit resistant
Nepeta sibirica 'Souvenir d' André Chaudron' - Souvenir d Andre Chaudron Catmint	GC	3b-9b	Y				H = 1-3' W = 1-2'	○	Variety	Low, well-drained	Europe	Cold tolerant Deer resistant
Nepeta x faassenii 'Select Blue' - Select Blue Catmint	GC	4a-9b	Y				H = 1-1.5' W = 1-2'	○	Variety	Low, well-drained	Europe	Air pollution tolerant Disease resistant Deer, pest resistant
Nepeta 'Psfike' - Little Trudy Catmint	GC	4a-9b	Y			M	H = 8-14" W = 12-16"	○	Variety	Low, well-drained	Europe	Air pollution tolerant Deer, rabbit resistant Attracts pollinators

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Teucrium chamaedrys 'Prostratum' - Compact Creeping Germander	GC	5a-9b	Y				H = 6-12" W = 1-3'	○	Variety	Low, well- drained	S Europe, Mediterranean, Britain	Deer, rabbit resistant Attracts wildlife
Veronica oltensis - Thyme-leaf Speedwell	GC	4a-9b	Y			S	H = 12" W = 24"	⊙	Variety	Low, well- drained		Adaptable growing conditions
Veronica liwanensis - Turkish veronica	GC	3b-9b	Y			S	H = 2" W = 18"	○	Variety	Low		Adaptable to salt Deer resistant
Veronica 'Reavis' - CRYSTAL RIVER® veronica	GC	3b-7b	Y			F	H = 1-3" W = 18-30"	○	Variety	Low		Deer resistant
Veronica x 'P018S' - SNOWMASS® blue-eyed veronica	GC	3b-9b	Y				H = 1-2" W = 18"	○	Variety	Low, moderate		Deer resistant Attracts pollinators
Campsis radicans f. flava - Yellow Trumpetvine	V	5a-9b	Y			F	H = 15-40' W = 5-12'	⊙	Variety	Low, well- drained	SE United States	Heat tolerant Urban pollution tolerant Deer, rabbit resistant Attracts pollinators
Clematis ligusticifolia - Western White Clematis	V	5a-9b	Y			F	H = 20' W = 18'	○	Variety	Low, well- drained	W North America, Alberta, British Columbia	Rabbit resistant Attracts pollinator
Vitis labrusca 'Concord' - Concord Grape	V	5a-8b					H = 15-20' W = 15-20'	⊙	Loam, rich, humusy	Moderate, well- drained	North America	Ornamental Deer, rabbit resistant
Vitis labrusca 'Niagara' - Niagara Grape	V	5a-8b				F	H = 15-20' W = 15-25"	⊙	Loam, rich, humusy	Moderate, well- drained	North America	Ornamental
Vitis 'Himrod' - Himrod Grape	V	5a-8b				F	H = 15-20' W = 15-25"	⊙	Loam, rich, humusy	Moderate, well- drained	Asia Minor; Turkey	Ornamental Deer, rabbit resistant
Vitis 'St. Theresa' - St. Theresa Grape	V	5a-8b					H = 15-20' W = 3-8'	○	Alkaline	Moderate		Cold tolerant Ornamental
Vitis x 'St. Theresa Seedless' - St. Theresa seedless grape	V	4a-8b					H = 15'-20' W = 3-8'	○	Loam, clay, alkaline	Moderate	Rocky Mountain Regions	Adaptable growing conditions
Yucca filamentosa - Adam's Needle	SU	5a-9b	Y		Y		H = 4-8' W = 2-3'	○	Sandy	Low, well- drained	SE United States	Adaptable to salt Air pollution tolerant Deer, rabbit resistant
Yucca filamentosa 'Bright Edge' - Bright Edge Yucca	SU	4a-9b	Y				H = 2-3' W = 3-4'	⊙	Rocky	Low	SE United States	Adaptable to salt Deer resistant

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