

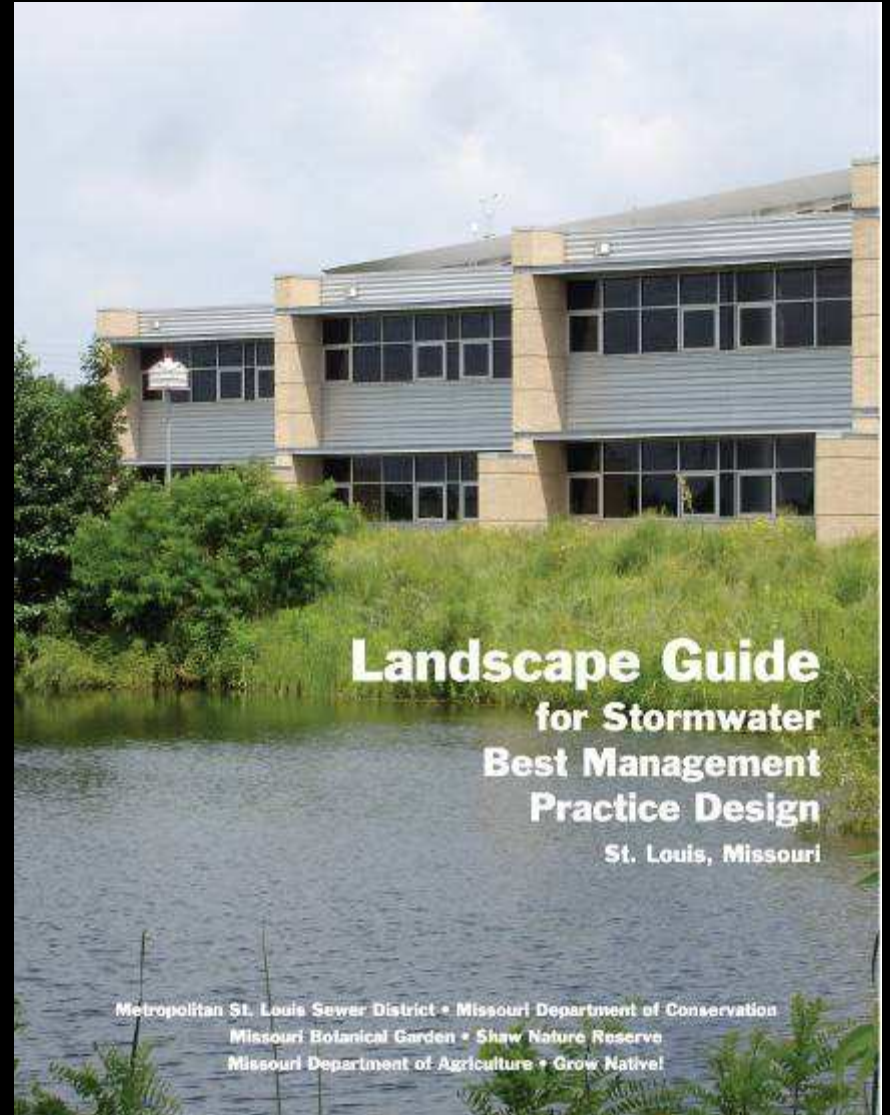


Chapter Two

Rain Gardening and Storm-water Management

A Landscaping Guide for Missouri

www.shawnature.org for details



Landscape Guide for Stormwater Best Management Practice Design

St. Louis, Missouri

Metropolitan St. Louis Sewer District • Missouri Department of Conservation
Missouri Botanical Garden • Shaw Nature Reserve
Missouri Department of Agriculture • Grow Native!

Native Plants for Rain Gardens

- Proven tolerance of scouring floods
- Ecologically connected
- Tolerates summer drought

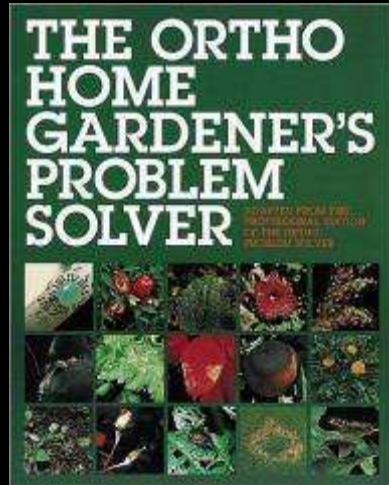


Native Plants for Rain Gardens

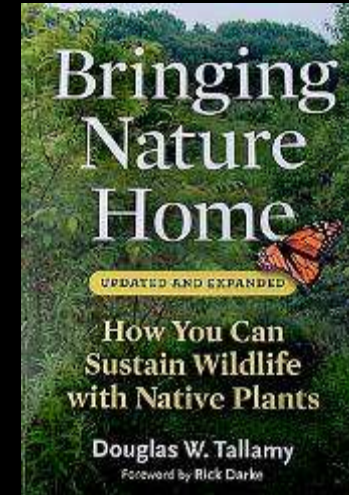
- Long-lived perennials
- Wide tolerance of soil and moisture
- Low-growing species
- Available at nurseries
- Supports insect and bird diversity



Ortho Garden

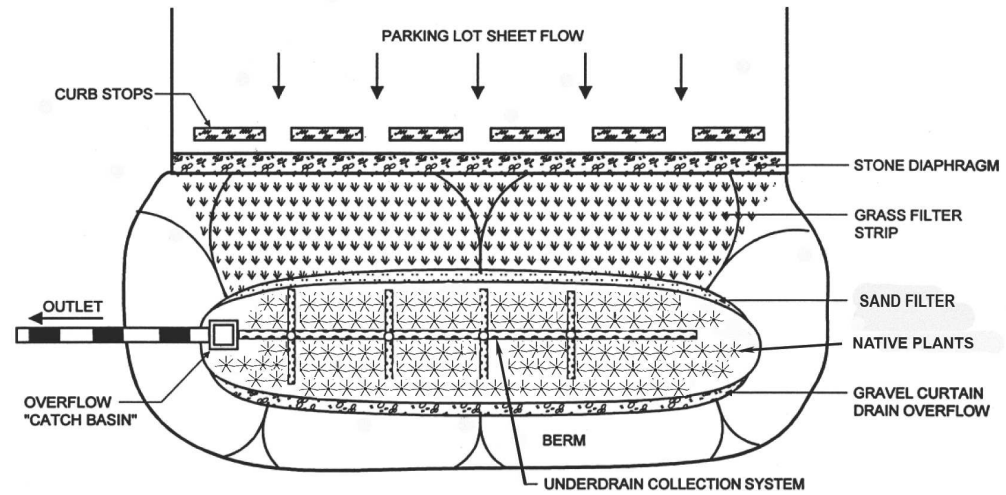


Tallamy Garden

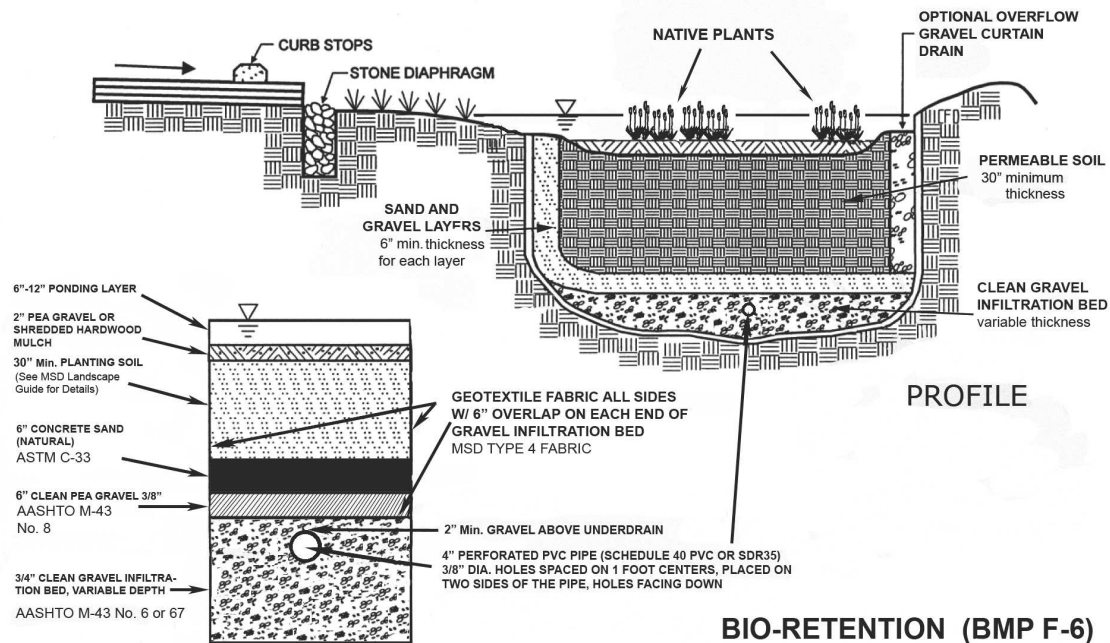


Latin Name	Common Name	Submersed & Emergent (water depth in feet)					Seasonal Interest - Color and Months	Sun	Pt Sun	Pt Shade	Dry	Medium	Wet	Birds	Butterflies	Fall Color	Winter Interest	Flood frequency tolerance	Flood height tolerance	Salt tolerance	Aggressive?												
		Pond Edges & Permanent Water			Height (feet)	Spreading (feet)																											
		Over sand	Lower slopes	Upper slopes																													
							J	F	M	A	M	J	J	A	S	O	N	D															
Grasses/Sedges																																	
Carex amplexans	Yellow fruited sedge	x	x	2-3	1.5	tan		x	x	x		x	x	x		x	H	12	3	L													
Carex albicans	Oak sedge		x	10"	1	kegreen	x	x				x	x	x		x	M	12	1		L												
Carex echinacea	Bristle-leaf sedge		x			evergreen	x	x				x	x	x		x	L				L												
Carex grayii	Eur sedge	x	x	1-2	1.5	kegreen	x		x	x	x		x	x	x		M	12	2		L	M											
Carex muskingumensis	Palm sedge	x	x	2-3	1.5	t yellow	x		x	x	x		x	x	x		x	H	24	3	M	M											
Juncus effusus	Soft rush	0-1	x	2-3	1.5	kegreen						x	x	x	x		x	H	24	4	L	M	M										
Schizachyrium scoparium	Little bluestem		x	2-3	1.5	bronze	x	x				x	x	x	x		x	L	12	1	M	L	L										
Sporobolus heterolepis	Prairie dropseed		x	2-3	1.5	yellow						x	x	x	x		x	L			L												
Forbs																																	
Anemone illustris**	Shining bluestar	x	x	2-3	2.5	lt. blue		x	x			x	x	x		x	x	H	35	5		L	H										
Aster oblongifolius	Aromatic aster		x	2	1.5	av. Blue						x	x		x	x	L				M	L											
Asclepias tuberosa	Butterfly milkweed	x	x	1-2	1.5	orange						x	x		x		L				M												
Baptisia spharocarpa	Yellow wild indigo		x	2	2	yellow		x	x							x	L				M												
Oenothera biennis	Rose turtlehead	x	x	3-4	2	seaburple						x	x	x			M	12	1		M												
Carex palmata	Finger coreopsis	x	x	2	1	yellow						x	x		x		L				L												
Echinacea purpurea	Purple coneflower		x	2-3	1.5	t. purple						x	x	x	x		L				L												
Heuchera americana	American alumroot		x	1	1.5	cream						x	x		x		L				L												
Heuchera parviflora	Late-flowering alumroot		x	1	1.5	white						x	x	x	x		L				L												
Heuchera richardsonii	Prairie alumroot	x	x	1	1.5	cream		x	x			x	x	x	x		M	12	1		L												
Heuchera villosa	Maple-leaf alumroot		x	1	1.5	white						x	x		x		L				L												
Hibiscus lasiocarpus**	Rose mallow	x	x	3-7	2.5	white/pink						x	x	x	x		x	x	H	35	5	M	M										
Iris cristata	Dwarf crested iris		x	1	1	Violet		x	x			x	x	x		x	L				L												
Iris fulva	Copper iris	x	x	2-3	1.5	copper						x	x	x			M	12	1		M												
Liatris spicata	Dense blazingstar		x	2-3	1.5	slavender						x	x		x	x	M	12	1		L												
Loelia cardinalis*	Cardinal flower	x	x	2-3	1.5	red						x	x	x	x		H	18	5		L	U											
Loelia spicata	Blue lobelia	x	x	1-2	1.5	blue						x	x	x	x		H	24	3		L	H											
Parthenium hispidum	American feverfew		x	1-2	1.5	white						x	x		x		L				M												
Pycnanthemum tenuifolium	Slender mountain mint		x	2	1.5	white						x	x	x		x	L				L												
Rudbeckia fulgida	Orange coneflower	x	x	2	1.5	yellow						x	x		x		H	24	3		M												
Sedum ternatum	Woodland stonecrop		x	6"	1	hib/brng	x		x	x		x	x	x		x	L				L												
Solidago hexacaulis	Zig zag goldenrod	x	x	2	1.5	yellow						x	x				L				L												
Spigelia marylandica	Indian pink		x	1-2	1.5	red/yel						x	x	x	x		L				L												
Trees/Shrubs																																	
Aesculus pavia	Red butternut	x	x	10-20	15	red						x	x	x		x	x	H	24	2		L	M										
Aronia melanocarpa**	Black chokeberry		x	5-7	5	white		x	x			x	x	x	x	x	x	M	12	2		L											
Betula nigra*	River birch	x	x	30-40	15-20	cream		x	x			x	x	x	x	x	x	H	35	5		H	H										
Callicarpa americana	Beautyberry		x	3-5	4-6	pink/pur						x	x	x	x		x	L			L												
Carpinus caroliniana	Musclewood		x	15-20	20	yellow	x	x	x			x	x	x	x		x	M	6	1		L											
Cercis canadensis	Redbud	x	x	10-20	15	pink		x	x			x	x	x	x		M				L	M	L										
Chionanthus virginicus	Fringetree		x	10-15	10	white		x	x			x	x		x		L				L												
Cornus alternifolia	Pagoda dogwood		x	10-15	10	white		x	x			x	x	x	x		x	L			L												
Cornus florida	Flowering dogwood		x	10-15	10	white		x	x	x		x	x	x	x		x	L			L												
Crataegus viridis	Green hawthorne	x	x	15-20	15	white		x	x			x	x	x	x		M	12	1		L	M											
Diospyros virginiana	Persimmon		x	30-40	20	orange	x	x				x	x	x	x		M	12	1		M	M											
Dirca palustris	Leatherwood		x	5-7	5	lt. yel		x	x			x	x	x	x		x	L			M												
Hammamelis virginiana	Eastern witchazel	x	x	10-15	15	yellow						x	x	x			L				L	L											
Hydrangea arborescens	Wild Hydrangea		x	5-7	5	white		x	x	x	x	x	x			x	L				L	L											
Ilex verticillata	Winterberry holly	x	x	5-10	10	red		x	x			x	x	x		x	H	12	3		L	M											
Neviusia alabamense***	Alabama snowreath		x	8-10	7	white		x	x			x	x			x	M				M												
Nyssa sylvatica	Black gum		x	40-50	25	white		x	x			x	x	x		x	L				H	L											
Quercus bicolor	Swamp white oak	x	x	40-50	25	white		x	x			x	x	x	x		x	H	24	3		H											

Example of Bioretention



PLAN VIEW



N.T.S.

Bioretention combines open space with stormwater treatment.

Missouri Botanical Garden





Hancock Elementary



Mo. Baptist Hospital



**United
Methodist
Conference
Center**

**Columbia,
MO**



The City Garden, St. Louis





Whitmire Wildflower Garden

Shaw Nature Reserve

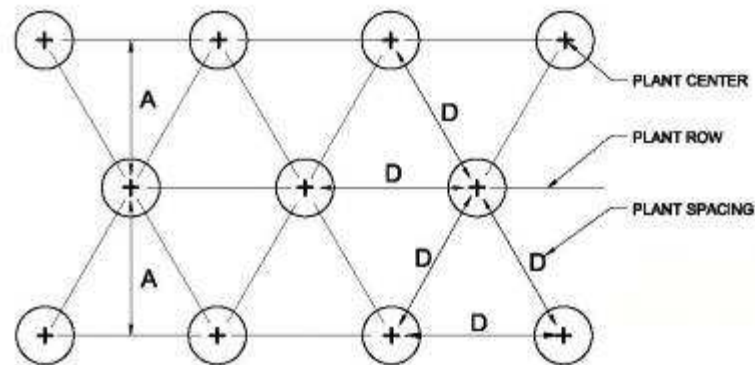


Plant Spacing Table

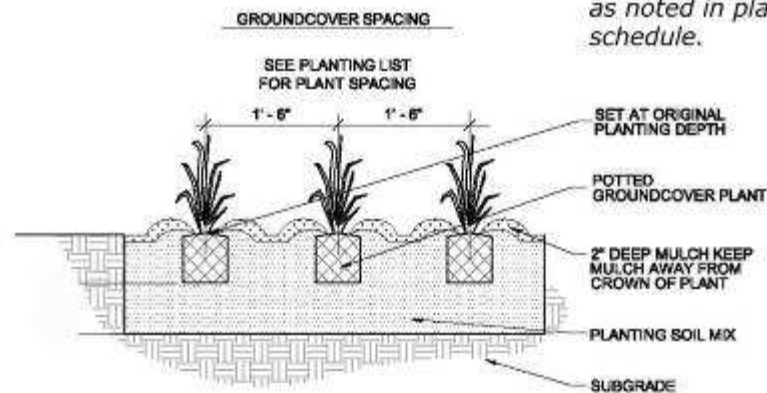
classygroundcovers.com

SPACING "D"	ROW "A"	NUMBER OF PLANTS/SQ. FT.
30"	26"	.180
24"	20.8"	.25
18"	15.6"	.450
15"	13.0"	.640
12"	10.4"	1.00
10"	8.66"	1.44
8"	6.93"	2.25

NOTE: PLANT QUANTITIES WERE DETERMINED BY MULTIPLYING AREA (SQ. FT.) BY NUMBER OF PLANTS/SQ. FT. FOR REQUIRED SPACING.



Quantity of plants as noted in planting schedule.



NOTES:

1. REMOVE SPENT FLOWERS PRIOR TO PLANTING.
2. LOOSEN ROOT MASS AT BOTTOM OF ROOTBALL.
3. TOP OF ROOTBALL STRIPPED OF 1/4" SURFACE GROWING MEDIA AND COVERED WITH 1/4" LANDSCAPE BED MIX PLUS SURFACE MULCH.



Plant Spacing Plan

N.T.S.

Planting Detail Courtesy of Ted Spaid
SWT Design, St. Louis, MO



**Freno
Modular
Rain
Garden
St. Louis**



Lions Choice, S. Lindbergh



First Community Credit Union, S. County



Maryville University





Novus International