

# RIPARIAN TEMPLATE

## STREAMSIDE PLANTING GUIDE

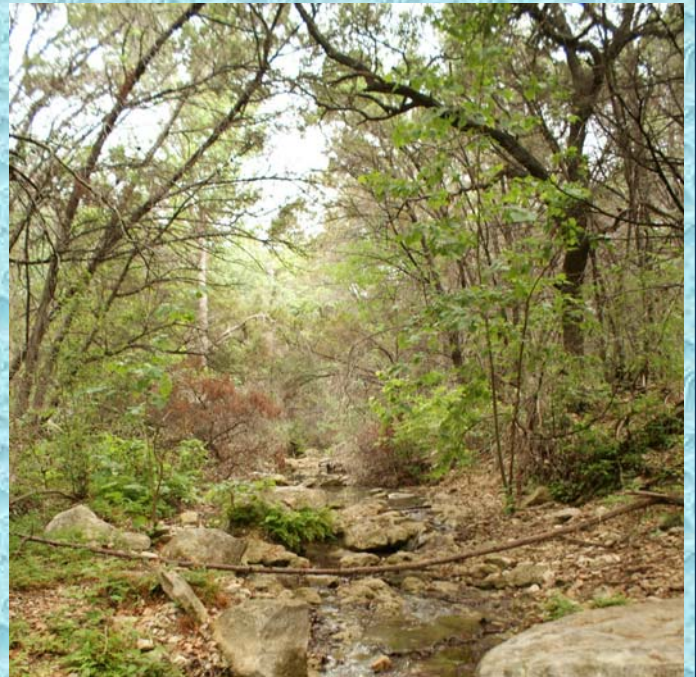
The land alongside a stream, the riparian zone, plays a critical role in maintaining the integrity of the stream. Mature plants in the riparian zone help maintain water quality in the stream.

They also function structurally to prevent erosion and flooding downstream.

This template provides guidance for landowners and developers interested in improving the integrity of the riparian corridor of their waterways. Recommendations for native grasses, forbs, shrubs and trees are provided for large and small drainage areas in both Edwards Plateau and Blackland Prairie riparian zones.

Although native plants are adapted to the extreme conditions of our local weather patterns, it is important to have an irrigation system in place for the first two years to help establish new plants. Placing 3"-4" of mulch around the plants will keep soil moist and reduce weeds.

All of the plants listed here are found in the riparian areas of Austin's streams. When replanting a degraded riparian zone it is wise to increase plant density of the woody plants as well as the grasses and wildflowers. Maintaining a diverse vegetative community, comprised of plants in all tiers and zones will help combat aggressive and non-native plants.







Zone 3 Zone 2 Zone 1 Creek

**Mature Riparian Structure:** Unique hydrologic conditions make different zones of the streamside suitable for distinct plant types. The soil in Zone 1 is always wet and frequently underwater. Zone 2 is underwater during most storm events but dries out afterwards. Zone 3 is a transitional area receiving its moisture from rainfall and large storm events.



Groundcover

Understory

Upper Canopy

**Tiered Vegetation Scenarios:** Wildflowers, grasses and other groundcover plants grow densely without canopy cover from trees and shrubs. In the presence of understory trees and shrubs, groundcover often thins out. When all three tiers of vegetation exist, grasses and forbs cover a very small percentage of area. It is recommended that trees, shrubs and groundcover be planted at increased densities to better facilitate success of the desired plant communities.

**Additional Resources:**

- CoA Riparian Website <http://www.cityofaustin.org/watershed/creekside.htm>
- Lady Bird Johnson Wildflower Center <http://www.wildflower.org/plants/>
- Texas Riparian Association <http://www.texasriparian.org/>

- CoA Tree Encyclopedia [http://www.ci.austin.tx.us/trees/en\\_spec.htm](http://www.ci.austin.tx.us/trees/en_spec.htm)
- National Plant Society of Texas <http://npsot.org/wp/austin/>
- Improving Urban Streams <http://www.msdlouky.org/insidemsd/wqstreams.htm>
- Tree Folks <http://treefolks.org/>





### Edwards Plateau Small Drainage (<1800 acres)

	Growth	Common names	Scientific Name	Zones
Groundcover	Forb	Brown-eyed Susan	<i>Rudbeckia triloba</i>	2,3
	Forb	Cedar sage	<i>Salvia roemeriana</i>	2,3
	Forb	Frost weed	<i>Verbesina virginica</i>	1,2,3
	Forb	Plateau goldeneye	<i>Viguiera dentata</i>	2,3
	Grass	Arapaho muhly	<i>Muhlenbergia utilis</i>	1,2
	Grass	Cedar sedge	<i>Carex planostachys</i>	2,3
	Grass	Inland sea oats	<i>Hasmanthium latifolium</i>	1,2,3
	Grass	Lindheimer muhly	<i>Muhlenbergia lindheimeri</i>	2,3
	Grass	Little bluestem	<i>Schizachyrium scoparium</i>	2,3
	Grass	Scribner's panic grass	<i>Dichantherium oligosanthes var. scribnerianum</i>	1,2,3
	Grass	Seep muhly	<i>Muhlenbergia reverchonii</i>	1,2
Grass	Switchgrass	<i>Panicum virgatum</i>	1,2	
Understory	Shrub	Agarita	<i>Mahonia trifoliolata</i>	3
	Shrub	Button bush	<i>Cephalanthus occidentalis</i>	1,2
	Shrub	Elbow bush	<i>Forestiera pubescens</i>	3
	Shrub	Silk tassel	<i>Garrya lindheimeri</i>	2,3
	Shrub	Turks Cap	<i>Malvaviscus drummondii</i>	2,3
	Tree/Shrub	Ashe juniper	<i>Juniperus ashei</i>	2,3
	Tree/Shrub	Escarpment black cherry	<i>Prunus serotina var. eximia</i>	2,3
	Tree/Shrub	Gum bumelia (Chittamwood)	<i>Bumelia lanuginosa</i>	2,3
	Tree/Shrub	Possum-haw (Deciduous holly)	<i>Ilex decidua</i>	1,2,3
	Tree/Shrub	Red Buckeye	<i>Aesculus pavia</i>	2
	Tree/Shrub	Texas persimmon	<i>Diospyros texana</i>	2,3
	Tree/Shrub	Yaupon	<i>Ilex vomitoria</i>	2,3
	Vine	Mustang grape	<i>Vitis mustangensis</i>	2,3
	Vine	Peppervine	<i>Ampelopsis arborea</i>	1,2,3
	Vine	Rattan Vine	<i>Berchemia scandens</i>	2
Vine	Sweet mountain grape	<i>Vitis monticola</i>	2,3	
Vine	Virginia creeper	<i>Parthenocissus quinquefolia</i>	1,2	
Overstory	Tree	Box elder	<i>Acer negundo</i>	1,2
	Tree	Cedar elm	<i>Ulmus crassifolia</i>	2,3
	Tree	Hackberry	<i>Celtis sp.</i>	2,3
	Tree	Texas ash	<i>Fraxinus texensis</i>	1,2,3
	Tree	Texas red oak	<i>Quercus buckleyi</i>	1,2,3

**Notes:**

These streams tend to have a rocky/bedrock substrate. The flow is intermittent, commonly occurring for only a short while after rain. A more comprehensive plant list can be found on the City of Austin's Riparian website.

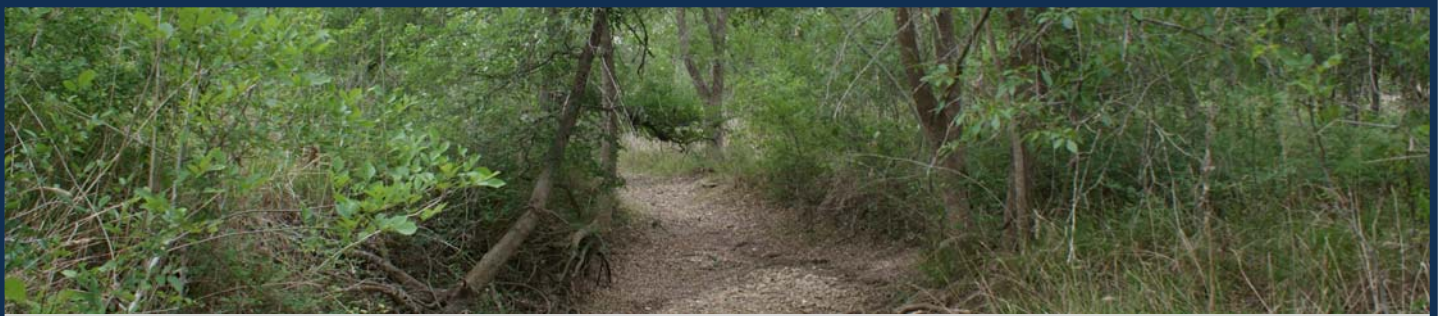


### Edwards Plateau Large Drainage (>1800 acres)

	Growth	Common names	Scientific Name	Zones
Groundcover	Forb	Frost weed	<i>Verbesina virginica</i>	3
	Forb	Maximillian sunflower	<i>Helianthus maximiliani</i>	2,3
	Forb	Rain lily	<i>Cooperia drummondii</i>	1,2
	Forb	Straggler daisy	<i>Calyptocarpus vialis</i>	1,2,3
	Grass	Curly mesquite	<i>Hilaria belangeri</i>	3
	Grass	Eastern gamagrass	<i>Tripsacum dactyloides</i>	2,3
	Grass	Inland saltgrass	<i>Distichlis spicata car. Stricta</i>	1,2,3
	Grass	Inland sea oats	<i>Chasmanthium latifolium</i>	1,2,3
	Grass	Lindheimer muhly	<i>Muhlenbergia lindheimeri</i>	2,3
	Grass	Little bluestem	<i>Schizachyrium scoparium</i>	2,3
	Grass	Sideoats grama	<i>Bouteloua curtipendula</i>	1,2,3
	Grass	Switchgrass	<i>Panicum virgatum</i>	1,2
	Grass	Virginia wildrye	<i>Elymus virginicus</i>	1,2,3
Understory	Shrub	Cat's-claw mimosa	<i>Mimosa biuncifera</i>	3
	Tree/Shrub	Ashe juniper	<i>Juniperus ashei</i>	3
	Tree/Shrub	Texas persimmon	<i>Diospyros texana</i>	3
	Tree/Shrub	Yaupon	<i>Ilex vomitoria</i>	1,2,3
	Vine	Dewberry	<i>Rubus sp.</i>	1,2,3
	Vine	Mustang grape	<i>Vitis mustangensis</i>	2,3
	Vine	Peppervine	<i>Ampelopsis arborea</i>	1,2,3
	Vine	Rattan vine	<i>Berchemia scandens</i>	1
Vine	Virginia creeper	<i>Parthenocissus quinquefolia</i>	1,2,3	
Overstory	Tree	American elm	<i>Ulmus americana</i>	2,3
	Tree	Boxelder maple	<i>Acer negundo</i>	1,2,3
	Tree	Cedar elm	<i>Ulmus crassifolia</i>	2,3
	Tree	Hackberry	<i>Celtis sp.</i>	1,2,3
	Tree	Roughleaf dogwood	<i>Cornus drummondii</i>	1,2,3
	Tree	Texas ash	<i>Fraxinus texensis</i>	2,3
	Tree	Texas red oak	<i>Quercus buckleyi</i>	3

**Notes:**

These streams tend to have a rocky/bedrock substrate. Large pools remain as aquatic habitat throughout the year. A more comprehensive plant list can be found on the City of Austin's Riparian website.



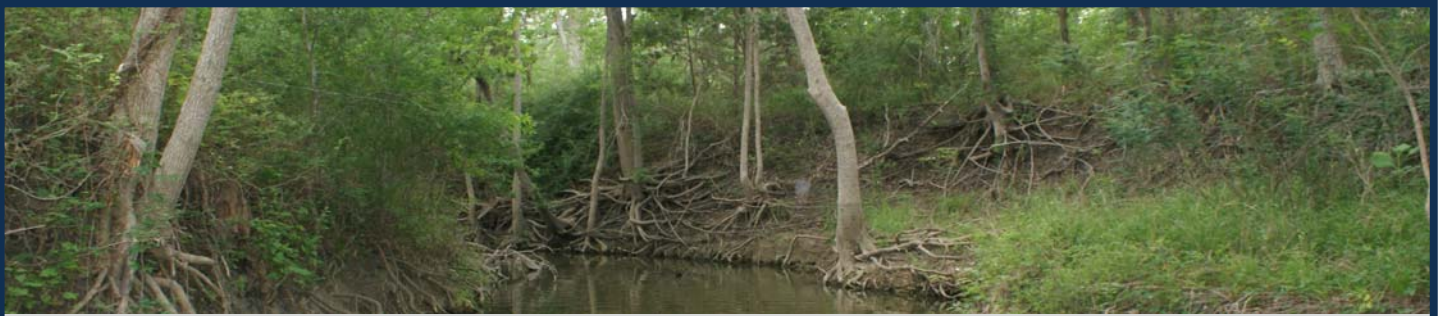
### Blackland Prairies Small Drainage (<1800 acres)

	Growth	Common names	Scientific Name	Zones
Groundcover	Forb	Brown-eyed Susan	<i>Rudbeckia triloba</i>	1,2,3
	Forb	Gayfeather	<i>Liatris mucronata</i>	2,3
	Forb	Illinois bundleflower	<i>Desmanthus illinoensis</i>	2
	Forb	Maximillian sunflower	<i>Helianthus maximiliani</i>	1,2
	Forb	Texas aster	<i>Aster texanus</i>	2,3
	Grass	Big bluestem	<i>Andropogon gerardii</i>	3
	Grass	Blue grama	<i>Bouteloua gracilis</i>	3
	Grass	Estern Gamagrass	<i>Tripsacum dactyloides</i>	1,2
	Grass	Ryegrass	<i>Lolium perenne</i>	1,2,3
	Grass	Sideoats grama	<i>Bouteloua curtipendula</i>	1,2
	Grass	Switchgrass	<i>Panicum virgatum</i>	2,3
	Grass	Virginia wildrye	<i>Elymus virginicus</i>	1,2,3
	Grass	Yellow indiagrass	<i>Solrgum nutans</i>	3
Understory	Shrub	Cat's-claw mimosa	<i>Mimosa biuncifera</i>	3
	Shrub	Coralberry	<i>Symphoricarpos orbiculatus</i>	1,2,3
	Shrub	Elbowbush	<i>Forestiera pubescens</i>	1,2,3
	Shrub	Turk's Cap	<i>Malvaviscus drummondii</i>	3
	Tree/Shrub	Western soapberry	<i>Sapindus saponaria var. drummondii</i>	2,3
	Vine	Ivy treebine, Cow-itch	<i>Cissus incisa</i>	1,2,3
	Vine	Purple Bindweed	<i>Iponea triclocarpe</i>	2,3
Vine	Virginia creeper	<i>Parthenocissus quinquefolia</i>	1,2,3	
Overstory	Tree	Cedar elm	<i>Ulmus crassifolia</i>	1,2,3
	Tree	Green ash	<i>Fraxinus pennsylvanica</i>	1,2,3
	Tree	Hackberry	<i>Celtis spp.</i>	1,2,3
	Tree	Live oak	<i>Quercus fusiformis</i>	1,2,3

**Notes:**

These streams tend to have a silty or muddy substrate. The flow is intermittent to perennial, with small pools lasting through most of the year. A more comprehensive plant list can be found on the City of Austin's Riparian website.





### Blackland Prairies Large Drainage (>1800 acres)

	Growth	Common names	Scientific Name	Zones
Groundcover	Forb	Frog fruit	<i>Phyla incisa</i>	2
	Forb	Frostweed	<i>Verbesina virginica</i>	2
	Forb	Late goldenrod	<i>Solidago altissima</i>	2
	Forb	Smartweed	<i>Polygonum sp.</i>	1,2
	Forb	Southern Dewberry	<i>Rubus trivialis</i>	2,3
	Forb	Swamp smartweed	<i>Polygonum hydropiperoides</i>	1
	Forb	Yerba de tago (False daisy)	<i>Eclipta alba</i>	1
	Grass	Bead grass	<i>Paspalum sp.</i>	1,2,3
	Grass	Big muhly	<i>Muhlenbergia lindheimeri</i>	2,3
	Grass	Devil's shoestring	<i>Nolina lindheimeriana</i>	3
	Grass	Dichanthelium	<i>Dichanthelium sp.</i>	1,2,3
	Grass	Emory's sedge	<i>Carex emoryi</i>	1,2
	Grass	Flatsedge	<i>Cyperus sp.</i>	2,3
	Grass	Inland sea oats	<i>Chasmanthium latifolium</i>	1,2,3
	Grass	Virginia wildrye	<i>Elymus virginicus</i>	1,2,3
Grass	Walter's millet	<i>Echinochloa walteri</i>	1,2,3	
Understory	Shrub	American beautyberry	<i>Callicarpa americana</i>	2
	Shrub	Coralberry	<i>Symphoricarpos orbiculatus</i>	1,2,3
	Shrub	Deciduous holly	<i>Ilex decidua</i>	1,2,3
	Shrub	Elbowbush	<i>Forestiera pubescens</i>	1,2,3
	Shrub	Pigeon Berry	<i>Rivina humilis</i>	2,3
	Shrub	Turk's Cap	<i>Malvaviscus drummondii</i>	2,3
	Tree/Shrub	Roughleaf dogwood	<i>Cornus drummondii</i>	2,3
	Tree/Shrub	Western soapberry	<i>Sapindus saponaria var. Drummondii</i>	1,2,3
	Vine	Virginia creeper	<i>Parthenocissus quinquefolia</i>	2,3
Overstory	Tree	Black Walnut	<i>Juglans nigra</i>	3
	Tree	Bois d' Arc	<i>Maclura pomifera</i>	3
	Tree	Bur Oak	<i>Quercus macrocarpa</i>	3
	Tree	Cedar elm	<i>Ulmus crassifolia</i>	1,2,3
	Tree	Cottonwood	<i>Populus deltoides</i>	1,2,3
	Tree	Eastern red cedar	<i>Juniperus virginiana</i>	3
	Tree	Hackberry	<i>Celtis spp.</i>	1,2,3
	Tree	Little Walnut	<i>Juglans microcarpa</i>	3
	Tree	Live Oak	<i>Quercus fusiformis</i>	3
	Tree	Pecan	<i>Carya illinoensis</i>	3
	Tree	Post Oak	<i>Quercus stellata</i>	3
	Tree	Sycamore	<i>Platanus occidentalis</i>	1,2

**Notes:**

These streams tend to have a combination of muddy and rocky substrates. Large pools remain as aquatic habitat throughout the year. A more comprehensive plant list can be found on the City of Austin's Riparian website.