

Earth-Kind Plant Selection Trees, Shrubs and Perennials

Laura M. Miller
Tarrant County Extension Agent-
Commercial Horticulture



Plant Selection

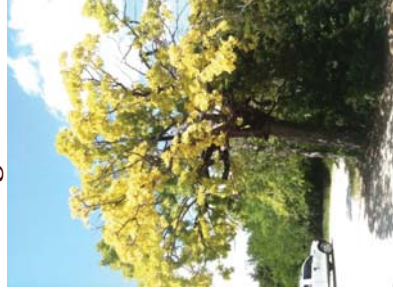
Macro-environment

- Hardiness Zone
- Heat Zone
- Prevailing Wind
- Chilling Hours
- Soil Type
 - pH
- Water
 - Salinity
 - pH

Micro-environment

- Sun/shade
- Building/Fences
- Pavement
- Irrigation
- Soil Amendments
- Mulch

The Right Plant in the Right Place



Plant Selection: Things to consider

- Light
 - Sun, part sun, shade, morning, afternoon...
- Soil
- Temperature
- Water
 - Hydrozones
 - Water quality

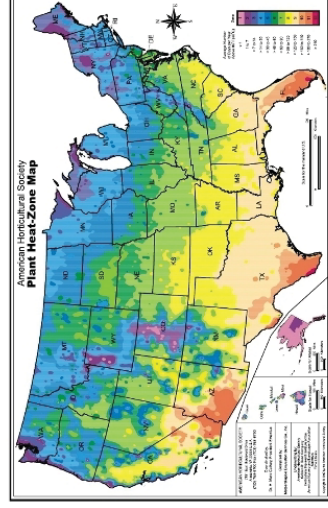


How much sun?

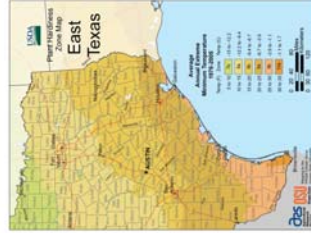
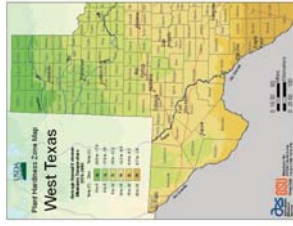
1. Light Shade/Part Sun
morning sun/afternoon shade is great
afternoon sun situations need full sun plants
2. Full Sun
at least 6 hours per day
3. Hot and Heavy Sun
SW side of a building
reflected light from pavement



ASHS Plant Heat Zones



USDA Plant Hardiness Zones



How much shade?

1. Light Shade/Part Sun
morning sun/afternoon shade is great
2. Medium Shade aka Shade
deciduous trees
50% sky
3. Dense or Deep Shade
north side of a building
evergreen broadleaf trees—live oak, magnolia

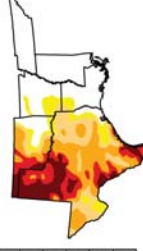


Rainfall and the lack thereof

U.S. Drought Monitor
May 21, 2013
V0477.01n.031

South

State	Days in Drought (Percent of Area)						
	0-9	10-19	20-29	30-39	40-49	50-59	60-69
Alabama	0	0	0	0	0	0	0
Arkansas	0	0	0	0	0	0	0
California	0	0	0	0	0	0	0
Colorado	0	0	0	0	0	0	0
Florida	0	0	0	0	0	0	0
Georgia	0	0	0	0	0	0	0
Illinois	0	0	0	0	0	0	0
Indiana	0	0	0	0	0	0	0
Iowa	0	0	0	0	0	0	0
Kansas	0	0	0	0	0	0	0
Kentucky	0	0	0	0	0	0	0
Louisiana	0	0	0	0	0	0	0
Michigan	0	0	0	0	0	0	0
Minnesota	0	0	0	0	0	0	0
Mississippi	0	0	0	0	0	0	0
Missouri	0	0	0	0	0	0	0
Montana	0	0	0	0	0	0	0
Nebraska	0	0	0	0	0	0	0
Nevada	0	0	0	0	0	0	0
New Hampshire	0	0	0	0	0	0	0
New Jersey	0	0	0	0	0	0	0
New Mexico	0	0	0	0	0	0	0
New York	0	0	0	0	0	0	0
North Carolina	0	0	0	0	0	0	0
North Dakota	0	0	0	0	0	0	0
Ohio	0	0	0	0	0	0	0
Oklahoma	0	0	0	0	0	0	0
Oregon	0	0	0	0	0	0	0
Pennsylvania	0	0	0	0	0	0	0
Rhode Island	0	0	0	0	0	0	0
South Carolina	0	0	0	0	0	0	0
South Dakota	0	0	0	0	0	0	0
Tennessee	0	0	0	0	0	0	0
Texas	0	0	0	0	0	0	0
Utah	0	0	0	0	0	0	0
Vermont	0	0	0	0	0	0	0
Virginia	0	0	0	0	0	0	0
Washington	0	0	0	0	0	0	0
West Virginia	0	0	0	0	0	0	0
Wisconsin	0	0	0	0	0	0	0
Wyoming	0	0	0	0	0	0	0



Legend:
 ■ D1 Drought - Extreme
 ■ D2 Drought - Severe
 ■ D3 Drought - Moderate
 ■ D4 Drought - Marginal

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for relevant statements.

<http://droughtmonitor.unl.edu>



The Earth-Kind Plant Selector

© <http://aggie-horticulture.tamu.edu/earthkind/plantselector/>



If it's native, it's not invasive!



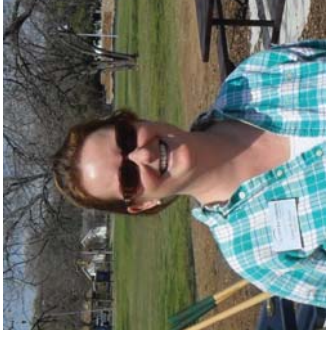
Lawbreakers?



Natives, Invasives, Cultivars and Weeds



If it's native, it's not invasive!



What's a Weed?



Cultivated Variety



- (a) The following plants have serious potential to cause economic or ecological harm to the state.
- (b) Unless permitted by the Texas Department of Parks and Wildlife Code §66.007 or by the Texas Department of Agriculture, a person commits an offense under the Texas Agriculture Code, §71.152, if the person sells, distributes or imports into the state the plants listed in subsection (a) of this section in any live form.
- (c) For the purpose of this section, the term "distributes" does not include the accidental or unintentional movement of noxious plant material in the course of legitimate construction activities or agricultural activities, including but not limited to, re-seeding, transportation of agricultural products and the movement of farm or earth moving equipment.

CRIMINAL PLANTS

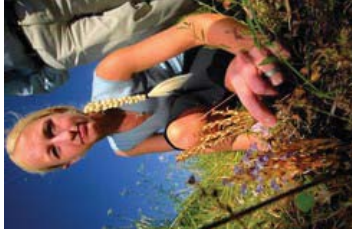
AKA "THE LIST"

Texas Administrative Code: Title 4, Part 1, Chapter 19, Subchapter T

Alligatorweed (page 98)
Alternanthera philoxeroides



Broomrape
Orobancha ramosa



Balloonvine
Cardiospermum halicacabum



Camelthorn
Alhagi camelorum



Brazilian Peppertree (Page 2)
Schinus terebinthifolius



Chinese Tallow Tree (Page 22)
Triadica sebifera



Eurasian watermilfoil (page 118)
Myriophyllum spicatum



Giant Reed (Page 86)
Arundo donax



Giant Duckweed
Spirodela oligorrhiza



Common duckweed *Lemna minor*

Hedge Bindweed
Calystegia sepium



Japanese dodder
Cuscuta japonica



Saltcedar (page 114)
Tamarix spp.



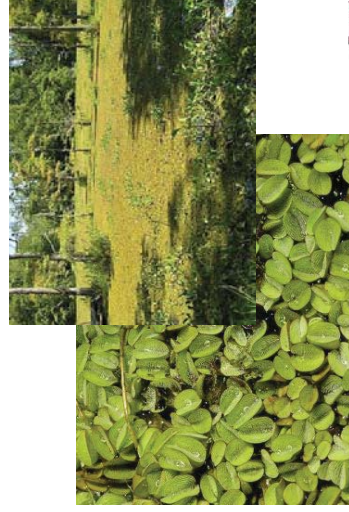
Hydrilla (page 118)
Hydrilla verticillata



Kudzu (Page 68)
Pueraria montana var. *lobata*



Salvinia (page 114)
Salvinia spp.



Itchgrass (page 115)
Rottboellia cochinchinensis



Purple Loosestrife (page 118)
Lythrum salicaria



Torpedograss (page 115)
Panicum repens



Waterhyacinth
Eichornia crassipes



Waterlettuce (page 118)
Pistia stratiotes



Plants of concern in Texas

TEXAS A&M
AGRI LIFE
EXTENSION

Cross Timbers and Prairies Dirty Dozen

These plants have been identified as particularly worrisome in my ecoregion.

- Japanese honeysuckle - *Lonicera japonica*
- Glossy privet - *Ligustrum lucidum*
- Chinese privet - *Ligustrum sinense*
- Giant reed - *Arundo donax*
- Chinese wisteria - *Wisteria sinensis*
- Lilac chastetree - *Vitex agnus-castus*
- Brazilian vervain - *Verbena brasiliensis*
- Guineagrass - *Urochloa maxima*
- Common periwinkle - *Vinca minor*
- Chinaberry tree - *Melia azedarach*
- Chinese tallow tree - *Triadica sebifera*
- Johnson grass - *Sorghum halepense*

Glossy privet (page 38)
ligustrum lucidum



Japanese honeysuckle (page 66)
lonicera japonica



Chinese privet (Page 34)
ligustrum sinense



Chinese Wisteria (page 72)
Wisteria sinensis



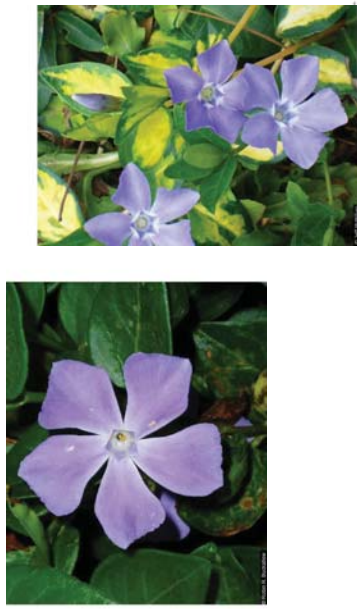
Giant Reed (Page 86)
Arundo donax



Lilac Chastetree
Vitex Agnus-castus



Common periwinkle
Vinca Minor



Brazilian vervain (page 117)
Verbena brasiliensis



TEXAS A&M
AGRI LIFE
 EXTENSION

Chinaberrytree (page 9)
Melia azedarach L.



Guineagrass (page 115)
Urochloa maxima



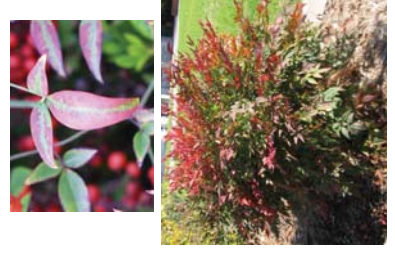
TEXAS A&M
AGRI LIFE
 EXTENSION

Johnsongrass
sorghum halapense



TEXAS A&M
AGRI LIFE
 EXTENSION

Heavenly Bamboo (PAGE 50)
Nandina domestica



- o **Flowers:** Tiny, white-to-pink clusters
- o **Flowering Period:** Spring- late spring
- o **Foliage:** Young foliage is often pinkish, and then turns to soft light green, can be tinged red in winter
- o **Approx. Height:** 6'-10'
- o **Approx. Width:** 3'-5'
- o **Sun/Drainage Requirements:** Full sun to shade; rich, well-drained soil
- o **Hardness Zones:** 6-9
- o Can displace native species and disrupt plant communities
- o Invasive infestations from Texas to the East coast, colonizes by root sprouts, and spread by animal disbursed seeds.

LET'S TALK NANDINA

YOU MAY NOT WANT TO BUY

Cultivar Wars



TEXAS A&M
AGRI LIFE
 EXTENSION

The bad old days



EarthKind™ Roses

- Belinda's Dream
- Sea Foam
- Marie Daly
- The Fairy
- Caldwell Pink
- Knock Out
- Perle d'Or
- Else Poulsen
- Katy Road Pink
- Mutabilis "Butterfly Rose"
- Climbing Pinkie



Plant Trialing Programs

- Texas Superstar
 - <http://www.texasuperstar.com/plants/>
- Oklahoma Proven
 - <http://oklahomaproven.okstate.edu/>
- Louisiana Super Plants
 - http://www.lsuagcenter.com/en/our_offices/research_stations/Hammound/Features/super_plants/
- All-America Selections (Flowers and veggies since 1936)
 - <http://www.all-americaselections.org/>

EarthKind™ Roses

- Prefer well-drained soil
- Any Soil Type
- High Pest Tolerance
- Full Sun
- Mulch
- Water
- Fertilize – March, June, Late August



Texas Superstar™



<http://www.TexasSuperstar.com>

Trees

An Investment in the Green Infrastructure

Texas Tree Selector

- <http://texasreplanting.tamu.edu/>



Texas Superstars: Trees

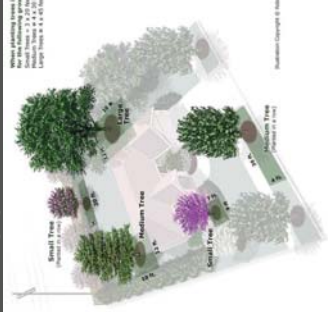
- Deciduous Holly
- Shantung Maple
- Lacey Oak
- Chinkapin Oak
- Chinese Pistache

Why Trees are so Important

- Add to property value
- Reduce energy use (shade)
- Sense of Community
- Reduce noise and screen views
- Fruit and Nut production
- Beauty

How to Pick a Tree

- Space Needed
 - Small
 - 60 square feet (8 ft x 8 ft.)
 - Medium
 - 120 square feet (11 ft x 11 ft)
 - Large
 - 180 square feet (14 ft x 14 ft)



64

Avoiding Problems With Your Tree

- Avoid blocking visibility of traffic signs or street corners.
- Avoid planting too close to house, chimney or other structure.
- Also Avoid:
 - Encroaching on a neighbor
 - Blocking views
 - Shading gardens
- Avoid blocking access to utility transformers.
- Avoid planting too close to sidewalks, streets or driveways.
- Avoid planting large trees smaller than 20 feet instead.

Illustration Copyright © Robert O'Brien

65

Why Native Trees?

Not invasive--100% guaranteed
 Easy to grow, care for—but not pest free
 There is no way to amend all the soil a tree needs
 Creates a sense of place



66

What about provenance?



How Big?



Illustration Copyright © Robert O'Brien

67

Relative Tree Sizes

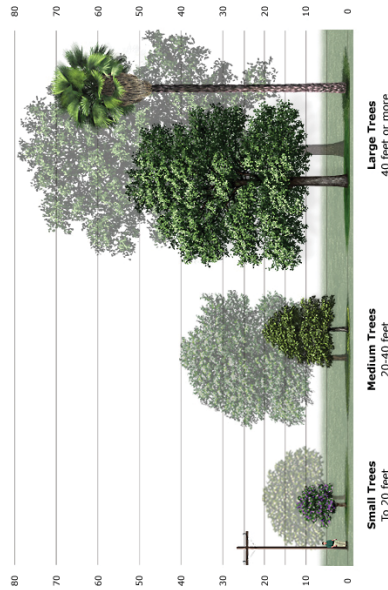


Illustration Copyright © Robert O'Brien

68

NOT
 off to a
 good
 start



Good Quality Tree

- Healthy form
- Single trunk or leader
- Trunk flare should be obvious
- Trunk free of wounds
- Healthy roots should fill up pot but not be circling. (Remove the root ball from the pot and look.)

Poor Quality Tree

What to avoid:

- Undressed yellow leaves
- Dense cover of weeds
- Boots out of pot can mean that the tree has been in the pot too long.
- Avoid a tree with trunk wounds.
- Avoid multi-trunked or V-shaped trees.
- Avoid tree with circling roots inside container. (Remove the root ball from the pot and look.)

Illustration Copyright © Robert O'Brien

69

- The Right Tree
- Size of tree
 - Small – medium - large
- Type
 - deciduous/evergreen
- Traits
 - Native, fall color, flowering, drought tolerant, standing water, fruit or nuts



68

Large Trees



What Can Go Wrong The Wrong Place

- ❖ Too close to structures
- ❖ Root growth
- ❖ Under power lines
- ❖ Over neighbors
- ❖ Too much shade
- ❖ Buckled walks, roads

TEXAS A&M
AGRI LIFE
EXTENSION

74


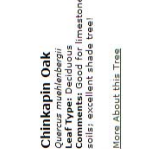


What Can Go Wrong The Wrong Tree

- ❖ Trashy
- ❖ Croch angle
- ❖ Unsuitable for area
- ❖ Impatience
- ❖ Too big for space

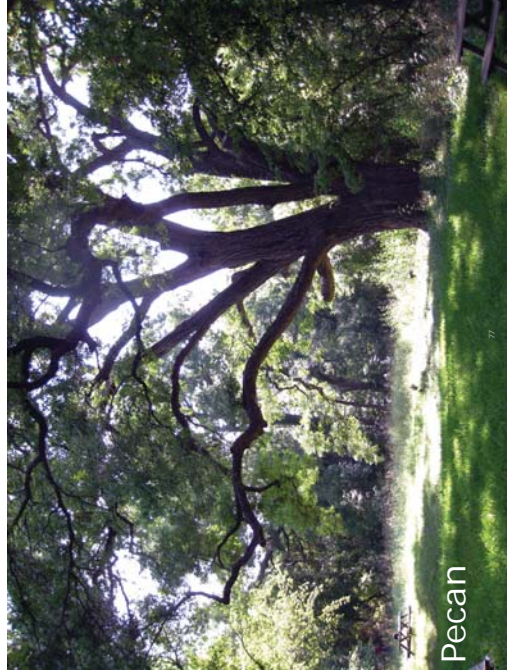
TEXAS A&M
AGRI LIFE
EXTENSION

75

Large Trees for Tarrant County

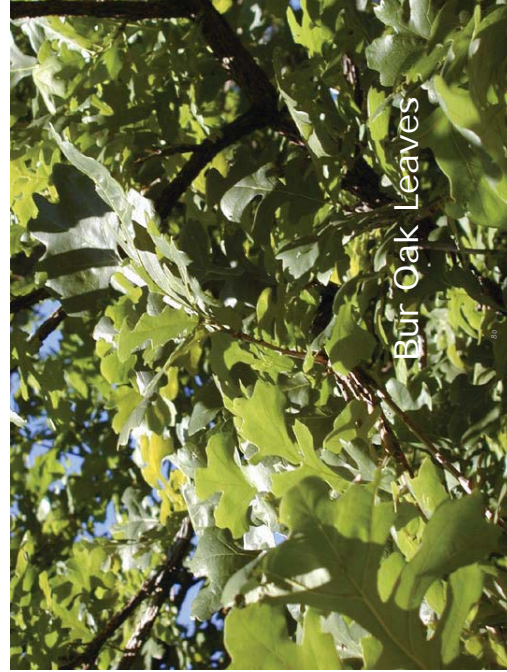
 <p>Live Oak Quercus virginiana Comments: The Live Oak is a native species more suited to Central and West Texas. More About this Tree</p>	 <p>Chinkapin Oak Quercus muhlenbergii Comments: Excellent shade tree! More About this Tree</p>	 <p>Shumard Oak Quercus shumardii Comments: Widely available; source of trees may determine success. More About this Tree</p>	 <p>Cedar Elm Ulmus crinitus Comments: Tough, drought-tolerant and well-adapted to a variety of conditions. More About this Tree</p>
--	---	---	--

76



Pecan

Live Oak



Bur Oak Leaves



Bur Oak



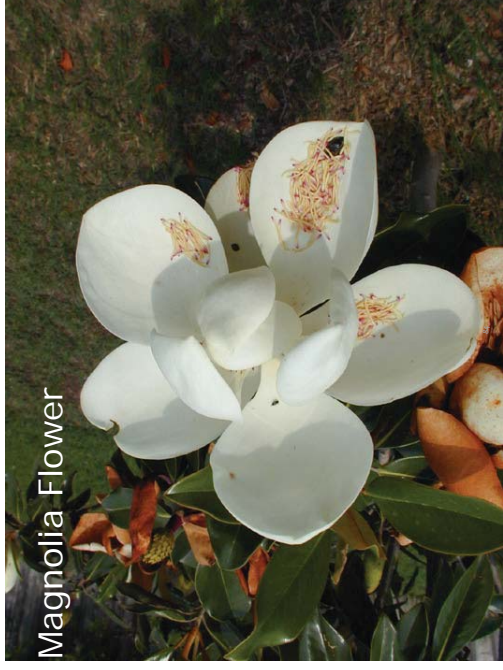
Cedar Elm



Bald Cypress



Bald Cypress



Magnolia Flower

Medium Trees



Medium Trees for Tarrant County

 <p>Texas Red Oak <i>Quercus bicolor</i> Leaf Types: Elliptical Comments: Several "red oaks" available. Also referred to as "Q. rubra". More About This Tree</p>	 <p>Lacey Oak <i>Quercus phellos</i> Leaf Types: Elliptical Comments: Unusual, native oak with bilobed foliage. Also known as "Q. laevis". More About This Tree</p>
 <p>Eastern Redcedar <i>Juniperus virginiana</i> Leaf Types: Elliptical Comments: Excellent as a windbreak. "Caracasita" is a popular cedar as a specimen tree. More About This Tree</p>	 <p>Goldenrain tree <i>Azadirachta indica</i> Leaf Types: Elliptical Comments: Excellent for urban settings. "K. Sultana" may flower better in South Texas. More About This Tree</p>

86



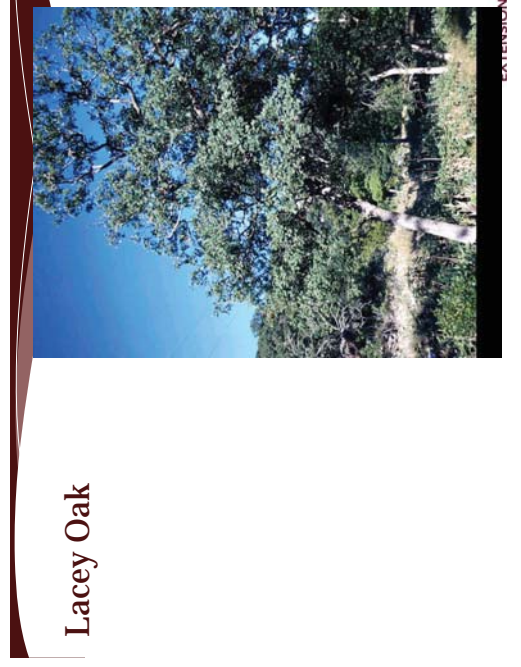
Shumard Oak



Texas Ash



Red Oak



Lacey Oak

Shantung Maple



Chinese Pistache



Eve's Necklace



Small Trees



Small Trees for Tarrant County

Mexican Plum
Prunus mexicana
Leaf Type: Deciduous
Comments: Excellent color, yellow to red to purple; prefers well-drained soils.
More About This Tree

Yaupon
Elaeagnus
Leaf Type: Evergreen
Comments: Many sizes and shapes; range of varieties.
More About This Tree

Texas Redbud
Cercis canadensis var. mexicana
Leaf Type: Deciduous
Comments: Good choice for Central and West Texas.
More About This Tree

Common Crapemyrtle
Lagerflora parviflora
Leaf Type: Deciduous
Comments: Many sizes and shapes; range of varieties; excellent choice.
More About This Tree

Mexican Plum



Redbud



Redbud in bloom



leaves &
fall color



Yaupon Holly



Possumhaw
Holly



Possumhaw
Holly
winter show



Desert
Willow



Trubs

It's a tree, no it's a shrub, it's a superplant!



Lilac Chastetree
Vitex Agnus-castus



Crape Myrtle

© Varieties from 3" to 20"



Texas Superstars: Shrubs

- © Lowery's Legacy Cenizo
- Belinda's Dream Rose
- Grandma's Yellow Rose
- 'Knock Out' Rose
- 'Marie Daly' Rose
- Texas Lilac Vitex



Shrubs

So much more than Foundation Plantings



Belinda's Dream Rose



Marie Daly



American Beauty Berry



Wax Myrtle



Abelia



What's not a "Perennial"?

Not woody plants



Not annuals or biennials



Perennials

The more the merrier!

What's a Perennial?



"a plant that grows indefinitely returning or remaining on its own roots each year"
" a herbaceous plant, usually flowering, that lives more than one growing season"

It's a perennial, not an immortal!



Texas Superstars: Perennials

- © Texas Gold Columbine
- Flare Hibiscus
- Lord Baltimore Hibiscus
- Moy Grande Hibiscus
- New Gold™ Lantana
- Trailing Lantana
- Malvaviscus, Turks Cap
- Dwarf Mexican Petunia
- John Fanicck Phlox
- Victoria Phlox
- Plumbago
- Mexican Bush Sage
- 'Henry Duelberg' Salvia
- 'Mystic Spires Blue' Salvia
- Blue Princess Verbena

PERENNIALS FOR SERIOUS SHADE

Lyreleaf Sage (*Salvia lyrata*)



EXTENSION

Aspidistra or Cast Iron Plant



TEXAS A&M
AGRI LIFE
EXTENSION

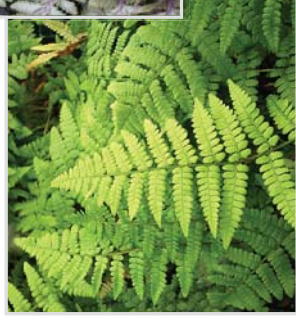
Ferns

Japanese Painted Fern



TEXAS A&M
AGRI LIFE
EXTENSION

Wood Fern



English Ivy and Mondo Grass



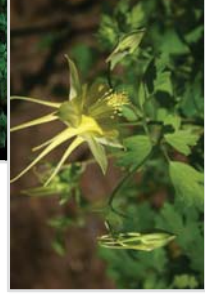
EXTENSION

Inland Sea Oats (*Chasmanthium latifolium*)



TEXAS A&M
AGRI LIFE
EXTENSION

Texas Columbine (*Aquilegia hinckleyana*)



TEXAS A&M
AGRI LIFE
EXTENSION

PLANTS FOR MEDIUM SHADE

Texas Columbine (Aquilegia hincleyana)



- Up to 2' tall
- Add organic material to soil
- Blooms 3-4 weeks in early to mid-spring
- Can cut back in summer, but foliage is evergreen
- Look for 'Texas Gold'

Turk's Cap



- Shade to full sun-leaves will be darker and crinkly in full sun
- 2-4' x 2-3'
- Cut back after first hard freeze
- Blooms May-November
- Any kind of reasonably well-drained soil

Turk's Cap (Malvastrum drummondii)



Turk's Cap

- o Sun or Shade!
- o Wet or Dry!
- o Butterflies and Hummingbirds!
- o Blooms from May to November!
- o Cultivar 'Pam Puryear'
- o Cultivar 'Big Momma'

Butterfly ginger (Hedychium spp.)



TEXAS A&M
AGRI LIFE
EXTENSION

Salvias for all sorts of situations



TEXAS A&M
AGRI LIFE
EXTENSION

Autumn Sage (Salvia greggii)



TEXAS A&M
AGRI LIFE
EXTENSION

PLANTS FOR PART TO FULL SUN

Autumn Sage- Salvia greggii

- o Wide range of colors
 - o 'Dark Dancer'
 - o 'Desert Blaze'
 - o 'Coral'
 - o 'Raspberry Royale'
 - o 'Pink Preference'
- o Mostly evergreen
- o Can cut back lightly in late winter and late summer
- o Needs good drainage



Autumn Sage



2 1/2' x 2 1/2'

Almost evergreen, sort of everblooming

Attracts hummingbirds

Autumn Sage & Mexican Bush Sage



TEXAS A&M
AGRI LIFE
EXTENSION

Dwarf Mexican Bush Sage *Salvia leucantha* 'Santa Barbara'



2' tall and 3'-4' wide

Mealy Blue Sage



Full sun to light shade
18"-24" tall
Cut back after hard freeze
Blooms April-November

Mexican Bush Sage

- Bi-color flowers are purple and white, velvety textured
- Late Summer to Fall bloomer
- Sun to part shade
- Cut back to ground in winter
- Give it room



Mealy Cup Sage (*Salvia farinacea*)

- Meet the Duelbergs!
 - Henry-Blue
 - Augusta-White
- Lots of hybrids have *farinacea* parentage
 - 'Indigo Spires'
 - 'Majestic Spires'
- Most are smaller in stature-under 2 feet



Mealy Cup Sage (*Salvia farinacea*)



TEXAS A&M
AGRI LIFE
EXTENSION

Anise Sage- *Salvia guaranitica*

- 'Black and Blue' has bi-color flowers, black calyx, blue flowers
- Blooms summer through fall



But wait there's more!

- Scarlet Sage, *Salvia coccinea*, a tropical perennial with red flowers that will re-seed
- Engelmann Sage, *Salvia engelmannii*, a mounding purple-blue flowered perennial
- Cedar sage, *Salvia roemeriana*, a shade tolerant red flowered sage that can be used as a ground cover
- Eight Salvias in all on the Recommended List of Native Plants for Landscape Use in North Central Texas at www.txnativeplants.org

But wait, there's still more!

- Salvia splendens- a tropical salvia used here as an annual bedding plant. It can take the heat!
- Salvia officinalis- culinary sage (Pineapple sage, Salvia elegans, and Autumn sage can also be used for seasoning or edible floral garnish)
- Salvia uliginosa-Bog sage has sky blue flowers and tolerates damper soils
- Salvia hybrids like 'Indigo Spires' and 'Majestic Spires' and 'California Sunset'

Sedums

- Tall flowering types:
 - Autumn Joy
 - Mr. Goodbud
- Low creeping types:
 - Dragon's blood
 - Lemon coral
- Well drained soils
- Part Shade to Sun



Sedums



Ornamental Grasses



PLANTS FOR SERIOUS SUN

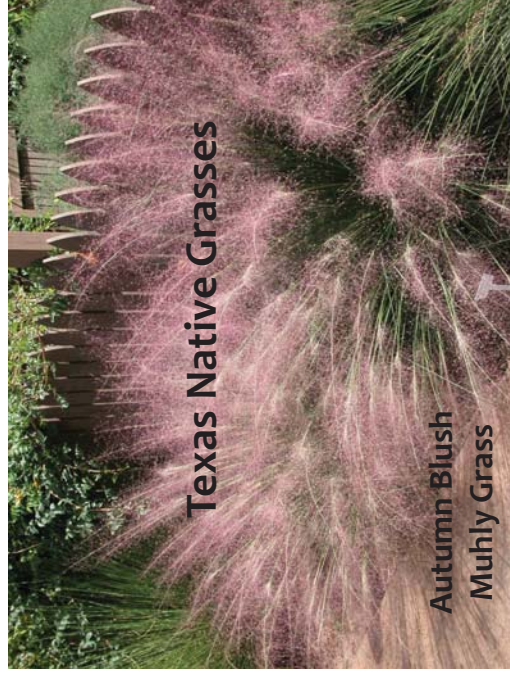
Gulf Muhly *Muhlenbergia capillaris*



- 2'-2 1/2' tall and wide
- Feathery deep pink blooms in fall
- Full sun
- Well-drained soil

Texas Native Grasses

Autumn Blush
Muhly Grass



Lindheimer's Muhly (*Muhlenbergia lindheimeri*)

- Foliage 3'-4' tall
- Silvery-tan tassels rise above foliage September through February
- Moist soil (well-drained to heavy clay)
- Texas native



Feather Grass-Stipa



Mexican Feather Grass (*Nassella tenuissima*)

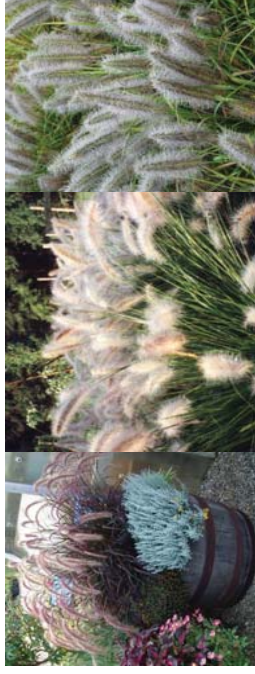
- 1'-2' tall
- Green during winter
- Dormant in summer
- Full sun
- Must have excellent drainage
- Reseeds prolifically
- Texas native



Switch Grasses - The Panicums



Fountain Grasses - Pennisetum



Maiden Grasses - Miscanthus



Wormwood (*Artemisia* spp.)



Artemisia

- Great for hot dry areas
- It's all about the foliage
- Look for variety in color and texture
 - 'Powis Castle' most popular
 - 'Oriental Lighthouse' green and yellow



Wormwood *Artemisia* x 'Powis Castle'

- Full sun
- Well-drained soil
- 3' x 3'
- Cut back in late winter



Rosemary (Rosemarinus spp.)



Rosemary

- Yes, you can cook with it, and it's great in cut floral arrangements
- Upright and prostrate types available
- Evergreen—no maintenance needed
- Likes it hot and dry



Zexmenia (*Wedelia hispida*)

- 18"-24" tall and wide
- Texas native
- Blooms May-November
- Full sun for best blooms
- Drought tolerant once established



Zexmenia

- 18"-24" tall by 3-4' wide
- Cut back after hard freeze—sometimes evergreen
- Can handle clay soils: coreopsis can't
- Attracts butterflies



Coreopsis vs. Zexmenia



Firebush



Texas Superstars: Per Annuals

- Caesalpinia, Pride-Of-Barbados
- Duranta, Brazilian Sky Flower
- Gold Star Esperanza
- Firebush
- Firecracker Jatropha
- Variegated Tapioca
- Thyrallis

Don't be discouraged, and don't stop learning about new plants.