



Help the Pollinators—and Ourselves!

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Texas Master Naturalists Heartwood Chapter (Woodlands, Conroe)

Native Plant Society of Texas Sam Houston Chapter (Huntsville)

Herb Society of America Texas Thyme Unit (Huntsville)

The Issue

- Half the world's arable lands are used to feed humans
- This means a significant loss of habitat for other species, reducing their chance of survival
- Many of the species being displaced are the same ones necessary to pollinate the food
- What to do?
 - Provide nectar and pollen for the adults and host plants for the offspring





Importance of Natives for Native Pollinators

- Native pollinators evolved with native plants
- The difference between native and alien plants
 - 90% of plant-eating insects are specialists
 - Native plants produce 35 times more caterpillar biomass than alien plants
 - Bird populations are limited by food they can find
 - Alien plants contribute little to the web of life
- In short, natives are a critical component of the ecosystem

What To Consider When Planting

- What you want to accomplish in that spot
- Soil
- Sun, part sun, part shade, dappled shade, shade
- Water
- Where the plant normally grows vs. where you are





What Do You Want to Accomplish?

- ▶ Pollinators – attract and support
 - ▶ Evolved with native plants (so did other insects)
 - ▶ Need nectar and may need host plants
 - ▶ Be sure the pollinator you are planting for is actually in your area
 - ▶ Know when the pollinator is coming through – may need nectar plants spring and fall
 - ▶ 3-foot groupings of plants
 - ▶ Diverse bloom times
 - ▶ Variety of flower shapes and sizes
 - ▶ Diverse colors
 - ▶ Avoid pesticides and plants that are embedded with them
 - ▶ Avoid hybrids
 - ▶ Include natives in your garden

Soil – Can Be a Challenge

- Unless you are planting in a pasture or your house was built before 1960, you may not have native soil
 - Foundations are typically on/in clay
 - New building codes can require higher elevation



Soil

- Even if you are in a pasture, you may not have native soil.



- Topsoil on top of clay in my beds. In a subdivision, beds are likely purchased topsoil.



Soil



- Oak tree planted beyond imported clay.



- Oak tree planted in clay. Loses leaves long before others.



Soil

- ▶ So what does this mean? You can—and should!—still plant natives!
 - ▶ Extra 6 inches of clay? No worries.
 - ▶ Natives typically have deep roots
 - ▶ Dig below the clay to ensure roots go there
 - ▶ Fill in with a mix of the clay you just dug up and native soil (or as close as you can get)
 - ▶ Several feet of non-native clay? More challenging.
 - ▶ Two schools on the hole
 - ▶ Dig a bigger, deeper, uglier hole
 - ▶ Dig a hole exactly the size of the pot
 - ▶ Give the water a place to go (this is very important)
 - ▶ Fill in with a mix of the clay you just dug up and native soil (or as close as you can get)

Soil – Think Outside the Bed



- House inside Loop 610 in Houston. Possibilities for using natives are endless, even in a small space.





Sun vs. Shade

- ▶ Direct sun
 - ▶ Full sun – 6 hours per day
 - ▶ Part sun – 3 to 6 hours per day
 - ▶ Part shade – 2 to 4 hours per day
 - ▶ Dappled shade – comes through trees or a filter
 - ▶ Shade – no more than 2 hours per day
- ▶ Vegetables may need 8 to 10 hours of direct sun/day. Flower gardens, not usually.
- ▶ Plants may need full sun to set buds and flower, but not the heat or dry conditions that come with it. Try morning sun if you have a location.
- ▶ <https://www.thespruce.com/what-is-full-sun-partial-shade-1402372>

Sun vs. Shade

- Ginger where it is living on the edge. Pigeonberry loves it here – enough shade for it. Clay substrate. French drain gives water a place to go.
- Ginger where it loves to grow, in shade in League City.





Water

- ▶ How much water does the spot get?
- ▶ Select the plant suited to the water and sun levels
- ▶ Natives typically have much longer roots, so will do better
- ▶ You might need to water even low-water natives
 - ▶ While they are being established
 - ▶ If you have zero shade, so they get 10+ hours of sun
 - ▶ During a drought



More
Thoughts
on Natives

Define “native”

- Is the plant native to your area of Texas, or does it only grow in Big Bend?
- It may be a cultivar of the true native

Remember herbs – many herbs are host plants

My Butterfly Garden



➤ Black-eyed Susan

➤ Vervain

➤ Mexican Hat

➤ Dill

➤ Brown-eyed Susan

➤ Milkweed

➤ Zinnias

➤ Parsley

➤ Confederate Daisy

➤ Columbine

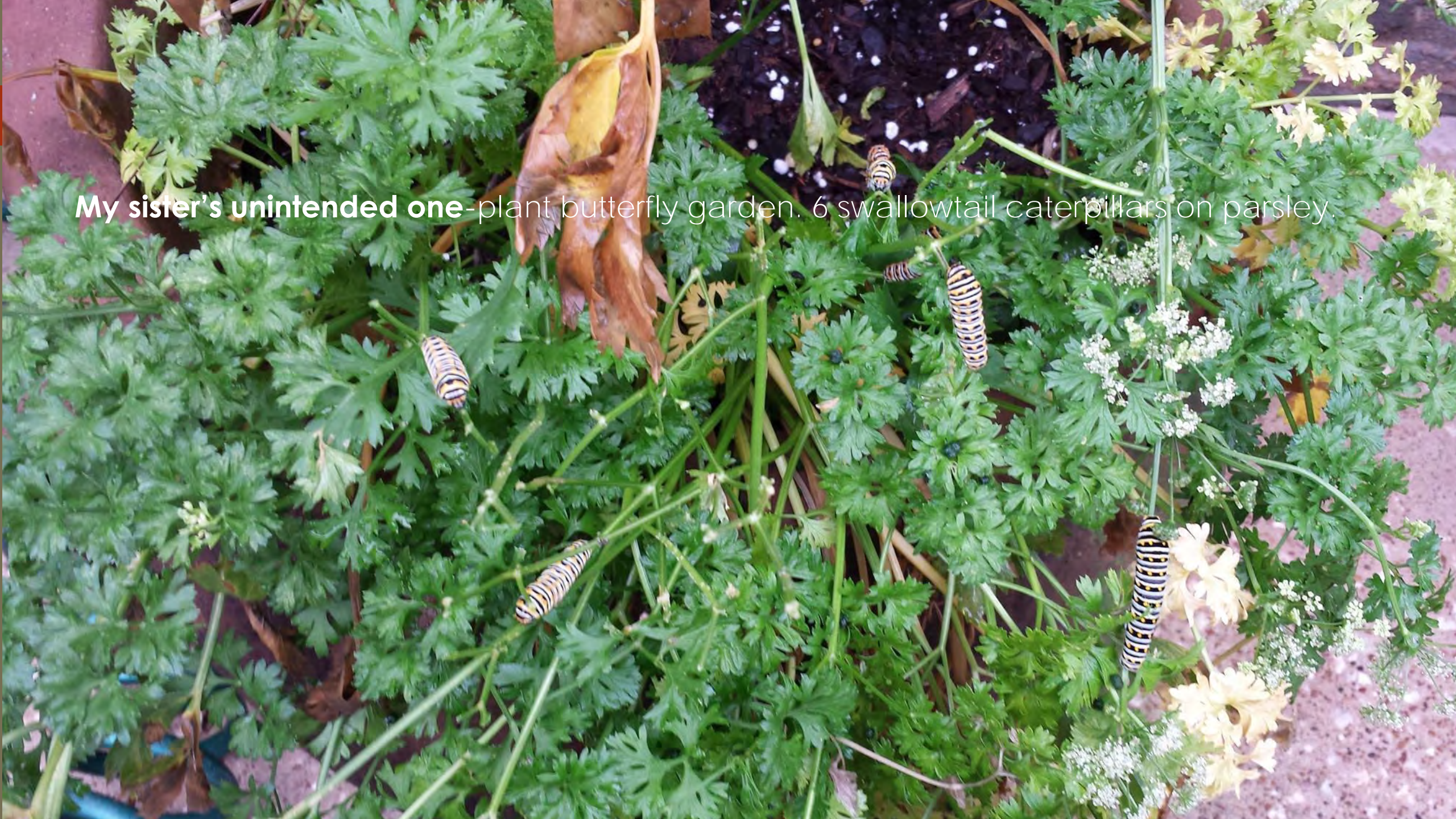
➤ Mealy Blue Sage

➤ Basil

My butterfly garden. 43 swallowtail caterpillars on dill



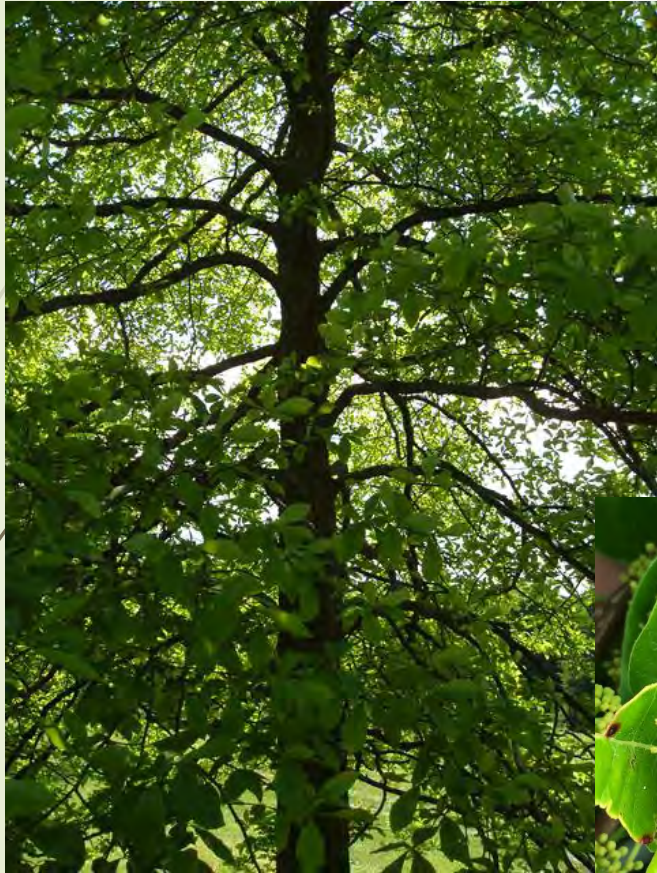
My sister's unintended one-plant butterfly garden. 6 swallowtail caterpillars on parsley.





Let's talk
about
specific
plants

Trees



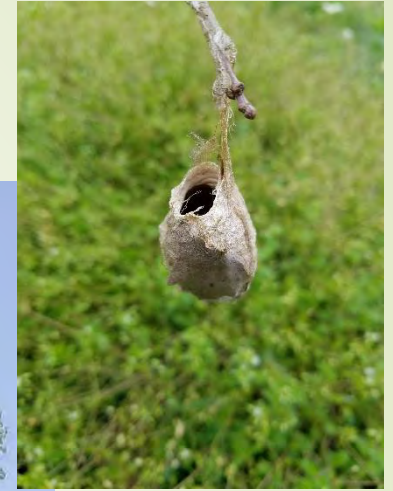
Black Tupelo
Nyssa sylvatica

Special value to honeybees
Juicy fruit consumed by many birds and mammals



American Sweetgum
Liquidambar styraciflua

Larval host for Luna Moth (*Actias luna*)
Seed balls attract several bird species
Nesting site, cover, fruit for birds and mammals



Luna moth pupa



Trees



Drummond Red Maple
Acer rubrum var drummondii
Larval host to many sphinx moths
Seeds food for many birds and squirrels
Leaves are food for deer



Box Elder Maple
Acer negundo L.
Larval host for Cecropia silkmoth (*Hyalophora cecropia*)
Special value to honeybees
Attracts birds and other showy insects

Trees



Oaks

Quercus spp.

Attracts songbirds, ground birds and mammals

Substrate-insectivorous birds

Nuts and pollen provide food for wildlife

Nesting and cover for birds and mammals

Larval host for many species – here are ten butterflies

Edwards Hairstreak (*Satyrium edwardsii*)

Banded Hairstreak (*Satyrium calanus*)

Striped Hairstreak (*Satyrium liparops*)

Southern Hairstreak (*Fixsenia favonius*)

White M Hairstreak (*Parrhasius m-album*)

Red-Spotted Purple (*Limenitis arthemis astyanax*)

Sleepy Duskywing (*Erynnis brizo*)

Juvenal's Duskywing (*Erynnis juvenalis*)

Meridian Duskywing (*Erynnis meridianus*)

Horace's Duskywing (*Erynnis Horatius*)

Trees



Fringe Tree

Chionanthus virginicus

Southern Living: Fringe Tree -- The Best Native Tree Nobody Grows
Larval host to several moths. Fruits eaten by several birds. Deer and other animals browse on foliage and fruits. Small rodents may eat hardened seeds. NOT the Chinese Fringe Tree.



Black Cherry
Prunus serotina

Fruit consumed by 33 bird species and many mammals
Special value to native bees, bumblebees, honeybees
Larval host to Eastern Tiger Swallowtail, Cherry Gall Azure, Viceroy, Columbia Silkmoth, Promethea Moth, Small-eyed Sphinx Moth, Wild Cherry Sphinx Moth, Banded Tussock Moth, Band-edged Prominent, Spotted Apatelodes.



Trees



Mexican Plum

Prunus mexicana

Larval host to Tiger Swallowtail, Cecropia moths
Special value to native bees
Plums attract birds. Nectar-bees, Fruit-birds and mammals



Flowering Dogwood

Cornus florida

Larval host to Spring Azure (*Celastrina "ladon"*)
Special value to native bees
Fruit eaten by birds and mammals, including deer



Trees



Eastern Redbud
Cercis canadensis

Var mexicana and texensis

Special Value to Native Bees and Bumble Bees
Provides Nesting Materials/Structure for Native Bees
Attracts birds and other insects. Flowers edible for humans



Tulip Poplar

Liriodendron tulipifera

Larval host for Tuliptree silkmoth (*Callosamia angulifera*) and Eastern Tiger Swallowtail (*Papilio glaucus*)
Special value to honeybees
Attracts birds, butterflies, hummingbirds



Trees



Parsley Hawthorne
Crataegus marshallii
Special value to native bees
Nectar source for butterflies
Fruit for mammals and birds



Honey Locust
Gleditsia triacanthos
Larval host to Silver-spotted Skipper (*Epargyreus clarus*), Bicolored (*Spingicampa bicolor*) and Bisected honey locust moth (*S. bisecta*)
Cover, nesting sites for birds, fruit for mammals, nectar for insects
Plant has thorns or prickles

Trees



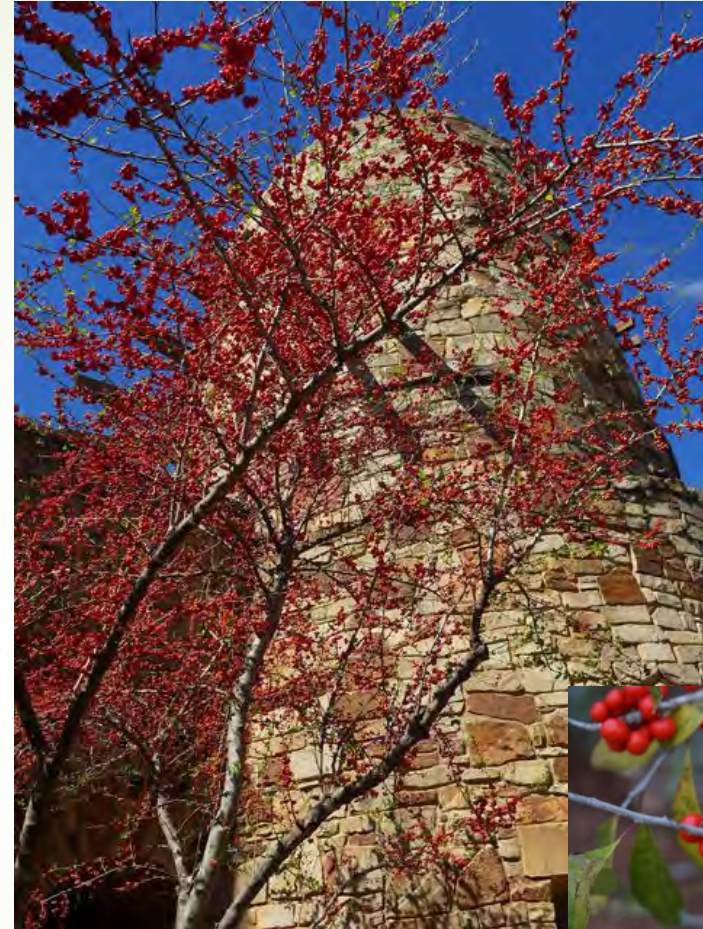
Vitex or Chaste Tree

Vitex agnus-castus L

Spring/Summer bloomer, pollinators love it

On several INVASIVES LISTS

It is also a TEXAS SUPERSTAR



Possumhaw

Ilex decidua

Nectar for insects. Berries attract songbirds and mammals.
Nesting sites.

Trees



Hercules Club or Prickly Ash
Zanthoxylum clava-herculis
Larval host for Giant Swallowtail (*Papilio cresphontes*)
Seeds eaten by granivorous birds



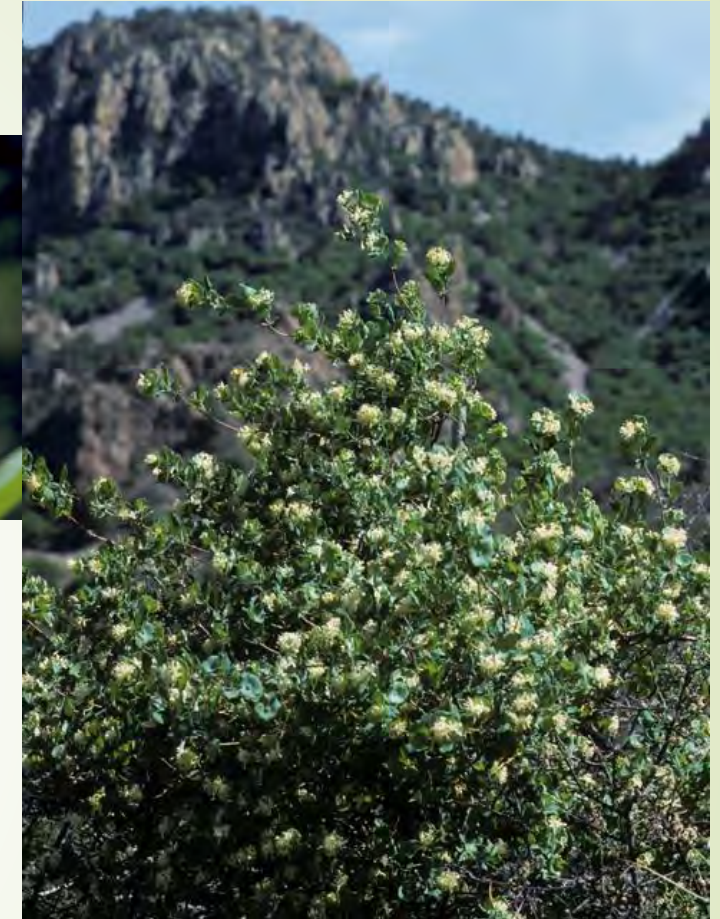
Sassafras
Sassafras albidum
Larval host for Spicebush Swallowtail (*Papilio troilus*), Pale Swallowtail (*Papilio eurymedon*) and Promethea silkmoth (*Callosamia promethea*)
Nectar source. Birds eat the fruit

Shrubs



Virginia sweetspire
Itea virginica L.

Attracts birds. Used for cover and nectar.
Used for erosion control. Showy.



White honeysuckle

Lonicera albiflora

Special value to bumble bees
Deer browse, berries attract birds. Nectar for
butterflies, bees, other insects. Central TX
native, fragrant, blooms and COVERED in
bees through winter

Shrubs



Coralbean

Erythrina herbacea

Spring bloomer

Hummingbirds love it

Beans are poisonous to humans

Shrubs



Esperanza or Yellow Bells

Tecoma stans

Larval host to Plebeian sphinx (*Paratrea plebeja*)

Spring/summer bloomer

Nectar for insects, bees, hummingbirds. Seeds for small mammals. Leaves browsed by mammals.



American Beautyberry

Callicarpa americana

Spring bloomer (nectar). Attracts birds and butterflies. The seeds and berries are important foods for many species of birds, particularly the Northern Bobwhite. Foliage is a favorite of White-tailed Deer.

Shrubs



Rock Rose

Pavonia lasiopetala

Spring/Summer bloomer

Attracts and provides nectar for butterflies, moths, hummingbirds



Duranta Golden Dewdrop

Duranta erecta f/k/a repens

Native from Florida to Brazil and in the West Indies, not Texas

Spring to fall bloomer

Pollinators love it for the nectar

Readily spreads

Shrubs



Texas Lantana

Lantana urticoides

Spring/Summer bloomer

Pollinators love it, attracts butterflies (nectar) and birds (seeds)

Deer proof



Flame Acanthus

Anisacanthus quadrifidus var. *wrightii*

Larval host to Texan Crescent (*Anthanassa texana*) and

Crimson Patch (*Chlosyne janais*)

Summer bloomer. Flowers attract hummingbirds and butterflies.

Shrubs



Buttonbush

Cephalanthus occidentalis

Larval host to Titan sphinx (*Aellopos titan*) and

Hydrangea sphinx (*Darapsa versicolor*)

Nectar source for butterflies, bees, insects. Fruit for birds.

Foliage is unpalatable to livestock.



Turk's Cap

Malvaviscus arboreus var. drummondii

Late spring to fall bloomer

Nectar source for hummingbirds, butterflies, moths, other insects

Fruit for birds and mammals

Shrubs



Rusty Blackhaw Viburnum
Viburnum rufidulum
Nectar for bees, butterflies, insects
Fruit for birds and mammals
Attracts birds



Arrowwood Viburnum
Viburnum dentatum
Larval host to Spring Azure (*Celastrina "ladon"*)
Special value to native bees and bumblebees
Beneficial for gamebirds, songbirds and small mammals. Attracts Eastern Bluebird, Northern Flicker, Gray Catbird, and American Robin.



Mapleleaf Viburnum
Viburnum acerifolium
Larval host to Spring Azure (*Celastrina "ladon"*)
Birds eat the blue berries
Nectar for bees, butterflies, insects

Vines



Dutchman's Pipevine *Aristolochia macrophylla*

Larval host Pipevine Swallowtail (*Battus philenor*)
Native from WV to KY, TN, and parts of GA, it has naturalized over much of the East Coast. It is the species most often sold at the retail level.

Nectar for hummingbirds and large butterflies

Fruit for wildlife

15 to 30 ft

Vines



Coral honeysuckle vine

Lonicera sempervirens

Larval host to Spring Azure (*Celastrina "ladon"*) and Snowberry clearwing (*Hemaris diffinis*)

Special value to bumble bees

Flowers attract hummingbirds, bees, and butterflies

Fruits attract quail, Purple Finch, Goldfinch, Hermit Thrush, American Robin. Reaches 3 to 20 ft.



Carolina Jessamine

Gelsemium sempervirens

Flowers attract native bees, hummingbirds and butterflies

A mainstay of the suburban landscape. Reaches 10 to 20 ft.

The flowers, leaves, and roots are poisonous and are toxic or lethal to humans and livestock if consumed. Nectar is toxic to honeybees if consumed in sufficient quantities. Honey produced from its nectar may be toxic to humans.

Vines



Crossvine

Bignonia capreolata

Evergreen vine with glossy leaves and showy, two-tone, trumpet flowers, red or yellow blooms.

Hummingbirds are attracted to flowers. Early nectar source for butterflies and hummingbirds. Deer browse it in winter. Can reach 50 ft.



Trumpetvine

Campsis radicans

Larval host to Plebeian sphinx (*Paratreia plebeja*)

Native vine, often cultivated for its attractive, reddish orange flowers. Although rapid colonization by suckers can make it a nuisance, it is useful for erosion control. Mowing suckers will discourage them. Attracts hummingbirds. Pollinated by hummingbirds and long tongued bees. Can reach 35 ft.

Vines



Blue Jasmine

Clematis crispa

Twines on fences, climbs walls, columns, and arbors. Without support, can be used to sprawl over low structures like steps or low walls. 6 to 10 feet.

Seeds for granivorous birds
Nectar for butterflies and other insects



Alamo Vine

Ipomoea sinuata

An attractive twining climber of the morning glory family. It has large white flowers with dark burgundy centers and the dark green foliage is intricately divided. Native habitat is open and disturbed areas, stream banks, and dry soils in central Texas. Can be very aggressive. Attracts butterflies. 6 to 12 ft.

Vines



Passion Vine or Passionflower

7 native species in Texas

Passiflora affinis, 3 to 6 ft

Passiflora foetida, 3 to 6 ft

Passiflora incarnata, up to 25 ft

Passiflora lutea, up to 15 ft

Passiflora suberosa

Passiflora tenuiloba, 3 to 6 ft

Passiflora foetida var. *gossypiifolia*

Larval host to Gulf Fritillary (*Agraulis vanillae*),

Variegated Fritillary (*Euptoieta claudia*),

Banded Hairstreak (*Satyrium calanus*),

Red-banded Hairstreak (*Calycopis cecrops*),

Zebra Longwing (*Heliconius charithonia*),

Crimson-patch longwing (*Chlosyne janais*),

Julia Heliconian (*Dryas iulia*)

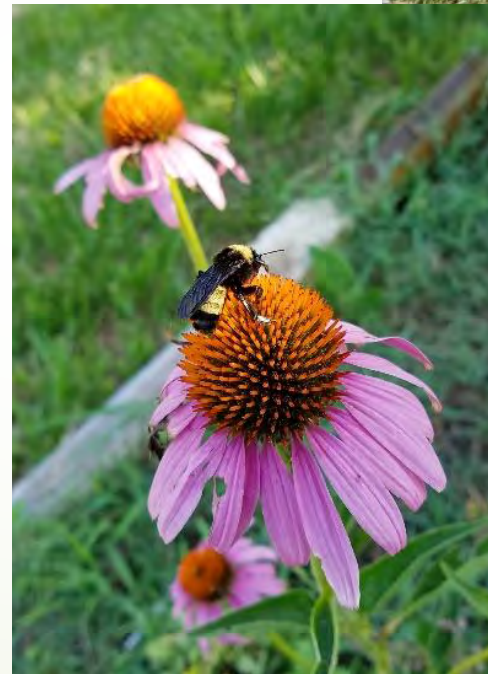
Birds eat the fruit

One way to tell a native is if leaves are 3-lobed. 5-lobed are a hybrid with a Chinese variety.

Perennials



Giant Coneflower
Rudbeckia maxima
Special value to native bees
Spring/summer bloomer
Reach 6 ft or more



Purple Coneflower
Echinacea purpurea
Special value to native bees
Summer bloomer
Echinacea spp. attract butterflies and hummingbirds. Nectar source.

Perennials



Blue Mistflower or
Gregg's Blue
Mistflower
Conoclinium coelestinum

Special Value to Native Bees

Supports Conservation Biological Control (A plant that attracts predatory or parasitoid insects that prey upon pest insects.)

The fluffy-edged flowers are a magnet for bees, butterflies, moths and birds. Blue mistflower is good as a border plant or as a colonizing groundcover. It also spreads quickly and can become a pest.

Perennials



Mealy Blue Sage

Salvia farinacea

Henry Duelberg popular variety

Special value to native bees. Spring/summer bloomer. Provides nectar for hummingbirds, bees, butterflies, insects.



Lanceleaf Coreopsis (Tickseed)

Coreopsis lanceolata

Special value to native bees

Supports Conservation Biological Control

Nectar source for butterflies and other insects.

Spring/summer bloomer

Perennials



Black-eyed Susan

Rudbeckia hirta

Larval host for Bordered Patch (*Chlosyne lacinia*),

Gorgone Checkerspot (*Chlosyne gorgone*),

Silvery Checkerspot (*Chlosyne nycteis*)

Use for color, wildflower meadow, pocket prairie

Birds enjoy ripe seeds

Nectar for bees, butterflies, other insects



Blackfoot Daisy

Melampodium leucanthum

Spring bloomer

Nectar for bees, butterflies, other insects

Seeds for granivorous birds

Resistant to deer

Perennials



Mexican Hat

Ratibida columnifera

Special value to native bees

Drought tolerant, fast growing wildflower that is not fussy about soils and is easy to grow from seed.

Nectar for bees, butterflies, and other insects

Seeds for granivorous birds



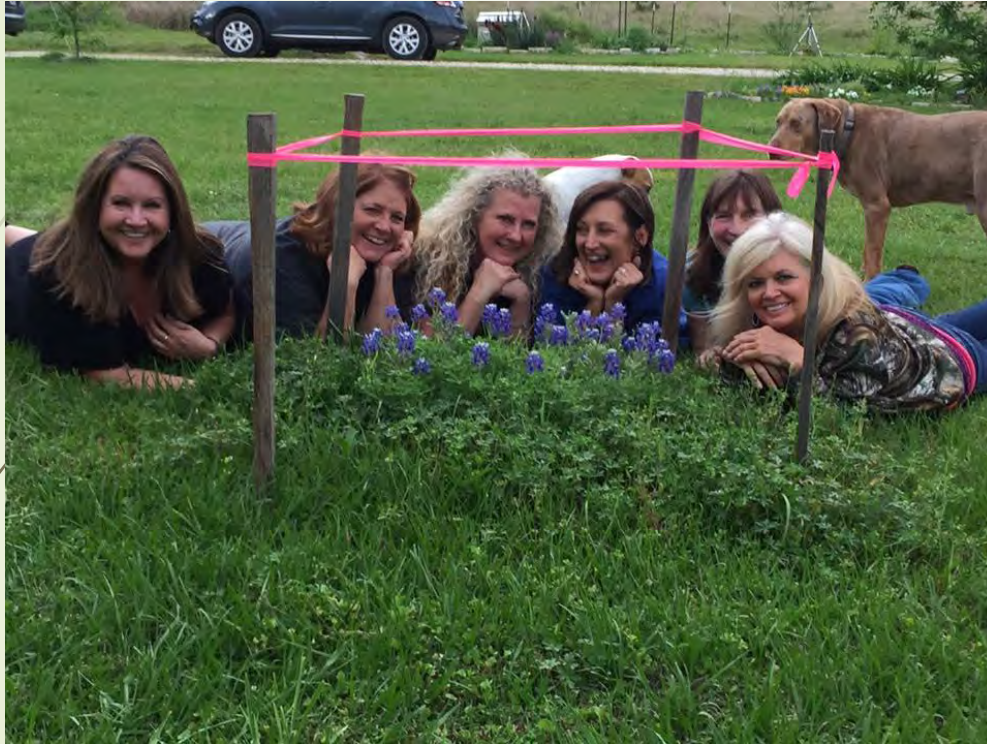
Heartleaf Skullcap

Scutellaria ovata

Nectar source for hummingbirds, butterflies, other insects

Showy blue flowers bloom on spikes. In the mint family, so it colonizes vigorously by underground, fleshy roots. Oily glands on the leaves make it possibly deer resistant

Perennials



Texas Bluebonnet

Lupinus texensis

Larval host to Elf (*Microtia elva*)

Special value to native bees and bumble bees

Use for wildflower meadow

Bees, butterflies, other insects love it



Aromatic Aster

Symphyotrichum oblongifolium

Special value to native bees

Support conservation biological control

Nectar source

Creates dazzling purple mounds in the fall

Perennials



Gulf Coast Penstemon

Penstemon tenuis

Special value to native bees

Nectar for bees, butterflies, other insects, hummingbirds

Tiny purple blooms like little bells. Has the potential to reseed freely. Plant with yellow columbine, which has the same requirements and bloom period.



Yellow Columbine

Aquilegia chrysantha

This shade-loving perennial with brilliant flowers and nearly evergreen foliage is perfect for brightening dark corners of shade gardens. It provides nectar for and is pollinated by moths, butterflies, and bees.

Perennials



Texas Spider Lily
Hymenocallis liriosme
Provides nectar for insects
Attracts birds
Good for bog or pond area,
wetland gardens and habitat



American Water-Willow
Justicia americana
Larval host for Texan Crescent-spot (*Anthanassa texana*)
Use in water garden
Spring/summer bloomer

Perennials



Swamp Sunflower

Helianthus angustifolius

Special value to native bees

Larval host for Silvery Checkerspot (*Chlosyne nycteis*)

Use in bog or pond area. Salt-tolerant and can tolerate water-logged soil, so great for coastal gardens. Many birds and small mammals are attracted to seeds so leave standing dead flowers into the winter as natural bird feeders.



Fall Obedient Plant

Physostegia virginiana

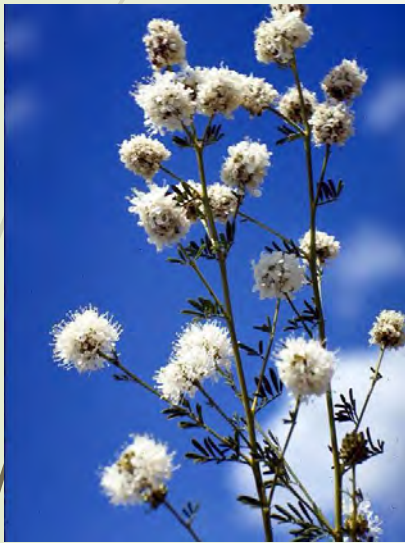
Good nectar source for hummingbirds, butterflies and other insects

Will tolerate both drought and poor drainage. Spreads aggressively by stolons, but is easy to pull out and keep in check. Easy to establish and maintain. Can become aggressive, but the shallow roots are easy to pull out.

Deer resistant

Clovers

Special Value to Native Bees
Special Value to Bumble Bees
Special Value to Honey Bees



Roundhead Prairie Clover
Dalea multiflora



Black Prairie Clover
Dalea frutescens



White Prairie Clover
Dalea candida



Indigo Bush
Dalea greggii



Purple Prairie Clover
Dalea purpurea



Compact Prairie Clover
Dalea compacta



Golden Prairie Clover
Dalea aurea



My Favorite Books

*Native Texas Plants,
Landscaping
Region by Region,*
by Sally and Andy
Wasowski

*Bringing Nature
Home,* by Douglas
W. Tallamy

*Texas Wildscapes,
Gardening for
Wildlife,* by Noreen
Damude and Kelly
Conrad Bender

*Texas Gardening
the Natural Way,
The Complete
Handbook,* by
Howard Garrett

*Southern Herb
Growing,* by
Madalene Hill &
Gwen Barclay with
Jean Hardy

Herbs for Texas, by
Howard Garrett with
Odena Brannam



Wrapping It Up

- Pollinators
 - Evolved with the natives, as did other insects
 - Need nectar plants and may need host plants
- Choose the plant to suit your purpose
- You may not have native soil, but you can still plant natives. Pollinators and other wildlife will thank you.
- Some plants—including natives—need lots of sun, some don't. Plant accordingly.
- Some plants—including natives—need lots of water, some don't. Plant accordingly.
- Ensure the pollinator and the plant is native to your area



Any Questions?

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