Help the Pollinators—and Ourselves!

Lisa Tuck
October 2019

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.

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
- Brown-eyed Susan
- Confederate Daisy
- Vervain
- Milkweed
- Columbine
- Mexican Hat
- Zinnias
- Mealy Blue Sage
- Dill
- Parsley
- 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
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 (*Sphingicampa 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**
*Sassafras albidum*
Larval host for Spicebush Swallowtail (*Papilio troilus*), Pale Swallowtail (*Papilio eurymedon*) and Promethea silkmoth (*Callosamia promethea*)
Nectar source. Birds eat the fruit

**Zanthoxylum clava-herculis**
Larval host for Giant Swallowtail (*Papilio cresphontes*)
Seeds eaten by granivorous birds
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 (*Paratreia plebeja*)
- Spring/summer bloomer

**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
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 Vibemum**  
Vibemum rufidulum  
Nectar for bees, butterflies, insects  
Fruit for birds and mammals  
Attracts birds

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

**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.

**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
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.

Birds eat the fruit
**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.
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 Crescentspot (Anthanassa texana)
Use in water garden
Spring/summer bloomer
**Perennials**

**Swamp Sunflower**  
*T.Science Name* 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 waterlogged 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

Indigo Bush
Dalea greggii

White Prairie Clover
Dalea candida

Compact Prairie Clover
Dalea compacta

Roundhead Prairie Clover
Dalea multiflora

Black Prairie Clover
Dalea frutescens

Golden Prairie Clover
Dalea aurea

Purple Prairie Clover
Dalea purpurea

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?

- Lisa Tuck
- veggiegaltx@gmail.com