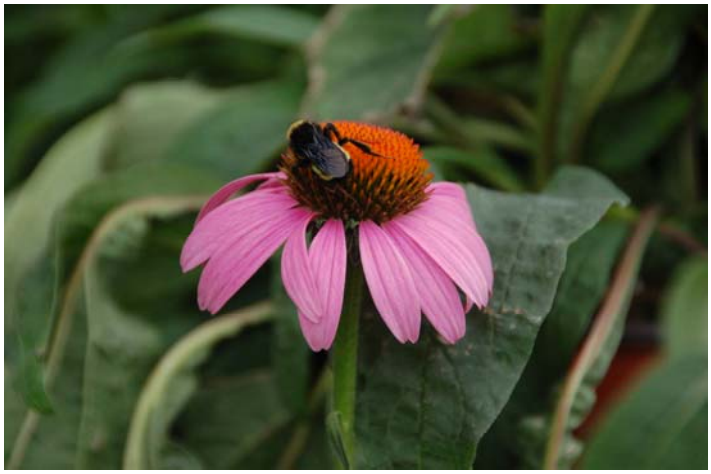
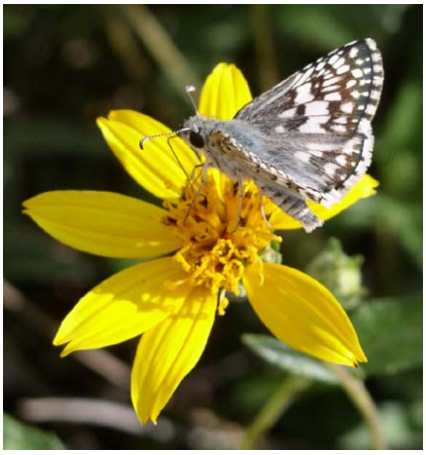
United States Department of Agriculture
Natural Resources Conservation Service
Technical Note No: TX-PM-08-02
September 2008

Pollinator Plants for Texas Conservation Practices

Plant Materials Technical Note



Eastern purple coneflower (*Echinacea purpurea*) Photo by Rob Ziehr



Goliad Germplasm orange zexmenia (W*edelia texana*) Photo by: Shelly Maher

Background

Pollinators, (insects, birds, bats and other animals), are a valuable resource to agriculture and to the flora of the North America. Pollination by bees and other species contributes an estimated $3 billion dollars of fruits and vegetables production, and $1.6 billion to $8.3 billion for agricultural crops. Texas crops that benefit from pollinators include: sunflowers, tomatoes, berries, alfalfa, fruit orchards, soybeans, cotton, rice and vegetables.

There is evidence that many pollinator species are on the decline due to disease, habitat loss, fragmentation, and deterioration. NRCS can help develop and enhance pollinator habitat through technical and financial assistance. Habitat development and enhancement can be planned and implemented adjacent to cropland fields and within pastureland, and rangeland using buffer strips, filter strips, strip cropping and riparian buffers. Habitat requirements of pollinators should include season-long food, shelter and water, space, a place to reproduce, and materials for nesting in order to survive and flourish. Native plant materials can provide these needs.

Purpose

The purpose of this technical note is to provide a list of pollinator friendly plants for use in conservation practices in Texas and suggested seeding mix compositions that promote site stability while enhancing pollinator habitat.

The following list from Appendix 1 of the eFOTG. This list is not all inclusive as many other species can provide excellent habitat for pollinators. Conservationist should contact their Zone Specialist for information about seeding plants not listed below.

Recommended Plant Materials for Pollinator Habitat
September 2008

Herbaceous Species	Variety	Season	Origin	Life Span	Bloom Period	Flower Color
Alfalfa		Cool	Introduced	Perennial	April - October	Purple to Pink
Awnless bush sunflower	Plateau	Warm	Native	Perennial	April - October	Yellow
Clover: arrowleaf	Meechee, Yuchi, Amclo, Apache	Cool	Introduced	Annual	March - May	White with Pinkish Cast
Clover: ball		Cool	Introduced	Annual	March - May	White
Clover: berseem	Bigbee	Cool	Introduced	Annual	March - May	White
Clover: crimson	Dixie, Tibbee, Chief	Cool	Introduced	Annual	March - May	Scarlet or Deep Red
Clover: persian		Cool	Introduced	Annual	March - May	White
Clover: red	Kenland, Cherokee	Cool	Introduced	Annual	March - May	Red, Pink
Clover: rose	Overton R18	Cool	Introduced	Annual	March - May	Red, Pink, White
Clover: subterranean	Karridale, Denmark, Clare, Nuba	Cool	Introduced	Annual	January - February	White
Cowpea	Iron, Clay	Wam	Introduced	Annual	June - August	White
Dotted Gayfeather		Wam	Native	Perennial	August - December	Purple
Englemann Daisy	Eldorado	Wam	Native	Perennial	August - November	Yellow, Brown
Herbaceous mimosa	Crockett Germplasm	Warm	Native	Perennial	May - August	Purple
Illinois bundleflower	Sabine	Warm	Native	Perennial	May - September	White
Leadplant		Warm	Native	Perennial	June - July	Purple
Lespedeza	Kobe, Korea	Warm	Introduced	Annual	March - April	Pink
Maximilian sunflower	Aztec	Warm	Native	Perennial	July - October	Yellow, Brown
Medic	Jemalong	Cool	Introduced	Annual	March - May	Yellow
Medic: Black		Cool	Introduced	Annual	March - May	Yellow
Medic: Bur	Armadillo	Cool	Introduced	Annual	March - May	Yellow
Orange zexmenia	Goliad Germplasm	Native	Warm	Perennial	May - November	Orange, Yellow
Partridge Pea	Comanche	Native	Warm	Annual	June - October	Yellow
Prairie acacia	Plains Germplasm	Warm	Native	Perennial	June - November	White
Purple prairie clover	Cuero Germplasm	Warm	Native	Perennial	June - September	Purple
Showy Menodora		Warm	Native	Perennial	March - October	Yellow

Singletary pea		Cool	Introduced	Annual	March - May	Red to Blue
Herbaceous Species	**Variety**	**Season**	**Origin**	**Life Span**	**Bloom Period**	**Flower Color**
Soybean	Tyrone		Introduced		July	Yellow
Sunflower, common		Warm	Native	Annual	July - October	Yellow
Sunflower	Perodovic	Warm	Introduced	Annual	June - September	Yellow
Sweetclover: White	Hubam	Cool	Introduced	Annual	March -May	White
Sweetclover: Yellow	Madrid	Cool	Introduced	Annual	March -May	Yellow
Texas Swampmallow	Kerr Germplasm	Warm	Native	Perennial	April - November	Pink, Yellow
Velvet bundleflower	Hondo Germplasm	Warm	Native	Perennial	April - June	White
Vetch: Hairy		Cool	Introduced	Annual	January - February	Purple
white prairieclover		Warm	Native	Perennial	May - September	White
Winter pea, Austrian		Cool	Introduced	Annual		White to Pink
Clover: white	LA S-1, Osceola, Regal	Cool	Introduced	Perennial	Indeterminate	White
Clover: button		Cool	Introduced	Annual	March - May	Yellow
Woody Species						
Yaupon		Warm	Native	Perennial	April - May	White
Willow: Black		Warm	Native	Perennial	April - May	Yellow
Willow: Sandbar		Warm	Native	Perennial	April - May	Yellow, Green, Brown
Hickory/Pecan: Bitternut		Warm	Native	Perennial	April - May	Yellow, Green, Brown
Hickory/Pecan: Pignut		Warm	Native	Perennial	April	Green, Brown
Hickory/Pecan: Mockernut		Warm	Native	Perennial	April	Yellow
Hickory/Pecan: Black		Warm	Native	Perennial	March	Red
Hickory/Pecan: Shagbark		Warm	Native	Perennial	March - June	Green, Brown
Hickory/Pecan: Bitter pecan		Warm	Native	Perennial	April	Yellow
Hickory/Pecan: Sweet pecan		Warm	Native	Perennial	May	Yellow
Hickory/Pecan: Black Walnut		Warm	Native	Perennial	April - May	Yellow, Green, Brown
Hickory/Pecan: Little walnut		Warm	Native	Perennial	March - April	White, Green
Littleleaf lead tree	Yellowpuff Germplasm	Warm	Native	Perennial	April - October	Yellow
Locust: Black		Warm	Native	Perennial	April - June	White
Locust: Honey		Warm	Native	Perennial	April - June	White
Leucaena	Popinac, Tepequaje	Warm	Native	Perennial	March - July	White
Dogwood: Flowering		Warm	Native	Perennial	March - May	Pink

Dogwood: Roughleaf		Warm	Native	Perennial	April - June	White
Woody Species	**Variety**	**Season**	**Origin**	**Life Span**	**Bloom Period**	**Flower Color**
Plum: American		Warm	Native	Perennial	April - May	White
Plum: Chickasaw	Rainbow Germplasm	Warm	Native	Perennial	February - May	White
Plum: Creek		Warm	Native	Perennial	March	White
Plum: Mexican		Warm	Native	Perennial	February - April	White, Pink
Plum: Oklahoma		Warm	Native	Perennial	March - May	White
Pawpaw		Warm	Native	Perennial	April - May	White, Yellow, Red, Purple
Sumac: Evergreen		Warm	Native	Perennial	July - August	White, Yellow
Sumac: Flameleaf		Warm	Native	Perennial	July - August	Green, Yellow
Sumac: Skunkbush		Warm	Native	Perennial	March - April	White, Yellow
Sumac: Smooth		Warm	Native	Perennial	May - August	White, Yellow, Green, Brown
Boxelder		Warm	Native	Perennial	March - April	Yellow, Green, Brown
Elderberry		Warm	Native	Perennial	May - June	White
Redbud: Eastern		Warm	Native	Perennial	March - May	Pink
Redbud: Texas		Warm	Native	Perennial	March - April	Pink, Purple
Anaqua		Warm	Native	Perennial	April	White
Texas madrone		Warm	Native	Perennial	February - April	White
Texas mountain laurel		Warm	Native	Perennial	February - March	Blue, Purple
Texas wild-olive		Warm	Native	Perennial	Year Long	White
Texas honeysuckle		Warm	Native	Perennial	March - May	White

Pollinator Habitat Planning Considerations

Pollinator diversity and abundance is influenced by two main factors: suitable habitat and pesticide use. Pollinator species are intolerant of pesticides. The basic habitat needs of native pollinators include: nesting or egg-laying sites, flowers for foraging, overwintering cover and refuge from pesticides. Pollinator habitat enhancement begins by knowing the habitat in the area followed with protecting and enhancing flowering plants and nest sites to ensure maximum forb diversity that flower from spring through fall.

Pollinator Seedmix by Land Use

Land Use	% Forb in Seedmix	Conservation Practice	Special Considerations
Cropland	50%-85%	Field Border (386) Conservation Cover (327)	Forb percentage determined by climatic factors at planting site; the highest percentage of forbs attainable for that planting site should be used. When seeding grasses, use lower succession type species such as sand dropseed, hairy grama, red grama, slender grama and Texas grama.
Rangeland	30%	Range Seeding (550)	Plant a mixture of at least 4 forbs and 5 native grasses. Grazing Management will be planned to ensure flowering forbs recover from grazing pressure.
Wildlife	50%–85%	Riparian Forest Buffer (391) Conservation Cover (327)	Plant a diversity of woody plant species to spread blooming periods from spring through fall.

References:

Stubbendieck, J., Hatch, S., and Butterfield, C.H., 1997, *North American Range Plants*, the University of Nebraska Press, Lincoln.

Ball, D.M., Hoveland, C.S., and Lacefield, G.D., 2002, *Southern Forages*, Potash and Phosphate Institute and the Foundation fro Agronomic Research, Norcross.

Parsons, J. and Lineberg, D., Wildflowers in Bloom, http://aggie-horticulture.tamu.edu/wildseed/index.html (September 2008.)

Smith, G.R., AggieClover Website, http://aggieclover.tamu.edu/ (September 2008.)

Lady Bird Johnson Wildflower Center, www.wildflower.org/plants/ (September 2008.)

The Xerces Society, www.xerces.org/pollinator_insect_conservation/index.html

Pollinator Partnership, www.pollinator.org