

Appendix R

# Small Acreage Management Techniques

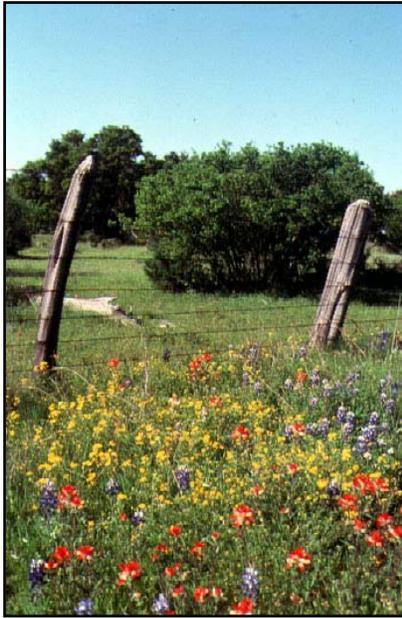
(Abridged)



By  
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# Small Acreage Management Techniques

By Trey Carpenter



The goal of this publication is to present wildlife habitat improvement projects to landowners with the least amount of narration as possible. The workbook describes the three necessary ingredients for wildlife habitat. Habitat is where wildlife lives, and they require food, water, and cover. The abundance and diversity of these three elements are directly proportional to the number of plant and animal species one can expect to attract.

Projects described in this workbook are intended to be as useful to an urban backyard wildlife enthusiast or a manager of a large ranch. The booklet will be most attractive to owners of small properties that want to attract wildlife and develop habitats for it. Incorporating the FOOD, WATER, and COVER projects laid out in this booklet will ensure good wildlife habitat. Managing properties for wildlife should be a holistic (big picture) practice; therefore much overlapping and duplication of

the sections will occur.

## FOOD

Providing food is an obvious and simple wildlife enhancement concept. There are many ways of supplying food to wildlife ranging from simple bird feeders to fenced food plots. It is a common misconception that an area knee-high in grass or a mature, closed-canopy forest is good wildlife habitat. There is little diversity in these situations and consequently these type habitats produce poor food sources for wildlife. Diversity is the key to quality wildlife habitat. This booklet will show how to create more edge effect to enhance wildlife habitat. The edge effect is the result of two adjoining plant communities coming together. The



**Food** section describes how to put “food on the table” for wildlife. Supplemental feeding is not a replacement for good habitat. Corn, milo, etc. are good attractants and can help hold wildlife in a given area; however, they are low in protein and do not meet the nutritional requirements for most wildlife. Periodic moving of feeders is necessary to

prevent disease transmission among wildlife species. In addition, washing with a 10% bleach solution is a safe way to keep structures germ-free.

## **WATER**

Water is a necessity for most wildlife. If the property in question has an existing stream, creek, or pond, most of a wildlife manager's problems are solved. This booklet will show how to improve these riparian habitats for wildlife and how to more evenly distribute wildlife by creating new watering situations and improving existing structures. The more diverse the watering situations are, the greater the number of species that will benefit. The ideal situation is to have many watering type areas ranging from fast moving water to pools. A small dam on a creek is a good way to change and diversify an existing water system. Wet marshy areas, excluded from livestock, will benefit many wildlife species. These water projects also produce many unseen creatures that provide food for other animals along the food chain.



## **COVER**

Cover can be broken down into three categories: nesting, escape, and feeding, with some overlapping of the three. Nesting boxes for birds are some of the most visible and enjoyable COVER projects. Cavity nesters such as bluebirds, and wrens are delightful to watch and easy to attract. Leaving snags, dead or dying trees may seem unattractive, but many birds depend upon them for their "natural" shelters.



Snags can be created by girdling a live tree. This entails ringing a tree's bark below the cambium level with a chain saw or axe. On small properties or around a house, a less drastic approach such as building a structure from limber products should be considered. Basic designs and dimensions for such structures have been included in the Nesting Cover portion of this workbook.

**Escape cover** can include brush piles, half-cut trees, and shrub plantings. These happen to be among some of the most popular wildlife enhancement projects. Most wildlife species are edge dwellers, and escape cover is necessary to provide protection from predators. Wildlife is not comfortable out in the wide open, and foods that they search out are not



always readily available in dense wooded situations. The line where these two areas meet compose the edge.

**Feeding Cover** is necessary for wildlife to forage over a large area. Brush clearing strategies are important to consider when trying to improve habitat in a small area. The more edge created, the more wildlife will benefit. Another method creating edge for wildlife is leaving fallow strips in agricultural plantings. This allows for year around feeding. Patterns and food sources will be described in the Cover Project section.

The amount of edge created can be greatly limited by thick matted amounts of grass if livestock is totally excluded. Many properties are too small to support livestock grazing. Continuous grazing of livestock is not recommended for small acreage. Continuous grazing of livestock, even if not “overstocked”, could lead to less biodiversity. A single cow will select towards the most choice forage. This leads to over utilization of these preferred foods and allows secondary, invader type species, to flourish. This ultimately leads to less desirable type foods.

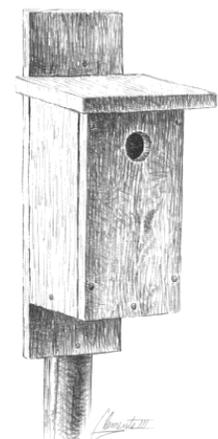
A good scenario for wildlife is a high intensity low frequency grazing system. By moving a large number of grazers into a pasture, a “mowing” effect can be achieved. Removal of old grass growth during late summer and winter can greatly benefit wildlife. The timing of grazing is important to prevent damage to vulnerable wildlife and plant



species. Young trees and plants can be damaged, and nesting birds disturbed, during springtime grazing. Livestock should be rotated in and out of an area once the desired mowing effect has been achieved. For small property owners this poses a problem. A good solution is to incorporate the small property into a grazing system of a neighbor with a herd. Both parties can benefit if approximately 50% of grass is removed. Care should be taken that critical areas, such as food

plots, structures and fragile riparian areas are restricted from the herd. Cattle are the best choice for grazing excess grass and the soil disturbance created by their “hoof action” will stimulate forb growth. Sheep, goats, and exotic species of deer will compete directly with native species for desirable food, water and space. Cattle are primarily grass foragers and do not pose a threat to native species for food if moderately stocked. “Moderation” is the key to deciding how many cows, goats, sheep, etc. are to be stocked. Remember that too many deer can over-utilize the vegetation in an area as drastically as sheep and goats.

Hunting, where permitted, is an important tool to keep many wildlife populations in check. Again, “moderation” is the key; care should be taken not to over-utilize any given species. Stay within the limits and recommendations provided by TPWD biologists for a given area.

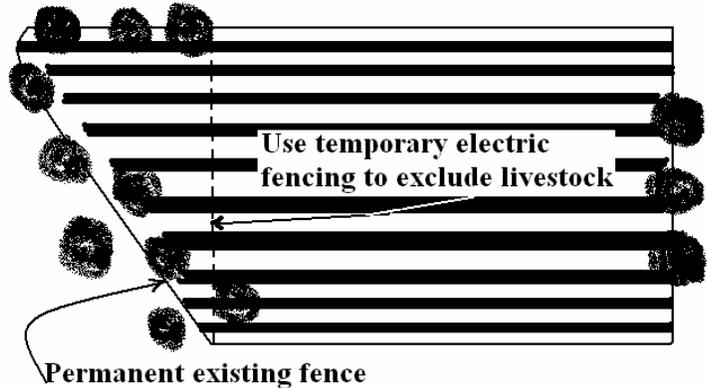


# Modifying Existing Agricultural Stands

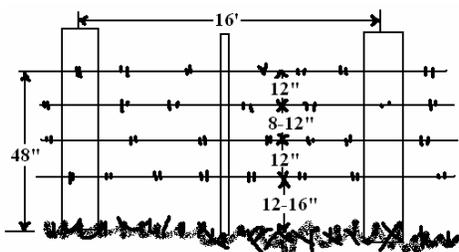
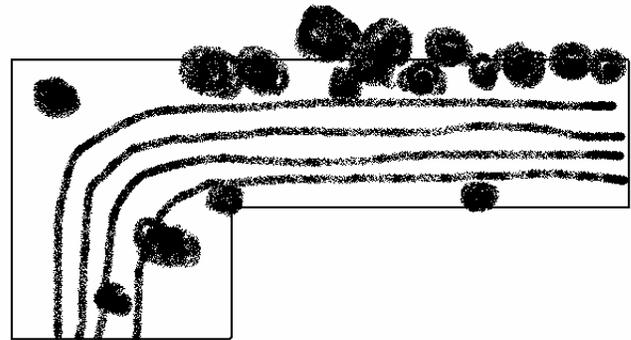
Allow irregular areas in cultivation, such as this triangular plot, to go fallow for winter food—especially adjacent to brushy cover.

**Food Plot.** In Conservation Reserve Program (CRP) or old field.

- Useful in areas where row cropping and necessary foods are scarce
- Plant row type crops specifically for wildlife
- Maximum edge can be created by long narrow plots (1/8 – 2 acres)
- Position between two cover types (ex. Between mature tree stand and open area).
- These areas can serve as wildlife corridors.



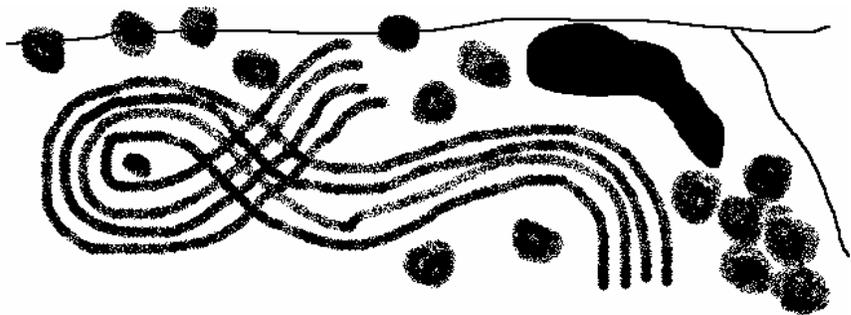
**Fencing.** Food plots specifically for wildlife, should be excluded from livestock with electric or barbed wire fence.

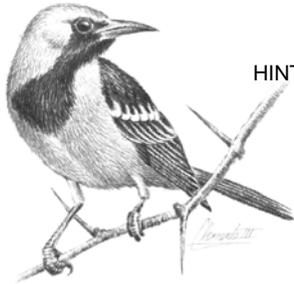


**Barbed-wire Hints.** Bottom wire should be a minimum of 12-16" from ground and smooth. Top wire should be no more than 48" (preferably lower), and 12" between it and next wire down. Fence stays should be used between posts to create a more rigid fence; this allows deer a better chance of struggling free should they become entangled.

## Random Discing.

- Pull a disc or chisel plow behind tractor in early spring to stimulate native forbs for wildlife production.
- Slightly disc soil in non-highly erodable areas with good soil moisture.
- Try sparsely broadcasting wildlife food producing seeds. Follow up by dragging a log or chain to create a simple food plot.





# Wildlife Plantings



- HINTS: --Need 25 inches of annual precipitation to be beneficial.  
 --Irrigation is an expensive alternative.  
 --Supplemental feeding is cheaper and more reliable.  
 --Use seed sources from within 200 miles north and south, and 100 miles east and west.  
 --Exclude from livestock.

## Seed Species

Annual Sunflower

| Rate (lbs/acre) | Depth (inches) | Planting Time | Time to Maturity (days) | Drought Tolerance | Species Benefited* |
|-----------------|----------------|---------------|-------------------------|-------------------|--------------------|
| 3-5             | .25-.5         | Mar.-May      | 100                     | High              | MD,Q               |

*Good drought insurance; will reseed yearly with spring discing.*

Fox-tail Millet

|       |       |          |       |      |           |
|-------|-------|----------|-------|------|-----------|
| 15-20 | 1-1.5 | Apr-June | 60-80 | Good | MD,Q,T,WF |
|-------|-------|----------|-------|------|-----------|

*Similar to native bristle grass; can be planted 0 days before frost.*

Proso Millet

|       |       |          |       |      |        |
|-------|-------|----------|-------|------|--------|
| 20-50 | 1-1.5 | Apr-June | 50-70 | Good | MD,Q,T |
|-------|-------|----------|-------|------|--------|

*Best adapted for North Texas (Rolling Plains)*

Japanese Millet

|       |       |          |       |      |    |
|-------|-------|----------|-------|------|----|
| 15-20 | 1-1.5 | Apr-June | 60-80 | Poor | WF |
|-------|-------|----------|-------|------|----|

*Good in playa lakes in High Plains for waterfowl*

Sorghum Alum

|       |       |          |         |      |             |
|-------|-------|----------|---------|------|-------------|
| 6-Mar | 2-Jan | Apr-June | 100-120 | Fair | MD,Q,T,D,WF |
|-------|-------|----------|---------|------|-------------|

*Do not plant too thick, to allow free movement throughout food plot*

Corn

|        |       |          |         |      |             |
|--------|-------|----------|---------|------|-------------|
| 10-Jul | 2-Jan | Apr-June | 170-190 | Poor | MD,Q,T,D,WF |
|--------|-------|----------|---------|------|-------------|

*Should not be planted in areas less than 30 inches precipitation (unless irrigated). Shred in strips to allow free movement of wildlife.*

Sesbania

|       |      |           |     |      |          |
|-------|------|-----------|-----|------|----------|
| 20-30 | .5-1 | June-July | 120 | Poor | MD,Q,T,D |
|-------|------|-----------|-----|------|----------|

*Might require irrigation in arid areas*

Partridge Pea

|   |   |           |     |      |     |
|---|---|-----------|-----|------|-----|
| 2 | 1 | Feb-March | 120 | Fair | ALL |
|---|---|-----------|-----|------|-----|

*Use local strains for best production*

Annual Pespedeza (Korean)

|       |         |            |     |           |       |
|-------|---------|------------|-----|-----------|-------|
| 20-25 | .25-.50 | Post Frost | 120 | Poor-Fair | D,Q,T |
|-------|---------|------------|-----|-----------|-------|

*Need 30+ inches of precipitation or irrigation*

Sesame (Benne)

|   |         |            |     |      |     |
|---|---------|------------|-----|------|-----|
| 1 | .25-.50 | Post Frost | 120 | Fair | D,Q |
|---|---------|------------|-----|------|-----|

*Use shattering variety for doves and quail*

Austrian Winter Peas

|       |     |      |  |  |     |
|-------|-----|------|--|--|-----|
| 20-30 | 1-2 | Fall |  |  | D,T |
|-------|-----|------|--|--|-----|

Illinois Bundle Flower

|   |     |             |  |      |        |
|---|-----|-------------|--|------|--------|
| 3 | 0.5 | Spring-Fall |  | Good | MD,Q,T |
|---|-----|-------------|--|------|--------|

*Mix into areas when reestablishing grasses and other perennials.*

Clover

|      |     |      |  |      |     |
|------|-----|------|--|------|-----|
| 8-10 | 1-2 | Fall |  | Poor | D,T |
|------|-----|------|--|------|-----|

Engleman Daisy

|   |     |        |  |      |     |
|---|-----|--------|--|------|-----|
| 3 | 1/8 | Spring |  | Good | D,T |
|---|-----|--------|--|------|-----|

Four-wing Saltbush

|      |     |        |  |      |     |
|------|-----|--------|--|------|-----|
| 8-10 | 0.5 | Spring |  | Good | D,T |
|------|-----|--------|--|------|-----|

Oats

|       |     |             |  |      |        |
|-------|-----|-------------|--|------|--------|
| 40-50 | 1-2 | Fall-Spring |  | Fair | D,T,WF |
|-------|-----|-------------|--|------|--------|

*Not as freeze resistant as wheat*

Reseeding Cow Peas

|        |     |        |  |      |     |
|--------|-----|--------|--|------|-----|
| 50-100 | 1-2 | Spring |  | Fair | ALL |
|--------|-----|--------|--|------|-----|

Maximillian Sunflower

|   |     |             |  |      |       |
|---|-----|-------------|--|------|-------|
| 3 | 1/8 | Fall-Winter |  | Good | D,Q,T |
|---|-----|-------------|--|------|-------|

|                       |       |     |             |      |          |
|-----------------------|-------|-----|-------------|------|----------|
| <u>Vetch</u>          | 20-30 | 1-2 | Fall        | Fair | Q,D,T,MD |
| <u>Egyptian Wheat</u> | 3-6   | 1-2 | Spring      | Fair | Q,MD,T   |
| <u>Winter Wheat</u>   | 30-50 | 1-2 | Fall-Spring | Fair | ALL      |

*Best all round winter forage*

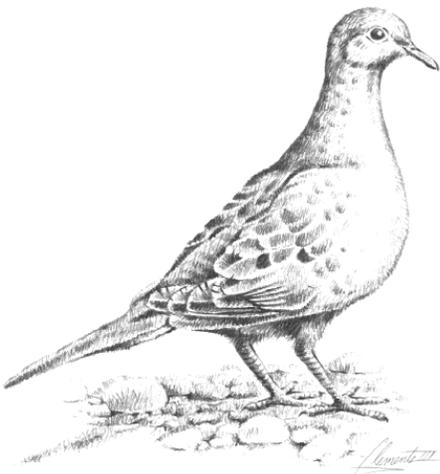
**\*MD=mourning dove**

**Q=Quail**

**T=turkey**

**WF=waterfowl**

**D=deer**



## RECOMMENDED SPECIES FOR CENTRAL TEXAS

| Botanical Name                          | Common Name                              | Site Preference   |
|---|--|---|
| <b>WILDFLOWERS</b>                      |  |   |
| <b>Annuals</b>                          |  |   |
| <i>Amblyolepis setigera</i>             | Huisache daisy                           | Dry, well-drained soil; sun   |
| <i>Cassia fasciculata</i>               | Partridge pea                            | Open, sandy fields; sun   |
| <i>Castilleja indivisa</i>              | Indian paintbrush                        | Sandy loam; sun   |
| <i>Centaurea americana</i>              | Basket flower                            | Dry, well-drained soil; sun   |
| <i>Coreopsis tinctoria</i>              | Coreopsis<br>Clasping-leaf<br>coneflower | Moist, sandy soil; sun<br>Moist areas, ditches; sun                   |
| <i>Dracopis amplexicaulis</i>           | Eryngo                                   | Plains, prairies; sun   |
| <i>Eryngium leavenworthii</i>           | Texas bluebell                           | Moist areas in prairies; sun  |
| <i>Eustoma grandiflorum</i>             | Indian blanket                           | Variety of soils, disturbed areas; sun                                |
| <i>Gaillardia pulchella</i>             | Blue flax                                | Sandy or rocky soils; sun   |
| <i>Linum lewsii</i>                     | Bluebonnet                               | Well-drained, alkaline soil; sun                                      |
| <i>Lupinus texensis</i>                 | Tahoka daisy                             | Rocky or sandy soils; sun   |
| <i>Machaeranthera<br/>tanacetifolia</i> | Horsemint                                | Well-drained, sandy loam-rocky soil                                   |
| <i>Monarda citriodora</i>               | Palafoxia                                | Limestone soil; sun   |
| <i>Palafoxia callosa</i>                | Blue curls                               | Moist, well-drained soils; sun-shade                                  |
| <i>Phacelia congesta</i>                | Drummond's phlox                         | Prefers sandy soil; sun-part sun                                      |
| <i>Phlox drummondii</i>                 | Black-eyed Susan                         | Varies widely; sun-part sun   |
| <i>Rudbeckia hirta</i>                  | Greenthread                              | Calcareous soils; sun   |
| <i>Thelesperma filifolium</i>           |  |   |
| <b>Perennials</b>                       |  |   |
| <i>Aquilegia canadensis</i>             | Columbine                                | Rocky, well-drained sites; part shade                                 |
| <i>Asclepias tuberosa</i>               | Butterfly weed                           | Moist areas in prairies, roadsides; sun                               |
| <i>Callirhoe digitata</i>               | Winecup                                  | Open woods, plains; sun   |
| <i>C. involucreta</i>                   | Winecup                                  | Open woods, rocky hills; sun  |
| <i>Calvlophus drummondianus</i>         | Square-bud primrose                      | Sandy or rocky soils; sun   |
| <i>Cooperia drummondii</i>              | Rain lily                                | Open fields, prairies, lawns; sun                                     |
| <i>C. pedunculata</i>                   | Rain lily                                | Open fields, prairies, lawns; sun                                     |
| <i>Coreopsis lanceolata</i>             | Lanceleaf coreopsis                      | Variety of soils; sun   |
| <i>Delphinium carolinianum</i>          | Prairie larkspur                         | Dry, open woods and fields; sun                                       |
| <i>Echinacea angustifolia</i>           | Purple coneflower                        | Dry, rocky prairies and hillsides; sun                                |
| <i>E. purpurea</i>                      | Purple coneflower                        | Rocky, open woods; sun-part sun                                       |
| <i>Engelmannia pinnatifida</i>          | Engelmann daisy                          | Open, calcareous sites; sun   |
| <i>Eryngium leavenworthii</i>           | Eryngo                                   | Plains and prairies; sun<br>Moist, sandy wooded area; sun-part<br>sun |
| <i>Eupatorium coelestinum</i>           | Mistflower                               |   |
| <i>Helianthus maximiliani</i>           | Maxillilian sunflower                    | Moist, clay-like soil; sun  |
| <i>Hymenoxys scaposa</i>                | four-nerve daisy                         | Dry, well-drained sites; sun  |

|  |                   |   |
|--|-------------------|---|
| <i>Ipomopsis rubra</i> (biennial)      | Standing cypress  | Dry, sandy or rocky soil; sun           |
| <i>Liatris mucronata</i>               | Gayfeather        | Well-drained soils; sun                 |
| <i>L. pycnostachya</i>                 | Gayfeather        | Well-drained, calcareous soil; sun      |
| <i>Lobelia cardinalis</i>              | Cardinal flower   | Wet to moist soil; sun-part shade       |
| <i>Melampodium leucanthum</i>          | Blackfoot daisy   | Calcareous soil; sun                    |
| <i>Monarda fistulosa</i>               | Beebalm           | Dry, open woods, wet meadow             |
| <i>Oenothera macrocarpa</i>            | Missouri primrose | Limestone hills and prairies; sun       |
| <i>O. speciosa</i>                     | Showy primrose    | Open areas in a variety of soils; sun   |
| <i>Penstemon baccharifolius</i>        | Rock penstemon    | Limestone crevices; sun-part shade      |
| <i>P. cobraea</i>                      | Wild foxglove     | Loamy soil, prairies; sun               |
|  | Hill Country      |   |
| <i>P. triflorus</i>                    | penstemon         | Limestone soil; sun-part shade          |
| <i>Physostegia pulchella</i>           | Obedient plant    | Wet soils of bottomlands; part shade    |
| <i>Ratibida columnifera</i>            | Mexican hat       | Variety of soil; sun-part sun           |
| <i>Salvia coccinea</i>                 | Scarlet Sage      | Thickets and open woods; part shade     |
| <i>S. engelmannii</i>                  | Englemann sage    | Limestone soils; sun                    |
| <i>S. farinacea</i>                    | Mealy blue sage   | Wide variety of soils; sun-part sun     |
| <i>S. roemeriana</i>                   | Cedar sage        | Woody, rocky areas; part shade          |
| <i>Solidago</i> spp.                   | Goldenrod         | Sandy to clay soil; sun                 |
| <i>Tradescantia</i> spp.               | Spiderwort        | Prairies, plains, moist areas; part sun |
| <i>Verbena bepennatifida</i>           | Dakota vervain    | Fields; sun                             |
| <i>V. elegans</i> var. <i>asperata</i> | Mountain vervain  | Limestone & sandstone outcrops; sun     |
| <i>Vernonia baldwinii</i>              | Ironweed          | Dry, well-drained sites; sun            |
| <i>V. lindheimeri</i>                  | Wooly ironweed    | Limestone soil; sun                     |
| <i>Wedelia hispida</i>                 | <i>Wedelia</i>    | Dry, well-drained sites; sun            |

## SHRUBS

### Blackland Prairie (east of the Balcones fault line)

|   |                      |  |
|---|----------------------|--|
| <i>Amorpha fruticosa</i> var. <i>angustifolia</i> | False indigo         | Moist woods, stream banks; calcareous soil |
| <i>Anisacanthus wrighii</i>                       | Flame acanthus       | Dry, well-drained soil                     |
| <i>Berberis swasevi</i>                           | Texs barberry        | Dry, well-drained soil                     |
| <i>B. trifoliolata</i>                            | Agarito              | Dry, well-drained soil                     |
| <i>Callicarpa americana</i>                       | American beauty bush | Rich woods, thickets                       |
| <i>Dalea frutescens</i>                           | Black dalea          | Dry soil in full sun                       |
| <i>Erythrina herbacea</i>                         | Coral bean           | Sandy or loamy soils; sun-part shade       |
| <i>Eupatoruim havenense</i>                       | Mistflower           | Well-drained soil; rocky ravines           |
| <i>E. odoratum</i>                                | Blue mistflower      | Well-drained soil; full sun                |
| <i>Eysenhardtia texana</i>                        | Kidneywood           | Dry hills and canyons                      |
| <i>Hesperaloe parviflora</i>                      | Red yucca            | Dry, well-drained soil; full sun           |
| <i>Lantana horrida</i>                            | Trailing lantana     | Dry, well-drained soil; sun-part-sun       |
| <i>Leucophyllum frutescens</i>                    | Cenizo, Texas sage   | Dry, well-drained soil; sun                |
| <i>Malvavixcus drummondii</i>                     | Turk's cap           | Moist, shaded areas                        |
| <i>Mimosa borealis</i>                            | Fragrant mimosa      | Well-drained soil; sun                     |

|                            |                     |                                      |
|----------------------------|---------------------|--------------------------------------|
| <i>Nolina texana</i>       | Bear grass          | Well-drained sites; full sun         |
| <i>Pavona lasiopetala</i>  | Rose pavonia        | Dry, rocky woods or stream banks     |
| <i>Rhus aromatica</i>      | Fragrant sumac      | Wooded areas; rocky soil             |
| <i>R. virens</i>           | Evergreen sumac     | Rocky hillsides                      |
| <i>Ruellia brittoniana</i> | Narrow-leaf petunia | Well-drained sites; full sun         |
| <i>Salvia greggii</i>      | Autumn sage         | Dry, well-drained soils; full sun    |
| <i>Viburnum rufidulum</i>  | Rusty blackhaw      | Wood borders, stream edges, thickets |

### Edwards Plateau (west of the Balcones fault line)

|                                |                      |   |
|--------------------------------|----------------------|---|
| <i>Amorpha fruticosa</i>       | False indigo         | Moist woods, streambanks; calcareous soil |
| <i>Anisacanthus wrightii</i>   | Flame acanthus       | Dry, well-drained soil                    |
| <i>Bauhinia congesta</i>       | Orchid tree          | Dry, well-drained soil; S. side of bdg.   |
| <i>Berberis swasevi</i>        | Texas barberry       | Dry, well-drained soil                    |
| <i>B. trifoliolata</i>         | Agarito              | Dry, well-drained soil                    |
| <i>Callicarpa americana</i>    | American beauty bush | Rich woods and thickets                   |
| <i>Capsicum frutescens</i>     | Chile piquin         | Well-drained sites                        |
| <i>Chrysactinia mexicana</i>   | Damianita            | Dry, rocky well-drained sites; sun        |
| <i>Colubrina texensis</i>      | Texas snakewood      | Dry, well-drained sites                   |
| <i>Dalea frutescens</i>        | Black dalea          | Dry soil in full sun                      |
| <i>Dasyilirion texanum</i>     | Texas sotol          | Dry, well-drained sites; full sun         |
| <i>Erythrina herbacea</i>      | Coral bean           | Sandy or loamy soils; sun-part shade      |
| <i>Eupatorium havanense</i>    | Mistflower           | Well-drained soil, rocky ravines          |
| <i>E. odoratum</i>             | Blue mistflower      | Well-drained soil, full sun               |
| <i>Hesperaloe parviflora</i>   | Red yucca            | Dry, well-drained soil; full sun          |
| <i>Hibiscus cardiophyllus</i>  | Heart-leaf hibiscus  | Well-drained soil; sun-part-sun           |
| <i>Lantana horrida</i>         | Trailing lantana     | Dry, well-drained soil; sun-part-sun      |
| <i>Leucophyllum frutescens</i> | Cenizo, Texas sage   | Dry, well-drained soil; sun               |
| <i>Lonicera albiflora</i>      | White honeysuckle    | Rocky or sandy soils; cedar brakes        |
| <i>Malvavixcus drummondii</i>  | Turk's cap           | Moist, shaded areas                       |
| <i>Mimosa borealis</i>         | Fragrant mimosa      | Well-drained soil; sun                    |
| <i>Nolina texana</i>           | Bear grass           | Well-drained sites; full sun              |
| <i>Pavona lasiopetala</i>      | Rose pavonia         | Dry, rocky woods or stream banks          |
| <i>Pistacia texana</i>         | Pistache             | Rocky, limestone stream banks, cliffs     |
| <i>Rhus aromatica</i>          | Fragrant sumac       | Wooded areas; rocky soil                  |
| <i>R. lanceolata</i>           | Flame-leaf sumac     | Rocky hillsides; sun or shade             |
| <i>R. virens</i>               | Evergreen sumac      | Rocky hillsides                           |
| <i>Ruellia brittoniana</i>     | Narrow-leaf petunia  | Well-drained sites; full sun              |
| <i>Salvia greggii</i>          | Autumn sage          | Dry, well-drained soils; full sun         |
| <i>S. regia</i>                | Royal sage           | Rocky, wooded slopes                      |
| <i>Viburnum rufidulum</i>      | Rusty blackhaw       | Wood borders, stream edges, thickets      |
| <i>Yucca rupicola</i>          | Twist-leaf yucca     | Dry, rocky soil; full sun                 |

## TREES

### Blackland Prairie (east of the Balcones fault line)

#### Conifers

|                             |                   |                    |
|-----------------------------|-------------------|--------------------|
| <i>Juniperus virginiana</i> | Eastern red cedar | Fields, grasslands |
| <i>Taxodium distichum</i>   | Bald cypress      | Along stream banks |

#### Shade Trees

|                                 |                      |                                      |
|---------------------------------|----------------------|--------------------------------------|
| <i>Carya illinoensis</i>        | Pecan                | Rich, river-bottom soil              |
| <i>Catalpa speciosa</i>         | Catlapa              | Deep, rich, moist soil               |
| <i>Fraxinus texensis</i>        | Texas ash            | Prefers limestone hills              |
| <i>Juglans nigra</i>            | Eastern black walnut | Well-drained, loamy soil             |
| <i>Plantanus occidentalis</i>   | Sycamore             | Rich bottomland soils along streams  |
| <i>Quercus glaucooides</i>      | Lacy oak             | Limestone soils                      |
| <i>O. macrocarpa</i>            | Bur oak              | Moist forests along streams          |
| <i>O. muhlenbergii</i>          | Chinkapin oak        | Calcareous uplands                   |
| <i>O. pungens var. vaseyana</i> | Vasey oak            | Dry, rocky slopes                    |
| <i>O. shumardii</i>             | Shumard red oak      | Moist hills, bottomlands, clay soils |
| <i>O. texana</i>                | Texas red oak        | Dry uplands                          |
| <i>O. fusiformis</i>            | Escarpment live oak  | Sandy loam soils, also clay soils    |
| <i>Sapindus drummondii</i>      | Western soapberry    | Moist soils along streams            |
| <i>Ulmus crassifolia</i>        | Cedar elm            | Prefers limestone soils              |

#### Small Trees

|  |                    |                                     |
|--|--------------------|-------------------------------------|
| <i>Cercis canadensis var. mexicana</i> | Mexican redbud     | Rich, moist sandy loam              |
| <i>C. canadensis var. texensis</i>     | Redbud             | Rich, moist sandy loam              |
| <i>Chilopsis linearis</i>              | Desert willow      | Dry, well-drained areas             |
| <i>Cotinus obovatus</i>                | Smoketree          | Rocky banks and hillsides           |
| <i>Diospyros texana</i>                | Texas persimmon    | Dry, well-drained sites             |
| <i>Eysenhardtia texana</i>             | Texas kidneywood   | Dry, well-drained sites             |
| <i>Ilex decidua</i>                    | Possom-haw holly   | Rich, moist soils                   |
| <i>I. vomitoria</i>                    | Yaupon             | Low, moist woods                    |
| <i>Parkinsonia aculeata</i>            | Retama             | Moist, sandy soils                  |
| <i>Pistacia texana</i>                 | Texas pistachio    | Rocky limestone soil                |
| <i>Prosopis glandulosa</i>             | Mesquite           | Variety of soils, well-drained site |
| <i>Prunus mexicana</i>                 | Mexican plum       | Well-drained, but moist sites       |
| <i>Rhamnus caroliniana</i>             | Carolina buckthorn | Low areas, moist site               |
| <i>Rhus glabra</i>                     | Scarlet sumac      | Moist, rich soil                    |
| <i>Sophora affinis</i>                 | Eye's necklace     | Limestone soils on hills and banks  |
| <i>S. secundiflora</i>                 | Mountain laurel    | Limestone soils                     |
| <i>Ungnadia speciosa</i>               | Mexican buckeye    | Limestone soils and moist areas     |

## TREES

### Edwards Plateau (west of the Balcones fault line)

#### Conifers

|                             |                   |                    |
|-----------------------------|-------------------|--------------------|
| <i>Juniperus virginiana</i> | Eastern red cedar | Fields, grasslands |
| <i>Taxodium distichum</i>   | Bald cypress      | Along stream banks |

#### Shade Trees

|   |                      |                                   |
|---|----------------------|-----------------------------------|
| <i>Arbutus xalapensis</i>                             | Texas madrone        | Limestone or igneous hills        |
| <i>Carya illinoensis</i>                              | Pecan                | Rich, river-bottom soil           |
| <i>Fraxinus texensis</i>                              | Texas ash            | Prefers limestone hills           |
| <i>Juglans microcarpa</i>                             | Texas black walnut   | Valleys and rocky stream beds     |
| <i>J. nigra</i>                                       | Eastern black walnut | Well-drained, loamy soil          |
| <i>Plantanus occidentalis</i><br>var. <i>glabrata</i> | Texas plane tree     | Limestone soils                   |
| <i>Quercus glaucooides</i>                            | Lacy oak             | Limestone soils                   |
| <i>O. buckleyi</i>                                    | Buckley oak          | Limestone soils                   |
| <i>O. macrocarpa</i>                                  | Bur oak              | Moist forests along streams       |
| <i>O. muhlenbergii</i>                                | Chinkapin oak        | Calcareous uplands                |
| <i>O. pungens</i> var. <i>vaseyana</i>                | Vasey oak            | Dry, rocky slopes                 |
| <i>O. fusiformis</i>                                  | Escarpment live oak  | Sandy loam soils, also clay soils |
| <i>Sapindus drummondii</i>                            | Western soapberry    | Moist soils along streams         |
| <i>Ulmus crassifolia</i>                              | Cedar elm            | Prefers limestone soils           |

#### Small Trees

|  |                    |                                     |
|--|--------------------|-------------------------------------|
| <i>Acacia wrightii</i>                           | Wright acacia      | Dry, rocky soils                    |
| <i>Acer grandidentatum</i>                       | Bigtooth maple     | Valleys & canyons (protected areas) |
| <i>Aesculus arguta</i>                           | White buckeye      | Limestone and granite soils         |
| <i>A. pavia</i>                                  | Red buckeye        | Limestone canyons and rocky hills   |
| <i>Cercis canadensis</i><br>var. <i>mexicana</i> | Mexican redbud     | Rich, moist sandy loam              |
| <i>C. canadensis</i> var. <i>texensis</i>        | Redbud             | Rich, moist sandy loam              |
| <i>Chilopsis linearis</i>                        | Desert willow      | Dry, well-drained areas             |
| <i>Cotinus obovatus</i>                          | Smoketree          | Rocky banks and hillsides           |
| <i>Diospyros texana</i>                          | Texas persimmon    | Dry, well-drained sites             |
| <i>Eysenhardtia texana</i>                       | Texas kidneywood   | Dry, well-drained sites             |
| <i>Ilex decidua</i>                              | Possom-haw holly   | Rich, moist soils                   |
| <i>I. vomitoria</i>                              | Yaupon             | Low, moist woods                    |
| <i>Parkinsonia aculeata</i>                      | Retama             | Moist, sandy soils                  |
| <i>Pistacia texana</i>                           | Texas pistachio    | Rocky limestone soil                |
| <i>Prosopis glandulosa</i>                       | Mesquite           | Variety of soils, well-drained site |
| <i>Prunus mexicana</i>                           | Mexican plum       | Well-drained, but moist sites       |
| <i>Rhamnus caroliniana</i>                       | Carolina buckthorn | Low areas, moist site               |
| <i>Rhus glabra</i>                               | Scarlet sumac      | Moist, rich soil                    |
| <i>Sophora affinis</i>                           | Eye's necklace     | Limestone soils on hills and banks  |
| <i>S. secundiflora</i>                           | Mountain laurel    | Limestone soils                     |

*Ungradiad speciosa*  
*Yucca thompsonia*

Mexican buckeye  
Thompson yucca

Limestone soils and moist areas  
Dry, rocky sites

## VINES

*Campsis radicans*  
*Clematis pitcheri*

Trumpet vine  
Purple leatherflower

Sun to part sun  
Sun to part sun  
Limestone cliffs, rocky areas, sun to part sun

*C. texensis*  
*Lonicera sempervirens*  
*Parthenocissus quinquefolia*  
*Passiflora incarnata*

Scarlet leatherflower  
Coral honeysuckle  
Virginia creeper  
Passion flower

Sun  
Sun to part sun  
Sun to shade, part sun

## GRASSES

*Andropogon gerardi*  
*A. glomeratus*  
*Bouteloua curtipendula*  
*B. hirsuta*  
*B. pectinata*  
*Buchloe dactyloides*  
*Hilaria belangeri*  
*Melica nitens*  
*Muhlenbergia hindheimeri*  
*M. reverchonii*  
*Panicum virgatum*  
*Schizachyruim scoparium*  
*Sporobolus asper*  
*Tripsacum dactyloides*

Big bluestem  
Bushy bluestem  
Sideoats grama  
Hairy grama  
Tall grama  
Buffalograss  
Curly mesquite  
Threeflower melic  
Lindheimer muhly  
Seep muhly  
Switchgrass  
Indiangrass  
Tall dropseed  
Eastern gramagrass

Prairies, open woods, sandy-loamy soil  
Prairies, open woods, sandy-loamy soil  
Prairies, open woods, sandy-loamy soil  
Low, moist sites  
Loose, alkaline soils  
Variety of soils  
Limestone outcrops and hilltops  
Full sun; prefers clay soils  
Rocky slopes, hillsides, grassy plains  
Calcareous moist sites  
Moist lowlands  
Open woods and prairies  
Borders of woods and prairies  
Low, moist grasslands

# Deer Resistant Plants That Are Well-adapted to Central Texas

Loss of habitat and other environmental stress can result in almost any plant being eaten by deer. Moreover, deer tastes vary widely. This list ranks each plant for deer resistance through the number in parentheses at the end of the listing.

- 1 = Safe; Deer don't eat**
- 2 = Deer eat flowers only**
- 3 = Deer sometimes eat**
- 4 = Deer eat plants and flowers, but it's not a first choice**

## Annuals

Bluebonnet, LUPINUS (1)  
Marigold, TAGETES spp. (3)  
Periwinkle, VINCA rosea (3)  
ZINNA (3)

## Bulbs

CALADIUM (3)  
Daffodil (1)  
IRIS (1)  
Snowdrop (1)  
Tulip (1)

## Grasses

Bamboos, BAMUSA (3)  
Beargrass, NOLINA spp. (1)  
Fescues, FESCUEA spp. (3)  
Little bluestem (1)  
Muhly Grass, MUHLENBERGIA lindeim (1)  
Pampas grass, CORTADERIA spp. (1)  
Purple Fountain Grass (1)  
Seep Muhly (1)

## Herbs

ALOE (1)  
ARTEMISIA (3)  
English Lavender (3)  
Mexican Marigold Mint (3)  
Mexican Oregano (1)  
Rosemary (1)  
Sage (1)  
Yarrow (3)

## Perennials

AGAVE (1)  
AJUGA reptans (3)  
Artichoke (3)  
ASTER frikartii (3)  
Bee Balm, MONARDA (3)  
Black-eyed Susan, RUDECKIA hirta (3)  
Blackfoot Daisy, MELAMPODIUM leucanthum (3)  
Butterfly Weed, ASCLEPIAS tuberosa (3)  
Cactus (1)  
Columbine, AQUILEGIA canadensis (3)  
Coneflower, ECHINACEA spp. (3)  
COREOPSIS hyb. And spp. (2)  
Dusty Miller, CENTAUREA cineraria (3)

Ferns: Wood fern, DRYOPTERIS spp. (1)  
Foxglove, DIGITALIS (2)  
Gayfeather, LIATRIS (2)  
Hummingbird Bush, ANISACANTHUS (1)  
IRIS (1)  
Lamb's Ear, STACHYS byzantina (1)  
LANTANA (horrida, no nibbling) (3)  
Lavender Cotton, SANTOLINA (1)  
Lily of the Nile, AGAPANTHUS (1)  
Mexican Marigold Mint, TAGETES lucida (3)  
Mexican Petunia, RUELLIA spp. (1)  
OXALIS (3)

Oxeye Daisy, CHRYS leucanthurn (1)  
PENSTEMON (3)  
Red Yucca, HESPERALOE parvifolia  
(2)  
Rock Rose, PAVONIA (3)  
Roses (Lady Banks Rose, no nibbling)  
(4)  
Rosemary, ROSMARINUS officinalis (1)  
Russian Sage, PAERVOSDIA (1)  
SALVIA coccinea (3)  
SALVIA greggii (Cherry sage, less

nibbling) (3)  
SALVIA leucantha (1)  
Silver Artemisia, ARTEMISIA  
ludoviciana (2)  
Sotol, DASYLIRION spp. (1)  
Spiderwort, TRADESCANTIA spp. (3)  
Turks Cap, MALVAVISCUS arboreus  
(3)  
Yarrow, ACHILLEA spp. (3)  
YUCCA (2)  
Zexmenia, WEDELIA hispida (1)

### Shrubs

ABELIA spp. (3)  
Agarito, BERBERIS trifoliata (1)  
AGAVE  
Barberry, BERBERIS (pygmy not  
resistant) (1)  
Bear Grass, NOLINA spp. (1)  
Beautyberry, CALLICARPA americana  
(1)  
Buckeye, AESCULUS pavia (3)  
Butterfly Bush, BUDDLEIA (3)  
CASSIA spp. (3)  
Cast Iron Plant, ASIDISTRA (3)  
Cacuts (1)  
Cenizo, LEUCOPHYLLUM frutescens  
(1)  
Cherry Sage (3)  
COTONEASTER (3)  
Dwf. Chinese Holly, ILEX (1)  
Dwf. Yaupon, ILEX (stokes variety) (1)  
ELEAGNUS (3)  
Evergreen Sumac, RHUS virens (1)  
Germander, TEUCRIUM fruticans (3)  
HYPERICUM (3)  
Junipers (most varieties) (1)  
Kidneywood, EYSENHARDTIA texana  
(3)  
Mistflower, EUPATORIUM (1)  
Mexican Oregano, POLIOMINTHA  
longiflora (1)

Mountain Laurel, SOPHORA  
secundiflora  
NANDINA nana and domestica (3)  
Oleander, NERIUM (1)  
Pampas Grass, CORTADERIA selloana  
(1)  
Prickly Pear Cactus (1)  
Privet (3)  
PYRACANTHA spp. (1)  
Red Yucca, HESPERALOE parviflora  
(3)  
Rosemary, ROSMARINUS officinalis (1)  
SALVIA greggii (red) (3)  
SALVIA leucantha (1)  
SANTOLINA (1)  
Sotol, DASYLIRION (2)  
SPIREA (3)  
Sumac, RHUS spp. (1)  
Texas Persimmon, DIOSPYROS texana  
(1)  
Texas Sage, LEUCOPHYLLUM  
frutescens (1)  
VIBURNUM (1)  
Wax Myrtle, MYRICA cerifera (1)  
Yaupon, ILEX (Use Stokes, not Strahn)  
(1)  
Yew Pine, PODOCARPUS  
macrophyllus (1)  
YUCCA

Anacacho Orchid (1)

### Trees

Ash, FRAXINUS spp. (1)

Bald Cypress, TAXODIUM distichum (1)  
Bois d'arc (1)  
Cedar Elm (1)  
Chaste Tree, VITEX spp. (1)  
Cherry Laurel, PRUNUS caroliniana (1)  
Crepe Myrtle (old varieties) (1)  
Deodora Cedar (1)  
Elm (all varieties) (1)  
Fig, FICUS spp. (1)  
Juniper (1)  
Maple, ACER grandidentatum (1)  
Mesquite, PROSOPIS (beans eaten) (1)  
Mexican Persimmon, DIOSPYROS  
texana (1)

Mexican Plum, PRUNUS mexicana (1)  
Mountain Laurel (1)  
Oaks, QUERCUS spp. (1)  
Palm (all varieties) (1)  
Pecan (1)  
Pine (3)  
Possum Haw, ILEX decidua (1)  
Redbud (Eastern & Mexican nibbled) (3)  
Retama (3)  
Smoke Tree, COTINUS obovatus (1)  
Sumac, RHUS spp. (1)  
Walnut (1)  
Yaupon, ILEX vomitoria (1)

### Vines & Groundcovers

AJUGA (3)  
Asiatic Jasmine (1)  
Carolina Jessamine (3)  
CLEMATIS (3)  
Confederate Jasmine (3)  
Cross Vine (1)  
English & Algerian Ivy (1)  
Ferns (3)  
Fig Ivy (3)

Honeysuckle (Coral & Purple nibbled  
less) (3)  
Liriope (4)  
Monkey Grass (3)  
Muhly Grass (3)  
SANTOLINA (1)  
VERBENA (3)  
Virginia Creeper (3)  
WISTERIA (3)  
Yarrow (3)

