

## EDWARDS PLATEAU LIMESTONE SHRUBLAND

**Nature Serve ID:** CES303.041

**Geology:** Often on massive limestone such as Edwards or related formations.

**Landform:** This system may occur on plateaus, or slopes, and may often form a discontinuous band around a plateau edge as it breaks into the adjacent slope.

**Soils:** Soils are characterized by Shallow or Very Shallow Ecological Sites, but may also be found on Low Stony Hill Ecological Sites.

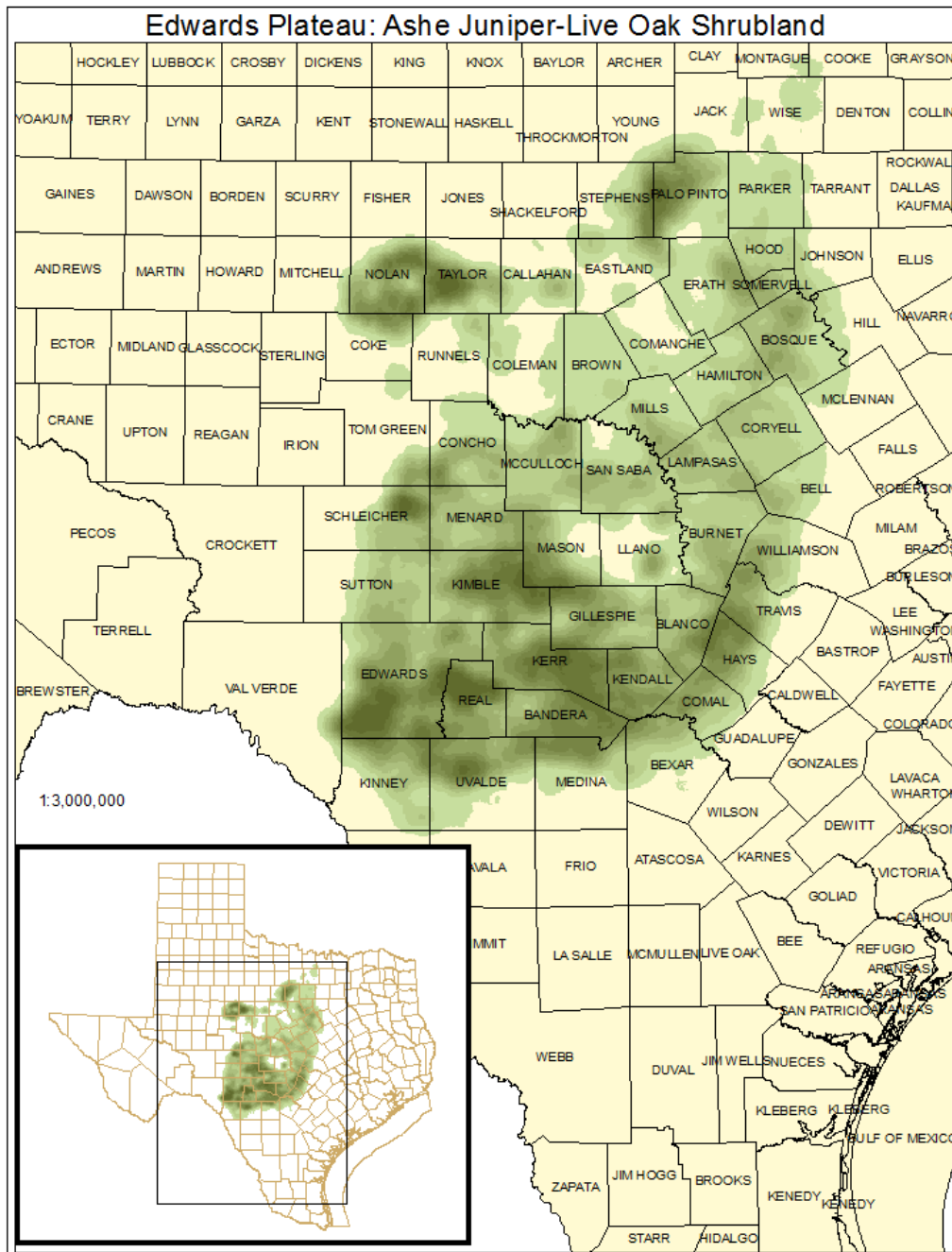
**Parent Description:** This system may be represented by extensive continuous shrub cover, or occur as a discontinuous shrubland, often with scattered emergent overstory trees. *Quercus sinuata* var. *breviloba* (white shin oak), *Quercus fusiformis* (plateau live oak), and/or *Juniperus ashei* (Ashe juniper) may be important components of the system. In the west, *Pinus remota* (paper-shell pinyon) may also contribute to a scattered emergent overstory. Shrub cover may be dominated by these species, or may be represented as an assemblage of a rather diverse array of species including *Rhus virens* (evergreen sumac), *Rhus lanceolata* (prairie sumac), *Cercis canadensis* var. *texensis* (Texas redbud), *Forestiera pubescens* (elbowbush), *Forestiera reticulata* (netleaf forestiera), *Ungnadia speciosa* (Mexican buckeye), *Sophora secundiflora* (Texas mountain-laurel), *Diospyros texana* (Texas persimmon), *Salvia ballotiflora* (mejerana), *Mimosa borealis* (fragrant mimosa), *Condalia hookeri* (brasil), *Rhus trilobata* (skunkbush sumac), *Opuntia engelmannii* var. *lindheimeri* (Lindheimer pricklypear), and *Mahonia trifoliolata* (agarito). This system also includes *Quercus mohriana* (Mohr's shin oak) or *Quercus vaseyana* (Vasey shin oak) dominated shrublands that are more common to the west. Herbaceous cover may be patchy and is generally graminoid with species including *Schizachyrium scoparium* (little bluestem), *Bouteloua curtipendula* (sideoats grama), *Bouteloua rigidisetata* (Texas grama), *Bouteloua trifida* (red grama), *Hilaria belangeri* (curlmesquite), *Bothriochloa laguroides* ssp. *torreyana* (silver bluestem), *Nassella leucotricha* (Texas wintergrass), *Erioneuron pilosum* (hairy tridens), *Aristida* spp. (threeawn), and others. Disturbances such as fire may be important processes maintaining this system. However, it appears to persist on thin-soiled sites. To the west, semi-arid conditions result in the replacement of upland woodlands with shrublands. *Juniperus pinchotii* (redberry juniper) increasingly replaces *Juniperus ashei* (Ashe juniper) in this semi-arid region, and shrubs such as *Prosopis glandulosa* (honey mesquite), *Leucophyllum frutescens* (cenizo), *Acacia berlandieri* (guajillo), *Mimosa aculeaticarpa* var. *biuncifera* (catclaw mimosa), and *Condalia viridis* (green condalia) become increasingly common. Succulents such as *Dasyilirion texanum* (Texas sotol), *Nolina texana* (Texas sacahuista), and *Agave lechuguilla* (lechuguilla) also become increasingly common. In these situations, sometimes large patches are dominated by grasses such as *Bouteloua trifida* (red grama), *Bouteloua curtipendula* (sideoats grama), *Hilaria belangeri* (curlmesquite), *Erioneuron pilosum* (hairy tridens), *Tridens muticus* (slim tridens), and *Nassella leucotricha* (Texas wintergrass). Interestingly, non-native grasses such as *Bothriochloa ischaemum* var. *songarica* (King Ranch bluestem) are less frequently encountered as dominants of occurrences in the semi-arid west, than in less xeric sites to the east. As conditions become more xeric to the west, this system transitions to shrublands more characteristic of the Chihuahuan Desert region, often with conspicuous increases in succulents such as *Dasyilirion texanum* (Texas sotol), *Nolina texana* (Texas sacahuista), *Agave lechuguilla* (lechuguilla), and even *Fouquieria splendens* (ocotillo). To the south, the system transitions to the shrublands of shallow soils characteristic of the South Texas Plains, with shrubs

such as *Leucophyllum frutescens* (cenizo), *Acacia berlandieri* (guajillo), and *Acacia rigidula* (blackbrush). Southern Val Verde County represents a particularly confusing mosaic of these three types.

**ECOLOGICAL MAPPING SYSTEMS:****EDWARDS PLATEAU: ASHE JUNIPER / LIVE OAK SHRUBLAND****Mapping System ID: 1205**

**EMS Description:** This is a commonly encountered type of shrub cover on the Edwards Plateau. It is usually dominated by *Juniperus ashei* (Ashe juniper), often to the almost total exclusion of other species. If other species are present, *Quercus fusiformis* (plateau live oak), *Quercus vaseyana* (Vasey shin oak), *Quercus mohriana* (Mohr's shin oak), *Sophora secundiflora* (Texas mountain-laurel), *Mahonia trifoliolata* (agarito), and/or *Rhus virens* (evergreen sumac) contribute to the evergreen cover of this shrubland. Deciduous shrub species, including *Rhus lanceolata* (prairie sumac), *Cercis canadensis* var. *texensis* (Texas redbud), *Diospyros texana* (Texas persimmon), *Prosopis glandulosa* (honey mesquite), and *Forestiera* spp. (elbowbush) may also be present but never dominant. Areas mapped as this system may, in some cases, lack significant cover of *Juniperus ashei* (Ashe juniper) and these sites are dominated by broad-leaved evergreen shrubs. Monotypic stands of *Quercus fusiformis* (plateau live oak) (occupying the shrub layer) are relatively uncommon. A sparse overstory canopy of *Juniperus ashei* (Ashe juniper), *Quercus fusiformis* (plateau live oak), *Pinus remota* (paper-shell pinyon), *Prosopis glandulosa* (mesquite), *Quercus sinuata* var. *breviloba* (white shin oak), *Quercus vaseyana* (Vasey shin oak), *Celtis* spp. (hackberry) or other species may sometimes be present. Where deciduous shrubs are present and shrub cover is distributed in a patchy mosaic, such sites may be used by black-capped vireos (*Vireo atricapilla*). Some areas currently mapped as Native Invasive: Juniper Shrubland (generally mapped on deeper soils) may be more appropriately considered as part of this vegetation type. Land use history likely contributes to the extensive nature of this type (including the Native Invasive: Juniper Shrubland on the Edwards Plateau) on the landscape. The unpalatable nature of many of the evergreen shrubs in this vegetation type enhances their proliferation under heavy browsing. The majority of shrublands on the Edwards Plateau is mapped as this vegetation type.

**Distribution Map:**



**Example:****Public Land Occurrence:**

Abilene State Park: Texas Parks & Wildlife Department

Barton Creek habitat Preserve: The Nature Conservancy

Colorado Bend State Park: Texas Parks & Wildlife Department

Devil's Sinkhole State Natural Area: Texas Parks & Wildlife Department

Fort Richardson State Park and Historical Site: Texas Parks & Wildlife Department

Garner State Park: Texas Parks & Wildlife Department

Government Canyon State Natural Area: Texas Parks & Wildlife Department

Hill Country State Natural Area: Texas Parks & Wildlife Department

Independence Creek Preserve: The Nature Conservancy

Kerr Wildlife Management Area: Texas Parks & Wildlife Department

Kickapoo Cavern State Park: Texas Parks & Wildlife Department

Pedernales Falls State Park: Texas Parks & Wildlife Department

Possum Kingdom State Park: Texas Parks & Wildlife Department

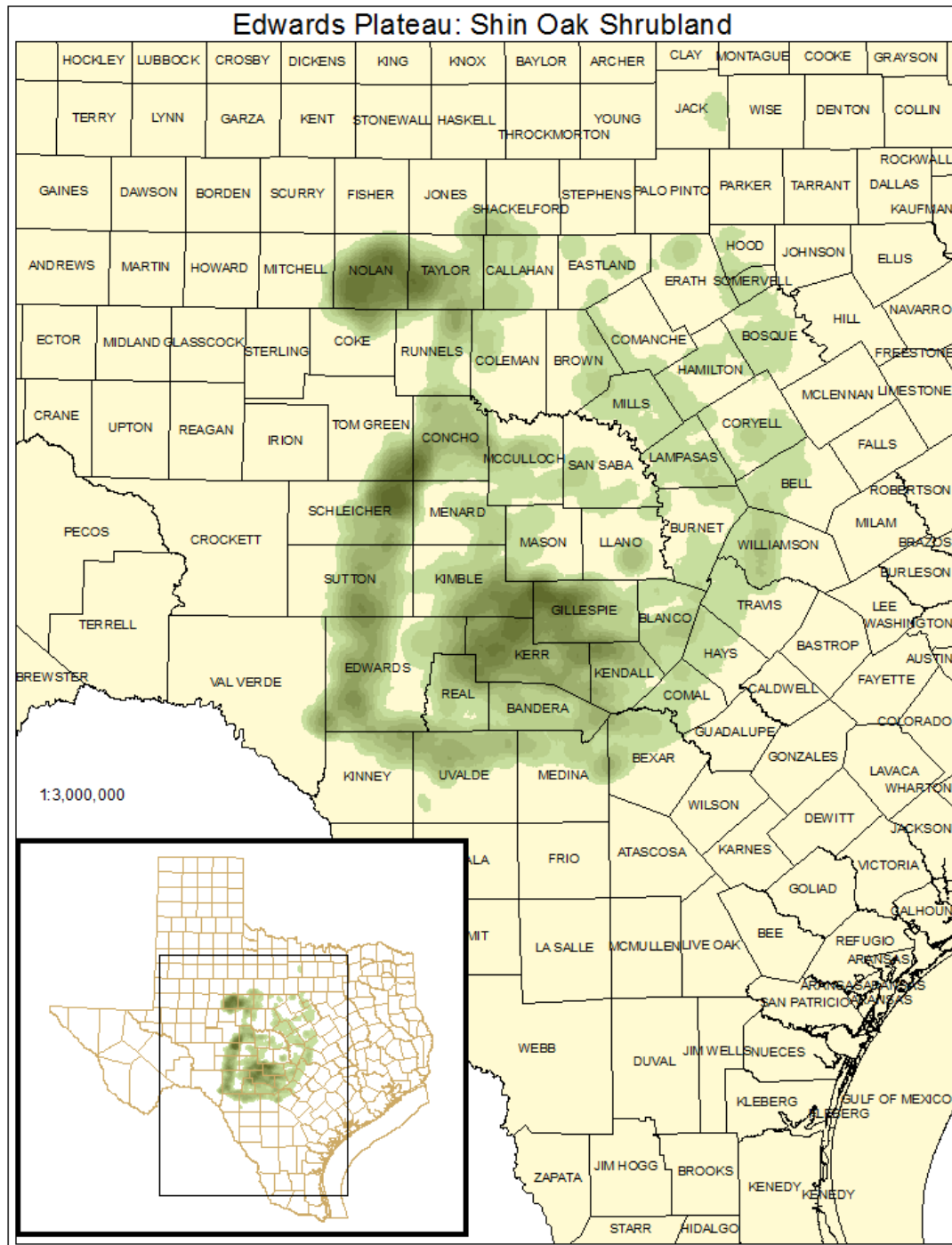
Walter Buck Wildlife Management Area: Texas Parks & Wildlife Department

## EDWARDS PLATEAU: SHIN OAK SHRUBLAND

### Mapping System ID: 1206

**EMS Description:** *Quercus sinuata* var. *breviloba* (white shin oak) may be the significant dominant in these shrublands, sometimes forming nearly monotypic stands. *Quercus fusiformis* (plateau live oak), *Juniperus ashei* (Ashe juniper), and other broad-leaved evergreen shrub species may be common components, but are not dominant. Scattered individuals of these species may be emergent as trees (along with other species such as *Celtis* spp. (hackberry), *Prosopis glandulosa* (mesquite), *Pinus remota* (paper-shell pinyon), *Quercus buckleyi* (Texas oak)) and form a sparse overstory canopy. At some sites, *Quercus sinuata* var. *breviloba* (white shin oak) is uncommon or lacking and other deciduous shrubs dominate. Such species as *Diospyros texana* (Texas persimmon), *Cercis canadensis* var. *texensis* (Texas redbud), *Prosopis glandulosa* (honey mesquite), *Mahonia trifoliolata* (agarito), *Forestiera pubescens* (elbowbush), *Forestiera reticulata* (netleaf forestiera), *Rhus lanceolata* (prairie sumac), *Condalia hookeri* (brasil), *Rhus trilobata* (skunkbush sumac), *Ungnadia speciosa* (Mexican buckeye), and/or *Mimosa borealis* (fragrant mimosa) may be significant components. These shrublands may be surrounded by grassland, or may transition to adjacent woodland. Where these shrublands are patchy, they may represent appropriate habitat for black-capped vireos (*Vireo atricapilla*). To the south, this shrubland may transition to vegetation more commonly encountered in the South Texas Plains, with shrub species such as *Leucophyllum frutescens* (cenizo), *Acacia berlandieri* (guajillo), *Jatropha dioica* (leatherstem), and *Salvia ballotiflora* (shrubby blue sage).

**Distribution Map:**



**Example:****Public Land Occurrence:**

Abilene State Park: Texas Parks & Wildlife Department

Balcones Canyonlands National Wildlife Refuge: U. S. Fish and Wildlife Service

Devil's Sinkhole State Natural Area: Texas Parks & Wildlife Department

Garner State Park: Texas Parks & Wildlife Department

Government Canyon State Natural Area: Texas Parks & Wildlife Department

Hill Country State Natural Area: Texas Parks & Wildlife Department

Kerr Wildlife Management Area: Texas Parks & Wildlife Department

Kickapoo Cavern State Park: Texas Parks & Wildlife Department

Mason Mountain Wildlife Management Area: Texas Parks & Wildlife Department

South Llano River State Park: Texas Parks & Wildlife Department

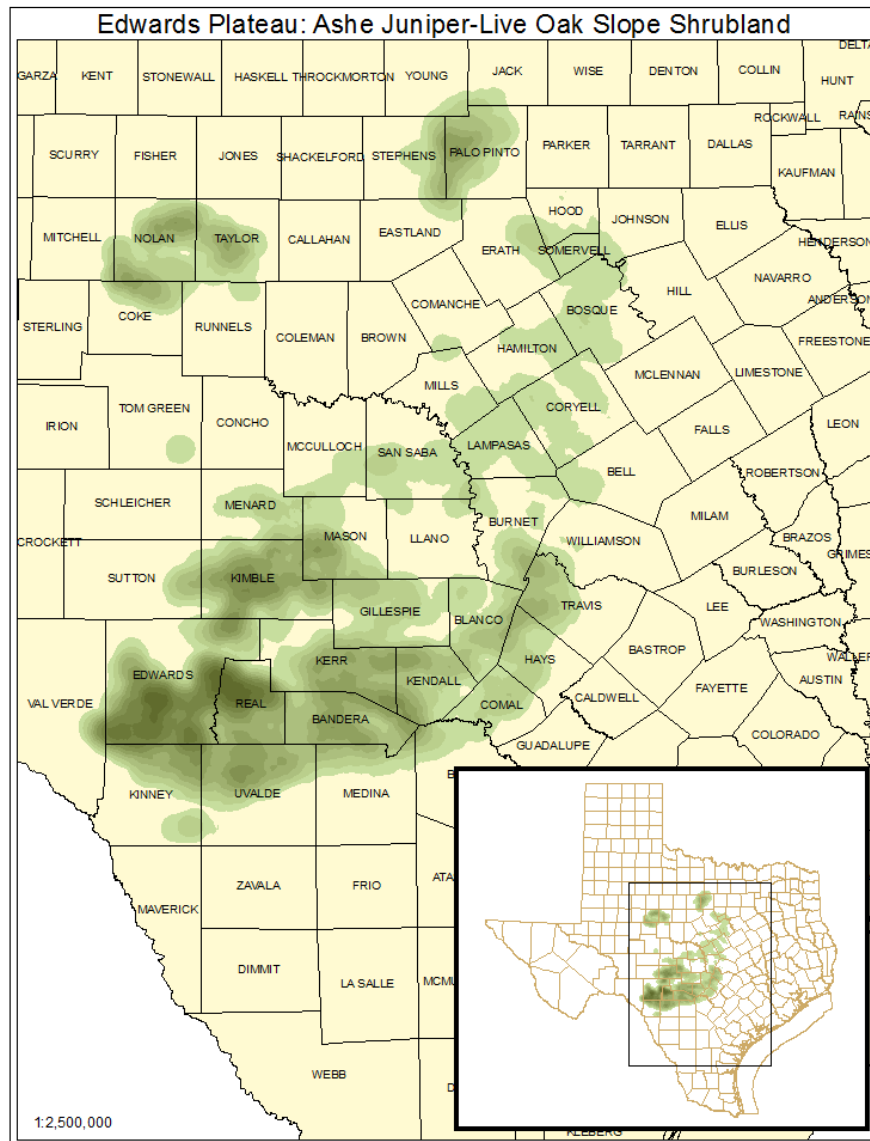


## EDWARDS PLATEAU: ASHE JUNIPER / LIVE OAK SLOPE SHRUBLAND

**Mapping System ID:** 1225

**EMS Description:** This shrubland resembles the Edwards Plateau: Ashe Juniper / Live Oak Shrubland, but occurs on slopes of greater than twenty percent and often occupies Steep Rocky and Steep Adobe ecoclasses. *Rhus virens* (evergreen sumac) and/or *Garrya ovata* var. *lindheimeri* (Lindheimer’s siltassel) may be more commonly encountered in this vegetation type. A sparse overstory of *Juniperus ashei* (Ashe juniper) and/or *Quercus fusiformis* (plateau live oak) may be present. Southern expressions may also have shrub components such as *Acacia berlandieri* (guajillo), *Jatropha dioica* (leatherstem), *Salvia ballotiflora* (shrubby blue sage), *Ungnadia speciosa* (Mexican buckeye), and *Acacia rigidula* (blackbrush).

### Distribution Map:



**Example:**



**Public Land Occurrence:**

Abilene State Park: Texas Parks & Wildlife Department

Balcones Canyonlands National Wildlife Refuge: U. S. Fish and Wildlife Service

Colorado Bend State Park: Texas Parks & Wildlife Department

Devil's Sinkhole State Natural Area: Texas Parks & Wildlife Department

Garner State Park: Texas Parks & Wildlife Department

Government Canyon State Natural Area: Texas Parks & Wildlife Department

Hill Country State Natural Area: Texas Parks & Wildlife Department

Pedernales Falls State Park: Texas Parks & Wildlife Department

Possum Kingdom State Park: Texas Parks & Wildlife Department

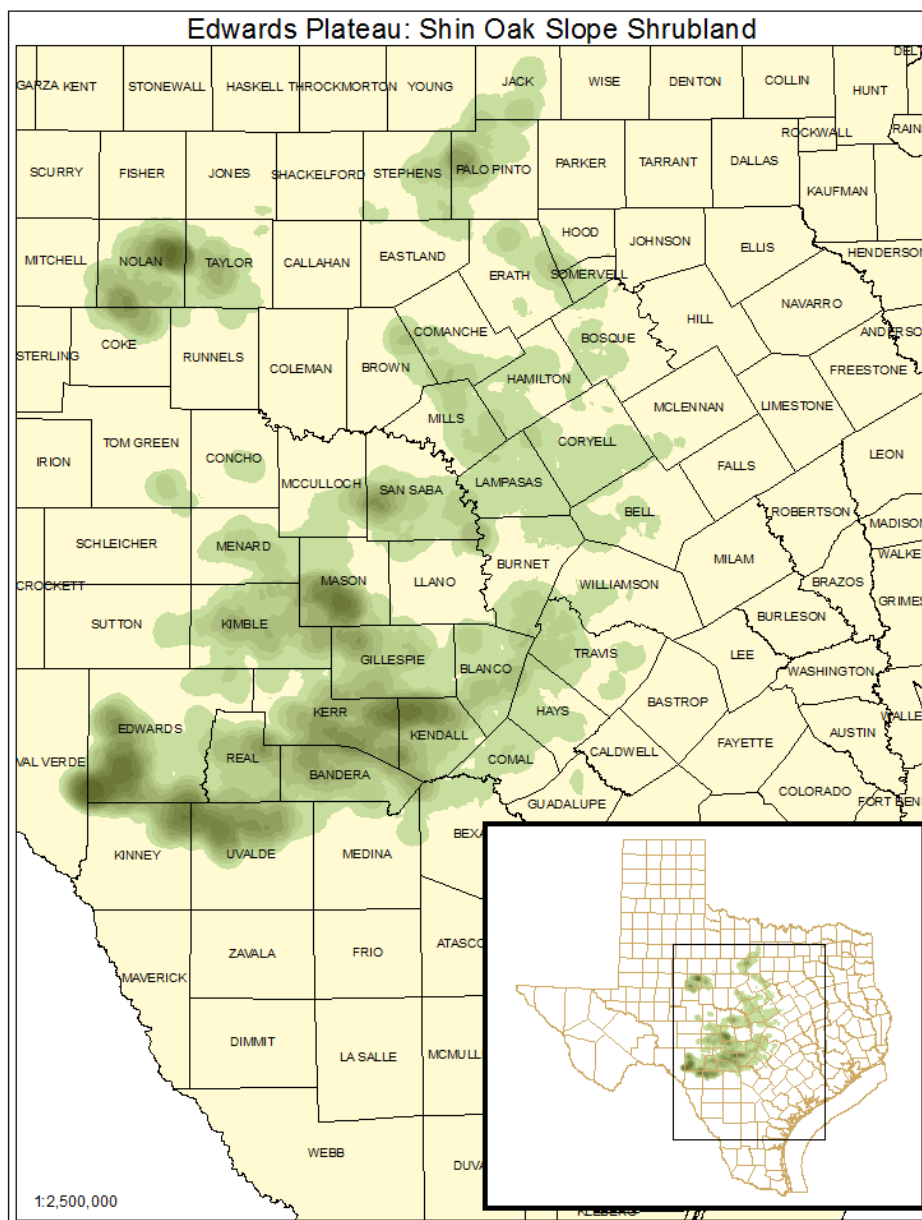
Walter Buck Wildlife Management Area: Texas Parks & Wildlife Department

## EDWARDS PLATEAU: SHIN OAK SLOPE SHRUBLAND

**Mapping System ID:** 1226

**EMS Description:** This shrubland resembles Edwards Plateau: Shin Oak Shrubland, but occurs on slopes greater than twenty percent. As with the occurrences off of slopes, *Quercus sinuata* var. *breviloba* (white shin oak) may not be dominant. *Nolina texana* (Texas sacahuista), *Acacia roemeriana* (Roemer’s acacia), *Salvia ballotiflora* (mejorana), *Ungrandia speciosa* (Mexican buckeye), and *Eysenhardtia texana* (Texas kidneywood) may be more commonly encountered on slopes than in non-slope deciduous shrublands.

**Distribution Map:**



**Example:**



**Public Land Occurrence:**

Balcones Canyonlands National Wildlife Refuge: U. S. Fish and Wildlife Service

Garner State Park: Texas Parks & Wildlife Department

Kerr Wildlife Management Area: Texas Parks & Wildlife Department

Kickapoo Cavern State Park: Texas Parks & Wildlife Department

Lost Maples State Natural Area: Texas Parks & Wildlife Department

Mason Mountain Wildlife Management Area: Texas Parks & Wildlife Department

Pedernales Falls State Park: Texas Parks & Wildlife Department

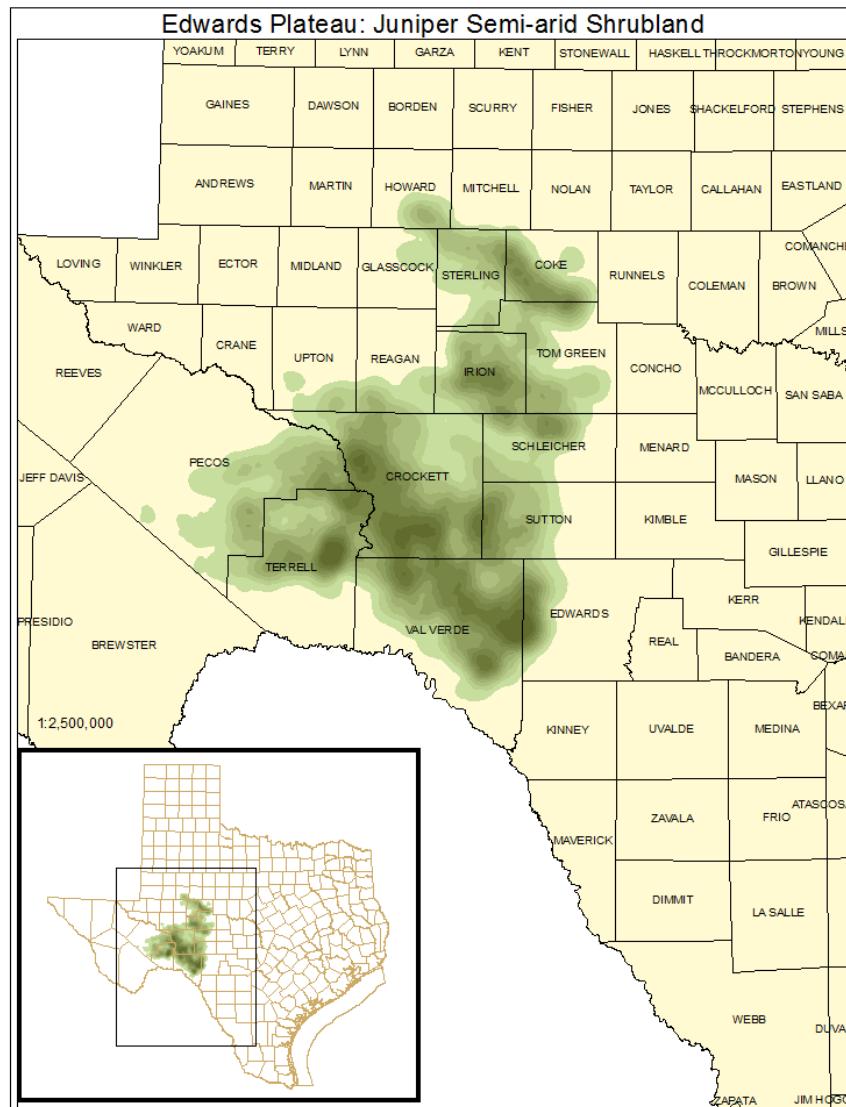
Walter Buck Wildlife Management Area: Texas Parks & Wildlife Department

## EDWARDS PLATEAU: JUNIPER SEMI-ARID SHRUBLAND

**Mapping System ID:** 1215

**EMS Description:** This shrubland is commonly encountered on the western portions of the Edwards Plateau and is dominated by *Juniperus pinchotii* (redberry juniper) or *Juniperus ashei* (Ashe juniper) shrubs. A sparse overstory canopy of *Juniperus* spp. (juniper), *Quercus fusiformis* (plateau live oak), *Pinus remota* (papershell pinyon), and/or *Prosopis glandulosa* (honey mesquite) may be present. Other shrub species commonly encountered include *Prosopis glandulosa* (honey mesquite), *Berberis trifoliolata* (agarito), *Diospyros texana* (Texas persimmon), *Leucophyllum frutescens* (cenizo), and *Acacia berlandieri* (guajillo). *Opuntia engelmannii* var. *lindheimeri* (Lindheimer pricklypear) and *Dasyliirion texanum* (Texas sotol) are commonly encountered succulents.

### Distribution Map:



**Example:**



**Public Land Occurrence:**

Amistad National Recreation Area: US National Park Service

Devils River State Natural Area: Texas Parks & Wildlife Department

Fort Lancaster State Historic Site: Texas Parks & Wildlife Department

Independence Creek Preserve: The Nature Conservancy

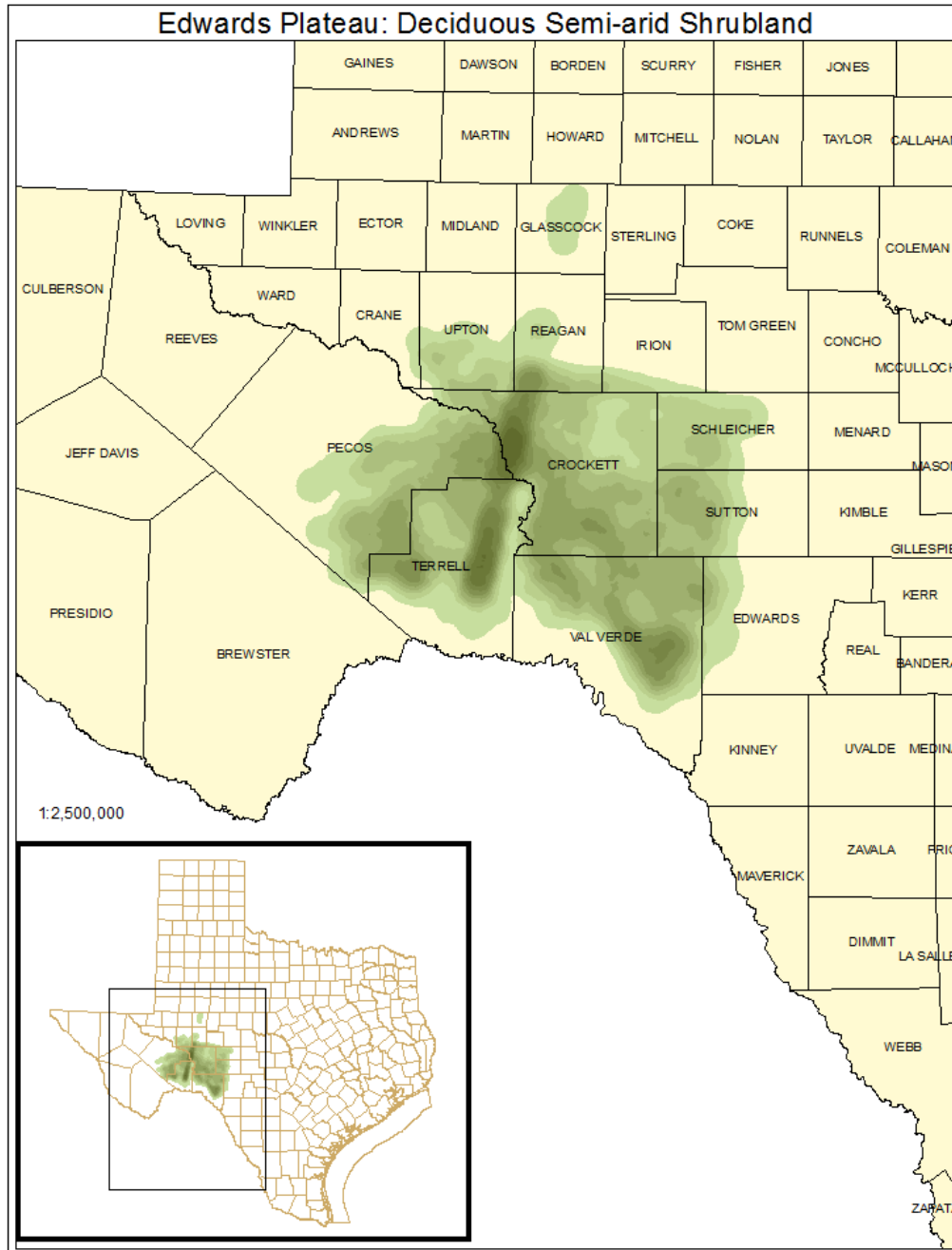
San Angelo State Park: Texas Parks & Wildlife Department

Twin Butte Reservoir Recreation Area: Texas Parks & Wildlife Department

**EDWARDS PLATEAU: DECIDUOUS SEMI-ARID SHRUBLAND****Mapping System ID:** 1216

**EMS Description:** This shrubland occurs within the more arid regions of the western portions of the Edwards Plateau. Dominant shrub species within this type include *Diospyros texana* (Texas persimmon), *Prosopis glandulosa* (honey mesquite), *Quercus vaseyana* (Vasey shin oak), *Quercus sinuata* var. *breviloba* (white shin oak), *Salvia ballotiflora* (shrubby blue sage), *Berberis trifoliolata* (agarito), *Condalia* spp. (condalia), *Sophora secundiflora* (Texas mountain-laurel), and *Acacia berlandieri* (guajillo). Succulents, including *Dasyliirion texanum* (Texas sotol), *Nolina texana* (Texas sacahuista), *Opuntia engelmannii* var. *lindheimeri* (Lindheimer pricklypear), and *Agave lechuguilla* (lechuguilla), are commonly encountered in the driest, rockiest situations. *Juniperus pinchotii* (redberry juniper), *Juniperus ashei* (Ashe juniper) and/or *Quercus fusiformis* (plateau live oak), may be present, but sites are dominated by deciduous shrubs.

**Distribution Map:**





**Example:**



**Public Land Occurrence:**

Amistad National Recreation Area: US National Park Service

Devils River State Natural Area: Texas Parks & Wildlife Department

Fort Lancaster State Historic Site: Texas Parks & Wildlife Department

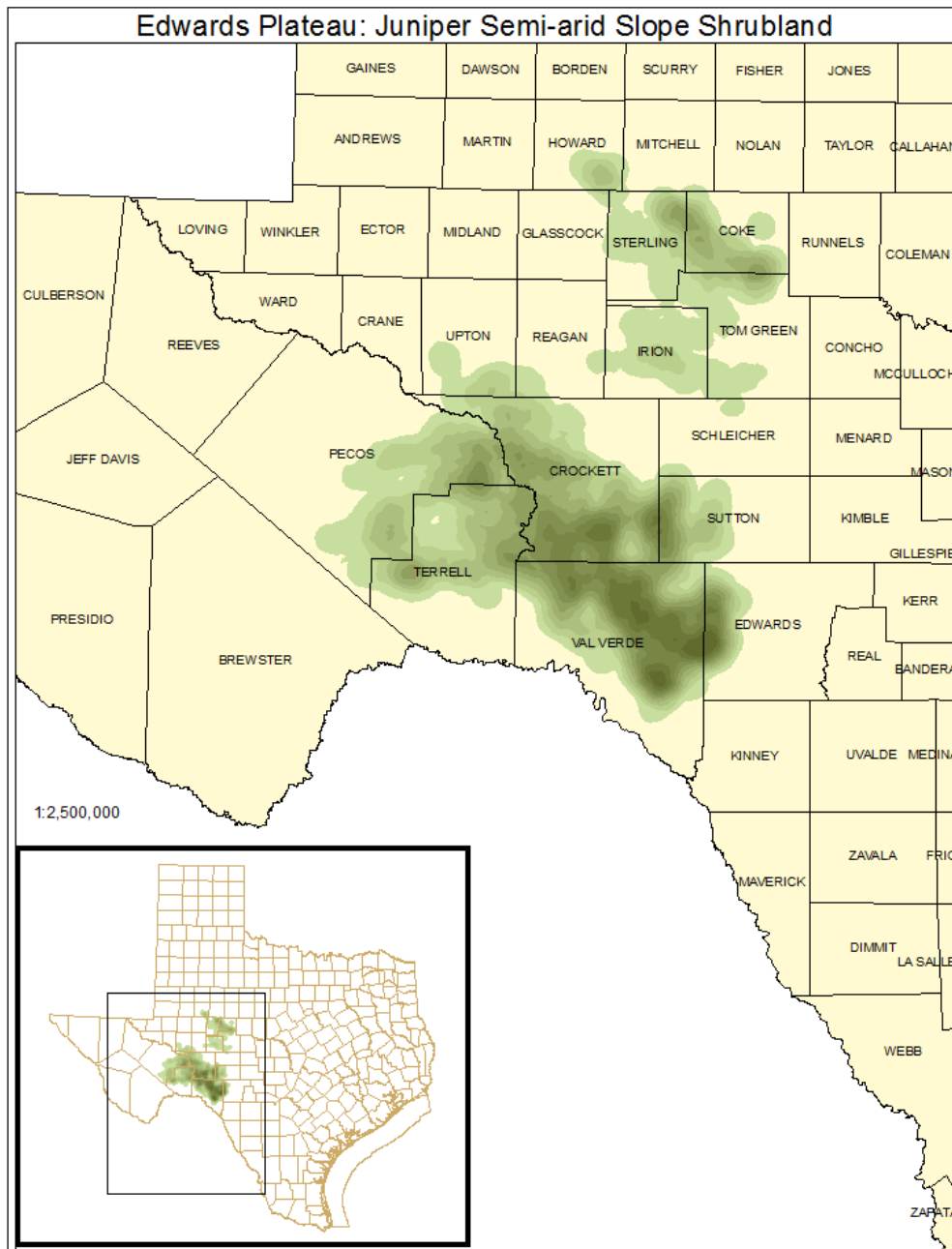
Independence Creek Preserve: The Nature Conservancy

## EDWARDS PLATEAU: JUNIPER SEMI-ARID SLOPE SHRUBLAND

**Mapping System ID:** 1235

**EMS Description:** This shrubland occurs on slopes greater than 20% in the western portions of the Edwards Plateau. They are dominated by *Juniperus pinchotii* (redberry juniper) and/or *Juniperus ashei* (Ashe juniper), but often have other deciduous shrub components (see Juniper Semi-arid Shrubland).

**Distribution Map:**



**Example:**



**Public Land Occurrence:**

Amistad National Recreation Area: US National Park Service

Devils River State Natural Area: Texas Parks & Wildlife Department

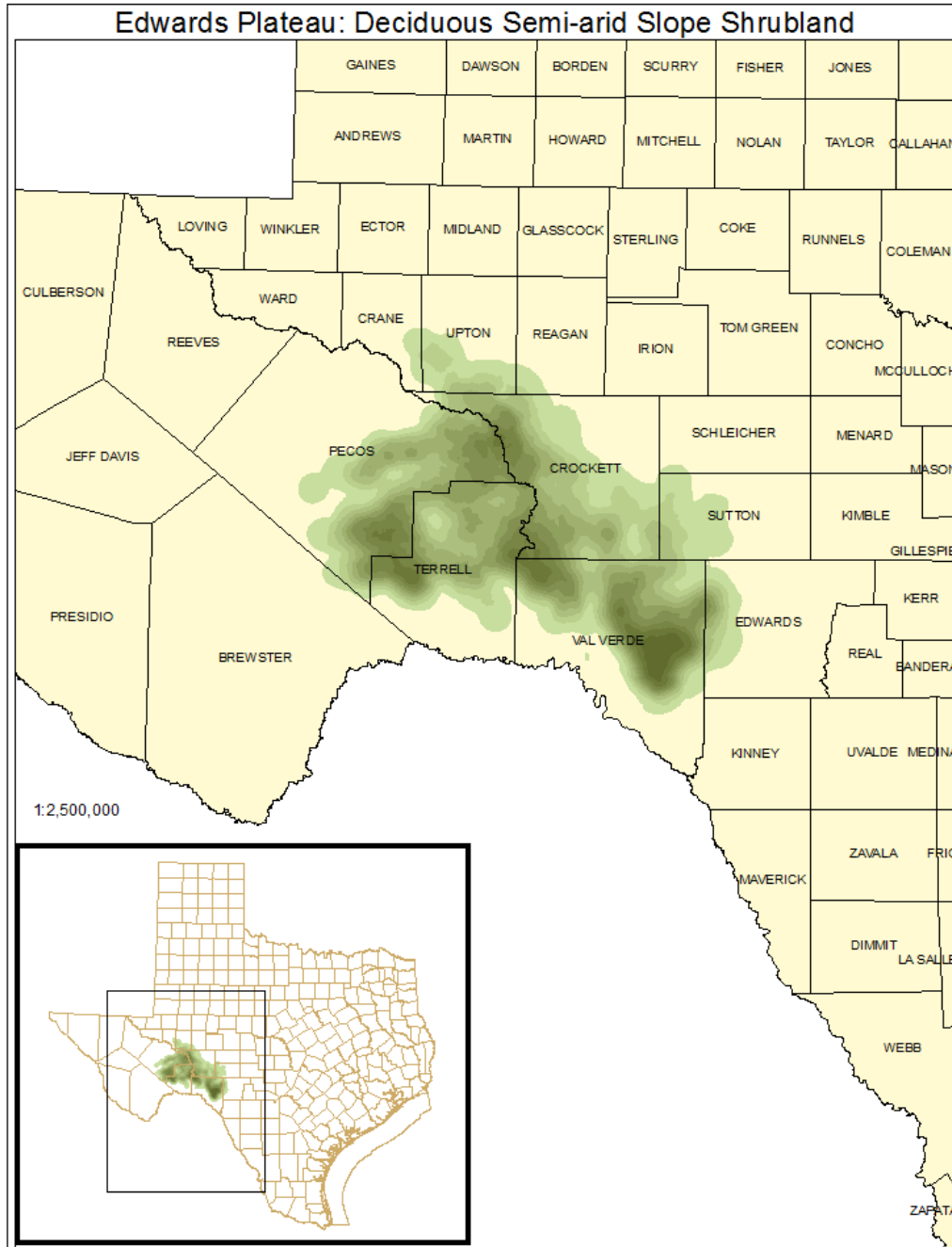
Fort Lancaster State Historic Site: Texas Parks & Wildlife Department

## EDWARDS PLATEAU: DECIDUOUS SEMI-ARID SLOPE SHRUBLAND

**Mapping System ID:** 1236

**EMS Description:** Shrublands of the western portion of the Edwards Plateau occurring on slopes greater than 20% and dominated by deciduous shrub species as described for Deciduous Semi-arid Shrubland.

**Distribution Map:**



**Example:**



**Public Land Occurrence:**

Amistad National Recreation Area: US National Park Service

Devils River State Natural Area: Texas Parks & Wildlife Department

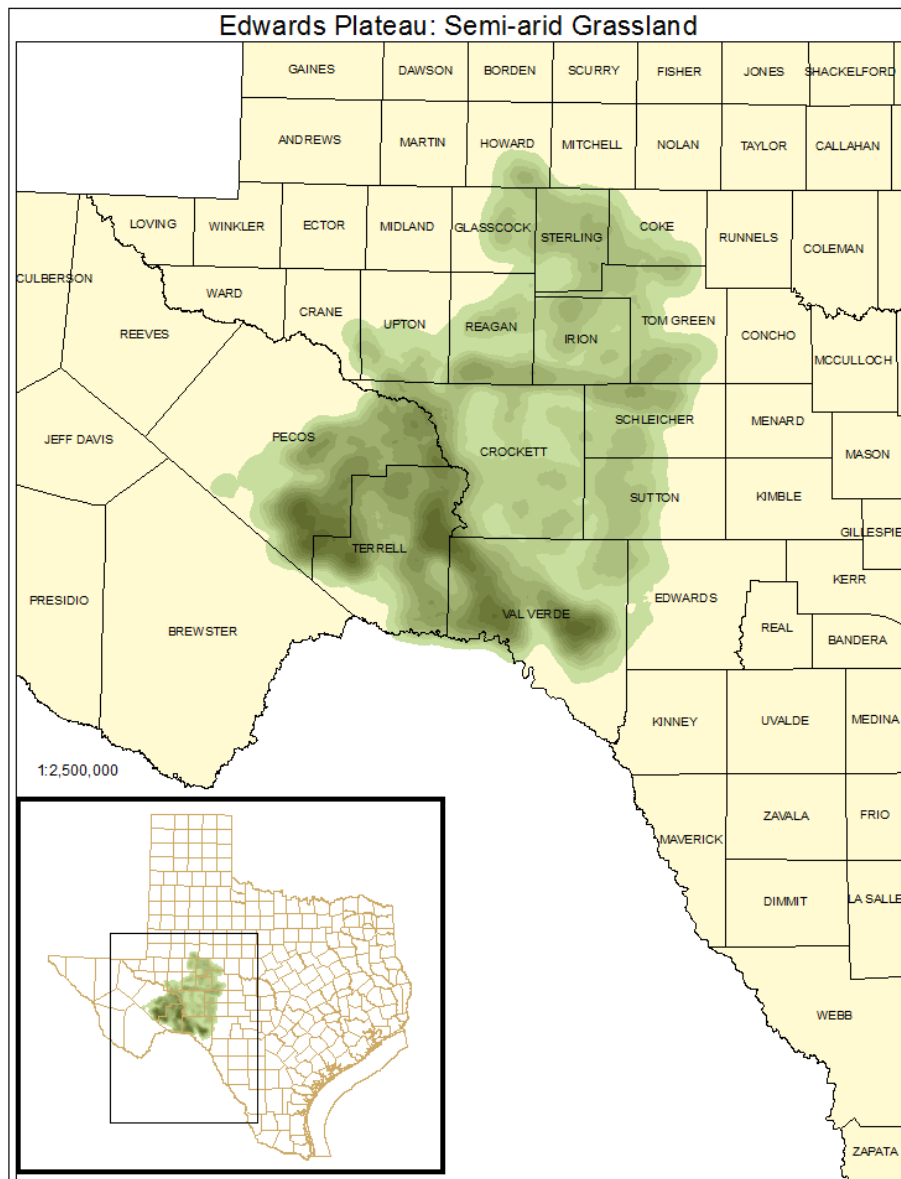
Fort Lancaster State Historic Site: Texas Parks & Wildlife Department

## EDWARDS PLATEAU: SEMI-ARID GRASSLAND

**Mapping System ID:** 1207

**EMS Description:** These grasslands form the interstices of the shrubland matrix of the western portion of the Edwards Plateau, sometimes occurring as extensive areas with reduced cover of woody and succulent species (though scattered individuals of woody species of the system may be present). Grasses such as *Aristida purpurea* (purple threeawn), *Bouteloua trifida* (red grama), *Bouteloua curtipendula* (side-oats grama), *Hilaria belangeri* (curlymesquite), *Erioneuron pilosum* (hairy tridens), *Tridens muticus* (slim tridens), *Nassella leucotricha* (Texas wintergrass), and/or *Bothriochloa laguroides* ssp. *torreyana* (silver bluestem) are common dominants.

**Distribution Map:**



**Example:**

*Not available at this time.*

**Public Land Occurrence:**

Amistad National Recreation Area

Devils River State Natural Area: Texas Parks & Wildlife Department

Fort Lancaster State Historic Site: Texas Parks & Wildlife Department

Independence Creek Preserve: The Nature Conservancy

O.C. Fisher Reservoir: Texas Parks & Wildlife Department

San Angelo State Park: Texas Parks & Wildlife Department

Twin Butte Reservoir Recreation Area: Texas Parks & Wildlife Department