
Texas Vegetation Classification Project: Interpretive Booklet for Phase 4

Texas Parks and Wildlife
Department and Texas
Natural Resources
Information System

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Introduction

The Texas Parks and Wildlife Department is mapping the existing vegetation of Texas at fine spatial and thematic resolution (more mapped vegetation types) over the course of six years (Figure 1). The outlines of phases correspond with the footprints of Thematic Mapper satellite image data in order to ensure cost efficiency. Phases 1 through 4 of the project, covering central, east, and south Texas, are complete. The following document accompanies Phase 4, including the western part of the South Texas Plains, the western-most Edwards Plateau, and a small portion of the Trans-Pecos region.

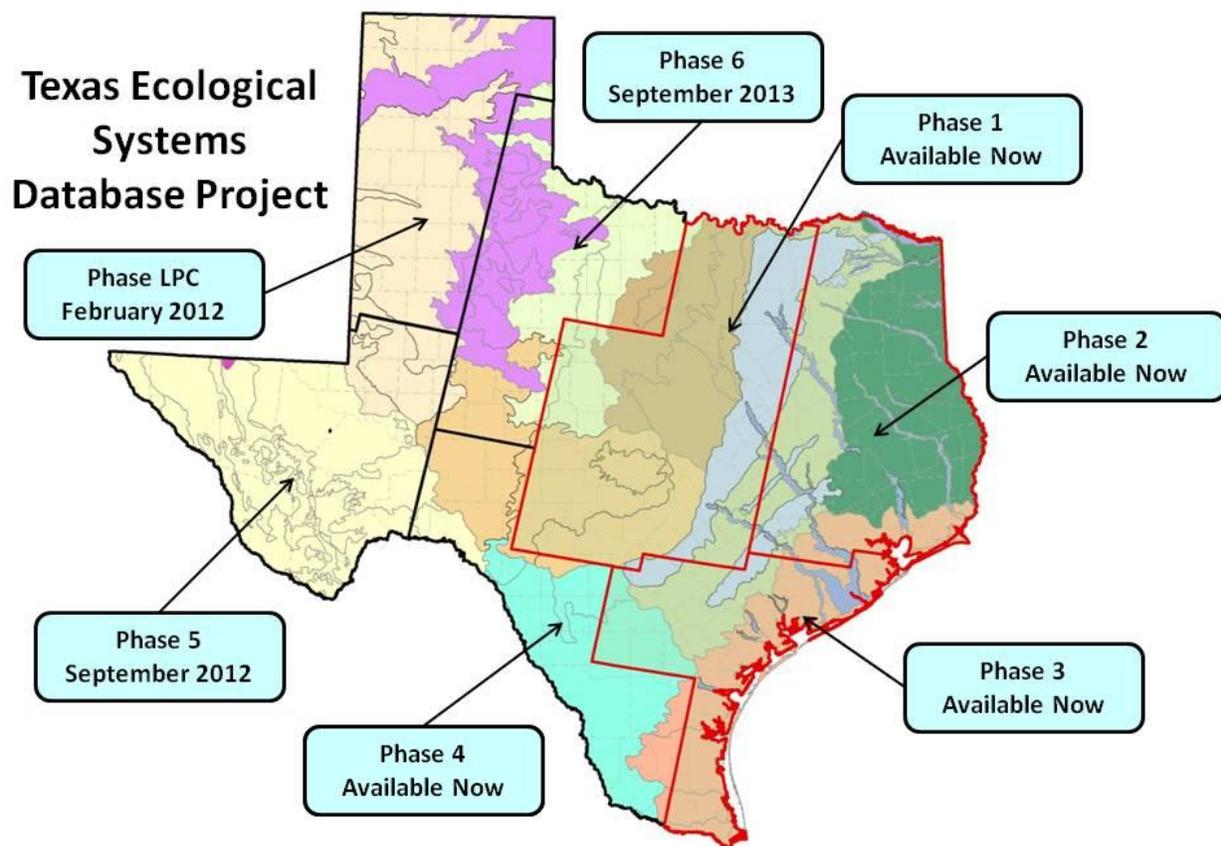


Figure 1. Texas Vegetation Classification Project Schedule. Phase LPC stands for Lesser Prairie Chicken.

The general procedure used to classify and map existing vegetation includes (1) mapping land cover from 30 m resolution satellite imagery, (2) developing image objects from air photos to improve spatial resolution to 10 m, and (3) modeling existing vegetation using information developed from digital county soil surveys and variables

developed from digital elevation models. Detailed overall methods are contained in the Phase 1 interpretative booklet, available on the Texas Parks and Wildlife public web site (<http://www.tpwd.state.tx.us/landwater/land/maps/gis/tescp/index.phtml>).

Many broad-leaved species of South Texas are drought-, rather than cold-deciduous, and many cold-deciduous species also may be drought-deciduous in dry years. Therefore, in many years no distinct cold-weather 'leaf-off' season occurs in the south, and droughts may cause cold-deciduous species to become drought-deciduous during the summer in the north. This results in some issues in distinguishing among land cover types, such as broadleaf evergreen woodland and forest, needle-leaf evergreen shrubland, and deciduous shrubland: each of these types tend to circumscribe a good deal of variation. In turn, ecoregions are diverse in Phase 4, and include habitats within the Edwards Plateau, Blackland Prairie, Post Oak Savanna, Gulf Coast Prairie, Coastal Bend, South Texas Plains, Coastal Sand Plain, subtropical Rio Grande Valley, High Plains, and xeric Trans-Pecos regions. Thus, we used a fairly broad suite of modeling rules to identify mapped vegetation types for Phase 4.

Shrublands cover much of the area of Phase 4. Because they are so widespread, landcover mapping resulted in identification of relatively more shrubland versus grassland or woodland types, and thus some seam lines are apparent when comparing Phase 4 with Phase 1 and Phase 3 results. Specifically, on the extreme southern Edwards Plateau, shrublands are sometimes mapped on Phase 4 whereas woodlands are mapped in adjacent areas of Phase 1 (see Figure 1). Likewise, more shrublands and fewer grasslands are mapping in Phase 4 versus Phase 3 in some areas along the seam line between these two in the South Texas Plains. These issues have not been entirely resolved at the time of preparation of this report (November, 2011).

Soil map units and ecological site types were used as primary modeling tools. Grouping of map units into similar habitat types for modeling was based both on ecological site type designations, and on modifications based on viewing the distribution of individual map units.

Differences among floodplain types (e.g. Coastal Bend, Edwards Plateau, South Texas, Trans-Pecos), which were mapped only on floodplain soil map units, are based on prevailing dominance patterns and circumscribe watersheds defined by drainage divides. Streams from the 100,000 scale National Hydrologic Database (NHD) were buffered by 30 meters to identify companion riparian or, for South Texas, Ramadero types. Trans-Pecos Riparian types were mapped only on floodplain soils, and not on buffered NHD line work. Additional notable modeling rules include:

1. Species range maps were used to help map types with post oak and eastern redcedar to the north and east, and to delimit where these species are replaced generally by South Texas Plains types to the west and south.
2. Slope types were mapped on slopes >20% in the Edwards Plateau and Post Oak Savanna regions, and slopes >20% were also used to define Trans-Pecos Succulent Desert Scrub in the northwestern part of Phase 4.
3. Edwards Plateau semi-arid types were distinguished from typical Edwards Plateau types based on geographic location as supported by field-collected data. They were mapped within the Semi-arid Edwards Plateau Level IV ecoregion (30d) as delineated by EPA. This landscape is predominantly shrubby or grassy with few trees over 4 meters. Additional notable differences versus typical Edwards Plateau types include: (1) communities often include redberry juniper among the important shrubs, (2) the ground flora generally is dominated by native grasses rather than introduced grasses (e.g. curlymesquite, purple threeawn, slim tridens, sideoats grama, hairy tridens), and (3) most communities contain some desert elements (e.g. Texas sotol, lechuguilla, cerosotebush). Nonetheless, the hard line delimiting typical types on the east from semi-arid types to the west is somewhat misleading, since in reality it is difficult to map the gradual gradient that occurs between these types.
4. Trans-Pecos types were mapped on steep slopes within the Semi-arid Edwards Plateau ecoregion (30d) and westward, and in southern Val Verde County. Field-collected data also drove this modeling rule. Cenizo, which occurs as a dominant of South Texas shallow shrublands, is also a prevailing dominant of the Trans-Pecos: Mixed Desert and Thornscrub type. However, south Texas species such as blackbrush and mesquite are less common and less important in the Mixed Desert type, and desert species such as Torrey yucca, lechuguilla, creosotebush, and Texas sotol are more common. As with the semi-arid versus typical Edwards Plateau types, a gradual, essentially non-mappable, gradient occurs from east to west, so the location of these mapped types represents a general trend and mis-mapping may occur at locations across the gradient.

Shrubland landcover was apparently over-mapped in the far western part of the study area, and thus shrubland landcover was mapped as Edwards Plateau: Semi-arid Grassland on the Stockton Plateau (EPA Ecoregion 24e).

We have mapped differences in shrublands for the portion of Phase 4 within the South Texas Plains based on soil variation with the following ideas in mind: (1) sandier or looser soils tend to be more open and have less shrub diversity, (2) clayey soils tend to support more dense and more diverse shrublands, (3) caliche soils tend to occur in areas of higher topographic relief, are diverse, and tend to contain some less commonly

encountered species such as cenizo and guajillo, among the dominants, and (4) deep sands are unique in terms of their grassland, shrubland, and woodland composition. Shrublands of all densities are found on sandy, clayey, and caliche soils in the South Texas Plains due to modern management regimes such as brush clearing, seeding of non-native grasses, and grazing management. Managed rangeland across large upland areas over all soil types are dominated by mesquite, sometimes with an understory of non-native grasses like buffelgrass or Kleberg bluestem and a few additional shrub species, and with pricklypear a conspicuous component. Likewise, tame pastures may occur on most soils, and may be relatively open or relatively shrubby. Thus, many of the shrubland types mapped may be more or less similar, and each circumscribes a good deal of variation. Deep sand types, however, are quite distinct in supporting live oak woodland and shrubland, lower shrub diversity, and high grassland diversity.

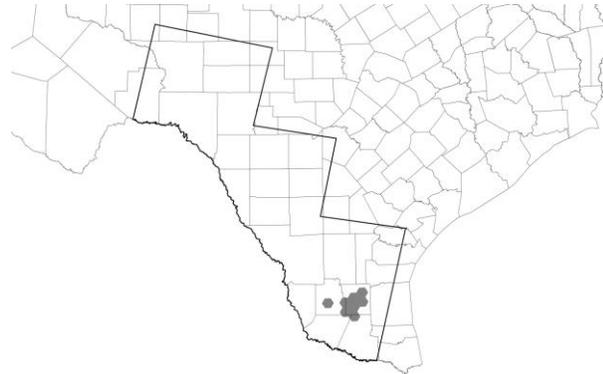
Mapped Vegetation Type Descriptions and Ecological Interpretations

The brief descriptions of existing vegetation types that follow help the user understand the type and amount of variation that might be circumscribed within a given mapped type. We sometimes refer to methods used in modeling and mapping in order to help the user better understand the concepts used to define a type. Photographs have been taken at almost every ground verification point for all phases, and we selected from those to provide the illustrations. Even though we collected 1,962 ground verification points, some of the less common mapped vegetation types were not sampled at all or contained only a few samples, and their general character was inferred from field experience. The description of these types is often abbreviated in the following summary, whereas heavily sampled types have slightly more detailed descriptions. Modeling and mapping results flow from the line of thought that asserts different types of plant communities prevail on different landforms and soils.

Active Sand Dune

Area in Phase 4: 94 acres (38 ha)

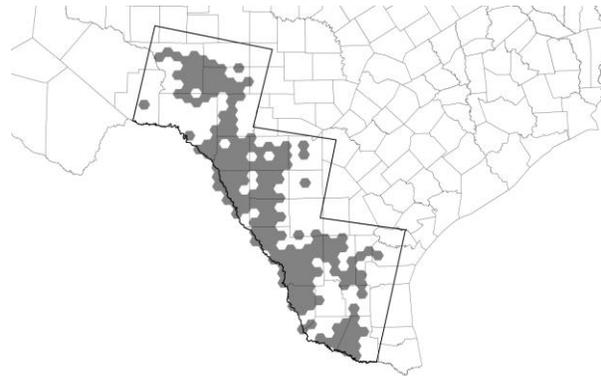
Description of Mapped Type: This mapped type consists of essentially barren, active sand dunes that are mapped in Phase 4 mainly on the western portions of the Coastal Sand Plain and associated outliers.



Barren

Area in Phase 4: 31,614 acres (12,794 ha)

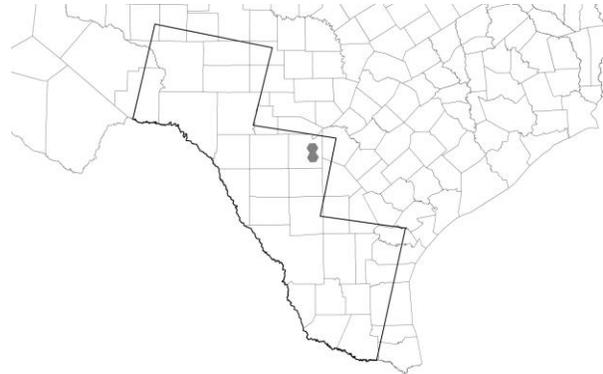
Description of Mapped Type: This type includes areas where little or no vegetation cover existed at the time of image data collection. In Phase 4, this includes fallow fields or areas within cropland blocks that remained barren throughout one growing season, heavily grazed pastures where bare soil was dominant, and areas of exposed rock and bare soil on outcrops, along rivers, or associated with development.



Blackland Prairie: Disturbance or Tame Grassland

Area in Phase 4: 3,179 acres (1,286 ha)

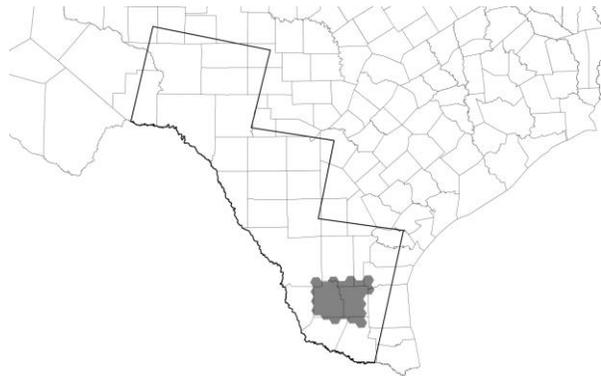
Description of Mapped Type: This type includes grasslands in many conditions, and introduced grasses such as Bermudagrass, King Ranch bluestem, Kleberg bluestem, and buffelgrass are the most frequent dominant species. Shrubs or trees such as mesquite, live oak, huisache, and pricklypear may be present. Important native grasses may include little bluestem, silver bluestem, sideoats grama, and threeawn species.



Coastal and Sandsheet: Deep Sand Grassland

Area in Phase 4: 801,326 acres (324,285 ha)

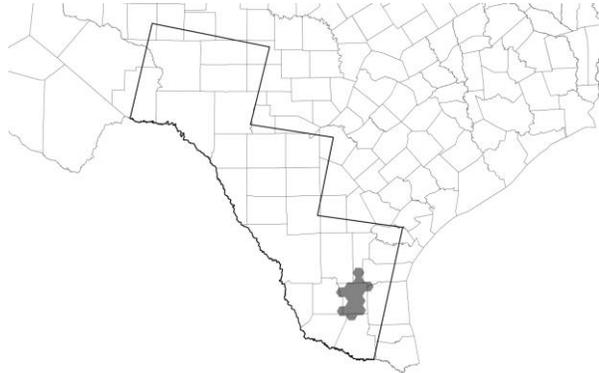
Description of Mapped Type: This type is mapped on the western portion of the Coastal Sand Plain and associated outliers in Phase 4. Grasslands in a variety of conditions are represented, and grazing-tolerant species such as common sandbur, guineagrass, buffelgrass, King Ranch bluestem, tanglehead, and Bermudagrass are common. Seacoast bluestem and gulfdune paspalum are common in areas with lighter grazing pressure. Sparse mesquite cover is common, and other trees may include live oak, granjeno, and huisache. Lindheimer pricklypear, tasajillo, and narrowleaf yucca are common succulents.



Coastal and Sandsheet: Deep Sand Live Oak / Mesquite Woodland

Area in Phase 4: 404 acres (163 ha)

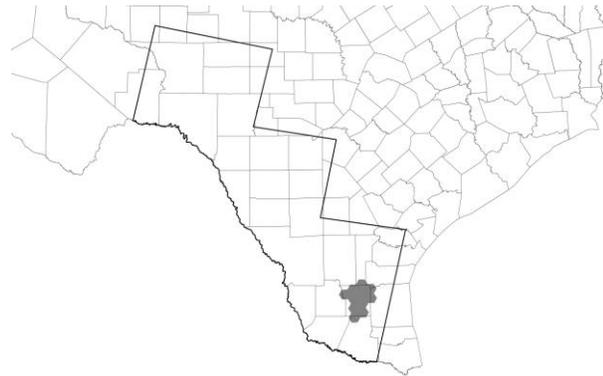
Description of Mapped Type: This uncommon and diverse type usually contains live oak as an important component and other species such as mesquite, sugar hackberry, granjeno, cedar elm, huisache, colima, and American beautyberry may be present.



Coastal and Sandsheet: Deep Sand Live Oak Forest and Woodland

Area in Phase 4: 124,272 acres (50,291 ha)

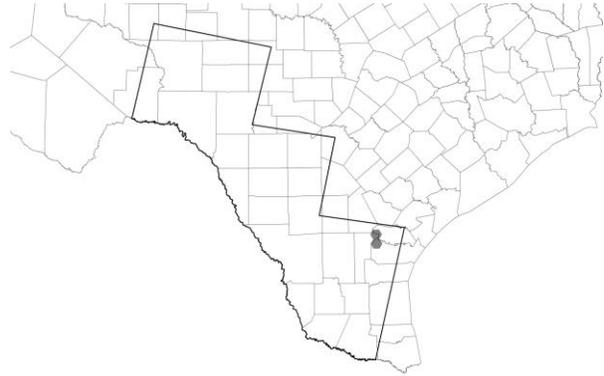
Description of Mapped Type: Dense, low stands of live oak trees or shrubs characterize this mapped type. Interior of larger mottes are usually low in species diversity, although guineagrass is common. Woody species such as mesquite, granjeno, blackbrush, Texas persimmon, and colima are common at motte edges and in less dense shrublands and woodlands. Tasajillo and narrowleaf yucca are common succulents in openings, together with a variety of grasses including seacoast bluestem, common sandbur, King Ranch bluestem, tanglehead, Bermudagrass, and buffelgrass. .



Coastal Bend: Floodplain Deciduous Shrubland

Area in Phase 4: 87 acres (35 ha)

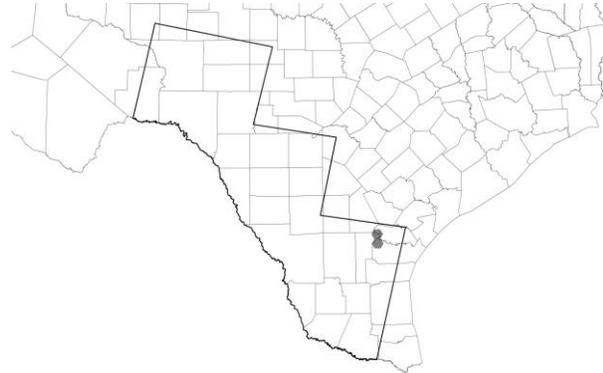
Description of Mapped Type: . Successional shrublands and sparse, low woodlands with species such as mesquite, huisache, sugar hackberry, and cedar elm are common within this uncommon type.



Coastal Bend: Floodplain Evergreen Shrubland

Area in Phase 4: 21 acres (8 ha)

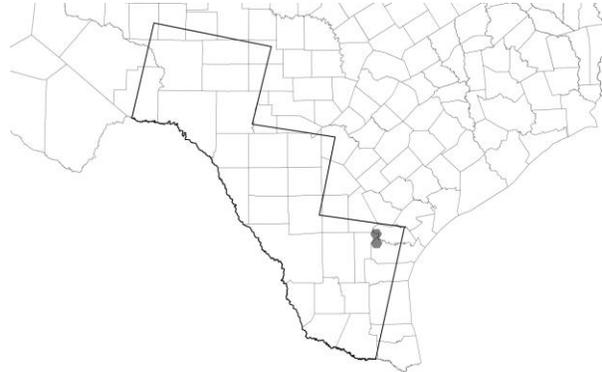
Description of Mapped Type: Relatively dense disturbance shrublands or low woodlands with species such as colima, huisache, granjeno, sugar hackberry, lotebush, and mesquite are characteristic of this rare type in Phase 4.



Coastal Bend: Floodplain Grassland

Area in Phase 4: 1,081 acres (437 ha)

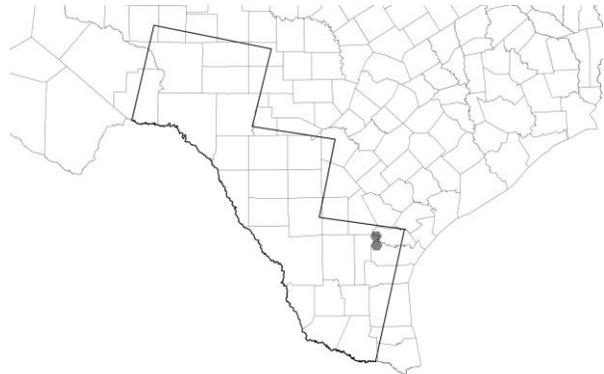
Description of Mapped Type: .Grazed pastures with grasses such as Bermudagrass, King Ranch bluestem, Kleberg bluestem, buffelgrass, and threeawns characterize this type in Phase 4. Herbaceous species such as silverleaf sunflower, dayflower, and smallflower groundcherry may be components, and woody species such as mesquite, huisache, granjeno, colima, live oak, and sugar hackberry may form a sparse canopy.



Coastal Bend: Floodplain Hardwood Forest

Area in Phase 4: 1,393 acres (564 ha)

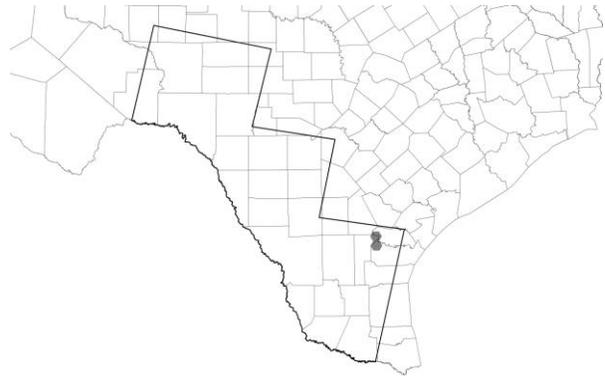
Description of Mapped Type: This type may be relatively wet or dry, and species such as cedar elm, sugar hackberry, anacua, pecan, Mexican ash, black willow, and live oak may be among the dominants. Mesquite, colima, and granjeno may also be components, especially on drier sites.



Coastal Bend: Floodplain Live Oak / Hardwood Forest

Area in Phase 4: 491 acres (199 ha)

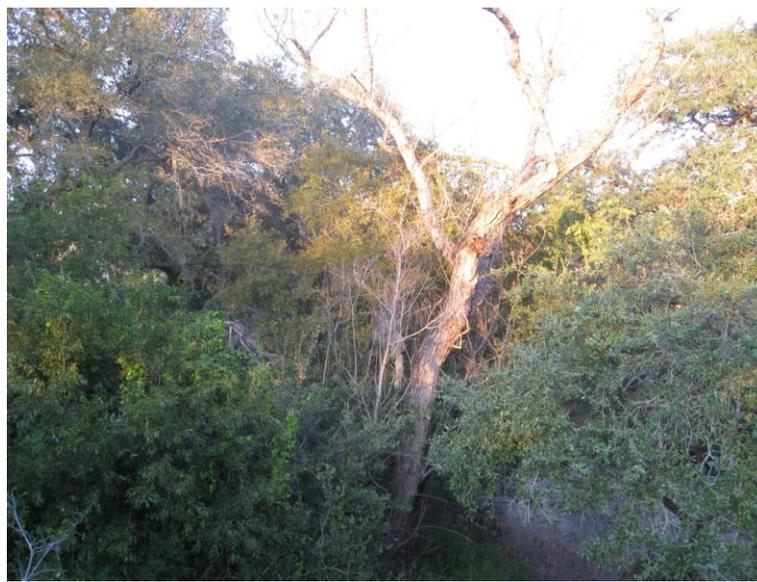
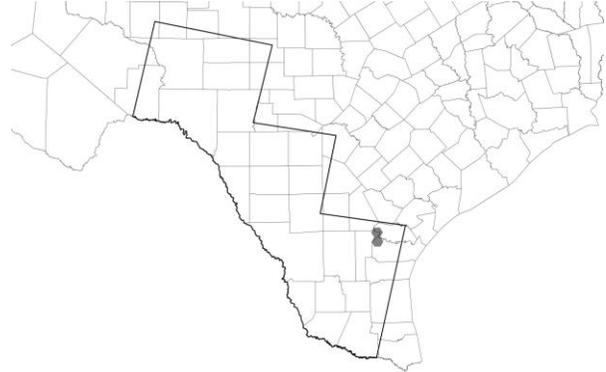
Description of Mapped Type: Live oak together with deciduous trees such as cedar elm, sugar hackberry, anacua, and black willow may be important in this uncommon type. Drier sites may have species such as mesquite, huisache, colima, and granjeno.



Coastal Bend: Floodplain Live Oak Forest

Area in Phase 4: 235 acres (95 ha)

Description of Mapped Type: Live oak may occur in nearly pure stands or may be mixed with species such as cedar elm, sugar hackberry, anacua, and black willow within this uncommon type in Phase 4.



Coastal Bend: Riparian Deciduous Shrubland

Area in Phase 4: 32 acres (13 ha)

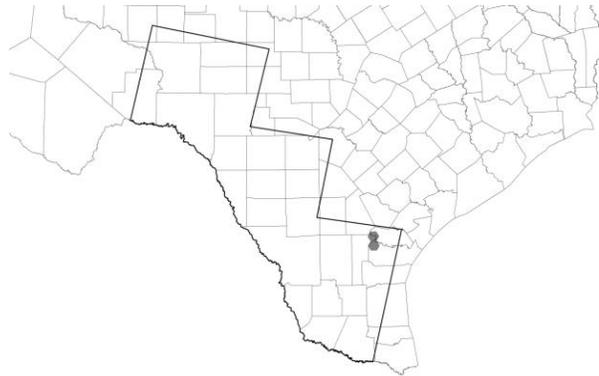
Description of Mapped Type: This uncommon type may consist of shrublands or sparse woodlands that are more dense than surrounding vegetation. Species such as mesquite, huisache, sugar hackberry, colima, and granjeno are common in Phase 4.



Coastal Bend: Riparian Evergreen Shrubland

Area in Phase 4: 9 acres (4 ha)

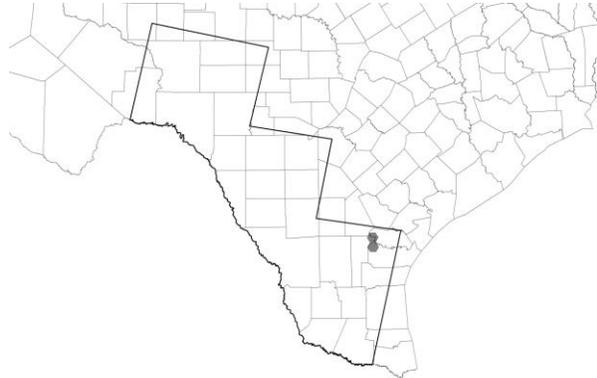
Description of Mapped Type: Relatively dense shrublands or low woodlands with species such as huisache, colima, sugar hackberry, cedar elm, anacua, and mesquite may occur in this rare type in Phase 4.



Coastal Bend: Riparian Grassland

Area in Phase 4: 236 acres (96 ha)

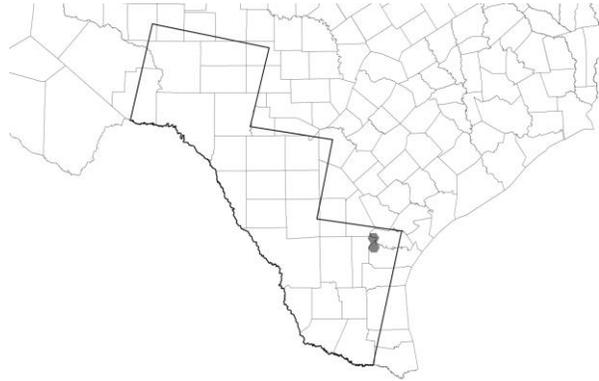
Description of Mapped Type: Upland drainage ways within pastures with grasses such as threeawns, King Ranch bluestem, bristlegrass species, Bermudagrass, and Kleberg bluestem may characterize this uncommon type in Phase 4. Trees and shrubs such as mesquite, huisache, colima, granjeno, sugar hackberry, cedar elm, and live oak may form a sparse canopy.



Coastal Bend: Riparian Hardwood Forest

Area in Phase 4: 253 acres (98 ha)

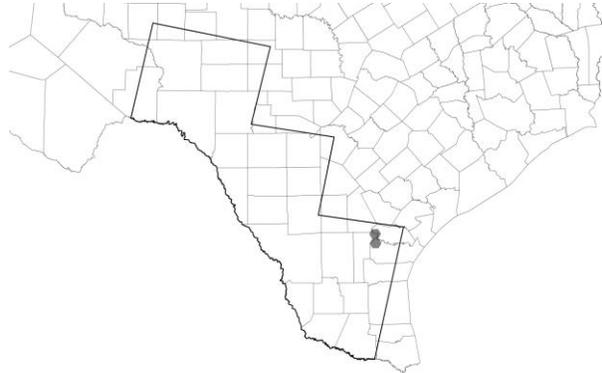
Description of Mapped Type: Narrow upland strips along water ways dominated by trees such as sugar hackberry, cedar elm, black willow, mesquite, huisache, granjeno, and colima are common within this rare type.



Coastal Bend: Riparian Live Oak / Hardwood Forest

Area in Phase 4: 13 acres (5 ha)

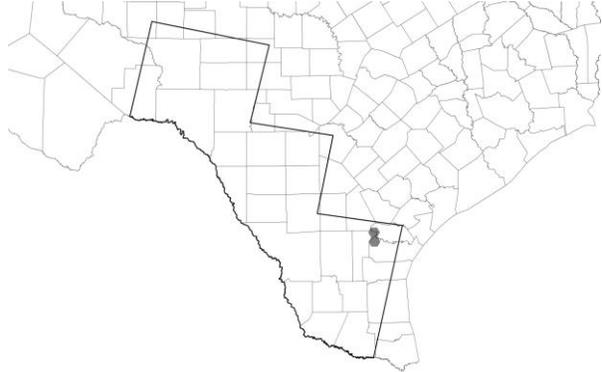
Description of Mapped Type: Narrow strips of woodland along drainage ways with species such as live oak, cedar elm, sugar hackberry, anacua, and black willow may be characteristic of this rare mapped type. Mesquite, huisache, colima, and granjeno may also be present.



Coastal Bend: Riparian Live Oak Forest

Area in Phase 4: 14 acres (6 ha)

Description of Mapped Type: Gallery woodlands along drainage ways with live oak mixed with species such as cedar elm, sugar hackberry, anacua, and black willow may characterize this rare type.



Edwards Plateau: Ashe Juniper / Live Oak Shrubland

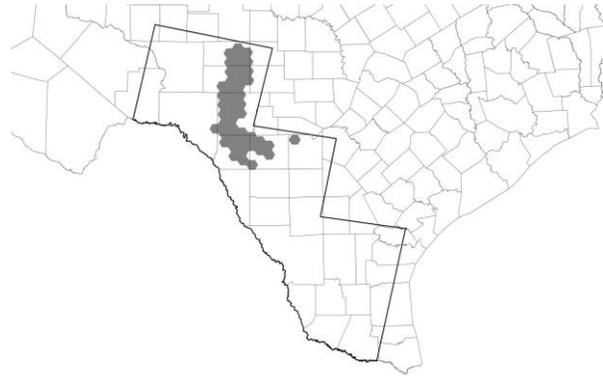
Area in Phase 4: 806,049 acres (326,197 ha)

Description of Mapped Type: Ashe juniper and plateau live oak are the most frequent dominants of this evergreen shrubland. Plateau live oak trees may form a sparse canopy and white shin oak, Texas persimmon, mesquite, and Lindheimer pricklypear common components. Sideoats grama, curlymesquite, and Texas wintergrass are common grasses within this type. Some sites have papershell pinyon in the tree or shrub layer.

Where to Visit:

Garner State Park

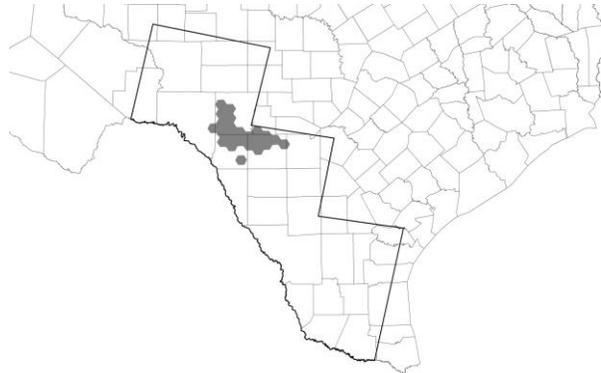
Kickapoo Cavern State Park



Edwards Plateau: Ashe Juniper / Live Oak Slope Shrubland

Area in Phase 1: 126,127 acres (51,042 ha)

Description of Mapped Type: This type is similar to the Edwards Plateau: Ashe Juniper / Live Oak Shrubland but is mapped on slopes >20%, and Ashe juniper is more often the primary dominant. Species more common in drier southern or western regions such as guajillo, Texas sotol, cenizo, and leatherstem may be important.



Edwards Plateau: Ashe Juniper Motte and Woodland

Area in Phase 4: 62,306 acres (25,214 ha)

Description of Mapped Type: Ashe juniper and plateau live oak are the most frequent dominants of this evergreen woodland. Some areas are characterized by nearly pure stands of Ashe juniper, while others have taller plateau live oaks with an understory of smaller Ashe juniper. White shin oak, Texas persimmon, and agarito are common shrubs.

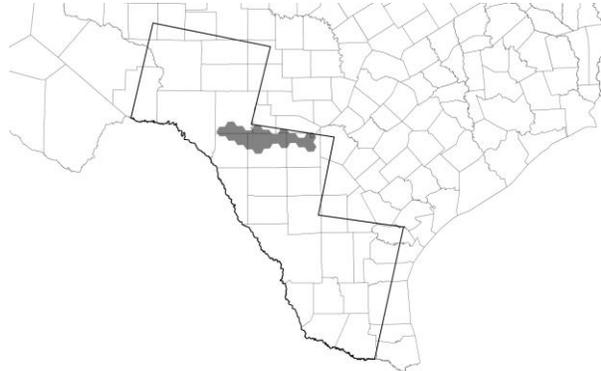
Where to Visit:

Amistad National Recreation Area

Devils River State Natural Area

Garner State Park

Kickapoo Cavern State Park



Edwards Plateau: Ashe Juniper Slope Forest

Area in Phase 4: 37,520 acres (15,184 ha)

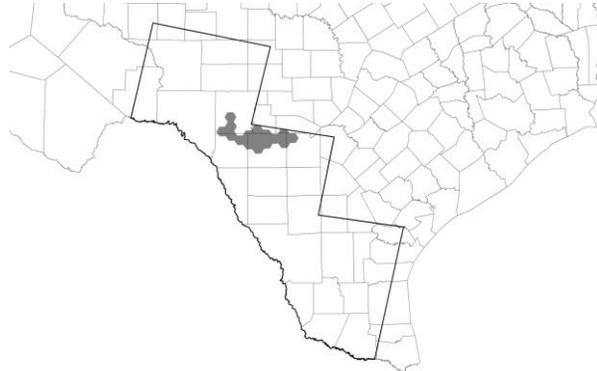
Description of Mapped Type: Ashe juniper and plateau live oak are often the dominant species of this mainly evergreen woodland or forest that is mapped on slopes >20%, and other oaks such as Texas oak and white shin oak may be important. Ashe juniper is often the most important understory species, along with species such as Texas persimmon, Texas mountain-laurel, and fragrant mimosa.

Where to Visit:

Devils River State Natural Area

Garner State Park

Kickapoo Cavern State Park



Edwards Plateau: Barren or Grassy Cliff/Bluff

Area in Phase 4: 209 acres (85 ha)

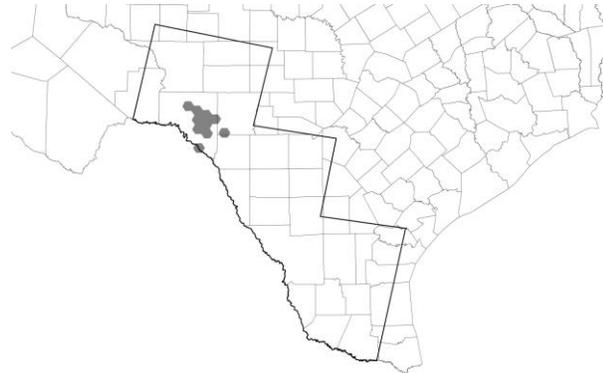
Description of Mapped Type: This type is mapped on slopes >100%, primarily on cliffs or bluffs associated with stream valleys. It is either steep enough to be barren or may support sparse grasses such as old-field threeawn, hairy grama, and Texas grama.

Where to Visit:

Amistad National Recreation Area

Devils River Ranch State Park

Devils River State Natural Area



Edwards Plateau: Deciduous Oak / Evergreen Motte and Woodland

Area in Phase 4: 4,700 acres (1,902 ha)

Description of Mapped Type: This mixed woodland type contains significant variation, but deciduous oaks such as Texas oak and white shin oak are often important in the overstory, together with Ashe juniper, plateau live oak, cedar elm, or sugar hackberry. The understory often contains Ashe juniper and plateau live oak, and Texas persimmon, agarito, and Texas mountain-laurel as common components.

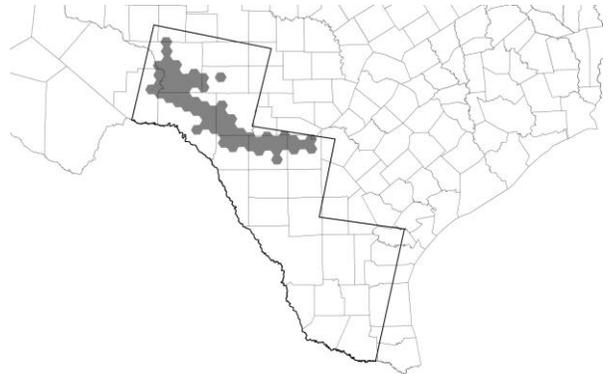
Where to Visit:

Amistad National Recreation Area

Devils River Ranch State Park

Devils River State Natural Area

Kickapoo Cavern State Park



Edwards Plateau: Deciduous Semi-arid Shrubland

Area in Phase 4: 600,608 acres (243,057 ha)

Description of Mapped Type: Shrub and small tree species such as mesquite, Texas persimmon, Plateau live oak, cenizo, Ashe juniper, and redberry juniper are commonly important in this broadly-circumscribed type. Succulents including Lindheimer pricklypear, *Opuntia* spp., Texas sotol, Texas sacahuista, Torrey's yucca, and lechuguilla are common, and grasses such as sideoats grama, threeawn species, white tridens, curlymesquite, hairy tridens, and red grama may be important..

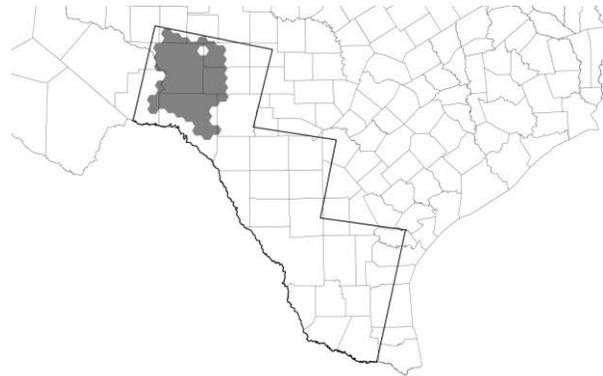
Where to Visit:

Amistad National Recreation Area

Devils River Ranch State Park

Devils River State Natural Area

Fort Lancaster State Historic Site



Edwards Plateau: Deciduous Semi-arid Slope Shrubland

Area in Phase 4: 126,335 acres (51,126 ha)

Description of Mapped Type: A wide diversity of shrubs and small trees such as guajillo, cenizo, catclaw mimosa, Vasey shin oak, Texas mountain-laurel, Texas persimmon, Rio Grande stickpea, Ashe juniper, and redberry juniper are common. Succulents such as Texas sotol, lechuguilla, *Opuntia* species, and Torrey's yucca are common. Herbaceous cover is often sparse, and sideoats grama, purple threeawn, hairy grama, and hairy tridens may be present.

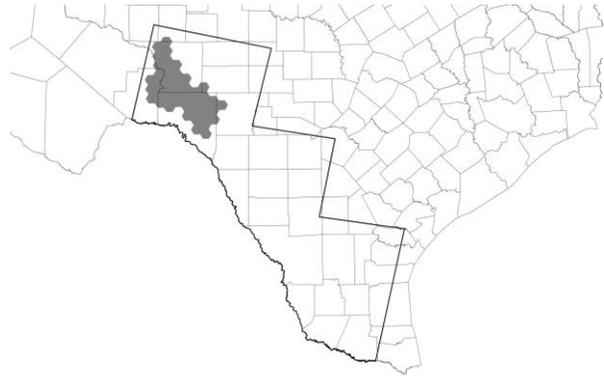
Where to Visit:

Amistad National Recreation Area

Devils River Ranch State Park

Devils River State Natural Area

Fort Lancaster State Historic Site



Edwards Plateau: Floodplain Ashe Juniper Forest

Area in Phase 4: 935 acres (378 ha)

Description of Mapped Type: Ashe juniper and plateau live oak are frequent canopy dominants of this woodland or forest, and cedar elm and sugar hackberry are common components.

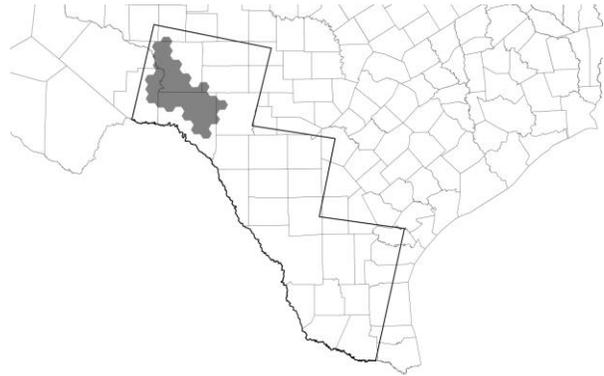
Where to Visit:

Amistad National Recreation Area

Devils River State Natural Area

Garner State Park

Kickapoo Cavern State Park



Edwards Plateau: Floodplain Ashe Juniper Shrubland

Area in Phase 4: 88,179 acres (35,658 ha)

Description of Mapped Type: Ashe juniper, plateau live oak, mesquite, Texas persimmon, whitebrush, redberry juniper, little walnut, and Lindheimer pricklypear are frequent components of this mainly evergreen disturbance shrubland.

Where to Visit:

Amistad National Recreation Area

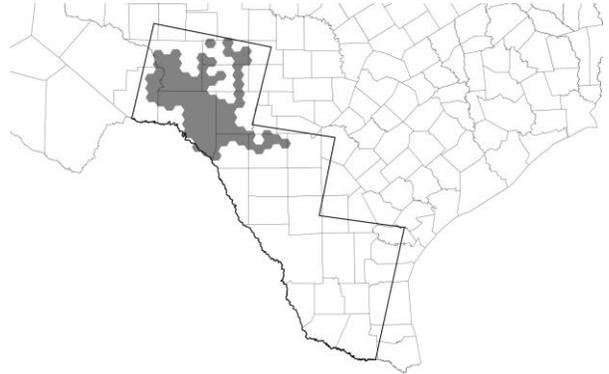
Devils River Ranch State Park

Devils River State Natural Area

Garner State Park

Kickapoo Cavern State Park

Seminole Canyon State Park/State Historic Site



Edwards Plateau: Floodplain Barrens

Area in Phase 4: 10,632 acres (4,303 ha)

Description of Mapped Type: River wash and rock with sparse vegetation characterizes this type. Plants such as little walnut, sycamore, gravelbar brickellbush, and desert willow may be present.

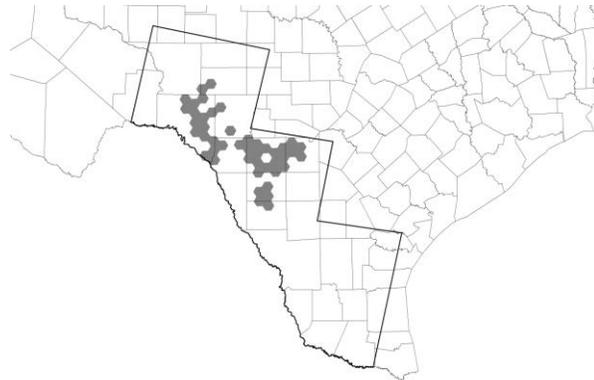
Where to Visit:

Amistad National Recreation Area

Devils River Ranch State Park

Devils River State Natural Area

Garner State Park



Edwards Plateau: Floodplain Deciduous Shrubland

Area in Phase 4: 121,138 acres (49,023 ha)

Description of Mapped Type: This type contains various mainly disturbance shrublands, and mesquite, plateau live oak, Texas persimmon, and Ashe juniper are common. Associated grasses may include non-natives such as Bermudagrass, Kleberg bluestem, and King Ranch bluestem or natives such as Texas wintergrass, curlymesquite, purple threeawn, and sideoats grama.

Where to Visit:

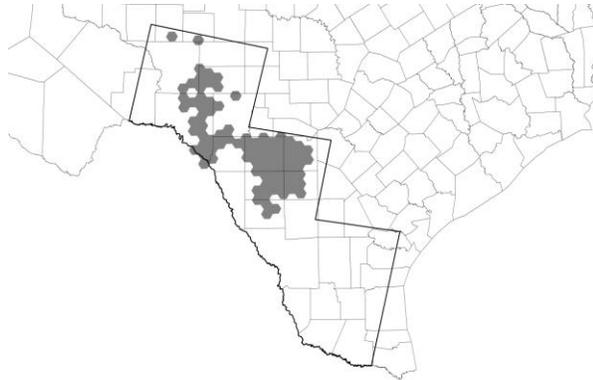
Amistad National Recreation Area

Devils River Ranch State Park

Devils River State Natural Area

Garner State Park

Kickapoo Cavern State Park



Edwards Plateau: Floodplain Hardwood / Ashe Juniper Forest

Area in Phase 4: 866 acres (351 ha)

Description of Mapped Type: Ashe juniper trees or shrubs are a primary component of this uncommon mixed forest type that may occur on wetter or drier sites. Plateau live oak, mesquite, sugar hackberry, black willow, Texas ash, and sycamore may be present.

Where to Visit:

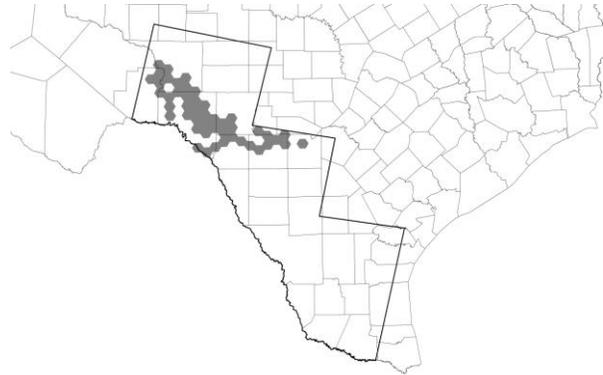
Amistad National Recreation Area

Devils River Ranch State Park

Devils River State Natural Area

Garner State Park

Kickapoo Cavern State Park



Edwards Plateau: Floodplain Hardwood Forest

Area in Phase 4: 69,587 acres (28,161 ha)

Description of Mapped Type: Sugar hackberry, plateau live oak, cedar elm, Texas ash, and mesquite are common components of this broadly-circumscribed mainly deciduous forest. Understory species may include Texas persimmon, gum bumelia, western soapberry, granjeno, and brasil.

Where to Visit:

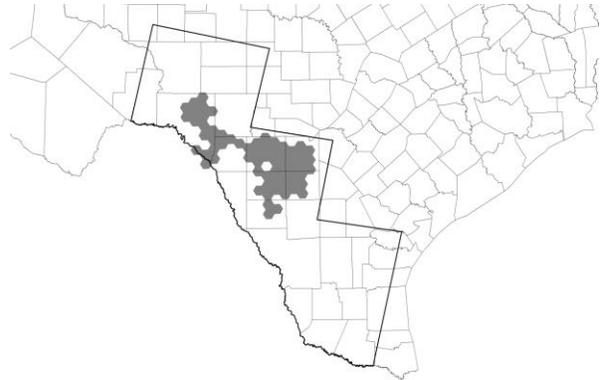
Amistad National Recreation Area

Devils River Ranch State Park

Devils River State Natural Area

Garner State Park

Kickapoo Cavern State Park



Edwards Plateau: Floodplain Herbaceous Vegetation

Area in Phase 4: 79,449 acres (32,152 ha)

Description of Mapped Type: This type circumscribes grazed grasslands in various conditions that may be more or less well-watered. Many pastures are dominated by introduced grasses such as Bermudagrass, buffelgrass, or King Ranch bluestem. Native species may include purple threeawn, Texas wintergrass, sideoats grama, and western ragweed. Plateau live oak, mesquite, Texas persimmon, huisache, and sugar hackberry may be components.

Where to Visit:

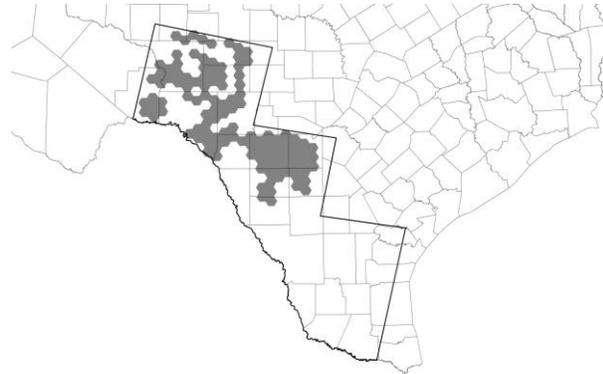
Amistad National Recreation Area

Devils River Ranch State Park

Devils River State Natural Area

Garner State Park

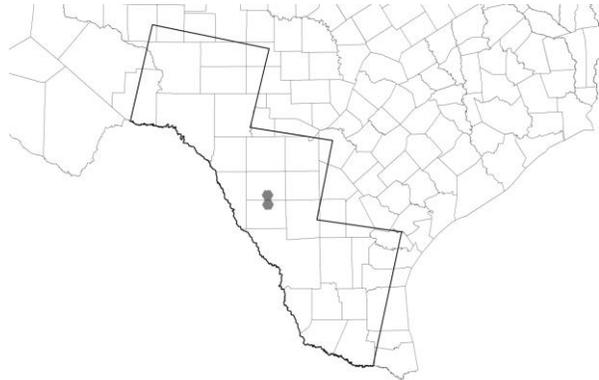
Kickapoo Cavern State Park



Edwards Plateau: Floodplain Herbaceous Wetland

Area in Phase 4: 8 acres (3 ha)

Description of Mapped Type: This rare type may be dominated by a variety of herbaceous sedges, rushes, spikerushes, bulrushes, smartweeds, and grasses, together with shrubs such as buttonbush and black willow.



Edwards Plateau: Floodplain Live Oak Forest

Area in Phase 4: 80,854 acres (32,721 ha)

Description of Mapped Type: Plateau live oak is a dominant canopy tree, together with deciduous trees such as sugar hackberry, cedar elm, black willow, and pecan. Texas persimmon and mesquite are common understory shrubs.

Where to Visit:

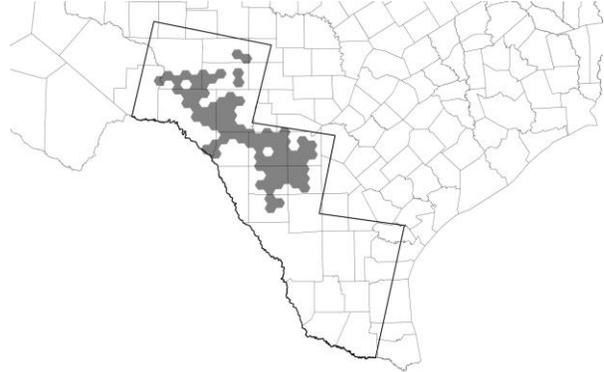
Amistad National Recreation Area

Devils River Ranch State Park

Devils River State Natural Area

Garner State Park

Kickapoo Cavern State Park



Edwards Plateau: Juniper Semi-arid Shrubland

Area in Phase 4: 1,285,278 acres (520,133 ha)

Description of Mapped Type: Ashe juniper and redberry juniper may both be present in this type, together with species such as plateau live oak, mesquite, Texas persimmon, and agarito. Important grasses may include sideoats grama, purple threeawn, curlymesquite, slim tridens, hairy tridens, and Texas wintergrass.

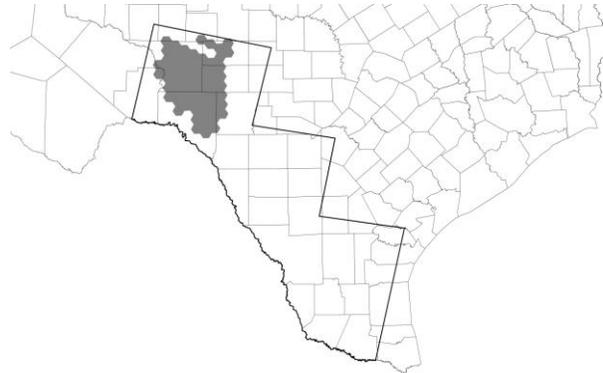
Where to Visit:

Amistad National Recreation Area

Devils River Ranch State Park

Devils River State Natural Area

Fort Lancaster State Historic Site



Edwards Plateau: Juniper Semi-arid Slope Shrubland

Area in Phase 4: 345,707 acres (139,903 ha)

Description of Mapped Type: This type is similar to the Juniper Semi-arid Shrubland but is mapped on slopes >20% and overall cover is generally lower. Common species of this diverse type include Ashe juniper, Vasey shin oak, Texas persimmon, white shin oak, guajillo, and redberry juniper. Succulents including Texas sotol, lechuguilla, Torrey's yucca, plateau yucca, and *Opuntia* species are often important.

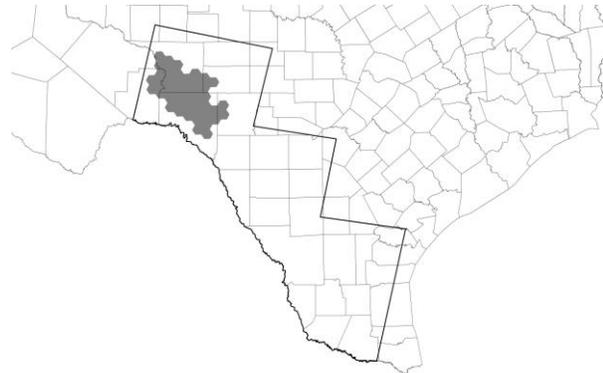
Where to Visit:

Amistad National Recreation Area

Devils River Ranch State Park

Devils River State Natural Area

Fort Lancaster State Historic Site



Edwards Plateau: Live Oak Motte and Woodland

Area in Phase 4: 315,412 acres (127,643 ha)

Description of Mapped Type: Plateau live oak alone or with Ashe juniper usually dominates the overstory of this type. Other important woody species may include redberry juniper, mesquite, Texas persimmon, sugar hackberry, cedar elm, and agarito.

Where to Visit:

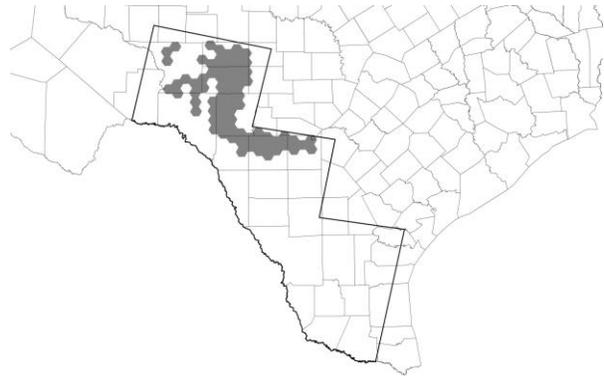
Amistad National Recreation Area

Devils River Ranch State Park

Devils River State Natural Area

Garner State Park

Kickapoo Cavern State Park



Edwards Plateau: Live Oak Slope Forest

Area in Phase 4: 63,385 acres (25,651 ha)

Description of Mapped Type: Plateau live oak and Ashe juniper are usually the most important woody species of this mainly evergreen slope woodland or forest, but deciduous trees such as Texas oak, white shin oak, sugar hackberry, and Lacey oak may be important in the overstory.

Where to Visit:

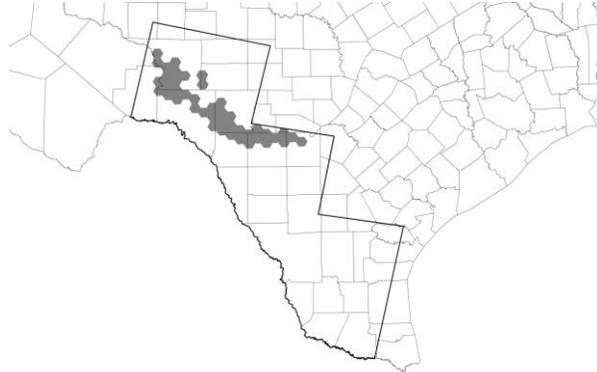
Amistad National Recreation Area

Devils River Ranch State Park

Devils River State Natural Area

Garner State Park

Kickapoo Cavern State Park



Edwards Plateau: Oak / Ashe Juniper Slope Forest

Area in Phase 4: 7,764 acres (3,142 ha)

Description of Mapped Type: Deciduous oaks such as Texas oak, Lacey oak, white shin oak, and chinkapin oak share dominance with Ashe juniper and plateau live oak in this mixed woodland or forest. Other trees such as cedar elm, sugar hackberry, escarpment black cherry, Texas ash, and Arizona walnut may be in the canopy.

Where to Visit:

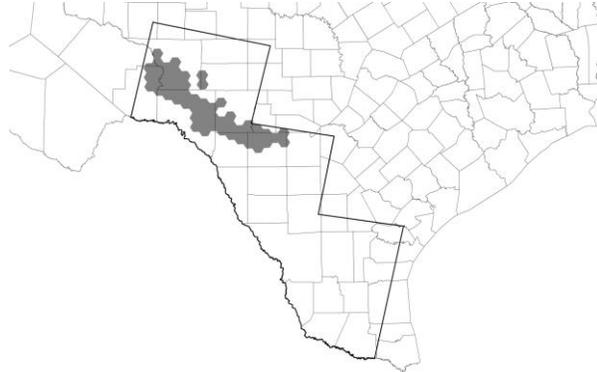
Amistad National Recreation Area

Devils River Ranch State Park

Devils River State Natural Area

Garner State Park

Kickapoo Cavern State Park



Edwards Plateau: Oak / Hardwood Motte and Woodland

Area in Phase 4: 91,730 acres (37,122 ha)

Description of Mapped Type: This deciduous woodland or forest may contain a diversity of species in the overstory, including cedar elm, Texas oak, Lacey oak, sugar hackberry, post oak, or white shin oak. Plateau live oak is often an important component, and Ashe juniper is often in the overstory as well as the understory.

Where to Visit:

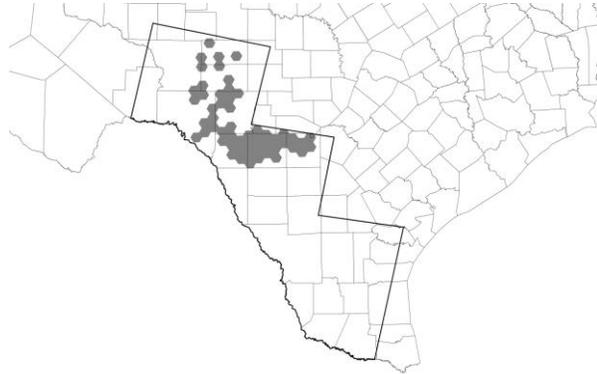
Amistad National Recreation Area

Devils River Ranch State Park

Devils River State Natural Area

Garner State Park

Kickapoo Cavern State Park



Edwards Plateau: Oak / Hardwood Slope Forest

Area in Phase 1: 4,020 acres (1,627 ha)

Description of Mapped Type: A fairly wide diversity of deciduous trees such as Texas oak, Lacey oak, white shin oak, chinkapin oak, escarpment black cherry, cedar elm, and sugar hackberry may be in the overstory of this mainly deciduous woodland or forest. Plateau live oak is often important in the canopy. The understory may also contain a diversity of woody plants such as elbowbush, roughleaf dogwood, Texas redbud, red buckeye, Mexican buckeye, Jersey tea, Carolina buckthorn, and rusty blackhaw.

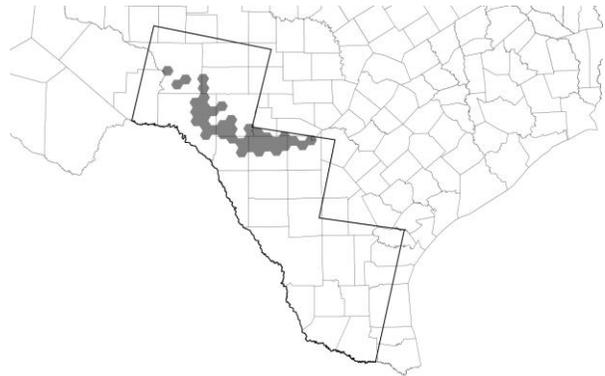
Where to Visit:

Devils River Ranch State Park

Devils River State Natural Area

Garner State Park

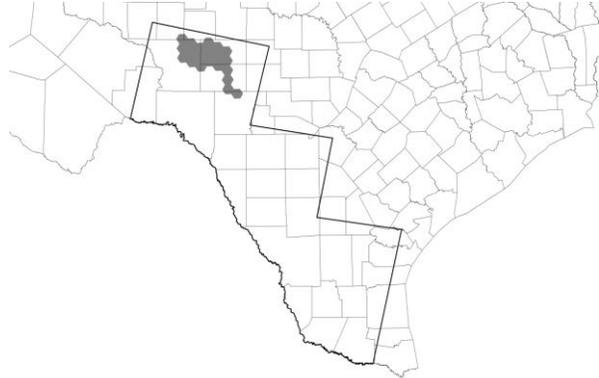
Kickapoo Cavern State Park



Edwards Plateau: Playa

Area in Phase 4: 7,171 acres (2,902 ha)

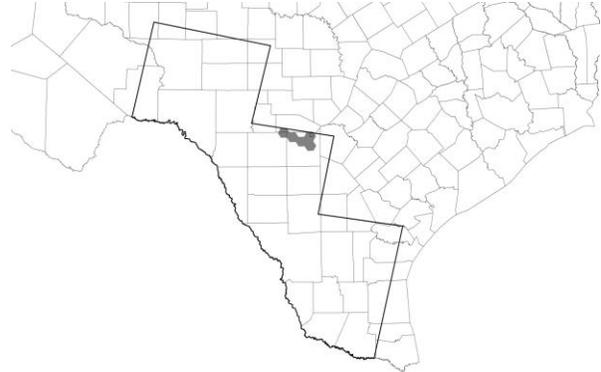
Description of Mapped Type: Buffalograss, white tridens, tobosa, yellow stonecrop, and cane bluestem are common components of this type, which is mapped in upland depressions and shallow lake beds.



Edwards Plateau: Post Oak Motte and Woodland

Area in Phase 4: 1,172 acres (474 ha)

Description of Mapped Type: Post oak, white shin oak, and plateau live oak are often the most important overstory dominants of this mainly deciduous woodland, and cedar elm, blackjack oak, Texas oak, and sugar hackberry may be present. Ashe juniper may be in the overstory and understory.



Edwards Plateau: Riparian Ashe Juniper Forest

Area in Phase 4: 7,553 acres (3,057 ha)

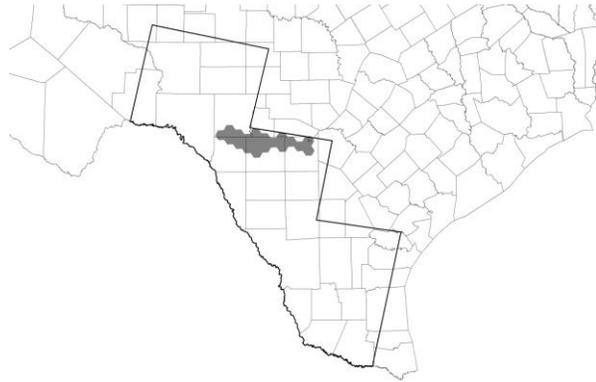
Description of Mapped Type: Ashe juniper, plateau live oak, sugar hackberry, and Lacey oak are common dominants of this narrow evergreen woodland along mainly first-order streams.

Where to Visit:

Amistad National Recreation Area

Garner State Park

Kickapoo Cavern State Park



Edwards Plateau: Riparian Ashe Juniper Shrubland

Area in Phase 4: 221,044 acres (89,453 ha)

Description of Mapped Type: Ashe juniper, mesquite, Texas persimmon, Vasey oak, and Lacey oak are common components of this narrow evergreen shrubland along mainly first-order streams. Plateau live oak may form a sparse canopy, and succulents such as Lindheimer pricklypear and Texas sotol may be present. Sideoats grama, Texas wintergrass, and white tridens are common grasses.

Where to Visit:

Amistad National Recreation Area

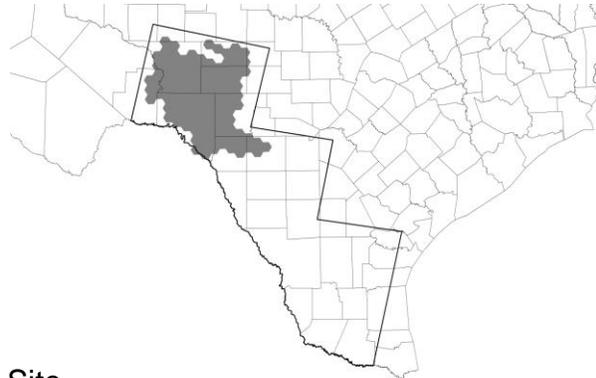
Devils River Ranch State Park

Devils River State Natural Area

Fort Lancaster State Historic Site

Kickapoo Cavern State Park

Seminole Canyon State Park/State Historic Site



Edwards Plateau: Riparian Barrens

Area in Phase 4: 1,626 acres (658 ha)

Description of Mapped Type: Gravel or bedrock within and adjacent to first order stream characterizes this mapped type. A sparse shrub or herbaceous cover may occur with species such as gravelbar brickellbush, desert willow, guajillo, sycamore, or little walnut present.

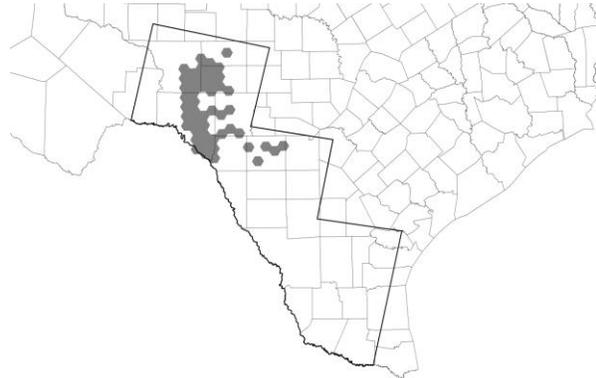
Where to Visit:

Amistad National Recreation Area

Devils River Ranch State Park

Devils River State Natural Area

Kickapoo Cavern State Park



Edwards Plateau: Riparian Deciduous Shrubland

Area in Phase 4: 73,849 acres (29,886 ha)

Description of Mapped Type: A variety of small trees or shrubs such as agarito, Texas persimmon, mesquite, desert willow, little walnut, sycamore, or whitebrush may dominate this broadly circumscribed type that occurs mainly along first order drainages. Plateau live oak may form a sparse overstory, and Ashe juniper and redberry juniper may be present.

Where to Visit:

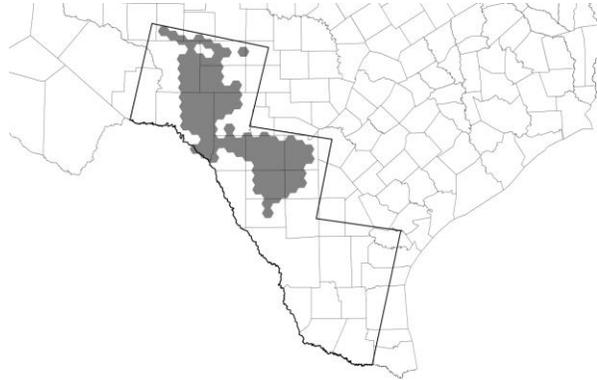
Amistad National Recreation Area

Devils River Ranch State Park

Devils River State Natural Area

Garner State Park

Kickapoo Cavern State Park



Edwards Plateau: Riparian Hardwood / Ashe Juniper Forest

Area in Phase 4: 4,375 acres (1,770 ha)

Description of Mapped Type: Ashe juniper, redberry juniper, and plateau live oak are the frequent dominant trees of this broadly defined mixed forest of narrow upland drainages. Mesquite, granjeno, Vasey oak, and Lacey oak may be components.

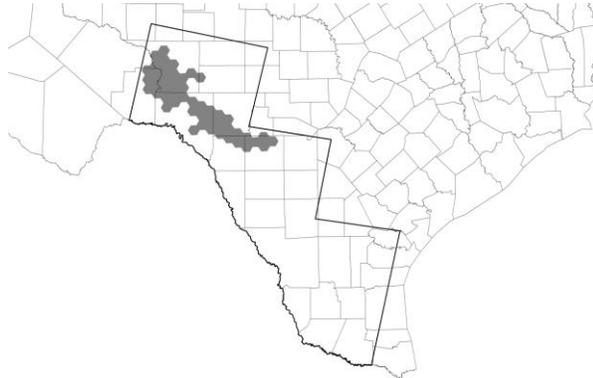
Where to Visit:

Amistad National Recreation Area

Devils River Ranch State Park

Devils River State Natural Area

Kickapoo Cavern State Park



Edwards Plateau: Riparian Hardwood Forest

Area in Phase 4: 28,677 acres (11,605 ha)

Description of Mapped Type: This narrow, deciduous forest along mainly first-order streams is broadly defined and may contain plateau live oak, Texas oak, sugar hackberry, cedar elm, Vasey oak, or Lacey oak as important overstory trees. Ashe juniper, redberry juniper, elbowbush, Texas persimmon, whitebrush, mesquite, granjeno, or little walnut may be present in the shrub layer.

Where to Visit:

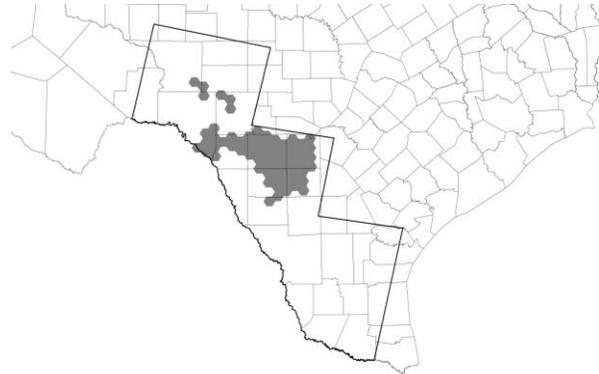
Amistad National Recreation Area

Devils River Ranch State Park

Devils River State Natural Area

Garner State Park

Kickapoo Cavern State Park



Edwards Plateau: Riparian Herbaceous Vegetation

Area in Phase 4: 71,476 acres (28,925 ha)

Description of Mapped Type: This is a broadly-defined grassland of upland drainages that may be dominated by grasses such as threeawns, tobosa, Texas wintergrass, sideoats grama, or white tridens, depending on grazing pressure and soils. Mesquite, agarito, whitebrush, Ashe juniper, redberry juniper, Texas persimmon, guajillo, and plateau live oak may be woody components.

Where to Visit:

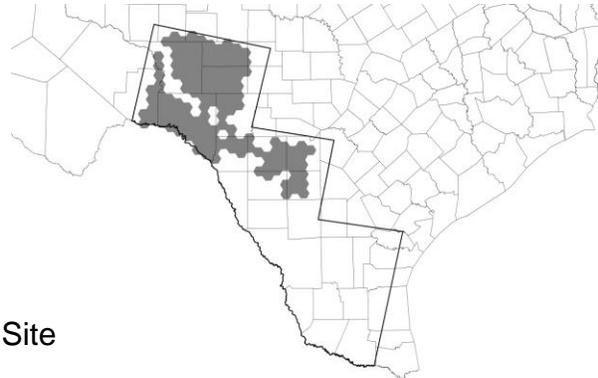
Amistad National Recreation Area

Devils River Ranch State Park

Devils River State Natural Area

Kickapoo Cavern State Park

Seminole Canyon State Park/State Historic Site



Edwards Plateau: Riparian Live Oak Forest

Area in Phase 4: 65,215 acres (26,392 ha)

Description of Mapped Type: Plateau live oak. Texas oak, and Lacey oak may be components of this narrow woodland of upland drainages. Other important woody species may include Ashe juniper, redberry juniper, mesquite, Texas mountain-laurel, agarito, and mesquite.

Where to Visit:

Amistad National Recreation Area

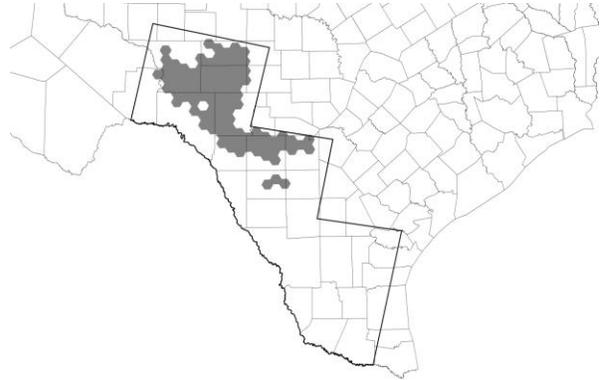
Devils River Ranch State Park

Devils River State Natural Area

Garner State Park

Kickapoo Cavern State Park

Seminole Canyon State Park/State Historic Site



Edwards Plateau: Savanna Grassland

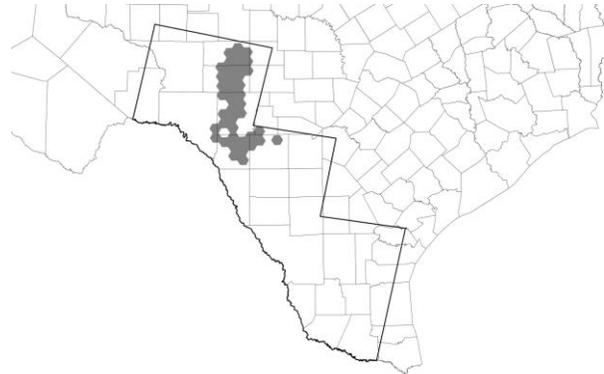
Area in Phase 4: 285,207 acres (115,419 ha)

Description of Mapped Type: Grassland condition varies for this type, and species such as Texas wintergrass, curlymesquite, sideoats grama, and threeawns may be important dominants. Trees such as plateau live oak and mesquite may form a sparse canopy, and Lindheimer pricklypear is a common succulent.

Where to Visit:

Garner State Park

Kickapoo Cavern State Park



Edwards Plateau: Semi-arid Grassland

Area in Phase 4: 712,399 acres (288,298 ha)

Description of Mapped Type: This type often contains a mix of grasses and shrubs with grasses such as purple threeawn, red grama, sideoats grama, curlymesquite, slim tridens, and Texas wintergrass common. Shrubs may include redberry juniper, mesquite, agarito, Texas persimmon, Ashe juniper, and cenizo.

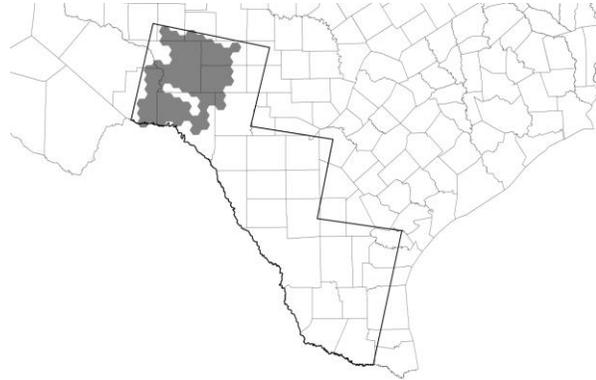
Where to Visit:

Amistad National Recreation Area

Devils River Ranch State Park

Devils River State Natural Area

Fort Lancaster State Historic Site



Edwards Plateau: Shin Oak Shrubland

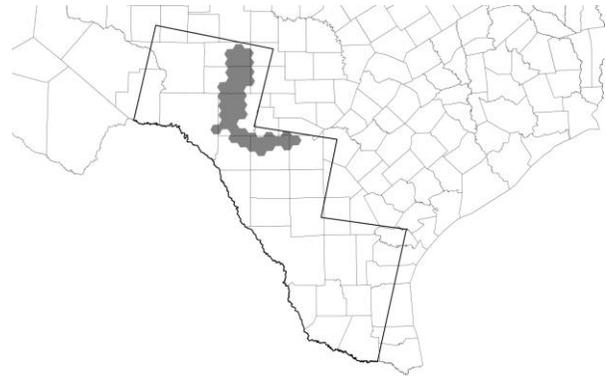
Area in Phase 4: 111,063 acres (44,946 ha)

Description of Mapped Type: White shin oak, Vasey oak, agarito, Texas persimmon, plateau live oak, and Ashe juniper are common woody component of this type. Grasses such as purple threeawn, curlymesquite, Texas wintergrass, sideoats grama, and slim tridens are often important.

Where to Visit:

Garner State Park

Kickapoo Cavern State Park



Edwards Plateau: Shin Oak Slope Shrubland

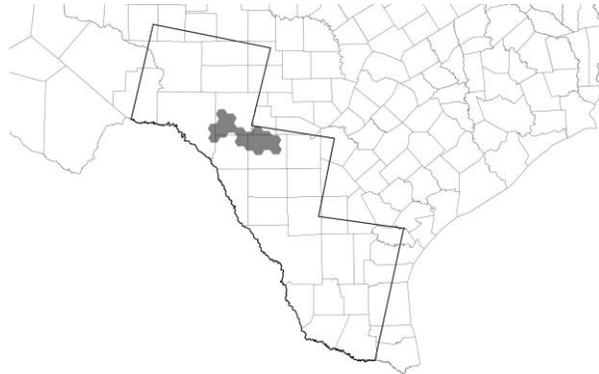
Area in Phase 4: 19,750 acres (7,993 ha)

Description of Mapped Type: This type is similar to the Edwards Plateau: Shin Oak Shrubland but is mapped on slopes >20%. On dry exposures, shrubs such as guajillo and cenizo, and succulents such as Texas sotol or Torrey's yucca, may be important.

Where to Visit:

Garner State Park

Kickapoo Cavern State Park



Edwards Plateau: Wooded Cliff/Bluff

Area in Phase 4: 659 acres (267 ha)

Description of Mapped Type: This type is mapped in areas of >100% slope. Woody canopy cover is mainly associated with adjacent rims and slopes and may include species such as Ashe juniper, Texas persimmon, Lacy oak, and cenizo.

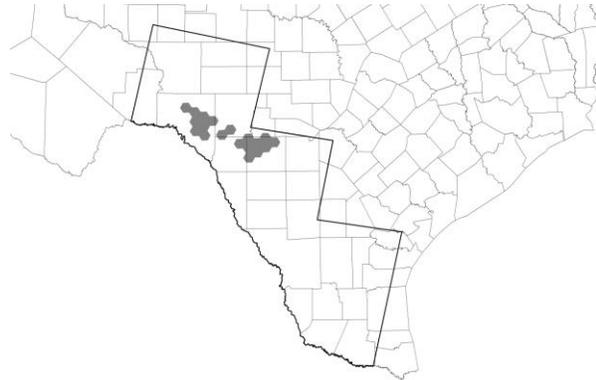
Where to Visit:

Amistad National Recreation Area

Devils River Ranch State Park

Devils River State Natural Area

Garner State Park



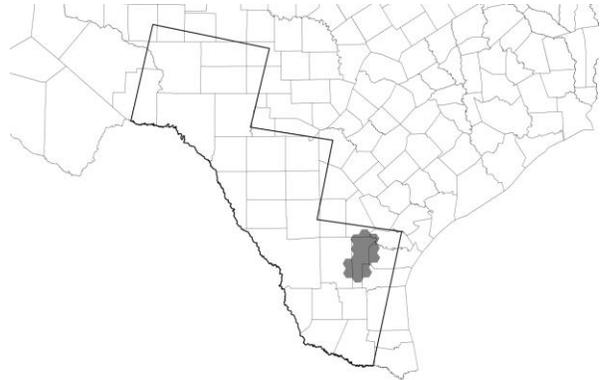
Gulf Coast: Coastal Prairie

Area in Phase 4: 145,925 acres (59,054 ha)

Description of Mapped Type: A variety of grasslands are circumscribed by this mapped type, and species such as Kleberg Bluestem, Bermudagrass, King Ranch bluestem, little bluestem, and brownseed paspalum may be dominant. Live oak is the most common tree component, and shrubs such as huisache, mesquite, and baccharis may be present.

Where to Visit:

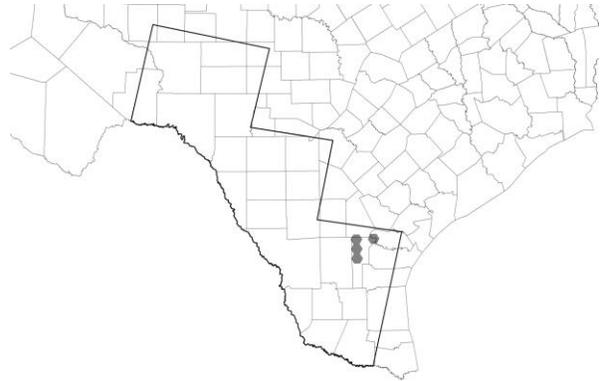
Lake Corpus Christi State Park



Gulf Coast: Coastal Prairie Pondshore

Area in Phase 4: 3 acres (1 ha)

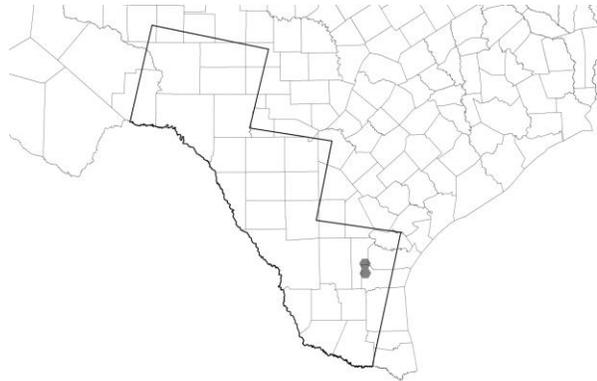
Description of Mapped Type: This very rare type is characterized by herbaceous or sparse woody cover. Species such as sedges, bulrushes, spikerushes, switchgrass, bushy bluestem, and emergent aquatics may be important. Woody species such as mesquite, huisache, baccharis, and black willow may also form sparse tree or shrub cover.



Gulf Coast: Salty Prairie

Area in Phase 4: 466 acres (189 ha)

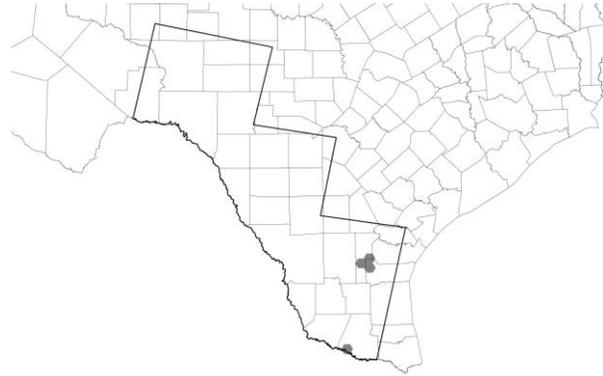
Description of Mapped Type: Gulf cordgrass may form nearly pure stands within this mapped type, or may form mosaics with marshhay cordgrass or saltgrass at slightly lower elevations or species such as Bermudagrass and little bluestem at slightly higher elevations. Other common grasses include Gulf muhly, shoregrass, switchgrass, and bushy bluestem, and shrubs such as baccharis, mesquite, or shrubby sumpweed may also occur.



Gulf Coast: Salty Prairie Shrubland

Area in Phase 4: 93 acres (38 ha)

Description of Mapped Type: This rare type may be dominated by a mix of shrubs such as baccharis, mesquite, huisache, and shrubby sumpweed together with grasses such as Gulf cordgrass, Gulf muhly, and spiny aster.



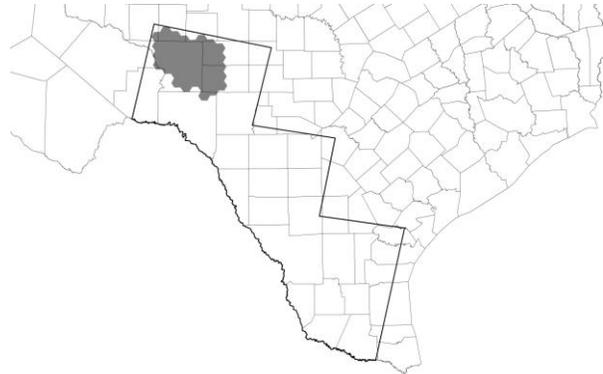
High Plains: Mesquite Shrubland

Area in Phase 4: 283,892 acres (114,887 ha)

Description of Mapped Type: More or less dense mesquite shrublands characterize this type. Other common woody species include redberry juniper, agarito, and tarbush. Lindheimer pricklypear is a common succulent, and grasses may include species such as tobosa, curlymesquite, purple threeawn, Texas wintergrass, and sideoats grama.

Where to Visit:

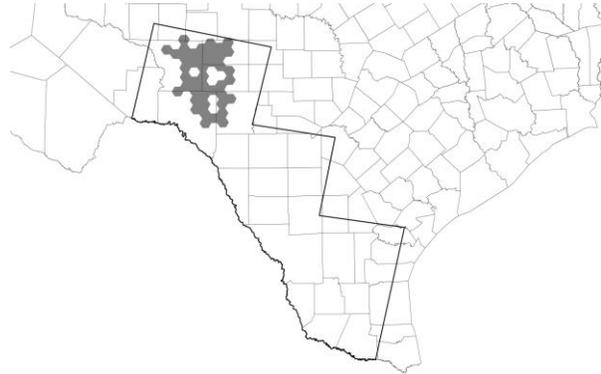
Fort Lancaster State Historic Site



High Plains: Mesquite Woodland

Area in Phase 4: 2,619 acres (1,060 ha)

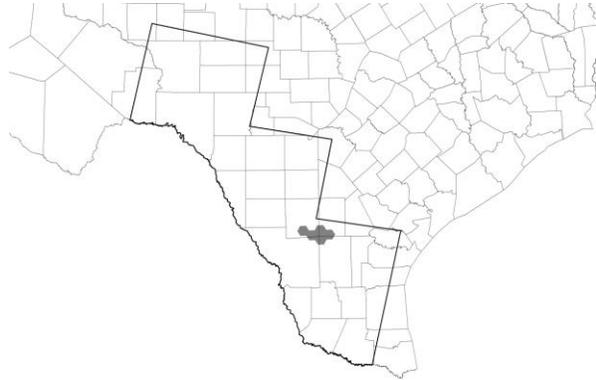
Description of Mapped Type: Dense stands of mesquite are characteristic of this uncommon type. Other woody components may include species such as redberry juniper, agarito, and lotebush.



Inland: Salty Prairie

Area in Phase 4: 6,242 acres (2,526 ha)

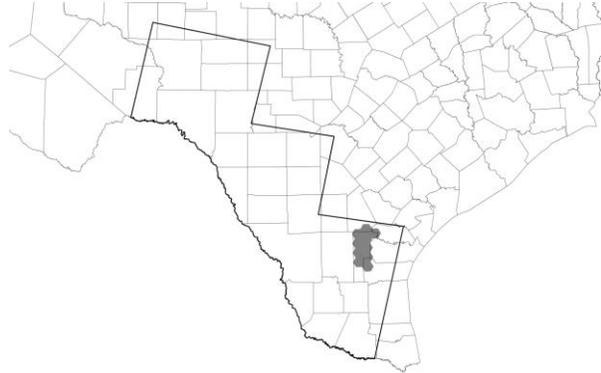
Description of Mapped Type: Gulf cordgrass may form nearly pure stands or may form mosaics with saltgrass, shoregrass, salt-tolerant herbaceous species and shrubs, and grasses of less saline soils such as King Ranch bluestem, Bermudagrass, and little bluestem. Mesquite, baccharis, huisache, Lindheimer pricklypear, and sumpweed may also occur.



Invasive: Evergreen Shrubland

Area in Phase 4: 4,253 acres (1,721 ha)

Description of Mapped Type: A variety of mainly disturbance shrublands with species such as huisache, baccharis, mesquite, blackbrush, lotebush, colima, granjeno, and brasil characterize this type.



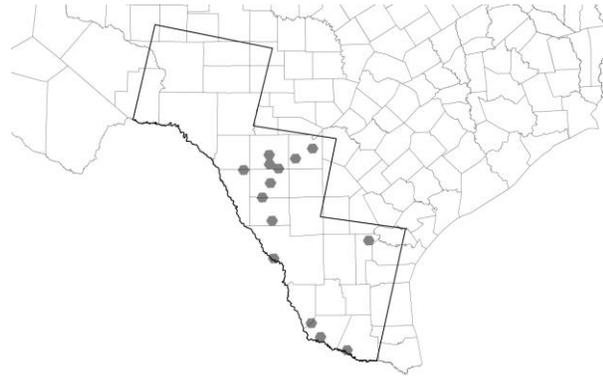
Marsh

Area in Phase 4: 72 acres (29 ha)

Description of Mapped Type: This rare type is usually associated with man-made ponds or tanks, and a variety of herbaceous sedges, rushes, spikerushes, bulrushes, smartweeds, and grasses, together with shrubs such as buttonbush and black willow may be important.

Where to Visit:

Lower Rio Grande Valley National Wildlife Refuge- La Puerta Unit



Native Invasive: Deciduous Woodland

Area in Phase 4: 76,023 acres (30,766 ha)

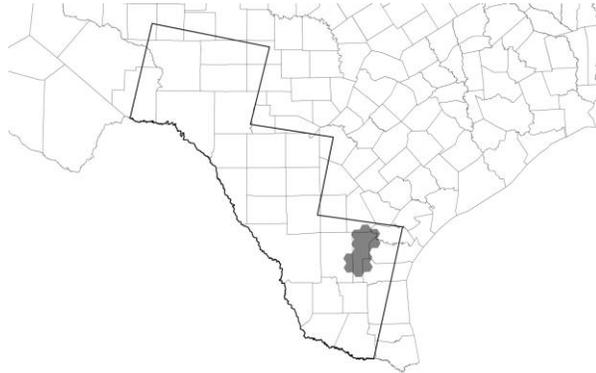
Description of Mapped Type: This broadly-defined type is mapped on prairie soils and often has mesquite, huisache, sugar hackberry, or cedar elm among the dominants. Species such as blackbrush, granjeno, colima, and Texas persimmon, along with live oak, may be present.

Where to Visit:

Lake Casa Blanca State Park

Lake Corpus Christi State Park

Lipantitlan State Historic Site



Native Invasive: Huisache Woodland or Shrubland

Area in Phase 4: 8,458 acres (3,423 ha)

Description of Mapped Type: This broadly-defined type often has invasive shrubs or small trees such as huisache, mesquite, sugar hackberry, or cedar elm among the dominants. Live oak may be present in the tree layer, and other common species include granjeno, blackbrush, desert olive, guajillo, Lindheimer pricklypear, and Texas persimmon.

Where to Visit:

Lake Corpus Christi State Park

Lower Rio Grande Valley National
Wildlife Refuge- El Morillo Banco Unit

Lower Rio Grande Valley National
Wildlife Refuge- Gabrielson Unit

Lower Rio Grande Valley National Wildlife Refuge- La Joya Unit

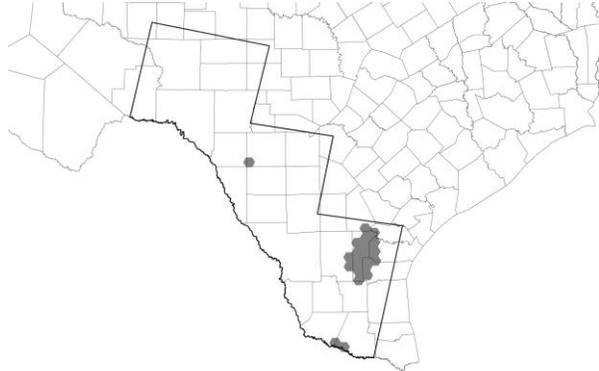
Lower Rio Grande Valley National Wildlife Refuge- La Parida Banco Unit

Lower Rio Grande Valley National Wildlife Refuge- Madero Unit

Lower Rio Grande Valley National Wildlife Refuge- Palmview Unit

Lower Rio Grande Valley National Wildlife Refuge- Sam Fordyce-North Unit

Lower Rio Grande Valley National Wildlife Refuge- Sam Fordyce Unit



Native Invasive: Juniper Shrubland

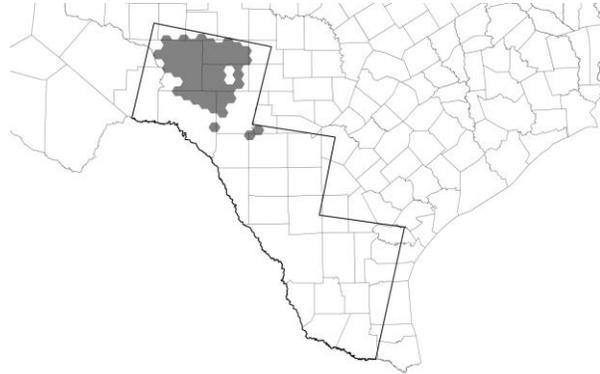
Area in Phase 4: 102,907 acres (41,645 ha)

Description of Mapped Type: This type is mapped on heavier-textured (former prairie or savanna) soils, and may contain Ashe juniper and/or redberry juniper. Mesquite, agarito, Texas persimmon, and plateau live oak are other common woody species. Lindheimer pricklypear is a common succulent, and grasses such as purple threeawn, Texas wintergrass, slim tridens, and tobosa may be important.

Where to Visit:

Devils River State Natural Area

Garner State Park



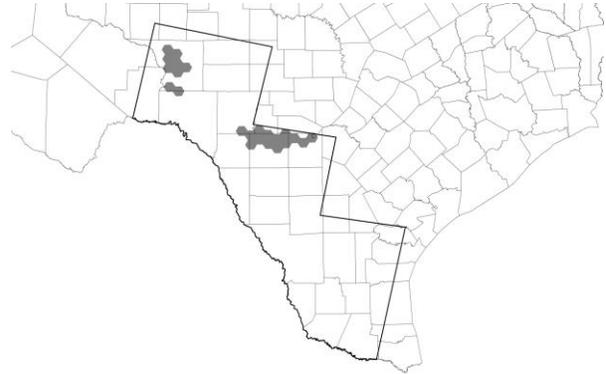
Native Invasive: Juniper Woodland

Area in Phase 4: 1,205 acres (488 ha)

Description of Mapped Type: This type may be dominated either by Ashe juniper or redberry juniper. Mesquite, live oak, Vasey oak, and white shin oak are other common components.

Where to Visit:

Garner State Park



Native Invasive: Mesquite Shrubland

Area in Phase 4: 53,067 acres (21,476 ha)

Description of Mapped Type: This type is mapped mainly on heavier-textured (former prairie or savanna) soils and is broadly-defined. Mesquite is often the dominant species but species such as huisache, granjeno, agarito, Texas persimmon, blackbrush, guajillo, Ashe juniper (north), redberry juniper (west), and brasil may be important. Live oak may form a sparse canopy.

Where to Visit:

Amistad National Recreation Area

Garner State Park

Lake Casa Blanca State Park

Lake Corpus Christi State Park

Las Palomas Wildlife Management Area

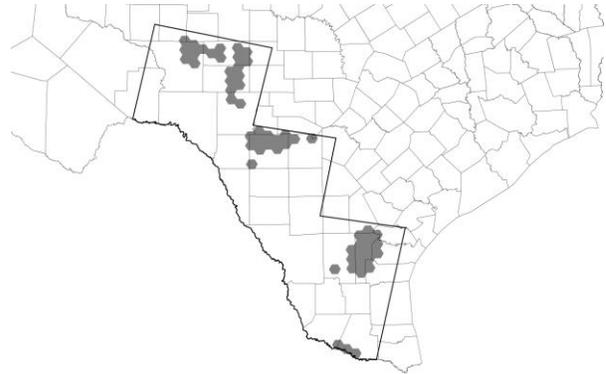
Lower Rio Grande Valley National Wildlife Refuge- El Morillo Banco Unit

Lower Rio Grande Valley National Wildlife Refuge- La Joya Unit

Lower Rio Grande Valley National Wildlife Refuge- Kiskadee Unit

Lower Rio Grande Valley National Wildlife Refuge- Pate Bend

Lower Rio Grande Valley National Wildlife Refuge- Sam Fordyce-North Unit



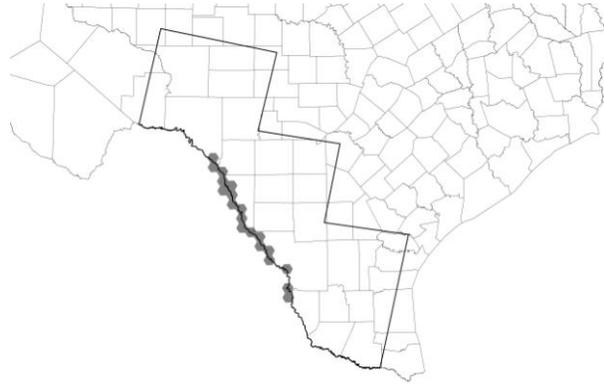
Non-native Invasive: Giant Reed

Area in Phase 4: 5,034 acres (2,037 ha)

Description of Mapped Type: This type consists of essentially monotypic stands of giant reed, and is mapped on floodplain soils of the Rio Grande. Stands usually occur immediately adjacent to the river and may extend away from the river to cover most of the moist soil floodplain soils along some sections of the river.

Where to Visit:

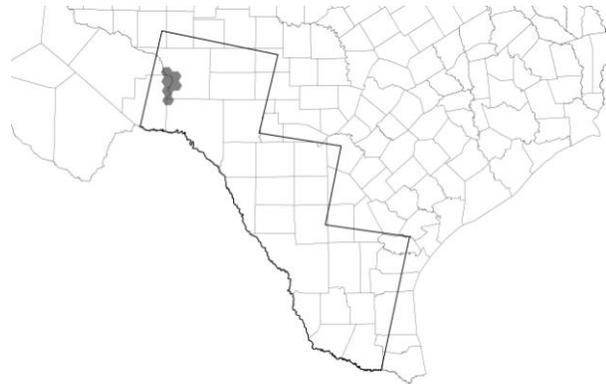
Lower Rio Grande Valley National Wildlife Refuge- Madero Unit



Non-native Invasive: Salt Cedar Shrubland

Area in Phase 4: 1,683 acres (681 ha)

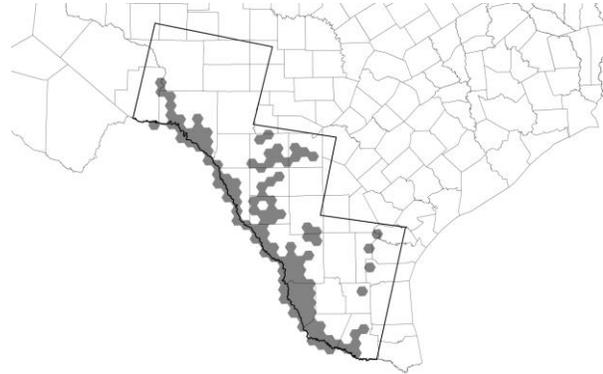
Description of Mapped Type: Salt cedar often forms nearly monotypic stands. This type is mapped on salty soils within the Pecos River floodplain.



Open Water

Area in Phase 4: 116,873 acres (47,297 ha)

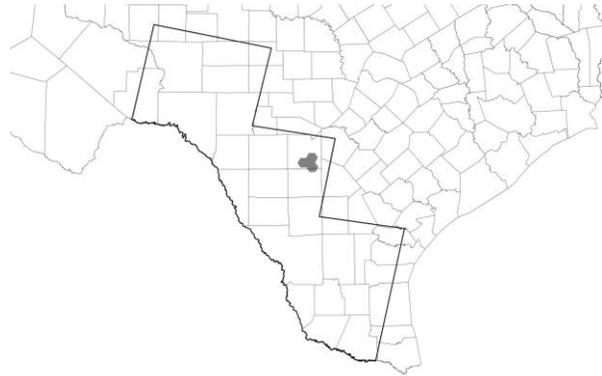
Description of Mapped Type: In addition to large lakes, rivers, and marine waters, ephemeral ponds may be mapped as open water in Phase 4, and some may support vegetation with pioneering species such as black willow, cottonwood, rushes, sedges, cattails, and spikerushes.



Post Oak Savanna: Live Oak Motte and Woodland

Area in Phase 4: 24 acres (10 ha)

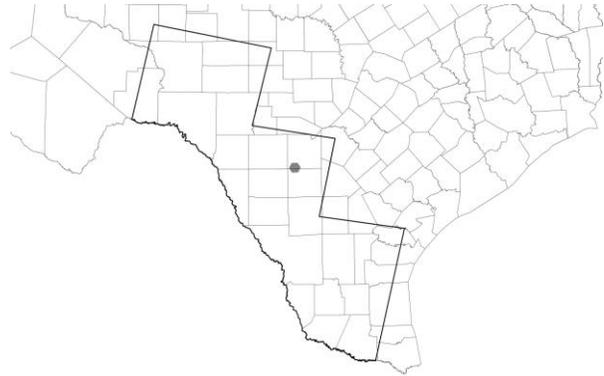
Description of Mapped Type: This type is rare in Phase 4, and live oak together with post oak may be the most important dominants. Tamaulipan species such as blackbrush, brasil, and granjeno may also occur.



Post Oak Savanna: Sandyland Grassland

Area in Phase 4: 2 acres (1 ha)

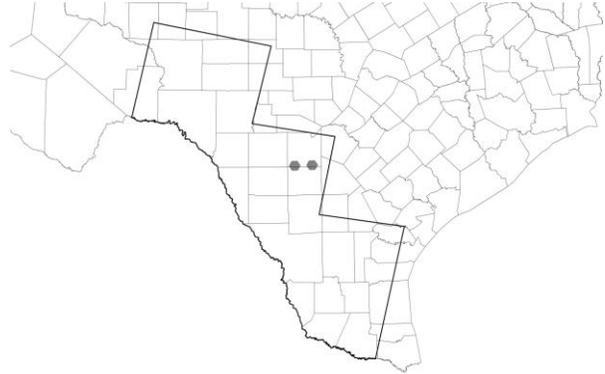
Description of Mapped Type: This type is incidental in Phase 4. Little bluestem is a common dominant of the type, which mainly occurs in the Post Oak Savanna to the northeast.



Post Oak Savanna: Sandyland Woodland and Shrubland

Area in Phase 4: 71 acres (29 ha)

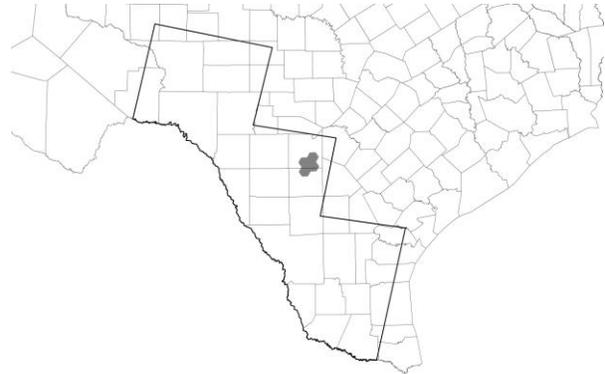
Description of Mapped Type: This rare type may be characterized by post oak, blackjack oak, and black hickory. The majority of this type occurs to the northeast of Phase 4.



Post Oak Savanna: Savanna Grassland

Area in Phase 4: 6,045 acres (2,446 ha)

Description of Mapped Type: A variety of grasslands are circumscribed within this type, and disturbance or tame grasses such as Kleberg bluestem and King Ranch bluestem are common. Little bluestem, brownseed paspalum, Indiangrass, lovegrasses, threeawns, and dropseeds are native species that may be important. Mesquite and huisache are common shrub components and live oak and post oak are common as sparse overstory trees.



Rio Grande Delta: Deciduous Thorn Woodland and Shrubland

Area in Phase 4: 49 acres (20 ha)

Description of Mapped Type: This type is mainly deciduous floodplain forest in a variety of successional and disturbance states with species such as sugar hackberry, cedar elm, Mexican ash, huisache granjeno, brasil, pecan, and mesquite as common components. Cedar elm has been eliminated from some stands recently due to de-watering of the floodplain. Evergreen species such as anacua and ebony may be present. Other common species include coma, desert olive, western soapberry, colima, and tepeguaje.

Where to Visit:

Lower Rio Grande Valley National Wildlife Refuge- El Morillo Banco Unit

Lower Rio Grande Valley National Wildlife Refuge- La Joya Unit

World Birding Center-Bentsen-Rio Grande Valley State Park



Rio Grande Delta: Evergreen Thorn Woodland and Shrubland

Area in Phase 4: 322 acres (130 ha)

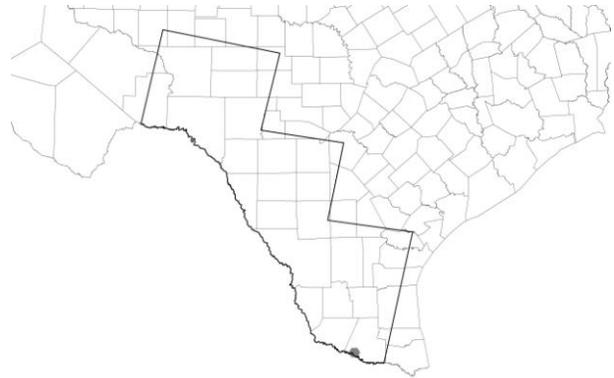
Description of Mapped Type: This type is dominated by evergreen trees such as ebony and anacua. A wide diversity of shrubs and low trees may occur, including mesquite, sugar hackberry, cedar elm, granjeno, Texas persimmon, tepeguaje, snake-eyes, torchwood, colima, brasil, guayacan, and desert olive.

Where to Visit:

Lower Rio Grande Valley National Wildlife Refuge- El Morillo Banco Unit

Lower Rio Grande Valley National Wildlife Refuge- La Joya Unit

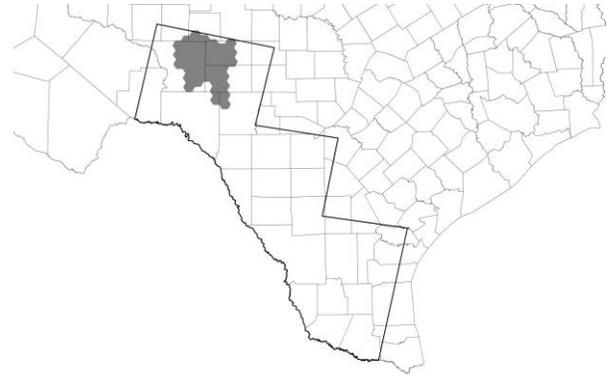
World Birding Center-Bentsen-Rio Grande Valley State Park



Rolling Plains: Mixedgrass Prairie

Area in Phase 4: 201,271 acres (81,451 ha)

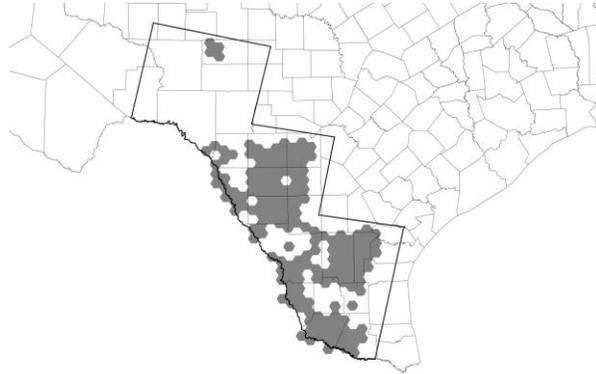
Description of Mapped Type: Texas wintergrass, curlymesquite, purple threeawn, tobosa, and sideoats grama may be important in this broadly-defined type. Mesquite is commonly the most important woody component and redberry juniper, agarito, and Ashe juniper may be present. Live oak is a common overstory tree and Lindheimer pricklypear is a common succulent.



Row Crops

Area in Phase 4: 726,884 acres (294,160 ha)

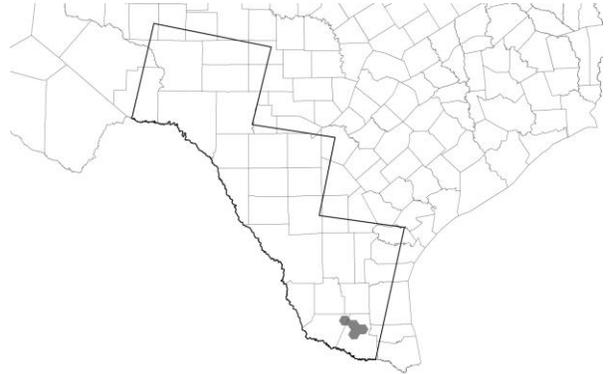
Description of Mapped Type: This type includes all cropland where fields are fallow for some portion of the year. Some fields may rotate into and out of cultivation frequently, and overgrazed pastures with sparse shrub and herbaceous cover are sometimes mistaken as cropland.



South Texas: Caliche Grassland

Area in Phase 4: 26,341 acres (10,660 ha)

Description of Mapped Type: Shallow, sandy soils over caliche or exposed caliche characterize this type, and grasses such as buffelgrass, Kleberg bluegrass, King Ranch bluestem, threeawns, and tanglehead are common, along with mesquite, huisache, colima, lotebush, and granjeno.



South Texas: Clayey Blackbrush Mixed Shrubland

Area in Phase 4: 558,308 acres (225,939 ha)

Description of Mapped Type: Relatively dense, tall, and diverse shrublands with species such as blackbrush, mesquite, granjeno, guajillo, lotebush, amargosa, brasil, and colima are characteristic of this type.

Where to Visit:

Amistad National Recreation Area

Chaparral Wildlife Management Area

Falcon State Park

Garner State Park

Lake Casa Blanca State Park

Lake Corpus Christi State Park

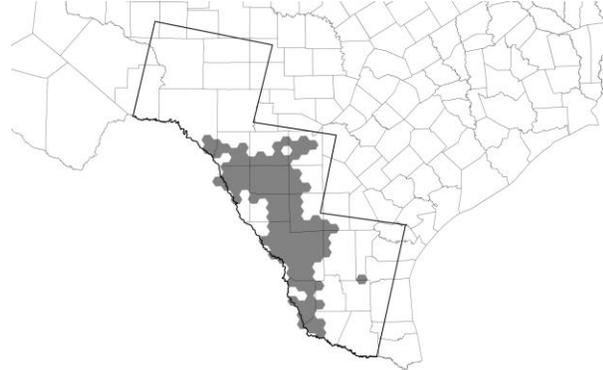
Lower Rio Grande Valley National Wildlife Refuge- Arroyo Morteros Unit

Lower Rio Grande Valley National Wildlife Refuge- Chapeno Unit

Lower Rio Grande Valley National Wildlife Refuge- Las Ruinas Unit

Lower Rio Grande Valley National Wildlife Refuge- Los Negros Creek Unit

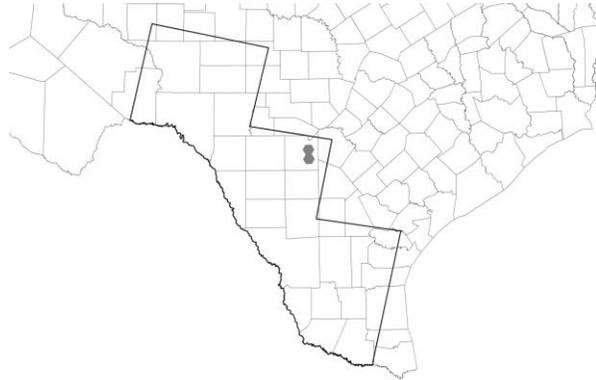
Lower Rio Grande Valley National Wildlife Refuge- Palmview Unit



South Texas: Clayey Live Oak Motte and Woodland

Area in Phase 4: 183 acres (74 ha)

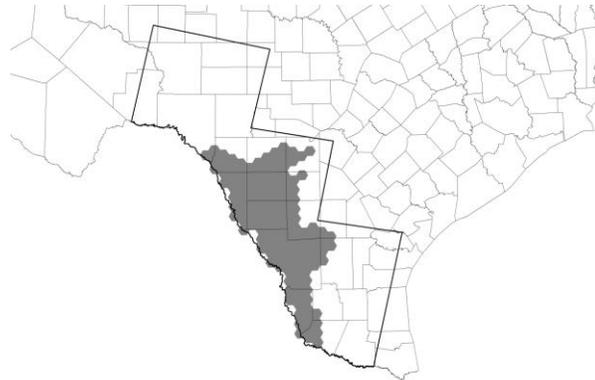
Description of Mapped Type: Live oak and sugar hackberry together with mainly southern small tree and shrub species such as huisache, mesquite, granjeno, colima, brasil, and Texas persimmon characterize this rare type in Phase 4.



South Texas: Clayey Mesquite Mixed Shrubland

Area in Phase 4: 3,429,743 acres (1,387,968 ha)

Description of Mapped Type: A discontinuous canopy of shrubs and small trees characterize this type, and soils range from clayey to loamy. Species such as mesquite, blackbrush, huisache, granjeno, sugar hackberry, brasil, guajillo, blackbrush, lotebush, pricklypear, and whitebrush are common components. Buffelgrass is a common herbaceous dominant.



South Texas: Disturbance Grassland

Area in Phase 4: 1,123,747 acres (454,764 ha)

Description of Mapped Type: A variety of mainly heavily grazed grasslands, including managed exotic pastures, are circumscribed within this type. Grasses and shrubs both are important components. Common dominant species include buffelgrass, King Ranch bluestem, pink pappusgrass, threeawn species, red grama, Bermudagrass, and Kleberg bluestem. Shrubs and small trees may include mesquite, huisache, blackbrush, lotebush, huisachillo, and granjeno.

Where to Visit:

Amistad National Recreation Area

Chaparral Wildlife Management Area

Lower Rio Grande Valley National
Wildlife Refuge- Abrams West Unit

Lower Rio Grande Valley National
Wildlife Refuge- Arroyo Ramirez Unit

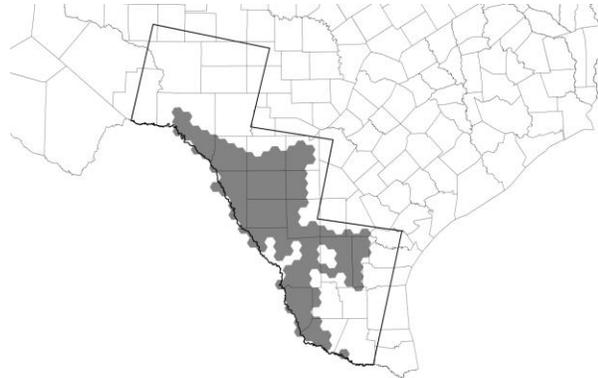
Lower Rio Grande Valley National Wildlife Refuge- El Morillo Banco Unit

Lower Rio Grande Valley National Wildlife Refuge- La Joya Unit

Lower Rio Grande Valley National Wildlife Refuge- Los Ebanos Unit

Lower Rio Grande Valley National Wildlife Refuge- Los Fresnos Banco Unit

Seminole Canyon State Park/State Historic Site



South Texas: Floodplain Deciduous Shrubland

Area in Phase 4: 174,231 acres (70,509 ha)

Description of Mapped Type: Successional sparse trees and shrubs such as mesquite, sugar hackberry, huisache, Texas persimmon, granjeno, retama, live oak, whitebrush, and brasil are characteristic of this mapped type.

Where to Visit:

Lower Rio Grande Valley National Wildlife Refuge- Abrams West Unit

Lower Rio Grande Valley National Wildlife Refuge- Arroyo Ramirez Unit

Lower Rio Grande Valley National Wildlife Refuge-Chicharra Banco Unit

Lower Rio Grande Valley National Wildlife Refuge- El Morillo Banco Unit

Lower Rio Grande Valley National Wildlife Refuge- La Casita East Unit

Lower Rio Grande Valley National Wildlife Refuge- La Casita West Unit

Lower Rio Grande Valley National Wildlife Refuge- La Joya Unit

Lower Rio Grande Valley National Wildlife Refuge- Las Ruinas Unit

Lower Rio Grande Valley National Wildlife Refuge- Los Ebanos Unit

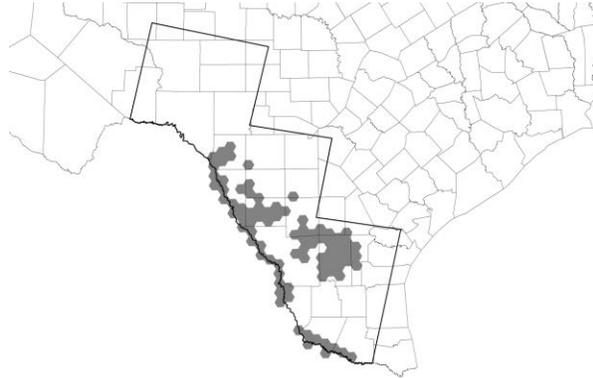
Lower Rio Grande Valley National Wildlife Refuge- Los Fresnos Banco Unit

Lower Rio Grande Valley National Wildlife Refuge-Los Velas Unit

Lower Rio Grande Valley National Wildlife Refuge- Los Velas-West Unit

Lower Rio Grande Valley National Wildlife Refuge- Sam Fordyce-North Unit

World Birding Center-Bentsen-Rio Grande Valley State Park



South Texas: Floodplain Evergreen Forest and Woodland

Area in Phase 4: 19,055 acres (7,711 ha)

Description of Mapped Type: In the northern part of Phase 4, Live oak together with species such as sugar hackberry, cedar elm, mesquite, huisache, anacua, granjeno, brasil, retama, and colima are common in this type. In the south, Texas ebony and anacua may be conspicuous evergreen components of the canopy.

Where to Visit:

Lower Rio Grande Valley National
Wildlife Refuge- Abrams Unit

Lower Rio Grande Valley National
Wildlife Refuge- Cottam Unit

Lower Rio Grande Valley National
Wildlife Refuge- El Morillo Banco Unit

Lower Rio Grande Valley National
Wildlife Refuge- Gabrielson Unit

Lower Rio Grande Valley National Wildlife Refuge- La Casita West Unit

Lower Rio Grande Valley National Wildlife Refuge- La Joya Unit

Lower Rio Grande Valley National Wildlife Refuge- La Parida Banco Unit

Lower Rio Grande Valley National Wildlife Refuge- Madero Unit

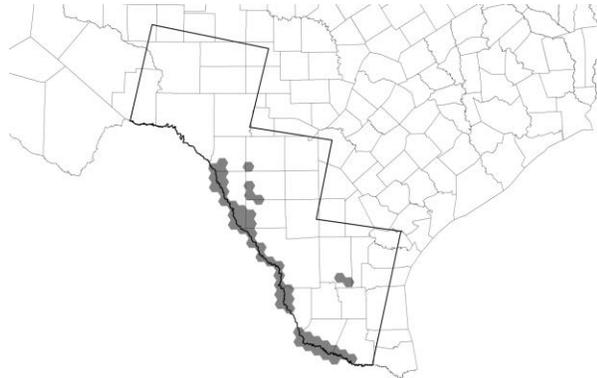
Lower Rio Grande Valley National Wildlife Refuge- Pate Bend Unit

Lower Rio Grande Valley National Wildlife Refuge- Rio San Juan Unit

Lower Rio Grande Valley National Wildlife Refuge- Sam Fordyce-North Unit

Lower Rio Grande Valley National Wildlife Refuge- Zamora Bend Unit

World Birding Center-Bentsen-Rio Grande Valley State Park



South Texas: Floodplain Evergreen Shrubland

Area in Phase 4: 37,912 acres (15,343 ha)

Description of Mapped Type: Trees and shrubs form a relatively dense canopy for this broadly-defined type, and species such as live oak, huisache, mesquite, anacua, Texas ebony, blackbrush, colima, brasil, and granjeno may be components.

Where to Visit:

Lower Rio Grande Valley National Wildlife Refuge- Chicharra Banco Unit

Lower Rio Grande Valley National Wildlife Refuge- Cottam Unit

Lower Rio Grande Valley National Wildlife Refuge- Guerra Unit

Lower Rio Grande Valley National Wildlife Refuge- Guerra North Unit

Lower Rio Grande Valley National Wildlife Refuge- Loma Verde Unit

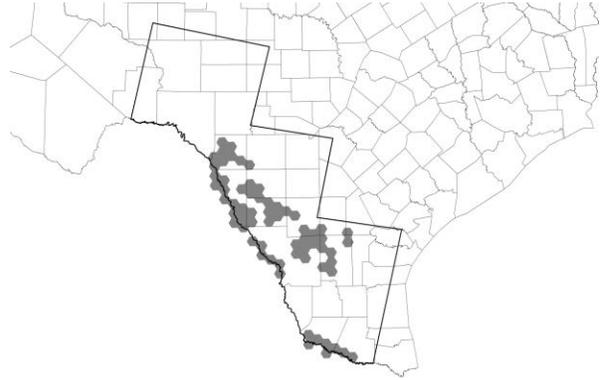
Lower Rio Grande Valley National Wildlife Refuge- Los Negros Creek Unit

Lower Rio Grande Valley National Wildlife Refuge- Palmview Unit

Lower Rio Grande Valley National Wildlife Refuge- Pate Bend Unit

Lower Rio Grande Valley National Wildlife Refuge- Sam Fordyce-North Unit

Lower Rio Grande Valley National Wildlife Refuge- Zambrano Unit



South Texas: Floodplain Hardwood Forest and Woodland

Area in Phase 4: 114,170 acres (46,203 ha)

Description of Mapped Type: A variety of trees such as sugar hackberry, live oak, cedar elm, Mexican ash, anacua, pecan, and black willow may be important within this type. Shrubs and small trees such as mesquite, huisache, Texas persimmon, brasil, granjeno, and colima are common components.

Where to Visit:

Lower Rio Grande Valley National Wildlife Refuge- Arroyo Ramirez Unit

Lower Rio Grande Valley National Wildlife Refuge- Chicharra Banco Unit

Lower Rio Grande Valley National Wildlife Refuge- Cottam Unit

Lower Rio Grande Valley National Wildlife Refuge- Cuevitas Unit

Lower Rio Grande Valley National Wildlife Refuge- La Joya Unit

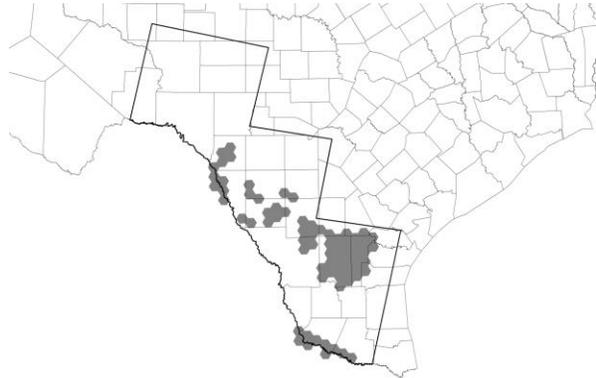
Lower Rio Grande Valley National Wildlife Refuge- Los Velas Unit

Lower Rio Grande Valley National Wildlife Refuge- Palmview Unit

Lower Rio Grande Valley National Wildlife Refuge- Pate Bend Unit

Lower Rio Grande Valley National Wildlife Refuge- Sam Fordyce-North Unit

Lower Rio Grande Valley National Wildlife Refuge- Sam Fordyce Unit



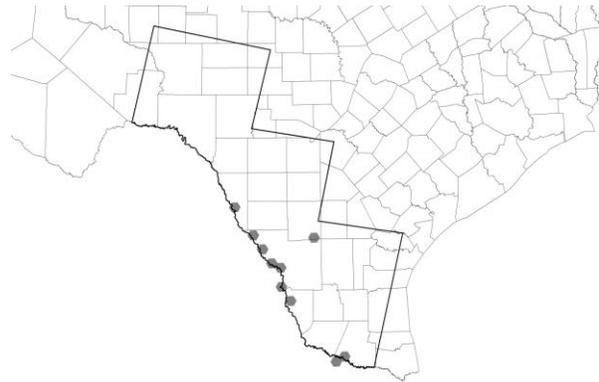
South Texas: Floodplain Herbaceous Wetland

Area in Phase 4: 53 acres (22 ha)

Description of Mapped Type: Wetland species such as cattails, American bulrush, sedges, and spike rushes are common components of this rare type. Some areas may be salty and contain species such as sea ox-eye daisy and wolfberry, and shrubs such as black willow and buttonbush may be present.

Where to Visit:

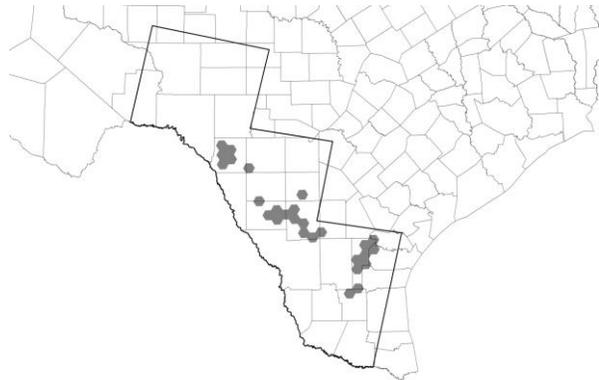
Lower Rio Grande Valley National Wildlife Refuge- La Joya Unit



South Texas: Floodplain Live Oak Forest and Woodland

Area in Phase 4: 18,523 acres (7,496 ha)

Description of Mapped Type: Live oak together with deciduous species such as sugar hackberry, Mexican ash, black willow, mesquite, and huisache may be important in this broadly-circumscribed type. Granjeno, brasil, and colima are common shrubs.



South Texas: Floodplain Mixed Deciduous / Evergreen Forest and Woodland

Area in Phase 4: 11,790 acres (4,771 ha)

Description of Mapped Type: Live oak (north), anacua, Mexican ash, huisache, and Texas ebony (south) may be components of this broadly-defined type. Other deciduous species may include sugar hackberry, cedar elm, pecan, black willow, and tepeguaje (south). Shrubs and small trees such as mesquite, whitebrush, brasil, granjeno, and colima are common components.

Where to Visit:

Las Palomas Wildlife Management Area-
Las Grulla Unit

Lower Rio Grande Valley National Wildlife
Refuge- Cottam Unit

Lower Rio Grande Valley National Wildlife
Refuge- Gabrielson Unit

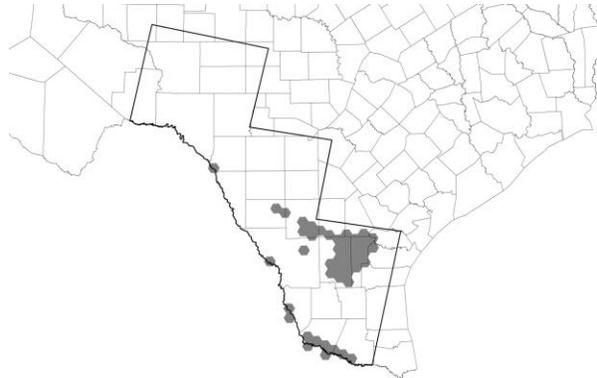
Lower Rio Grande Valley National Wildlife
Refuge- Guerra Unit

Lower Rio Grande Valley National Wildlife Refuge- La Grulla Unit

Lower Rio Grande Valley National Wildlife Refuge- La Parida Banco Unit

Lower Rio Grande Valley National Wildlife Refuge- Madero Unit

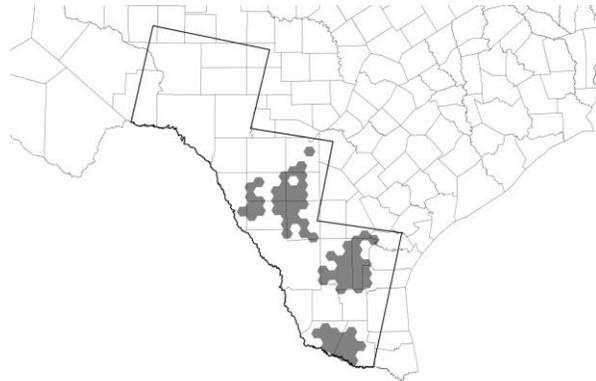
World Birding Center-Bentsen-Rio Grande Valley State Park



South Texas: Pond and Laguna Shrubland

Area in Phase 4: 5,998 acres (2,427 ha)

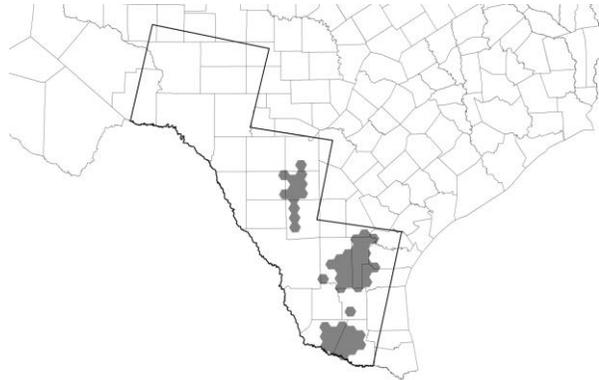
Description of Mapped Type: This type is mapped within shallow depressions and is often dominated by sparse stands of rattlebox sesbania, huisache, retama, or mesquite.



South Texas: Pond and Laguna Woodland

Area in Phase 4: 10,313 acres (4,173 ha)

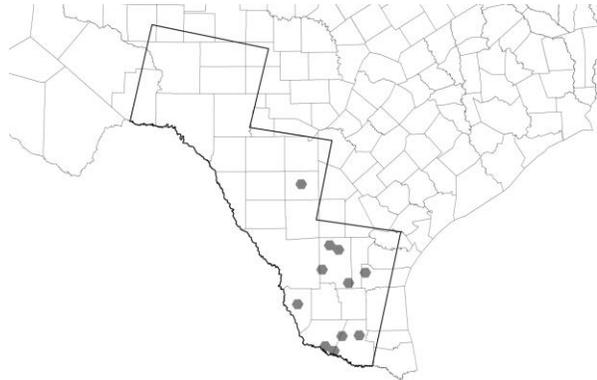
Description of Mapped Type: Relatively dense stands of huisache, retama, or mesquite are common within this type, which often occurs near the edges of shallow ponds. Cedar elm, coma, colima, and brasil may also be present.



South Texas: Pondshore Herbaceous Vegetation

Area in Phase 4: 22 acres (9 ha)

Description of Mapped Type: Herbaceous plants in wet lakebeds and shorelines are mapped within this rare type, and dominants may include a variety of sedges, rushes, spikerushes, bulrushes, smartweeds, and grasses.



South Texas: Ramadero Dense Shrubland

Area in Phase 4: 71,774 acres (29,046 ha)

Description of Mapped Type: This type is mapped as narrow bands along upland drainages. Common small trees or shrubs include mesquite, huisache, granjeno, sugar hackberry, palo verde, whitebrush, colima, brasil, desert olive, and lotebush.

Where to Visit:

Chaparral Wildlife Management Area

Falcon State Park

Lake Casa Blanca State Park

Lower Rio Grande Valley National Wildlife
Refuge- Arroyo Morteros Unit

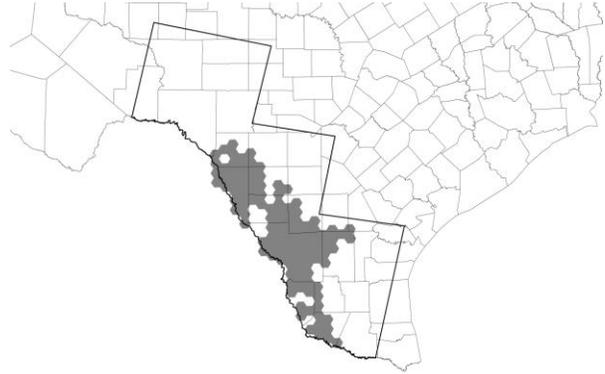
Lower Rio Grande Valley National Wildlife
Refuge- Los Negros Creek Unit

Lower Rio Grande Valley National Wildlife Refuge- Los Olmos Unit

Lower Rio Grande Valley National Wildlife Refuge- Monte Cristo Unit

Lower Rio Grande Valley National Wildlife Refuge- Palmview Unit

Lower Rio Grande Valley National Wildlife Refuge- Yturria Brush Unit



South Texas: Ramadero Evergreen Woodland

Area in Phase 4: 27,693 acres (11,207 ha)

Description of Mapped Type: This type is mapped as narrow bands long upland drainages. Common small trees include huisache, sugar hackberry, mesquite, palo verde, live oak, and Texas ebony (south). Common shrubs include whitebrush, colima, brasil, desert olive, and lotebush.

Where to Visit:

Chaparral Wildlife Management Area

Falcon State Park

Lower Rio Grande Valley National Wildlife Refuge- Chapeno Unit

Lower Rio Grande Valley National Wildlife Refuge- La Parida Banco Unit

Lower Rio Grande Valley National Wildlife Refuge- La Puerta Unit

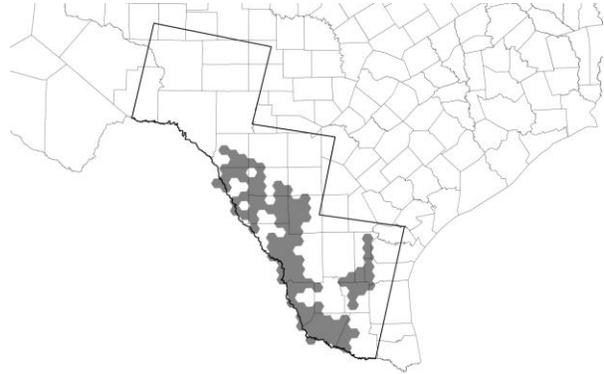
Lower Rio Grande Valley National Wildlife Refuge- Los Olmos Unit

Lower Rio Grande Valley National Wildlife Refuge- Monte Cristo Unit

Lower Rio Grande Valley National Wildlife Refuge- Palmview Unit

Lower Rio Grande Valley National Wildlife Refuge- Pope Unit

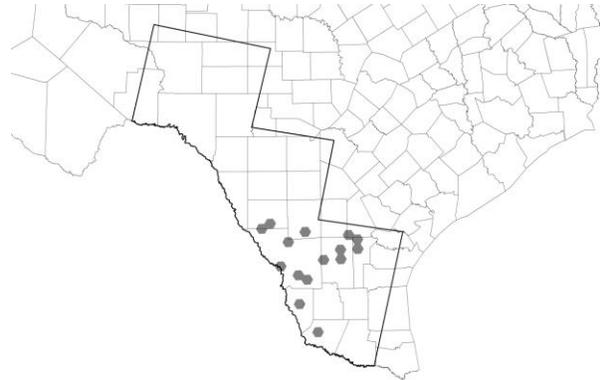
Lower Rio Grande Valley National Wildlife Refuge- Yturria Brush Unit



South Texas: Ramadero Herbaceous Wetland

Area in Phase 4: 15 acres (6 ha)

Description of Mapped Type: Herbaceous plants in wet upland drainages are mapped within this rare type, and dominants may include a variety of sedges, rushes, spikerushes, bulrushes, smartweeds, and grasses.



South Texas: Ramadero Shrubland

Area in Phase 4: 340,530 acres (137,808 ha)

Description of Mapped Type: This type is mapped in narrow bands along upland drainages, and common shrubs or small trees include mesquite, huisache, blackbrush, granjeno, colima, brasil, palo verde, whitebrush, and lotebush.

Where to Visit:

Chaparral Wildlife Management Area

Falcon State Park

Lake Casa Blanca State Park

Lower Rio Grande Valley National Wildlife
Refuge- Arroyo Morteros Unit

Lower Rio Grande Valley National Wildlife
Refuge- Arroyo Ramirez Unit

Lower Rio Grande Valley National Wildlife Refuge- Chapeno Unit

Lower Rio Grande Valley National Wildlife Refuge- El Morillo Banco Unit

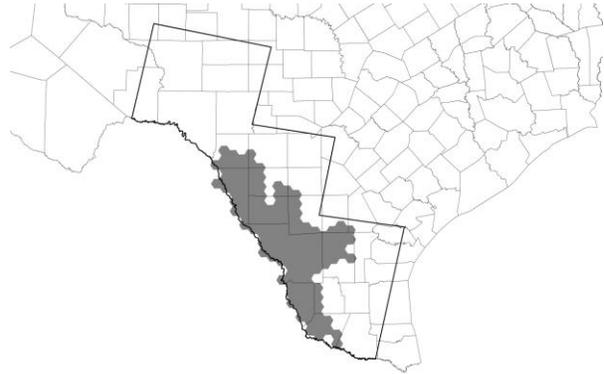
Lower Rio Grande Valley National Wildlife Refuge- Los Olmos Unit

Lower Rio Grande Valley National Wildlife Refuge- Monte Cristo Unit

Lower Rio Grande Valley National Wildlife Refuge- Palmview Unit

Lower Rio Grande Valley National Wildlife Refuge- Yturria Brush Unit

World Birding Center-Bentsen-Rio Grande Valley State Park



South Texas: Ramadero Woodland

Area in Phase 4: 117,540 acres (47,567 ha)

Description of Mapped Type: This type is mapped as narrow bands long upland drainages. Common small trees include mesquite, huisache, sugar hackberry, mesquite, and palo verde. Common shrubs include granjeno, whitebrush, colima, brasil, desert olive, and lotebush.

Where to Visit:

Chaparral Wildlife Management Area

Lower Rio Grande Valley National Wildlife Refuge- Arroyo Ramirez Unit

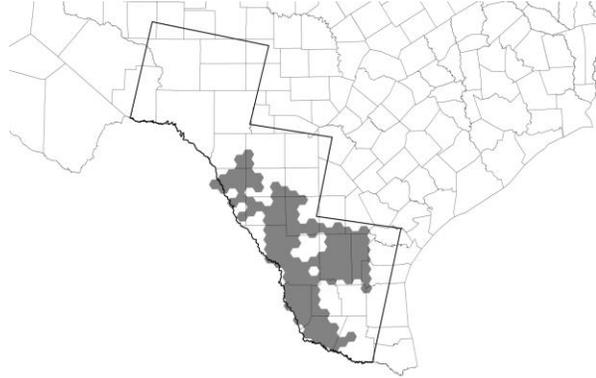
Lower Rio Grande Valley National Wildlife Refuge- Los Olmos Unit

Lower Rio Grande Valley National Wildlife Refuge- Monte Cristo Unit

Lower Rio Grande Valley National Wildlife Refuge- Palmview Unit

Lower Rio Grande Valley National Wildlife Refuge- Pope Unit

Lower Rio Grande Valley National Wildlife Refuge- Yturria Brush Unit



South Texas: Salty Thornscrub

Area in Phase 4: 132,612 acres (53,666 ha)

Description of Mapped Type: This type may be over more or less salty soils, and often contains mesquite as the overstory dominant except on the saltiest sites. A variety of shrubs and succulents may be present, including species such as whitebrush, blackbrush, granjeno, lotebush, brasil, goldenweed, Lindheimer pricklypear, four-wing saltbush, amargosa, saladillo, and knifeleaf condalia. Buffelgrass, red grama, Kleberg bluestem, curlymesquite, and whorled dropseed are common grasses.

Where to Visit:

Falcon State Park

Lake Casa Blanca State Park

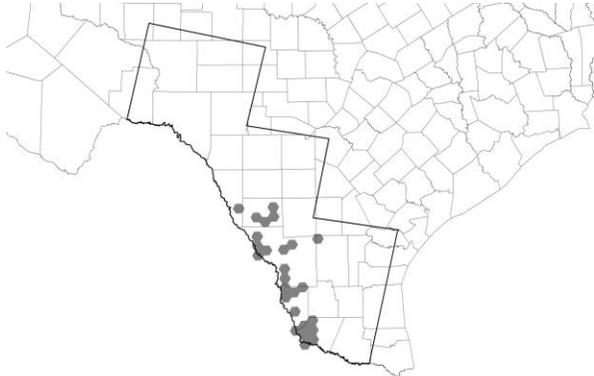
Lower Rio Grande Valley National Wildlife
Refuge- Arroyo Morteros Unit

Lower Rio Grande Valley National Wildlife
Refuge- Chapeno Unit

Lower Rio Grande Valley National Wildlife Refuge- Cuellar Unit

Lower Rio Grande Valley National Wildlife Refuge- Las Ruinas Unit

Lower Rio Grande Valley National Wildlife Refuge- Los Negros Creek Unit



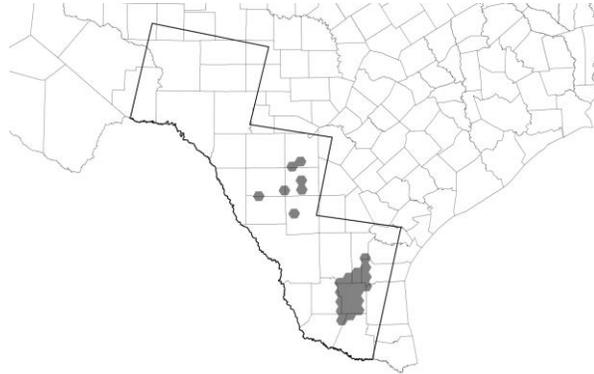
South Texas: Sandy Live Oak Motte and Woodland

Area in Phase 4: 16,734 acres (6,772 ha)

Description of Mapped Type: Live oak, sugar hackberry, post oak, and cedar elm are common trees of this type, and shrubs may include a mix of more northern and more southern species such as gum bumelia, huisache, mesquite, granjeno, and colima.

Where to Visit:

Lake Corpus Christi State Park



South Texas: Sandy Mesquite / Evergreen Woodland

Area in Phase 4: 30,629 acres (12,395 ha)

Description of Mapped Type: Mesquite and huisache are common dominants of this type. Live oak, granjeno, colima, brasil, lotebush, whitebrush, and coma may be present.

Where to Visit:

Chaparral Wildlife Management Area

Lower Rio Grande Valley National Wildlife Refuge- Alto Bonito Unit

Lower Rio Grande Valley National Wildlife Refuge- Garza Unit

Lower Rio Grande Valley National Wildlife Refuge- Havana North

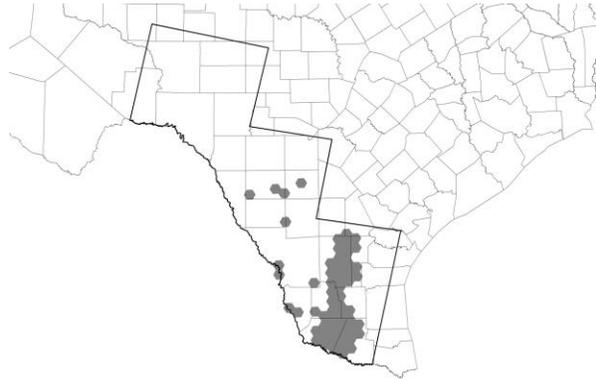
Lower Rio Grande Valley National Wildlife Refuge- La Puerta Unit

Lower Rio Grande Valley National Wildlife Refuge- Los Olmos Unit

Lower Rio Grande Valley National Wildlife Refuge- Monte Cristo Unit

Lower Rio Grande Valley National Wildlife Refuge- Pope Unit

Lower Rio Grande Valley National Wildlife Refuge- Yturria Brush Unit



South Texas: Sandy Mesquite Dense Shrubland

Area in Phase 4: 4,102 acres (25,941 ha)

Description of Mapped Type: Dense mesquite shrubland with a relatively diverse compliment of additional shrubs and small trees such as colima, granjeno, Texas persimmon, sugar hackberry, Texas ebony, huisache, guajillo, blackbrush, and brasil characterize this type.

Where to Visit:

Chaparral Wildlife Management Area

Lower Rio Grande Valley National Wildlife Refuge- Alto Bonito Unit

Lower Rio Grande Valley National Wildlife Refuge- Chicharra Banco Unit

Lower Rio Grande Valley National Wildlife Refuge- Garza Unit

Lower Rio Grande Valley National Wildlife Refuge- Havana North

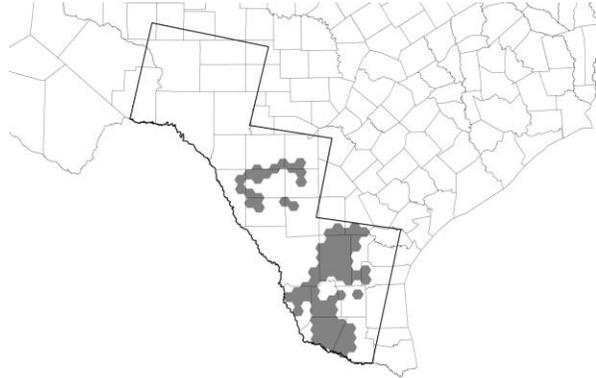
Lower Rio Grande Valley National Wildlife Refuge- La Puerta Unit

Lower Rio Grande Valley National Wildlife Refuge- Los Olmos Unit

Lower Rio Grande Valley National Wildlife Refuge- Monte Cristo Unit

Lower Rio Grande Valley National Wildlife Refuge- Pope Unit

Lower Rio Grande Valley National Wildlife Refuge- Yturria Brush Unit



South Texas: Sandy Mesquite Savanna Grassland

Area in Phase 4: 732,346 acres (296,370 ha)

Description of Mapped Type: Grasslands with scattered mesquite characterize this type, which includes areas over both loamy sands and loams. Herbaceous species such as King Ranch bluestem, buffelgrass, Kleberg bluestem, Bermudagrass, little bluestem, purple threeawn, silver bluestem, tanglehead, and hog croton are common. Additional common shrubs include blackbrush, huisache, colima, Texas hogplum, whitebrush, and granjeno.

Where to Visit:

Chaparral Wildlife Management Area

Lake Corpus Christi State Park

Lower Rio Grande Valley National Wildlife
Refuge- Chicharra Banco Unit

Lower Rio Grande Valley National Wildlife
Refuge- Havana North Unit

Lower Rio Grande Valley National Wildlife Refuge- Havana South Unit

Lower Rio Grande Valley National Wildlife Refuge- La Puerta Unit

Lower Rio Grande Valley National Wildlife Refuge- Los Ebanos Unit

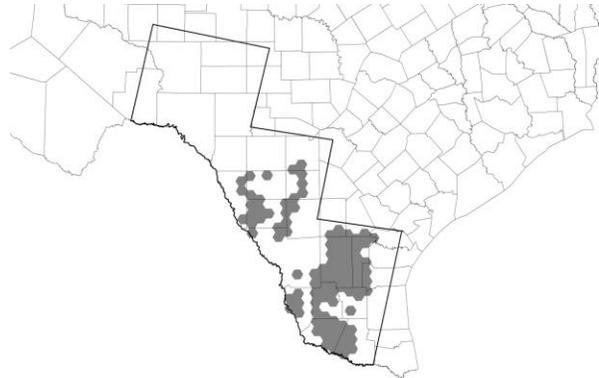
Lower Rio Grande Valley National Wildlife Refuge- Monte Cristo Unit

Lower Rio Grande Valley National Wildlife Refuge- Pope Unit

Lower Rio Grande Valley National Wildlife Refuge- Sam Fordyce North Unit

Lower Rio Grande Valley National Wildlife Refuge- Sam Fordyce Unit

Lower Rio Grande Valley National Wildlife Refuge- Yturria Brush Unit



South Texas: Sandy Mesquite Woodland and Shrubland

Area in Phase 4: 1,616,102 acres (653,977 ha)

Description of Mapped Type: Relatively dense mesquite low woodlands are characteristic of this type. Shrub composition varies and diversity may be relatively high, and granjeno, blackbrush, Texas hogplum, colima, huisache, Texas persimmon, lotebush, and brasil may be components.

Where to Visit:

Chaparral Wildlife Management Area

Lower Rio Grande Valley National Wildlife Refuge- Chicharra Banco Unit

Lower Rio Grande Valley National Wildlife Refuge- Garza Unit

Lower Rio Grande Valley National Wildlife Refuge- La Puerta Unit

Lower Rio Grande Valley National Wildlife Refuge- Los Olmos Unit

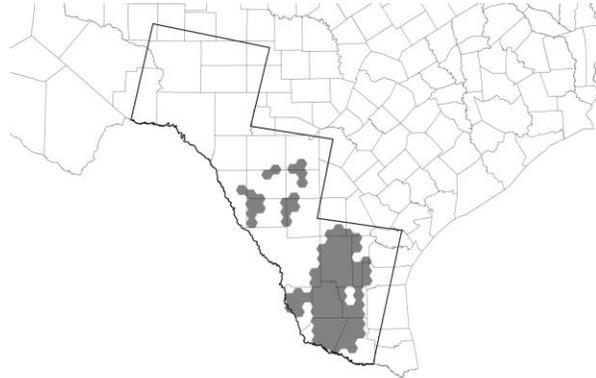
Lower Rio Grande Valley National Wildlife Refuge- Monte Cristo Unit

Lower Rio Grande Valley National Wildlife Refuge- Pope Unit

Lower Rio Grande Valley National Wildlife Refuge- Sam Fordyce North Unit

Lower Rio Grande Valley National Wildlife Refuge- Sam Fordyce Unit

Lower Rio Grande Valley National Wildlife Refuge- Yturria Brush Unit



South Texas: Shallow Dense Shrubland

Area in Phase 4: 302,516 acres (122,424 ha)

Description of Mapped Type: Cenizo, guajillo, mesquite, and blackbrush often form a low, dense canopy within this mapped type. A diversity of shrubs such as shrubby blue sage, Texas kidneywood, Texas persimmon, guayacan, granjeno, coma, brasil, agarito, and vara dulce may be present.

Where to Visit:

Amistad National Recreation Area

Chaparral Wildlife Management Area

Lake Corpus Christi State Park

Lower Rio Grande Valley National Wildlife
Refuge- Arroyo Ramirez Unit

Lower Rio Grande Valley National Wildlife Refuge- Alto Bonito Unit

Lower Rio Grande Valley National Wildlife Refuge- Chicharra Banco Unit

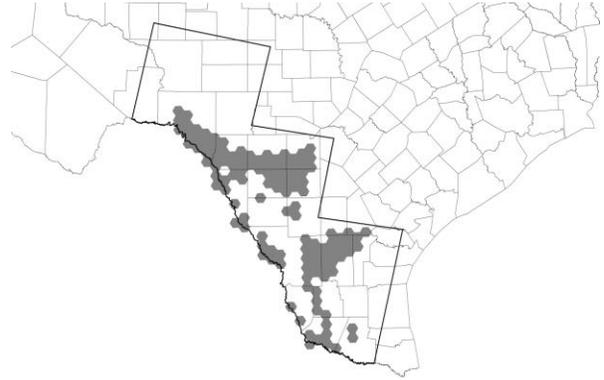
Lower Rio Grande Valley National Wildlife Refuge- Garza Unit

Lower Rio Grande Valley National Wildlife Refuge- La Puerta Unit

Lower Rio Grande Valley National Wildlife Refuge- Los Olmos Unit

Lower Rio Grande Valley National Wildlife Refuge- Yturria Brush Unit

Seminole Canyon State Park/State Historic Site



South Texas: Shallow Shrubland

Area in Phase 4: 1,467,415 acres (593,842 ha)

Description of Mapped Type: A more or less discontinuous canopy of shrubs and small trees characterize this type, and species such as mesquite, guajillo, blackbrush, granjeno, cenizo, Texas persimmon, guayacan, leatherstem, and colima are common components. Succulents such as yucca species, sotol, Lindheimer cactus, and tasajillo are important on some sites.

Where to Visit:

Amistad National Recreation Area

Chaparral Wildlife Management Area

Devils River Ranch State Park

Kickapoo Cavern State Park

Lake Casa Blanca State Park

Lake Corpus Christi State Park

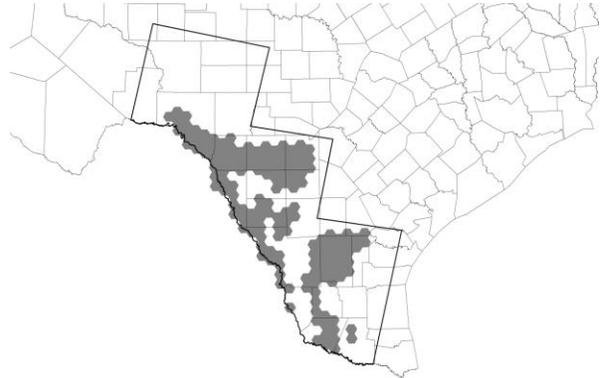
Lower Rio Grande Valley National Wildlife Refuge- Arroyo Ramirez Unit

Lower Rio Grande Valley National Wildlife Refuge- La Puerta Unit

Lower Rio Grande Valley National Wildlife Refuge- Los Olmos Unit

Lower Rio Grande Valley National Wildlife Refuge- Yturria Brush Unit

Seminole Canyon State Park/State Historic Site



South Texas: Shallow Sparse Shrubland

Area in Phase 4: 25,200 acres (10,198 ha)

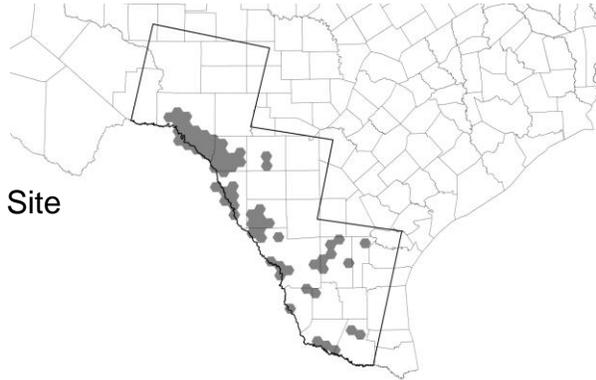
Description of Mapped Type: This type includes both grasslands, including managed pastures, and more natural grass/shrub mixes. Common grasses include Kleberg bluestem, King Ranch bluestem, buffelgrass, threeawns, buffalograss, Texas grama, and hairy tridens, and common shrubs include mesquite, cenizo, guajillo, blackbrush, lotebush, guayacan, leatherstem, and Texas persimmon. Succulents such as yucca species, Lindheimer pricklypear, tasajillo, lechuguilla (west), and sotol may be important on some sites.

Where to Visit:

Amistad National Recreation Area

Devils River Ranch State Park

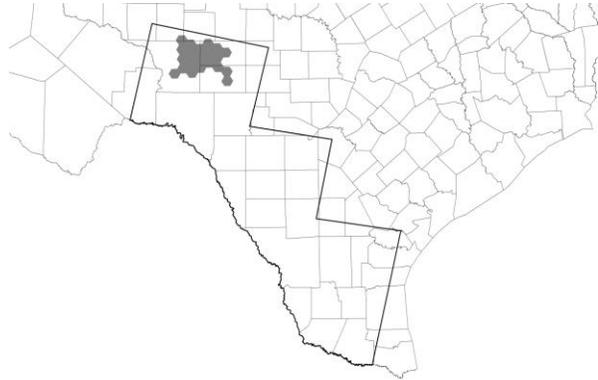
Seminole Canyon State Park/State Historic Site



Southwest: Tobosaland

Area in Phase 1: 100,102 acres (40,510 ha)

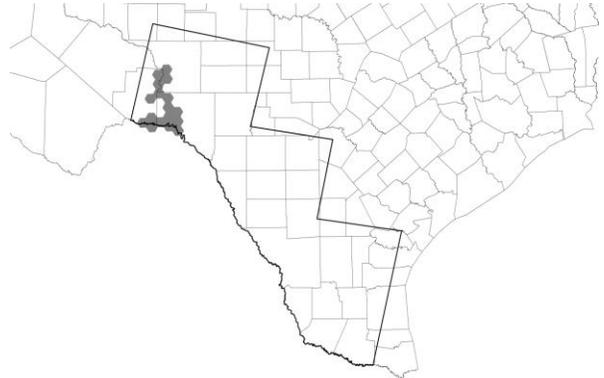
Description of Mapped Type: This grassland type is mapped on clay flats, and often contains mesquite as a woody component. Tobosa is a dominant on some sites, but other species such as curlymesquite, Texas wintergrass, purple threeawn, and buffalograss may also be important.



Trans-Pecos: Cliff and Outcrop

Area in Phase 4: 2,334 acres (944 ha)

Description of Mapped Type: This type is mapped where slope is $>100\%$ and represents areas of sheer cliffs and high river bluffs.



Trans-Pecos: Mixed Desert and Thornscrub

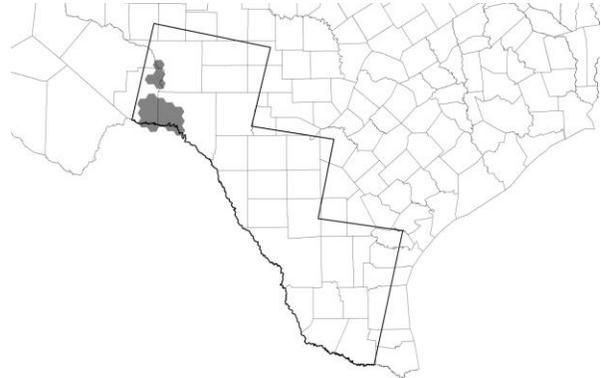
Area in Phase 4: 310,345 acres (125,592 ha)

Description of Mapped Type: In Phase 4, this type contains a suite of both southern and western species. Important shrub species may include cenizo, guajillo, Rio Grande stickpea, mesquite, Texas persimmon, and creosotebush. Succulents such as lechuguilla, border pricklypear, Lindheimer pricklypear, Torrey's yucca, and Texas sotol may be important.

Where to Visit:

Amistad National Recreation Area

Devils River Ranch State Park



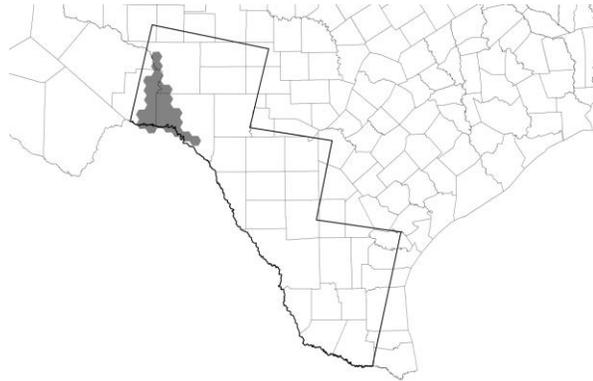
Trans-Pecos: Riparian Barren

Area in Phase 4: 9,664 acres (3,911 ha)

Description of Mapped Type: Bare rock and gravel beds along narrow, upland drainages characterize this type. Sparse cover by species such as desert willow, shrubby blue sage, or gravelbar brickellbush may be present.

Where to Visit:

Amistad National Recreation Area



Trans-Pecos: Riparian Shrubland

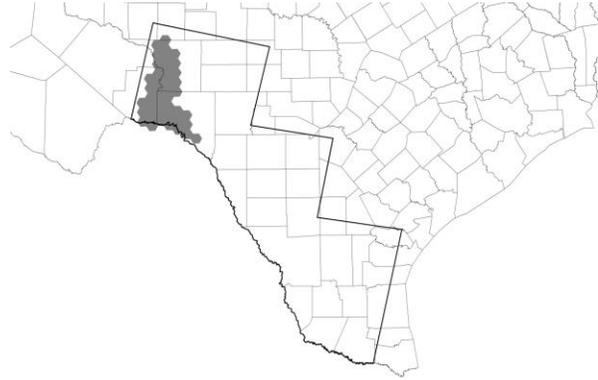
Area in Phase 4: 52,678 acres (21,318 ha)

Description of Mapped Type: Narrow upland drainages with a variety of shrubs characterize this type. Texas persimmon, redberry juniper, whitebrush, guajillo, and mesquite are common components in Phase 4.

Where to Visit:

Amistad National Recreation Area

Seminole Canyon State Park/State
Historic Site



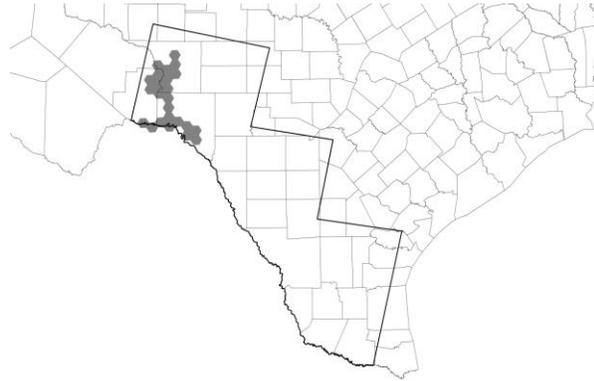
Trans-Pecos: Riparian Woodland

Area in Phase 4: 1,822 acres (737 ha)

Description of Mapped Type: Narrow, upland drainages with dense, low tree and shrub cover characterize this type. Mesquite, granjeno, huisache, and white brush may be important on Phase 4.

Where to Visit:

Amistad National Recreation Area



Trans-Pecos: Succulent Desert Scrub

Area in Phase 4: 205,384 acres (83,298 ha)

Description of Mapped Type: This type is mapped on slopes >20% and often is a low shrubland with a strong succulent component and much bare rock or shallow, non-vegetated soils. Important species may include shrubs such as Ashe or redberry juniper, catclaw mimosa, creosotebush, and guajillo, and succulents such as Torrey's yucca, Texas sotol, lechuguilla, Rio Grande pricklypear, border pricklypear, and tasajillo.

Where to Visit:

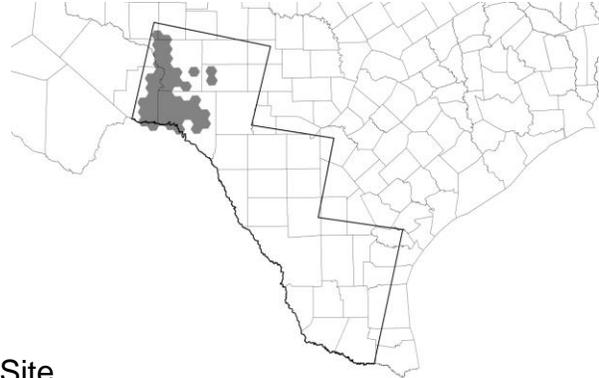
Amistad National Recreation Area

Devils River Ranch State Park

Devils River State Natural Area

Fort Lancaster State Historic Site

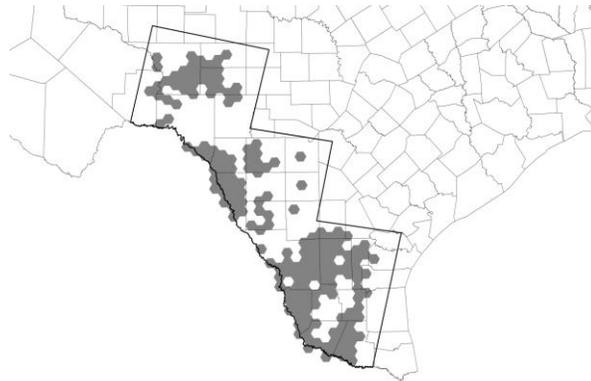
Seminole Canyon State Park/State Historic Site



Urban High Intensity

Area in Phase 4: 74,375 acres (30,099 ha)

Description of Mapped Type: This type consists of built-up areas and wide transportation corridors that are dominated by impervious cover.



Urban Low Intensity

Area in Phase 4: 151,388 acres (61,265 ha)

Description of Mapped Type: This type includes areas that are built-up but not entirely covered by impervious cover, and includes most of the non-industrial areas within cities and towns.

