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Notes on a Third Visit to the Encinitos Ranch, Brooks County, Texas, 14-15 November 2006

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During November 2006, I spent two days examining the flora of the Encinitos Ranch, a large property straddling parts of four counties in the western part of the South Texas Holocene Sand Sheet. This visit was a follow-up to an initial summertime visit on 14 June 2006 and a brief fall survey on 28 September 2006. This was not a solo effort; I was assisted in this survey by two colleagues from The Nature Conservancy of Texas. Tamaulipan Thornscrub Project Director Lisa Williams made the initial contact with the landowners and helped lead the June survey. Natural Heritage Database Manager and expert plant finder Debbie Benesh took time out from her regular duties to help locate things we would otherwise have missed. Additional eyes were also provided, from time to time, by Toddy Burns and her two sons, Kyle and H. F.

Areas Examined

During this installment of the continuing investigation of the ranch, we made especial effort to look at some habitats that had not been examined during the two previous visits. One such habitat was the so-called red sand of the western part of the ranch, and Toddy led us to several such sites. A second focus were the shallow ephemeral wetlands that develop in depressional areas during wetter seasons, and once again Toddy showed us several of those. And even though it had been examined in the past, we were obliged to return to the active dune field in the eastern part of the ranch, since it's one of the botanical and scenic highlights of the Sand Sheet.

Stop 1 was along the west side of the road to the Big House, about 0.2 miles northwest of the house itself, at N26^{o}47'11.8", W098^{o}19'50.8". We were attracted by the site's good quality mid-successional grassland, which contained plenty of little bluestem but also some earlier-successional species such as threeawns, and enough bare sand to allow growth of annual species. Diversity seemed fairly high. Species we noted here included:

Aristida sp.
Cenchrus spinifex
Chamaecrista calycioides
Chloris cucullata
Cnidoscolus texanus
Commelina erecta
Croptilon rigidifolium
Croton capitatus
Croton glandulosus
Cyperus sp.
Diodia teres
Eragrostis secundiflora
Evolvulus alsinoides
Froelichia sp.
Galactia canescens
Helianthus debilis var. runyonii
Matelea parviflora
Opuntia cf. macrorhiza
Oxalis berlandieriana
Panicum virgatum
Paspalum sp.
Phyllanthus abnormis
Physalis spathulifolia
Rhynchelytrum repens
Richardia brasiliense
Schizachyrium scoparium
Setaria sp.
Sida sp. (not lindheimeri)
Stemodia tomentosa
Stillingia sylvatica
Trachypogon secundus
Urochloa ciliatissima
Vaseyochloa multinervosa

Within this matrix were several large live oak (*Quercus fusiformis*) mottes. In the example at N26^{o}47’13.9”, W098^{o}19’53.8” we noted:

Celtis pallida
Cissus incisa
Digitaria sp. (25345)
Funastrum cynanchoides
Lantana urticoides
Lycium berlandieri
Physalis spathulifolia
Prosopis glandulosa
Quercus fusiformis
Richardia brasiliensis
Setaria leucopila
Vaseyochloa multinervosa
Zanthoxylum fagara
Ziziphus obtusifolius

Among the woody plants, mesquite (*Prosopis glandulosa*) and colima (*Zanthoxylum fagara*) were probably the most common understory species in the example we visited. Plains bristlegrass (*Setaria leucopila*) was a common and characteristic grass, although Texasgrass (*Vaseyochloa multinervosa*), which was also seen in the surrounding grassland, was also quite common here.

Shorter brush mottes were also present and typically composed mostly of Gregg's catclaw (*Acacia greggii* var. *greggii*), tasajillo (*Opuntia leptocaulis*), mesquite, brasil (*Condalia hookeri*) and Texas lantana (*Lantana urticoides*). Such mottes were too small and open to contain any unique ground layer species, but cowpen daisy (*Verbesina encelioides*) was way more common along their edges than out in the grassland matrix.

Rare or unusual plants at this stop included **smallflower milkvine** (*Matelea parviflora*), which was represented by about four plants among shorter grasses and barish sand near the road at N26^{o}44'09.5", W098^{o}19'50.8".

Stop 2 was at a pen surrounding a windmill-fed stock tank along the same road, at N26^{o}48'03.8", W098^{o}19'21.2". We wanted to get a look at the ranch's ruderal flora, and we found a few weeds at this spot. Most conspicuous was pink clammyweed (*Polanisia dodecandra* var. *riograndensis*), which was abundant and attracting hundreds of butterflies and other lepidoptera to its flowers. Also abundant were espanta vaqueros (*Tidestroemia lanuginosa*), threelobe-falsemallow (*Malvastrum coromandelianum*), and buffelgrass (*Pennisetum ciliare*). The margin of the small stock tank was lined with Bermudagrass (*Cynodon dactylon*) and therefore offered little in the way of mudflat species. Guadalupe water-naiad (*Najas guadalupensis*) was common in the water itself.

We stopped again on a low rise about a mile east of that tank, along an east-west stretch of the same road, at N26^{o}48'02.1", W098^{o}18'34.4". Vegetation at stop 3 was something of a mesquite savanna. Live oak was present but not as common. Brasil was a frequent component of open to fairly dense tall mesquite shrublands. An undescribed species, a *Ditaxis* that Lisa and I have taken to calling "Ditaxis austrotexana" for want of an officially published name, was locally abundant on hummocky sand in open areas among the mesquite mottes. It was associated with fringed signalgrass (*Urochloa ciliatissima*), hoary milkpea (*Galactia canescens*) and doveweed (*Croton capitatus*).

Texas peachbush or duraznillo (*Prunus texana*) was encountered at stop 3. A single shrub about four feet tall was noted about ten feet north of the road, at N26^{o}48'02.1", W098^{o}18'33.2".

Stop 4 was along the road parallel to and southwest of the Vargas Creek bottom about 1.8-1.9 airmiles northeast of the Big House, at N26^{o}48'10.4", W098^{o}18'18.6" and vicinity. The creek is a wet-weather affair that contains water only after heavy rainfalls and was bone dry at the time of our visit. The creek's valley is about fifty feet wide here and as much as five feet lower than the sandy plain it drains. No channel was discernible; the bottom was grassed over with exotics, mostly Kleberg bluestem (*Dichanthium annulatum*) from which emerged the occasional mesquite However, the area along the road itself was interesting. Its rather tight sandy soil was saline enough to support the occasional clump of goldenweed (*Isocoma drummondii*), but most of the species in the areas were weedy generalists rather than halophytes. Abundant in the area were hierba del soldado (*Waltheria indica*) and heartleaf mallow (*Sida cordifolia*). An unexpected suite of annual sedges turned up in

shallow nonsaline veneer sand on gentle slopes between the plain and the roadbed. Common hemicarpha (*Lipocarpha micrantha*), bearded flatsedge (*Cyperus squarrosus*) and cinnamon hair-sedge (*Bulbostylis capillaris*) were all rather common but inconspicuous here. None had been collected in Brooks County prior to this visit. These same species turned up in greater numbers along the margins of ephemeral wetlands in depressional areas at other stops later during the visit.

Stop 5 was at another spot along the Vargas Creek drainageway "downstream" from stop 4, at N26°47'38.0", W098°17'55.3". Its vegetation included mottes of mesquite and brasil within a matrix of the usual sandplain species such as doveweed, Natalgrass (*Rhynchelytrum repens*), heartleaf sida, hierba del soldado, tasajillo (*Opuntia leptocaulis*) and Gregg's catclaw.

Stop 6 was at a caliche pit along the west side of Vargas Creek about 1.9 airmiles northeast of the Big House, at N26°48'23.6", W098°18'35.1". Like most of the caliche pits in the area, this one supported a bunch of weeds. However, the geology was interesting. At the west end of the pit, one can see four or five feet of eolian sand of the Sand Sheet lying atop grayish sandstone of the underlying Goliad Formation.

Stop 7 was along a major surfaced road a little more than 1.0 airmiles southeast of the Big House, at N26°46'12.4", W098°19'20.7". We stopped here to take a look at a low sand ridge (vegetated dune) a few hundred feet north of the road. Its vegetation was a grassland dominated by seacoast bluestem (Schizachyrium scoparium var. littoralis), which provided dense cover and left relatively little bare sand. Nonetheless, some of the regional sandhill flora species were present, including Hooker's palafoxia (*Palafoxia hookeriana*), bush horsemint (*Monarda fruticulosa*), cardinal-feather (*Acalypha radians*), Texasgrass, hoary milkpea, and silverleaf croton (*Croton argyranthemus*). On the surrounding plain, seacoast bluestem was present but not quite as abundant, sharing dominance with threeawn (*Aristida* sp.), natalgrass, an unidentified paspalum (*Paspalum* sp.), and scattered mesquite.

Texas peachbush or duraznillo was locally common at stop 7. Individuals or small clonal clumps were observed at N26°46'16.6", W098°19'19.7"; N26°46'16.4", W098°19'19.9"; N26°46'16.5", W098°19'20.0"; N26°46'16.2", W098°19'19.9"; N26°46'15.7", W098°19'19.2"; and N26°46'15.5", W098°19'19.1".

Another **Texas peachbush** turned up at stop 8, along the north-south road leading to Hargrove Windmill, about 1.0 airmiles south of stop 7 and roughly 1.9 airmiles south-southeast of the Big House, at N26°45'25.1", W098°19'18.4". The gently undulating landscape here supported an open mesquite savanna. Species of note included tasajillo, snake-cotton (*Froelichia* sp.), and Texasgrass. Buffelgrass (*Pennisetum ciliare*) was present but limited to the roadside.

Next we turned east on yet another paved road, stopping about 0.7 miles east of its junction with the Hargrove Windmill Road, roughly 2.5-2.6 airmiles south-southeast of the Big House, at N26°45'05.4", W098°18'33.4". North of the road, on the very gently undulating topography typical of most of the ranch, was a very extensive stand of seacoast bluestem grassland. Components detected included:

Chloris cf. cucullata
Cnidoscolus texanus
Commelina erecta
Croton capitatus
Croton glandulosus
Eragrostis secundiflora
Froelichia sp.
Galactia canescens
Monarda fruticulosa
Paspalum sp.
Phyllanthus abnormis
Rhynchelytrum repens
Richardia tricocca
Setaria ramiseta
Vaseyochloa multinervosa

Stop 10 was at an unnamed windmill near the east end of that road, about 3.0-3.1 airmiles southeast of the Big House, at N26°45'00.6", W098°17'56.9". Although the above-ground concrete tank was full, the excavated in-ground regular tank was dry. Its margin was rimmed by a nearly continuous stand of spikesedge (*Eleocharis albida*).

Stop 11 wasn't really a stop at all. We took at point (N26°44'58.4", W098°17'30.2") on a well pad because from there we could see what we assumed was the southern fenceline of the ranch.

Next we backtracked to the north-south road and followed it to Hargrove Windmill, at N26°44'23.5", W098°19'07.3" (stop 12). This spot has a single above-ground concrete tank and two excavated ponds. Water was low in the ponds, and the exposed flats were dominated by *Eleocharis albida* and Bermudagrass. About this time we decided that the florula of permanent stock tanks does not mimic the flora of natural ephemeral wetlands.

Stop 13 was along one of the ranch's main roads about 1.6 airmiles southwest of the Big House, at N26°44'15.7", W098°20'56.5". Vegetation at this point is a brushy mesquite shrubland containing lots of brasil, pricklypear (*Opuntia engelmannii* var. *lindheimeri*), tasajillo, granjeno (*Celtis pallida*) and whitebrush (*Aloysia gratissima*).

Field work on 15 November 2006 began with a trip to the west side of the ranch to look at the so-called red sands and the thornscrub they are said to support. Toddy led us to a paved oil field road in the Starr County portion of the ranch, and from there we looked at four representative sites. Stop 14, at N26°46'28.6", W098°24'59.7", did indeed feature reddish-brown sand, and the vegetation on those reddish-brown sands was a bit different from the matrix vegetation on lighter-colored sands to the east, and topography on this side of the ranch was probably a bit flatter than that of the gently undulating eastern part. At the spot where we happened to stop, the most conspicuous element of the woody vegetation was not mesquite or live oak but Texas colubrina (*Colubrina texensis*), although mesquite proved to be a common part of the matrix in the area. All told, cover by shrubs and small trees was less than 25 percent. The grassland balance was dominated by mid-successional species such as threeawn and windmillgrass, and most of the species we saw were sandyland generalists rather than specialties of the red sand region:

Acacia greggii
Acalypha radians
Aristida sp.
Bothriochloa laguroides
Callirhoe sp.
Chloris cucullata
Clematis drummondii
Colubrina texensis
Croton capitatus
Digitaria cognata
Ditaxis “austrotexana”
Eragrostis sessilispica
Evolvulus alsinoides
Evolvulus sericeus
Galactia canescens
Lantana urticoides
Monarda fruticulosa
Opuntia engelmannii var. lindheimeri
Panicum capillarioides
Prosopis glandulosa
Prunus texana
Rhynchelytrum repens
Setaria ramiseta
Tridens muticus
Urochloa ciliatissima
Waltheria indica

The last species was locally abundant, leading us to suspect a rather intense grazing history just prior to the recent removal of cattle from the ranch.

Texas peachbush was represented in the surveyed area by a single plant or clone about two feet tall, at N26°46'27.5", W098°25'00.8". Additional shrubs could well have occurred nearby.

At stop 15 (N26°46'16.1", W098°25'17.4"), along the same road about half a mile to the southwest of stop 14, cenizo (*Leucophyllum frutescens*) made its first significant appearance. We stopped in the expectation of seeing a radically different vegetation type, i.e., one dominated by medium-stature shrubs typical of clayier substrates rather than grasses and mesquite typical of the Sand Sheet. However, cenizo and other such shrubs turned out to be of rather localized occurrence here. The balance of the vegetation was a mesquite-granjeno-colima taller shrubland or woodland that we'd seen in many other places. That vegetation had been recently cleared on the south side of the road, and growing back in its place was a medium-stature shrubland of Texas colubrina with a grassland component of threeawn and chloris.

Stop 16 was at another permanent tank at a windmill on the south side of that same road, at N26°45'57.2", W098°25'40.7". The shoreline of the tank was dominated by bermudagrass, and few other species were present. Durban crowfoot (*Dactyloctenium aegyptium*) was abundant in the heavily impacted adjacent upland.

We stopped around the corner at N26°45'31.7", W098°25'50.4" to look at another example of mesquite-colubrina shrubland, this time on sand that was of a somewhat whitish color, or at least lighter than the reddish soil of nearby stops. One two-foot-tall **Texas peachbush** was noted at the GPS point mentioned above.

Next we left this part of the ranch and crossed to the north side of R. M. 755 via the Chevron Gate. Stop 18 was at the point where a major oil field road crosses the upper part of the Vargas Creek watershed, at N26°50'24.4", W098°21'37.7". That point was taken at the upwind base of a sand dune on the southeast side of the road, where Toddy showed us populations of two cacti we hadn't seen much of on the ranch, Heyder's nipple-cactus (*Mammillaria heyderi*) and manca caballo or horse-crippler (*Echinocactus texensis*); both were associated with goldenweed (*Isocoma drummondii*) rather than true dune species. When I walked to the top of that slope, I realized that Toddy had led us into a very interesting landscape, one in which the dunes are only partially stabilized if not quite active. We had other places to visit, so we didn't spend much time here. But it's certainly worth a very long look next time around.

Texas peachbush is present at stop 18. We saw two shrubs on the top of a low, partially vegetated dune at N26°50'24.6", W098°21'36.6". Associated species included cardinal-feather, toothed croton (*Croton glandulosus*), sand dropseed (*Sporobolus cryptandrus*), snake-cotton, tasajillo, and mesquite.

Also at stop 18 we examined a bona fide ephemeral wetland in a depression among dunes on the northwest side of the road, at N26°50'28.2", W098°21'37.0". The depression was perhaps 50 feet wide and essentially level. No water was present, but the sand was moist. Vegetation was continuous and mostly low, composed of:

Cynodon dactylon
Cyperus acuminatus
Cyperus squarrosus
Echinodorus berteroi
Eleocharis atropurpurea
Heteranthera limosa
Lipocarpha micrantha
Marsilea sp.
Mecardonia procumbens

Of these, Bermudagrass and water-clover (*Marsilea* sp.) were perhaps the most common species. Pencil-flower (*Stylosanthes viscosa*) was for some reason locally common on dry hummocky sand at the edge of and only a few inches higher than the wetland flat.

Stop 19 was at another ephemeral wetland in a natural depression, about 50 to 100 feet south of the northern fenceline at N26°51'34.7", W098°21'12.5". This one had numerous mesquite in the bottom, as if the wetland doesn't hold water often enough to prevent their growth; the abundance of bermudagrass and doveweed may also indicate that the site is dry most of the time. However, it held plenty of standing water when we stopped by for a look. Noted Wetland species included toothcup (*Rotala ramosior*), Rocky Mountain bulrush (*Schoenoplectus saximontanus*), and an annual spikesedge (*Eleocharis atropurpureus*).

After these other nineteen stops, we finally made it over to the active sands dunes. Thanks to a wind blowing from the north at more than twenty miles an hour, the dunes were actually quite active, and it was painful to stand in their midst. We didn't take many notes out in the sandblasting zone, but we ran into one small (16-18 inches tall) **Texas peachbush** shrub on the east edge of the dune field, at N26°51'21.4", W098°19'42.2".

Stop 21 was at an ephemeral pond in a U-shaped natural depression among low vegetated dunes about a quarter mile west of Agua Dulce Windmill, at N26°50'06.3", W098°20'27.3". As at stop 19, the bottom of the pond was dominated by bermudagrass, doveweed and mesquite, despite the presence of several inches of water. Truer wetland species were noted along the sandy margins, including water-clover, Rocky Mountain bulrush, Anglo mud-babies (*Heteranthera limosa*), annual flatsedge (*Cyperus squarrosus*), common hemicarpha (*Lipocarpha micrantha*), and annual spikesedge (*Eleocharis atropurpureus*).

Stop 22 was on a very gently undulating upland along a sand road just north of its crossing of a pipeline and Vargas Creek about 0.8-0.9 airmiles northwest of its culvert under R.M. 755, at N26°50'06.8", W098°21'08.7" and vicinity. This spot had lots of gopher mounds and other low sandy hummocks, and its vegetation was a mix of seacoast bluestem, sandhill species, and generalists. **Texas peachbush** was common here; fourteen plants were noted during a quick walk look, including:

one plant at N26°50’08.3”, W098°21’08.7”
one plant at N26°50’08.8”, W098°21’09.2”
one plant at N26°50’09.0”, W098°21’09.1”
three plants at N26°50’08.9”, W098°21’09.0”
three plants at N26°50’09.4”, W098°21’09.0”
three plants at N26°50’09.2”, W098°21’10.3”
one plant at N26°50’11.0”, W098°21’10.3”
one plant at N26°50’11.3”, W098°21’09.6”

Stop 23 was along the east side of a north-south sand road roughly 1.3 airmiles north-northwest of the Vargas Creek culvert under R. M. 755, at N26°50'38.4", W098°21'04.6". We stopped here to identify the white-flower straggler we spotted at the edge of a mesquite motte several yards east of the road. It turned out to be hierba de alacran (*Plumbago scandens*), a species we saw nowhere else during our visit.

Summary

During this third survey of the Encinitos Ranch, we examined the flora at 23 locations, including seventeen on soils of the Sandy range site, three on soils assigned to the Deep Sandy range site, two on soils of the Loamy Sand range site, and one on the Sand Hill range site. We added forty or fifty species to the still-incomplete plant list for the ranch, bringing the total number of species observed to about 213 (Appendix 1). Of those, 192 are native to South Texas, and 11 are exotic (native to some other continent). Fifteen species are endemic to (found only in) Texas:

Amelia's sand-verbena (*Abronia ameliae*)
Cory's croton (*Croton coryi*)
Parks' croton (*Croton parksii*)
hairy wild-mercury (*Ditaxis pilosissima*)
Sand Sheet wild-mercury (*Ditaxis* sp.)
hoary milkpea (*Galactia canescens*)
creeping milkvine (*Matelea parviflora*)
bushy horsemint, shrubby beebalm (*Monarda fruticulosa*)
Hooker's palafoxia (*Palafoxia hookeriana*)
yellow clammyweed (*Polanisia erosa* ssp. *breviglandulosa*)
Texas peachbush (*Prunus texana*)
Lindheimer's globemallow (*Sphaeralcea lindheimeri*)
Lindheimer's goat-rue (*Tephrosia lindheimeri*)
squarebud daisy, showy nerveray (*Tetragonatheca repanda*)
Texasgrass (*Vaseyochloa multinervosa*)

Three of those endemics are species of conservation interest in that they have narrow global ranges that are thought to include fewer than 100 populations worldwide: smallflower milkvine, Amelia's sand-verbena, and Texas peachbush. Several populations of smallflower milkvine and Texas peachbush have been mapped on the ranch; both seem to be fairly common here. A third globally-rare species, one with a range that includes the South Texas Sand Sheet and a smidgen of northern Mexico, was seen at one spot during the June 2006 survey but not during subsequent visits: South Texas rushpea (*Pomaria austrotexana*). Many many additional species would no doubt be detected by extensive surveys during spring months.

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Figure 1. Areas examined during survey of Encinitos Ranch, Brooks County, Texas, and 14-15 November 2006. Base maps: La Reforma 7.5' Quadrangle (USGS, 1972a); San Isidro 7.5' Quadrangle (USGS, 1972b); Santa Elena 7.5' Quadrangle (USGS, 1972c); Santa Elena SE 7.5' Quadrangle (USGS, 1972d). Smallflower milkvine (*Matelea parviflora*) was observed at stop 1; Texas peachbush or duraznillo (*Prunus texana*) was observed at stops 7, 8, 14, 17, 18, 20 and 22.