



The Sabal

April 2017

Volume 34, number 4

In this issue:

April program p1 below
Arroyo Colorado Brush Community—
by Michael Heep & Gene Lester — p 2-6
LRGV Native Plant Sources & Landscapers,
NPP Sponsors, Upcoming Meetings p 7
Membership Application (cover) p8

Plant species page #s in the Sabal refer to:
"Plants of Deep South Texas" (PDST).

Native Plant Project (NPP) Board of Directors

President: Ken King
Vice Pres: Joe Lee Rubio
Secretary: Kathy Sheldon
Treasurer: Bert Wessling
Drew Bennie
Ginger Byram
Raziel Flores
Carol Goolsby
Sande Martin
Jann Miller
Eleanor Mosimann
Christopher Muñoz
Rachel Nagy
Ann Treece Vacek

NPP Advisory Board

Mike Heep
Benito Trevino

Editor:

Christina Mild
<mild.christina@gmail.com>
Submissions of relevant
articles and/or photos
are welcomed.

Editorial Advisory Board:

Mike Heep, Jan Dauphin
Ken King, Betty Perez
Eleanor Mosimann
Dr. Alfred Richardson
Ann Vacek

NPP meeting topic/speaker:

"Rare Plants of the Rio Grande Delta"
—by Christopher Muñoz
Tues., April 25th, at 7:30pm

Munoz will present an overview of the rare and endangered plants of the RGV and the environmental parameters which contribute to their distribution. He is a botanist specializing in plant biogeography and evolution. His research work is in support of a biological control program in which he conducts species diversity evaluations along the Rio Grande as well as host-range experimentation.

Christopher has a gift for explaining complicated subjects in ways that reach everyone in the audience.

The meeting is at: **Valley Nature Center**, 301 S Border, (in Gibson Park), Weslaco. 956-969-2475.



Alabama Lip Fern, PDST 13, *Cheilanthes alabamensis*. Photographed on the upper Arroyo Colorado bank, Glatz' Rio Hondo property, 4/12/17. Rarely encountered in LRGV.

The Sabal is the newsletter of the Native Plant Project.

It conveys information on native plants, habitats and environment of the Lower Rio Grande Valley, Texas.

Previous **Sabal** issues are posted on our website [www.NativePlantProject.org].

Electronic versions of our **Handbooks** on recommended natives for landscaping are also posted there.

Change of address, missing issue, or membership: <bwessling@rgv.rr.com>

President - Ken King - <wk_king01@yahoo.com>

The Arroyo Colorado Brush of the Lower Rio Grande Valley, Texas

— by Michael Heep and Gene Lester

This article describes the unique brush community adjoining the Arroyo Colorado. The Arroyo brush is a very species-rich community dominated by Ebony, Coma and Adelia. The abundance of Adelia and the presence of other characteristic species make the Arroyo brush distinct from other woodlands in the Lower Rio Grande Valley.

Editor's Notes: Unfortunately, most Arroyo brush has been removed by man and has been used as a dumping ground for decades. The need to preserve this diverse brush community for wildlife and as a nature preserve is imminent, while the few fragments remain. It serves as a seed source for many revegetation projects.

An Arroyo property in Rio Hondo owned by Dr. Frank Glatz is one of the few tracts of this type which has not been invaded by invasive, exotic, poisonous Kalanchoe species (PDST 199-200) or overrun by invasive grasses. Recent visits to that property provided several photos and inspired the topic for this issue.

Other than the Rio Grande, the Arroyo Colorado (known locally as the 'The Arroyo') is the only permanent stream in the Lower Rio Grande Valley, Texas. It is a headwater eroding stream that occupies what is believed to be a former distributary channel of the Rio Grande (Brown et al., 1980). It cuts a deep channel beginning southwest of Mercedes, Texas in eastern Hidalgo County, proceeds east northeast through Cameron County, and forms the northern boundary of Cameron County from about 12 miles west of where it drains into the Laguna Madre of the Gulf of Mexico.

The surface sediments along the Arroyo Colorado are mostly late Pleistocene deposits, as opposed to the younger Holocene deposits on the Recent Delta between the Arroyo and the Rio Grande (Brown et al., 1980). The soil map of Cameron County identifies the soils as mostly Harlingen and Mercedes Associations (Williams et al., 1977). These soils are very high in clay content, higher than most of the soils in the Lower Rio Grande Valley area.

The descriptions of the vegetation provided here are based on reconnaissance of 42 sites of uncleared brush along the Arroyo

Colorado from southwest of La Feria, Texas to near where it drains into the Laguna Madre. The size of these blocks of brush range from uncleared lots in subdivisions in the Harlingen area (about 1/2 acre) to larger blocks of 40 acres or more. Although some sites have been visited only once, others have been reconnoitered repeatedly over a period of about 20 years.

Complete or nearly complete coverage by brush species other than Mesquite (*Prosopis glandulosa*), Huisache (*Acacia smallii*), and Prickly Pear (*Opuntia lindheimeri*) was used as an indicator that the land had not been cleared. This hypothesis is confirmed by the presence of characteristic species in the understory that do not readily colonize disturbed land.

The brush along the Arroyo Colorado is distinct from the other woodlands in the Lower Rio Grande Valley. Although most of the common woody species in the Lower Rio Grande Valley occur in all recognized types of woodlands, the presence of particular species in the Arroyo brush give it a visibly distinct character

Most of the Arroyo Colorado brush is a very dense mixed growth dominated by small-leaved thorny shrubs and small trees. Most of the brush would be impassable but for man-made trails that have been cut through. Many of these trails in the Harlingen area have been there for at least 35 years and are likely to be considerably older.

There is a recognizable continuum in the height and density of the brush. On much of the higher, drier land the brush is from 3 to 8 feet in height and is readily passable. In and near the drainageways the brush is higher, from 8 to 20 feet, and much denser. In some of the ravines adjoining the Arroyo Colorado channel, the vegetation is somewhat riparian, with tall Cedar Elm (*Ulmus crassifolia*), Rio Grande Ash (*Fraxinus berlandieriana*), Tepeguaje (*Leucaena pulverulenta*), Anacua (*Ehretia anacua*) and Hackberry (*Celtis laevigata*). Occasionally a specimen of the Texas Sabal Palm (*Sabal texana*) is found.

The most abundant tree and shrub species in the Arroyo brush are listed in Table 1.

Photo right: Gutta Percha (Leather Leaf) in bloom, forming fruit. PDST 178.



Table 1.
Common Trees and
Shrubs of the Arroyo
Colorado brush in the
LRGV, TX.

Common Name	Botanical Name
Adelia	<i>Adelia vaseyi</i>
Agrito	<i>Lycium berlandieri</i>
Amargosa	<i>Castela texana</i>
Blackbrush	<i>Acacia rigidula</i>
Blue Sage	<i>Salvia ballotiflora</i>
Brasil	<i>Condalia hookeri</i>
Cenizo	<i>Leucophyllum frutescens</i>
Chapotillo	<i>Amyris texana</i>
Coma	<i>Bumelia celastrina</i>
Colima	<i>Zanthoxylum fagara</i>
Coyotillo	<i>Karwinskia humboldtiana</i>
Crucillo	<i>Randia rhagocarpa</i>
Desert Yaupon	<i>Schaeferia cuneifolia</i>
Dove Croton	<i>Croton humilis</i>
Ebony	<i>Pithecellobium flexicaule</i>
Elbowbush	<i>Forestiera angustifolia</i>
Golden Eye Daisy	<i>Viguiera stenoloba</i>
Granjeno	<i>Celtis pallida</i>
Guayacan	<i>Guaiacum angustifolium</i>
Gutta Percha	<i>Maytenus texana</i>
Hog Plum	<i>Colubrina texensis</i>
Huisachillo	<i>Acacia schaffneri</i>
Lantana	<i>Lantana horrida</i>
Lotebush	<i>Ziziphus obtusifolia</i>
Manzanita	<i>Malpighia glabra</i>
Mesquite	<i>Prosopis glandulosa</i>
Paloverde	<i>Cercidium texanum</i>
Prickly Pear	<i>Opuntia lindheimeri</i>
Snake Eyes	<i>Phaulothamnus spinescens</i>
Tasajillo	<i>Opuntia leptocaulis</i>
Texas Persimmon	<i>Diospyros texana</i>
Tenaza	<i>Pithecellobium pallens</i>
Yucca	<i>Yucca treculeana</i>

Although several species are generally conspicuous and dominant at most sites; the brush is very species rich and diverse. Virtually all species listed in Table 1 can be found in any block of brush larger than one acre. The dominant species at almost all sites are Ebony (*Pithecellobium ebano*), Coma (*Bumelia celastrina*), and Adelia (*Adelia vaseyi*).

Ebony is widespread and abundant. It occurs at all sites, and is usually the largest tree species present. In the deeper brush it may form a dense canopy. It is shorter in stature and more widely scattered in the shorter brush.

Coma is also widespread along the Arroyo. At some sites it is more abundant than Ebony. It spreads by large, woody rhizomes, often forming dense, impenetrable thickets.

Adelia is locally dominant along the Arroyo, where it occurs as a multistemmed large shrub to 15 feet. Adelia also spreads by large, woody rhizomes, although it does not form impenetrable thickets. Adelia is a characteristic species of the Arroyo. It is neither common nor abundant in any other brush type in the Lower Rio Grande Valley.

Although Ebony, Coma, and Adelia are dominant at many sites, much of the brush is a dense mixture of these 3 species, as well as about 2 dozen others. At many sites, all of the species listed in Table 1, and some others, can be found on a single, uncleared residential lot in a subdivision.

Abundant species at almost all sites include Amargosa, Blackbrush, Cenizo, Colima, Coyotillo, Crucillo, Elbowbush, Granjeno, Guayacan, Huisachillo, Lotebush, Snake Eyes, Prickly Pear and Texas Persimmon.

In the shorter phases of brush on higher land, Cenizo, Blackbrush, and Huisachillo are conspicuous. Two species that are generally absent from the deeper brush, Golden Eye Daisy (*Viguiera stenoloba*) and Monte de Conejo, (*Ericameria austrotexana*) are common.

Mesquite does occur in the Arroyo brush, where it is dominant in some areas. Mesquite is much more abundant on adjoining land in which the brush has been removed.

The ground layer in the Arroyo brush is composed of a characteristic set of species. In the open short brush, common subshrubs and perennial herbs include Dalea (*Dalea thyrsoiflora*), Bastardia (*Bastardia viscosa*), Malva Loca (*Malvastrum americanum*), Blue Mistflower (*Eupatorium odoratum*), Velvet Leaf (*Allowissadula lozanii*), Gutta Percha (*Maytenus texana*), Heliotrope (*Heliotropium angiospermum*), and Huaco (*Manfreda variegata*). Occasionally found in the full sun is the tropical species *Sanvitalia ocymoides*.

Common grasses in open areas in the shorter brush are Buffalograss (*Buchloe dactyloides*), Red Grama (*Bouteloua trifida*), and Filly Panicum (*Panicum filipes*). At many sites, these grasses are being invaded and crowded out by two very invasive, introduced forage grasses, Common Buffelgrass (*Cenchrus ciliaris*) and Guineagrass (*Panicum maximum*).

The understory is very diverse in the shade provided by the deeper brush. Common species include Pigeonberry (*Rivina humilis*), Scarlet Sage (*Salvia coccinea*), False Honeysuckle (*Siphonoglossa greggii*), Flor de Amanda (*Trixis inula*), Texas Nightshade (*Solanum triquetrum*), Bernadette (*Isocarpha oppositifolia*), Wild Petunia (*Ruellia* sp.) and Celosia (*Celosia nitida*). Only one grass species is usually found, Texas Bristlegrass (*Setaria texana*). Chapotillo (*Amyris texana*), is a very abundant short shrub in shade.

The cactus species, with the exception of Prickly Pear and Tasajillo (*Opuntia leptocaulis*), occur in the shade of the trees and shrubs. The most abundant species are Lady Fingers (*Echinocereus berlandieri*) and (*E. pentalophus*), Twisted Rib (*Echinocactus setispinus*), Rio Grande Valley Barrel Cactus (*Echinocactus sinuatus*), and Pincushion (*Mammillaria heyderi*). Dumpling Cactus (*Mammillaria multiceps*) is found only in deep shade, usually under the canopy of large Ebonies.

A noteworthy cactus in the Arroyo brush is Blanck's Alicoche (*Echinocereus blanckii*). It is not common in any other brush in the area but is found all along the Arroyo.



Above: *Tournefortia volubilis*, PDST 150. Native in the U.S. to Cameron & Hidalgo counties and Florida. Host plant to the Saucy Beauty day-flying moth, which resembles a butterfly.



Above: Blanck's Alicoche, *Echinocereus berlandieri*, Dark-Throat Ladyfinger, PDST 163. Often blooms in mid-April. Large colonies occur naturally in Harlingen's Ramsey Park, remnants of Arroyo Colorado brush predating the city landfill.



Above: Madeira Vine, *Anredera leptostachys*, PDST 139. "TZ" Arroyo brush property in Rio Hondo, 4/12/17, owned by Dr. Glatz, previously by James Matz. Photo by Anita Westervelt.

Photo right: *Ericameria austrotexana*, PDST 114, Monte de Conejo, (*Neonesomia palmeri*). Slender shrub, tolerates partial shade. Colony-former; provides cover for rabbits. This is a well-watered specimen. Frequent, tiny blooms.



Indio (*Kalanchoe verticillata*) an introduced succulent from South Africa, has become established, and is abundant and widespread. Indio was noted as common in the 1960's and is present in shorter brush from south of La Feria to the mouth of the Arroyo.

The most common vines are Balloon Vine (*Cardiospermum halicacabum*), Serjania (*Serjania brachycarpa*), Apaac (*Urvillea ulmacea*), Blue Passionvine (*Passiflora foetida*), and Possum Grape (*Cissus incisa*). *Passiflora suberosa* is found at almost all sites but is not especially conspicuous. The tropical vines *Tournefortia volubilis*, *Pisonia aculeata*, and Noseburn (*Tragia glanduligera*) have been found in some brush sites in the Harlingen, Texas area.

Almost all of the common species in the Arroyo brush are also common in other types of brush in the Lower Rio Grande Valley. The relative abundance of particular species makes the Arroyo brush visibly distinct from any other brush type in the area.

The Arroyo brush can be viewed as an amalgam of species from other brush types:

- Species common to the hotter, drier brush of Western Hidalgo County are Blackbrush, Huisachillo, Paloverde, Golden Eye Daisy, and Huaco. These species are rare or absent from the woodlands on the Recent Delta.
- Species characteristic of the clay dunes, or lomas, near the coast that are common along the Arroyo are Bastardia, Dalea, and Monte de Conejo. Fiddlewood (*Citharexylum berlandieri*) is dominant on many of the lomas and is also abundant in the Arroyo brush east of the old Paso Real stagecoach station about 7 miles northeast of Rio Hondo.
- Some species characteristic of the more mesic woodlands along the resacas (old ox-bows of the Rio Grande) on the Recent Delta include *Tournefortia*, *Chiococca alba*, and Sierra Madre Torchwood (*Amyris madrensis*). Sierra Madre Torchwood is locally abundant in some blocks of Arroyo brush.

The abundance of *Adelia* is probably the most unique aspect of the Arroyo brush. Although present on the Recent Delta, it is quite rare there. We have not seen *Adelia* on the lomas or in the upland brush of the western region of the Lower Rio Grande Valley.

Much of the Arroyo brush has been cleared since Mike Heep first observed it in the 1960's. Most of the clearing occurred in a piecemeal fashion, with the brush being replaced by housing subdivisions. In recent years some of the brushland has been thankfully purchased for preservations.

Mike Heep grows native plants at his nursery in Harlingen. (See his ad on page 7.) Dr. Gene Lester is a previous President of the Native Plant Project who currently works in Washington, DC.

LITERATURE CITED

- Brown, L.F. Jr., J.L. Brewton, T.J. Evans, J.H. McGowen, W.A. White, C.G. Groat, and W.L. Fisher. 1980. Environmental geologic atlas of the Texas coastal zone - Brownsville - Harlingen area. Bureau of Economic Geology, The University of Texas at Austin, 130 pp.
- Williams, D., C.M. Thompson, and J.L. Jacobs. 1977. Soil Survey of Cameron County, Texas p 6. U.S. Department of Agriculture- Soil Conservation Service and Texas Agriculture Experiment Station Weslaco, TX.



Photo above: Some of the diversity present in Arroyo Colorado brush. **Inside the orange triangle** are two of the exotic, invasive, poisonous *Kalanchoe* species (PDST 199-200) which threaten diversity in the Arroyo brush. In the upper inset photo is Texas Stonecrop, PDST 201, which grows amongst the spines of the various small cacti present in undisturbed brushy tracts. Upper right is a colony of *Manfreda variegata*, PDST 19, a relative of lilies and agaves. *Manfreda* is putting forth bloomstalks in early April, which are sometimes consumed by rabbits. The swollen underground stem is apparently a favorite of many animals, as *Manfreda* species transplanted into Harlingen's Ramsey Park are always dug up and eaten to oblivion.

LRGV Native Plant Sources

See also our
Sponsors on right

Perez Ranch Nursery

(Betty Perez)

12 miles north of La Joya, TX

(956) 580-8915

<PerezRanchNatives@gmail.com>

These vendors may sell exotics:

National Butterfly Center

Old Military Hwy/3333 Butterfly Pk Dr

Mission, TX 78572

office (956) 583-5400

Marianna Trevino Wright, Exec.Dir.

cell 956-648-7117

<mariana@nationalbutterflycenter.org>

[http://www.nationalbutterflycenter.org]

Rancho Lomitas Nursery

(Benito Trevino)

P.O. Box 442

Rio Grande City, TX 78582

(956) 486-2576 *By appt. only

Valley Garden Center

701 E. Bus. Hwy. 83

McAllen, TX 78501

(956) 682-9411

M&G Double D Native Plants & Seeds of South Texas, (Gail Dantzker)

956-342-5979; <gdld@att.net>

7500 N 21st St; McAllen, TX 78504

[mandgdoubled.com]

Grown at The Woods, Willacy Cty., TX.

Landscapers using Natives:

Landscaping, Etc. Inc.

Noel Villarreal

125 N. Tower Rd, Edinburg

Sponsors (Native Plant Nurseries)

Heep's LRGV Native Plant Nursery

Owned and operated by Mike and Claire Heep

We grow plants suited to landscaping
and revegetation in south Texas.

1714 S. Palm Court Drive, Harlingen, TX 78552

(956) 457-6834 <heep0311@yahoo.com>

[www.heepsnursery.com]



Come visit the VNC:

301 S. Border Ave.

Weslaco, TX 78596

(956) 969-2475

info@valleynaturecenter.org

www.valleynaturecenter.org



**Native Plants
for Sale**

*Watch Birds
& Butterflies*

*A Secret Garden
in the Heart of the
Rio Grande Valley*

Valley Nature Center
-6 acre Nature Park & Trails -Book & Gift Shop-
-Native Plant Nursery-Meeting Room-
-Environmental Education and Exhibit Hall-



Photos above by Raziel Flores Burquez. Highly-magnified blooms of Desert Yaupon, *Schaefferia cuneifolia*, PDST 179. Male bloom (left) has noticeable stamens. Female blooms (right) are forming green fruits which ripen to orange/red. Unisexual: male and female flowers occur on different plants. A shrub of the Arroyo Colorado brush. Blooms appear in spring, summer or fall, depending on rainfall. Occurs throughout deep South Texas. May grow to 6' in height, though usually shorter. Fruits are eaten by small mammals, quails and cactus wrens. Leaves are browsed by white tail deer. Evergreen, suitable as compact low ornamental.

NPP Board & General Meetings are held at
Valley Nature Center
(4th Tues. each month)

Brd Mtgs 6:30pm — Speaker 7:30pm.
2017 meetings: 5/23, 9/26, 10/24, 11/28

FROM: NPP; POB 2742; San Juan, TX 78589

The **Native Plant Project (NPP)** has no paid staff or facilities. NPP is supported entirely by memberships and contributions.

Anyone interested in native plants is invited to join. Members receive 8 issues of **The Sabal** newsletter per year in which they are informed of all project activities and meetings.

Meetings are held at:

Valley Nature Center, 301 S. Border, Weslaco, TX.

Native Plant Project Membership Application

Regular \$20/yr. Contributing \$45/yr

Life \$250 one time fee/person

Other donation: _____

Please print:

Name _____

Address _____

City _____ State ____

Phone _____ Zip _____ - _____

I'm choosing the "green option!"

Send my SABAL via .pdf file to:

Email address: _____

*Please mail this form with dues check payable to:
Native Plant Project, POB 2742, San Juan, TX 78589-7742*



NPP meeting/speaker:

The Native Plant Project will present:

"Rare Plants of the Rio Grande Delta"

—by Christopher Muñoz

Tues., April 25th, at 7:30pm

The meeting is held at
Valley Nature Center,

301 S Border, (in Gibson Park), Weslaco.
956-969-2475.

We hope to see you there!

In this issue: **"Arroyo Colorado Brush of the Lower Rio Grande Valley, Texas,"** by Mike Heep and Gene Lester, reprinted with the permission of the authors.

This paper was presented to the Fall 2000 meeting of the Native Plant Society of Texas, (NPSOT) held in Harlingen. It was also published in *The Sabal*, 17(6), December 2000.



Photo above: White-center Alicoche, Ladyfinger cactus, *Echinocereus pentalophus*, PDST 165. Taxonomy on this species is confusing due to recent name changes. Blooms generally occur in late March over the course of about 2 weeks, with each bloom lasting only a few days. Note the small stonecrop (white circle), PDST 201. Rabbits love this small native succulent. It survives best in the protection of a spiny *Echinocereus* colony. Where spineless exotics have replaced cactus colonies, stonecrop is eaten to oblivion.