

**FINAL REPORT**

As Required by

THE ENDANGERED SPECIES PROGRAM

TEXAS

Grant No. TX E-112-R-1

Endangered and Threatened Species Conservation

**Seedbanking the Rare Plants of Texas**

Prepared by:

Dr. Kathryn Kennedy



Carter Smith  
Executive Director

Clayton Wolf  
Director, Wildlife

19 November 2012

## FINAL REPORT

STATE: Texas GRANT NUMBER: TX E-112-R-1

GRANT TITLE: Seedbanking the Rare Plants of Texas

REPORTING PERIOD: 1 Sep 09 to 28 Aug 12

**OBJECTIVE(S):** To collect and secure material of priority Texas species for recovery efforts while concurrently increasing interaction among partners (private landowners, agency land managers, gardens and volunteers) to improve stewardship and awareness of plant biodiversity and vulnerability.

### **Segment Objectives (see Project Statement for full details):**

**Task 1:** List all G1, G2, and G3 ranked species in the Texas Natural Heritage Database. Selection based upon conservation priority rank and vulnerability, status of prior existing collections, ease of accessibility to properties, and species with no taxonomic uncertainty.

**Task 2:** Twenty species from with the highest priority (emphasizing federally listed plants) will be collected and accessioned in coordination with USFWS and TPWD botanists. Federal and state permit requirements will be met and permit applications are being prepared for submission for species not currently permitted for collection. Private landowner permission forms needed for project approval will be acquired.

**Task 3:** Record information about the condition of the habitat and the populations to assist in planning for future restoration work.

**Task 4:** Primary material will be deposited at the NCGRP and, where quantities permit, backed-up at the five CPC PIs under appropriate conditions particular to each species.

### **Significant Deviations:**

None.

### **Summary Of Progress:**

Please see Attachment A (also, a set of photos CD to be delivered separately).

**Location:** Texas.

**Cost:** Costs were not available at time of this report, they will be available upon completion of the Final Report and conclusion of the project.

Prepared by: Craig Farquhar

Date: 19 November 2012

Approved by:   
C. Craig Farquhar

Date: 19 November 2012

## ATTACHMENT A

**Final Report  
Seedbanking the Rare Plants of Texas  
Phase I**

**Project #E-112-1  
Contract #212327**

**Submitted by:  
Center for Plant Conservation**

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Anita Tiller

San Antonio Botanical Garden

Debbie Benesh

And their support staff and many volunteers!

# **Seedbanking the Rare Plants of Texas**

## **Abstract**

The Center for Plant Conservation (CPC), working with its five participating institutions (PIs) who are partners for Texas conservation work, undertook a pilot collaborative project to collect and secure seeds of twenty species of Texas' vulnerable plants. The project tested a broad public private partnership operating quickly, in close coordination with the Texas Parks and Wildlife Department and the U.S. Fish and Wildlife Service to meet priority needs. In addition there was emphasis on using consistent protocols, and best defined best conservation practices for collection from populations and for storage and data management to meet both Heritage Program and Center for Plant Conservation protocols. Despite record drought that severely constrained collection opportunities, the collaborators successfully completed 17 collections of 14 different species, and made unsuccessful attempts to collect an additional three species. The project demonstrated that such an approach is feasible, and it is hoped that this will establish an ongoing effort to secure resource seed collections needed for future management and restoration work to help steward Texas' plant diversity through the coming challenges of climate change. The implementation of the project underscored the urgency to establish a steady and ongoing collection program, given the weather extremes experienced, and the additional fluctuations expected in coming years. Underestimated project constraints to be addressed in future work include planning for the time lag in executing funding agreements for the Section 6 program, the challenge of coordinating the raising of private partner funds for match during the constraints of the section 6 funding defined periods of work, and the need for an approved process for establishing alternate species for collection in event the highest priority species cannot be obtained in a given field season due to adverse field conditions.

## **Introduction**

The state of Texas is ranked as one of CPC's highest priority hotspots for plant biodiversity needing conservation attention. The state of Texas has identified over 200 species of plants that are currently at risk (Poole et al. 2010). In Texas, of the 27 species with federal recovery plans, 82% (22/27) list reintroduction or augmentation as an action needed to achieve species' recovery in the wild. Rare species that have not been federally listed have similar needs to prevent them from becoming listed. Conservation seed collections provide necessary material for research tasks identified in recovery plans (reproductive biology, genetic analysis, etc.) and for restoration in the wild. Establishing Ex-situ (off-site) collections for Texas plant diversity will secure the genetic integrity of declining populations, provide a seed bank resource for immediate restoration needs, and create a safety net against unforeseen future threats of extirpation.

## **Objective**

To collect and secure material of priority Texas species for recovery efforts while concurrently increasing interaction among partners (private landowners, agency land managers, gardens and volunteers) to improve stewardship and awareness of plant biodiversity and vulnerability.

## **Location**

The project ranges statewide, according to the locations of priority species. See accompanying data forms for more precise locality information by species.

## Methods/Approach

**Task 1:** This project will support long-term collaborative work with CPC institutions, USFWS, Texas Parks and Wildlife Department (TPWD), and other knowledgeable botanists to produce a prioritized list in order to secure ex-situ conservation collections of the Texas plant species. The complete species list will attempt to include all G1, G2, and G3 ranked species in the Texas Natural Heritage Database. The initial list of plants lays the foundation for the eventual completed list to be defined after pilot work with the CPC national office, participating institution conservation officers, and knowledgeable Texas botanists. Selection was based upon conservation priority rank and vulnerability, status of prior existing collections, ease of accessibility to properties, and species with no taxonomic uncertainty.

**Task 2:** While the project is envisioned as the initiation of a multi-year effort, preliminary funding requested will not allow completion of collection of all taxa in Table 1. Twenty species from Table 1 with the highest priority (emphasizing federally listed plants) will be collected and accessioned in coordination with USFWS and TPWD botanists. Most species have populations located on public lands. CPC protocols promote collection from known populations across land use and landowner profiles. Federal and state permit requirements will be met and permit applications are being prepared for submission for species not currently permitted for collection. Private landowner permission forms needed for project approval are being gathered and collection on private lands will not proceed without necessary documentation. To identify the specific sites for collection during the first year of the effort, PIs will confirm distribution, species seasonal biology, current weather conditions, and landowner information and permission. Species or population substitutions for initial collection will be made as necessary as approved by USFWS and TPWD.

Collections will be done using CPC protocols, cited in the USFWS Policy Regarding Controlled Propagation of Species Listed Under the Endangered Species Act. Guerrant, Fiedler, Havens, and Maunder (2004) recommend collecting genetically representative propagules that can be used during plant reintroductions. Although land managers must balance the needs of the species with the limits of available resources, the following are general collection guidelines:

- Collect no more than 10% of any individual plant's reproductive output in any year.
- For species with  $\leq 50$  populations, collect from as many populations as possible.
- For populations with  $\leq 50$  plants, collect from all known individuals.
- For populations with  $> 50$  plants, collect from 10% of the plants or at least 50 individuals if 10% is not possible.
- Collect randomly from a diverse selection of plants regardless if characteristics are rare or common (do not select for only the plants with the largest blooms, unique colors, etc).
- If the genetics are unknown, collect as broadly (in an area) as possible to collect the most diverse selection of material.
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In each case, however, knowledge of imminent threat, breeding systems, population density and structure, and genetic diversity governs species-specific decisions about collection quantities. These will be coordinated with USFWS and TPWD biologists in the permitting process.

**Task 3:** Collectors visiting the sites will record information about the condition of the habitat and the populations to assist in planning for future restoration work. Population information that will be collected will include the number of plants, area surveyed, average number of plants per square meter, maximum number of plants per square meter, number or percentage of seedlings, reproductive and non-reproductive plants, and threats to the population. Other habitat information of interest that will be recorded as equipment capacity allows will include canopy and vegetation cover, slope, exposure, litter, soil map type and characteristics (pH, trace minerals and organic matter), parent material, plant community, and associated plant species. This information will be shared with the Texas Natural Heritage Database and will be included in the central database of the Center for Plant Conservation. The CPC database is maintained by CPC and tracks the quantity, age, and withdrawal of ex-situ material for research and restoration work and will serve as a resource to review the progress and priorities for ex-situ collections in Texas.

**Task 4:** Primary material will be deposited at the NCGRP and, where quantities permit, backed-up at the five CPC PIs under appropriate conditions particular to each species.

## **Results and Discussion**

The Center for Plant Conservation (CPC) worked with five of its 38 Participating Institutions (PIs) nationwide to implement this project. The PIs working in Texas habitats include Lady Bird Johnson Wildflower Center (Austin), Mercer Arboretum and Botanic Garden (Houston), San Antonio Botanical Garden (San Antonio), The Arboretum at Flagstaff (Flagstaff), and Desert Botanical Garden (Phoenix).

**Task 1. Establishing Species Priorities.** The initial list (Table 1) of 52 highest priority plants was compiled after pilot work with the CPC national office, participating institution conservation officers, and knowledgeable Texas botanists. Selection was based upon conservation priority rank and vulnerability, status of prior existing collections, ease of accessibility to properties, and species with no taxonomic uncertainty. This initial list includes species that are federally listed, candidates for listing, critically imperiled (G1), imperiled (G2), or vulnerable to extirpation or extinction (G3).

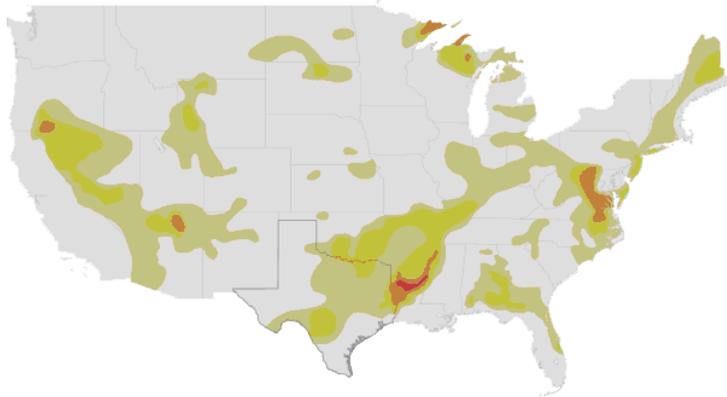
Due to the ongoing drought situation throughout the state of Texas, facilitating substitutions that would allow collectors to find species with the greatest possibility of seed set. In June of 2011 CPC received approval from the USFWS office to expand the initial list of 52 plants to incorporate the vast majority of the species on The List of the Rare Plants of Texas (Poole et al. 2010).

**Task 2. Collection of ex-situ materials.** During the 2010, 2011 and early 2012 Texas suffered extensive drought, including the driest 7 month period on record (Table 2 and Figure 1). While under more average weather conditions it would be anticipated that species collections would exceed minimum goals, the work period was severely constrained in meeting collection targets due to field conditions, even though a project extension was sought and granted.

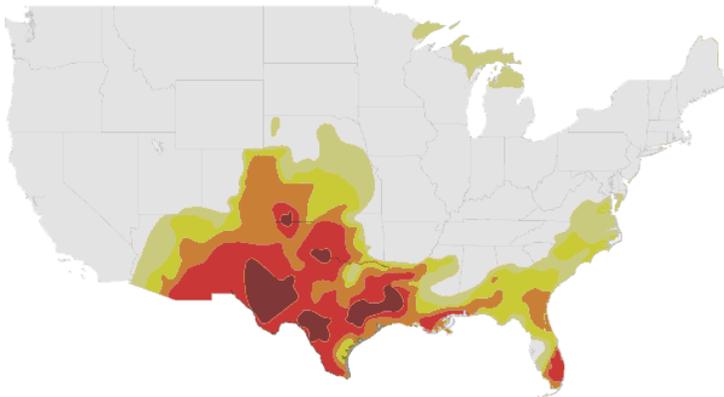
**Table 1.** Texas plant species with corresponding Texas Natural Heritage Database rank, land ownership, and PI.

Species	Rank	Landowner	PI
<i>Abronia macrocarpa</i>	G2	private	Mercer
<i>Agalinis calycina</i>	G1	private	LBJWC
<i>Agalinis navasotensis</i>	G1	private	Mercer
<i>Ambrosia cheiranthifolia</i>	G2	private	SABG
<i>Amsonia tharpii</i>	G1	public	Desert
<i>Arenaria livermorensis</i>	G1	public	Flagstaff
<i>Arida blepharophylla</i>	G1	private	LBJWC
<i>Arida matturneri</i>	G1	private	LBJWC
<i>Asclepias prostrata</i>	G1G2	public	SABG
<i>Ayenia limitaris</i>	G2	private	SABG
<i>Bartonia texana</i>	G1	public/private	Mercer
<i>Callirhoe scabriuscula</i>	G2	public/private	LBJWC
<i>Cryptantha crassipes</i>	G1	private	Desert
<i>Cypripedium kentuckiense</i>	G3	public	Mercer
<i>Echeandia texensis</i>	G1	private	SABG
<i>Festuca ligulata</i>	G1	public	Desert
<i>Frankenia johnstonii</i>	G3	private	SABG
<i>Genistidium dumosum</i>	G1	private	Desert
<i>Geocarpon minimum</i>	G2	public/private	Mercer
<i>Helianthus paradoxus</i>	G2	private-TNC	LBJWC
<i>Hibiscus dasycalyx</i>	G1	public	Mercer
<i>Houstonia correllii</i>	G1	private	SABG
<i>Hymenoxys texana</i>	G2	public	Mercer
<i>Kallstroemia perennans</i>	G1	public	Desert
<i>Leavenworthia texana</i>	G2T1	private	Mercer
<i>Leitneria floridana</i>	G3	public	Mercer
<i>Lepidospartum burgessii</i>	G2	public	Desert
<i>Liatris tenuis</i>	G3	public	Mercer
<i>Malaxis wendtii</i>	G2	public	Flagstaff
<i>Manfreda longiflora</i>	G2	public	SABG
<i>Matelea texensis</i>	G1	private	Desert
<i>Opuntia arenaria</i>	G2	public	Desert
<i>Opuntia aureispina</i>	G1	public	Desert
<i>Osmorhiza bipatriata</i>	G5T1	private-TNC	Flagstaff
<i>Ostrya chisosensis</i>	G5T2	public	Flagstaff
<i>Paronychia congesta</i>	G1	private	SABG
<i>Pediomelum humile</i>	G1	public/private	LBJWC
<i>Phlox nivalis ssp. texensis</i>	G4T2	public	Mercer
<i>Physaria pallida</i>	G1	public/private	Mercer
<i>Physaria thamnophila</i>	G1	private	SABG
<i>Physostegia correllii</i>	G2	public	Mercer
<i>Pseudoclappia watsonii</i>	G1	private	LBJWC
<i>Quercus tardifolia</i>	G1	public	Flagstaff
<i>Rudbeckia scabrifolia</i>	G3G4	public	Mercer
<i>Salvia pentstemonoides</i>	G1	public	LBJWC
<i>Scutellaria laevis</i>	G1	public/private	LBJWC
<i>Silene subciliata</i>	G3	public	Mercer
<i>Sophora gypsophila var. guadalupensis</i>	G1	public	Desert
<i>Stenaria mullerae var. pooleana</i>	G1	private	Desert
<i>Streptanthus bracteatus</i>	G1G2	public	LBJWC
<i>Symphotrichum puniceum var. scabricaule</i>	G5T2	public/private	Mercer
<i>Viola guadalupensis</i>	G1	public	Flagstaff

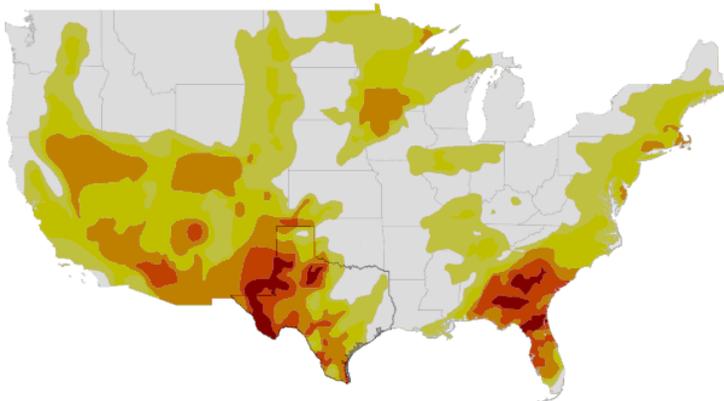
Figure 1. U.S. Drought During Project Period



8-31-2010



5-03-2011



5-01-2012

Source: National Public Radio <http://stateimpact.npr.org/texas/drought/>

Table 2 Surface Area of Texas in Drought by Severity  
Selected Dates During Project Period

**June 22, 2010**

**Abnormally Dry:** 35%  
**Moderate Drought:** 13%  
Severe Drought: 0%  
Extreme Drought: 0%  
Exceptional Drought: 0%

**August 31, 2010**

**Abnormally Dry:** 37%  
**Moderate Drought:** 11%  
**Severe Drought:** 1%  
Extreme Drought: 0%  
Exceptional Drought: 0%

**May 17, 2011**

**Abnormally Dry:** 3%  
**Moderate Drought:** 5%  
**Severe Drought:** 12%  
**Extreme Drought:** 32%  
**Exceptional Drought:** 48%

**June 28, 2011**

**Abnormally Dry:** 2%  
**Moderate Drought:** 1%  
**Severe Drought:** 4%  
**Extreme Drought:** 18%  
**Exceptional Drought:** 72%

**September 27, 2011**

Abnormally Dry: 0%  
**Moderate Drought:** 1%  
**Severe Drought:** 3%  
**Extreme Drought:** 11%  
**Exceptional Drought:** 86%

**February 28, 2012**

**Abnormally Dry:** 9%  
**Moderate Drought:** 18%  
**Severe Drought:** 29%  
**Extreme Drought:** 24%  
**Exceptional Drought:** 15%

Source: National Public Radio <http://stateimpact.npr.org/texas/drought/>

Collaborators successfully completed 17 collections of 14 different species, and made unsuccessful attempts to collect an additional three species (Table 3). Species with successful collections included *Arenaria livermorensis*, *Callirhoe scabriuscula*, *Croton alabamensis*, *Cryptantha crassipes*, *Hibiscus dasycalyx*, *Hymenoxys texana*, *Lesquerella thamnophilla*, *Liatris tenuis*, *Malaxis wendtii*, *Ostrya chisoensis*, *Rudbeckia scabrifolia*, *Salvia penstemonoides*, *Streptanthus bracteatus*, and *Viola guadalupensis*.

Three efforts to secure collection were unsuccessful due to weather conditions (*Cypripedium kentuckiense*), problems relocating recorded populations (only dead *Quercus tardifolia* individuals were located), or poor condition from disease (powdery mildew on one population of *Streptanthus bracteatus*).

Collections were conducted using CPC protocols, cited in the USFWS Policy Regarding Controlled Propagation of Species Listed Under the Endangered Species Act [FR65:183, p 56916], generally following the guidance of Guerrant, Fiedler, Havens and Maunder (2004). In each case, however, species biology and population condition, as well as threat assessment guided collection decisions to collect in a manner that did not weaken natural populations. Consequently, seed quantities harvested varies with species and population. During this project period one population of *Callirhoe scabriuscula*, slated for imminent destruction in the wild was sampled for ex-situ seed conservation, and also individual plants were rescued and transported to the Lady Bird Johnson Wildflower Center. Permission was obtained for collection on private lands and forms were submitted annually to TXNDD.

Ten collections are of fewer than 500 seeds, reflecting poor seed availability, and it is recommended that collection efforts for these populations continue gradually over time if necessary to reach a minimum of 1000 seed. Larger seed quantities also facilitate establishing duplicate or divided collections held in two locations for security, and to permit ongoing research from locally held accessions to advance recovery plan tasks.

Going forward, maximizing productivity for each field season will require careful planning and coordination. During the first phase of work, the timing of arrival of executed funding agreements did initially delay implementation of work, and undoubtedly was a factor in reduced numbers of species available for collection in the 2010 field season. Closer communication and coordination between notification and the executed funding instruments would expedite funding availability needed for seasonal hiring decisions and before incurring extensive staff and field expense.

**Task 3 Data Collection and Management.** Collectors also followed TPWD Texas Natural Diversity Database (TXNDD) protocols in data recording. To ensure the most efficient and accurate data collection for the TXNDD, a training was coordinated with TXNDD and the CPC national office. TXNDD designed the training and held it at the Lady Bird Johnson Wildflower Center in November of 2010 and at Mercer Arboretum and Botanic Gardens in January of 2011. Travel logistics with the two Arizona PIs (Desert and Flagstaff) working far to the west, have delayed training for these PIs. Training is anticipated when they are in Texas for field work. The half-day training consisted of a presentation/discussion and a lab practical. The presentation covered the role of the TXNDD, NatureServe's (and TXNDD's) spatial methodology, collecting GPS data, downloading GPS data with a DNR Garmin, and checking and using data in Arc Explorer (or ArcMap). The lab practical/exercise involved collecting GPS data using

NatureServe's methodology, downloading and reviewing data, overlaying data over other spatial data, and discussing how the spatial data could be used to assist future seed collecting efforts.

Task 3. Collectors recorded information about the condition of the habitat and the populations using the standard TPWD Rare Plant Survey Form. Population information collected included the number of plants, area surveyed, number or percentage of seedlings, reproductive and non-reproductive plants, and threats to the population. Other habitat information was recorded included slope, exposure, litter, and associated plant species as equipment and opportunity permitted. Forms were submitted to the Texas Natural Diversity Database (TXNDD). It is added to the Center for Plant Conservation Database, and data forms were submitted annually (Appendix 1). Photographs were taken and submitted as well (Appendix 2) and will be archived and indexed at the Center for Plant Conservation.

**Task 4. Secure Storage.** CPC has a formal and active cooperative agreement with the National Center for Genetic Resources Preservation (NCGRP) to house CPC's seed collections of the vulnerable plants of the United States at no charge. As soon as all collections were cleaned and accessioned they are evaluated for quantity, conditioned and shipped for delivery to the NCGRP and, if numbers permit, a second portion also backed up at their respective CPC institutions. The only exception to this is a *Viola guadalupensis* collection made by The Arboretum at Flagstaff which the National Park Service requested be retained at The Arboretum for immediate use in recovery activities.

#### Acknowledgements

The Center for Plant Conservation gratefully acknowledges the funding of the U.S. Fish and Wildlife Service, the Texas Parks and Wildlife Department, the Meadows Foundation, and private donors for making this project possible. The CPC network Participating Institutions who assumed responsibility for species in their area, conducted the field work, and contributed significant in-kind match are to be commended for their achievement under poor field conditions. In addition all of the collaborators and agency partners who assisted with TNDD training, landowner research, permit contacts, species knowledge, assistance monitoring wild conditions and site visits have contributed to project success. We look forward to continuing to work to secure and restore the vulnerable species of such a significant botanical center of diversity.

**Table 3** Texas plant species collected (or collection attempt) in initial work period.

Successful collections												
Genus	Species	Variety/ Subspecies	Federal Status	G- Rank	PI Accession No.	Collection Date	Total No. seeds collected	Ownership	No. of Moms	1° Storage Location	1° Location seed count	2° Storage Locati
Arenaria	livermorensis			G1	2010-0088	2010-Aug-14	243	Private	14	NCGRP	243	
Callirhoe	scabriuscula		LE	G2	1358	2010-Jun-(7-22)	4,998	Private	54	NCGRP	3,998	LBJWC
						2011	3,150	Private		LBJWC	3,150	
Croton	alabamensis	texensis		G3T2	20110001	2011-Jun-8	309	Private	97	NCGRP	267	LBJWC
Cryptantha	crassipes		LE	G1	20110044- 20110049	2010-Mar-28, May-9&13, & Jun-13	2901	Private	458	NCGRP	2901	
Hymenoxys	texana		LE	G2	20120091-01 to 20120091-18	2012-Apr-25	150,000	Public No EO # yet assigned	1005	Mercer	130,000	NCGRP
Hibiscus	Dasycalyx (1)		C	G1	20110004	2011-Oct-6	174	Public	10	NCGRP	174	
Hibiscus	Dasycalyx (2)		C	G1	20120160- 20120199	2012-august 16	1188	Public	20	NCGRP		Mercer
Lesquerella	thamnophila		LE	G1	20110002	2011-Apr-22	105	Public	9	NCGRP	105	
Liatris	tenuis			G3	20110003	2011-Nov-4	1,389	Public	63	NCGRP	1,389	
Malaxis	wendtii			G2	2010-0087	2010-Sep-15	50	Public	2	NCGRP	50	
Ostrya	chisosensis			G5T2	2010-0086	2010-Sep-14	1451	Public	5	NCGRP	1451	
Rudbeckia	scabrifolia			G3G4	20110005	2011-Nov- (21&29)	2,005	Public	34	NCGRP	2,005	
Salvia	pentstemonoides			G1	1357	2010-Jul-7 & Aug-5	377	Private	30	NCGRP	377	
				G1	CPC201202	2012-July 26	51			LBJWC	51	
Streptanthus	bracteatus		C	G1G2	1356	2010-Jun-21	355	Private	6	NCGRP	355	
					CPC201201	2012-Jul-8	154	Public		LBJWC	154	
Viola	guadalupensis			G1	2010-0126	2010-May-1	300	Public	unk	FLAG	300	

Table 3. Continued.

Unsuccessful Collections

Genus	Species	Variety/ Subspecies	Federal Status	Rank	PI Accession No.	Collection Date	Total No. seeds collected	Ownership	No. of Moms	1° Storage Location	1° Location seed count	2° Storage Location	2° L s c
Cypripedium	kentuckiense			G3	N/A	2010-Oct-XX	0	Public	0	N/A			
Quercus	tardifolia			G1	N/A	2010-Sep-14	0	Public	0	N/A			
Streptanthus	bracteatus		C	G1G2	N/A	2010-May-7	0	Private	0	N/A			

N/A= unsuccessful attempt

FLAG-The Arboretum at Flagstaff; LBJWC-Lady Bird Johnson Wildflower Center; DES-Desert Botanical Garden; MERC-Mercer Arboretum and Botanic Gardens

NCGRP-National Center for Genetic Resources Preservation

## Citations

Guerrant, E.O., Fiedler, P.L., Havens, K.H. and M. Maunder. Revised Genetic Sampling Guidelines for Conservation Collections of Rare and Endangered Plants. pp419-441 IN: Ex-Situ Plant Conservation, Supporting Species Survival in the Wild. E.O Guerrant Jr., K. Havens, and M. Maunder, eds. Island Press, Washington D.C.

National Public Radio. Dried Out. Confronting the Texas Drought. Online web site:  
<http://stateimpact.npr.org/texas/drought/>

“Policy Regarding Controlled Propagation of Species Listed Under the Endangered Species Act, Notice.” Federal Register 65:183 (20 September 2000) p.56916.

Poole, J.M., J.R. Singhurst, and W.R. Carr. 2010. The Rare Plant List of Texas. Wildlife Diversity Program of Texas Parks and Wildlife Department and Texas Conservation Data Center of The Nature Conservancy of Texas.

## Significant Deviations

**Field work was implemented for only 16 separate species instead of the expected minimum of 20 species.**

This was due to two factors. The primary factor was the record drought over much of Texas during the majority of the work period. An additional factor is the award contracting workflow. As executed funding agreements or extension documentations do not arrive until spring or early summer, many species in Texas are already well developed, and the initiation of work necessarily lags behind prime collection season for some species.

**Species collections varied from the emphasis on the identified highest priority species, as the project had intended to focus on.**

We were successful in collecting a significant number of federally listed and candidate species (7), and G1 ranked species (3). We had intended to make more progress on the highest priority species identified in Table 1. However, the drought reduced the availability of many of the priority species, and as poor conditions continued, in consultation with TPWD, it was decided to allow more latitude in substituting collections of other species on The Rare Plant List of Texas that could be located in good condition and would support progress in seed collection for future restoration and management needs.

## Appendix One. Field Forms

Appendix Two. Photographs

Delivered as Digital Files by FTP

**Cryptantha crassipes**

Collection Date	Location	lat/long	Elevation	USGS Topo Map	DBG ACC #	Seed count	# Mother plants
13-May-10	Lower Hill Valley, O2 Ranch, Brewster Co, TX	N3284848 E629412 UTMS	955-1045m	Longhills	201100491000..	496	100
13-May-10	Sotol Valley #2, O2 Ranch, Brewster Co, TX	N3283236 E627723.79		Longhills	201100451000..	692	135
28-Mar-10	John Wells "The Field Lab" Brewster Co, TX	N3289193 E627689			201100481000..	151	
9-May-10	Terlingua Ranch, Brewster Co, TX				201100471000..	247	
May 9, 2010 & June 13, 2010	John Wells "The Field Lab" Brewster Co, TX, Agua Fria Mt.	N3269347.66m E636850.03m	1000m	29103-E6	201100461000..	38	
13-May-10	O2 Ranch, Population NW of Hill Valley population	N29.41'12.8" W103.40'03.8"	1049m		201100441000..	31	23
13-May-10	Brewster Co, TX				201100441000..	103	
13-May-10	Sotol Valley pop, O2 Ranch, Brewster Co, TX	N29.40'16.2" W103.40'51.5"	1056m		201100441000..	561	100
13-May-10	Section 6, O2 Ranch, Brewster Co, TX	N29.40'07.8" W103.40'33.8"	1056m		201100441000..	582	100

2901

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## CPC FIELD COLLECTION FORM

Use this form in \_\_\_\_\_ with the Accession Form to file information on wild-collected germ plasm

## General Information

1. Completed by: Maria T. Williams Date: June 13, 2010
2. Taxon name (scientific) Cryptantha crassipes
3. Institution Sul Ross State University
4. Your institution's accession number \_\_\_\_\_
5. Herbarium specimen number # 67
6. Collected by Maria T. Williams Date of Collection June 13, 2010 <sup>(s)</sup> May 9, 2010

**Collection Location** (fill out as many as possible; items 7 and 8 are essential. If you do not have information for item 8, fill out item 12 at a minimum)

7. State Texas County Brewster
8. Latitude N 32° 23' 17.64" Longitude E 63° 68' 50.03"
9. Township \_\_\_\_\_ Range \_\_\_\_\_ Section \_\_\_\_\_
10. Elevation 1000 m Agua Fria Mt.
11. USGS Topo Map 29103-E6
12. Land owner name and address John Wells

13. Descriptive location (MPO1, MPO2)  
Flaggy limestone z arroyo, Terlingua Creek Ranch  
Subdivision

## Habitat Information

- |                        |       |         |             |         |             |
|------------------------|-------|---------|-------------|---------|-------------|
| 14. Light (circle one) | Open  | ¼ shade | ½ shade     | ¾ shade | <u>full</u> |
| 15. Slope (circle one) | 0-5   | 6-10    | 11-40       | 41-60   | >60         |
| 16. Exposure           | North | South   | <u>East</u> | West    |             |
| 17. Litter             | 0cm   | <1 cm   | 1-3 cm      | 3-8 cm  | >8cm        |



### CPC FIELD COLLECTION FORM (cont'd)

Use this form in conjunction with the Accession Form to file information on wild-collected germ plasm

#### Soil Characteristics

##### 18. Soil Test results

P	K	Ca	Mg	CEC	Organic Matter	Soil Ph	Soil Type
---	---	----	----	-----	----------------	---------	-----------

19. Parent Rock Limestone

RD #

20. Plant community

21. Associated species

Tiquilia hispidissima Eriogonum havardii

#### Population Information

21. Number of plants	1-10	11-30	31-100	101-500	<u>&gt;500</u>
----------------------	------	-------	--------	---------	----------------

22. Area covered length (m) 40 acres  
width (m)

23. Avg. no. of plants/sq m \_\_\_\_\_

24. Max. no. of plants/sq m \_\_\_\_\_

26. No. or % reproductive \_\_\_\_\_

27. No. or % nonreproductives \_\_\_\_\_

28. No. or % seedlings \_\_\_\_\_

29. % reproductives In Bud In Flower In Fruit

30. Threats to this population Development; habitat loss, All terrain vehicle traffic



## CPC FIELD COLLECTION FORM

Use this form in \_\_\_\_\_ with the Accession Form to file information on wild-collected germ plasm

**General Information**

1. Completed by: BRANDI EIDE Date: 12-3-10
2. Taxon name (scientific) CRYPTANTHA CRASSIPES
3. Institution SUL ROSS UNIVERSITY
4. Your institution's accession number \_\_\_\_\_
5. Herbarium specimen number \_\_\_\_\_
6. Collected by \_\_\_\_\_ Date of Collection 5/9/10

**Collection Location** (fill out as many as possible; items 7 and 8 are essential. If you do not have information for item 8, fill out item 12 at a minimum)

7. State TX County BREWSTER
8. Latitude \_\_\_\_\_ Longitude \_\_\_\_\_
9. Township \_\_\_\_\_ Range \_\_\_\_\_ Section \_\_\_\_\_
10. Elevation \_\_\_\_\_
11. USGS Topo Map \_\_\_\_\_
12. Land owner name and address \_\_\_\_\_
13. Descriptive location \_\_\_\_\_

**Habitat Information**

- |                        |       |         |         |         |      |
|------------------------|-------|---------|---------|---------|------|
| 14. Light (circle one) | Open  | ¼ shade | ½ shade | ¾ shade | full |
| 15. Slope (circle one) | 0-5   | 6-10    | 11-40   | 41-60   | >60  |
| 16. Exposure           | North | South   | East    | West    |      |
| 17. Litter             | 0cm   | <1 cm   | 1-3 cm  | 3-8 cm  | >8cm |



**CPC FIELD COLLECTION FORM (cont'd)**

*Use this form in conjunction with the Accession Form to file information on wild-collected germ plasm*

**Soil Characteristics**

18. Soil Test results

P	K	Ca	Mg	CEC	Organic Matter	Soil Ph	Soil Type
---	---	----	----	-----	----------------	---------	-----------

19. Parent Rock

20. Plant community

21. Associated species

**Population Information**

21. Number of plants 1-10                      11-30                      31-100                      101-500                      >500

22. Area covered      length (m)  
   width (m)

23. Avg. no. of plants/sq m \_\_\_\_\_

24. Max. no. of plants/sq m \_\_\_\_\_

26. No. or % reproductive \_\_\_\_\_

27. No. or % nonreproductives \_\_\_\_\_

28. No. or % seedlings \_\_\_\_\_

29. % reproductives    In Bud                      In Flower                      In Fruit

30. Threats to this population \_\_\_\_\_



### CPC FIELD COLLECTION FORM

Use this form in with the Accession Form to file information on wild-collected germ plasm

#### General Information

- 1. Completed by: BRANDI EIDE Date: 12-3-10
- 2. Taxon name (scientific) \_\_\_\_\_
- 3. Institution SUL ROSS UNIVERSITY
- 4. Your institution's accession number \_\_\_\_\_
- 5. Herbarium specimen number \_\_\_\_\_
- 6. Collected by \_\_\_\_\_ Date of Collection 5/13/10

**Collection Location** (fill out as many as possible; items 7 and 8 are essential. If you do not have information for item 8, fill out item 12 at a minimum)

- 7. State TX County BREWSTER
- 8. Latitude N 21° 40' 16.2" Longitude W 103° 40' 51.5"
- 9. Township \_\_\_\_\_ Range \_\_\_\_\_ Section \_\_\_\_\_
- 10. Elevation 3465'
- 11. USGS Topo Map \_\_\_\_\_
- 12. Land owner name and address \_\_\_\_\_
- 13. Descriptive location OZ RANCH, SOTOL VALLEY POPULATION

#### Habitat Information

- |                        |       |         |         |         |      |
|------------------------|-------|---------|---------|---------|------|
| 14. Light (circle one) | Open  | ¼ shade | ½ shade | ¾ shade | full |
| 15. Slope (circle one) | 0-5   | 6-10    | 11-40   | 41-60   | >60  |
| 16. Exposure           | North | South   | East    | West    |      |
| 17. Litter             | 0cm   | <1 cm   | 1-3 cm  | 3-8 cm  | >8cm |



### CPC FIELD COLLECTION FORM (cont'd)

*Use this form in conjunction with the Accession Form to file information on wild-collected germ plasm*

#### Soil Characteristics

18. Soil Test results

P	K	Ca	Mg	CEC	Organic Matter	Soil Ph	Soil Type
---	---	----	----	-----	----------------	---------	-----------

19. Parent Rock

20. Plant community

21. Associated species

#### Population Information

21. Number of plants 1-10                      11-30                      31-100                      101-500                      >500

22. Area covered      length (m)  
   width (m)

23. Avg. no. of plants/sq m \_\_\_\_\_

24. Max. no. of plants/sq m \_\_\_\_\_

26. No. or % reproductive \_\_\_\_\_

27. No. or % nonreproductives \_\_\_\_\_

28. No. or % seedlings \_\_\_\_\_

29. % reproductives    In Bud                      In Flower                      In Fruit

30. Threats to this population \_\_\_\_\_



### CPC FIELD COLLECTION FORM

Use this form in with the Accession Form to file information on wild-collected germ plasm

#### General Information

- 1. Completed by: BRANDI EIDE Date: 12-3-10
- 2. Taxon name (scientific) \_\_\_\_\_
- 3. Institution SULL ROSS UNIVERSITY
- 4. Your institution's accession number \_\_\_\_\_
- 5. Herbarium specimen number \_\_\_\_\_
- 6. Collected by \_\_\_\_\_ Date of Collection 5/13/10

**Collection Location** (fill out as many as possible; items 7 and 8 are essential. If you do not have information for item 8, fill out item 12 at a minimum)

- 7. State TX County BREWSTER
- 8. Latitude N 29° 41' 12" Longitude W 103° 40' 03.8"
- 9. Township \_\_\_\_\_ Range \_\_\_\_\_ Section \_\_\_\_\_
- 10. Elevation 3443'
- 11. USGS Topo Map \_\_\_\_\_
- 12. Land owner name and address \_\_\_\_\_

13. Descriptive location OZ RANCH, POPULATION NW OF HILL VALLEY POP.

NOTES: many still immature, some herbivory

#### Habitat Information

- 14. Light (circle one) Open      ¼ shade      ½ shade      ¾ shade      full
- 15. Slope (circle one) 0-5      6-10      11-40      41-60      >60
- 16. Exposure      North      South      East      West
- 17. Litter      0cm      <1 cm      1-3 cm      3-8 cm      >8cm



### CPC FIELD COLLECTION FORM (cont'd)

*Use this form in conjunction with the Accession Form to file information on wild-collected germ plasm*

#### Soil Characteristics

18. Soil Test results

P	K	Ca	Mg	CEC	Organic Matter	Soil Ph	Soil Type
---	---	----	----	-----	----------------	---------	-----------

19. Parent Rock

20. Plant community

21. Associated species

#### Population Information

21. Number of plants 1-10	<u>11-30</u>	31-100	101-500	>500
---------------------------	--------------	--------	---------	------

*~ 23 plants sampled*

22. Area covered      length (m)  
                                 width (m)

23. Avg. no. of plants/sq m \_\_\_\_\_

24. Max. no. of plants/sq m \_\_\_\_\_

26. No. or % reproductive \_\_\_\_\_

27. No. or % nonreproductives \_\_\_\_\_

28. No. or % seedlings \_\_\_\_\_

29. % reproductives	In Bud	In Flower	In Fruit
---------------------	--------	-----------	----------

30. Threats to this population \_\_\_\_\_



## CPC FIELD COLLECTION FORM

Use this form in conjunction with the Accession Form to file information on wild-collected germ plasm

**General Information**

1. Completed by: BRANDI EIDE Date: 5/12-3-10
2. Taxon name (scientific) \_\_\_\_\_
3. Institution SUL ROSS UNIVERSITY
4. Your institution's accession number \_\_\_\_\_
5. Herbarium specimen number \_\_\_\_\_
6. Collected by \_\_\_\_\_ Date of Collection 5/13/10

**Collection Location** (fill out as many as possible; items 7 and 8 are essential. If you do not have information for item 8, fill out item 12 at a minimum)

7. State \_\_\_\_\_ County BREWSTER
8. Latitude N 29° 40' 07.8" Longitude W 103° 40' 33.8"
9. Township \_\_\_\_\_ Range \_\_\_\_\_ Section \_\_\_\_\_
10. Elevation 3465'
11. USGS Topo Map \_\_\_\_\_
12. Land owner name and address \_\_\_\_\_
13. Descriptive location SECTION 6, OZ RANCH

NOTES: A few still in flower, some herbivory, best fruiting on ridges

**Habitat Information**

- |                        |       |         |         |         |      |
|------------------------|-------|---------|---------|---------|------|
| 14. Light (circle one) | Open  | ¼ shade | ½ shade | ¾ shade | full |
| 15. Slope (circle one) | 0-5   | 6-10    | 11-40   | 41-60   | >60  |
| 16. Exposure           | North | South   | East    | West    |      |
| 17. Litter             | 0cm   | <1 cm   | 1-3 cm  | 3-8 cm  | >8cm |



### CPC FIELD COLLECTION FORM (cont'd)

*Use this form in conjunction with the Accession Form to file information on wild-collected germ plasm*

#### Soil Characteristics

18. Soil Test results

P	K	Ca	Mg	CEC	Organic Matter	Soil Ph	Soil Type
---	---	----	----	-----	----------------	---------	-----------

- 19. Parent Rock
- 20. Plant community
- 21. Associated species

#### Population Information

21. Number of plants 1-10                      11-30                      31-100                      101-500                      >500

*100 SAMPLED*

22. Area covered      length (m)  
   width (m)

23. Avg. no. of plants/sq m \_\_\_\_\_  
24. Max. no. of plants/sq m \_\_\_\_\_

26. No. or % reproductive \_\_\_\_\_  
27. No. or % nonreproductives \_\_\_\_\_  
28. No. or % seedlings \_\_\_\_\_

29. % reproductives    In Bud                      In Flower                      In Fruit

30. Threats to this population \_\_\_\_\_  
*some herbivory*



## CPC FIELD COLLECTION FORM

Use this form in conjunction with the Accession Form to file information on wild-collected germ plasm

**General Information**

1. Completed by: BRANDI EIDE Date: 12-3-10
2. Taxon name (scientific) \_\_\_\_\_
3. Institution SULL ROSS UNIVERSITY
4. Your institution's accession number \_\_\_\_\_
5. Herbarium specimen number \_\_\_\_\_
6. Collected by \_\_\_\_\_ Date of Collection 5/13/10

**Collection Location** (fill out as many as possible; items 7 and 8 are essential. If you do not have information for item 8, fill out item 12 at a minimum)

7. State TX County BREWSTER
8. Latitude \_\_\_\_\_ Longitude \_\_\_\_\_
9. Township \_\_\_\_\_ Range \_\_\_\_\_ Section \_\_\_\_\_
10. Elevation \_\_\_\_\_
11. USGS Topo Map \_\_\_\_\_
12. Land owner name and address \_\_\_\_\_

## 13. Descriptive location

May be greenhouse seed - DES seeking clarification and more information

**Habitat Information**

- |                        |       |         |         |         |      |
|------------------------|-------|---------|---------|---------|------|
| 14. Light (circle one) | Open  | ¼ shade | ½ shade | ¾ shade | full |
| 15. Slope (circle one) | 0-5   | 6-10    | 11-40   | 41-60   | >60  |
| 16. Exposure           | North | South   | East    | West    |      |
| 17. Litter             | 0cm   | <1 cm   | 1-3 cm  | 3-8 cm  | >8cm |





**CPC FIELD COLLECTION FORM**

Use this form in with the Accession Form to file information on wild-collected germ plasm

**General Information**

1. Completed by: MARIA T. Williams Date: July 31, 2010
2. Taxon name (scientific) Cryptantha crassipes
3. Institution Sul Ross State University
4. Your institution's accession number SRSC
5. Herbarium specimen number Populational voucher #94 MWilliams
6. Collected by Patty Manning Date of Collection 13 MAY 2010  
*Seed collection by*

**Collection Location** (fill out as many as possible; items 7 and 8 are essential. If you do not have information for item 8, fill out item 12 at a minimum)

7. State Texas County Brewster
8. Latitude N 32° 48' Longitude E 62° 42' UTMS
9. Township \_\_\_\_\_ Range \_\_\_\_\_ Section \_\_\_\_\_
10. Elevation 955-1045 m
11. USGS Topo Map Longhills
12. Land owner name and address \_\_\_\_\_

13. Descriptive location

Flaggy limestone, soft yellow hills < 10% vegetation

**Habitat Information**

- |                        |              |              |             |         |      |
|------------------------|--------------|--------------|-------------|---------|------|
| 14. Light (circle one) | <u>Open</u>  | ¼ shade      | ½ shade     | ¾ shade | full |
| 15. Slope (circle one) | 0-5          | <u>6-10</u>  | 11-40       | 41-60   | >60  |
| 16. Exposure           | <u>North</u> | <u>South</u> | <u>East</u> | West    |      |
| 17. Litter             | <u>0cm</u>   | <1 cm        | 1-3 cm      | 3-8 cm  | >8cm |



### CPC FIELD COLLECTION FORM (cont'd)

Use this form in conjunction with the Accession Form to file information on wild-collected germ plasm

#### Soil Characteristics

##### 18. Soil Test results

P	K	Ca	Mg	CEC	Organic Matter	Soil Ph	Soil Type
---	---	----	----	-----	----------------	---------	-----------

##### 19. Parent Rock

20. Plant community Hot desert scrub

##### 21. Associated species

Tiquilia hispidisma, Anulocaulis leiserus, Machaeranthera wrightii

#### Population Information

21. Number of plants	1-10	11-30	31-100	<u>101-500</u>	>500
----------------------	------	-------	--------	----------------	------

22. Area covered      length (m)  
   width (m)

23. Avg. no. of plants/sq m \_\_\_\_\_

24. Max. no. of plants/sq m \_\_\_\_\_

26. No. or % reproductive \_\_\_\_\_

27. No. or % nonreproductives \_\_\_\_\_

28. No. or % seedlings \_\_\_\_\_

29. % reproductives	In Bud	In Flower	<u>In Fruit</u>
---------------------	--------	-----------	-----------------

30. Threats to this population Bentonite mining, development, off road 4 wheelin



**CPC FIELD COLLECTION FORM**

Use this form in conjunction with the Accession Form to file information on wild-collected germ plasm

**General Information**

1. Completed by: Mania T. Williams Date: March 23, 2010
2. Taxon name (scientific) Cryptantha crassipes
3. Institution Sul Ross State University
4. Your institution's accession number SRSC
5. Herbarium specimen number #62 MWilliams populational voucher
- \* 6. Collected by M. Williams Date of Collection 3 23 2010

Does this mean the date that the specimen (voucher) was collected or  
 Seeds collected 13 MAY 2010 by Patty Manning  
**Collection Location** (fill out as many as possible; items 7 and 8 are essential. If you do not have information for item 8, fill out item 12 at a minimum) *the seeds collected*

7. State Texas County Brewster
8. Latitude N3283236 Longitude E627723.79
9. Township \_\_\_\_\_ Range \_\_\_\_\_ Section \_\_\_\_\_
10. Elevation \_\_\_\_\_
11. USGS Topo Map Longhills
12. Land owner name and address \_\_\_\_\_

13. Descriptive location  
Soft hills, rocky slopes

**Habitat Information**

- |                        |              |                     |                     |                     |      |
|------------------------|--------------|---------------------|---------------------|---------------------|------|
| 14. Light (circle one) | <u>Open</u>  | $\frac{1}{4}$ shade | $\frac{1}{2}$ shade | $\frac{3}{4}$ shade | full |
| 15. Slope (circle one) | <u>0-5</u>   | <u>6-10</u>         | <u>11-40</u>        | 41-60               | >60  |
| 16. Exposure           | <u>North</u> | <u>South</u>        | <u>East</u>         | West                |      |
| 17. Litter             | <u>0cm</u>   | <1 cm               | 1-3 cm              | 3-8 cm              | >8cm |





## CPC FIELD COLLECTION FORM

Use this form in \_\_\_\_\_ with the Accession Form to file information on wild-collected germ plasm

**General Information**

1. Completed by: Maria Williams Date: 9 May 2010
2. Taxon name (scientific) Cryptantha crassipes
3. Institution Sul Ross State University
4. Your institution's accession number SRSC
5. Herbarium specimen number #67 MWilliams
6. Collected by M Williams Date of Collection 28 March 2010

**Collection Location** (fill out as many as possible; items 7 and 8 are essential. If you do not have information for item 8, fill out item 12 at a minimum)

7. State Texas County Brewster
8. Latitude N 32 28 19.3 Longitude E 62 76 09
9. Township \_\_\_\_\_ Range \_\_\_\_\_ Section \_\_\_\_\_
10. Elevation \_\_\_\_\_
11. USGS Topo Map \_\_\_\_\_
12. Land owner name and address John Wells of "The Field Lab" - google Field Lab

## 13. Descriptive location

Approximately 62 miles South of Alpine TX 1185 (R) @ Terlingua Ranch  
 sign down dirt road for 2-3 miles see sign for "The Field Lab"  
 Frassy limestone, yellow hills

**Habitat Information**

- |                        |             |                     |                     |                     |      |
|------------------------|-------------|---------------------|---------------------|---------------------|------|
| 14. Light (circle one) | <u>Open</u> | $\frac{1}{4}$ shade | $\frac{1}{2}$ shade | $\frac{3}{4}$ shade | full |
| 15. Slope (circle one) | 0-5         | <u>6-10</u>         | 11-40               | 41-60               | >60  |
| 16. Exposure           | North       | <u>South</u>        | <u>East</u>         | West                |      |
| 17. Litter             | <u>0cm</u>  | <1 cm               | 1-3 cm              | 3-8 cm              | >8cm |



RARE PLANT SURVEY FORM

Texas Parks & Wildlife Department  
 Wildlife Diversity Program  
 3000 IH-35 South, Ste 100  
 Austin, TX 78704 (512) 912-7011

INSTRUCTIONS: Complete 1 form per element per visit.

ELEMENT INFORMATION

Scientific Name: Arenaria livermorensis Update of record: \_\_\_ yes \_\_\_ no  
 Occ.# (if known): \_\_\_\_\_

SURVEY SITE INFORMATION

Survey Site: Davis Mountains, near the summit of Mt. Livermore  
 Quad Name(s) (if known): \_\_\_\_\_

SURVEY INFORMATION

Survey Date: 08/14/2010 Time: from 12 to 3 am or pm (circle) Database Use Only  
 Sourcecode: F \_\_\_\_\_ TXUS  
 Surveyors (principal surveyor first, include first & last name): Sheila Murray, Mark Jarecki  
 Weather conditions: Sunny, 90°  
 Revisit to this EO needed? \_\_\_ yes X no Why? \_\_\_\_\_

IDENTIFICATION

Photograph/slide taken? X yes \_\_\_ no Is a copy attached? X yes \_\_\_ no Digital photo #: ArLiv 8-2010 A-E Archived location: Arboretum at Flagstaff  
 Specimen collected? X yes \_\_\_ no Collection # and repository (specify if from a subpopulation): seeds collected, stored at NCGRP for seed banking purposes # 2010-0088  
 Identification problems? \_\_\_ yes X no If necessary, describe the important plant characteristics you used for identification: \_\_\_\_\_

**CONDITION:** Condition is an integrated measure of the quality of biotic and abiotic factors, structures and processes within the occurrence, and the degree to which they affect the continued existence of the occurrence. Components of condition for species are: 1) reproduction and health, 2) ecological processes, 3) species composition and biological structure, and 4) abiotic physical/chemical factors. Factors to consider: evidence of regular successful reproduction, habitat degradation, disturbance, presence of exotic species, the degree to which ecological processes are sustaining the habitat.

**SIZE AND PHENOLOGY:** Size is a quantitative measure of the area and/or abundance of an occurrence. Components of this factor are 1) area of occupancy, 2) population abundance, 3) population distribution and 4) population fluctuation.

**Abundance** (total size of the occurrence): Total #: 42 Type of measurement: X precise (P) count \_\_\_ estimate (E)  
 What was counted (individuals, stems, etc.): individuals  
**Vigor** of plants: \_\_\_ excellent (E) X good (G) \_\_\_ fair (F) \_\_\_ poor (P)  
**Age structure:** \_\_\_ % seedlings (sdl) \_\_\_ % juveniles (j) 100 % mature (m) \_\_\_ % senescent (sn)  
**Population distribution** (widely scattered, clumped, evenly distributed throughout): clumped

**Area of occupancy** (fill one): \_\_\_ meters<sup>2</sup> 4375 feet<sup>2</sup> \_\_\_ acres Type of measurement: \_\_\_ precise (P) X estimate (E)  
**Phenology:** Indicate the number observed in each category (or check if numbers are unknown):  
0 in leaf (lf) 0 in bud (bd) 2 in flower (fl) 26 immature fruit (ifr) 0 mature fruit (mfr)  
14 seed dispersing (disp) 0 dormant (dor)

SUBPOPULATION INFORMATION (if applicable) (see above for abbreviations); additional table on page 3

Subpop #	# of (P or E) and age structure	Vigor	Distribution	Area (units, P or E)	Phenology	GPS data (lat, long, accuracy)

BIOLOGY

Evidence of disease and/or predation: No  
 Collected: \_\_\_ yes X no  
 Flora visitors: \_\_\_\_\_ Collected: \_\_\_ yes X no  
 Do other members of this genus or look-alike plants occur at this survey site? X yes \_\_\_ no If yes, list species: Arenaria fendleri

**CONDITION (continued)**

**GENERAL DESCRIPTION:** Describe the specific habitat or micro habitat of the plant at this location. Convey a mental image of the habitat and its features including quality/condition of the habitat, land forms, aquatic features, vegetation, geology, soils, and associated plant species. The TPWD Optional Plant List form is available for associated plant species; please attach.

Plants growing on igneous rock outcrop near a smaller summit of Mount Livermore. Plants were not found growing in soil, they were all directly on the large outcrop, or on pieces of the outcrop near the base, and tended to prefer the shade, moister habitat. Plants found growing among mosses & lichens.

**TOPOGRAPHY:** Elevation: 8100 ft If elevation is range: Minimum: \_\_\_\_\_ ft Maximum: \_\_\_\_\_ ft  
 Aspect: \_\_\_\_\_ Slope (%): \_\_\_\_\_ Light: \_\_\_\_\_ Position: \_\_\_\_\_ Moisture: \_\_\_\_\_  
 N  NE  flat  open  crest  inundated  
 E  NW  0-10  partial  upper slope  saturated (wet-mesic)  
 S  SE  10-35  filtered  mid-slope  moist (mesic)  
 W  SW  35+  shade  lower slope  dry-mesic  
 vertical  bottom  dry (xeric)

**LANDSCAPE CONTEXT:** Describe how the surrounding landscape is different or similar to the plant population habitat and how this may affect the viability of the population. Plants only occur either directly on the rock outcrop, or on pieces of the outcrop that have broken off & lay at the base of the outcrop.

**CURRENT THREATS** to this occurrence (i.e. browsing, mining, off-road vehicles, dumping, etc.) Exotics are noted below.

rock falls

**POTENTIAL THREATS** to this occurrence: Global climate change

**EXOTICS PRESENT?**  yes  no If yes, describe their impacts to this occurrence. List exotic species in Habitat Description or on the Optional Plant List form. Chenopodium observed in the area, but not occurring on the rock face

**PAST IMPACTS**, if known, to this occurrence (i.e., logging, burn, etc.) \_\_\_\_\_

**EO RANK:** BC **EO Rank Date:** 08/14/2010 **Comments:** used the Natureserve Key for Ranking Species Element Occurrences using the Generic Approach

**LANDOWNER AND MANAGEMENT INFORMATION**

**LANDOWNER**  
 Managed Area Name: Davis Mountains Landowner Name: The Nature Conservancy  
 Permission Form Signed:  yes (attach copy) Date signed 07/16/2010  no  
 Can Landowner contact information be added to the database?  yes  no  
 Comments: \_\_\_\_\_

**MANAGEMENT AND PROTECTION**

**MANAGEMENT, MONITORING, & RESEARCH NEEDS** (e.g. burn periodically, open the canopy, control exotics, study effects of browsing): \_\_\_\_\_

**AREAS IN NEED OF PROTECTION** (e.g. the entire prairie, the slope and crest of slope, canyon): \_\_\_\_\_

More management needed:  yes  no  questionable Comments: \_\_\_\_\_

More land needed:  yes  no  questionable Comments: \_\_\_\_\_

For Public Land: More protection needed:  yes  no  questionable Comments: \_\_\_\_\_







## LANDOWNER PERMISSION FOR WILDLIFE RESEARCH

(Pursuant to Section 12.103 of the Texas Parks and Wildlife Code)

1. **Use of Information:** I hereby grant approval for Texas Parks and Wildlife Department employees to enter property I own or manage to conduct scientific investigations and research on wildlife and to record and use (such as in analyses) site-specific information from the property. This may include placing that information onto a topographic map and entering the information into a Department database. Thus, the information could be viewed by the public.

Christopher C. Pipes July 16, 2010  
 (Landowner or authorized agent) (Date)

2. **Reporting of Information:** I hereby grant approval for Texas Parks and Wildlife Department employees to report (such as in publications or technical reports) the above approved information in a manner that permits identification of the location of the specific parcel of property I own or manage.

Christopher C. Pipes July 16, 2010  
 (Landowner or authorized agent) (Date)

3. **Other Conditions:** List any other conditions that apply to this approval.

4. **Name and Address:**

Christopher C. Pipes, Davis Mountains Project Director, The Nature Conservancy  
 (Name of Landowner or Authorized Agent)

P.O. Box 2092  
 (Address)

Ft. Davis, TX 79734  
 (City, State, Zip)

5. **Optional:**

Davis Mountains Preserve, The Nature Conservancy  
 (Name of Ranch or Tract)

Jeff Davis Approx. 32,000  
 (County) (Acreage)

432-413-1554 432-436-2390 \_\_\_\_\_  
 (Home Phone) (Office Phone) (FAX)

Texas Parks and Wildlife Department maintains the information collected through this form. With few exceptions, you are entitled to be informed about the information we collect. Under Sections 552.021 and 553.023 of the Texas Government Code, you are also entitled to receive and review the information. Under Section 559.004, you are also entitled to have this information corrected. For assistance call 512-389-4978.

RARE PLANT SURVEY FORM

Texas Parks & Wildlife Department
Wildlife Diversity Program
3000 IH-35 South, Ste 100
Austin, TX 78704 (512) 912-7011

INSTRUCTIONS: Complete 1 form per element per visit.

ELEMENT INFORMATION

Scientific Name: Malaxis wendtii
Update of record: \_\_\_ yes \_\_\_ no
Occ.# (if known):

SURVEY SITE INFORMATION

Survey Site: Big Bend National Park, Chisos Mountains, Colima Trail
Quad Name(s) (if known):

SURVEY INFORMATION

Database Use Only

Survey Date: 09/14/2010 Time: from 12 to 2 am or pm (circle) Sourcecode: F TXUS
Surveyors: Sheila Murray, Mark Jarecki, Whitney Rooney, Gayle Nance
Weather conditions: sunny, 85°
Revisit to this EO needed? X yes \_\_\_ no Why? To better count individuals

IDENTIFICATION

Photograph/slide taken? X yes \_\_\_ no Is a copy attached? \_\_\_ yes \_\_\_ no Digital photo #: Malwen 9-2010 A-G Archived location: Arboretum at Flagstaff
Specimen collected? X yes \_\_\_ no Collection # and repository (specify if from a subpopulation): seeds collected, stored at NCRP for seed banking purposes BIBE-01625 #48482, #48483
Identification problems? \_\_\_ yes X no If necessary, describe the important plant characteristics you used for identification:

CONDITION: Condition is an integrated measure of the quality of biotic and abiotic factors, structures and processes within the occurrence, and the degree to which they affect the continued existence of the occurrence.

SIZE AND PHENOLOGY: Size is a quantitative measure of the area and/or abundance of an occurrence. Components of this factor are 1) area of occupancy, 2) population abundance, 3) population distribution and 4) population fluctuation.

Abundance (total size of the occurrence): Total #: 21 Type of measurement: \_\_\_ precise (P) count X estimate (E)
What was counted (individuals, stems, etc.): individuals

Vigor of plants: X excellent (E) \_\_\_ good (G) \_\_\_ fair (F) \_\_\_ poor (P)

Age structure: 01 % seedlings (sdl) 09 % juveniles (j) 90 % mature (m) 0 % senescent (sn)

Population distribution (widely scattered, clumped, evenly distributed throughout): scattered

Area of occupancy (fill one): \_\_\_ meters^2 500 feet^2 \_\_\_ acres Type of measurement: \_\_\_ precise (P) X estimate (E)

Phenology: Indicate the number observed in each category (or check if numbers are unknown):
8 in leaf (lf) 0 in bud (bd) 6 in flower (fl) 3 immature fruit (ifr) 2 mature fruit (mfr)
2 seed dispersing (disp) 0 dormant (dor)

SUBPOPULATION INFORMATION (if applicable) (see above for abbreviations); additional table on page 3

Table with 7 columns: Subpop #, # of (P or E) and age structure, Vigor, Distribution, Area (units, P or E), Phenology, GPS data (lat, long, accuracy)

BIOLOGY

Evidence of disease and/or predation: Rodent tunnel had disturbed the soil around one Collected: \_\_\_ yes X no

Flora visitors: Collected: \_\_\_ yes X no

Do other members of this genus or look-alike plants occur at this survey site? \_\_\_ yes X no If yes, list species:

CONDITION (continued)

GENERAL DESCRIPTION: Describe the specific habitat or micro habitat of the plant at this location. Convey a mental image of the habitat and its features including quality/condition of the habitat, land forms, aquatic features, vegetation, geology, soils, and associated plant species. The TPWD Optional Plant List form is available for associated plant species; please attach.

Mesic slope, underneath oaks, most plants observed upslope from the trail, sometimes in deep leaf litter, other times the slope was steep enough so that litter did not accumulate, mostly in areas that were not very dense with grass cover.

TOPOGRAPHY: Elevation: 7000 ft If elevation is range: Minimum: \_\_\_\_\_ ft Maximum: \_\_\_\_\_ ft
Aspect: X N NE Slope (%): flat Light: open Position: crest Moisture: inundated
E NW 0-10 partial X upper slope saturated (wet-mesic)
S SE 10-35 filtered mid-slope moist (mesic)
W SW X 35+ shade lower slope X dry-mesic
vertical bottom dry (xeric)

LANDSCAPE CONTEXT: Describe how the surrounding landscape is different or similar to the plant population habitat and how this may affect the viability of the population. Plants in areas of dense oak, not in open areas

CURRENT THREATS to this occurrence (i.e. browsing, mining, off-road vehicles, dumping, etc.) Exotics are noted below.
Collection, Trampling from hikers

POTENTIAL THREATS to this occurrence:

EXOTICS PRESENT? \_\_\_ yes X no If yes, describe their impacts to this occurrence. List exotic species in Habitat Description or on the Optional Plant List form.

PAST IMPACTS, if known, to this occurrence (i.e., logging, burn, etc.)

EO RANK: BC EO Rank Date: 09/14/2010 Comments: used Nature reserve Key for Ranking Species Element Occurrences using the Generic Approach

LANDOWNER AND MANAGEMENT INFORMATION

LANDOWNER
Managed Area Name: Big Bend National Park Landowner Name: National Park Service
Permission Form Signed: X yes (attach copy) Date signed 05/05/2010 \_\_\_ no
Can Landowner contact information be added to the database? X yes \_\_\_ no
Comments:

MANAGEMENT AND PROTECTION

MANAGEMENT, MONITORING, & RESEARCH NEEDS (e.g. burn periodically, open the canopy, control exotics, study effects of browsing):

AREAS IN NEED OF PROTECTION (e.g. the entire prairie, the slope and crest of slope, canyon):

More management needed: \_\_\_ yes \_\_\_ no X questionable Comments: overharvesting by collectors a serious threat

More land needed: \_\_\_ yes X no \_\_\_ questionable Comments:

For Public Land: More protection needed: \_\_\_ yes X no \_\_\_ questionable Comments:





rev. 05/24/2006

**RARE PLANT SURVEY FORM**

Texas Parks & Wildlife Department  
 Wildlife Diversity Program  
 3000 IH-35 South, Ste 100  
 Austin, TX 78704 (512) 912-7011

**INSTRUCTIONS:** Complete 1 form per element per visit.

**ELEMENT INFORMATION**

Scientific Name: Ostrya chisosensis Update of record: \_\_\_ yes \_\_\_ no  
 Occ.# (if known): \_\_\_\_\_

**SURVEY SITE INFORMATION**

Survey Site: Big Bend National Park, Chisos Mountains, Pinnacles Trail  
 Quad Name(s) (if known): \_\_\_\_\_

**SURVEY INFORMATION**

Database Use Only

Survey Date: 09/14/2010 Time: from 2 to 4 am or  (pm) Sourcecode: F \_\_\_\_\_ TXUS  
 Surveyors (principal surveyor first, include first & last name): Sheila Murray, Mark Jarecki, Whitney Rooney, Gayle Nance  
 Weather conditions: sunny, 85°  
 Revisit to this EO needed? \_\_\_ yes  no Why? \_\_\_\_\_

**IDENTIFICATION**

Ostchi 9-2010 A → D

Photograph/slide taken?  yes \_\_\_ no Is a copy attached?  yes \_\_\_ no Digital photo #: ↑ Archived location: Arboretum at Flagstaff  
 Specimen collected?  yes \_\_\_ no Collection # and repository (specify if from a subpopulation): seed collected, stored at NCRP for seed banking purposes BIBE-01625 #48484-48488  
 Identification problems? \_\_\_ yes  no If necessary, describe the important plant characteristics you used for identification: \_\_\_\_\_

**CONDITION:** Condition is an integrated measure of the quality of biotic and abiotic factors, structures and processes within the occurrence, and the degree to which they affect the continued existence of the occurrence. Components of condition for species are: 1) reproduction and health, 2) ecological processes, 3) species composition and biological structure, and 4) abiotic physical/chemical factors. Factors to consider: evidence of regular successful reproduction, habitat degradation, disturbance, presence of exotic species, the degree to which ecological processes are sustaining the habitat.

**SIZE AND PHENOLOGY:** Size is a quantitative measure of the area and/or abundance of an occurrence. Components of this factor are 1) area of occupancy, 2) population abundance, 3) population distribution and 4) population fluctuation.

**Abundance** (total size of the occurrence): Total #: 20 Type of measurement:  precise (P) count \_\_\_ estimate (E)  
 What was counted (individuals, stems, etc.): individual adult trees

**Vigor** of plants:  excellent (E) \_\_\_ good (G) \_\_\_ fair (F) \_\_\_ poor (P)

**Age structure:** \_\_\_ % seedlings (sdl) 02 % juveniles (j) 98 % mature (m) \_\_\_ % senescent (sn)

**Population distribution** (widely scattered, clumped, evenly distributed throughout): clumped

**Area of occupancy** (fill one): \_\_\_ meters<sup>2</sup> 500 feet<sup>2</sup> \_\_\_ acres Type of measurement:  precise (P) \_\_\_ estimate (E)

**Phenology:** Indicate the number observed in each category (or check if numbers are unknown):

1 in leaf (lf) 0 in bud (bd) 0 in flower (fl) 0 immature fruit (ifr) 19 mature fruit (mfr)  
0 seed dispersing (disp) 0 dormant (dor)

**SUBPOPULATION INFORMATION (if applicable) (see above for abbreviations); additional table on page 3**

Subpop #	# of _____ (P or E) and age structure	Vigor	Distribution	Area (units, P or E)	Phenology	GPS data (lat, long, accuracy)

**BIOLOGY**

Evidence of disease and/or predation: herbivory on foliage - assumed to be caterpillars

Collected: \_\_\_ yes  no

Flora visitors: \_\_\_\_\_ Collected: \_\_\_ yes  no

Do other members of this genus or look-alike plants occur at this survey site? \_\_\_ yes  no If yes, list species: \_\_\_\_\_

**CONDITION (continued)**

**GENERAL DESCRIPTION:** Describe the specific habitat or micro habitat of the plant at this location. Convey a mental image of the habitat and its features including quality/condition of the habitat, land forms, aquatic features, vegetation, geology, soils, and associated plant species. The TPWD Optional Plant List form is available for associated plant species; please attach.

*Plants growing on steep slopes, and in drainage very near the base of a tall cliff face, loose soil and rocks, >35° slope, among other tall trees,*

**TOPOGRAPHY:** Elevation: 6410 ft If elevation is range: Minimum: \_\_\_\_\_ ft Maximum: \_\_\_\_\_ ft

Aspect:	Slope (%):	Light:	Position:	Moisture:
<input type="checkbox"/> N <input type="checkbox"/> NE	<input type="checkbox"/> flat	<input type="checkbox"/> open	<input type="checkbox"/> crest	<input type="checkbox"/> inundated
<input type="checkbox"/> E <input checked="" type="checkbox"/> NW	<input type="checkbox"/> 0-10	<input checked="" type="checkbox"/> partial	<input checked="" type="checkbox"/> upper slope	<input type="checkbox"/> saturated (wet-mesic)
<input type="checkbox"/> S <input type="checkbox"/> SE	<input type="checkbox"/> 10-35	<input type="checkbox"/> filtered	<input type="checkbox"/> mid-slope	<input type="checkbox"/> moist (mesic)
<input type="checkbox"/> W <input type="checkbox"/> SW	<input checked="" type="checkbox"/> 35+	<input type="checkbox"/> shade	<input type="checkbox"/> lower slope	<input checked="" type="checkbox"/> dry-mesic
	<input type="checkbox"/> vertical		<input type="checkbox"/> bottom	<input type="checkbox"/> dry (xeric)

**LANDSCAPE CONTEXT:** Describe how the surrounding landscape is different or similar to the plant population habitat and how this may affect the viability of the population. The population seemed restricted to the NW aspect, and also restricted to the mesic canyon near the base of the pinnacles

**CURRENT THREATS** to this occurrence (i.e. browsing, mining, off-road vehicles, dumping, etc.) Exotics are noted below.

Rock falls, defoliation

**POTENTIAL THREATS** to this occurrence: \_\_\_\_\_

**EXOTICS PRESENT?**  yes  no If yes, describe their impacts to this occurrence. List exotic species in Habitat Description or on the Optional Plant List form. \_\_\_\_\_

**PAST IMPACTS**, if known, to this occurrence (i.e., logging, burn, etc.) \_\_\_\_\_

**EO RANK:** BC **EO Rank Date:** 09/14/2010 **Comments:** used Nature serve Key for Ranking Species Element Occurrences Using The Generic Approach

**LANDOWNER AND MANAGEMENT INFORMATION**

**LANDOWNER**  
 Managed Area Name: Big Bend National Park Landowner Name: National Park Service  
 Permission Form Signed:  yes (attach copy) Date signed 05/05/2010  no  
 Can Landowner contact information be added to the database?  yes  no  
 Comments: \_\_\_\_\_

**MANAGEMENT AND PROTECTION**

**MANAGEMENT, MONITORING, & RESEARCH NEEDS** (e.g. burn periodically, open the canopy, control exotics, study effects of browsing): \_\_\_\_\_

**AREAS IN NEED OF PROTECTION** (e.g. the entire prairie, the slope and crest of slope, canyon): \_\_\_\_\_

More management needed:  yes  no  questionable Comments: \_\_\_\_\_

More land needed:  yes  no  questionable Comments: do not know if the plant occurs outside of park boundary

For Public Land: More protection needed:  yes  no  questionable Comments: \_\_\_\_\_





rev. 05/24/2006

**RARE PLANT SURVEY FORM**

Texas Parks & Wildlife Department  
 Wildlife Diversity Program  
 3000 IH-35 South, Ste 100  
 Austin, TX 78704 (512) 912-7011

**INSTRUCTIONS:** Complete 1 form per element per visit.

**ELEMENT INFORMATION**

Scientific Name: Quercus tardifolia Update of record:  yes  no  
 Occ.# (if known): \_\_\_\_\_

**SURVEY SITE INFORMATION**

Survey Site: Big Bend National Park, Chisos Mountains, Boot Spring  
 Quad Name(s) (if known): \_\_\_\_\_

**SURVEY INFORMATION**

Database Use Only

Survey Date: 09/14/2010 Time: from 2 to 3 am or  pm (circle) Sourcecode: F \_\_\_\_\_ TXUS  
 Surveyors (principal surveyor first, include first & last name): Sheila Murray, Mark Jarecki, Whitney Rooney, Gayle Nance  
 Weather conditions: sunny, 85°  
 Revisit to this EO needed?  yes  no Why? To confirm extirpation

**IDENTIFICATION**

Photograph/slide taken?  yes  no Is a copy attached?  yes  no Digital photo #: Quercus 9-2010 A → D Archived location: Herbarium at Flagstaff  
 Specimen collected?  yes  no Collection # and repository (specify if from a subpopulation): \_\_\_\_\_  
 Identification problems?  yes  no If necessary, describe the important plant characteristics you used for identification:  
Could not find any live specimens, by process of elimination, we concluded it to be the only dead tree in area.

**CONDITION:** Condition is an integrated measure of the quality of biotic and abiotic factors, structures and processes within the occurrence, and the degree to which they affect the continued existence of the occurrence. Components of condition for species are: 1) reproduction and health, 2) ecological processes, 3) species composition and biological structure, and 4) abiotic physical/chemical factors. Factors to consider: evidence of regular successful reproduction, habitat degradation, disturbance, presence of exotic species, the degree to which ecological processes are sustaining the habitat.

**SIZE AND PHENOLOGY:** Size is a quantitative measure of the area and/or abundance of an occurrence. Components of this factor are 1) area of occupancy, 2) population abundance, 3) population distribution and 4) population fluctuation.

**Abundance** (total size of the occurrence): Total #: 1 Type of measurement:  precise (P) count  estimate (E)  
 What was counted (individuals, stems, etc.): dead tree

**Vigor** of plants:  excellent (E)  good (G)  fair (F)  poor (P)  
**Age structure:**  % seedlings (sdl)  % juveniles (j)  % mature (m)  % senescent (sn)

**Population distribution** (widely scattered, clumped, evenly distributed throughout): even

**Area of occupancy** (fill one): \_\_\_\_\_ meters<sup>2</sup> 10 feet<sup>2</sup> \_\_\_\_\_ acres Type of measurement:  precise (P)  estimate (E)

**Phenology:** Indicate the number observed in each category (or check if numbers are unknown):  
 \_\_\_\_\_ in leaf (lf) \_\_\_\_\_ in bud (bd) \_\_\_\_\_ in flower (fl) \_\_\_\_\_ immature fruit (ifr) \_\_\_\_\_ mature fruit (mfr)  
 \_\_\_\_\_ seed dispersing (disp) \_\_\_\_\_ dormant (dor) \* - one dead & broken tree trunk

**SUBPOPULATION INFORMATION (if applicable) (see above for abbreviations); additional table on page 3**

Subpop #	# of _____ (P or E) and age structure	Vigor	Distribution	Area (units, P or E)	Phenology	GPS data (lat, long, accuracy)

**BIOLOGY**

Evidence of disease and/or predation: \_\_\_\_\_ Collected:  yes  no  
 Flora visitors: \_\_\_\_\_ Collected:  yes  no  
 Do other members of this genus or look-alike plants occur at this survey site?  yes  no If yes, list species: Quercus emoryi, rugosa, grisea, and graveolens

CONDITION (continued)

GENERAL DESCRIPTION: Describe the specific habitat or micro habitat of the plant at this location. Convey a mental image of the habitat and its features including quality/condition of the habitat, land forms, aquatic features, vegetation, geology, soils, and associated plant species. The TPWD Optional Plant List form is available for associated plant species; please attach.

Moist canyon near Boot Springs & below the corral, riparian overstory of pines & oaks, many large boulders, junipers,

TOPOGRAPHY: Elevation: 6700 ft If elevation is range: Minimum: \_\_\_\_\_ ft Maximum: \_\_\_\_\_ ft
Aspect: N NE flat Light: open Position: crest Moisture: inundated
X E NW 0-10 partial upper slope saturated (wet-mesic)
S SE X 10-35 filtered X mid-slope moist (mesic)
W SW 35+ shade lower slope dry-mesic
vertical bottom dry (xeric)

LANDSCAPE CONTEXT: Describe how the surrounding landscape is different or similar to the plant population habitat and how this may affect the viability of the population.

CURRENT THREATS to this occurrence (i.e. browsing, mining, off-road vehicles, dumping, etc.) Exotics are noted below.

POTENTIAL THREATS to this occurrence:

EXOTICS PRESENT? \_\_\_ yes \_\_\_ no If yes, describe their impacts to this occurrence. List exotic species in Habitat Description or on the Optional Plant List form.

PAST IMPACTS, if known, to this occurrence (i.e., logging, burn, etc.)

EO RANK: X EO Rank Date: 09/14/2010 Comments: Talked to Betty Alex and confirmed from her that the last known individual at this site was found dead 2 weeks prior.

LANDOWNER AND MANAGEMENT INFORMATION

LANDOWNER
Managed Area Name: Big Bend National Park Landowner Name: National Park Service
Permission Form Signed: X yes (attach copy) Date signed 05/05/2010 \_\_\_ no
Can Landowner contact information be added to the database? X yes \_\_\_ no
Comments:

MANAGEMENT AND PROTECTION

MANAGEMENT, MONITORING, & RESEARCH NEEDS (e.g. burn periodically, open the canopy, control exotics, study effects of browsing):

AREAS IN NEED OF PROTECTION (e.g. the entire prairie, the slope and crest of slope, canyon):

More management needed: \_\_\_ yes X no \_\_\_ questionable Comments:

More land needed: \_\_\_ yes \_\_\_ no X questionable Comments:

For Public Land: More protection needed: \_\_\_ yes X no \_\_\_ questionable Comments:





**RARE PLANT SURVEY FORM**

Texas Parks & Wildlife Department  
 Wildlife Diversity Program  
 3000 IH-35 South, Ste 100  
 Austin, TX 78704 (512) 912-7011

**INSTRUCTIONS:** Complete 1 form per element per visit.

**ELEMENT INFORMATION**

Scientific Name: Viola guadalupensis Update of record:  yes  no  
 Occ.# (if known): \_\_\_\_\_

**SURVEY SITE INFORMATION**

Survey Site: VIGU Site # 4  
 Quad Name(s) (if known): \_\_\_\_\_

**SURVEY INFORMATION**

**Database Use Only**

Survey Date: 6/1/2010 Time: from 11 AM to 1 PM am or pm (circle) Sourcecode: F \_\_\_\_\_ TXUS

Surveyors (principal surveyor first, include first & last name): Jeremy Markuson

Weather conditions: 75°F

Revisit to this EO needed?  yes  no Why? To collect data loggers

**IDENTIFICATION**

Photograph/slide taken?  yes  no Is a copy attached?  yes  no Digital photo #: \_\_\_\_\_ Archived location: \_\_\_\_\_

Specimen collected?  yes  no Collection # and repository (specify if from a subpopulation): Only seeds were collected from the site

Identification problems?  yes  no If necessary, describe the important plant characteristics you used for identification: \_\_\_\_\_

**CONDITION:** Condition is an integrated measure of the quality of biotic and abiotic factors, structures and processes within the occurrence, and the degree to which they affect the continued existence of the occurrence. Components of condition for species are: 1) reproduction and health, 2) ecological processes, 3) species composition and biological structure, and 4) abiotic physical/chemical factors. Factors to consider: evidence of regular successful reproduction, habitat degradation, disturbance, presence of exotic species, the degree to which ecological processes are sustaining the habitat.

**SIZE AND PHENOLOGY:** Size is a quantitative measure of the area and/or abundance of an occurrence. Components of this factor are 1) area of occupancy, 2) population abundance, 3) population distribution and 4) population fluctuation.

**Abundance** (total size of the occurrence): Total #: 500 Type of measurement:  precise (P) count  estimate (E)  
 What was counted (individuals, stems, etc.): Approximate number of individuals at the site

**Vigor** of plants:  excellent (E)  good (G)  fair (F)  poor (P)

**Age structure:**  % seedlings (sdl)  % juveniles (j)  % mature (m)  % senescent (sn)

**Population distribution** (widely scattered, clumped, evenly distributed throughout): Scattered along limestone rock walls

**Area of occupancy** (fill one): 3700 meters<sup>2</sup> \_\_\_\_\_ feet<sup>2</sup> \_\_\_\_\_ acres Type of measurement:  precise (P)  estimate (E)

**Phenology:** Indicate the number observed in each category (or check if numbers are unknown):  
 \_\_\_\_\_ in leaf (lf) \_\_\_\_\_ in bud (bd)  in flower (fl) \_\_\_\_\_ immature fruit (ifr) \_\_\_\_\_ mature fruit (mfr)  
 \_\_\_\_\_ seed dispersing (disp) \_\_\_\_\_ dormant (dor)

**SUBPOPULATION INFORMATION (if applicable) (see above for abbreviations); additional table on page 3**

Subpop #	# of _____ (P or E) and age structure	Vigor	Distribution	Area (units, P or E)	Phenology	GPS data (lat, long, accuracy)

**BIOLOGY**  
 Evidence of disease and/or predation: No

Flora visitors: \_\_\_\_\_ Collected:  yes  no  
 \_\_\_\_\_ Collected:  yes  no

Do other members of this genus or look-alike plants occur at this survey site?  yes  no If yes, list species: \_\_\_\_\_

**CONDITION (continued)**

**GENERAL DESCRIPTION:** Describe the specific habitat or micro habitat of the plant at this location. Convey a mental image of the habitat and its features including quality/condition of the habitat, land forms, aquatic features, vegetation, geology, soils, and associated plant species. The TPWD Optional Plant List form is available for associated plant species; please attach.

Violets are growing out of pockets of limestone rock at approximately 6,500 ft in elevation. Associated plant species at the site include Valeriana texana, Chaetopappa hersheyi, Pseudotsuga menziesii, Petrophytum caespitosum, Aquilegia chrysantha, Ostrya knowltonii, Acer grandidentatum, Pinus strobiformis, and Ptelea trifoliata.

**TOPOGRAPHY:** Elevation: 6,500 ft If elevation is range: Minimum: \_\_\_\_\_ ft Maximum: \_\_\_\_\_ ft

Aspect:	Slope (%):	Light:	Position:	Moisture:
<input type="checkbox"/> N <input type="checkbox"/> NE	<input type="checkbox"/> flat	<input type="checkbox"/> open	<input type="checkbox"/> crest	<input type="checkbox"/> inundated
<input type="checkbox"/> E <input type="checkbox"/> NW	<input type="checkbox"/> 0-10	<input type="checkbox"/> partial	<input type="checkbox"/> upper slope	<input type="checkbox"/> saturated (wet-mesic)
<input type="checkbox"/> S <input type="checkbox"/> SE	<input type="checkbox"/> 10-35	<input type="checkbox"/> filtered	<input checked="" type="checkbox"/> mid-slope	<input type="checkbox"/> moist (mesic)
<input type="checkbox"/> W <input type="checkbox"/> SW	<input checked="" type="checkbox"/> 35+	<input checked="" type="checkbox"/> shade	<input type="checkbox"/> lower slope	<input checked="" type="checkbox"/> dry-mesic
	<input type="checkbox"/> vertical		<input type="checkbox"/> bottom	<input type="checkbox"/> dry (xeric)

**LANDSCAPE CONTEXT:** Describe how the surrounding landscape is different or similar to the plant population habitat and how this may affect the viability of the population. The plants are located along a steep section of canyon. They receive a lot of shade from the canyon and from overstory trees.

**CURRENT THREATS** to this occurrence (i.e. browsing, mining, off-road vehicles, dumping, etc.) Exotics are noted below.

Unknown

**POTENTIAL THREATS** to this occurrence: Catastrophic fire, disease, or herbivore attack

**EXOTICS PRESENT?**  yes  no If yes, describe their impacts to this occurrence. List exotic species in Habitat Description or on the Optional Plant List form.

**PAST IMPACTS**, if known, to this occurrence (i.e., logging, burn, etc.) Unknown

**EO RANK:** \_\_\_\_\_ **EO Rank Date:** \_\_\_\_\_ **Comments:** \_\_\_\_\_

**LANDOWNER AND MANAGEMENT INFORMATION**

**LANDOWNER**

Managed Area Name: Guadalupe Mountains National Park Landowner Name: National Park Service

Permission Form Signed:  yes (attach copy) Date signed \_\_\_\_\_  no

Can Landowner contact information be added to the database?  yes  no

Comments: For information please contact the Resource Management Office at GUMO.

**MANAGEMENT AND PROTECTION**

**MANAGEMENT, MONITORING, & RESEARCH NEEDS** (e.g. burn periodically, open the canopy, control exotics, study effects of browsing):

Monitoring and research

**AREAS IN NEED OF PROTECTION** (e.g. the entire prairie, the slope and crest of slope, canyon): \_\_\_\_\_

More management needed:  yes  no  questionable Comments: \_\_\_\_\_

More land needed:  yes  no  questionable Comments: \_\_\_\_\_

For Public Land: More protection needed:  yes  no  questionable Comments: \_\_\_\_\_





Summary of *Viola guadalupensis* search, June 24<sup>th</sup> 2010

On June 24<sup>th</sup>, 2010, Kristin Haskins, Leanne Starbuck and Sheila Murray attempted to relocate one of four known populations of *Viola guadalupensis*. Leanne (of the National Park Service) had been to this site once before, but it had been over a year ago. To access the site required hiking over 3 miles in steep drainages and boulder-filled draws. With maps of the area and a UTM datapoint, we started our trek at 7:15 am. After 6 hours of searching the backcountry, we could not relocate the population. Based on advice from Fred Armstrong, we thought we were hiking up the correct drainage, but it turns out we were searching near to, but on the wrong side of the ridge. We were unsure of our GPS accuracy, the elevation readings were not correct, we weren't exactly sure which drainage we were in on the map, there were storm clouds building, and we needed to save some energy for the hike back, so we returned to the car by 4:00 pm.

We did take some GPS readings of areas where the violet did not occur. Some of these drainages near the violet site seemed to have habitat that would support its growth. These were mesic canyons with many of the associated species.

VIGU site #3 from Fred Armstrong: 13R 0512193 3530754

Data Point #1: 13R 0512863 3530932

(we surveyed the drainage due south of this point as well)

Data Point #2: 13R 0512993 3531173

(this is the farthest up the main drainage we walked)

Data Point #3: 13R 0513665 3530714

(this drainage that leads up to the west looked promising, but we did not survey it)

Thanks to Jeremy Markuson of the National Park Service, we did manage to secure some seeds from *Viola guadalupensis*. In May of 2010, Jeremy collected seeds from VIGU site #4. The seed pods were collected green, and after drying and cleaning, there are approximately 300 good seeds.



**RARE PLANT SURVEY FORM**

Texas Parks & Wildlife Department  
 Wildlife Diversity Program  
 3000 IH-35 South, Ste 100  
 Austin, TX 78704 (512) 912-7011

**INSTRUCTIONS:** Complete 1 form per element per visit.

**ELEMENT INFORMATION**

Scientific Name: Viola gradalupensis Update of record: \_\_\_ yes \_\_\_ no  
 Occ.# (if known): \_\_\_\_\_

**SURVEY SITE INFORMATION**

Survey Site: Guadalupe Mountains National Park  
 Quad Name(s) (if known): \_\_\_\_\_

**SURVEY INFORMATION**

Survey Date: 06/24/2010 Time: from 12 to 2 am or  (circle) Database Use Only  
 Sourcecode: F \_\_\_\_\_ TXUS  
 Surveyors (principal surveyor first, include first & last name): Sheila Murray - The Arboretum at Flagstaff, Kristin Haskins - The Arboretum at Flagstaff, Leanne Starbuck - NPS  
 Weather conditions: sunny to partly cloudy, thunderstorms in the distance  
 Revisit to this EO needed? \_\_\_ yes \_\_\_ no Why? \_\_\_\_\_

**IDENTIFICATION**

Photograph/slide taken?  yes \_\_\_ no Is a copy attached?  yes \_\_\_ no Digital photo #: (2) Archived location: Arboretum at Flagstaff  
 Specimen collected? \_\_\_ yes \_\_\_ no Collection # and repository (specify if from a subpopulation): VIGU June 2010 033, VIGU June 2010 034  
 Identification problems? \_\_\_ yes \_\_\_ no If necessary, describe the important plant characteristics you used for identification: \_\_\_\_\_

**CONDITION:** Condition is an integrated measure of the quality of biotic and abiotic factors, structures and processes within the occurrence, and the degree to which they affect the continued existence of the occurrence. Components of condition for species are: 1) reproduction and health, 2) ecological processes, 3) species composition and biological structure, and 4) abiotic physical/chemical factors. Factors to consider: evidence of regular successful reproduction, habitat degradation, disturbance, presence of exotic species, the degree to which ecological processes are sustaining the habitat.

**SIZE AND PHENOLOGY:** Size is a quantitative measure of the area and/or abundance of an occurrence. Components of this factor are 1) area of occupancy, 2) population abundance, 3) population distribution and 4) population fluctuation.

**Abundance** (total size of the occurrence): Total #: 0 Type of measurement:  precise (P) count \_\_\_ estimate (E)  
 What was counted (individuals, stems, etc.): \_\_\_\_\_

**Vigor** of plants: \_\_\_ excellent (E) \_\_\_ good (G) \_\_\_ fair (F) \_\_\_ poor (P)

**Age structure:** \_\_\_ % seedlings (sdl) \_\_\_ % juveniles (j) \_\_\_ % mature (m) \_\_\_ % senescent (sn)

**Population distribution** (widely scattered, clumped, evenly distributed throughout): \_\_\_\_\_

**Area of occupancy** (fill one): \_\_\_\_\_ meters<sup>2</sup> \_\_\_\_\_ feet<sup>2</sup> \_\_\_\_\_ acres Type of measurement: \_\_\_ precise (P) \_\_\_ estimate (E)

**Phenology:** Indicate the number observed in each category (or check if numbers are unknown):

\_\_\_\_\_ in leaf (lf) \_\_\_\_\_ in bud (bd) \_\_\_\_\_ in flower (fl) \_\_\_\_\_ immature fruit (ifr) \_\_\_\_\_ mature fruit (mfr)  
 \_\_\_\_\_ seed dispersing (disp) \_\_\_\_\_ dormant (dor)

**SUBPOPULATION INFORMATION (if applicable) (see above for abbreviations); additional table on page 3**

Subpop #	# of _____ (P or E) and age structure	Vigor	Distribution	Area (units, P or E)	Phenology	GPS data (lat, long, accuracy)

**BIOLOGY**

Evidence of disease and/or predation: \_\_\_\_\_ Collected: \_\_\_ yes \_\_\_ no  
 Flora visitors: \_\_\_\_\_ Collected: \_\_\_ yes \_\_\_ no  
 Do other members of this genus or look-alike plants occur at this survey site? \_\_\_ yes \_\_\_ no If yes, list species: \_\_\_\_\_

**CONDITION (continued)**

**GENERAL DESCRIPTION:** Describe the specific habitat or micro habitat of the plant at this location. Convey a mental image of the habitat and its features including quality/condition of the habitat, land forms, aquatic features, vegetation, geology, soils, and associated plant species. The TPWD Optional Plant List form is available for associated plant species; please attach.

**TOPOGRAPHY:** Elevation: ~~7850~~ <sup>7350</sup> ft If elevation is range: Minimum: \_\_\_\_\_ ft Maximum: \_\_\_\_\_ ft

Aspect:	Slope (%):	Light:	Position:	Moisture:
___ N <input checked="" type="checkbox"/> NE	___ flat	<input checked="" type="checkbox"/> open	___ crest	___ inundated
___ E ___ NW	___ 0-10	___ partial	___ upper slope	___ saturated (wet-mesic)
___ S ___ SE	___ 10-35	___ filtered	<input checked="" type="checkbox"/> mid-slope	<input checked="" type="checkbox"/> moist (mesic)
___ W ___ SW	<input checked="" type="checkbox"/> 35+	___ shade	___ lower slope	___ dry-mesic
	___ vertical		___ bottom	___ dry (xeric)

**LANDSCAPE CONTEXT:** Describe how the surrounding landscape is different or similar to the plant population habitat and how this may affect the viability of the population. \_\_\_\_\_

**CURRENT THREATS** to this occurrence (i.e. browsing, mining, off-road vehicles, dumping, etc.) Exotics are noted below. \_\_\_\_\_

**POTENTIAL THREATS** to this occurrence: \_\_\_\_\_

**EXOTICS PRESENT?** \_\_\_ yes \_\_\_ no If yes, describe their impacts to this occurrence. List exotic species in Habitat Description or on the Optional Plant List form. \_\_\_\_\_

**PAST IMPACTS**, if known, to this occurrence (i.e., logging, burn, etc.) \_\_\_\_\_

**EO RANK:** \_\_\_\_\_ **EO Rank Date:** \_\_\_\_\_ **Comments:** \_\_\_\_\_

**LANDOWNER AND MANAGEMENT INFORMATION****LANDOWNER**

Managed Area Name: Guadalupe Mountains National Park Landowner Name: National Park Service

Permission Form Signed:  yes (attach copy) Date signed 03/23/2010 \_\_\_ no

Can Landowner contact information be added to the database?  yes \_\_\_ no

Comments: \_\_\_\_\_

**MANAGEMENT AND PROTECTION**

**MANAGEMENT, MONITORING, & RESEARCH NEEDS** (e.g. burn periodically, open the canopy, control exotics, study effects of browsing): \_\_\_\_\_

**AREAS IN NEED OF PROTECTION** (e.g. the entire prairie, the slope and crest of slope, canyon): \_\_\_\_\_

More management needed: \_\_\_ yes \_\_\_ no \_\_\_ questionable Comments: \_\_\_\_\_

More land needed: \_\_\_ yes \_\_\_ no \_\_\_ questionable Comments: \_\_\_\_\_

For Public Land: More protection needed: \_\_\_ yes \_\_\_ no \_\_\_ questionable Comments: \_\_\_\_\_





**RARE PLANT SURVEY FORM**

Texas Parks & Wildlife Department  
 Wildlife Diversity Program  
 3000 IH-35 South, Ste 100  
 Austin, TX 78704 (512) 912-7011

**INSTRUCTIONS:** Complete 1 form per element per visit.

**ELEMENT INFORMATION**

Scientific Name: Viola guadalupensis Update of record:  yes  no  
 Occ.# (if known): \_\_\_\_\_

**SURVEY SITE INFORMATION**

Survey Site: Guadalupe Mountains National Park  
 Quad Name(s) (if known): \_\_\_\_\_

**SURVEY INFORMATION**

Survey Date: 06/24/2010 Time: from 2 to 4 am or  (pm) (circle) Database Use Only  
 Sourcecode: F \_\_\_\_\_ TXUS  
 Surveyors (principal surveyor first, include first & last name): Sheila Murray - The Arboretum at Flagstaff, Kristin Haskins - The Arboretum at Flagstaff, Leanne Starbuck - NPS  
 Weather conditions: sunny to partly cloudy, thunderstorms in the distance  
 Revisit to this EO needed?  yes  no Why? \_\_\_\_\_

**IDENTIFICATION**

Photograph/slide taken?  yes  no Is a copy attached?  yes  no Digital photo #: (2) Archived location: Arboretum at Flagstaff  
 Specimen collected?  yes  no Collection # and repository (specify if from a subpopulation): VIU June 2010 039, VIU June 2010 041  
 Identification problems?  yes  no If necessary, describe the important plant characteristics you used for identification: \_\_\_\_\_

**CONDITION:** Condition is an integrated measure of the quality of biotic and abiotic factors, structures and processes within the occurrence, and the degree to which they affect the continued existence of the occurrence. Components of condition for species are: 1) reproduction and health, 2) ecological processes, 3) species composition and biological structure, and 4) abiotic physical/chemical factors. Factors to consider: evidence of regular successful reproduction, habitat degradation, disturbance, presence of exotic species, the degree to which ecological processes are sustaining the habitat.

**SIZE AND PHENOLOGY:** Size is a quantitative measure of the area and/or abundance of an occurrence. Components of this factor are 1) area of occupancy, 2) population abundance, 3) population distribution and 4) population fluctuation.

**Abundance** (total size of the occurrence): Total #: 0 Type of measurement:  precise (P) count  estimate (E)  
 What was counted (individuals, stems, etc.): \_\_\_\_\_

**Vigor** of plants:  excellent (E)  good (G)  fair (F)  poor (P)  
**Age structure:**  % seedlings (sdl)  % juveniles (j)  % mature (m)  % senescent (sn)  
**Population distribution** (widely scattered, clumped, evenly distributed throughout): \_\_\_\_\_

**Area of occupancy** (fill one): \_\_\_\_\_ meters<sup>2</sup> \_\_\_\_\_ feet<sup>2</sup> \_\_\_\_\_ acres Type of measurement:  precise (P)  estimate (E)

**Phenology:** Indicate the number observed in each category (or check if numbers are unknown):  
 \_\_\_\_\_ in leaf (lf) \_\_\_\_\_ in bud (bd) \_\_\_\_\_ in flower (fl) \_\_\_\_\_ immature fruit (ifr) \_\_\_\_\_ mature fruit (mfr)  
 \_\_\_\_\_ seed dispersing (disp) \_\_\_\_\_ dormant (dor)

**SUBPOPULATION INFORMATION (if applicable) (see above for abbreviations); additional table on page 3**

Subpop #	# of _____ (P or E) and age structure	Vigor	Distribution	Area (units, P or E)	Phenology	GPS data (lat, long, accuracy)

**BIOLOGY**

Evidence of disease and/or predation: \_\_\_\_\_ Collected:  yes  no  
 Flora visitors: \_\_\_\_\_ Collected:  yes  no  
 Do other members of this genus or look-alike plants occur at this survey site?  yes  no If yes, list species: \_\_\_\_\_

**CONDITION (continued)**

**GENERAL DESCRIPTION:** Describe the specific habitat or micro habitat of the plant at this location. Convey a mental image of the habitat and its features including quality/condition of the habitat, land forms, aquatic features, vegetation, geology, soils, and associated plant species. The TPWD Optional Plant List form is available for associated plant species; please attach.

**TOPOGRAPHY:** Elevation: 6900 ft If elevation is range: Minimum: \_\_\_\_\_ ft Maximum: \_\_\_\_\_ ft

Aspect:	Slope (%):	Light:	Position:	Moisture:
<input checked="" type="checkbox"/> N <input type="checkbox"/> NE	<input type="checkbox"/> flat	<input type="checkbox"/> open	<input type="checkbox"/> crest	<input type="checkbox"/> inundated
<input type="checkbox"/> E <input type="checkbox"/> NW	<input checked="" type="checkbox"/> 0-10	<input type="checkbox"/> partial	<input type="checkbox"/> upper slope	<input type="checkbox"/> saturated (wet-mesic)
<input type="checkbox"/> S <input type="checkbox"/> SE	<input type="checkbox"/> 10-35	<input checked="" type="checkbox"/> filtered	<input type="checkbox"/> mid-slope	<input type="checkbox"/> moist (mesic)
<input type="checkbox"/> W <input type="checkbox"/> SW	<input type="checkbox"/> 35+	<input type="checkbox"/> shade	<input checked="" type="checkbox"/> lower slope	<input checked="" type="checkbox"/> dry-mesic
	<input type="checkbox"/> vertical		<input type="checkbox"/> bottom	<input type="checkbox"/> dry (xeric)

**LANDSCAPE CONTEXT:** Describe how the surrounding landscape is different or similar to the plant population habitat and how this may affect the viability of the population. \_\_\_\_\_

**CURRENT THREATS** to this occurrence (i.e. browsing, mining, off-road vehicles, dumping, etc.) Exotics are noted below. \_\_\_\_\_

**POTENTIAL THREATS** to this occurrence: \_\_\_\_\_

**EXOTICS PRESENT?** \_\_\_ yes \_\_\_ no If yes, describe their impacts to this occurrence. List exotic species in Habitat Description or on the Optional Plant List form. \_\_\_\_\_

**PAST IMPACTS**, if known, to this occurrence (i.e., logging, burn, etc.) \_\_\_\_\_

**EO RANK:** \_\_\_\_\_ **EO Rank Date:** \_\_\_\_\_ **Comments:** \_\_\_\_\_

**LANDOWNER AND MANAGEMENT INFORMATION**

**LANDOWNER**  
 Managed Area Name: Guadalupe Mountains National Park Landowner Name: National Park Service  
 Permission Form Signed:  yes (attach copy) Date signed 03/23/2010 \_\_\_ no  
 Can Landowner contact information be added to the database?  yes \_\_\_ no  
 Comments: \_\_\_\_\_

**MANAGEMENT AND PROTECTION**

**MANAGEMENT, MONITORING, & RESEARCH NEEDS** (e.g. burn periodically, open the canopy, control exotics, study effects of browsing): \_\_\_\_\_

**AREAS IN NEED OF PROTECTION** (e.g. the entire prairie, the slope and crest of slope, canyon): \_\_\_\_\_

More management needed: \_\_\_ yes \_\_\_ no \_\_\_ questionable Comments: \_\_\_\_\_

More land needed: \_\_\_ yes \_\_\_ no \_\_\_ questionable Comments: \_\_\_\_\_

For Public Land: More protection needed: \_\_\_ yes \_\_\_ no \_\_\_ questionable Comments: \_\_\_\_\_





RARE PLANT SURVEY FORM

Texas Parks & Wildlife Department
Wildlife Diversity Program
3000 IH-35 South, Ste 100
Austin, TX 78704 (512) 912-7011

INSTRUCTIONS: Complete 1 form per element per visit.

ELEMENT INFORMATION

Scientific Name: Viola gradalupensis Update of record: \_\_\_ yes \_\_\_ no
Occ.# (if known):

SURVEY SITE INFORMATION

Survey Site: Guadalupe Mountains National Park
Quad Name(s) (if known):

SURVEY INFORMATION

Database Use Only

Survey Date: 06/24/2010 Time: from 10 to 11:45(am or pm (circle)) Sourcecode: F TXUS

Surveyors (principal surveyor first, include first & last name): Sheila Murray - The Arboretum at Flagstaff,
Kristin Haskins - The Arboretum at Flagstaff, Leanne Starbuck - NPS

Weather conditions: sunny to partly cloudy, thunderstorms in the distance
Revisit to this EO needed? \_\_\_ yes \_\_\_ no Why?

IDENTIFICATION

Photograph/slide taken? X yes \_\_\_ no Is a copy attached? X yes \_\_\_ no Digital photo #: (2) Archived location: Arboretum at Flagstaff
Specimen collected? \_\_\_ yes \_\_\_ no Collection # and repository (specify if from a subpopulation): VIGU June 2010 035, VIGU June 2010 036

Identification problems? \_\_\_ yes \_\_\_ no If necessary, describe the important plant characteristics you used for identification:

CONDITION: Condition is an integrated measure of the quality of biotic and abiotic factors, structures and processes within the occurrence, and the degree to which they affect the continued existence of the occurrence. Components of condition for species are: 1) reproduction and health, 2) ecological processes, 3) species composition and biological structure, and 4) abiotic physical/chemical factors. Factors to consider: evidence of regular successful reproduction, habitat degradation, disturbance, presence of exotic species, the degree to which ecological processes are sustaining the habitat.

SIZE AND PHENOLOGY: Size is a quantitative measure of the area and/or abundance of an occurrence. Components of this factor are 1) area of occupancy, 2) population abundance, 3) population distribution and 4) population fluctuation.

Abundance (total size of the occurrence): Total #: 0 Type of measurement: X precise (P) count \_\_\_ estimate (E)

What was counted (individuals, stems, etc.):

Vigor of plants: \_\_\_ excellent (E) \_\_\_ good (G) \_\_\_ fair (F) \_\_\_ poor (P)

Age structure: \_\_\_ % seedlings (sd) \_\_\_ % juveniles (j) \_\_\_ % mature (m) \_\_\_ % senescent (sn)

Population distribution (widely scattered, clumped, evenly distributed throughout):

Area of occupancy (fill one): \_\_\_ meters^2 \_\_\_ feet^2 \_\_\_ acres Type of measurement: \_\_\_ precise (P) \_\_\_ estimate (E)

Phenology: Indicate the number observed in each category (or check if numbers are unknown):

\_\_\_ in leaf (lf) \_\_\_ in bud (bd) \_\_\_ in flower (fl) \_\_\_ immature fruit (ifr) \_\_\_ mature fruit (mfr)
\_\_\_ seed dispersing (disp) \_\_\_ dormant (dor)

SUBPOPULATION INFORMATION (if applicable) (see above for abbreviations); additional table on page 3

Table with 7 columns: Subpop #, # of (P or E) and age structure, Vigor, Distribution, Area (units, P or E), Phenology, GPS data (lat, long, accuracy)

BIOLOGY

Evidence of disease and/or predation: Collected: \_\_\_ yes \_\_\_ no

Flora visitors: Collected: \_\_\_ yes \_\_\_ no

Do other members of this genus or look-alike plants occur at this survey site? \_\_\_ yes \_\_\_ no If yes, list species:

**CONDITION (continued)**

**GENERAL DESCRIPTION:** Describe the specific habitat or micro habitat of the plant at this location. Convey a mental image of the habitat and its features including quality/condition of the habitat, land forms, aquatic features, vegetation, geology, soils, and associated plant species. The TPWD Optional Plant List form is available for associated plant species; please attach.

**TOPOGRAPHY:** Elevation: 7100 ft If elevation is range: Minimum: \_\_\_\_\_ ft Maximum: \_\_\_\_\_ ft

Aspect:	Slope (%):	Light:	Position:	Moisture:
<input type="checkbox"/> N <input type="checkbox"/> NE	<input type="checkbox"/> flat	<input type="checkbox"/> open	<input type="checkbox"/> crest	<input type="checkbox"/> inundated
<input type="checkbox"/> E <input type="checkbox"/> NW	<input checked="" type="checkbox"/> 0-10	<input type="checkbox"/> partial	<input type="checkbox"/> upper slope	<input type="checkbox"/> saturated (wet-mesic)
<input type="checkbox"/> S <input type="checkbox"/> SE	<input type="checkbox"/> 10-35	<input checked="" type="checkbox"/> filtered	<input type="checkbox"/> mid-slope	<input type="checkbox"/> moist (mesic)
<input type="checkbox"/> W <input checked="" type="checkbox"/> SW	<input type="checkbox"/> 35+	<input type="checkbox"/> shade	<input checked="" type="checkbox"/> lower slope	<input checked="" type="checkbox"/> dry-mesic
	<input type="checkbox"/> vertical		<input type="checkbox"/> bottom	<input type="checkbox"/> dry (xeric)

**LANDSCAPE CONTEXT:** Describe how the surrounding landscape is different or similar to the plant population habitat and how this may affect the viability of the population. \_\_\_\_\_

**CURRENT THREATS** to this occurrence (i.e. browsing, mining, off-road vehicles, dumping, etc.) Exotics are noted below.

**POTENTIAL THREATS** to this occurrence: \_\_\_\_\_

**EXOTICS PRESENT?**  yes  no If yes, describe their impacts to this occurrence. List exotic species in Habitat Description or on the Optional Plant List form. \_\_\_\_\_

**PAST IMPACTS**, if known, to this occurrence (i.e., logging, burn, etc.) \_\_\_\_\_

**EO RANK:** \_\_\_\_\_ **EO Rank Date:** \_\_\_\_\_ **Comments:** \_\_\_\_\_

**LANDOWNER AND MANAGEMENT INFORMATION**

**LANDOWNER**  
Managed Area Name: Guadalupe Mountains National Park Landowner Name: National Park Service  
Permission Form Signed:  yes (attach copy) Date signed 03/23/2010  no  
Can Landowner contact information be added to the database?  yes  no  
Comments: \_\_\_\_\_

**MANAGEMENT AND PROTECTION**

**MANAGEMENT, MONITORING, & RESEARCH NEEDS** (e.g. burn periodically, open the canopy, control exotics, study effects of browsing):

**AREAS IN NEED OF PROTECTION** (e.g. the entire prairie, the slope and crest of slope, canyon): \_\_\_\_\_

More management needed:  yes  no  questionable Comments: \_\_\_\_\_

More land needed:  yes  no  questionable Comments: \_\_\_\_\_

For Public Land: More protection needed:  yes  no  questionable Comments: \_\_\_\_\_





01/28/2008 Version Date

Office Use Only	
Date Received:	_____ (yyyy-mm-dd)
Sourcecode:	U _____ TXUS
EOR transcribed/updated by:	_____ (initials) _____ (date)
Scientist Reviewer:	_____ (initials) EO id: _____

Texas Natural Diversity Database Reporting Form  
**Wildlife Diversity Program**  
**Texas Parks and Wildlife Department**  
**4200 Smith School Road**  
**Austin, TX 78744** (512) 389-8111

We Need Your Help. If you have information on the location of a rare plant or animal and would like to help us build the Texas Natural Diversity Database, please complete the form below. Thank you!

**Instructions:**

1. Complete this form for first hand field observations only.
2. **DO NOT COMPLETE THIS FORM** if the source of your information is a report, letter, conversation or other document. Send us the documentation.
3. Rare Birds: Complete this form only for observations during the breeding season or at large concentration areas during migration or in winter.
4. Attach a copy of a map (USGS 1:24,000 topographic map preferred) and mark the location of the rare species or its boundary (if known). Note, you may print copies of topo maps from the internet at <http://www.topozone.com>. Please use 1:24,000 or 1:25,000 scale only.

**Source of Your Information:** (check one of the following)

Firsthand field observation Does the identification need to be confirmed?  yes  no

Other: Please do not complete this form; send us a copy of the documentation instead. If source is a conversation with someone, send us a note.

**Form Completed By:**

Flo Oxley	March 22, 2011	512/232-0160
Name	Date	Phone

**Identification:**

Complete **only one form per rare plant or animal per site**. If you need a list of rare species we are currently tracking, contact our office.

Name of the rare plant or animal:	Croton alabamensis var. texensis
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Method of ID: (Source of key, photo, name of expert, other):	Expert
--	--------

Date First Observed:	March 22, 20100	Date Last Observed:	June 8, 2011
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**Observer:**

Name:	Address:	Phone:
Flo Oxley Jean Nance (landowner) Christine Powell (WFC volunteer) Dale Rye (WFC volunteer)	Lady Bird Johnson Wildflower Center 4801 La Crosse Avenue Austin, Texas 78739	512/232-0160

**Location:**

GPS data:	Latitude:	+30.584444	Longitude:	-97.990.139
	Accuracy:	+/- 1 meter	GPS Brand:	Garmen

Survey Site Name (locale or place name):	Private residence
--	-------------------

Directions (describe in detail the precise location of the species or community; begin with an easily identifiable starting point, include nearby landmarks, street names, and mileages):

25601 River Fern Court Leander, TX 78641
---

County:	Travis	Town:	Leander
Name of USGS 7.5' topo (if known)	Nameless		

**Observation Data:**

For Animals: Indicate the number of adults, juveniles, nests, etc.

For Plants: Indicate 1) the number of flowering plants and/or sterile stems, 2) the number of separate plant groupings, 3) the health of the plants, etc.

Population consists of more than 250 plants. At the time we bagged the plants to collect seed, approximately half of the population was in flower. All plants appeared to be in good health in spite of severe drought conditions.

At the time we went back to collect bagged seeds, 90% of the population had flowered/gone to seed. Notice a lot of empty fruit and aborted flowers.

**Size:**

Please indicate the estimated area occupied by the plant or animal:

1-2	Acres or		sq. meters
-----	----------	--	------------

If the area occupied is long and narrow (less than 12.5 meters wide), please indicate:

Length (meters):		Width (meters):	
------------------	--	-----------------	--

**Habitat Description:** Write a description of the habitat for the species at this location. Include ecological communities, dominants, associated species, substrates, soils, aspect, slope, hydrology, etc.

Plants found in a riparian forest along a tributary of Bingham Creek. Associated species include: *Celtis laevigata*, *Ulmus crassifolia*, *Fraxinus texensis*, *Quercus buckleyi*, *Ptelea trifoliata*, *Ilex decidua*, *Chasmanthium latifolium*, *Tinantia anomala*, and *Packera obovata*.

**Managed Area** (Name of the state or federally owned area):

N/A

**Landscape** (Describe the current landscape surrounding the plant or animal (i.e. farmland, residential, forest, etc.))

Rural, although being developed.

**Current and Potential Threats:**

Development

**Management Comments:**

This property is privately owned and the owner is making plans to keep the property from being developed after her death. It butts up against the Blacones Canyonland National Wildlife Refuge and the croton population on the private property is, I believe, a segment of the population that occurs on the Refuge.

**Specimen:** Was a specimen taken?  yes  no

If yes, indicate the herbarium, collector(s) name(s) and number(s), accession #, and date collected:

LBJWC Herbarium, Florence M. Oxley, 2010-01, 08 April 2010

**Photograph:** Was a photo taken?  yes  no    If yes,  slide  print  digital    If possible, please submit a copy of the photo.

Is a copy included with the form?  yes  no

**General Comments:**





Texas Natural Diversity Database Reporting Form  
 Wildlife Diversity Program  
 Texas Parks and Wildlife Department  
 4200 Smith School Road  
 Austin, TX 78744 (512) 389-8111

We Need Your Help. If you have information on the location of a rare plant or animal and would like to help us build the Texas Natural Diversity Database, please complete the form below. Thank you!

**Instructions:**

1. Complete this form for first hand field observations only.
2. DO NOT COMPLETE THIS FORM if the source of your information is a report, letter, conversation or other document. Send us the documentation.
3. Rare Birds: Complete this form only for observations during the breeding season or at large concentration areas during migration or in winter.
4. Attach a copy of a map (USGS 1:24,000 topographic map preferred) and mark the location of the rare species or its boundary (if known). Note, you may print copies of topo maps from the internet at <http://www.topozone.com>. Please use 1:24,000 or 1:25,000 scale only.

**Source of Your Information:** (check one of the following)

- Firsthand field observation Does the identification need to be confirmed?  yes  no
- Other: Please do not complete this form; send us a copy of the documentation instead. If source is a conversation with someone, send us a note.

**Form Completed By:**

Flo Oxley	March 22, 2011	512/232-0160
Name	Date	Phone

**Identification:**

Complete only one form per rare plant or animal per site. If you need a list of rare species we are currently tracking, contact our office.

Name of the rare plant or animal:	Croton alabamensis var. texensis
-----------------------------------	----------------------------------

Method of ID: (Source of key, photo, name of expert, other):	Expert
--	--------

Date First Observed:	March 22, 20100	Date Last Observed:	June 8, 2011
----------------------	-----------------	---------------------	--------------

**Observer:**

Name:	Address:	Phone:
Flo Oxley Jean Nance (landowner) Christine Powell (WFC volunteer) Dale Rye (WFC volunteer)	Lady Bird Johnson Wildflower Center 4801 La Crosse Avenue Austin, Texas 78739	512/232-0160

**Location:**

GPS data:	Latitude:	+30.584444	Longitude:	-97.990.139
	Accuracy:	+/- 1 meter	GPS Brand:	Garmen

Survey Site Name (locale or place name):	Private residence
--	-------------------

Directions (describe in detail the precise location of the species or community; begin with an easily identifiable starting point, include nearby landmarks, street names, and mileages):

25601 River Fern Court Leander, TX 78641
---

County:	Travis	Town:	Leander
Name of USGS 7.5' topo (if known)	Nameless		

**Observation Data:**

For Animals: Indicate the number of adults, juveniles, nests, etc.

For Plants: Indicate 1) the number of flowering plants and/or sterile stems, 2) the number of separate plant groupings, 3) the health of the plants, etc.

opulation consists of more than 250 plants. At the time we bagged the plants to collect seed, approximately half of the population was in flower. All plants appeared to be in good health in spite of severe drought conditions.

At the time we went back to collect bagged seeds, 90% of the population had flowered/gone to seed. Notice a lot of empty fruit and aborted flowers.

**Size:**

Please indicate the estimated area occupied by the plant or animal:

1-2	Acres or		sq. meters
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If the area occupied is long and narrow (less than 12.5 meters wide), please indicate:

Length (meters):		Width (meters):	
------------------	--	-----------------	--

**Habitat Description:** Write a description of the habitat for the species at this location. Include ecological communities, dominants, associated species, substrates, soils, aspect, slope, hydrology, etc.

Plants found in a riparian forest along a tributary of Bingham Creek. Associated species include: *Celtis laevigata*, *Ulmus crassifolia*, *Fraxinus texensis*, *Quercus buckleyi*, *Ptelea trifoliata*, *Ilex decidua*, *Chasmanthium latifolium*, *Tinantia anomala*, and *Packera obovata*.

**Managed Area** (Name of the state or federally owned area):

N/A

**Landscape** (Describe the current landscape surrounding the plant or animal (i.e. farmland, residential, forest, etc.))

Rural, although being developed.

**Current and Potential Threats:**

Development

**Management Comments:**

This property is privately owned and the owner is making plans to keep the property from being developed after her death. It butts up against the Blaques Canyonland National Wildlife Refuge and the croton population on the private property is, I believe, a segment of the population that occurs on the Refuge.

**Specimen:** Was a specimen taken?  yes  no

If yes, indicate the herbarium, collector(s) name(s) and number(s), accession #, and date collected:

LBJWC Herbarium, Florence M. Oxley, 2010-01, 08 April 2010

**Photograph:** Was a photo taken?  yes  no If yes,  slide  print  digital If possible, please submit a copy of the photo.

Is a copy included with the form?  yes  no

**General Comments:**

Show Masthead

Participating Institutions Only Entrance

Logoff

**Use this form to create a new Accession.**  
**RED fields are required. Hover over fields in the entry form to get descriptions.**

<b>Taxon:</b>	Croton alabamensis var. texensis	<b>CPC Num:</b>	16071
<b>Institution:</b>	The Lady Bird Johnson Wildflower Center	<b>Institution Code:</b>	LBJWC
<b>Record Type:</b>	Primary Record	<b>NatureServe ID:</b>	
<b>Accession:</b>		<b>Accession Token:</b>	
<b>Accession Date</b>		<b>Created:</b>	12/15/2011
<b>Deaccession Date:</b>		<b>Changed:</b>	12/15/2011
<b>Last Updated By:</b>			

Accession Number: CPC20110001

General Accession Data

06/08/2011 unknown=12/29/1899	<b>Accession Date:</b>	12/15/2011	<b>Deaccessioned?</b>	<input type="checkbox"/>	<b>Deaccession Date:</b>	unknown=12/29/1899
Field Collected						
<b>Propagation Notes:</b>			If accession material is propagated, describe method.			
<b>Parent Accession(s):</b> If accession material is propagated, identify Parent Accession(s).			<input type="button" value="Select Parent Accession"/> Include unknown reason or bulked parents here.			
<b>Herbarium Collection Voucher:</b>			8 voucher specimens were collected and stored in the WFC herbarium collection. Record ID numbers: 3249			
<b>Represented In Collection?</b>			<input checked="" type="checkbox"/>			
<b>Accession Notes:</b>			Collection made from private property that backs up to the Balcones Canyonland National Wildlife Refuge			

Field Collection Data: Location Section

	Yes	<b>Collector Name:</b>	Flo Oxley Jean Nance (landowner)
	Texas	<b>Collection County:</b>	Travis
<b>Location Popular Name:</b>	Jean Nance residence	<b>Location Notes:</b>	
	Private	<b>LandOwner Name:</b>	Jean & Shay Nance
	80-7792	<b>Elevation (in Meters):</b>	
<b>Latitude &amp; Longitude:</b>	30.58444 N 97.99013 W		

	Formats: 39 07 09 or 39.1180	
<b>UTM Zone, North, &amp; East:</b>	<b>mN</b>	<b>mE</b> 6 digits for mN & mE
<b>Meridian</b>	N/A	
<b>Township &amp; Range:</b>	<b>T. R. Section</b>	<b>Qtr. Sec.</b>
	Formats: T. 33N R. 07W Section 24 Qtr. Sec. SENW	
<b>USGS topo Map:</b>	Nameless	

Field Collection Data: Habitat Section			
<b>Light:</b>	1/2 shade	<b>Slope:</b>	0-5%
<b>Litter:</b>	N/A	<b>Exposure:</b>	N/A
<b>Phosphorus:</b>		<b>Potassium:</b>	
<b>Calcium:</b>		<b>Magnesium:</b>	
<b>Cation Exchange Capacity:</b>		<b>Soil Moisture:</b>	
<b>Organic Matter:</b>		<b>Soil Type:</b>	
<b>Soil PH:</b>			
<b>Parent Rock :</b>	Limestone		
<b>Plant Community :</b>	Riparian forest along a tributary of Bingham		
<b>Associated Species:</b>	Associated species include: Celtis laevigata, Ulmus		

Field Collection Data: Population Section			
	101-500	<b>Area covered (length in Meters)</b>	
<b>Area covered (Width in Meters)</b>		<b>Average Plants per Square Meter</b>	
<b>Maximum Plants per Square Meter</b>		<b>Percent Reproductive</b>	<1%
<b>Percent Non-Reproductive</b>	63%	<b>Percent Seedlings</b>	0%
<b>Percent in Bud</b>	0%	<b>Percent in Flower</b>	0%
<b>Percent in Fruit</b>	36%	<b>Number of Genets:</b>	97
<b>Threats</b>	Development		
<b>Field Collection Notes</b>	This property is privately owned and the owner is		

Indicate the reason(s) this Accession is being updated/created? If this is a new accession please be sure to select "New Accession". CTRL-CLICK for Multiple.	DOD Special Status General <input checked="" type="checkbox"/> <b>New Accession</b> RPL
	<b>Submitted By:</b> Flo Oxley

<p><b>Full name, last name, or initials.</b></p>
<p><b>Create Accession Record</b> <input type="button" value="Go"/></p>

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Created by the Center for Plant Conservation: [contact us](#)

Release of Audio-Visual Material

I give permission to the Center for Plant Conservation to use photographic or other visual material as listed below for use in that organization's publicity and education programs. I understand that the Center is a non-profit, charitable organization, that the materials produced are for educational purposes, and that no admission will be charged for viewing. Fill out the below for each photo:

Photo 1 File name: Croton alabamensis var. texensis\_pistillate flowers

Photo 2 File name: Croton alabamensis var. texensis\_staminate flowers

Photo 3 File name:

Photo 4 File name:

Photo 5 File name:

Photo 6 File name:

Photo 7 File name:

Photo 8 File name:

Photo 9 File name:

Signed: Flo Oxley

Date 12/15/2011

Name Flo Oxley

Address Lady Bird Johnson Wildflower Center @ University of Texas-Austin  
4801 La Crosse Avenue  
Austin, Texas 78739

PLEASE put only one species per tab

	PHOTO 1	PHOTO 2	PHOTO 3	PHOTO 4	PHOTO 5
File name	Pistillate flowers	Staminate flowers			
Species name	Croton alabamensis var. texensis	Croton alabamensis var. texensis			
Synonyms					
Name of people (if any)					
Location	Jean Nance residence	Jean Nance residence			
Date (dd/mm/yyyy)					
Photographer	Flo Oxley	Flo Oxley			
Image Owner (if different than photographer)					

	PHOTO 6	PHOTO 7	PHOTO 8	PHOTO 9	PHOTO 10
File name					
Species name					
Synonyms					
Name of people (if any)					
Location					
Date (dd/mm/yyyy)					
Photographer					
Image Owner (if different than photographer)					

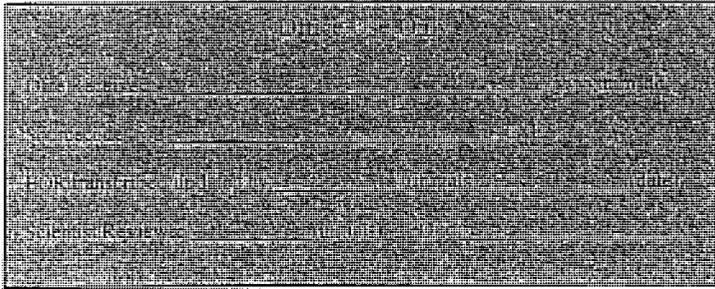
	PHOTO 11	PHOTO 12	PHOTO 13	PHOTO 14	PHOTO 15
File name					
Species name					
Synonyms					
Name of people (if any)					
Location					
Date (dd/mm/yyyy)					
Photographer					
Image Owner (if different than photographer)					

	PHOTO 16	PHOTO 17	PHOTO 18	PHOTO 19	PHOTO 20
File name					
Species name					
Synonyms					
Name of people (if any)					
Location					
Date (dd/mm/yyyy)					
Photographer					
Image Owner (if different than photographer)					

CPL20110004

HiDa

01/28/2008 Version Date



Texas Natural Diversity Database Reporting Form  
 Wildlife Diversity Program  
 Texas Parks and Wildlife Department  
 4200 Smith School Road  
 Austin, TX 78744 (512) 389-8111

We Need Your Help. If you have information on the location of a rare plant or animal and would like to help us build the Texas Natural Diversity Database, please complete the form below. Thank you!

**Instructions:**

1. Complete this form for first hand field observations only.
2. **DO NOT COMPLETE THIS FORM** if the source of your information is a report, letter, conversation or other document. Send us the documentation.
3. Rare Birds: Complete this form only for observations during the breeding season or at large concentration areas during migration or in winter.
4. Attach a copy of a map (USGS 1:24,000 topographic map preferred) and mark the location of the rare species or its boundary (if known). Note, you may print copies of topo maps from the internet at <http://www.topozone.com>. Please use 1:24,000 or 1:25,000 scale only.

**Source of Your Information:** (check one of the following)

- Firsthand field observation Does the identification need to be confirmed?  yes  no
- Other: Please do not complete this form; send us a copy of the documentation instead. If source is a conversation with someone, send us a note.

**Form Completed By:**

Minnette Marr	October 11, 2011	214-908-1161
Name	Date	Phone

**Identification:**

Complete only one form per rare plant or animal per site. If you need a list of rare species we are currently tracking, contact our office.

Name of the rare plant or animal:	Hibiscus dasycalyx		
Method of ID: (Source of key, photo, name of expert, other):	Expert - Thomas Philipps (USDA Forest Service)		
Date First Observed:	October 6, 2011	Date Last Observed:	October 6, 2011

**Observer:**

Name:	Address:	Phone:
Minnette Marr	4801 La Crosse Avenue, Austin, TX 78739	214-908-1161

**Location:**

GPS data:	Latitude:	31.34297	Longitude:	-095.04105
	Accuracy:		GPS Brand:	Garmin GPS 60

Survey Site Name (locale or place name):	Davy Crockett National Forest
--	-------------------------------

Directions (describe in detail the precise location of the species or community; begin with an easily identifiable starting point, include nearby landmarks, street names, and mileages):

Texas Highway 7 at Forest Service Road 503 (31.389722; -95.053611 from ArcGIS Explorer); travel 5-6 kilometer south to the end of FS road 503; bog is about a ten-minute walk to the east

County:	Houston	Town:	Ratcliff
Name of USGS 7.5' topo (if known)	Centralia		

**Observation Data:**

For Animals: Indicate the number of adults, juveniles, nests, etc.

For Plants: Indicate 1) the number of flowering plants and/or sterile stems, 2) the number of separate plant groupings, 3) the health of the plants, etc.

estimate: 100-200 plants  
 approximately 50% of plants with fruit containing non-viable seeds; 10% with fruit containing viable seeds; 40% of plants with no fruit  
 height of stems produced in 2011 approximately 75% the height of stems produced in 2010  
 one plant had recently flowered (image is attached to reporting form)

**Size:**

Please indicate the estimated area occupied by the plant or animal:

	Acres or	3,000	sq. meters
--	----------	-------	------------

If the area occupied is long and narrow (less than 12.5 meters wide), please indicate:

Length (meters):		Width (meters):	
------------------	--	-----------------	--

**Habitat Description:** Write a description of the habitat for the species at this location. Include ecological communities, dominants, associated species, substrates, soils, aspect, slope, hydrology, etc.

Bog  
 Cephalanthus occidentalis, Brunnichia ovata, Mikana scandens, and Juncus cf. effusus dominate the zone to the outside of HIDA  
 Sesbania herbacea and Heliotropium indicum are scattered in the central area.

**Managed Area** (Name of the state or federally owned area):

Davy Crockett National Forest

**Landscape** (Describe the current landscape surrounding the plant or animal (i.e. farmland, residential, forest, etc.))

Forest

**Current and Potential Threats:**

Encroachment by Brunnichia ovata; herbivory; prolonged drought

**Management Comments:**

Volunteers or contractors could cut back Brunnichia ovata growing on Hibiscus dasycalyx

**Specimen:** Was a specimen taken?  yes  no

If yes, indicate the herbarium, collector(s) name(s) and number(s), accession #, and date collected:

Lady Bird Johnson Wildflower Center, Minnette Marr #1277, collected October 6, 2011

**Photograph:** Was a photo taken?  yes  no If yes,  slide  print  digital If possible, please submit a copy of the photo.

Is a copy included with the form?  yes  no

**General Comments:**

A total of 174 seeds were collected from ten plants for long-term conservation.  
 This area is experiencing an exceptional drought.

Show Masthead

Participating Institutions Only Entrance

Select Accession

Options

Taxon:	Hibiscus dasycalyx	CPC Num:	2258
Institution:	The Lady Bird Johnson Wildflower Center	Code:	LBJWC
Record Type:	Collateral Record		
Accession:	CPC20110004	Token:	17235
Accession Date:	12/15/2011	Created:	12/15/2011
Deaccession Date:	-1	Changed:	12/15/2011
Submitted By:	Minnette Marr		

Please note that fields in which there have been no values entered have been updated to "N/A" (for text fields) or "-1" (for numeric or date fields). "N/A" and "-1" do not appear on the Accession edit form.

Accession Number: CPC20110004

General Accession Data			
Collection Date:	10/06/2011	Accession Date:	12/15/2011
Deaccessioned?	No	Deaccession Date:	-1
Propagation Notes:		N/A	
Parent Accession(s): Required if propagated.		N/A	
Herbarium Collection Voucher:		None	
Represented In Collection?		No	
Accession Notes: N/A			

Field Collection Data: Location Section			
Field Collection Form sent to CPC?:	True	Collector Name:	Minnette Marr, Thomas Philipps (USFS)
Collection State/Province:	Texas	Collection County:	Houston
Location Popular Name:	Davy Crockett NF	Location Notes:	NFR 503
Landowner Type:	Federal - USFS	LandOwner Name and Address:	Davy Crockett National Forest
EO-ID:	00-0000	Elevation (in Meters)	N/A
Latitude & Longitude:	31.34297 N 95.04105 W Formats: 39 07 09 or 39.1180		
UTM Zone, North, & East:	-1 -1 mN -1 mE 6 digits for mN & mE		
Meridian	N/A		
Township & Range:	N/A T. N/A R. -1 Section N/A Qtr. Sec. Formats: T. 33N R. 07W Section 24 Qtr. Sec. SENW (not required) (not required)		
USGS topo Map:	Centralia		

Field Collection Data: Habitat Section			
Light:	Open	Slope:	0-5%
Litter:	less than 1 cm	Exposure:	N/A
Phosphorus:	N/A	Potassium:	N/A
Calcium:	N/A	Magnesium:	N/A
Cation Exchange			

Capacity:	N/A	Soil Moisture:	N/A
Organic Matter:	N/A	Soil Type:	N/A
Soil PH:	N/A		
Parent Rock :	Alluvium		
Plant Community :	Bog		
Associated Species:	Cephalanthus occidentalis, Brunnichia ovata, Mikania scandens, Juncus sp., Sesbania herbacea, Heliotropium indicum		

Field Collection Data: Population Section			
Total number of plants present at collection:	101-500	Area covered (length in Meters)	N/A
Area covered (Width in Meters)	N/A	Average Plants per Square Meter	0.05
Maximum Plants per Square Meter	N/A	Percent Reproductives	0.06
Percent Non-Reproductives	N/A	Percent Seedlings	N/A
Percent in Bud	N/A	Percent in Flower	N/A
Percent in Fruit	N/A	Number of Genets:	10
Threats	encroachment by Brunnichia ovata, herbivory, prolonged drought		
Field Collection Notes	area = 3,000 sq meters, donut shape		

Reason for Update?	
Indicate the reason this Accession is being updated?	New Accession
Submitted By: Minnette Marr	
Please add storage location and propagule information by clicking	
<input type="button" value="Go To Select Inventory"/>	

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Created by the Center for Plant Conservation: [contact us](#)

Release of Audio-Visual Material

I give permission to the Center for Plant Conservation to use photographic or other visual material as listed below for use in that organization's publicity and education programs. I understand that the Center is a non-profit, charitable organization, that the materials produced are for educational purposes, and that no admission will be charged for viewing. Fill out the below for each photo:

Photo 1 File name: Hibiscus dasycalyx\_calyx.tif

Photo 2 File name: Hibiscus dasycalyx\_fruit.tif

Photo 3 File name: Hibiscus dasycalyx\_habitat.tif

Photo 4 File name: Liatris tenuis\_Angelina habitat.tif

Photo 5 File name: Liatris tenuis\_fruit.tif

Photo 6 File name: Liatris tenuis\_seedheads.tif

Photo 7 File name: Rudbeckia scabrifolia\_habitat.tif

Photo 8 File name: Rudbeckia scabrifolia\_infructescence.tif

Photo 9 File name:

Signed: Minnette Marr

Date 12-15-2011

Minnette Marr  
Name

4801 La Crosse  
Address

Austin, TX 78734

PLEASE put only one species per tab

	PHOTO 1	PHOTO 2	PHOTO 3	PHOTO 4	PHOTO 5
File name	Calyx	Fruit	Habitat		
Species name	Hibiscus dasycalyx	Hibiscus dasycalyx	Hibiscus dasycalyx		
Synonyms					
Name of people (if any)					
Location	Davy Crockett National Forest	Davy Crockett National Forest	Davy Crockett National Forest		
Date (dd/mm/yyyy)	10/6/2011	10/6/2011	10/6/2011		
Photographer	Minnette Marr	Minnette Marr	Minnette Marr		
Image Owner (if different than photographer)					

	PHOTO 6	PHOTO 7	PHOTO 8	PHOTO 9	PHOTO 10
File name					
Species name					
Synonyms					
Name of people (if any)					
Location					
Date (dd/mm/yyyy)					
Photographer					
Image Owner (if different than photographer)					

	PHOTO 11	PHOTO 12	PHOTO 13	PHOTO 14	PHOTO 15
File name					
Species name					
Synonyms					
Name of people (if any)					
Location					
Date (dd/mm/yyyy)					
Photographer					
Image Owner (if different than photographer)					

	PHOTO 16	PHOTO 17	PHOTO 18	PHOTO 19	PHOTO 20
File name					
Species name					
Synonyms					
Name of people (if any)					
Location					
Date (dd/mm/yyyy)					
Photographer					
Image Owner (if different than photographer)					

Office Use Only	
Date Received:	_____ (yyyy-mm-dd)
Sourcecode:	U _____ TXUS
EOR transcribed/updated by:	_____ (initials) _____ (date)
Scientist Reviewer:	_____ (initials) EO id: _____

Texas Natural Diversity Database Reporting Form  
**Wildlife Diversity Program**  
**Texas Parks and Wildlife Department**  
**4200 Smith School Road**  
**Austin, TX 78744** (512) 389-8111

We Need Your Help. If you have information on the location of a rare plant or animal and would like to help us build the Texas Natural Diversity Database, please complete the form below. Thank you!

**Instructions:**

1. Complete this form for first hand field observations only.
2. **DO NOT COMPLETE THIS FORM** if the source of your information is a report, letter, conversation or other document. Send us the documentation.
3. Rare Birds: Complete this form only for observations during the breeding season or at large concentration areas during migration or in winter.
4. Attach a copy of a map (USGS 1:24,000 topographic map preferred) and mark the location of the rare species or its boundary (if known). Note, you may print copies of topo maps from the internet at <http://www.topozone.com>. Please use 1:24,000 or 1:25,000 scale only.

**Source of Your Information:** (check one of the following)

Firsthand field observation Does the identification need to be confirmed?  yes  no

Other: Please do not complete this form; send us a copy of the documentation instead. If source is a conversation with someone, send us a note.

**Form Completed By:**

Minnette Marr	October 11, 2011	214-908-1161
Name	Date	Phone

**Identification:**

Complete **only one form per rare plant or animal per site**. If you need a list of rare species we are currently tracking, contact our office.

Name of the rare plant or animal:	Hibiscus dasycalyx
-----------------------------------	--------------------

Method of ID: (Source of key, photo, name of expert, other):	Expert - Thomas Philipps (USDA Forest Service)
--	--

Date First Observed:	October 6, 2011	Date Last Observed:	October 6, 2011
----------------------	-----------------	---------------------	-----------------

**Observer:**

Name:	Address:	Phone:
Minnette Marr	4801 La Crosse Avenue, Austin, TX 78739	214-908-1161

**Location:**

GPS data:	Latitude:	31.34297	Longitude:	-095.04105
	Accuracy:		GPS Brand:	Garmin GPS 60

Survey Site Name (locale or place name):	Davy Crockett National Forest
--	-------------------------------

Directions (describe in detail the precise location of the species or community; begin with an easily identifiable starting point, include nearby landmarks, street names, and mileages):

Texas Highway 7 at Forest Service Road 503 (31.389722;-95.053611 from ArcGISExplorer); travel 5-6 kilometer south to the end of FS road 503; bog is about a ten-minute walk to the east

County:	Houston	Town:	Ratcliff
Name of USGS 7.5' topo (if known)	Centralia		

**Observation Data:**

For Animals: Indicate the number of adults, juveniles, nests, etc.

For Plants: Indicate 1) the number of flowering plants and/or sterile stems, 2) the number of separate plant groupings, 3) the health of the plants, etc.

estimate: 100-200 plants  
 approximately 50% of plants with fruit containing non-viable seeds; 10% with fruit containing viable seeds; 40% of plants with no fruit  
 height of stems produced in 2011 approximately 75% the height of stems produced in 2010  
 one plant had recently flowered (image is attached to reporting form)

**Size:**

Please indicate the estimated area occupied by the plant or animal:

	Acres or	3,000	sq. meters
--	----------	-------	------------

If the area occupied is long and narrow (less than 12.5 meters wide), please indicate:

Length (meters):		Width (meters):	
------------------	--	-----------------	--

**Habitat Description:** Write a description of the habitat for the species at this location. Include ecological communities, dominants, associated species, substrates, soils, aspect, slope, hydrology, etc.

Bog  
 Cephalanthus occidentalis, Brunnichia ovata, Mikana scandens, and Juncus cf. effusus dominate the zone to the outside of HIDA  
 Sesbania herbacea and Heliotropium indicum are scattered in the central area.

**Managed Area** (Name of the state or federally owned area):

Davy Crockett National Forest

**Landscape** (Describe the current landscape surrounding the plant or animal (i.e. farmland, residential, forest, etc.))

Forest

**Current and Potential Threats:**

Encroachment by Brunnichia ovata; herbivory; prolonged drought

**Management Comments:**

Volunteers or contractors could cut back Brunnichia ovata growing on Hibiscus dasycalyx

**Specimen:** Was a specimen taken?  yes  no

If yes, indicate the herbarium, collector(s) name(s) and number(s), accession #, and date collected:

Lady Bird Johnson Wildflower Center, Minnette Marr #1277, collected October 6, 2011

**Photograph:** Was a photo taken?  yes  no    If yes,  slide  print  digital    If possible, please submit a copy of the photo.

Is a copy included with the form?  yes  no

**General Comments:**

A total of 174 seeds were collected from ten plants for long-term conservation.  
 This area is experiencing an exceptional drought.

Office Use Only	
Date Received:	_____ (yyyy-mm-dd)
Sourcecode:	U _____ TXUS
EOR transcribed/updated by:	_____ (initials) _____ (date)
Scientist Reviewer:	_____ (initials) EO id: _____

Texas Natural Diversity Database Reporting Form <b>Wildlife Diversity Program</b> <b>Texas Parks and Wildlife Department</b> <b>4200 Smith School Road</b> <b>Austin, TX 78744</b> (512) 389-8111	
We Need Your Help. If you have information on the location of a rare plant or animal and would like to help us build the Texas Natural Diversity Database, please complete the form below. Thank you!	

**Instructions:**

1. Complete this form for first hand field observations only.
2. **DO NOT COMPLETE THIS FORM** if the source of your information is a report, letter, conversation or other document. Send us the documentation.
3. Rare Birds: Complete this form only for observations during the breeding season or at large concentration areas during migration or in winter.
4. Attach a copy of a map (USGS 1:24,000 topographic map preferred) and mark the location of the rare species or its boundary (if known). Note, you may print copies of topo maps from the internet at <http://www.topozone.com> . Please use 1:24,000 or 1:25,000 scale only.

**Source of Your Information:** (check one of the following)

- Firsthand field observation Does the identification need to be confirmed?  yes  no
- Other: Please do not complete this form; send us a copy of the documentation instead. If source is a conversation with someone, send us a note.

**Form Completed By:**

Anita Tiller, David Berkshire	August 19, 2012	281-443-8731
Name	Date	Phone

**Identification:**

Complete **only one form per rare plant or animal per site**. If you need a list of rare species we are currently tracking, contact our office.

Name of the rare plant or animal:	Hibiscus dasycalyx
-----------------------------------	--------------------

Method of ID: (Source of key, photo, name of expert, other):	Expert - Jackie Poole(TPWD)
--	-----------------------------

Date First Observed:	August 16, 2012	Date Last Observed:	August 16, 2012
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**Observer:**

Name:	Address:	Phone:
Anita Tiller	Mercer Arboretum and Botanic Gardens 22306 Aldine Westfield Rd., Humble, TX 77338	2281-443-8731
Minnette Marr Karen Clary Amber Miller	4801 La Crosse Avenue, Austin, TX 78739 (as above) USFWS	214-908-1161 (as above)

**Location:**

GPS data:	Latitude:	31.10111	Longitude:	-095.47569
	Accuracy:		GPS Brand:	Garmin GPS 60

Survey Site Name (locale or place name):	Texas Land Conservancy Hibiscus dasycalyx Preserve
--	--

Directions (describe in detail the precise location of the species or community; begin with an easily identifiable starting point, include nearby landmarks, street names, and mileages):

The following information was recorded during the site visit to the 30-acre preserve owned by the Texas Land Conservancy near Lovelady. Feel free to check with Jackie Poole and Jason Singhurst for additional information.

target species: Hibiscus dasycalyx  
 date: 2012-08-16  
 county: Houston

closest city with a post office: Lovelady  
 coordinates: 31.10111, -095.47569  
 associated species: Sesbania drummondii, Polygonum sp., Croton capitatus, Eupatorium serotinum, Cephalanthus occidentalis, Iva angustifolia, Baccharis halimifolia, Poncirus trifoliata, Carya illinoensis, Salix nigra, Brunnichia ovata  
 notes:  
 1) no flowers observed at this site (possible causes include dry conditions and defoliation by grasshoppers)  
 2) hydrology is not well understood (HIDA prefers wet conditions in winter)  
 3) 30 acres owned by the Texas Land Conservancy (Daniel Dietz is land steward.)  
 4) cows browsed plants to ground in 2011 (extreme drought), but not in 2012  
 5) site across FM230 that previously was home to HIDA was contoured and converted to a pine plantation

background information obtained online:

directions from intersection of TX 19 and FM 230: travel west on FM 230 approximately 2.6 miles, site is on north side of road (see attachment)

watershed: Tantabogue Creek (Tantabogue Creek rises two miles southwest of Crockett in south central Houston County (at 31°17' N, 95°30' W). The creek formerly flowed southeast for twenty-six miles to its mouth on White Rock Creek in western Trinity County (at 31°01' N, 95°21' W). Since the construction of Lake Livingston in the late 1960s the creek has been inundated in its lower reaches. It crosses flat terrain surfaced by clay and sandy loam that supports water-tolerant hardwoods, conifers, and grasses. (Handbook of Texas Online)

soil: Nahatchie loam, frequently flooded (Web Soil Survey)

County:	Houston	Town:	Lovelady
Name of USGS 7.5' topo (if known)	Centralia		

**Observation Data:**

For Animals: Indicate the number of adults, juveniles, nests, etc.

For Plants: Indicate 1) the number of flowering plants and/or sterile stems, 2) the number of separate plant groupings, 3) the health of the plants, etc.

**Size:**

Please indicate the estimated area occupied by the plant or animal:

	Acres or	3,000	sq. meters
--	----------	-------	------------

If the area occupied is long and narrow (less than 12.5 meters wide), please indicate:

Length (meters):		Width (meters):	
------------------	--	-----------------	--

**Habitat Description:** Write a description of the habitat for the species at this location. Include ecological communities, dominants, associated species, substrates, soils, aspect, slope, hydrology, etc.

Bog  
 Cephalanthus occidentalis, Brunnichia ovata, Mikana scandens, and Juncus cf. effusus dominate the zone to the outside of HIDA  
 Sesbania herbacea and Heliotropium indicum are scattered in the central area.

**Managed Area** (Name of the state or federally owned area):

Davy Crockett National Forest

**Landscape** (Describe the current landscape surrounding the plant or animal (i.e. farmland, residential, forest,etc.))

Forest

**Current and Potential Threats:**

Encroachment by Brunnichia ovata; herbivory; future droughts

01/28/2008 Version Date

**Management Comments:**

Volunteers or contractors could cut back *Brunnichia ovata* growing on *Hibiscus dasycaylx*

**Specimen:** Was a specimen taken?  yes  no

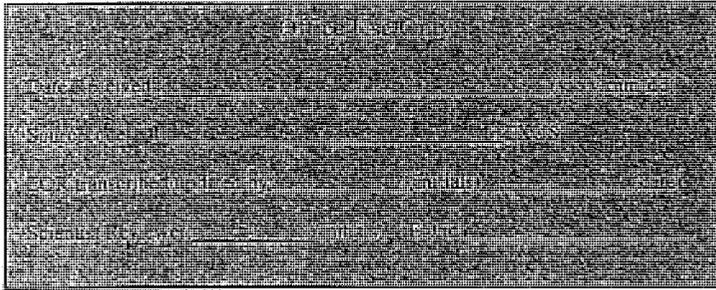
If yes, indicate the herbarium, collector(s) name(s) and number(s), accession #, and date collected:

**Photograph:** Was a photo taken?  yes  no      If yes,  slide  print  digital      If possible, please submit a copy of the photo.

Is a copy included with the form?  yes  no

**General Comments:**

39 seed pods were collected and accessioned separately.  
Mercer accession no. 2012-0160 to 2012-0199  
Total seeds collected: ~1,188  
Stored frozen at Mercer ABG and for NCGRP.



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 Wildlife Diversity Program  
 Texas Parks and Wildlife Department  
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4. Attach a copy of a map (USGS 1:24,000 topographic map preferred) and mark the location of the rare species or its boundary (if known). Note, you may print copies of topo maps from the internet at <http://www.topozone.com>. Please use 1:24,000 or 1:25,000 scale only.

### Source of Your Information: (check one of the following)

- Firsthand field observation Does the identification need to be confirmed?  yes  no
- Other: Please do not complete this form; send us a copy of the documentation instead. If source is a conversation with someone, send us a note.

### Form Completed By:

Flo Oxley	April 22, 2011	512/232-0160
Name	Date	Phone

### Identification:

Complete **only one form per rare plant or animal per site**. If you need a list of rare species we are currently tracking, contact our office.

Name of the rare plant or animal:	Lesquerella thamnophylla
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Method of ID: (Source of key, photo, name of expert, other):	Expert: Michael L. Eason
--	--------------------------

Date First Observed:	April 22, 2011	Date Last Observed:	April 22, 2011
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### Observer:

Name:	Address:	Phone:
Michael L. Eason Edd Paradise	Lady Bird Johnson Wildflower Center Texas Department of Transportation	512/632-0332 956/765-9971

### Location:

GPS data:	Latitude:	26o 41 841N	Longitude:	99o06 566W
	Accuracy:		GPS Brand:	Garmin

Survey Site Name (locale or place name):	TxDOT Roadside US 83
--	----------------------

Directions (describe in detail the precise location of the species or community; begin with an easily identifiable starting point, include nearby landmarks, street names, and mileages):

South of Zapata, approximately 12 miles on US 83. East side of road.
--

County:	Zapata	Town:	Zapata
Name of USGS 7.5' topo (if known)			

**Observation Data:**

For Animals: Indicate the number of adults, juveniles, nests, etc.

For Plants: Indicate 1) the number of flowering plants and/or sterile stems, 2) the number of separate plant groupings, 3) the health of the plants, etc.

Population consisted of ~10 individuals, one (removed) was within 5' of pavement, remainder along gentle slope towards fence line. No evidence of damage or disturbance. Plants all around dispersal stage and healthy.

**Size:**

Please indicate the estimated area occupied by the plant or animal:

Acres or  sq. meters

If the area occupied is long and narrow (less than 12.5 meters wide), please indicate:

Length (meters):  Width (meters):

**Habitat Description:** Write a description of the habitat for the species at this location. Include ecological communities, dominants, associated species, substrates, soils, aspect, slope, hydrology, etc.

Roadside habitat (frequently mowed), construction area: *Bouteloua repens*, *Bothriochloa ischaemum*, *Merrimeia dissecta*, *Asclepias oenotheroides*, *Pennisetum ciliare*, *Thamnosia texana*, *Dalea pogonathera*. Fenceline/woodland habitat along top of slope: *Sideroxylon celastrinum*, *Prosopis glandulosa*, *Cylindropuntia leptocaulis*, *Opuntia engelmannii*, *Jatropha dioica*, *Yucca treculeana*, *Koerberlina spinosa*

**Managed Area** (Name of the state or federally owned area):

Texas Department of Transportation

**Landscape** (Describe the current landscape surrounding the plant or animal (i.e. farmland, residential, forest, etc.))

Roadside habitat (frequently mowed), construction area.

**Current and Potential Threats:**

Road construction by TxDOT

**Management Comments:**

We will return plants to the site once construction is completed. Until then, we will be keeping them at the Wildflower Center.

**Specimen:** Was a specimen taken?  yes  no

If yes, indicate the herbarium, collector(s) name(s) and number(s), accession #, and date collected:

**Photograph:** Was a photo taken?  yes  no If yes,  slide  print  digital If possible, please submit a copy of the photo.

Is a copy included with the form?  yes  no

**General Comments:**

This collection was part of a plant rescue requested by TxDOT.

Show Masthead

Participating Institutions Only Entrance

Logoff

**Use this form to create a new Accession.**  
**RED fields are required. Hover over fields in the entry form to get descriptions.**

<b>Taxon:</b>	Lesquerella thamnophila	<b>CPC Num:</b>	2516
<b>Institution:</b>	The Lady Bird Johnson Wildflower Center	<b>Institution Code:</b>	LBJWC
<b>Record Type:</b>	Project Record	<b>NatureServe ID:</b>	
<b>Accession:</b>		<b>Accession Token:</b>	
<b>Accession Date</b>		<b>Created:</b>	12/15/2011
<b>Deaccession Date:</b>		<b>Changed:</b>	12/15/2011
<b>Last Updated By:</b>			

**Accession Number:** CPC20110002

**General Accession Data**

04/22/2011 <small>unknown=12/29/1899</small>	<b>Accession Date:</b> 12/15/2011	<b>Deaccessioned?</b> <input type="checkbox"/>	<b>Deaccession Date:</b> <small>unknown=12/29/1899</small>
	Field Collected		
<b>Propagation Notes:</b>		If accession material is propagated, describe method.	
<b>Parent Accession(s):</b> If accession material is propagated, identify Parent Accession(s).		<input type="button" value="Select Parent Accession"/> Include unknown reason or bulked parents here.	
<b>Herbarium Collection Voucher:</b>			
<b>Represented In Collection?</b> <input type="checkbox"/>			
<b>Accession Notes:</b>		This was an "emergency" plant rescue at the request of TxDOT. We were able to collect seeds from plants that had gone to seed as well as plants that were brought back to the WFC for	

**Field Collection Data: Location Section**

	Yes	<b>Collector Name:</b>	Michael L. Eason (WFC) Edd Paradise (TxDOT)
	Texas	<b>Collection County:</b>	Zapata
<b>Location Popular Name:</b>	US 83 roadside	<b>Location Notes:</b>	Approximately 12 miles south of Zapata on the east
	Local/Public	<b>LandOwner Name:</b>	State of Texas
	00-0000	<b>Elevation (in Meters)</b>	
<b>Latitude &amp; Longitude:</b>	26 41 84 N 99 06 566 W		

	Formats: 39 07 09 or 39.1180		
<b>UTM Zone, North, &amp; East:</b>	<b>mN</b>	<b>mE</b>	6 digits for mN & mE
<b>Meridian</b>	N/A		
<b>Township &amp; Range:</b>	<b>T.</b>	<b>R.</b>	<b>Section Qtr. Sec.</b>
<b>USGS topo Map:</b>	Formats: T. 33N R. 07W Section 24 Qtr. Sec. SENW		

Field Collection Data: Habitat Section			
<b>Light:</b>	N/A	<b>Slope:</b>	N/A
<b>Litter:</b>	N/A	<b>Exposure:</b>	N/A
<b>Phosphorus:</b>		<b>Potassium:</b>	
<b>Calcium:</b>		<b>Magnesium:</b>	
<b>Cation Exchange Capacity:</b>		<b>Soil Moisture:</b>	
<b>Organic Matter:</b>		<b>Soil Type:</b>	
<b>Soil PH:</b>			
<b>Parent Rock :</b>			
<b>Plant Community :</b>	Roadside habitat, frequently mowed, construction area		
<b>Associated Species:</b>	Sideroxylon celastrinum, Prosopis glandulosa,		

Field Collection Data: Population Section			
	1-10	<b>Area covered (length in Meters)</b>	
<b>Area covered (Width in Meters)</b>		<b>Average Plants per Square Meter</b>	
<b>Maximum Plants per Square Meter</b>		<b>Percent Reproductive</b>	0%
<b>Percent Non-Reproductive</b>	0%	<b>Percent Seedlings</b>	0%
<b>Percent in Bud</b>	0%	<b>Percent in Flower</b>	0%
<b>Percent in Fruit</b>	100%	<b>Number of Genets:</b>	10
<b>Threats</b>	Road construction by TxDOT		
<b>Field Collection Notes</b>			

<p>Indicate the reason(s) this Accession is being updated/created? If this is a new accession please be sure to select "New Accession". CTRL-CLICK for Multiple.</p>	<p>DOD Special Status                  General  <input checked="" type="checkbox"/> New Accession                  RPL</p>
<p><b>Submitted By:</b> Flo Oxley</p>	

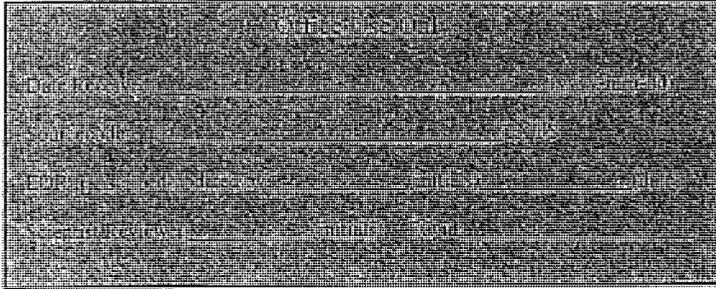
Full name, last name, or initials.

Create Accession Record

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Created by the Center for Plant Conservation: [contact us](#)

01/28/2008 Version Date



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**Wildlife Diversity Program**  
 Texas Parks and Wildlife Department  
 4200 Smith School Road  
 Austin, TX 78744 (512) 389-8111

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4. Attach a copy of a map (USGS 1:24,000 topographic map preferred) and mark the location of the rare species or its boundary (if known).  
 Note, you may print copies of topo maps from the internet at <http://www.topozone.com>. Please use 1:24,000 or 1:25,000 scale only.

**Source of Your Information:** (check one of the following)

Firsthand field observation Does the identification need to be confirmed?  yes  no

Other: Please do not complete this form; send us a copy of the documentation instead. If source is a conversation with someone, send us a note.

**Form Completed By:**

Minnette Marr and Anita Tiller	2011-12-03	MM 214-908-1161 and AT 281-443-8731
Name	Date	Phone

**Identification:**

Complete **only one form per rare plant or animal per site**. If you need a list of rare species we are currently tracking, contact our office.

Name of the rare plant or animal:	Liatris tenuis
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Method of ID: (Source of key, photo, name of expert, other):	Flora of North America; Rare Plants of Texas
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Date First Observed:	2011-11-04	Date Last Observed:	2011-11-04
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**Observer:**

Name:	Address:	Phone:
Minnette Marr	4801 La Crosse Avenue, Austin, TX 78739	214-908-1161
Anita Tiller	22306 Aldine Westfield Rd. Humble, TX 77338	281-443-8731
Pauline Singleton	903 E. Archer Rd Baytown, TX 77521	281-421-2469

**Location:**

GPS data:	Latitude:	31.09347	Longitude:	-94.25551
	Accuracy:	15m	GPS Brand:	Garmin GPS ETREX

Survey Site Name (locale or place name):	Angelina National Forest
--	--------------------------

Directions (describe in detail the precise location of the species or community; begin with an easily identifiable starting point, include nearby landmarks, street names, and mileages):

Drive east on SH 63 from Zavalla to Forest Route 364. Turn left (north) onto Forest Rt. 364. The site is in Angelina County and south of Sam Rayburn Reservoir. This stand of *Liatris tenuis* is on the east and west side of Forest Route 364 just a few minutes walk from the intersection of NF 364 and SH 63.

County:	Angelina	Town:	Zavalla
Name of USGS 7.5' topo (if known)	Boykin Springs, Texas		

**Observation Data:**

**For Animals:** Indicate the number of adults, juveniles, nests, etc.

**For Plants:** Indicate 1) the number of flowering plants and/or sterile stems, 2) the number of separate plant groupings, 3) the health of the plants, etc.

We collected 1,389 seeds from 63 plants. The total number of plants in the stand was approximately 390.  
Plants occurred on both side of Forest Rt. 364.

Site had been burned and lacked heavy underbrush, with little poison ivy  
Did not observe damage from herbivores or pathogens.

**Size:**

Please indicate the estimated area occupied by the plant or animal:

	Acres or	1230.5	sq. meters
--	----------	--------	------------

If the area occupied is long and narrow (less than 12.5 meters wide), please indicate:

Length (meters):		Width (meters):	
------------------	--	-----------------	--

**Habitat Description:** Write a description of the habitat for the species at this location. Include ecological communities, dominants, associated species, substrates, soils, aspect, slope, hydrology, etc.

Mixed pine-oak forest. *Liatis tenuis* occurs along both sides of the road into the forest and ditch along road.  
Pine tree bark sooty from prescribed burn. Understory very open with little poison ivy.  
Highest density of *Liatis tenuis* appears near depressions remaining from complete burning of trees trunks and roots. These depressions appear to retain more moisture and the plants are more robust.  
Canopy dominated by widely-spaced *Pinus taeda*, possibly some *P. elliotti* and some oak.  
Understory open with scattered *Quercus* saplings, *Vaccinium arboreum*, *Callicarpa americana*. *Quercus* leaves were bristle-tipped and had stellate pubescence on undersurfaces, thus likely *Q. marilandica* as shown in Flora of N. Central TX.  
Herbaceous associates include:  
*Pityopsis graminifolia*, *Chasmanthium sessiliflorum*, *Croton capitatus*, *Eryngium yuccifolium*, *Ionactis linarifolia*, *Symphotrichum* spp, *Baptisia* spp, *Hypericum* spp, *Smilax* spp.

**Managed Area** (Name of the state or federally owned area):

Angelina National Forest

**Landscape** (Describe the current landscape surrounding the plant or animal (i.e. farmland, residential, forest, etc.))

Open pine forest maintained by prescribed burns

**Current and Potential Threats:**

Fire suppression

**Management Comments:**

This large stand of *Liatis tenuis* seems to be benefiting from prescribed burns.

**Specimen:** Was a specimen taken?  yes  no

If yes, indicate the herbarium, collector(s) name(s) and number(s), accession #, and date collected:

Mercer Arboretum and Botanic Gardens Anita A. Tiller MERCA 4386 November 4, 2011

**Photograph:** Was a photo taken?  yes  no If yes,  slide  print  digital If possible, please submit a copy of the photo.

Is a copy included with the form?  yes  no

**General Comments:**

01/28/2008 Version Date

Images will be provided by Pauline Singleton, Anita Tiller and/or Minnette Marr.  
The total area of 1230.5 square meters did not include the road.  
Area occupied by L. tenuis east of road was 583.9 square meters.  
Area occupied by L. tenuis west of road was 646.6 square meters.

Show Masthead

Participating Institutions Only Entrance

Select Accession

Options

<b>Taxon:</b>	Liatris tenuis	<b>CPC Num:</b>	2539
<b>Institution:</b>	The Lady Bird Johnson Wildflower Center	<b>Code:</b>	LBJWC
<b>Record Type:</b>	Collateral Record		
<b>Accession:</b>	CPC20110003	<b>Token:</b>	17236
<b>Accession Date:</b>	12/15/2011	<b>Created:</b>	12/15/2011
<b>Deaccession Date:</b>	-1	<b>Changed:</b>	12/15/2011
<b>Submitted By:</b>	Minnette Marr		

Please note that fields in which there have been no values entered have been updated to "N/A" (for text fields) or "-1" (for numeric or date fields). "N/A" and "-1" do not appear on the Accession edit form.

Accession Number: CPC20110003

General Accession Data					
<b>Collection Date:</b>	11/04/2011	<b>Accession Date:</b>	12/15/2011	<b>Deaccessioned?</b>	No
		<b>Deaccession Date:</b>	-1		
<b>Propagation Notes:</b>		N/A			
<b>Parent Accession(s):</b> Required if propagated.		N/A			
<b>Herbarium Collection Voucher:</b>		Anita A. Tiller MERCA 4386			
<b>Represented In Collection?</b>		No			
<b>Accession Notes:</b> collected 11/04/2011					

Field Collection Data: Location Section	
<b>Field Collection Form sent to CPC?:</b>	True
<b>Collector Name:</b>	Anita A. Tiller
<b>Collection State/Province:</b>	Texas
<b>Collection County:</b>	Angelina
<b>Location Popular Name:</b>	Angelina Nationa Forest
<b>Location Notes:</b>	NFR 364
<b>Landowner Type:</b>	Federal - USFS
<b>LandOwner Name and Address:</b>	Other
<b>EO-ID:</b>	00-0000
<b>Elevation (in Meters):</b>	76
<b>Latitude &amp; Longitude:</b>	31.09347 N 94.25551 W Formats: 39 07 09 or 39.1180
<b>UTM Zone, North, &amp; East:</b>	-1 -1 mN -1 mE 6 digits for mN & mE
<b>Meridian:</b>	N/A
<b>Township &amp; Range:</b>	N/A T. N/A R. -1 Section N/A Qtr. Sec. Formats: T. 33N R. 07W Section 24 Qtr. Sec. SENW (not required) (not required)
<b>USGS topo Map:</b>	Boykin Spring

Field Collection Data: Habitat Section	
<b>Light:</b>	3/4 shade
<b>Slope:</b>	0-5%
<b>Litter:</b>	N/A
<b>Exposure:</b>	N/A
<b>Phosphorus:</b>	N/A
<b>Potassium:</b>	N/A
<b>Calcium:</b>	N/A
<b>Magnesium:</b>	N/A
<b>Cation Exchange Capacity:</b>	N/A
<b>Soil Moisture:</b>	N/A

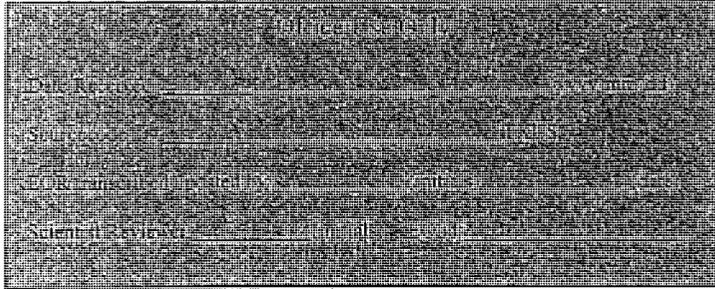
<b>Organic Matter:</b>	N/A	<b>Soil Type:</b>	Sandy loam
<b>Soil PH:</b>	N/A		
<b>Parent Rock :</b>	Mudstone		
<b>Plant Community :</b>	Forest		
<b>Associated Species:</b>	Pinus taeda, Pinus elliotii, Quercus marilandica, Vaccinium arboreum, Callicarpa americana, Pityopsis graminifolia, Chasmanthium sessiliflorum, Croton capitatus, Eryngium yuccifolium, Ionactis linarifolium, Symphyotrichum spp., Sesbania spp., Smilax spp.		

Field Collection Data: Population Section			
<b>Total number of plants present at collection:</b>	101-500	<b>Area covered (length in Meters)</b>	N/A
<b>Area covered (Width in Meters)</b>	N/A	<b>Average Plants per Square Meter</b>	0.317
<b>Maximum Plants per Square Meter</b>	N/A	<b>Percent Reproductives</b>	16%
<b>Percent Non-Reproductives</b>	N/A	<b>Percent Seedlings</b>	N/A
<b>Percent in Bud</b>	N/A	<b>Percent in Flower</b>	N/A
<b>Percent in Fruit</b>	N/A	<b>Number of Genets:</b>	63
<b>Threats</b>	fire suppression		
<b>Field Collection Notes</b>	1,389 seeds collected by maternal lines		

Reason for Update?	
Indicate the reason this Accession is being updated?	New Accession
<b>Submitted By: Minnette Marr</b>	
Please add storage location and propagate information by clicking	
<input type="button" value="Go To Select Inventory"/>	

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Created by the Center for Plant Conservation: [contact us](#)



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 Wildlife Diversity Program  
 Texas Parks and Wildlife Department  
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4. Attach a copy of a map (USGS 1:24,000 topographic map preferred) and mark the location of the rare species or its boundary (if known). Note, you may print copies of topo maps from the internet at <http://www.topozone.com>. Please use 1:24,000 or 1:25,000 scale only.

**Source of Your Information:** (check one of the following)

Firsthand field observation Does the identification need to be confirmed?  yes  no

Other: Please do not complete this form; send us a copy of the documentation instead. If source is a conversation with someone, send us a note.

**Form Completed By:**

Minnette Marr	2011-11-10	214-908-1161
Name	Date	Phone

**Identification:**

Complete **only one form per rare plant or animal per site**. If you need a list of rare species we are currently tracking, contact our office.

Name of the rare plant or animal:	Liatris tenuis
-----------------------------------	----------------

Method of ID: (Source of key, photo, name of expert, other):	Flora of North America; Rare Plants of Texas
--	--

Date First Observed:	2011-11-06	Date Last Observed:	2011-11-06
----------------------	------------	---------------------	------------

**Observer:**

Name:	Address:	Phone:
Minnette Marr	4801 La Crosse Avenue, Austin, TX 78739	214-908-1161

**Location:**

GPS data:	Latitude:	31.17387	Longitude:	-094.34048
	Accuracy:	5m	GPS Brand:	Garmin GPS 60

Survey Site Name (locale or place name):	Angelina National Forest
--	--------------------------

Directions (describe in detail the precise location of the species or community; begin with an easily identifiable starting point, include nearby landmarks, street names, and mileages):

Drive east on SH 63 from Zavalla to County Route 2743. Turn right onto CR 2743. CR 2743 forks almost immediately. The right fork goes to Caney Creek Recreation Area. Keep to the left on National Forest Route 308 until you see NF 308A. This stand of *Liatris tenuis* will be a three-minute walk from the intersection of NF308 and NF308A.

County:	Angelina	Town:	Zavalla
Name of USGS 7.5' topo (if known)	Cassells-Boykin Park, TX		

**Observation Data:**

**For Animals:** Indicate the number of adults, juveniles, nests, etc.

**For Plants:** Indicate 1) the number of flowering plants and/or sterile stems, 2) the number of separate plant groupings, 3) the health of the plants, etc.

Stopped counting at 60 plants due to close proximity of deer hunters. Will try to monitor this population again this year.  
Did not observe damage from herbivores or pathogens.

**Size:**

Please indicate the estimated area occupied by the plant or animal:

	Acres or	369	sq. meters
--	----------	-----	------------

If the area occupied is long and narrow (less than 12.5 meters wide), please indicate:

Length (meters):		Width (meters):	
------------------	--	-----------------	--

**Habitat Description:** Write a description of the habitat for the species at this location. Include ecological communities, dominants, associated species, substrates, soils, aspect, slope, hydrology, etc.

Mixed pine-oak forest. *Liatris tenuis* more common in forest than in borrow ditch along road. Pine tree bark covered with ash from prescribed burn. Understory very open at this location. Highest density of *Liatris tenuis* appears near depressions remaining from complete burning of trees trunks and roots. Canopy dominated by widely-spaced *Pinus taeda*. Understory open with scattered *Quercus* saplings, *Vaccinium arboreum*, *Callicarpa americana*. Herbaceous associates include *Ambrosia psilostachya*, *Pityopsis graminifolia*, *Aristida purpurascens*, *Tridens flavus*, *Symphotrichum patens*, *Symphotrichum ericoides*.

**Managed Area** (Name of the state or federally owned area):

Angelina National Forest

**Landscape** (Describe the current landscape surrounding the plant or animal (i.e. farmland, residential, forest, etc.))

Open pine forest maintained by prescribed burns

**Current and Potential Threats:**

Fire suppression

**Management Comments:**

This represents the largest stand of *Liatris tenuis* that I have observed in the forest. The other locations were limited mostly to the ROWs.

**Specimen:** Was a specimen taken?  yes  no

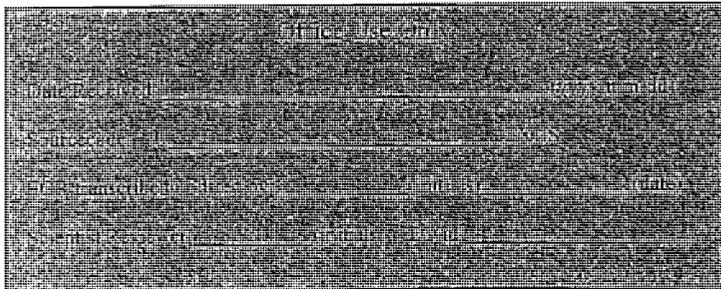
If yes, indicate the herbarium, collector(s) name(s) and number(s), accession #, and date collected:

**Photograph:** Was a photo taken?  yes  no If yes,  slide  print  digital If possible, please submit a copy of the photo.

Is a copy included with the form?  yes  no

**General Comments:**

I accidentally came across this stand while monitoring invasive species along the forest service road. A more thorough search of this area, especially earlier in the growing season, might turn up many more plants. This area has been in exceptional drought for most of the 2011 growing season.



Texas Natural Diversity Database Reporting Form  
 Wildlife Diversity Program  
 Texas Parks and Wildlife Department  
 4200 Smith School Road  
 Austin, TX 78744 (512) 389-8111

We Need Your Help. If you have information on the location of a rare plant or animal and would like to help us build the Texas Natural Diversity Database, please complete the form below. Thank you!

**Instructions:**

1. Complete this form for first hand field observations only.
2. **DO NOT COMPLETE THIS FORM** if the source of your information is a report, letter, conversation or other document. Send us the documentation.
3. Rare Birds: Complete this form only for observations during the breeding season or at large concentration areas during migration or in winter.
4. Attach a copy of a map (USGS 1:24,000 topographic map preferred) and mark the location of the rare species or its boundary (if known).  
 Note, you may print copies of topo maps from the internet at <http://www.topozone.com> . Please use 1:24,000 or 1:25,000 scale only.

**Source of Your Information:** (check one of the following)

- Firsthand field observation Does the identification need to be confirmed?  yes  no
- Other: Please do not complete this form; send us a copy of the documentation instead. If source is a conversation with someone, send us a note.

**Form Completed By:**

Minnette Marr	2011-11-10	214-908-1161
Name	Date	Phone

**Identification:**

Complete **only one form per rare plant or animal per site**. If you need a list of rare species we are currently tracking, contact our office.

Name of the rare plant or animal:	Liatris tenuis
-----------------------------------	----------------

Method of ID: (Source of key, photo, name of expert, other):	Flora of North America; Rare Plants of Texas
--	--

Date First Observed:	2011-11-05	Date Last Observed:	2011-11-05
----------------------	------------	---------------------	------------

**Observer:**

Name:	Address:	Phone:
Minnette Marr Pauline Singleton	4801 La Crosse Avenue, Austin, TX	214-908-1161 281-421-2469

**Location:**

GPS data:	Latitude:	31.31983	Longitude:	-094.20489
	Accuracy:		GPS Brand:	Garmin GPS 60

Survey Site Name (locale or place name):	Angelina National Forest, Upland Island Wilderness Area
--	---

Directions (describe in detail the precise location of the species or community; begin with an easily identifiable starting point, include nearby landmarks, street names, and mileages):

Approximately 25 miles east of Lufkin.  
 From Lufkin, take SH 103 to SH 147. Turn south on SH 147. Turn east on Forest Service Road 300 (Turkey Hill Road).

County:	San Augustine County	Town:	Broaddus
Name of USGS 7.5' topo (if known)	Harvey Creek		

**Observation Data:**

For Animals: Indicate the number of adults, juveniles, nests, etc.

For Plants: Indicate 1) the number of flowering plants and/or sterile stems, 2) the number of separate plant groupings, 3) the health of the plants, etc.

Eighty four individuals were observed.  
All plants observed had finished flowering and had immature achenes.  
No damage from insects or herbivores was observed.

**Size:**

Please indicate the estimated area occupied by the plant or animal:

	Acres or		sq. meters
--	----------	--	------------

If the area occupied is long and narrow (less than 12.5 meters wide), please indicate:

Length (meters):	207	Width (meters):	2m x 2
------------------	-----	-----------------	--------

**Habitat Description:** Write a description of the habitat for the species at this location. Include ecological communities, dominants, associated species, substrates, soils, aspect, slope, hydrology, etc.

Most plants observed on shoulder of outside (forest side) bank of borrow ditch. No plants observed more than one meter into forest.  
West side of National Forest Road: 52 plants observed. with a gap of approximately 100 meters between the plants 28 and 29  
East side of National Forest Road 300: 32 plants observed  
Turkey Hill Road cuts through a forest dominated by *Pinus taeda*. *Liatris tenuis* was observed in the borrow ditch along the road, not in the forest.  
Associated species include *Aristida* species, *Pityopsis graminifolia*, *Symphotrichum patens*, *Symphotrichum ericoides*, *Tridens flavus*, *Dichanthelium* species, and seedlings of numerous woody species (*Vitis*, *Pinus*, *Quercus* and *Rubus*)

**Managed Area** (Name of the state or federally owned area):

Angelina National Forest, Bannister Wildlife Management Area

**Landscape** (Describe the current landscape surrounding the plant or animal (i.e. farmland, residential, forest, etc.))

Evergreen forest with an open understory maintained by prescribed fire surrounds this stand of *Liatris tenuis*  
Unpaved road bisects this stand of *Liatris tenuis*

**Current and Potential Threats:**

Road widening, fire suppression; *Lygodium japonicum* invasion

**Management Comments:**

*Liatris tenuis* appears to benefit from maintenance of the borrow ditch along forest service road

**Specimen:** Was a specimen taken?  yes  no

If yes, indicate the herbarium, collector(s) name(s) and number(s), accession #, and date collected:

Lady Bird Johnson Wildflower Center, Minnette Marr, one specimen, accession number 1278, collected November 5, 2011

**Photograph:** Was a photo taken?  yes  no If yes,  slide  print  digital If possible, please submit a copy of the photo.

Is a copy included with the form?  yes  no

**General Comments:**

As part of a grant from the National Forest Foundation, I am working with local volunteers to monitor rare species in the National Forests and Grasslands of Texas. Pauline Singleton and I searched for a stand noted by the MacRoberts in 1995.

*Liatris tenuis* (Asteraceae) SAN AUGUSTINECO. Angelina National Forest. Compartment 22/23. On both sides of FS 300, just north of FS 356. Mesic pine-oak woodlands edge. 8/9/1995 B. R. & M. H. MacRoberts 2864 [TEX 00391793]

## Release of Audio-Visual Material

I give permission to the Center for Plant Conservation to use photographic or other visual material as listed below for use in that organization's publicity and education programs. I understand that the Center is a non-profit, charitable organization, that the materials produced are for educational purposes, and that no admission will be charged for viewing. Fill out the below for each photo:

Photo 1 File name: Hibiscus dasycalyx\_calyx.tif

Photo 2 File name: Hibiscus dasycalyx\_fruit.tif

Photo 3 File name: Hibiscus dasycalyx\_habitat.tif

Photo 4 File name: Liatris tenuis\_Angelina habitat.tif

Photo 5 File name: Liatris tenuis\_fruit.tif

Photo 6 File name: Liatris tenuis\_seedheads.tif

Photo 7 File name: Rudbeckia scabrifolia\_habitat.tif

Photo 8 File name: Rudbeckia scabrifolia\_infructescence.tif

Photo 9 File name:

Signed: Minnette Marr

Date 12-15-2011

Minnette Marr

Name

4801 La Crosse

Address

Austin, TX 78739

\_\_\_\_\_

PLEASE put only one species per tab

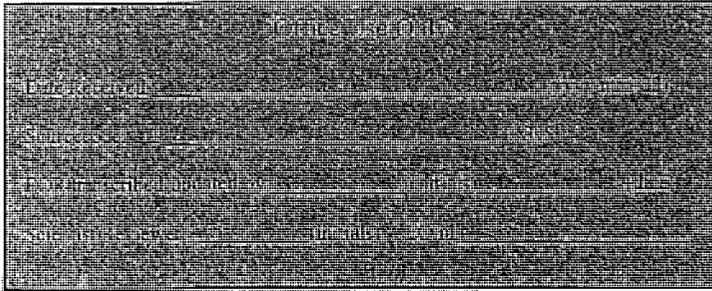
	PHOTO 1	PHOTO 2	PHOTO 3	PHOTO 4	PHOTO 5
File name	Angelina habitat	Fruit	Seedheads		
Species name	Liatris tenuis	Liatris tenuis	Liatris tenuis		
Synonyms					
Name of people (if any)					
Location	Angelina National Forest	Angelina National Forest	Angelina National Forest		
Date (dd/mm/yyyy)	11/6/2011	11/6/2011	11/6/2011		
Photographer	Minnette Marr	Minnette Marr	Minnette Marr		
Image Owner (if different than photographer)					

	PHOTO 6	PHOTO 7	PHOTO 8	PHOTO 9	PHOTO 10
File name					
Species name					
Synonyms					
Name of people (if any)					
Location					
Date (dd/mm/yyyy)					
Photographer					
Image Owner (if different than photographer)					

	PHOTO 11	PHOTO 12	PHOTO 13	PHOTO 14	PHOTO 15
File name					
Species name					
Synonyms					
Name of people (if any)					
Location					
Date (dd/mm/yyyy)					
Photographer					
Image Owner (if different than photographer)					

	PHOTO 16	PHOTO 17	PHOTO 18	PHOTO 19	PHOTO 20
File name					
Species name					
Synonyms					
Name of people (if any)					
Location					
Date (dd/mm/yyyy)					
Photographer					
Image Owner (if different than photographer)					

01/28/2008 Version Date



Texas Natural Diversity Database Reporting Form  
 Wildlife Diversity Program  
 Texas Parks and Wildlife Department  
 4200 Smith School Road  
 Austin, TX 78744 (512) 389-8111

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4. Attach a copy of a map (USGS 1:24,000 topographic map preferred) and mark the location of the rare species or its boundary (if known). Note, you may print copies of topo maps from the internet at <http://www.topozone.com>. Please use 1:24,000 or 1:25,000 scale only.

**Source of Your Information:** (check one of the following)

- Firsthand field observation Does the identification need to be confirmed?  yes  no
- Other: Please do not complete this form; send us a copy of the documentation instead. If source is a conversation with someone, send us a note.

**Form Completed By:**

Minnette Marr and Lori Horne	2011-11-21 and 2011-11-29	MM 214-908-1161; LH 713-817-9961
Name	Date	Phone

**Identification:**

Complete only one form per rare plant or animal per site. If you need a list of rare species we are currently tracking, contact our office.

Name of the rare plant or animal:	Rudbeckia scabrifolia		
Method of ID: (Source of key, photo, name of expert, other):	Thomas Philipps; Flora of North America; Rare Plants of Texas		
Date First Observed:	2011-10-05	Date Last Observed:	2011-11-21

**Observer:**

Name:	Address:	Phone:
Minnette Marr Lori Horne	4801 La Crosse Avenue, Austin, TX 78739 30 County Route 225, Brookeland, TX 75931	214-908-1161 713-817-9961

**Location:**

GPS data:	Latitude:	31.06096	Longitude:	-094.15286
	Accuracy:		GPS Brand:	Garmin GPS 60

Survey Site Name (locale or place name):	Harveytown
--	------------

Directions (describe in detail the precise location of the species or community; begin with an easily identifiable starting point, include nearby landmarks, street names, and mileages):

Start at intersection of TX 63 and TX 255. Drive NE on TX 255. Turn left on Letney Road (County Road 335). Drive NW on Letney Road for about 0.5 mile. Turn left on County Route 059. Drive about 0.9 mile on CR 059. Park at end of road. Coordinates for this preferred parking spot are 31.06134, -094.15630. The EO is about 362 m east of these coordinates.

County:	Jasper	Town:	Jasper
Name of USGS 7.5' topo (if known)	Ebenezer		

**Observation Data:**

For Animals: Indicate the number of adults, juveniles, nests, etc.

For Plants: Indicate 1) the number of flowering plants and/or sterile stems, 2) the number of separate plant groupings, 3) the health of the plants, etc.

156 plants with mature fruit dispersing

**Size:**

Please indicate the estimated area occupied by the plant or animal:

	Acres or	208.6	sq. meters
--	----------	-------	------------

If the area occupied is long and narrow (less than 12.5 meters wide), please indicate:

Length (meters):		Width (meters):	
------------------	--	-----------------	--

**Habitat Description:** Write a description of the habitat for the species at this location. Include ecological communities, dominants, associated species, substrates, soils, aspect, slope, hydrology, etc.

West Gulf Coast Plain Seepage Bog  
 Woodland canopy dominated by *Pinus palustris* and *Pinus taeda*  
 Understory of scattered *Myrica heterophylla*, *Persea borbonia* and *Magnolia virginiana*  
 Herbaceous layer dominated by *Sarracenia alata*. Associates include *Rhynchospora* spp., *Dichanthelium* sp., and *Sphagnum* sp.

**Managed Area** (Name of the state or federally owned area):

Angelina National Forest

**Landscape** (Describe the current landscape surrounding the plant or animal (i.e. farmland, residential, forest, etc.))

Forest maintained by prescribed burns

**Current and Potential Threats:**

Current threat: drought. Potential threat: fire suppression

**Management Comments:**

*Rudbeckia scabrifolia* is most abundant in more open areas.

**Specimen:** Was a specimen taken?  yes  no

If yes, indicate the herbarium, collector(s) name(s) and number(s), accession #, and date collected:

**Photograph:** Was a photo taken?  yes  no If yes,  slide  print  digital If possible, please submit a copy of the photo.

Is a copy included with the form?  yes  no

**General Comments:**

Seeds were collected earlier this fall with Thomas Philipps (US Forest Service).

A total of 2005 seeds were collected from 34 plants on October 5, 2011.

These seeds were collected by maternal lines and will be stored at the National Center for Genetic Resources Preservation in Fort Collins, Colorado.

Show Masthead

Participating Institutions Only Entrance

Select Accession

Options

<b>Taxon:</b>	Rudbeckia scabrifolia	<b>CPC Num:</b>	8221
<b>Institution:</b>	The Lady Bird Johnson Wildflower Center	<b>Code:</b>	LBJWC
<b>Record Type:</b>	Collateral Record		
<b>Accession:</b>	CPC20110005	<b>Token:</b>	17237
<b>Accession Date:</b>	12/15/2011	<b>Created:</b>	12/15/2011
<b>Deaccession Date:</b>	-1	<b>Changed:</b>	12/15/2011
<b>Submitted By:</b>	Minnette Marr		

Please note that fields in which there have been no values entered have been updated to "N/A" (for text fields) or "-1" (for numeric or date fields). "N/A" and "-1" do not appear on the Accession edit form.

Accession Number: CPC20110005

General Accession Data					
<b>Collection Date:</b>	10/05/2011	<b>Accession Date:</b>	12/15/2011	<b>Deaccessioned?</b>	No
		<b>Deaccession Date:</b>	-1		
<b>Propagation Notes:</b>		N/A			
<b>Parent Accession(s) Required if propagated:</b>		N/A			
<b>Herbarium Collection Voucher:</b>		None			
<b>Represented In Collection?</b>		No			
<b>Accession Notes:</b> N/A					

Field Collection Data: Location Section			
<b>Field Collection Form sent to CPC?:</b>	True	<b>Collector Name:</b>	Minnette Marr, Thomas Philipps
<b>Collection State/Province:</b>	Texas	<b>Collection County:</b>	Jasper
<b>Location Popular Name:</b>	Angelina NF	<b>Location Notes:</b>	Country Road 059
<b>Landowner Type:</b>	Federal - USFS	<b>LandOwner Name and Address:</b>	Other
<b>EO-ID:</b>	00-0000	<b>Elevation (in Meters):</b>	44
<b>Latitude &amp; Longitude:</b>	31.06096 N 94.15286 W Formats: 39 07 09 or 39.1180		
<b>UTM Zone, North, &amp; East:</b>	-1 -1 mN -1 mE 6 digits for mN & mE		
<b>Meridian:</b>	N/A		
<b>Township &amp; Range:</b>	N/A T. N/A R. -1 Section N/A Qtr. Sec. Formats: T. 33N R. 07W Section 24 Qtr. Sec. SENW (not required) (not required)		
<b>USGS topo Map:</b>	Ebenezer		

Field Collection Data: Habitat Section			
<b>Light:</b>	1/4 shade	<b>Slope:</b>	0-5%
<b>Litter:</b>	N/A	<b>Exposure:</b>	N/A
<b>Phosphorus:</b>	N/A	<b>Potassium:</b>	N/A
<b>Calcium:</b>	N/A	<b>Magnesium:</b>	N/A
<b>Cation Exchange Capacity:</b>	N/A	<b>Soil Moisture:</b>	N/A

Organic Matter:	N/A	Soil Type:	Sandy loam
Soil PH:	N/A		
Parent Rock :	mudstone		
Plant Community :	seepage bog		
Associated Species:	Pinus palustris, Pinus taeda, Myrica heterophylla, Persea borbonia, Magnolia virginiana, Sarracenia alata, Rhynchospora spp., Dichanthelium spp., Sphagnum spp.		

Field Collection Data: Population Section			
Total number of plants present at collection:	101-500	Area covered (length in Meters)	N/A
Area covered (Width in Meters)	N/A	Average Plants per Square Meter	0.75
Maximum Plants per Square Meter	N/A	Percent Reproductives	22
Percent Non-Reproductives	N/A	Percent Seedlings	N/A
Percent in Bud	N/A	Percent in Flower	N/A
Percent in Fruit	N/A	Number of Genets:	34
Threats	drought; fire suppression		
Field Collection Notes	area = 208.6 m, 2005 seeds collected by maternal lines; only 22% with ripe seed on 10/05. Most with ripe seed during monitoring visit on 11/21/2011.		

Reason for Update?	
Indicate the reason this Accession is being updated?	New Accession
<b>Submitted By: Minnette Marr</b>	
Please add storage location and propagule information by clicking	
<input type="button" value="Go To Select Inventory"/>	

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Created by the Center for Plant Conservation: [contact us](#)

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Photo 5 File name: Liatris tenuis\_fruit.tif

Photo 6 File name: Liatris tenuis\_seedheads.tif

Photo 7 File name: Rudbeckia scabrifolia\_habitat.tif

Photo 8 File name: Rudbeckia scabrifolia\_infructescence.tif

Photo 9 File name:

Signed: Minnette Marr

Date 12-15-2011

Minnette Marr

Name

4801 La Crosse

Address

Austin, TX 78739

PLEASE put only one species per tab

	PHOTO 1	PHOTO 2	PHOTO 3	PHOTO 4	PHOTO 5
File name	Habitat	Infructescence			
Species name	Rudbeckia scabrifolia	Rudbeckia scabrifolia			
Synonyms					
Name of people (if any)					
Location	Harveytown	Harveytown			
Date (dd/mm/yyyy)	11/21/2011	11/21/2011			
Photographer	Minnette Marr	Minnette Marr			
Image Owner (if different than photographer)					

	PHOTO 6	PHOTO 7	PHOTO 8	PHOTO 9	PHOTO 10
File name					
Species name					
Synonyms					
Name of people (if any)					
Location					
Date (dd/mm/yyyy)					
Photographer					
Image Owner (if different than photographer)					

	PHOTO 11	PHOTO 12	PHOTO 13	PHOTO 14	PHOTO 15
File name					
Species name					
Synonyms					
Name of people (if any)					
Location					
Date (dd/mm/yyyy)					
Photographer					
Image Owner (if different than photographer)					

	PHOTO 16	PHOTO 17	PHOTO 18	PHOTO 19	PHOTO 20
File name					
Species name					
Synonyms					
Name of people (if any)					
Location					
Date (dd/mm/yyyy)					
Photographer					
Image Owner (if different than photographer)					

Office Use Only	
Date Received:	_____ (yyyy-mm-dd)
Sourcecode:	U _____ TXUS
EOR transcribed/updated by:	_____ (initials) _____ (date)
Scientist Reviewer:	_____ (initials) EO id: _____

Texas Natural Diversity Database Reporting Form	
<b>Wildlife Diversity Program</b>	
<b>Texas Parks and Wildlife Department</b>	
<b>4200 Smith School Road</b>	
<b>Austin, TX 78744</b>	(512) 389-8111
We Need Your Help. If you have information on the location of a rare plant or animal and would like to help us build the Texas Natural Diversity Database, please complete the form below. Thank you!	

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3. Rare Birds: Complete this form only for observations during the breeding season or at large concentration areas during migration or in winter.
4. Attach a copy of a map (USGS 1:24,000 topographic map preferred) and mark the location of the rare species or its boundary (if known). Note, you may print copies of topo maps from the internet at <http://www.topozone.com> . Please use 1:24,000 or 1:25,000 scale only.

**Source of Your Information:** (check one of the following)

- Firsthand field observation Does the identification need to be confirmed?  yes  no
- Other: Please do not complete this form; send us a copy of the documentation instead. If source is a conversation with someone, send us a note.

**Form Completed By:**

Minnette Marr	26 April 2011	214-908-1161
Name	Date	Phone

**Identification:**

Complete **only one form per rare plant or animal per site**. If you need a list of rare species we are currently tracking, contact our office.

Name of the rare plant or animal:	Callirhoe scabriuscula
-----------------------------------	------------------------

Method of ID: (Source of key, photo, name of expert, other):	Jackie Poole
--	--------------

Date First Observed:	07 June 2010	Date Last Observed:	07 June 2010
----------------------	--------------	---------------------	--------------

**Observer:**

Name:	Address:	Phone:
Minnette Marr	4801 La Crosse Avenue Austin, TX 78739	214-908-1161

**Location:**

GPS data:	Latitude:	31.704667°N	Longitude:	99.978167°W
	Accuracy:	5 meters	GPS Brand:	Garmin GPS 60

Survey Site Name (locale or place name):	Texas Greenhouse (formerly known as Burns Nursery)
--	--

Directions (describe in detail the precise location of the species or community; begin with an easily identifiable starting point, include nearby landmarks, street names, and mileages):

9222 US Highway 67 S, Ballinger, TX From the intersection of US Highway 83 S (7 <sup>th</sup> Street) and US Highway 67 S, travel 9 miles southwest on US 67. The site will be on the right side (west side) of US Highway 67.
---

County:	Runnels	Town:	Ballinger
Name of USGS 7.5' topo (if known)	Ballinger		

**Observation Data:**

For Animals: Indicate the number of adults, juveniles, nests, etc.

For Plants: Indicate 1) the number of flowering plants and/or sterile stems, 2) the number of separate plant groupings, 3) the health of the plants, etc.

55 plants; 20 with flowers; 54 with fruit;  
Jackie Poole described health of individual stems: 3 poor, 12 average; 35 good; 5 very good; 1 excellent  
(Individual stems did not equal individual plants in three cases.)

**Size:**

Please indicate the estimated area occupied by the plant or animal:

1	Acres or		sq. meters
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If the area occupied is long and narrow (less than 12.5 meters wide), please indicate:

Length (meters):		Width (meters):	
------------------	--	-----------------	--

**Habitat Description:** Write a description of the habitat for the species at this location. Include ecological communities, dominants, associated species, substrates, soils, aspect, slope, hydrology, etc.

Deep sand; Cnidoscolus texanus, Artemisia ludoviciana, Cenchrus spinifex, Opuntia macrorhiza

**Managed Area** (Name of the state or federally owned area):

Not applicable

**Landscape** (Describe the current landscape surrounding the plant or animal (i.e. farmland, residential, forest,etc.))

**Current and Potential Threats:**

**Management Comments:**

**Specimen:** Was a specimen taken?  yes  no

If yes, indicate the herbarium, collector(s) name(s) and number(s), accession #, and date collected:

**Photograph:** Was a photo taken?  yes  no      If yes,  slide  print  digital      If possible, please submit a copy of the photo.

Is a copy included with the form?  yes  no

**General Comments:**

Landowners plan to build a driveway through this population.



Office Use Only	
Date Received:	_____ (yyyy-mm-dd)
Sourcecode:	U _____ TXUS
EOR transcribed/updated by:	_____ (initials) _____ (date)
Scientist Reviewer:	_____ (initials) EO id: _____

Texas Natural Diversity Database Reporting Form  
**Wildlife Diversity Program**  
**Texas Parks and Wildlife Department**  
**4200 Smith School Road**  
**Austin, TX 78744** (512) 389-8111

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4. Attach a copy of a map (USGS 1:24,000 topographic map preferred) and mark the location of the rare species or its boundary (if known). Note, you may print copies of topo maps from the internet at <http://www.topozone.com> . Please use 1:24,000 or 1:25,000 scale only.

**Source of Your Information:** (check one of the following)

Firsthand field observation Does the identification need to be confirmed?  yes  no

Other: Please do not complete this form; send us a copy of the documentation instead. If source is a conversation with someone, send us a note.

**Form Completed By:**

Minnette marr	March 29, 2011	214-908-1161
Name	Date	Phone

**Identification:**

Complete **only one form per rare plant or animal per site**. If you need a list of rare species we are currently tracking, contact our office.

Name of the rare plant or animal:	Salvia pentstemonoides
-----------------------------------	------------------------

Method of ID: (Source of key, photo, name of expert, other):	Description in Rare Plants of Texas (Poole, Carr, price & Singhurst 2007)
--	---

Date First Observed:	July 27, 2010	Date Last Observed:	August 5, 2010
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**Observer:**

Name:	Address:	Phone:
Minnette Marr and Bill Ward	Lady Bird Johnson Wildflower Center 4801 La Crosse Ave Asutin, TX 78739	512-232-0240

**Location:**

GPS data:	Latitude:	29.77578	Longitude:	98.68788°
	Accuracy:	± 5m	GPS Brand:	Garmon GPS 60

Survey Site Name (locale or place name):	Cibolo Creek Canyon
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Directions (describe in detail the precise location of the species or community; begin with an easily identifiable starting point, include nearby landmarks, street names, and mileages):

From Interstate Highway 10 and Scenic Loop. North on Scenic Loop. East on Cascade Cavern, north on Ranch Drive tocul-de-sac. Follow private drive that goes to northeast. Park by barn at end of driveway. Walk north to Cibolo Creek. The collection site is isolated from the rest of the ranch by the Cibolo Creek. According to Bill Ward this sisolated tract will be donated to Cibolo Nature Center.
---

County:	Kendall	Town:	Boerne
Name of USGS 7.5' topo (if known)	Boerne		

01/28/2008 Version Date

**Observation Data:**

For Animals: Indicate the number of adults, juveniles, nests, etc.

For Plants: Indicate 1) the number of flowering plants and/or sterile stems, 2) the number of separate plant groupings, 3) the health of the plants, etc.

Thirty plants, many with multiple stems.

**Size:**

Please indicate the estimated area occupied by the plant or animal:

	Acres or		sq. meters
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If the area occupied is long and narrow (less than 12.5 meters wide), please indicate:

Length (meters):	15	Width (meters):	6
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**Habitat Description:** Write a description of the habitat for the species at this location. Include ecological communities, dominants, associated species, substrates, soils, aspect, slope, hydrology, etc.

North-facing slope of canyon carved by Cibolo Creek.  
Plants inhabiting ledges inaccessible to cattle and deer.  
Dominants: Quercus buckleyi, Juniperus ashei, Prunus serotina.  
Associated species: Styrax platanifolius, Toxicodendron radicans, Philadelphus ernestii

**Managed Area** (Name of the state or federally owned area):

NA

**Landscape** (Describe the current landscape surrounding the plant or animal (i.e. farmland, residential, forest,etc.))

Above: woodland dominated by Juniperus ashei  
Below: gallery of Cephalanthus occidentalis

**Current and Potential Threats:**

Potential threat: shading out by woody species

**Management Comments:**

**Specimen:** Was a specimen taken?  yes  no

If yes, indicate the herbarium, collector(s) name(s) and number(s), accession #, and date collected:

**Photograph:** Was a photo taken?  yes  no    If yes,  slide  print  digital    If possible, please submit a copy of the photo.

Is a copy included with the form?  yes  no

**General Comments:**

Bill Ward (authorized agent for collecting visit) died in January 2011. I hope that Patty Leslie Pazstor will be able to secure access to this population in the future.  
  
Archer Price wrote an article about this collection for the Austin American Statesman.

Office Use Only	
Date Received: (yyyy-mm-dd)	
Sourcecode: U _____ TXUS	
EOR transcribed/updated by: _____ (initials) _____ (date)	
Scientist Reviewer: _____ (initials) EO id: _____	

Texas Natural Diversity Database Reporting Form  
**Wildlife Diversity Program**  
**Texas Parks and Wildlife Department**  
**4200 Smith School Road**  
**Austin, TX 78744** (512) 389-8111

We Need Your Help. If you have information on the location of a rare plant or animal and would like to help us build the Texas Natural Diversity Database, please complete the form below. Thank you!

**Instructions:**

1. Complete this form for first hand field observations only.
2. **DO NOT COMPLETE THIS FORM** if the source of your information is a report, letter, conversation or other document. Send us the documentation.
3. Rare Birds: Complete this form only for observations during the breeding season or at large concentration areas during migration or in winter.
4. Attach a copy of a map (USGS 1:24,000 topographic map preferred) and mark the location of the rare species or its boundary (if known). Note, you may print copies of topo maps from the internet at <http://www.topozone.com>. Please use 1:24,000 or 1:25,000 scale only.

**Source of Your Information:** (check one of the following)

- Firsthand field observation Does the identification need to be confirmed?  yes  no
- Other: Please do not complete this form; send us a copy of the documentation instead. If source is a conversation with someone, send us a note.

**Form Completed By:**

Minnette Marr	2012_06_09	214-908-1161
Name	Date	Phone

**Identification:**

Complete **only one form per rare plant or animal per site**. If you need a list of rare species we are currently tracking, contact our office.

Name of the rare plant or animal:	Streptanthus bracteatus
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Method of ID: (Source of key, photo, name of expert, other):	Expert: Wendy Leonard
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Date First Observed:	2012-01-13 by W. Leonard	Date Last Observed:	(2012-06-08 by MM, WL, AS)
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**Observer:**

Name:	Address:	Phone:
Wendy Leonard	13203 Blanco Rd, San Antonio, TX 78216	210-260-2604
Minnette Marr	4801 La Crosse Ave, Austin, TX 78739	214-908-1161
Anna Strong	7805 Downing St, Austin, TX 78759	314-517-2334

**Location:**

GPS data:	Latitude: ???	Longitude: ???
	Accuracy:	GPS Brand:

Survey Site Name (locale or place name):	Rancho Diana
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Directions (describe in detail the precise location of the species or community; begin with an easily identifiable starting point, include nearby landmarks, street names, and mileages):

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County:	Bexar	Town:	Helotes
Name of USGS 7.5' topo (if known)	Helotes		

**Observation Data:**

For Animals: Indicate the number of adults, juveniles, nests, etc.

For Plants: Indicate 1) the number of flowering plants and/or sterile stems, 2) the number of separate plant groupings, 3) the health of the plants, etc.

Information provided by Wendy Leonard.  
 More than 100 rosettes observed in January. Plants started bolting 2012-03-14. One hundred forty four (144) plants observed on 2012-05-01. Less than 30% of plants that flowered produced siliques. April was drier than average. Some plants produced additional flowers after rain in early May. A few plants were in flower on day that siliques were collected.

**Size:**

Please indicate the estimated area occupied by the plant or animal:

1.5	Acres or		sq. meters
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If the area occupied is long and narrow (less than 12.5 meters wide), please indicate:

Length (meters):		Width (meters):	
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**Habitat Description:** Write a description of the habitat for the species at this location. Include ecological communities, dominants, associated species, substrates, soils, aspect, slope, hydrology, etc.

Dominant species include *Acacia roemeriana*, *Sophora secundiflora*, *Opuntia engelmannii*, *Mahonia trifoliolata*, *Callinadra conferta*, *Diospyros texana*, and *Quercus sinuata* var. *breviloba*

Associated species include *Gymnosperma glutinosum*, *Phacelia congesta*, *Senna Lindheimeriana*, *Triodanis coloradoensis*, *Arabis pertiolaris* and *Muhlenbergia* sp.

**Managed Area**(Name of the state or federally owned area):

City of San Antonio Natural Area (not open to the public at this time)

**Landscape** (Describe the current landscape surrounding the plant or animal (i.e. farmland, residential, forest,etc.))

Residential lots more that one acre

**Current and Potential Threats:**

Wild hogs, whitetail deer, butterfly larvae

**Management Comments:**

Numerous small (DBH < 6 inches) *Juniperus ashei* were removed three years ago to improve habitat for black cap vireo. Removal of large woody species will be repeated as necessary to maintain habitat for BCV. A fence will be constructed this fall to exclude mammals from site with *Streptanthus bracteatus*.

**Specimen:** Was a specimen taken?  yes  no

If yes, indicate the herbarium, collector(s) name(s) and number(s), accession #, and date collected:

**Photograph:** Was a photo taken?  yes  no      If yes,  slide  print  digital      If possible, please submit a copy of the photo.

Is a copy included with the form?  yes  no

**General Comments:**



Office Use Only	
Date Received:	_____ (yyyy-mm-dd)
Sourcecode: U	_____ TXUS
EOR transcribed/updated by:	_____ (initials) _____ (date)
Scientist Reviewer:	_____ (initials) EO id: _____

Texas Natural Diversity Database Reporting Form  
**Wildlife Diversity Program**  
**Texas Parks and Wildlife Department**  
**4200 Smith School Road**  
**Austin, TX 78744** (512) 389-8111

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4. Attach a copy of a map (USGS 1:24,000 topographic map preferred) and mark the location of the rare species or its boundary (if known). Note, you may print copies of topo maps from the internet at <http://www.topozone.com> . Please use 1:24,000 or 1:25,000 scale only.

**Source of Your Information:** (check one of the following)

Firsthand field observation Does the identification need to be confirmed?  yes  no

Other: Please do not complete this form; send us a copy of the documentation instead. If source is a conversation with someone, send us a note.

**Form Completed By:**

Minnette Marr	23 June 2010	214-908-1161 (cell)
Name	Date	Phone

**Identification:**

Complete **only one form per rare plant or animal per site**. If you need a list of rare species we are currently tracking, contact our office.

Name of the rare plant or animal:	Streptanthus bracteatus
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Method of ID: (Source of key, photo, name of expert, other):	Jackie Poole and Jason Singhurst by photo in 2009 for Chad Norris
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Date First Observed:	21 June 2010	Date Last Observed:	21 June 2010
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**Observer:**

Name:	Address:	Phone:
Minnette Marr	4801 La Crosse Avenue Austin, TX 78739	512-232-0240

**Location:**

GPS data:	Latitude:	30.0213°N	Longitude:	-98.2074°W
	Accuracy:	±24 ft	GPS Brand:	Garmin GPS 60

Survey Site Name (locale or place name):	Rough Hollow Ranch
--	--------------------

Directions (describe in detail the precise location of the species or community; begin with an easily identifiable starting point, include nearby landmarks, street names, and mileages):

Starting point: intersection of FM 2325/RR 2325 and Burnett Ranch Road (approximately 7 miles northwest of Wimberley). Drive south on Burnett Ranch Road two miles. Entrance to Rough Hollow Ranch will be on the left.
---

County:	Hays	Town:	Wimberley
Name of USGS 7.5' topo (if known)	Rough Hollow		

01/28/2008 Version Date

**Observation Data:**

For Animals: Indicate the number of adults, juveniles, nests, etc.

For Plants: Indicate 1) the number of flowering plants and/or sterile stems, 2) the number of separate plant groupings, 3) the health of the plants, etc.

Twenty plants were observed at Rough Hollow Ranch. Approximately the same number were observed on the other side of the fence separating Rough Hollow Ranch from the adjacent ranch. Most of the plants that were taller than the neighboring *Verbesina virginica* had at least seven fruit. Most of the plants under the canopy of *Verbesina virginica* did not have any fruit. Most of the fruit present during this visit were too green to harvest. Powdery mildew was observed on one plant.

**Size:**

Please indicate the estimated area occupied by the plant or animal:

	Acres or	20	sq. meters
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If the area occupied is long and narrow (less than 12.5 meters wide), please indicate:

Length (meters):	10	Width (meters):	2
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**Habitat Description:** Write a description of the habitat for the species at this location. Include ecological communities, dominants, associated species, substrates, soils, aspect, slope, hydrology, etc.

The plants were growing about mid-slope above the perennial spring-fed stream flowing through Rough Hollow. The plants were growing in a canopy opening along a fenceline separating two ranches. The plant community is similar to the Buckley oak-Texas ash-Ashe juniper forest described by NatureServe. The substrate is limestone and the soils are extremely stony clays. The slope approaches 30 degrees.

**Managed Area** (Name of the state or federally owned area):

Not applicable

**Landscape** (Describe the current landscape surrounding the plant or animal (i.e. farmland, residential, forest, etc.))

Ranch

**Current and Potential Threats:**

This EO appears to be safe as long as the current landowner is responsible for managing the Rough Hollow Ranch. The greatest threat would be a change in ownership or management that results in overgrazing or development.

**Management Comments:**

*Triadica sebifera* was observed elsewhere in Rough Hollow.

**Specimen:** Was a specimen taken?  yes  no

If yes, indicate the herbarium, collector(s) name(s) and number(s), accession #, and date collected:

**Photograph:** Was a photo taken?  yes  no    If yes,  slide  print  digital    If possible, please submit a copy of the photo.

Is a copy included with the form?  yes  no

**General Comments:**

*Streptanthus bracteatus* was first observed on the adjacent ranch in 2009 by Chad Norris while monitoring springs. We need to conduct a more thorough search of Rough Hollow in the spring of 2011.



# LANDOWNER PERMISSION FOR WILDLIFE RESEARCH

(Pursuant to Section 12.103 of the Texas Parks and Wildlife Code)

**Use of Information:** I hereby grant approval for Texas Parks and Wildlife Department employees to enter property I own or manage to conduct scientific investigations and research on wildlife and to record and use (such as in analyses) site-specific information from the property. This may include placing that information onto a topographic map and entering the information into a Department database. Thus, the information could be viewed by the public.

Wendy Leonard  
(Landowner or authorized agent)

6/8/2012  
(Date)

**Reporting of Information:** I hereby grant approval for Texas Parks and Wildlife Department employees to report (such as in publications or technical reports) the above approved information in a manner that permits identification of the location of the specific parcel of property I own or manage.

Wendy Leonard  
(Landowner or authorized agent)

6/8/2012  
(Date)

3. **Other Conditions:** List any other conditions that apply to this approval.

please do not publicly disclose the exact location  
of the population

4. **Name and Address:**

Wendy Leonard  
(Name of Landowner or Authorized Agent)

21395 Milsa Rd.  
(Address)

San Antonio, TX 78254  
(City, State, Zip)

5. **Optional:**

Office Use Only	
Date Received:	_____ (yyyy-mm-dd)
Sourcecode:	U _____ TXUS
EOR transcribed/updated by:	_____ (initials) _____ (date)
Scientist Reviewer:	_____ (initials) EO id: _____

<p>Texas Natural Diversity Database Reporting Form  <b>Wildlife Diversity Program</b>  <b>Texas Parks and Wildlife Department</b>  <b>4200 Smith School Road</b>  <b>Austin, TX 78744</b> (512) 389-8111</p> <p>We Need Your Help. If you have information on the location of a rare plant or animal and would like to help us build the Texas Natural Diversity Database, please complete the form below. Thank you!</p>
---

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4. Attach a copy of a map (USGS 1:24,000 topographic map preferred) and mark the location of the rare species or its boundary (if known). Note, you may print copies of topo maps from the internet at <http://www.topozone.com> . Please use 1:24,000 or 1:25,000 scale only.

**Source of Your Information:** (check one of the following)

- Firsthand field observation Does the identification need to be confirmed?  yes  no
- Other: Please do not complete this form; send us a copy of the documentation instead. If source is a conversation with someone, send us a note.

**Form Completed By:**

Anita Tiller, David Berkshire	August 19, 2012	281-443-8731
Name	Date	Phone

**Identification:**

Complete **only one form per rare plant or animal per site**. If you need a list of rare species we are currently tracking, contact our office.

Name of the rare plant or animal:	Hibiscus dasycalyx
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Method of ID: (Source of key, photo, name of expert, other):	Expert - Jackie Poole(TPWD)
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Date First Observed:	August 16, 2012	Date Last Observed:	August 16, 2012
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**Observer:**

Name:	Address:	Phone:
Anita Tiller	Mercer Arboretum and Botanic Gardens 22306 Aldine Westfield Rd., Humble, TX 77338	2281-443-8731
Minnette Marr Karen Clary Amber Miller	4801 La Crosse Avenue, Austin, TX 78739 (as above) USFWS	214-908-1161 (as above)

**Location:**

GPS data:	Latitude:	31.10111	Longitude:	-095.47569
	Accuracy:		GPS Brand:	Garmin GPS 60

Survey Site Name (locale or place name):	Texas Land Conservancy Hibiscus dasycalyx Preserve
--	--

Directions (describe in detail the precise location of the species or community; begin with an easily identifiable starting point, include nearby landmarks, street names, and mileages):

<p>The following information was recorded during the site visit to the 30-acre preserve owned by the Texas Land Conservancy near Lovelady. Feel free to check with Jackie Poole and Jason Singhurst for additional information.</p> <p>target species: Hibiscus dasycalyx  date: 2012-08-16  county: Houston</p>
--

01/28/2008 Version Date

closest city with a post office: Lovelady  
 coordinates: 31.10111, -095.47569  
 associated species: *Sesbania drummondii*, *Polygonum* sp., *Croton capitatus*, *Eupatorium serotinum*, *Cephalanthus occidentalis*, *Iva angustifolia*,  
*Baccharis halimifolia*, *Poncirus trifoliata*, *Carya illinoensis*, *Salix nigra*, *Brunnichia ovata*  
 notes:  
 1) no flowers observed at this site (possible causes include dry conditions and defoliation by grasshoppers)  
 2) hydrology is not well understood (HIDA prefers wet conditions in winter)  
 3) 30 acres owned by the Texas Land Conservancy (Daniel Dietz is land steward.)  
 4) cows browsed plants to ground in 2011 (extreme drought), but not in 2012  
 5) site across FM230 that previously was home to HIDA was contoured and converted to a pine plantation

background information obtained online:

directions from intersection of TX 19 and FM 230: travel west on FM 230 approximately 2.6 miles, site is on north side of road (see attachment)

watershed: Tantabogue Creek (Tantabogue Creek rises two miles southwest of Crockett in south central Houston County (at 31°17' N, 95°30' W). The creek formerly flowed southeast for twenty-six miles to its mouth on White Rock Creek in western Trinity County (at 31°01' N, 95°21' W). Since the construction of Lake Livingston in the late 1960s the creek has been inundated in its lower reaches. It crosses flat terrain surfaced by clay and sandy loam that supports water-tolerant hardwoods, conifers, and grasses. (Handbook of Texas Online)

soil: Nahatchie loam, frequently flooded (Web Soil Survey)

County:	Houston	Town:	Lovelady
Name of USGS 7.5' topo (if known)	Centralia		

### Observation Data:

For Animals: Indicate the number of adults, juveniles, nests, etc.

For Plants: Indicate 1) the number of flowering plants and/or sterile stems, 2) the number of separate plant groupings, 3) the health of the plants, etc.

### Size:

Please indicate the estimated area occupied by the plant or animal:

	Acres or	3,000	sq. meters
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If the area occupied is long and narrow (less than 12.5 meters wide), please indicate:

Length (meters):		Width (meters):	
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**Habitat Description:** Write a description of the habitat for the species at this location. Include ecological communities, dominants, associated species, substrates, soils, aspect, slope, hydrology, etc.

Bog  
*Cephalanthus occidentalis*, *Brunnichia ovata*, *Mikana scandens*, and *Juncus* cf. *effusus* dominate the zone to the outside of HIDA  
*Sesbania herbacea* and *Heliotropium indicum* are scattered in the central area.

**Managed Area** (Name of the state or federally owned area):

Davy Crockett National Forest

**Landscape** (Describe the current landscape surrounding the plant or animal (i.e. farmland, residential, forest, etc.))

Forest

**Current and Potential Threats:**

Encroachment by *Brunnichia ovata*; herbivory; future droughts

**Management Comments:**

Volunteers or contractors could cut back *Brunnichia ovata* growing on *Hibiscus dasycalyx*

**Specimen:** Was a specimen taken?  yes  no

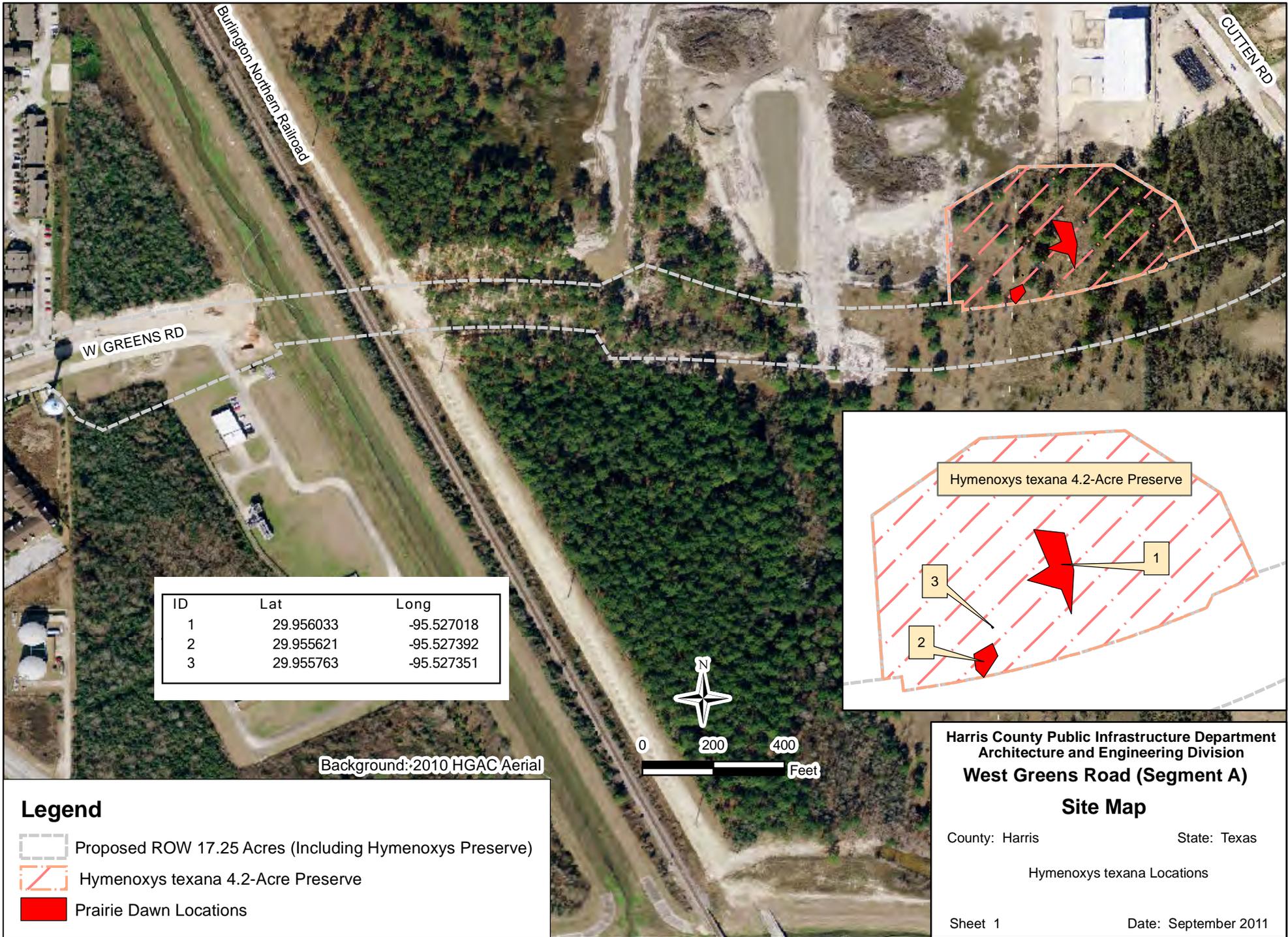
If yes, indicate the herbarium, collector(s) name(s) and number(s), accession #, and date collected:

**Photograph:** Was a photo taken?  yes  no      If yes,  slide  print  digital      If possible, please submit a copy of the photo.

Is a copy included with the form?  yes  no

**General Comments:**

39 seed pods were collected and accessioned separately.  
Mercer accession no. 2012-0160 to 2012-0199  
Total seeds collected: ~1,188  
Stored frozen at Mercer ABG and for NCGRP.

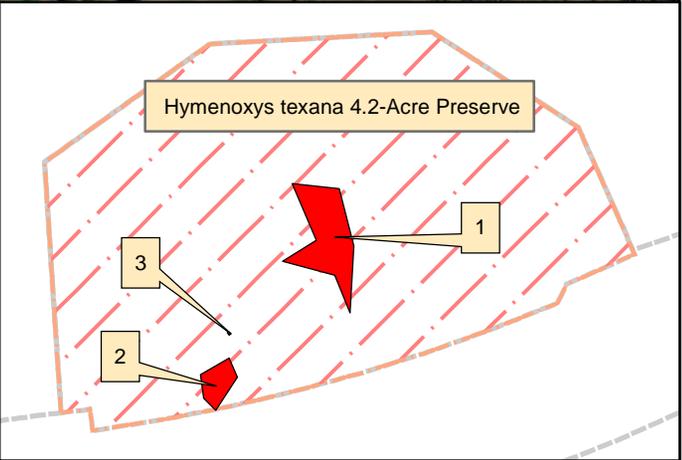


ID	Lat	Long
1	29.956033	-95.527018
2	29.955621	-95.527392
3	29.955763	-95.527351

Background: 2010 HGAC Aerial

**Legend**

-  Proposed ROW 17.25 Acres (Including Hymenoxys Preserve)
-  Hymenoxys texana 4.2-Acre Preserve
-  Prairie Dawn Locations



Harris County Public Infrastructure Department  
 Architecture and Engineering Division  
**West Greens Road (Segment A)**

**Site Map**

County: Harris State: Texas

Hymenoxys texana Locations