Section 6 (Texas Traditional) Report Review

Attachment to letter dated JAN 25 2006

Project Title: Status, Distribution and Conservation of Three Species of Rare Plants of the Lower Rio Grande in Mexico

Final or Interim Report? Final

Job #: **WER-89** **Grant #:** E--34

Reviewer Station: Corpus Christi Ecological Services FO

Lead station was contacted and concurs with the following comments:
☐ Yes ☐ No ☒ Not applicable (reviewer is from lead station)

Interim Report (check one):

☐ is acceptable as is

☐ is acceptable as is, but comments below need to be addressed in the next report

☐ needs revision (see comments below)

Final Report (check one):

☐ is acceptable as is

☒ is acceptable, but needs minor revision (see comments below)

☐ needs major revision (see comments below)

Comments:

This is a very thorough report containing a lot of locality information. We appreciate the considerable level of work that went into this project and are pleased with the new population information that has emerged from this effort. Only minor revisions listed below are requested with this review.

General:

1. The focus of this study was proposed to be a land strip from Laredo to the Gulf Coast, south of the Rio Grande, 100 km wide in the States of Tamaulipas and Nuevo Leon. However, the report seems to focus on Tamaulipas locations only, including all figures after Figure 1.
2. Regarding *Ambrosia chieranthifolia* at Site 223 – has this specimen been confirmed? If so, this is significant, since the species has not been reported from Mexico in many years. More details regarding this find should be provided if possible, including a description of the site where the plant was found – location, soils and associated vegetation.
3. On page 49, under the section entitled "Management Plan for Species Conservation", please clarify what is meant by the actions "planning and distributing" that are described for the conservation of *Manihot walkerae* and *Physaria thamnophila* in paragraph 5.

Figures and Tables:

1. For all figures, please translate all legends into English, spell out abbreviations, and label States.

2. Figures 1 and 13 are labeled as showing locations for the three rare species that are the focus of this study. Please indicate each species with its own shape in the legends and on the maps.
3. The red line in Figure 1 outlining the study area does not coincide with the proposed focus area of the study. Please clarify.
4. In Figure 3, please add the geologic descriptions that match the colored designations to the legend.
5. Please clarify what the number one represents in tables 4, 5, and 7 and why Table 4 lists numbers other than one for *Ayenia limitaris*, but tables 5 and 7 only have ones for *Physaria thamnophila* or *Manihot walkerae*.
6. *Physaria thamnophila* was located at nine sites; however, only eight are displayed on Figure 9. Please clarify.
7. *Manihot walkerae* was located at 24 sites; however, Table 7 only counts 23. Please clarify.

Species Specific Discussions:

Ayenia limitaris

1. Under Population, it states there are possibly more than 4,000 individuals in the region; however, the numbers listed in Table 4 only add up to 1,221. Please clarify.
2. Please indicate on Figure 6 where the possible 40 kilometer by 10 kilometer distribution is.
3. Under Observations, the second reference to Figure 4 does not correlate with the sentence.

FINAL REPORT

As Required by

THE ENDANGERED SPECIES PROGRAM

TEXAS

Grant No. E – 34

Endangered and Threatened Species Conservation

Project WER: 89

Status, Distribution And Conservation Of Three Species Of Rare Plants Of The Lower Rio Grande In Mexico

Prepared by:

Alberto Contreras Arquieta

TEXAS PARKS & WILDLIFE

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23 September 2005

FINAL REPORT

STATE: Texas **GRANT NUMBER:** E - 34

GRANT TITLE: Endangered and Threatened Species Conservation

REPORTING PERIOD: 1 Sept 2002 – 31 Aug 2005

PROJECT NUMBER: WER 89

PROJECT TITLE:

Status, Distribution And Conservation Of Three Species Of Rare Plants Of The Lower Rio Grande In Mexico

OBJECTIVE(S):

To study and determine the status of individuals and/or populations, their distribution, and identify and implement conservation strategies in private sites for the three species of rare plants in the Lower Rio Grande, Mexico: *Lesquerella thamnophila* (BRASSICACEAE), *Ayenia limitaris* (STERCULIACEAE) *and Manihot walkerae* (EUPHORBIACEAE).

Segment Objectives:

To achieve the above mentioned objective, two phases were implemented. Phase 1 includes years 1 and 2, and phase 2 corresponds to year 3 after beginning the project.

Phase 1. Status, distribution and threats to the species and populations. The purpose of this phase will be to compile, generate and analyze the information on occurrences and ecology to determine population conditions and distribution.

1. Information compilation and existent occurrences will be carried out through scientific collections on herbals and museums such as the Biology Sciences and Forestry Sciences Departments from the Nuevo León Autonomous University, the Tamaulipas Technological Institute, the Tamaulipas Autonomous University, Mexico National Autonomous University, National Polytechnic Institute, and institutions in the U.S. such as Texas Nature Conservancy-CDC, TAMU and UT.
2. Jointly with Texas-CDC a database will be created to register historic and current information on the species.
3. Previous collection sites will be visited to verify existing organisms and populations.
4. Ecological information on the area will be collected, specifically, quantitative parameters on density, frequency and coverage will be taken employing the quadrant method to obtain an index of biological relevance. Sampling will be

taken using 5 by 20 meter quadrants for a total of 100 sq. meters for tree and bush strata per site. These measurements will be used to obtain the sample size needed to characterize the populations' habitat.

5. Afterwards a geographic information system (GIS) will be designed and developed and fed with information on vegetation, soil, geology, climate, digital land model, use of land, and ownership situation. It will be used to identify areas with the same biophysical features or potential distribution to find new populations of the species of interest.
6. Similar information will be obtained on their distribution in Texas to spatially correlate with Mexico's ecosystems and habitats.
7. Field trips will be planned for monthly sampling based on potential distribution areas detected with the GIS.
8. If organisms are found, qualitative and quantitative sampling will be carried out to characterize populations. This information will be fed into the system to digitally map the real distribution of species and generate the cartography.
9. Information will be compiled on observed and potential threats, and interviews and communications with landowners will be established to generate a data base on actors as well as threats and sources of threats.

Phase 2. Conservation Plan on private lands: The objective of this phase will be the design and implementation of conservation strategies on private lands for populations of the three rare species. During the last 12 months of the project the following actions will be considered for the conservation work on the species:

10. The GIS will identify the private lands with greater viability for the existing rare species populations and to form a bi-national conservation corridor.

11. Workshops will be organized with landowners so they actively participate together with recommendations of experts, identifying the most viable strategies and actions for the management and conservation of the most viable populations.

12. The conservation plan at a specific property or site will be formalized through legal agreements in Mexico.

13. Conservation actions and strategies for the species will be operational through management plans for each property together with owners and conservation and management experts.

14. Finally, this effort is expected to show on the long term through the implementation of at least three conservation easements in three properties.

Summary Of Progress:

Please see Attachment A. All tasks proposed in the Approach section of the Project Statement were adequately addressed with the exception of task #13 (above, #10 in Final

Report, p. 7). This task, related to preparing management plans for landowners was not finalized due to delayed fieldwork which did not permit sufficient time to prepare them. No mention was given as to whether this component would continue to receive attention.

Location: Coahuila, Nuevo Leon, Tamaulipas

Cost: $67,893.04 (Total)

Prepared by: Alberto Contreras Arquieta **Date:** 23 September 2005

Approved by: Neil (Nick) E. Carter **Date:** 9/27/2005

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PROJECT

Status, Distribution And Conservation Of Three Species Of Rare Plants Of The Lower Rio Grande In Mexico

With additional records of other species of rare plants of importance for Mexico-USA.

FINAL REPORT

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Monterrey, Nuevo León, Mexico

July 31th / 2005.

ABSTRACT

Tamaulipas thornscrub has suffered a strong pressure affecting Mexico in more than 60% of its natural vegetation cover due to changes in land use, diverse practices for agriculture activities, cattle raising, the maquiladora industry, exploration and exploitation of natural gas, and the own growth needs of urban and rural populations, among other reasons; which have caused habitat destruction, fragmentation and disturbances, placing many species of flora and fauna as threatened or in danger of extinction. Thanks to the institutional and international collaboration, an investigation was accomplished to study the status, distribution and conservation of three rare plants (*Ayenia limitaris, Manhot walkerae* and *Physaria thamnophila),* listed as species in danger by the Texas Park & Wildlife Department and the U.S. Fish & Wildlife Services.

The amount of historical records with which this study began came from the Botanical Collection from the University of Texas that had 6 collected records distributed as follows: *Ayenia* 3, for the states of Durango, Coahuila and Tamaulipas, *Manihot* 2 for Tamaulipas, and *Physaria* 1 for Tamaulipas. In Mexican Botanical Collections 4 records were found for 2 localities of *Manihot* in Tamaulipas. A field data record was obtained for 1994 for *Ayenia limitaris*, without reference of individuals in Herbariums. In this study very scarce populations of individuals were found, ranging from 1 to 64 individuals per hectare for *Manihot,* recognizing 2 excellent areas for its conservation; for *Physaria* densities were from 1 to 16 individuals per hectare and only one site; for *Ayenia* density ranged from 3 to 2000 individuals per hectare, with various options for its conservation. We reported 49 new records for these three species, of which 14 reports are of *Ayenia limitaris,* 24 of *Manihot walkerae* and 9 for *Physaria thamnophila,* all sites for Tamaulipas. Habitat conditions, biological aspects and plant forms are very different to those found in Texas. *Ayenia limitaris* flourishes from August to April, and produces capsules from October to April; at the condition known as *sotobosque* in Mexico, we can find it in a parched distribution, in open spaces, directly in the sun even though the plant is more vigorous when found in the shade. Maximum sizes for *Manihot walkerae* are 20-30 centimeters tall, however, in Texas they can be one meter height. Habitat condition for *Physaria thamnophila* in grasslands, in caliche soils with sands, is scarcely found in the Tamaulipas Thornscrub, while in Texas it is found in sandy soils and rocky areas where oyster fossils are generally found. Finally, 4 conservation agreements were signed with private and ejido landowners where these species of rare plants were found, among which we should mention Ranch Loreto where 19 species of rare plants were found, specially *Manihot* and *Physaria;* Ejido San José de las Rusias where we reported 6 species of rare plants, specially *Ayenia limitaris;* and the Ejido Vicente Guerrero where we found 8 species of rare plants and an excellent population of *Manihot walkerae.*

With funding for other projects in the same geographical area, specially the Tamaulipas Thornscrub Eco-regional Plan, 400 new records were obtained for 41 conservation target species for Northeast Mexico. These finds include new reports for the states of Coahuila, Nuevo León and Tamaulipas, distribution range, and biological and ecological data reports.

INTRODUCTION.- 50% of the natural vegetation cover in Mexico's Northeastern region has been destroyed during the past decades for agricultural and cattle raising purposes. The remnants of original vegetation are continuously threatened by over-grazing, invasion of exotic species, population growth in rural areas and other productive activities such as the maquiladora industry, exploration and exploitation of natural gas, etc.

There aren't any legally protected sites in this region of Northeast Mexico, so implementing research and conservation activities is especially important. There are approximately 100 plant species under threatened, rare or in danger of extinction status in Mexico (NOM-059-SEMARNAT-2001) and the United States (rare, threatened and endemic species of Tamaulipas, rare species of the Lower Rio Grande federally listed in the U.S.; species of rare plants for the Conservation Project of the Lower Rio Grande-Texas Park & Wildlife). Of this list 8 are considered endemic to the region. The most important are *Physaria thamnophila, Ayenia limitaris and Manihot walkerae* because of their rare status and the lack of information on distribution, threats and ecology of populations at the Mexican border, south of the Rio Grande.

There is no information up to date to establish the status of these species of rare plants' populations, and in some cases the taxonomic determination and distribution ranges are uncertain. The present project seeks to integrate existing information on the three species of rare plants registered for the North of Tamaulipas and Nuevo León, and complement the rare plants initiatives in Texas on their status, distribution and conservation.

The project will integrate scientific and spatial knowledge on occurrences for the species, and will also implement the needed strategies and actions for their conservation in private lands and ejidos. The Plan includes using knowledge on these species from the Texas Conservation Data Center in the U.S. for their localization and conservation in Mexico. Specific strategies and actions will be directed to diminish the above mentioned threats together with landowners and biology and ecology experts on these species.

The successful implementation of conservation strategies implies designing a private site conservation plan to detect viable populations for conservation. The plan will be developed jointly with local landowners and ejidos for its implementation.

BACKGROUND

Carr (2002) during a meeting in Texas presented the distribution and known records for these three species of rare plants, with the following reports found for Mexico:

> *Ayenia limitaris:* COAHUILA: Muzquiz, Yuda Spring, Sep 18, 1936, *E. G. Marsh, Jr. 949* (TEX-LL). DURANGO: Topia, Topia Municipality, alt. 1450-1800 m.a.s.l., 1.5 m tall scrub, immature fruits, abundant, veg. disturbed oak forest, yellow arcilloso soil, Sep 19, 1985, *P. Tenorio L., C. Romero de T., J. Ignacio S. & P. Davila 9848* (TEX-LL). Det. by P. Fryxell 1991. TAMAULIPAS: Soto La Marina Municipality, on road to Tepeguaje, 1.5 km from main highway, in brush, subshrub to 1 m tall, flowers greenish yellow, scarce, 16 Sep 1981, *P. A. Fryxell 3669* (TEX-LL). Det. by C. L. Cristobal 1982.

Manihot walkerae: TAMAULIPAS: sandy prairies overlying caliche on the Rancho Loreto, frequent perennials to 1 ft. tall, growing up through protective thorny shrubs on the overgrazed prairies; of the many plants, only this was beginning to flower; 26 Apr 1960, *M. C. Johnston 5363-B* (TEX-LL). Papalote de Mirandena, 3 mi SSW of headquarters, Loreto Ranch, prairie on sandy loam shallowly overlying caliche, 24°20'N, 98°W, 16 Sep 1960, *M. C. Johnston & J. Crutchfield 5572-B* (TEX-LL). *Asclepias prostrata*, *Physaria thamnophila* and *Manfreda longiflora* were also collected from this site on this date.

Physaria thamnophila: TAMAULIPAS: Papalote de Mirandena, 3 mi SSW of headquarters, Loreto Ranch, prairie on sandy loam shallowly overlying caliche, 24°20'N, 98°W, 16 Sep 1960, *M. C. Johnston & J. Crutchfield* 5556 (TEX-LL). Originally determined *L. argyraea*; annotated to *P. thamnophila* by Guy Nesom, 1989. *Asclepias prostrata*, *Manfreda longiflora* and *Manihot walkerae* were also collected from this site on this date.

González-Medrano and collaborators found in 1993 two sites for *Manihot walkerae* at 4 and 6 km NE Ejido Morales, Abasolo, Tamaulipas, (Herbarium from IB-UNAM).

Best (1994, Com. Pers.) and F. González-Medrano visited the original location reported by Fryxell in 1981 for *Ayenia limitaris* at Soto La Marina and didn't find it, and in searching neighboring areas located a small population of 48 individuals 0.5 km W of the above-mentioned site.

In studies done on flower inventories in Northeast Mexico none of these species are mentioned for the states of Coahuila, Durango, Nuevo León, Tamaulipas, San Luis Potosí and Veracruz (Alanís-Flores, 2005; Alanís Flores, *et al.* 2004; González-Elizondo, *et al.,* 1991; González-Medrano, 1972, 2005; Hernández-Sandoval, *et al.,* 2005; Martínez y Ojeda y González-Medrano, 1977; Puig, 2005), or in flower listings published for geographic abstracts for the states of Coahuila, Nuevo León and Tamaulipas (Secretaría de Programación y Presupuesto, 1981, 1983a, 1983b).

The most recent study for the Texas populations is Sternberg's (2005) in which he did an analysis of vegetation associated with *Physaria thamnophila* to know the population's actual state.

PROJECT OBJECTIVES

To study and determine the status of individuals and/or populations, their distribution, and identify and implement conservation strategies in private sites for the three species of rare plants in the Lower Rio Grande, Mexico: *Physaria* (= *Lesquerella*) *thamnophila* (BRASSICACEAE), *Ayenia limitaris* (STERCULIACEAE) *and Manihot walkerae* (EUPHORBIACEAE).

Process: The proposal is divided in two phases. Phase 1 includes the first two years, and phase 2 corresponds to the third year of the project (Table 1).

Table 1. Objectives and Phases of the Project, during the three years.

PHASE 1	
1	Information compilation and search of existent occurrences will be carried out through scientific collections on herbals and museums such as the Biology Sciences, Forestry Sciences, and Agronomy Faculties from Universidad Autónoma de Nuevo León, the Institute of Ecology and Food from the Universidad Autónoma de Tamaulipas, Instituto Tecnológico de Cd. Victoria, the Biology Institute of the Universidad Nacional Autónoma de Mexico, Universidad Autónoma Metropolitana, the Instituto Politécnico Nacional, National Ecology Institute, Universidad Veracruzana, and institutions in the U.S. such as Texas Nature Conservancy-CDC, TAMU and UT.
2	Jointly with Texas-CDC a database will be created to register historic information on the species of rare plants.
3	Visit Herbariums and Botanical Collections at institutions to verify existing organisms and population data.
4	Ecological information on the observation sites will be collected, specifically, quantitative parameters on density, frequency and coverage, also to characterize the populations' habitat.
5	A geographic information system (GIS) will be designed and developed, and fed with information on vegetation, soil, geology, climate, use of land, and ownership situation. It will be used to identify areas of potential distribution to find new populations of the three species of rare plants.
6	Information will be compiled on sources and observed and potential threats, data of landowners will be established to generate a database on actors as well as threats and stress sources.
PHASE 2	
7	The GIS will identify the private lands with greater viability for the existing rare species populations and to form a bi-national conservation corridor.
8	Workshops will be organized with landowners so they actively participate together with recommendations of experts, identifying the most viable strategies and actions for the management and conservation of rare plants' populations.
9	The conservation plan at a specific property or site will be formalized through legal private and public land conservation mechanisms in Mexico that better respond to the needs and economic activities of landowners.
10	Conservation actions and strategies for the rare plants' species will be operational through management plans for each property together with owners and conservation and management experts.
11	Finally, we expect to put in practice and implement all agreements generated for the rare plants' species conservation, landowners and management plans. The commitment for this project is to have three landowners in this conservation program for the species.

RESULTS OF OBJECTIVES

Objective	Advance %	Results obtained
1	100	Information on the species of rare plants for their historical occurrence has been obtained but very few data exist, some are not accessible as there aren't any facilities to provide them. Several Herbariums and scientific plant collections at diverse institutions were visited.
2	95	The work initiated by TNC has been enriched with data collected by diverse sources. This data is already found in the database, some lack geographical coordinates for the GIS because there isn't enough information for their location on topographical maps.
3	100	The data obtained in most cases does not provide ecological information, and only one individual exists at the museum.
4	100	Distribution of plants has a tendency to be in patches, small groups of individuals and densities for these plants are low for *Manihot walkerae and Physaria thamnophila.* Abundance for *Ayenia limitaris* is higher but only in some observation sites.
5	100	With the support of TNC in the elaboration of the Tamaulipas Thornscrub Eco-regional Plan, layers of geographic information were built from the field data observations.
6	100	For populations of *Ayenia limitaris* threats are change in land use, loss of habitat and fragmentation, mainly due to extensive cow and goat herds, deforestation for urban-rural areas, road construction, and more recently, building gas lines. For populations of *Manihot walkerae* threats are change in land use, loss of habitat and fragmentation, mainly for agriculture and the extensive cattle activities in the area, exploitation of caliche for road pavement, and exploration of natural gas and distribution roads. For populations of *Physaria thamnophila* threats are changes in land use, and loss of habitat and fragmentation for extensive cattle-raising activities.
7	100	Sites with rare plants were identified, as well as potential sites, which wasn't very productive as these species of rare plants were found in very few sites; also, four agreements were established with private landowners to create the biological corridor and three agreements more have already being signed in sites were *Ayania, Manihot* and *Physaria* are not found, but with other species of rare plants found and described bellow.
8	100	Talks were held with landowners, from April to May 2005, and visits were programmed so they could see the species of rare plants and understand threats that place the plant's survival at risk and which have a very limited distribution due to the habitat where they live.
9	100	For the time being, we only have the intention letters to participate in conservation programs of species in some risk category; however, they have a great disposition to be informed about the needed steps to establish

		the best private and public land conservation legal mechanism in Mexico and at the same time have some economic incentive for their participation; studies are under way, with support and counseling so they can benefit from environmental service programs, etc.
10	70	Preliminary studies were done on the vegetation and distribution of species of rare plants, and actions were recommended on how to conserve the soil, and the advantages of having natural vegetation in their properties. More time is needed and the termination of field studies in order to elaborate a management plan for each landowner and establish conservation commitments.
11	100	Recommendations made to landowners to conserve vegetation cover in good conditions and the species living here can be made through an investment that guarantees the conservation of the species, which could be destined from this project's budget if it has the follow-up and financial resources necessary for investments in exclusion areas, propagation and reforestation with species produced in nurseries.

ACCOMPLISHED ACTIVITIES

1	Recognition of habitat and species of rare plants in Texas with visit to Hancock Ranch, San Isidro, Zapata, March 17-19, 2003 (Lee Elliot, Dana Price, Lisa Williams, C. Smith, Chris Best, Alfonso Banda and Alberto Contreras); also other sites in Zapata, Texas, April 3 – 5, 2003. Visits to interest sites November 15 – 16, 2003 and February 27 – 29, 2004 with Dana Price and Christ Best at Mexican sites, and June 30 and 31, 2004 with people from Texas A&M University at the Rio Grande in Roma, Texas.
2	In April, 2003, an Action Plan was made for a vegetation profile of Northeast Mexico including rare plants of interest for the project and the Tamaulipas Thornscrub. The best way of doing the study was locate sites at 5 to 10 kilometers on back roads and highways; the best sites with the least disturbed vegetation were selected.
3	Progress on this study has been presented at three scientific events: IV Border Meeting of the Lower Rio Bravo in McAllen, Texas (October, 2003); Cactáceas de la Ecorregión del Matorral Espinoso Tamaulipeco in Guadalajara, Jalisco, Mexico (May, 2004), Leguminous from Northeast Mexico to be presented in October, 2004. Status, Conservation and Distribution of three species of rare plants in Northeast Mexico, Brownsville, Tx, May 9, 2005.
4	Participation in the biological evaluation of the Treviño Ranch (5,000 acres), Webb County, Texas, March 15-17, 2005. In a preliminary visit *Frankenia johnstonii, Echinocereus reichenbachi var. fitchii, Matelea parviflora, Coryphantha sulcata* were observed. Biological evaluation at Ranch Loreto (26,000 hectares), San Fernando, Tamaulipas, April 15 -17, 2005. In the related report (Annex 8) 235 plant species were reported, 17 of these are rare and/or plants listed as risk category in the U.S. and Mexico. Also, two rare plants not found in this visit have been reported. Significative populations of *Physaria thamnophila* and *Manihot walkerae* were found here.

	Of other ranches (Las Carreras, Rincón del Perro, Anacahuita, etc.) and in ejido lands visited, only a significant population of *Manihot walkerae* was found. They were evaluated without finding any of the three species of this study, however, other rare species were found. This section is discussed below. At the San José de las Rusias ejido there are several sites with significant populations of *Ayenia limitaris*, and formal monitoring will begin in at least two private ranches as evaluation was limited to lands next to the roads.

Additionally, the following field, laboratory, bibliography and information activities have been accomplished, divided as follows:

FIELD WORK

Three species of rare plants are the primary target in this project: *Physaria* (= *Lesquerella*) *thamnophila* (BRASSICACEAE), *Ayenia limitaris* (STERCULIACEAE) and *Manihot walkerae* (EUPHORBIACEAE). And if within this search of species we found some other species of interest that are mentioned as objects of conservation for the Eco-region Plan of the Tamaulipan Thornscrubs.

At this moment, 460 collections have been made in 360 sampling sites (Appendix 2), all the stations are georeferred (GPS), most with altitude, in the States of Coahuila, Nuevo León and Tamaulipas (Figure 1), and where the following rare species have been collected and/or observed (Appendix 1). Also, approximately 120 sites were considered to confirm if a vegetation study was convenient, but as the species of study were not observed during a first visit, new sites were sought.

In a comparative analysis of species of importance for the U.S. Government, the Departments of Wildlife in Texas, The Nature Conservancy, species protected by Mexican laws, and lists provided by experts, a total of 183 species threatened and in danger of extinction was obtained (Appendix 3).

STUDY AREA

The study area includes the eco-region of the Tamaulipas thornscrub, which includes three states in Mexico: Coahuila, Nuevo León, and Tamaulipas (Figure 1), the area of greater importance for the species being studied are the last two states where the geologic environment with its edaphologic features is one of the main aspects for the presence of populations of these species.

Climate: In the North-South and West-East direction there are four types of general climates (Figure 2): Semi-arid, hot [BS1(h')(x')], with Summer and Winter rains over the annual 18%, found on the Tamaulipas border area in municipalities such as Camargo, Miguel Alemán, Reynosa, Rio Bravo.

Semi-hot, Sub-humid [(A)C(wo)x'], Summer rains over annual 10.2%, located in Matamoros to San Fernando next to the Laguna Madre of Tamaulipas.

Semi-arid, hot [BS1(h')w], Summer rains with annual 5 to 10.2%, located in Llera, Soto La Marina, Abasolo, Mendez, Burgos, Santander Jiménez, and other municipalities.

Semi-hot, template humid [(A)C(wo)], Summer rains with annual 5 to 10.2%, located south of Soto La Marina and extends through the Eastern Sierra Madre up to Ciudad Victoria.

Geology (Table 2, Figure 3): Great part of the Tamaulipas thornscrub consists on sedimentary-type rocks, originating at the superior Quaternary period (Q) and superior Tertiary (Ts), with its Mioceso sections (Tm) and its sedimentary lutita - arenaceous rocks (lu-ar) and the Pliocene (Tpl) section with its caliche (Caliche) rocks and soils, and conglomerated (cg). These formations offer the conditions so that some elements of the vegetation community belong to these rocks and their respective types of soils, which result in several being threatened with extinction. These formations are:

Table 2.- Geological Features of rocks in lands of Central & Northeastern Tamaulipas, Mexico.

Features of rocks in the land
Lutita - Arenaceous [Tm (lu - ar)]: Continental and marine environmental sequence of shallow waters related with the Tuxpan formation. Formed by alternating lutita and aranaceous in layers that vary from thin to sheets, in brown color with yellow tones of fresh and brown surfaces in red tones with interperizadas surfaces. Arenaceous are literenites, formed mainly by quartz and rock clastics, cemented by carbonates and frequently with a crossed stratigraphy. Lutites, scarcely compacted, are slightly sandy with a great content of pelecipode and gasteropode fossils, and contain some calcium carbonate lenses. It is found overlaying in a discordant way to the Oligocene sequence and underlying discordantly with Pliocenic and Quarternary deposits. Its distribution is formed by low altitude hills and soft slopes..
Conglomerate [Tpl (cg)]: Sequence of conglomerate alluvial deposits formed by different clasts from limestone, pedernal, arenaceous and ocassionaly igneous rocks and petrified wood fragments. These clasts are over-rounded, with sizes that vary from gravel to blocks included in a sandy-clay matrix. Sometimes it presents pseudostratification and locally can be a cementing calcareous; in the section nearer the eroded surface caliche deposits appear. These deposits, with almost 8 meters thickness, are placed discordant over Miocene sandy-clay sediments and are covered with a caliche layer up to 0,7 meters of thickness. On the other hand, these deposits are litostratifically assigned to the Reynosa Conglomerate, and found underlying discordantly to Tertiary marine sequences and the exposed part is covered with recent alluvial deposits.
Caliche [Tpl (caliche)]: Unit constituted by petorcalcic deposits of white color (carbonates) of variable thickness, found cementing sandy and gravos material, locally presents a layered structure and filling up globular shape holes. Stratigraphically this deposit can be related to the Reynosa Conglomerate and is found overlying a large portion of the Tertiary marine sequence; its morphologic expression is characterized by the presence of low-altitude mesas. This deposit was originated by a capillarity process, caused by a dry and very hot climate.

Figure 1. Distribution of the sample and/or observation sites for the three rare plants species; also, sites for the Tamaulipas Thornscrub Eco-region Plan Project. The red lines enclose the main study area.

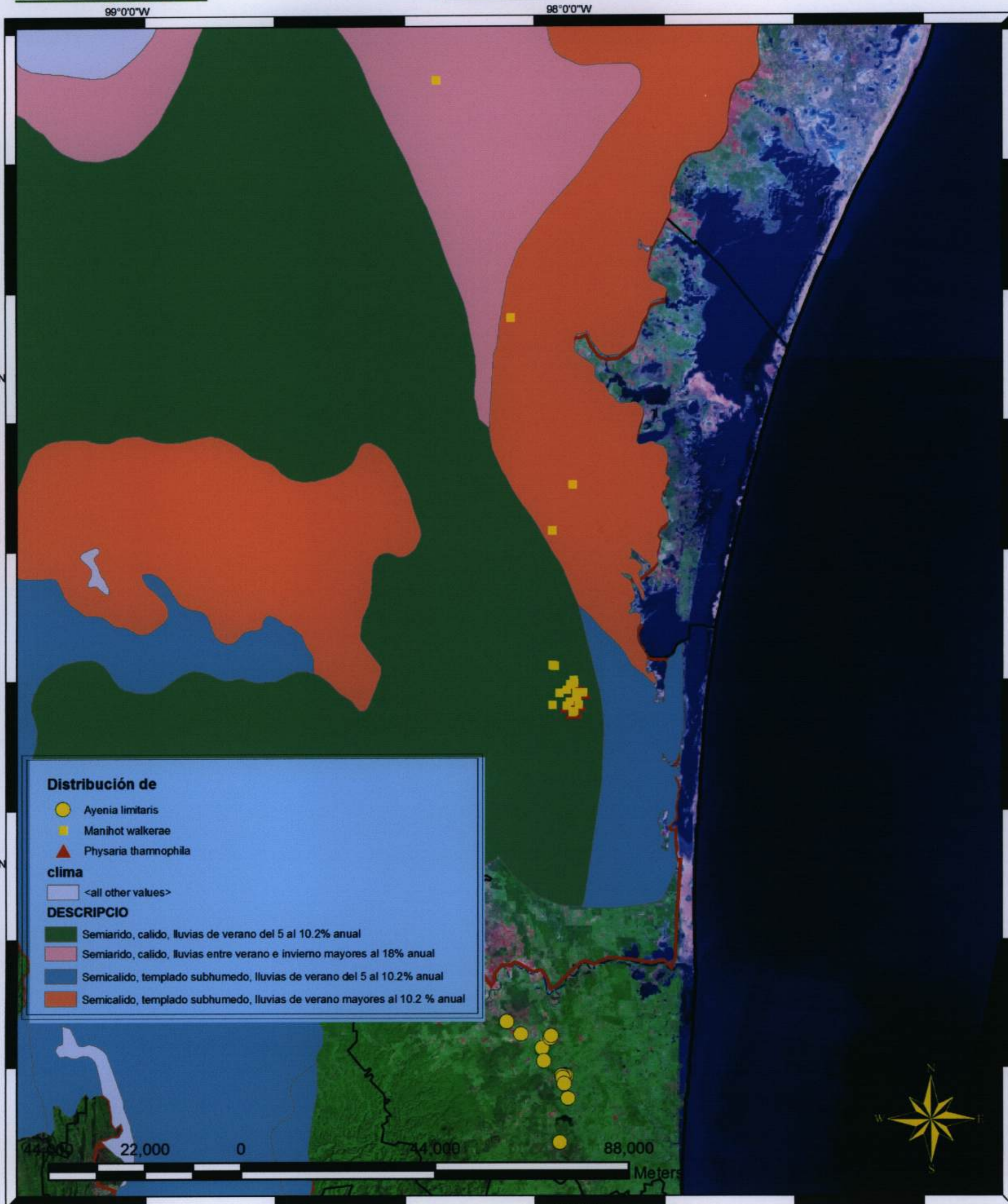

Figure 2. Climates for Northeast Mexico referred to sites where the three species of rare plants were observed.

PRONATURA

TEXAS PARKS & WILDLIFE

The Nature Conservancy
SAVING THE LAST GREAT PLACES ON EARTH

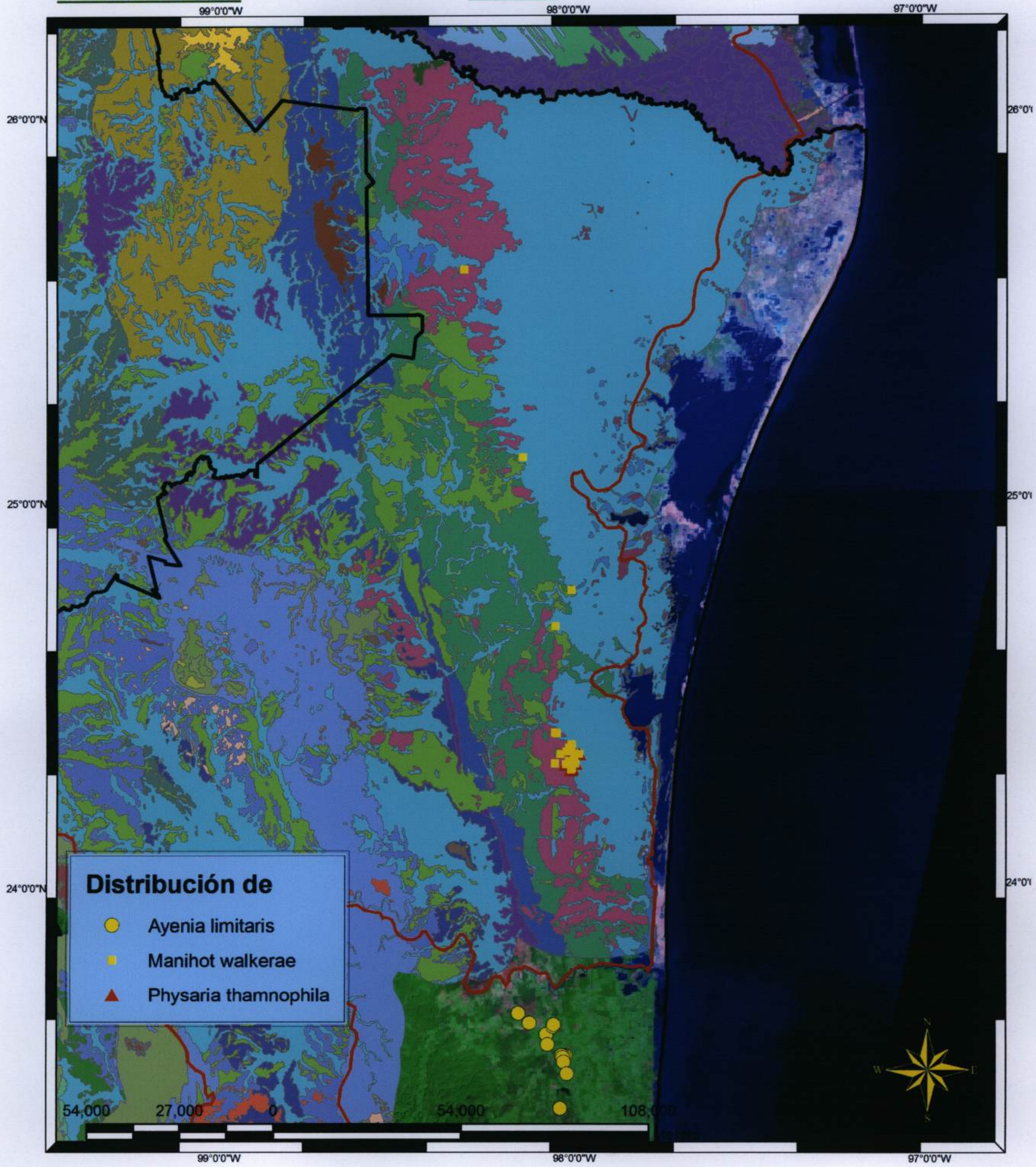

Figure 3. Geological map of Northeast Mexico, with distribution of caliche and records of *Manihot and Physaria; Ayenia* is distributed in the Tamaulipas Tropical region.

METHODOLOGY

During the first year of the project, and doing an evaluation of the Tamaulipas Thornscrub which is the geographic distribution zone for the three species of rare plants, roads were traveled to find areas with good shrub conditions and search for these plants. When populations were found, a more exhaustive search of the area was done to verify the distribution range.

Each site was covered in 1 square hectare with zig-zag crossings. A vegetation listing was elaborated, and samples were collected for museum when possible. Notes were taken on vegetation, land conditions and detected threats.

Ecological information on the area was collected; specifically quantitative parameters on density, frequency and coverage were taken employing the quadrant method to obtain an index of biological relevance. Sampling was taken using 5 by 20 meter quadrants for a total of 100 sq. meters for tree and bush strata per site. These measurements were used to obtain the sample size needed to characterize the population's habitat.

During the second period, historical sites were visited to verify if these populations still exist and to search nearby to asses the distribution area.

Once the three rare plant populations are located, talks will be held with the landowners on the biological importance of these species in danger of extinction, so they participate in Site Conservation Programs for these species though some of the legal mechanisms for private land conservation currently in Mexico and that Pronatura Noreste, A.C. has implemented.

RESULTS

The species in this study are not listed as species in danger under NOM-059-SEMARNAT-2001. However, they are listed as species in "danger of extinction" by the U.S. Fish & Wildlife Service.

Ayenia limitaris (Texas ayenia): Distribution: U.S.A. (TX), Mexico. Listed on August 24, 1994 (Volume 59 Federal Register 43652).

Manihot walkerae (Walter moniac): Distribution: U.S.A. (Texas), Northern Mexico. Listed on October 2, 1991 (Federal Register 64 FR 57114).

Physaria (= ***Lesquerella***) ***thamnophila*** (Zapata bladderpod): Distribution: U.S.A. (Texas), Northeastern Mexico. Listed on November 22, 1999 (Federal Register 64 FR 57114).

Herbariums and Collections in Mexico and Texas were visited (Table 3) and only four records were found for three sites of *Ayenia limitaris*; six records for four sites for *Manihot walkerae* and one site for *Physaria thamnophila*.

Visits were used to consult on more species of rare plants and conservation targets for the Tamaulipas Thornscrub Eco-region Plan (reports are found in Appendix 4 and annexed as Excel databases).

Table 3. Historic reports found in visits to Herbariums and Scientific Collections in Mexico VS this study.

	Institution	Reports	Historical sites		
			Ayenia limitaris	***Manihot walkerae***	***Physaria thamnophila***
Herbario de Biología	UANL	0			
Herbario de Agronomía	UANL	0			
Herbario de Forestales	UANL	0			
Herbario del Inst. de Ecol. y Alimentos	UAT	0			
Herbario de Tec. de Victoria	T. de Cd. Victoria	0			
Herbario	UAM	0			
Herbario de Veracruz	UV	0			
Herbario del INE	INECOL- Ver	0			
Herbario del Inst. de Biología	UNAM	4		2	
Colecciones científicas procedentes de mas de 40 instituciones	CONABIO	Mismos registros de la UNAM			
Herbario UAMIZ	U.A.M.	0			
Herbario TT	U. Texas	6	3	2	1
Present Study	**PNE**	**46**	**13**	**24**	**9**

STERCULACEAE FAMILY

AYENIA LIMITARIS

CRISTÓBAL, 1960

Synonym: *Nephropetalum pringlei.*

Observation sites: 13 near San José de las Rusias, municipality of Soto La Marina at the Sites 289, 304, 306, 307, 311, 314, 357, 358, 359, 362, 363, 364, 365, all in Tamaulipas (Figure 4). Reports of coordinates and localities are shown in Appendix 2.

Habitat: Low caducifolia tropical forest (Figure 5) with mix of tall thorn scrub, sometimes in open areas, even though plants growing in shaded areas have higher vigor. Soil is rich in organic material, and has a great quantity of fine sands.

Habitat Condition: Population in general terms is very vulnerable to human pressure. The area is being divided into lots to build housing; there are clandestine garbage dumps in the area (Figure 6). Change in land use due to agriculture and cattle activities, especially goats are a menace. A highway and gas line offer greater access to the area and therefore threats can increase with time.

Population: Population density is higher than expected, there are perhaps more than 4000 plants in the region, and discoveries lead us to predict more than 40 kilometers long by 10 kilometers wide distribution. In some sites we could only observe few specimens because they were located near property boundaries. During sampling we found the plant flowering from August to May, and even then they had capsules with seeds. Flora associated with *Ayenia* is very diverse, with more than 120 species (Table 4).

Land Ownership: Sites observed with *Ayenia* are found in private lots and ejidos, for cattle and crop raising activities, with scarcely disturbed native vegetation.

Threat & Stress Sources: This is a cattle region, with scarce agriculture. Main threats are housing construction because it is found on an access to a tourist beach area. Illegal garbage dumps are a threat because sometimes they are burned to destroy the garbage and not enough precautions are taken to control fires.

Observations: The Yuda Spring in Múzquiz, Coahuila, probably disappeared more than 20 years ago, according to information provided by people that lived there during childhood. Even though most don't remember a spring with this name in a site where there was a population in 1936. There are more than six springs that can be potential for their location but most have shorelines impacted by cattle and agriculture. A visit is being programmed soon, once we have finished some points we are investigating in our search for this species.

Historically, another population found was on the road to Tepehuaje in Soto La Marina, however, Chris Best of Texas Park & Wildlife Service found a population near the above mentioned site.

During the months of March and April, 2005, an exhaustive search was done near San José de las Rusias in Soto La Marina and eight populations were found still with flowers and capsules (Figure 4), which helped in their identification. At first, low population densities were expected but during monitoring we found areas with a density superior to 2000 plants per hectare. This is a statistical quantification by the coverage observed in the site. In August of the same year a second exhaustive visit was done to the area and seven new sites were found, increasing its distribution range (Figure 4).

Four samples were obtained next to the highway to be cultivated in a nursery, and to this date they have established in excellent conditions, presenting leaves which they had initially lost, and have new stem sprouts.

Seed collection of 100 capsules will be taken to the nursery to establish an index of germination for the species. We still have much to know about this population as it's the first time we have information on their distribution range.

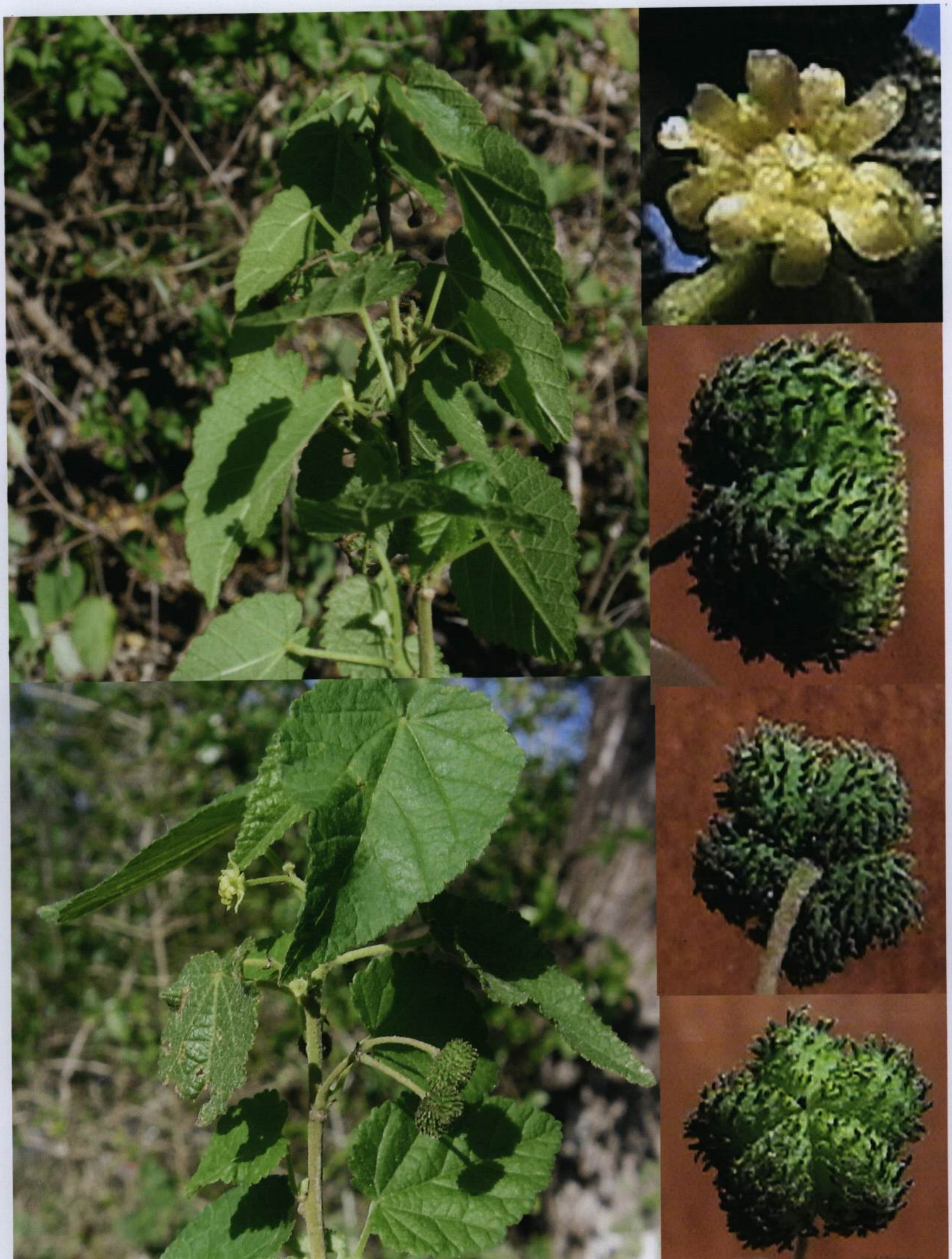

Figure 4. *Ayenia limitaris*, collected on March 12th, 2005 on crossroad to Tepehuaje, Soto La Marina, Tampaulipas.

Figure 5.- Threats to *Ayenia limitaris* populations: A) Goats, B) Illegal garbage dumps, C) PEMEX gas lines, and D) Land clearing for housing and utilities.

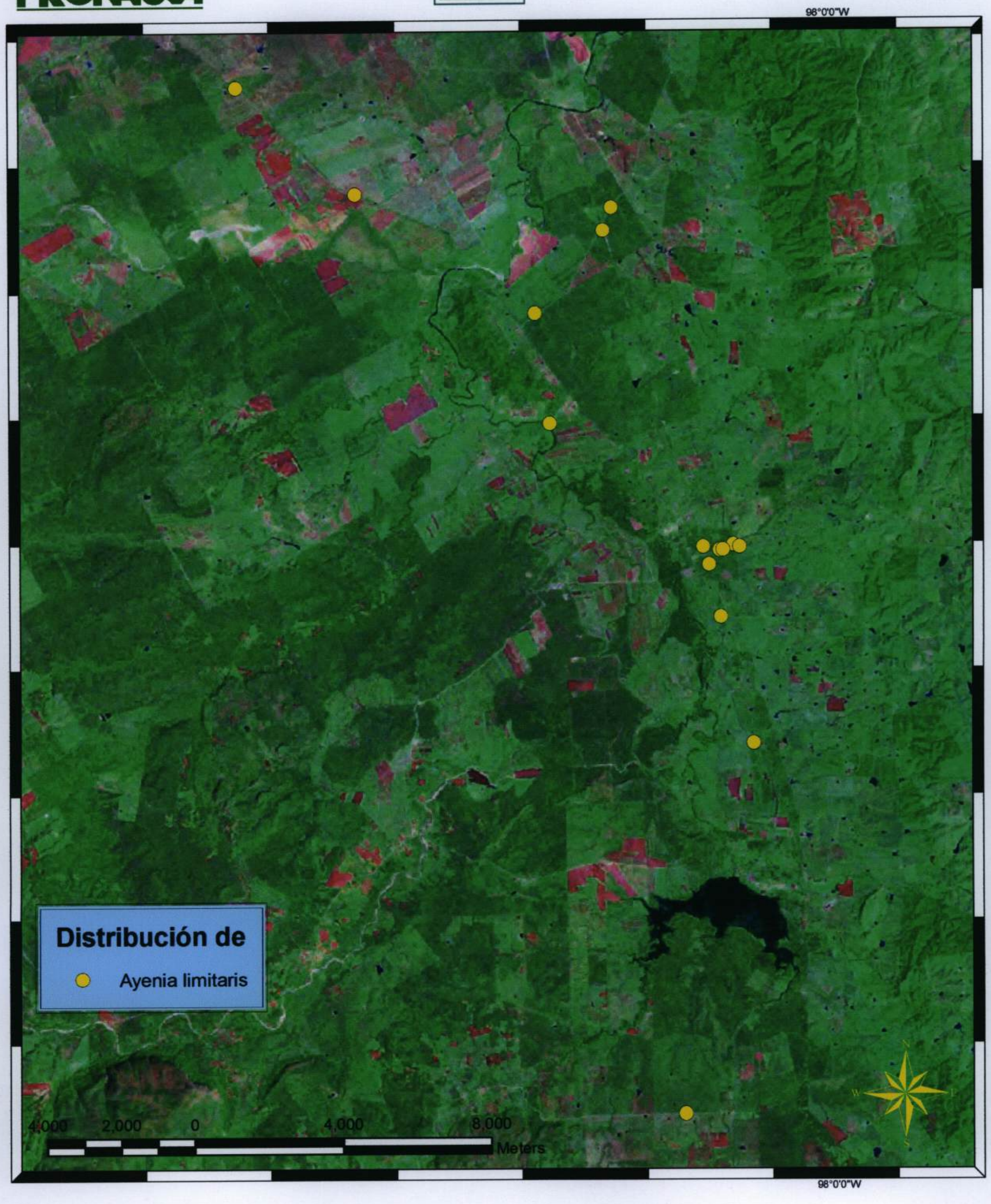

Figure 6.- Distribution of *Ayenia limitaris* in Soto La Marina municipality, Tamaulipas.

Table 4. Flora associated to *Ayenia limitaris* localities. Threatened species are highlighted in gray.

		Sitios												
Familia	**Especie**	**289**	**304**	**306**	**307**	**311**	**314**	**357**	**358**	**359**	**362**	**363**	**364**	**365**
Sterculaceae	*Ayenia limitaris*	120	13	41	36	600	26	85	62	21	28	80	37	71
Malvaceae	*Abutilum sp.*	1		1	1	1	1	1	1	1	1	1	1	
Fabaceae	*Acacia berlandieri*					1								
Fabaceae	*Acacia farnesciana*					1		1			1		1	
Fabaceae	*Acacia roemeriana*							1						
Cactaceae	*Acanthocereus tetragonus*			1	1					1	1	1		
Nyctaginaceae	*Acleisanthes obtusa*							1		1				
Nyctaginaceae	*Acleisanthes sp.*				1									
Cochleospermaceae	*Amoreuxia wrightii*					1			1	1				
Asteraceae	*Baccaris salsifolia*			1	1									
Fabaceae	*Casealpinia mexicana*					1		1		1	1			
Simaroubaceae	*Castela erecta*					1		1						
Ulmaceae	*Celtis pallida*	1		1	1	1		1	1	1			1	
Fabaceae	*Cercidium macrum*							1						
Fabaceae	*Chaemacrista sp.*					1								
Poaceae	*Chloris sp.*												1	
Vitaceae	*Cissus incisa*			1	1	1								
Verbenaceae	*Citharexylum berlandieri*								1	1				
Renunculaceae	*Clematis drummondii*	1		1	1	1		1		1	1		1	
Rhamnaceae	*Condalia hookeri*	1												
Boraginaceae	*Cordia boisieri*	1		1	1	1		1		1	1			
Euphorbiaceae	*Croton incarum*			1	1									
Euphorbiaceae	*Croton sp.*	1						1	1		1	1		
Cactaceae	*Cylindropuntia leptocaulis*	1		1	1	1		1		1				
Asclepidaceae	*Cynachum barbigerum*			1	1			1		1			1	
Fabaceae	*Desmanthus virgatus*	1		1	1				1	1		1		
Ebanaceae	*Diospyros texanus*							1	1	1				
Fabaceae	*Ebanopsis ebano*	1				1		1	1	1	1	1		
Euphorbiaceae	*Euphorbia sp.*	1		1	1	1		1	1	1				
Fabaceae	*Havardia pallens*	1		1	1	1		1	1	1	1	1	1	
Lamiaceae	*Hedeoma sp.*			1	1									
Boraginaceae	*Heliotropium angiospermum*	1		1	1	1		1	1	1		1		
Malvaceae	*Hibiscus martianus*			1	1	1		1	1	1				
Cucurbitaceae	*Ibervillea lindheimeri*	1							1	1				
Convolvulaceae	*Ipomea sp*					1			1				1	
Euphorbiaceae	*Jatropha dioica*				1	1				1				
Rhamnaceae	*Karwinskia humboldtiana*	1		1	1	1			1	1				
Verbenaceae	*Lantana urticoides*			1	1				1				1	
Brassicaceae	*Lesquerella sp.*							1						
Fabaceae	*Leucaena pulverulenta*	1				1				1				
Scrophulariaceae	*Leucophyllum frutescens*					1		1		1				
Verbenaceae	*Lippia alba*				1				1		1	1	1	
Solanaceae	*Lycium berlandieri*		1			1								
Malpighiaceae	*Malpighia sp*							1	1					
Asclepidaceae	*Matelea sp.*		1											

		Sitios												
Familia	**Especie**	**289**	**304**	**306**	**307**	**311**	**314**	**357**	**358**	**359**	**362**	**363**	**364**	**365**
Fabaceae	*Mimosa malacophylla*										1			
Cactaceae	*Opuntia engelmanni*	1		1	1	1				1				
Oxalidaceae	*Oxalis dichondrifolia*										1			
Oxalidaceae	*Oxalis drummondii*				1									
Fabaceae	*Parkinsonia aculeata*			1	1			1	1	1	1			
Asteraceae	*Parthenium hysteroforus*			1	1	1		1		1		1	1	
Passifloraceae	*Passiflora feotida*			1	1								1	
Malvaceae	*Pavonia lasiopetala*				1									
Phytolaccaceae	*Phaulothamnus spinicens*					1		1				1		
Fabaceae	*Prosopis glandulosa*			1	1	1				1				
Rubiaceae	*Randia rhagocarpa*	1		1	1	1		1	1	1	1		1	
Poaceae	*Rhynchelitrum repens*							1						
Fabaceae	*Rhynchosia minima*	1	1							1		1	1	
Acacthaceae	*Ruellia nodiflora*				1							1	1	
Palmae	*Sabal mexicana*	1		1	1			1			1	1	1	1
Salicaceae	*Salix nigra*										1			
Lamiaceae	*Salvia coccinea*	1		1	1	1		1					1	
Asteraceae	*Sanvitalia ocymodes*				1							1		
Asteraceae	*Senesio ampulacium*			1	1									
Malvaceae	*Sida sp.*				1									
Sapotaceae	*Sideroxylum celastrinum*												1	
Solanaceae	*Solanum triquetrum*			1	1									
Lamiaceae	*Teucrium cubensis*			1	1									
Asteraceae	*Thymophila pentachaeta*						1							
Asteraceae	*Thymophila tenuiloba*						1							
Commelinaceae	*Tradescantia sp.*			1	1									
Urticaceae	*Urtica sp.*							1						
Verbenaceae	*Verbena sp.*	1												
Liliaceae	*Yucca treculeana*	1			1	1		1		1	1		1	
Rutaceae	*Zanthoxylum fagara*	1		1	1	1		1	1	1	1	1		
Rhamnaceae	*Ziziphus obtusifolia*	1									1			
	Total de especies 78	**25**	**4**	**32**	**41**	**32**	**4**	**33**	**22**	**32**	**20**	**16**	**20**	**2**

BRASSICACEAE FAMILY

PHYSARIA (= LESQUERELLA) THAMNOPHILA

(ROLLINS & SHAW, 1972)

Observation Sites: San Fernando, Aldama and Soto La Marina municipalities: 9 localities which are: 319, 322, 324, 326, 327, 328, 331, 332 and 343 (Figures 3 and 7). Records of coordinates and localities are shown in Appendix 1 and 2.

Habitat: Open areas in sandy soils over caliche in the Quaternary (Figures 3 and 8). Natural grasslands are excellent growing places; scarce in bushes; only observed in the Loreto region.

Habitat Conditions: Habitat conditions are excellent, as this is the original vegetation cover in the area and is under very low disturbances thanks to the adequate practices used by the ranch owner which has cattle, and by the exploration roads for the gas companies.

Population: Population numbers are low, only 57 specimens were observed in 9 sites during April. In August many young plants were observed starting to flower in Site 343. *Physaria* populations are associated with 133 plant species when it is found in caliche areas and with 74 species when it is found on the prairies (Table 6).

Land Ownership: The historical report and only current report is Ranch Loreto, privately owned (Lic. Luis Esteban García); nearby there are private lots and ejidos where there is a possibility of finding other populations.

Threats and sources of stress: Agriculture and extensive cattle activities are the main threats around the known site, there is also de-fragmentation and destruction of the habitat by changes in land use and invading species.

Observations: During the visit to Ranch Loreto it was observed that the preferred habitat for this species is sandy over caliche, but low density populations were found. Most individuals are found in disturbed areas, probably because not having a tall vegetation cover favors the original grassland vegetation in the region, such as is documented by Johnston (1963).

Also, there has been an extensive search in sites on the Mexican border with the Rio Grande were populations are located in Texas, but the *Physaria* has not been found.

Figure 7.- ***Physaria thamnophila*** **showing its growth, flowers and capsules, Ranch Loreto, San Fernando in Tamaulipas, Mexico.**

Figure 8.- ***Physaria thamnophila*** **habitat in the Ranch Loreto grasslands, San Fernando, Tamaulipas.**

Figure 9.- Distribution of *Physaria (=Lesquerella) thamnophila* in Tamaulipas.

Table 5. Flora associated to *Physaria thamnophila* localities. Threatened species are highlighted in gray.

FAMILIA	ESPECIE	319	322	324	326	327	328	331	332	343	Total
Apocynaceae	*Macrosiphonia lanuginosa*	1		1	1	1	1	1	1	1	8
Asclepidaceae	*Asclepias prostrata*									1	1
Asclepidaceae	*Cynanchum barbigerum*	1	1	1	1						4
Asteraceae	*Palafoxia texana*									1	1
Astreraceae	*Aphanosthephus sp*	1									1
Astreraceae	*Thymophilla pentachaeta*			1	1	1	1		1		5
Astreraceae	*Thymophilla tenuiloba*	1	1	1	1	1			1		6
Boraginaceae	*Cordia boissieri*	1	1	1			1	1		1	6
Boraginaceae	*Heliotropium angiospermae*						1				1
Boraginaceae	*Heliotropium confertifolium*	1		1		1		1			4
Brassicaceae	*Physaria thamnophila*	1	1	1	1	1	1	1	1	1	9
Bromeliaceae	*Bromelia pinguin*									1	1
Bromeliaceae	*Tillandis unsinoides*					1					1
Cactaceae	*Acanthocereus tetragonus*	1	1		1		1		1	1	6
Cactaceae	*Ancistrocactus sheeri*						1		1		2
Cactaceae	*Cylindropuntia leptocaulis*	1		1					1		3
Cactaceae	*Echinocactus texensis*	1									1
Cactaceae	*Opuntia engelmannii*						1		1		2
Commelinaceae	*Commelina sp.*									1	1
Commelinaceae	*Tradescantia elegans*			1							1
Convolvulaceae	*Evolvulus cericeus*	1		1							2
Convolvulaceae	*Ipomea sp*							1		1	2
Cyperaceae	*Cyperus sp.*			1						1	2
Ebenaceae	*Diospyros palmeri*									1	1
Ebenaceae	*Diospyros texana*	1	1	1	1	1	1	1		1	8
Euphorbiaceae	*Acalypha radians*									1	1
Euphorbiaceae	*Cnidoscolus texanus*	1	1	1		1	1	1		1	7
Euphorbiaceae	*Croton humilis*	1								1	2
Euphorbiaceae	*Euphorbia johnstonii*		1		1		1	1			4
Euphorbiaceae	*Euphorbia sp 1*	1	1								2
Euphorbiaceae	*Euphorbia sp 2*			1							1
Euphorbiaceae	*Jatropha dioica*								1		1
Euphorbiaceae	*Manihot walkerae*	1	1	1	1		1	1		1	7
Fabaceae	*Acacia berlandieri*	1	1	1	1	1	1		1		7
Fabaceae	*Acacia greggii*			1							1
Fabaceae	*Acacia rigidula*			1		1	1		1	1	5
Fabaceae	*Acacia sphaerocephala*									1	1
Fabaceae	*Caesalpinea phyllanthoides*	1	1	1	1	1	1	1			7
Fabaceae	*Calliandra americana*									1	1
Fabaceae	*Calliandra biflora*			1	1	1		1		1	5
Fabaceae	*Calliandra mexicana*			1	1			1		1	4
Fabaceae	*Calliandra sp*		1	1	1	1	1	1			6
Fabaceae	*Coursetia axillaris*				1					1	2
Fabaceae	*Dalea aurea*	1	1	1		1	1	1		1	7
Fabaceae	*Dalea pogonopthera*	1									1
Fabaceae	*Desmanthus virgatus*	1									1
Fabaceae	*Ebanopsis ebano*					1		1			2
Fabaceae	*Eysenhardtia texana*					1					1
Fabaceae	*Havardia pallens*	1									1

FAMILIA	ESPECIE	319	322	324	326	327	328	331	332	343	Total
Fabaceae	*Hoffmannseggia drummondii*			1	1	1	1	1			5
Fabaceae	*Indigoflora miniata*									1	1
Fabaceae	*Neptunia*							1			1
Fabaceae	*Prosopis gladulosa*								1		1
Fabaceae	*Rhynchosia americana*							1	1	1	3
Fabaceae	*Senna sp*	1	1	1			1				4
Fabaceae	*Vicia sp*									1	1
Hydrophyllaeae	*Nama hispida*			1	1						2
Krameriaceae	*Krameria ramosisima*	1		1	1	1		1		1	6
Labiatae	*Monarda*	1									1
Liliaceae	*Yucca treculeana*	1	1	1	1	1	1	1	1	1	9
Malpighiaceae	*Cevalia sinuata*	1									1
Malpighiaceae	*Galphemia angustifolia*	1									1
Malvaceae	*Sida sp*									1	1
Oleaceae	*Forestiera angustifolia*	1	1	1		1	1	1		1	7
Onagraceae	*Oenothera sp*	1	1					1			3
Passifloraceae	*Passiflora tenuiloba*		1	1							2
Poaceae	*Aristida purpurea*			1							1
Poaceae	*Bouteloua sp*	1									1
Poaceae	*Bouteloua trifida*	1									1
Poaceae	*Cenchrus ciliaris*	1						1			2
Poaceae	*Cenchrus incertus*	1		1						1	3
Poaceae	*Chloris cucullata*		1								1
Poaceae	*Tridens sp*	1									1
Rhamnaceae	*Colubrina texensis*	1	1	1		1	1	1			6
Rhamnaceae	*Condalia hookeri*			1			1		1	1	4
Rhamnaceae	*Karwinskia humboldthiana*	1	1	1	1	1		1	1	1	8
Rubiaceae	*Randia rhagocarpa*	1				1	1	1	1	1	6
Rubiaceae	*Randia sp*									1	1
Rutaceae	*Zanthoxylum fagara*	1	1		1	1	1		1	1	7
Sapotaceae	*Sideroxylum celastrinum*	1					1				2
Scrophulariaceae	*Leucophyllum frutescens*	1	1		1	1			1		5
Simaroubaceae	*Castela erecta*	1		1						1	3
Solanaceae	*Petunia sp*									1	1
Sterculiaceae	*Waltheria indica*	1	1			1	1	1	1	1	7
Turneraceae	*Turnera difussa*	1	1	1	1	1	1		1	1	8
Ulmaceae	*Celtis laevigata*					1					1
Verbenaceae	*Citharexylum berlandieri*		1		1	1	1		1		5
Verbenaceae	*Lippia graveolens*	1	1								2
Verbenaceae	*Verbena sp*	1		1							2
Zygophillaceae	*Guajacum angustifolia*								1		1
TOTAL 91 especies	**TOTAL**	**46**	**28**	**38**	**24**	**29**	**29**	**27**	**23**	**40**	**284**

Table 6. Relation of species with habitat where *Physaria thamnophila* is found on Ranch Loreto, San Fernando, Tamaulipas.

ID	Family	Genus	Species	Variety o ssp	Bush	Caliche	Prairies
1	Acanthaceae	*Carlowrightia*	*hendersonii*			1	1
2	Acanthaceae	*Dyschoriste*	*crenulata*			1	
3	Acanthaceae	*Elytraria*	*bromoides*			1	
4	Acanthaceae	*Justicia*	*turneri*			1	
5	Acanthaceae	*Ruellia*	*sp. 1*			1	
6	Acanthaceae	*Ruellia*	*sp. 2*			1	
7	Acanthaceae	*Sternandrium*	*dulce*			1	
8	Achatocarpaceae	*Phaulothamnus*	*spinescens*		1		
9	Agavaceae	*Manfreda*	*sileri*		1		
10	Agavaceae	*Yucca*	*treculeana*		1	1	
11	Apocynaceae	*Macrosiphonia*	*lanuginosa*	*macrosiphon*		1	1
12	Aristolochiaceae	*Aristolochia*	*sp.*			1	
13	Asclepiadaceae	*Asclepias*	*prostrata*			1	
14	Asclepiadaceae	*Cynanchum*	*barbigerum*			1	1
15	Asclepiadaceae	*Matelea*	*brevicoronata*			1	
16	Asteraceae	*Acourtia*	*runciniata*		1	1	
17	Asteraceae	*Bidens*	*odorata*	*rosea*		1	
18	Asteraceae	*Chaetopappa*	*bellioides*			1	
19	Asteraceae	*Dyssodia*	*tenuiloba*			1	
20	Asteraceae	*Florentina*	*tripteris*			1	
21	Asteraceae	*Latris*	*mucronata*			1	
22	Asteraceae	*Melampodium*	*cinereum*			1	1
23	Asteraceae	*Palafoxia*	*texana*		1		
24	Asteraceae	*Simsia*	*calva*			1	1
25	Asteraceae	*Thelesperma*	*megapotamicum*	*ambiguum*		1	
26	Asteraceae	*Viguiera*	*stenoloba*		1		
27	Asteraceae	*Wedelia*	*texana*			1	1
28	Astreraceae	*Aphanosthephus*	*sp.*		1		
29	Astreraceae	*Thymophilla*	*pentachaeta*			1	1
30	Astreraceae	*Zexmenia*	*sp.*		1		
31	Boraginaceae	*Cordia*	*boissieri*		1	1	
32	Boraginaceae	*Heliotropium*	*angiospermae*		1		
33	Boraginaceae	*Heliotropium*	*confertifolium*			1	
34	Brassicaceae	*Physaria*	*thamnophila*			1	1
35	Bromeliaceae	*Bromelia*	*pinguin*		1		
36	Bromeliaceae	*Tillandsia*	*baileyi*		1		
37	Bromeliaceae	*Tillandsia*	*ionantha*	*ionantha*	1		
38	Bromeliaceae	*Tillandsia*	*unsinoides*		1		
39	Cactaceae	*Acanthocereus*	*tetragonus*		1	1	1
40	Cactaceae	*Ancistrocactus*	*sheeri*		1		
41	Cactaceae	*Cylindropuntia*	*leptocaulis*		1	1	1
42	Cactaceae	*Echinocactus*	*texensis*		1	1	
43	Cactaceae	*Echinocereus*	*enneacanthus*		1		
44	Cactaceae	*Ferocactus*	*hamatacanthus*	*sinuatus*	1		
45	Cactaceae	*Opuntia*	*engelmannii*	*lindheimeri*	1		
46	Cactaceae	*Selenicereus*	*spinulosus*		1		

ID	Family	Genus	Species	Variety o ssp	Bush	Caliche	Prairies
47	Cactaceae	*Stenocereus*	*griseus*		1		
48	Capparaceae	*Capparis*	*incana*		1		1
49	Commelinaceae	*Commelina*	*sp.*			1	
50	Commelinaceae	*Tradescantia*	*elegans*		1		
51	Convolvulaceae	*Convolvulus*	*equitans*				1
52	Convolvulaceae	*Evolvulus*	*alsonoides*			1	
53	Convolvulaceae	*Evolvulus*	*cericeus*		1	1	
54	Convolvulaceae	*Evolvulus*	*sp.*			1	
55	Convolvulaceae	*Ipomea*	*cordatogtriloba*		1	1	
56	Convolvulaceae	*Ipomea*	*sinuata*		1		
57	Convolvulaceae	*Ipomea*	*sp.*			1	
58	Convolvulaceae	*Merremia*	*dissecta*			1	1
59	Cucurbitaceae	*Cucurbitaceae*	*sp.*			1	
60	Cucurbitaceae	*Doyerea*	*emetocanthartica*		1		
61	Cucurbitaceae	*Iberville*	*lindheineri*		1		
62	Cyperaceae	*Cyperus*	*sp.*			1	1
63	Ebenaceae	*Diospyros*	*palmeri*		1		
64	Ebenaceae	*Diospyros*	*sp.*		1		
65	Ebenaceae	*Diospyros*	*texana*			1	1
66	Euphorbiaceae	*Acalypha*	*radians*				1
67	Euphorbiaceae	*Adelia*	*vaseyi*		1		
68	Euphorbiaceae	*Argythamnia*	*neomexicana*			1	
69	Euphorbiaceae	*Argythamnia*	*sp.*				1
70	Euphorbiaceae	*Bernardia*	*myricaefolia*		1		
71	Euphorbiaceae	*Cnidoscolus*	*herbaceum*		1		1
72	Euphorbiaceae	*Croton*	*cortesianus*			1	
73	Euphorbiaceae	*Croton*	*humilis*		1		
74	Euphorbiaceae	*Croton*	*incanus*			1	
75	Euphorbiaceae	*Croton*	*reflexifolius*				1
76	Euphorbiaceae	*Croton*	*sp.*				1
77	Euphorbiaceae	*Croton*	*watsonii*			1	
78	Euphorbiaceae	*Euphorbia*	*dioeca*			1	
79	Euphorbiaceae	*Euphorbia*	*hirta*			1	
80	Euphorbiaceae	*Euphorbia*	*johnstonii*			1	
81	Euphorbiaceae	*Euphorbia*	*sp. 1*			1	
82	Euphorbiaceae	*Euphorbia*	*sp. 2*			1	
83	Euphorbiaceae	*Euphorbia*	*sp. 3*				1
84	Euphorbiaceae	*Euphorbia*	*vellifera*			1	
85	Euphorbiaceae	*Jatropha*	*dioica*		1	1	
86	Euphorbiaceae	*Manihot*	*walkerae*		1	1	1
87	Euphorbiaceae	*Pedilanthus*	*tythymaloides*		1		
88	Euphorbiaceae	*Tragia*	*amblyodonta*			1	
89	Euphorbiaceae	*Tragia*	*sp.*			1	
90	Fabaceae	*Acacia*	*berlandieri*		1	1	
91	Fabaceae	*Acacia*	*farnesciana*		1		
92	Fabaceae	*Acacia*	*greggii*		1		
93	Fabaceae	*Acacia*	*rigidula*		1	1	1
94	Fabaceae	*Acacia*	*sp.*			1	
95	Fabaceae	*Acacia*	*sphaerocephala*		1		
96	Fabaceae	*Caesalpinea*	*drummondii*			1	1

ID	Family	Genus	Species	Variety o ssp	Bush	Caliche	Prairies
97	Fabaceae	*Caesalpinea*	*mexicana*		1		
98	Fabaceae	*Caesalpinea*	*phyllanthoides*			1	
99	Fabaceae	*Caesalpinea*	*platyloba*			1	
100	Fabaceae	*Caesalpinea*	*wootonii*		1		
101	Fabaceae	*Calliandra*	*americana*		1		
102	Fabaceae	*Calliandra*	*biflora*			1	1
103	Fabaceae	*Calliandra*	*conferta*			1	1
104	Fabaceae	*Calliandra*	*tergemina*	*emarginata*		1	1
105	Fabaceae	*Centrosema*	*virginianum*				1
106	Fabaceae	*Cercidium*	*macrum*			1	
107	Fabaceae	*Chamaecrista*	*flexuosa*	*texana*			1
108	Fabaceae	*Chamaecrista*	*greggii*			1	
109	Fabaceae	*Coursetia*	*axillaris*		1		
110	Fabaceae	*Dalea*	*aurea*			1	
111	Fabaceae	*Dalea*	*nana*			1	
112	Fabaceae	*Dalea*	*pogonopthera*		1	1	
113	Fabaceae	*Dalea*	*scandens*	*paucifolia*		1	
114	Fabaceae	*Desmanthus*	*virgatus*		1	1	
115	Fabaceae	*Diphysa*	*microphylla*			1	
116	Fabaceae	*Ebanopsis*	*ebano*		1		
117	Fabaceae	*Eysenhardtia*	*texana*		1		
118	Fabaceae	*Galactia*	*canescens*				1
119	Fabaceae	*Galactia*	*marginalis*				1
120	Fabaceae	*Havardia*	*pallens*		1	1	
121	Fabaceae	*Hoffmanseggia*	*drummondii*			1	
122	Fabaceae	*Indigoflora*	*miniata*			1	
123	Fabaceae	*Mimosa*	*latridens*			1	
124	Fabaceae	*Mimosa*	*malacophylla*		1		
125	Fabaceae	*Neptunia*	*sp.*			1	
126	Fabaceae	*Paintera*	*elachistophylla*		1		
127	Fabaceae	*Parkinsonia*	*texana*	*macra*	1		
128	Fabaceae	*Pomaria*	*austrotexana*			1	
129	Fabaceae	*Pomaria*	*wootonii*		1		
130	Fabaceae	*Prosopis*	*glandulosa*	*glandulosa*	1		
131	Fabaceae	*Rhynchosia*	*americana*			1	1
132	Fabaceae	*Rhynchosia*	*senna*				1
133	Fabaceae	*Senna*	*sp.*			1	
134	Fabaceae	*Tephrosia*	*potosina*				1
135	Fabaceae	*Vicia*	*sp.*			1	
136	Fabaceae	*Zornia*	*gemella*				1
137	Fabaceae	*Zornia*	*reticulata*				1
138	Flacourtiaceae	*Neopringlea*	*integrifolia*		1		
139	Flacourtiaceae	*Xylosma*	*flexuosa*			1	
140	Hydrophyllaceae	*Nama*	*hispida*		1		
141	Krameriaceae	*Krameria*	*lanceolata*			1	
142	Krameriaceae	*Krameria*	*ramosissima*			1	1
143	Labiatae	*Monarda*	*sp.*		1		
144	Lamiaceae	*Salvia*	*coccinea*		1		
145	Lamiaceae	*Teucrium*	*cubense*		1		
146	Liliaceae	*Smilax*	*bona-nox*		1		

ID	Family	Genus	Species	Variety o ssp	Bush	Caliche	Prairies
147	Linaceae	*Linum*	*sp.*			1	1
148	Loasaceae	*Cevalia*	*sinuata*			1	
149	Malpighiaceae	*Galphimia*	*angustifolia*			1	
150	Malpighiaceae	*Malpighia*	*glabra*			1	1
151	Malvaceae	*Abutilum*	*sp.*			1	
152	Malvaceae	*Hibiscus*	*martianus*		1		
153	Malvaceae	*Meximalva*	*filipes*		1		
154	Malvaceae	*Sida*	*ciliaris*			1	
155	Malvaceae	*Sida*	*sp.*			1	1
156	Malvaceae	*Sida*	*tragiifolia*		1		
157	Moraceae	*Ficus*	*sp.*		1		
158	Myrtaceae	*Myrcianthes*	*coccinea*		1		
159	Oleaceae	*Forestiera*	*angustifolia*			1	1
160	Oleaceae	*Schoepfia*	*schreberi*		1		
161	Onagraceae	*Gaura*	*sp.*				1
162	Onagraceae	*Oenothera*	*sp.*			1	
163	Onagraceae	*Onagraceae*	*sp.*			1	
164	Opiliaceae	*Agonandra*	*obtusifolia*		1		
165	Oxalidaceae	*Oxalis*	*berlandieri*		1	1	
166	Oxalidaceae	*Oxalis*	*sp.*				1
167	Passifloraceae	*Passiflora*	*tenuiloba*			1	
168	Poaceae	*Aristida*	*purpurea*	*purpurea*		1	1
169	Poaceae	*Bothriochloa*	*pertusa*			1	1
170	Poaceae	*Bouteloua*	*curtipendula*			1	1
171	Poaceae	*Bouteloua*	*hirsuta*			1	1
172	Poaceae	*Bouteloua*	*radicosa*			1	1
173	Poaceae	*Bouteloua*	*rigidiseta*			1	
174	Poaceae	*Bouteloua*	*sp.*			1	
175	Poaceae	*Bouteloua*	*trifida*			1	
176	Poaceae	*Cenchrus*	*incertus*		1		
177	Poaceae	*Cenchrus*	*spinifex*			1	1
178	Poaceae	*Chloris*	*cucullata*				1
179	Poaceae	*Dicanthium*	*annulatum*		1		
180	Poaceae	*Digitaria*	*cognata*			1	
181	Poaceae	*Elionurus*	*tripsacoides*	*tripsacoides*		1	1
182	Poaceae	*Eragrostis*	*secundiflora*	*oxylepis*		1	1
183	Poaceae	*Eragrostis*	*sessilispica*				1
184	Poaceae	*Helionuras*	*tripsoquelis*				1
185	Poaceae	*Heteropogon*	*contortus*			1	1
186	Poaceae	*Hilaria*	*belangeri*	*belangeri*			1
187	Poaceae	*Panicum*	*maximum*		1		
188	Poaceae	*Paspalum*	*setaceum*	*ciliatifolium*		1	1
189	Poaceae	*Pennisetum*	*ciliare*	*ciliare*	1		
190	Poaceae	*Schizachyrium*	*scoparium*	*littorale*			1
191	Poaceae	*Setaria*	*sp.*		1		
192	Poaceae	*Trachypogon*	*spicatus*			1	1
193	Poaceae	*Tridens*	*muticus*			1	
194	Poaceae	*Tridens*	*sp.*			1	
195	Poaceae	*Tridens*	*texanus*			1	1
196	Polygalaceae	*Polygala*	*alba*		1		

ID	Family	Genus	Species	Variety o ssp	Bush	Caliche	Prairies
197	Polygalaceae	*Polygala*	*glandulosa*			1	
198	Polygalaceae	*Polygala*	*nitida*	*tamaulipana*		1	
199	Polygalaceae	*Polygala*	*palemeri*		1		
200	Polygalaceae	*Polygala*	*sp.*			1	1
201	Renunculaceae	*Clematis*	*drummondi*		1		
202	Rhamnaceae	*Colubrina*	*texensis*			1	
203	Rhamnaceae	*Condalia*	*hookeri*		1	1	1
204	Rhamnaceae	*Karwinskia*	*humboldtiana*		1	1	
205	Rhamnaceae	*Ziziphus*	*obtusifolia*		1		
206	Rubiaceae	*Hedyotis*	*nigricans*			1	
207	Rubiaceae	*Randia*	*latifolia*				1
208	Rubiaceae	*Randia*	*rhagocarpa*		1		
209	Rubiaceae	*Randia*	*sp.*		1		
210	Rubiaceae	*Richardia*	*sp.*			1	
211	Rubiaceae	*Richardia*	*trioccoca*			1	
212	Rutaceae	*Zanthoxylum*	*fagara*		1	1	1
213	Sapindaceae	*Cardiospermum*	*dissectum*			1	
214	Sapindaceae	*Serjania*	*brachycapa*		1		
215	Sapindaceae	*Urvillea*	*ulmaceae*			1	
216	Sapotaceae	*Sideroxylon*	*celastrinum*		1	1	1
217	Sapotaceae	*Sideroxylon*	*palmeri*		1		
218	Scrophulariaceae	*Leucophyllum*	*frutescens*		1	1	
219	Simaroubaceae	*Castela*	*erecta*	*texana*	1		1
220	Solanaceae	*Petunia*	*parviflora*			1	
221	Sterculiaceae	*Ayenia*	*pilosa*				1
222	Sterculiaceae	*Waltheria*	*indica*			1	1
223	Turneraceae	*Turnera*	*diffusa*	*aphrodisiaca*		1	1
224	Ulmaceae	*Celtis*	*laevigata*		1		
225	Ulmaceae	*Celtis*	*pallida*		1		
226	Urticaceae	*Urtica*	*sp.*				1
227	Verbenaceae	*Citharexylum*	*berlandieri*		1		1
228	Verbenaceae	*Lantana*	*achyranthifolia*				1
229	Verbenaceae	*Lantana*	*urticoides*				1
230	Verbenaceae	*Lantana*	*velutina*			1	1
231	Verbenaceae	*Lippia*	*alba*		1		
232	Verbenaceae	*Lippia*	*graveolens*			1	
233	Verbenaceae	*Verbena*	*sp.*			1	
234	Zygophyllaceae	*Guajacum*	*angustifolium*		1		
				TOTAL	**96**	**133**	**74**

EUPHORBIACEAE FAMILY

MANIHOT WALKERAE

CROIZAT, 1942

Observation Sites: 24 localities and are: 194, 195, 254, 266, 276, 317, 319, 321, 322, 324, 325, 326, 328, 330, 331, 333, 334, 336, 337, 339, 341, 342, 343, & 344 (Figure 3).

Habitat: Caliche soils, Pliocene tertiary origin.

Habitat Conditions: Free access area impacted by deforestation for agriculture use and extensive cattle raising (Sites 194, 195); in other sites for caliche exploitation (Site 254) (Figure 10).

Population: During a more than 2 hectares recognition 49 plants (Site 194) and 24 plants were observed (Site 195), both in caliche soil. In February plants had few leaves, without flowers or fruits.

Land Ownership: Localities apparently are ejidal property, although historical records relate to private lands such as Ranch Loreto. Owners sometimes won't let unknown persons enter their lands because they believe the government can make some recommendation or prohibition for certain activities that could damage the species.

Threats and stress sources: Agriculture and extensive cattle activities are the main threats near Ranch Loreto; there is de-fragmentation and habitat destruction due to changes in land use and invading species. Exploitation of caliche is a strong threat.

Two populations were found 150 km north of this locality, where habitat is destroyed because of caliche exploitation (Figure 11) to use as highway pavement. When the caliche is in low areas, land is transformed for agriculture purposes, and when on hills, there is only cattle raising activities.

Observations: A very small specimen with 2 leaves was collected for reproduction in a herbarium; first, it lost its leaves but with the care it received it was very successful as the plant is growing satisfactorily with new leave buds and doubling its size (20 cm tall).

Manihot walkerae is associated with 93 typical Tamaulipas thornscrub plants such as those listed on Table 6; also there are non-determined plants at a specific level.

Figure 10. ***Manihot walkerae*** **observed at Ranch Loreto, San Fernando, Tamaulipas, Mexico.**

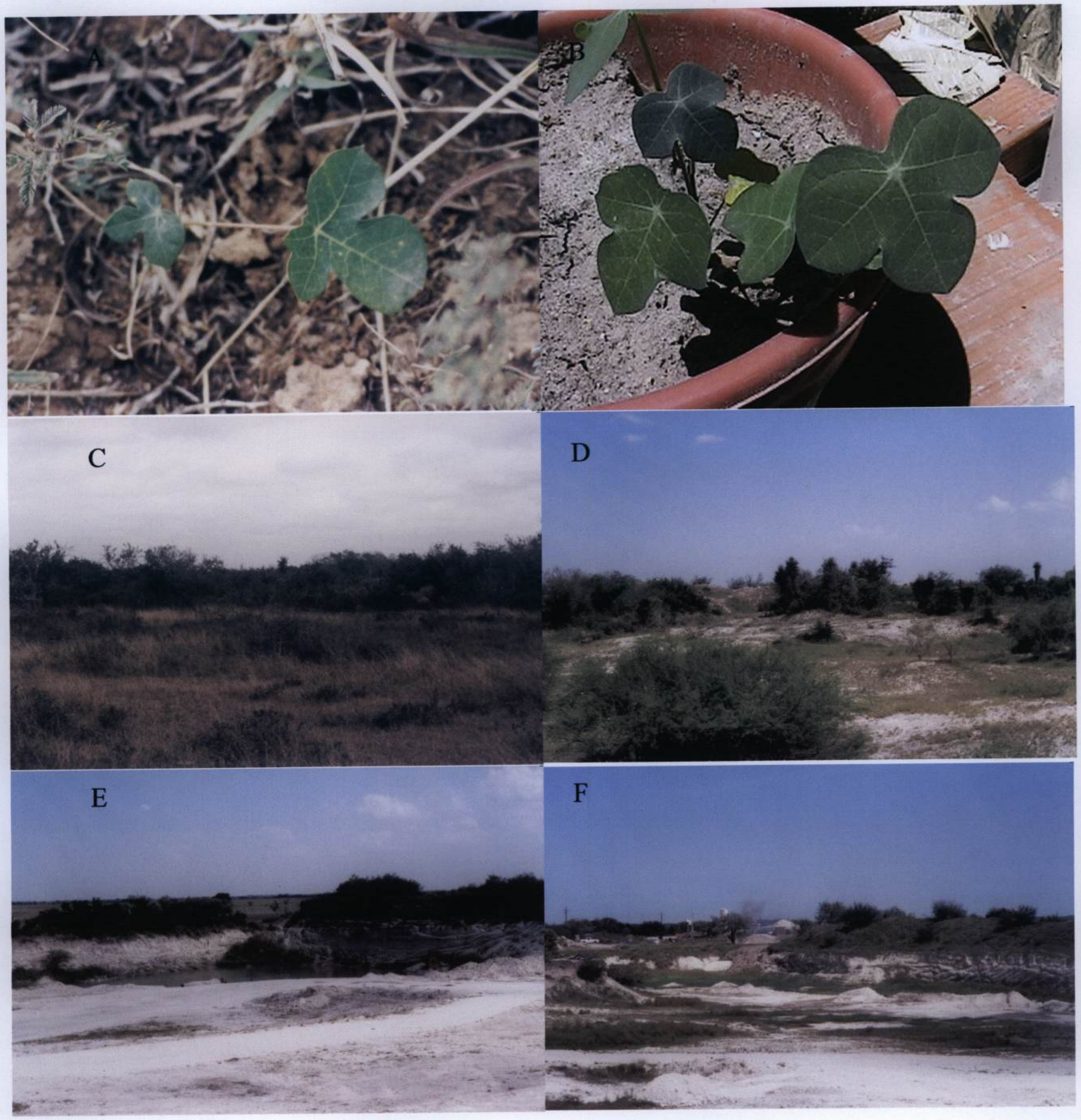

Figure 11.- *Manihot walkerae:* A) Specimen in its natural habitat; B) Cultivated *Manihot*; C) Natural habitat; D) Degraded habitat; E) Caliche exploitation up to 6 meters deep, and F) After exploitation, caliche areas are left to look for new exploitation areas.

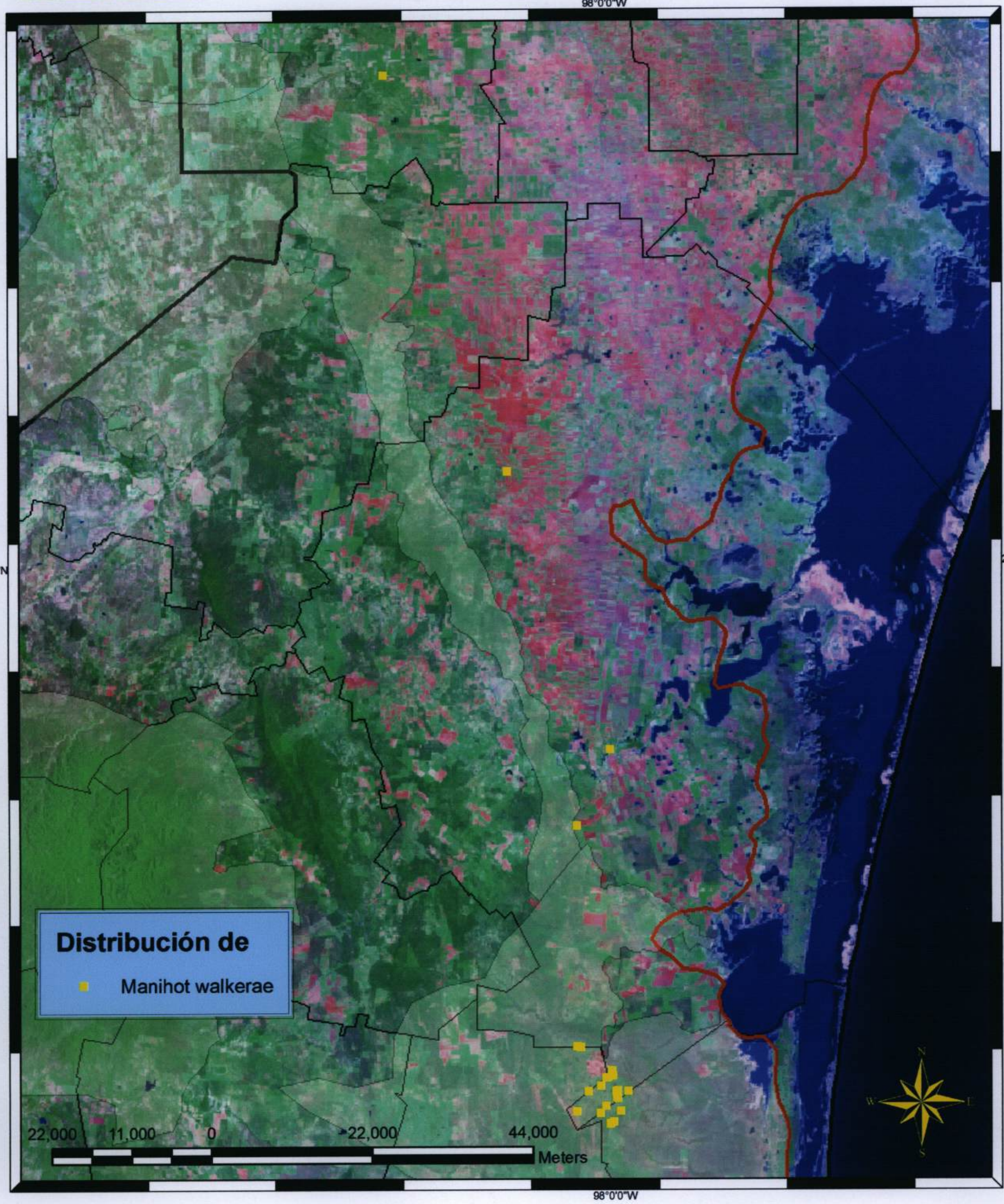

Figure 12.- Distribution of *Manihot walkerae* in Tamaulipas.

Table 7. Flora associated to *Manihot walkerae* localities. Threatened species are highlighted in gray.

FAMILIA	ESPECIE	194	195	254	266	276	317	319	321	322	324	325	326	328	330	331	333	334	336	337	339	341	342	343	Total
Acacthaceae	*Ruellia sp.*																					1	1		2
Agavaceae	*Manfreda sileri*						1																		1
Apocynaceae	*Macrosiphonia lanuginosa*	1		1	1	1		1	1		1	1	1	1	1	1	1	1	1	1	1	1	1	1	20
Asclepidaceae	*Asclepias prostrata*		1																1			1		1	4
Asclepidaceae	*Cynanchum barbigerum*						1	1		1	1	1	1				1	1		1			1		10
Asclepidaceae	*Matelea sp.*																		1						1
Asteraceae	*Palafoxia texana*				1	1													1		1			1	5
Asteraceae	*Parthenium hyterophorus*			1																					1
Asteraceae	*Sanvitalia ocymoides*			1																					1
Astreraceae	*Aphanosthephus sp*							1																	1
Astreraceae	*Eupatorium azureum*	1																							1
Astreraceae	*Thymophilla pentachaeta*										1	1	1	1	1			1		1	1		1		9
Astreraceae	*Thymophilla tenuiloba*		1	1	1	1		1		1	1	1	1					1			1				11
Astreraceae	*Zexmenia hispida*			1	1														1	1					4
Boraginaceae	*Cordia boissieri*	1	1	1	1	1		1		1	1	1		1	1	1	1	1	1	1	1		1	1	19
Boraginaceae	*Heliotropium angiospermum*	1	1											1							1				4
Boraginaceae	*Heliotropium confertifolium*			1		1		1			1	1				1				1	1		1		9
Boraginaceae	*Tiquilia canescens*				1																				1
Brassicaceae	*Physaria thamnophila*							1		1	1		1	1		1								1	7
Bromeliaceae	*Bromelia pinguin*						1					1												1	3
Bromeliaceae	*Tillandis ionantha*						1																		1
Bromeliaceae	*Tillandis unsinoides*						1													1					2
Bromeliaceae	*Tillandsia baileyi*						1																		1
Cactaceae	*Acanthocereus tetragonus*	1	1			1	1	1	1	1			1	1	1		1	1	1	1			1	1	16
Cactaceae	*Ancistrocactus sheeri*													1								1			2
Cactaceae	*Cylindropuntia leptocaulis*		1		1	1	1	1			1	1			1			1							9
Cactaceae	*Echinocactus texensis*		1			1		1																	3
Cactaceae	*Echinocereus pectinatus*		1																						1
Cactaceae	*Echinocereus reichebachii*		1																						1
Cactaceae	*Ferocactus hamatacanthus*				1																				1
Cactaceae	*Opuntia engelmannii*	1	1	1	1	1	1							1					1	1	1	1			11
Cactaceae	*Sclerocactus scheeri*	1	1	1																					3
Cactaceae	*Stenocereus griseus*					1												1							2

FAMILIA	ESPECIE	194	195	254	266	276	317	319	321	322	324	325	326	328	330	331	333	334	336	337	339	341	342	343	Total
Cactaceae	*Thelocactus setispinus*					1																			1
Commelinaceae	*Commelina sp.*																							1	1
Commelinaceae	*Tradescantia elegans*										1	1													2
Convolvulaceae	*Evolvulus alsinoides hirticaulis*	1																							1
Convolvulaceae	*Evolvulus cericeus*							1			1	1										1	1		5
Convolvulaceae	*Ipomea sp*								1						1	1	1		1			1	1	1	8
Cucurbitaceae	*Coculus diversifolius*	1	1	1																					3
Cucurbitaceae	*Iberville lindheineri*																				1				1
Cyperaceae	*Cyperus sp.*										1	1							1			1		1	5
Ebenaceae	*Diospyros palmeri*																			1				1	2
Ebenaceae	*Diospyros texana*					1		1	1	1	1	1	1	1	1	1	1	1		1	1		1	1	16
Euphorbiaceae	*Acalypha lineheimeri*	1																							1
Euphorbiaceae	*Acalypha radians*			1															1			1		1	4
Euphorbiaceae	*Adelia vaseyi*						1																		1
Euphorbiaceae	*Bernardia myricaefolia*						1														1				2
Euphorbiaceae	*Cnidoscolus texanus*						1	1	1	1	1	1		1	1	1	1		1		1	1		1	14
Euphorbiaceae	*Croton humilis*							1													1		1	1	4
Euphorbiaceae	*Croton incarum*																				1				1
Euphorbiaceae	*Croton sp*			1	1	1																			3
Euphorbiaceae	*Euphorbia cordiflora*			1																					1
Euphorbiaceae	*Euphorbia johnstonii*									1		1	1	1		1							1		6
Euphorbiaceae	*Euphorbia sp 1*					1		1		1								1							4
Euphorbiaceae	*Euphorbia sp 2*										1	1								1					3
Euphorbiaceae	*Jatropha dioica*			1			1														1				3
Euphorbiaceae	*Manihot walkerae*	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	23
Euphorbiaceae	*Pedilamthus tytimaloides*						1																		1
Fabaceae	*Acacia berlandieri*				1		1	1		1	1	1	1	1							1				9
Fabaceae	*Acacia farnesciana*	1		1	1		1								1										5
Fabaceae	*Acacia greggii*										1	1													2
Fabaceae	*Acacia rigidula*	1	1	1	1	1	1		1		1	1		1			1	1		1	1	1	1	1	17
Fabaceae	*Acacia sphaerocephala*																							1	1
Fabaceae	*Acacia wrightii*				1																				1
Fabaceae	*Caesalpinea mexicana*		1																						1
Fabaceae	*Caesalpinea phyllanthoides*					1		1	1	1	1	1	1	1	1	1		1			1	1	1		14
Fabaceae	*Calliandra americana*																				1			1	2

FAMILIA	ESPECIE	194	195	254	266	276	317	319	321	322	324	325	326	328	330	331	333	334	336	337	339	341	342	343	Total
Fabaceae	*Calliandra biflora*										1	1	1			1	1	1	1		1	1	1	1	11
Fabaceae	*Calliandra conferta conferta*	1	1	1		1																			4
Fabaceae	*Calliandra mexicana*										1	1	1		1	1	1	1	1		1	1	1	1	12
Fabaceae	*Calliandra sp*								1	1	1	1	1	1		1		1	1	1	1	1	1		13
Fabaceae	*Cercidium macrum*			1		1											1								3
Fabaceae	*Chaemacrista greggii*	1																							1
Fabaceae	*Chaemacrista nictitians*		1																						1
Fabaceae	*Coursetia axillaris*												1								1			1	3
Fabaceae	*Dalea aurea*							1	1	1	1	1		1	1	1		1	1	1	1	1	1	1	15
Fabaceae	*Dalea nana nana*		1	1																					2
Fabaceae	*Dalea pogonopthera*							1										1							2
Fabaceae	*Dalea sp.*					1																			1
Fabaceae	*Desmanthus virgatus*							1										1							2
Fabaceae	*Diphysa microphylla*		1																						1
Fabaceae	*Ebanopsis ebano*	1	1			1	1									1									5
Fabaceae	*Ensenhardtia texana*				1																				1
Fabaceae	*Galactica marginalis*																1			1					2
Fabaceae	*Havardia pallens*	1	1			1	1	1									1			1	1	1			9
Fabaceae	*Hoffmannseggia drummondii*										1	1	1	1		1		1							6
Fabaceae	*Indigoflora miniata*		1																					1	2
Fabaceae	*Lupinus texansis*	1	1	1																					3
Fabaceae	*Mimora texana*		1																						1
Fabaceae	*Mimosa emoryana*		1																						1
Fabaceae	*Neptunia*															1	1	1	1	1		1	1		7
Fabaceae	*Pomaria autrotexana*						1																		1
Fabaceae	*Prosopis gladulosa*	1	1	1	1		1											1	1	1		1			9
Fabaceae	*Rhynchosia americana*														1	1	1	1		1	1	1	1	1	9
Fabaceae	*Rhynchosia senna*														1										1
Fabaceae	*Senna sp*			1	1			1		1	1	1		1	1				1				1		10
Fabaceae	*Vicia sp*																							1	1
Fabaceae	*Zapoteca media*	1	1																						2
Hydrophyllaceae	*Nama hispida*										1	1	1								1				4
Krameriaceae	*Krameria ramosisima*	1	1	1	1	1		1	1		1	1	1		1	1	1	1	1	1	1	1	1	1	20
Labiatae	*Monarda*							1																	1
Liliaceae	*Yucca treculeana*	1	1	1		1	1	1		1	1	1	1	1		1		1	1	1	1		1	1	18

FAMILIA	ESPECIE	194	195	254	266	276	317	319	321	322	324	325	326	328	330	331	333	334	336	337	339	341	342	343	Total
Malpighiaceae	*Cevalia sinuata*							1															1		2
Malpighiaceae	*Galphemia angustifolia*							1	1														1		3
Malvaceae	*Abutilum sp*						1														1				2
Malvaceae	*Hibuscus martianus*					1																			1
Malvaceae	*Meximalva filipes*			1		1	1										1				1				5
Malvaceae	*Sida sp*					1												1			1			1	4
Moraceae	*Ficus sp*																			1					1
Oleaceae	*Forestiera angustifolia*		1					1	1	1	1	1		1		1		1		1			1	1	12
Onagraceae	*Oenothera sp*							1		1						1									3
Oxalidaceae	*Oxalis berlandieri*																						1		1
Oxalidaceae	*Oxalis dichromata*			1																					1
Passifloraceae	*Passiflora tenuiloba*				1					1	1	1									1		1		6
Poaceae	*Aristida purpurea*										1	1						1							3
Poaceae	*Bouteloua hirsuta*		1																						1
Poaceae	*Bouteloua repens*		1	1																					2
Poaceae	*Bouteloua sp*							1							1										2
Poaceae	*Bouteloua trifida*							1										1							2
Poaceae	*Cenchrus ciliaris*			1		1	1	1								1	1		1						7
Poaceae	*Cenchrus incertus*						1	1			1	1								1		1		1	7
Poaceae	*Chloris cucullata*									1															1
Poaceae	*Chloris cucullata*			1																					1
Poaceae	*Helionuras tripsoquelis*																1								1
Poaceae	*Heteropogon contortus*	1	1																						2
Poaceae	*Tridens sp*							1																	1
Polemoniaceae	*Phlox drummondi*		1																						1
Renunculaceae	*Clematis drummondi*			1			1														1				3
Rhamnaceae	*Colubrina texensis*	1		1				1		1	1	1		1		1				1	1				10
Rhamnaceae	*Condalia hookeri*										1	1		1	1		1	1	1			1		1	9
Rhamnaceae	*Condalia spathulata*	1		1		1																			3
Rhamnaceae	*Karwinskia humboldthiana*	1	1	1	1	1		1		1	1	1	1		1	1	1	1	1	1	1	1	1	1	20
Rhamnaceae	*Ziziphus obtusifolia*					1																			1
Rubiaceae	*Randia rhagocarpa*			1			1	1				1		1		1		1		1	1			1	10
Rubiaceae	*Randia sp*																1	1		1	1			1	5
Rutaceae	*Zanthoxylum fagara*	1	1	1		1	1	1		1			1	1	1		1	1	1	1	1		1	1	17
Sapindaceae	*Cardiospermum dissectum*																				1				1

FAMILIA	ESPECIE	194	195	254	266	276	317	319	321	322	324	325	326	328	330	331	333	334	336	337	339	341	342	343	Total
Sapotaceae	*Sideroxylum celastrinum*	1	1			1		1	1					1						1	1		1		9
Scrophulariaceae	*Leucophyllum frutescens*		1	1		1	1	1		1			1					1		1	1		1		11
Simaroubaceae	*Castela erecta*			1		1	1	1			1	1						1		1				1	9
Smilacaceae	*Smilax bona-nox*																			1					1
Solanaceae	*Lycium berlandieri*			1		1																			2
Solanaceae	*Petunia sp*																							1	1
Solanaceae	*Solanum eleagnifolia*			1																					1
Solanaceae	*Sonchus oleraceus*			1																					1
Sterculiaceae	*Ayenia pilosa*																1								1
Sterculiaceae	*Melochia pyramidalis*			1	1																				2
Sterculiaceae	*Waltheria indica*	1	1			1	1	1		1				1	1	1	1	1	1	1		1	1	1	16
Turneraceae	*Turnera difussa*	1	1	1	1	1	1	1		1	1	1	1	1					1	1	1		1	1	17
Ulmaceae	*Celtis laevigata*																			1					1
Ulmaceae	*Celtis pallida*			1		1																			2
Verbenaceae	*Citharexylum berlandieri*			1		1				1		1	1	1			1	1		1	1				10
Verbenaceae	*Lantana urticoides*														1										1
Verbenaceae	*Lippia alba*	1																							1
Verbenaceae	*Lippia graveolens*	1	1				1	1		1								1		1	1		1		9
Verbenaceae	*Verbena officinale halei*	1		1																					2
Verbenaceae	*Verbena sp*							1			1	1													3
Vitaceae	*Cissus trifoliata*			1	1																				2
TOTAL 160 ESPECIES	Total	33	41	47	24	40	35	46	14	28	38	41	24	29	23	27	27	39	28	40	46	26	36	40	772

Bibliography Research

Literature reporting localities for these species of rare plants is very scarce, many without publication or reports in Mexico. Thanks to several written and non-written cooperation agreements observation sites have been obtained for rare plants.

A list of species reports in publications and Museum data are presented in Appendix 4. This list was started with the work of Carr Williams (TNC, 2002), from which a database with historic reports is being created. A problem to have a more satisfactory progress is that publications do not provide coordinate data needed to make a GIS with the information.

Laboratory Work

At each sampling site specimens of rare plants were collected for their certification and/or specific determination, as some groups do not have enough information for field identification. The lab work was done with the collaboration of the Biological Sciences Faculty, and the Forestry Sciences Faculty, both from the University of Nuevo León (U.A.N.L.). Photographs of the plants and habitat in sampling sites were taken, to help to their correct identification once the herbarium collection material was reviewed. Specimens for collection will be deposited mainly at the Forestry Sciences Faculty of the U.A.N.L. This process has not begun because of other investigation project commitments. Adding these to the database and collection will take at least six months of work.

Information Work for Database

A database (DB) with the reported species for the Tamaulipas Thornscrub Eco-region (MET Eco-region) was elaborated, with a total of 1464 species, including 38 fields, with the following taxonomy, museum, locality and global range information, distribution patterns and coordinates.

During the last revision 35 more species will be added to the previous list, but this requires a revision by specialists to certify the species.

With this list species of rare plants and target species for conservation were identified for the MET Eco-region Plan. This gave a registration total above 15,000, of which 450 are new reports for 45 species of rare plants (Appendix 1). There are 27 reports that require a field visit to certify the species, as the needed structures for their identification were not found. There are many records of non-determined species that could be rare species, which will be annexed to our list of threatened species, as well as new subspecies for the cactus *Turbinicarpus.*

There are still plant samples whose species have not being determined and that could provide some 5000 more reports, particularly of grasses and other herbaceous that continue in the identification process.

REPORTS OF OTHER RARE PLANT SPECIES OF NORTHEAST MEXICO

Within the study to elaborate the Tamaulipas Thornscrub Eco-regional Plan a budget was provided for field work to locate conservation targets of flora species for ecological evaluation and as the study area of the rare plants project is found in this area, sampling and observations were made for any plants listed as a threatened species for Mexico and the United States (Texas).

466 samplings were done in Northeast Mexico in more than 360 observation sites and we found new reports for 41 species in the general inventory (Appendix 3). Reports of species by locality are presented in Appendix 1 with a series of commentaries on their populations, interest areas for conservation and the species distribution when it wasn't collected for this study or from distribution data based on historical reports. Data of geographic coordinates, date of observation/collection, etc., are presented in Appendix 2 (and on the database annexed to the Report). A photographic Atlas was prepared with all the species found in this study in Appendix 5.

These findings are very important to establish better conservation measures for the natural resources, and are a tool to establish conservation agreements with landowners where there are species under the risk category (Appendix 7).

In Appendix 6 some species that could not be identified are presented and that were very rare or scarce in the samplings. Further studies can provide more data for these species, their distribution range and biological status.

All the samples collected will be deposited mainly at the Herbarium of the Forestry Sciences Faculty of the University of Nuevo León (U.A.N.L.); also, samples will be given to the following Herbariums: Biological Sciences Faculty, U.A.N.L., Universidad Autónoma Agraria "Antonio Narro", and Instituto de Ecología y Alimentos from the Universidad Autónoma de Tamaulipas. If TPWD and TNC require a sample deposited in a Herbarium within the United States, the needed paperwork must be done for their legal introduction in Texas.

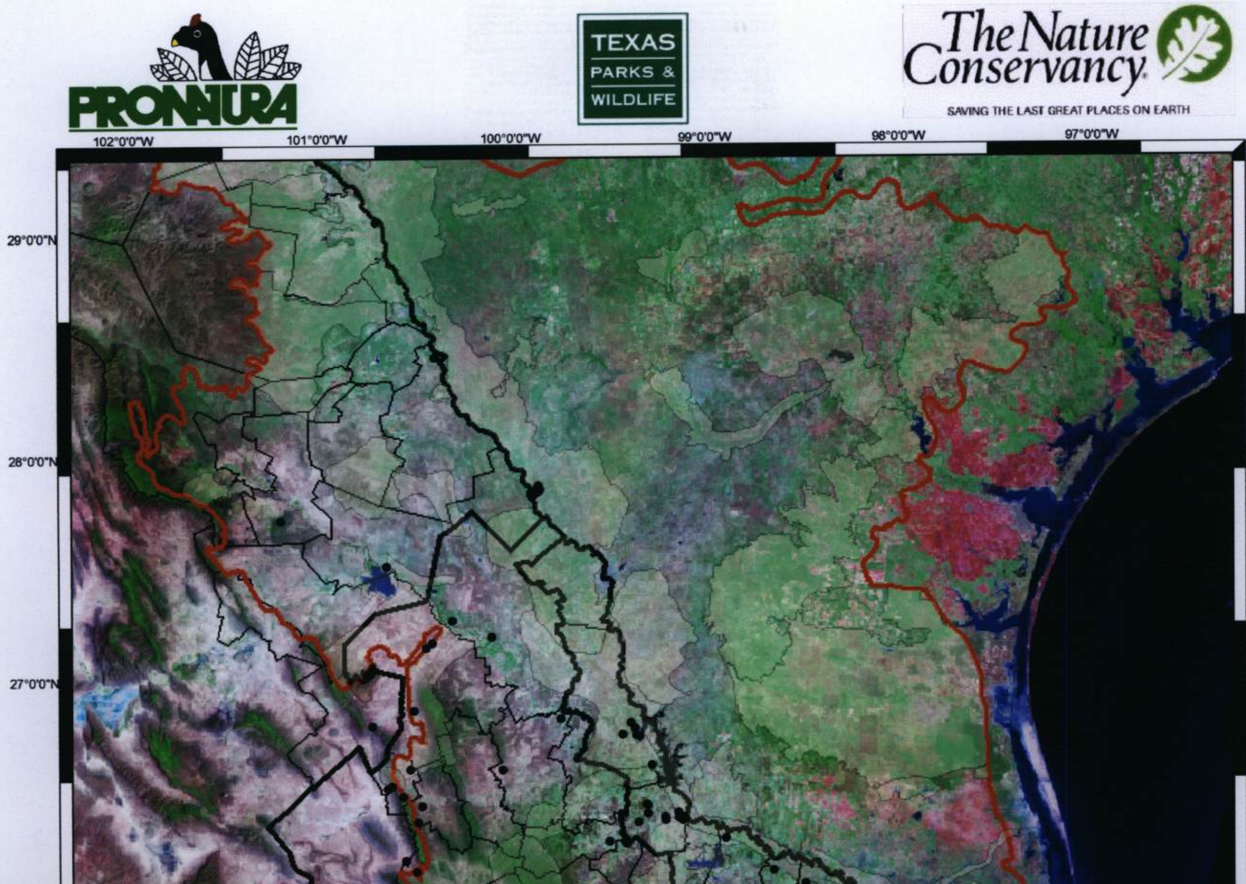

Figure 13. Reports for species of rare plants occurrences observed in this study. In Appendix 1 the species and their localities are reported, and Appendix 2 shows the geographic coordinates.

PRONATURA

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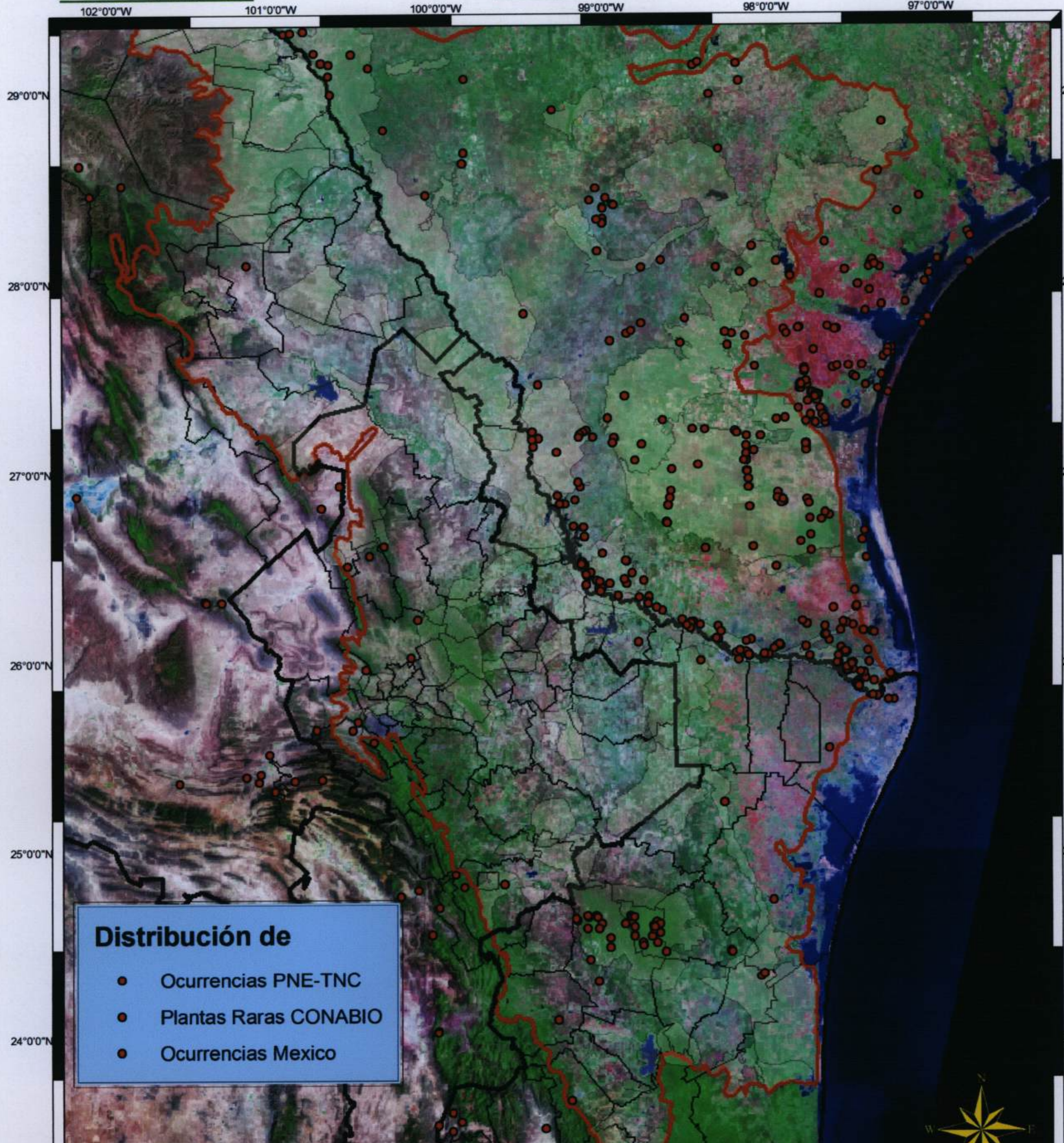

Figure 14. Historical reports for species of rare plants obtained in Herbariums, scientific collections and CONABIO. Appendix 2 shows other reports without coordinates in collection.

Conservation Measures

During field sampling, private and social (ejido) landowners were contacted to involve them in conservation projects for species under threatened categories; to date there have been talks and advances in the following sites. Others will be obtained through cattle associations from Nuevo León and Tamaulipas, and ANGADI (National Association of Diversified Cattle Dealers).

LAND OR SITE	SPECIES TO PROTECT
Rincón del Perro, San Fernando, Tamaulipas	*Adelia vaseyi* habitat.
Ranch Rincón de Anacahuitas, San Fernando, Tamaulipas	Land and aquatic habitat with natural vegetation with good condition of Tamaulipas Thornscrub. Excellent habitat for migratory waterfowl.
Ejido El Refugio, Matamoros, Tamaulipas	Lower Rio Grande habitat with *Sabal mexicana.*
Ranch Las Carreras, San Fernando, Tamaulipas	Tamaulipas Thornscrub species with habitat in good condition.
Laguna Anda La Piedra, San Fernando, Tamaulipas	*Adelia vaseyi, Echinocereus papillosus* var. *papillosus* habitats.
Ranch Loreto, San Fernando, Tamaulipas	Habitat for various species of rare plants (19 species): uIT the presence of *Manihot walkerae, Adelia vaseyi, Manfreda longiflora, Manfreda sileri, Physaria thamnophila; Caesalpinea phyllanthoides, Hoffmannseggia drummondi* and *Asclepia prostrata*. Flora richness surpasses 230 species. Presents thorn scrub and native grasslands in good conditions. Adjunt the ecological evaluation for the ranch.
Ranch Los Carrizos, Matamoros, Tamaulipas	*Tillandsia baileyi* habitat.
Ranch El Saladito, Cd. Mier, Tamaulipas	Several species of rare plants are found in this site: *Cardisspernum dissectum, Echonocereus poselgeri, Echinocereus reichenbachi var. fitchii, Sabal mexicana, Coryphantha macromeris* var. *runyoni.*
Ranch San Rafael, China, Nuevo León	Habitat for *Adelia vaseyi, Coryphantha macromeris* var. *runyoni, Lophophora williamsi, Echinocereus poselgeri, Echinocereus papillosus* var. *papillosus, Echinoereus reichenbachi* var. *fitchii.*
Ranch La Coma, China, Nuevo León	Habitat for *Asclepias prostrata, Matelea brevicoronata, Caesalpinea caudata, Echinocereus poselgeri* and an interesting population of *Aristolochia* sp.
Ranch Cañada Fria, San Fernando, Tamaulipas	This is a very interesting ranch because it presents environmental conditions similar to those found for *Manihot walkerae and Physaria thamnophila.* We hope to evaluate the ranch in September, 2005, to search and inspect if other rare plants are found here.

Ranch El Lobo, San Fernando, Tamaulipas	This is a very interesting ranch because it presents the environmental conditions similar to those found for *Manihot walkerae and Physaria thamnophila.* We hope to evaluate the ranch in September, 2005, to search and inspect if other rare plants are found here.

There are lands of high interest where it hasn't been possible to contact the owners.

LAND OR SITE	SPECIES TO PROTECT
Lucio Blanco, Tamaulipas	*Astrophytum asterias, Arioarpus trigonus* habitats.
Site at San Juan de Vaquerías, Nuevo León	*Astrophytum asterias, Adelia vaseyi, Echinocereus papillosus* var. *papillosus.*
Sierra de Higueras, Higueras, Nuevo León	Habitat for several species of rare plants: *Epithelanta micromeris, Ariocarpus trigonus, Echonicereus poselgeri, Eriogonum greggii,* besides a new endemic species *Turbinicarpus saueri* ssp *septentrionalis.*
Ranch at Rincón de Potrero, Villaldama, Nuevo León	Private land and habitat for *Brahea berlandieri and Bauhinea lunaroides,* and a not identified land orchid.

MANAGEMENT PLAN FOR SPECIES CONSERVATION

In order to guarantee the conservation of species we must consider the following recommendations:

The conservation management plan for species under a threatened category will be limited to working together with the landowner to destine a land plot according to the estate's extension, physical features, vegetation cover and/or extension that the owner provides. These will be closed with wire fence and/or mesh to avoid cattle grazing.

To evaluate population densities two inspection visits will be done each year. The visit will take place during the reproductive season so seeds can be collected for germination in site and posterior transplantation, making the needed preparations for each species, and reforesting impacted areas at the ranch and neighboring areas were the species is known.

A sign with the message Conservation of Endangered Species with the trademarks for the participants and the ranch's name will be installed; as well as the species that is being protected. This will motivate other ranch owners to commit to conservation of the natural resources. Also, we will search for the best legal conservation mechanism with the landowner and we would try, as much as possible, to support them so they can receive economic benefits for the environmental services offered by their properties.

In the particular case of the *Manihot* with only two areas where work can be done because of significant populations (Ranch Loreto and Ejido Vicente Guerrero), at the locality of La Llorona, there is only less than three hectares because the rest is used for agriculture. Here the main threat is goat herds.

The Ranch Loreto, where *Manihot walkerae* and *Physaria thamnophila* are found, an area of approximately 100 hectares is being planed, distributed in five 20-hectare sections, to ensure the conservation for these two species and at the same time 17 other species of rare plants found in this place (Table 6).

In the case of *Ayenia limitaris*, even though in some sites populations are impacted by cattle activities, spaces left between properties are good places to maintain and conserve the species. For the time being, we only have established contact with small landowners, but if we arrange participation of an estate larger than 1000 hectares we could implement the exclusion of sites and apply a larger conservation strategy and consequently eliminate threats.

DISCUSSION

The three species of rare plants (*Ayenia limitaris*, *Manihot walkerae* and *Physaria thamnophila*) studied in the present investigation were found.

Only eight historic locations were known, 3 for *Ayenia*, 4 for *Manihot* and 1 for *Physaria*. At the conclusion of this study 14 for *Ayenia*, 25 for *Manihot* and 9 for *Physaria* had been found.

Revision of Herbariums and Botanical Collections from Coahuila, Nuevo León, Tamaulipas, San Luis Potosí and Veracruz offered as result zero reports in Northeast Mexico. Also, CONABIO with the largest database on national biodiversity (with more than 40 captured institutions) only had four reports for two localities for one of the species (*Manihot*); this data is found at the IB-UNAM Herbarium.

Talking advantage of the search for these species, a revision was done on any species under the risk category and/or species target of conservation for the Tamaulipas Thornscrub Eco-regional Plan, 400 new reports were found and 340 historical reports from national Herbarium consults.

There isn't much data for *Ayenia limitaris* to establish a comparison, but at first sight flowering and seed producing seasons have a long period from August to April or May. It was believed that its habitat was the sotobosque, this study found a different sunny habitat.

The environmental conditions for *Manihot walkerae* are the same as in Texas, but the maximum sizes for the plants are lower; here they are scarcely 30 cm. tall.

The habitat conditions and associated species are very different to those reported for *Physaria thamnophila* in Texas (Stermnerg, 2005) and Tamaulipas; here it is found with more than one hundred species, and also geological conditions are different as they are found in sandy soils over a deep caliche layer.

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To Hernando Cabral of TNC Mexico for his review of the report, logistic support and friendship by being present during all the study's progress.

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APPENDIX 1

List of species reported in the "Species of rare plants" Project.

Scientific Name	Range	Historical reports	Additional reports	Sites or Locality	Observations
Ayenia limitaris	G2 S1	4	13	289, 304, 306, 307, 311, 314, 357, 358, 359, 362, 363, 364, 365	The original population found in 1981 in Tepehuajes, Tamaulipas was not located, however at 500 m at west of this site were found 48 plants in 1994. In this study we registered 13 new localities, increasing the distributional range of Ayenia limitaris. There are few threats but the most significants are the pasture and urbanization. The habitat conditions and flowering periods are different from the reports registered at Texas.
Manihot walkerae	G1 S1	4	24	194, 195, 254, 266, 276, 317, 319, 321, 322, 324, 325, 326, 328, 330, 331, 333, 334, 336, 337, 339, 341, 342, 343, 344.	Two populations have been found near Ranch Loreto and one more in Valle Hermoso in Tamaulipas. Caliche exploitation almost finishes the population with only six specimens at Site 254. An excellent population is Site 266 with 67 specimens in half hectare. Other populations with fewer individuals are Sites 333, 336, 343 located inside Ranch Loreto, and one more population, Site 344 with 54 individuals observed. It has been reported for Nuevo León but not been found.
Physaria thamnophila	G1 S1	1	9	319, 322, 324, 326, 327, 328, 331, 332, 343.	The search in the adjoining zone of México, in the border in which was reported a Physaria in Texax, was negative; we did not find any population. In the specific historical location at Rancho Loreto the plant was not found, but in the evaluation of the ranch were observed from 1 to 67 plants per hectare in 9 sites. The habitat conditions and the associated flora are very different from the reported in Texas.

Checklist of the Target species, for the Tamaulipas Thornscrub Eco-regional Plan.

Scientific Name	Range	Historical reports	Additional reports	Sites or Locality	Observations
Abies guatemalensis		2	0		This species is distributed in the high Pine-Oak forests, located at the southern tip of the Tamaulipas thornscrub eco-region.
Abies vejanii		8	0		This species is distributed in the Sierra Madre Oriental in the states of Coahuila and Nuevo León.
Acleisanthes crassifolia	G2 S2	10	0		Records found in Mexico are for the Sierra San Carlos, within the Thornscrub Eco-region, but in the mountains where the vegetation is different.
Adelia vaseyi	G2 G3 S2 S3	10	30	104, 107, 160, 162, 182, 184, 187E, 187F, 187G, 187I, 191, 192, 200, 207A, 207B, 207C, 211, 212, 213, 214, 235, 240, 251, 253, 255, 274, 286, 316, 317, 366.	Only three sites were known for this species in the State of Tamaulipas, and now we have extended it for the China municipality in Nuevo León.
Agave bracteosa		2	2	125A, 125B.	This is an endemic, peripheral species, located in rocky areas with slopes between 60º and 90º, La Huasteca, Jonuco, in Santa Catarina and Potrero Chico in Hidalgo, N.L. and in Coahuila.
Agave victoria-reginae		1	2	141, 142.	It is distributed on the boundaries of the Chihuahua Desert Eco-region, in the status of Durango, Coahuila and Nuevo León, even though there are reports at the Tamaulipas Thornscrub.
Ambrosia cheiranthifolia	G2 S2		1	223.	It was found in a site next to Laguna Madre in Tamaulipas.
Amoreuxia wrightii		9	13	53, 61, 66, 165, 275, 305, 311, 353, 358, 359, 360, 367, 368.	Observation sites are scarce and its populations also, with less than 10 specimens per hectare; however, at the 353 and 367 localities populations with a distribution over 100 specimens per hectare were found, even though other scarce specimens were found nearby.

Anthericum chandleri		3	0		This species was not found in samplings within the Tamaulipas thornscrub eco-region and only one report in the visited herbariums and botanical collections.
Ariocarpus kotschoubeyanus		3	0		This species has a distribution in the Chihuahua desert eco-region.
Ariocarpus retusus		6	0		This species has a distribution in the Chihuahua desert eco-region.
Ariocarpus trigonus		2	7	183, 209, 210, 216-1, 216-2, 217-2, 218-1, 218-2, 281.	Two important distribution sites: Lucio Blanco in Tamaulipas and Higueras in Nuevo León.
Asclepios prostrata	G1 G2 S1 S2	2	6	195, 336, 341, 343, 344, 350.	Has only been observed in Tamaulipas; we received information on a population in Nuevo León on the municipal boundaries of General Terán and Montemorelos, but it was not found; however, an isolated population was found in China, N.L. (Site 350).
Astrophytum asterias (*Echinocactus asterias*)	G1 S1		5	107, 180, 181, 183, 184, 207F.	Population in the best conditions is found at Vquerías (107), in Nuevo León, with more than 100 specimens in a 1 hectare extension. Other populations are scarcer and have more deteriorated habitats. Probably, this species distribution coincides with an ancient coastline.
Astrophytum capricorne (*Echinocactus capricornis*)		2	3	112, 113, 140.	Peripheral species within the thornscrub eco-region, extending to the Chihuahua desert region.
Bauhinia lunarioides (*B. congesta*)	G3 S1	15	1	103A	A population was found at Rincón del Potrero, and two more sites have been reported, one for Chipinque and another for Cerro de las Mitras, all reported in Nuevo León. We have detected that this species is more related to the Sierra Madre Oriental.
Beaucarnea inermes		3	0		Historical records reported are outside the Tamaulipas Thornscrub Eco-region.
Boerhavia mathisiana	G2 S2	2	0		This species was not found in samplings inside the Tamaulipas thornscrub region.

Brahea dulcis (=*B. berlandieri*)		4	8	103A, 103B, 112, 113, 114, 125A, 141, 144.	Its distribution is found between two eco-regions, the Tamaulipas thornscrub and the Chihuahua desert. New distribution sites have been reported to the interior of the thornscrub in Sierra de Picachos.
Caesalpinea caudata		5	1	350	Species of limited distribution, not abundant, probably this is the most southern known report.
Caesalpinea phyllanthoides	G2 S1	9	34	189, 211, 212, 252, 253, 256, 257, 269, 271, 276, 286, 318, 319, 320, 321, 322, 324, 325, 326, 327, 328, 329, 330, 331, 333, 334, 335, 336, 338, 339, 340, 341, 342, 344.	Populations are scarce and in ejido lands, next to roads. Site 257 favored clearing of land, as this species was dominant with a population over 2000 specimens. At Ranch Loreto (Sites 318-343) it is found distributed throughout most of the property, even though observations are not very abundant.
Calliandra biflora	G3 S3	3	18	323, 324, 325, 326, 327, 329, 330, 333, 334, 335, 336, 338, 339, 340, 341, 242, 343, 344.	At Ranch Loreto (Sites 323-343) it is found distributed in a large part of the property, even though observations are not very abundant.
Callisia micrantha (= *Tradescantia micrantha*)	G3 S3		5	21A, 21B, 80, 186B, 225.	Populations found are medium large, but are always located next to other bushes, probably they provide a damper soil with more nutrients.
Cardiospermum dissectum	G2 S2	10	9	2G, 27, 28, 135, 203, 269, 270, 339, 350.	Very scarce species at the observation sites, with one or two specimens per site. Site 339 presented a population of 18 specimens located in a disturbed area of approximately 1 hectare.
Carya ovata		8	0		This species was not found in samplings inside the Tamaulipas thornscrub region, because its distribution is the high mountain ranges with pine-oak forests.
Carya ovata var. mexicana		3	0		Species distributed in the high mountains in Central Tamaulipas.

Citharexylum spatulathum	G2 G3 S2 S3		0		This species wasn't found in samplings inside the Tamaulipas thornscrub region and no records were found in visited herbariums and botanical collections.
Coryphantha pseudoechinus			16	90, 92, 100, 101, 111, 112, 115, 116, 120, 139, 149, 154, 155, 156A, 157, 165.	This species is abundant at the observation sites, but has affinity with the Chihuahua desert.
Coryphantha sulcata var. *nickelsiae*	G4 T2	4	2	139, 206B.	At Ranch San Rafael a regular population was found.
Coryphantha macromeris var. *runyonii*	G5 T2 T2 S3		17	2A, 12, 14, 104, 110, 149, 154, 156A, 157, 206A, 206B, 207E, 207F, 207G, 208B, 244, 347.	This subspecies has three interest areas because of its densities in Los Ramones, Agualeguas and China, N.L. They reproduce in June and August through vegetation propagation, and each lobule generates a new plant.
Desmodium lindheimeri		18	0		Species distributed in the Sierra Madre Oriental.
Dioon edule		8	1	83.	This species is distributed in limestone soils of the Sierra Madre Oriental on the boundaries with the thornscrub where it is present in isolated sites according to information received.
Digitostygma capuz-medusae	G1	1	0		Species of a very limited distribution to a few hectares and no more than 200 specimens in all its distribution range up to the year 2004.
Echinocereus papillosus var. *papillosus*	G3 T3 S3		31	32, 60, 64, 66, 69, 104, 107, 132, 153, 157, 158, 180, 184, 187I, 201, 206A, 206B, 206D, 207F, 207G, 208B, 212, 213, 214, 241, 242, 243, 244, 252, 253, 246B.	This subspecies is distributed in many sites but in low densities, we think that larger and less perturbed populations can be found at Ranch San Rafael.

Echinocereus poselgeri	G4	9	38	2C, 2F, 2G, 2H, 3-1, 3-2, 4A-1, 5B, 7A, 12, 14, 17, 22, 29, 99, 119, 129, 153, 156B, 157, 169, 170, 172, 179, 203, 206A, 207E, 207F, 215-1, 215-2, 218-1, 218-2, 220-1, 220-2, 241, 244, 248, 284, 292, BSI-01, 350.	This species of rare plants has the largest distribution at the time being but its population densities are low, with two or three up to 16 specimens per hectare.
Echinocereus reichenbachii var. *alberti*	G5 T1 QS1	No se conoce en México	0		This subspecies has not being reported in Mexico.
Echinocereus reichenbachii var. *fitchii*	G5 T3 S3	1	15	2F, 63, 97, 113, 166, 167, 217, 291, 293, 294, 296, 297, 298, 299, 300.	There are not abundant populations in Northeast Mexico.
Epithelantha micromeris	G4	8	10	112, 113, 123, 125B, 139, 140, 167, 215-1, 215-2, 216-1, 216-2, 217-1, 217-2.	The three more important sites for this species are Lampazos, Hidalgo and Higueras in Nuevo León. Even though it is distributed in the states of Coahuila and Nuevo León towards the Chihuahua desert eco-region.
Eriogonum greggii	G2 S2	22	3	216-1, 216-2, 217-1, 217-2, 218-1, 218-2.	This is a new observation site for this species in Higueras, N.L.
Eupatoriom richardsonii		1			Reported for the Sierra Madre Oriental at the Biosfera El Cielo Reserve.
Euphorbia innocua	G3 S3	1	0		Was not observed in the samplings done.
Euphorbia johnstonii		10	11	174, 195, 215-1, 215-2, 216-1, 216-2, 217-1, 217-2, 322, 325, 326, 328, 331, 342.	This species is typical of caliche zones in the Tamaulipas thornscrub, its distribution is more ample than previously known; however, its population nucleus are reduced, and is reported for the first time in Coahuila..

Fagus mexicana		3	0		Species of distribution in the high mountain ranges of Central Tamaulipas.
Fraxinus udhei		3	0		This species wasn't found in the samplings inside the Tamaulipas thornscrub eco-region, because its distribution is in the Sierra Madre Oriental.
Frankenia johnstonii	G3 S3	4	4	294, 295, 296, 297.	Could only be observed in Texas during sampling, in the nearest part of the Mexican border it was not observed.
Heteranthera mexicana	G3 S2	4	1	246.	Few specimens were found, some flowering, with a purple flower. The spring with a small stream has been disturbed by clearing nearby and is located in a private land. Four historical locations have been reported, but three are found at southern Tamaulipas and the Nuevo León record was an ephemeral lake in 1960.
Hoffmanseggia drummondi	G3 S3	6	11	323, 324, 325, 326, 327, 328, 329, 331, 334, 335, 340.	This species is abundant at the sampling sites, mostly in the Loreto Region in Tamaulipas.
Isochilus unilateralis		1	0		Reported for the Sierra Madre Oriental at the Biosfera El Cielo Reserve.
Juglans major		1	0		Reported for the Sierra Madre Oriental at the Biosfera El Cielo Reserve, and in other sites.
Juglans mollis		23	0		Reported for the Sierra Madre Oriental at the Biosfera El Cielo Reserve, and in other sites.
Justicia runyoni		10	0		This species wasn't found during sampling.
Laelia anceps		1	0		Reported for the Sierra Madre Oriental at the Biosfera El Cielo Reserve.
Lenophyllum texana	G3 S3	3	1	225	Only one population was found regularly abundant in damp areas and nearby the freshwater lagoon.
Leuchenbergia prinicpis		1	0		This species is distributed South of the state of Nuevo Leon.
Litsea glaucocescens		16	0		This species is distributed in the Sierra Madre Oriental and in pine-oak forest areas.

Lophophora williamsii	G4	4	1	206B.	This species is more common in the Chihuahua Desert eco-region in rocky areas at foothills; however, from this report and others that are known from the bush areas, its habitat is caliche and sandy type soil, in shallow soils.
Magnolia schiedeana		4	0		This species is distributed in the Sierra Madre Oriental at altitudes over 1000 m.a.s.l. Many populations are threatened by logging. .
Mammillaria baumii		1	0		Reported for the Sierra Madre Oriental at the Biosfera El Cielo Reserve.
Mammillaria plumosa		2	2	120, 103A.	Only found at the Cerro de las Mitras, N.L.
Mammillaria prolifera			9	13, 86, 99, 109, 186B, 207F, 207G, 208B, 220.	Scarce population at the observation sites, but each colony with more than a dozen individuals.
Mammillaria sanchez-mejoradae			0		Requires revision to confirm the species.
Manfreda longiflora	G2 S2	2	12	32, 43, 59, 70, 132, 134, 138, 153, 157, 183, 184, 245.	New reports have been added for this species in Nuevo León and Tamaulipas.
Manfreda sileri	G3 S3		17	92, 93, 128, 138, 154, 156B, 204, 206A, 228, 244, 245, 293, 297, 316, 317, 347, 352.	No previous information on its distribution and historical reports have been found.
Matelea brevicoronata	G3 S3	1	1	350.	An isolated population of no more than 4 hectares of extension, it is not very abundant but because it is located in an area where the gas lines pass, this area will not be seriously impacted.
Matelea parviflora	G3 S3		4	292, 293, 301, 302.	Reports obtained were from an ecological evaluation visit to Treviño Ranch in Texas.
Omphaloides richardsonii		1	0		Reported for the Sierra Madre Oriental at the Biosfera El Cielo Reserve.
Ostrya virginiana		5	0		Reported for the Sierra Madre Oriental.
Paronychia setacea	G3 S3	1	0		This species wasn't found in samplings done at the study area.

Physostegia correllii	G2 S1	6	0		This species wasn't found in samplings done at the study area.
Podocarpus reichei		5	0		Reported for the Sierra Madre Oriental at the Biosfera El Cielo Reserve, and in other sites.
Pomaria autrotexana			2	317, 323	Has very low density in the sampling sites.
Rhynchosia tamaulipensis		4	0		This species wasn't found in samplings done at the study area. .
Sabal mexicana			22	2A, 2H, 36A, 36B, 36C, 81, 233, 287, 288, 289, 290, 306, 307, 308, 312, 357, 360, 362., 363, 364, 365, 367.	The Ejido El Refugio is where the largest population for this palm is found, located next to the Rio Grande and bordering with a TNC Reserve in Texas. There are populations in good conservation state in the crossroads to Tepehuajes, Soto La Marina and near Ciudad Victoria in the state of Tamaulipas.
Stanhopea tigrina		1	0		Reported for the Sierra Madre Oriental at the Biosfera El Cielo Reserve.
Taxus globosa		5	0		Species distributed in the Sierra Madre Occidental.
Tetraneuris turneri	G3 S3	1	0		
Thelocactus conothele var. aureantans		1	0		This species has its distribution in the Chihuahua desert.
Thelocactus conothele var. conothele		1	0		This species has its distribution in the Chihuahua desert.
Thelocactus rinconensis var. *nidulans*		4	4	116, 117, 119, 139.	This subspecies is of peripheral distribution, and is found in Hidalgo and García, N.L. Its abundance is related to dry areas of the Sierra Madre Oriental.
Thelypodiopsis shnnerii	G2 S2	4	0		This species wasn't observed during samplings in the region.
Tillandsia baileyi	G2 S2	6	3	37B, 37C, 317.	A scarce population was found in two sites inside the Ranch Los Carrizos and in the Sierra de San Carlos, both located in Tamaulipas.

Tillandsia ionantha var. ionantha		3	2	192, 317.	This species is found in the Tamaulipas bush along the coast (municipalities of San Fernando and Soto La Marina), and is also frequent near Mante, and is less frequent north of Ciudad Victoria, Tamaulipas, and in the low parts of the Sierra Madre Oriental at the Biosfera El Cielo Reserve.
Tricocornis ruvularis		5	0		This species wasn't found in samplings done in the study area.
Tricocornis wrightii var. wrightii	G4 T3 S3	3	0		This species wasn't found in samplings done in the study area.
Turbinicarpus saueri ssp. *gonzalezi*	G1?	1	0		Type of Locality: Tamaulipas, 25 km from Linares, altitude 300 m.a.s.l, collected on June 15, 2002, by M.A. González Botello *et. al.* 650.
Turbinicarpus saueri ssp. *septentrionalis*	G1?	1	2	215	Type of Locality: A valley north of Monterrey on the road to Bustamente, collected Holotypus: G.S. Hinton No. 28256, May 28, 2004. Two new localities are known in Hidalgo and Higueras, in Nuevo León. Populations are very scarce.
Yeastesia platystegia	G3 S3	2	0		Its distribution borders between the Chihuahua desert and the Tamaulipas thornscrub, in mountains where dominant vegetation are oak trees.
Zamia fischerii		1	0		Reported for the Sierra Madre Oriental at the Biosfera El Cielo Reserve.
TOTAL SPECIES	**91**	**365**	**433**	**REPORTS**	

New reports of localities for various species have been added and also new reports for the states.

Note: Because of a lack of information on the region's flora, I believe there are more species of rare plants in Mexico distributed in the Tamaulipas Thornscrub region.

Information on localities is annexed in the Appendix 2 and Excel database.

APPENDIX 2

Sites and coordinates for localities sampled at the Tamaulipans Thornscub region, Northeastern Mexico.

No_ID	Lat. N	Long. W	Site	Locality	Altitude	State	C_Edo	Municipality	C_Mpio	Date
1	25.97698000	-98.22803000	Sitio 01	Rancho Daniel Chapa.	ND	Tamaulipas	28	Reynosa	28032	7-Feb-2003
2	26.41588889	-99.10988889	Sitio 02A	Rancho El Saladito.	ND	Tamaulipas	28	Ciudad Mier	28024	26-Abr-2003
3	26.41427778	-99.11011111	Sitio 02B	Rancho El Saladito.	ND	Tamaulipas	28	Ciudad Mier	28024	26-Abr-2003
4	26.41213889	-99.11111111	Sitio 02C	Rancho El Saladito.	ND	Tamaulipas	28	Ciudad Mier	28024	26-Abr-2003
5	26.40758333	-99.11119444	Sitio 02D	Rancho El Saladito.	ND	Tamaulipas	28	Ciudad Mier	28024	26-Abr-2003
6	26.40405556	-99.11275000	Sitio 02E	Rancho El Saladito.	ND	Tamaulipas	28	Ciudad Mier	28024	26-Abr-2003
7	26.40377778	-99.11827778	Sitio 02F	Rancho El Saladito.	ND	Tamaulipas	28	Ciudad Mier	28024	26-Abr-2003
8	26.40600000	-99.11727778	Sitio 02G	Rancho El Saladito.	ND	Tamaulipas	28	Ciudad Mier	28024	26-Abr-2003
9	26.41550000	-99.11316667	Sitio 02H	Rancho El Saladito.	ND	Tamaulipas	28	Ciudad Mier	28024	6-May-2003
10	26.41697222	-99.11686111	Sitio 02I	Rancho El Saladito.	ND	Tamaulipas	28	Ciudad Mier	28024	5-Jun-2003
11	26.78033333	-99.33738889	Sitio 03-1	15.4 Km. de Carretera Mex-2 en Antigua Ciudad Guerrero.	ND	Tamaulipas	28	Guerrero	28014	27-Abr-2003
12	26.78033333	-99.33738889	Sitio 03-2	15.4 Km. de Carretera Mex-2 en Antigua Ciudad Guerrero.	ND	Tamaulipas	28	Guerrero	28014	5-May-2003
13	26.78747222	-99.35280556	Sitio 04A-1	12.4 Km. de Carretera Mex-2 rumbo a Antigua Ciudad Guerrero.	ND	Tamaulipas	28	Guerrero	28014	27-Abr-2003
14	26.78747222	-99.35280556	Sitio 04A-2	12.4 Km. de Carretera Mex-2 rumbo a Antigua Ciudad Guerrero.	ND	Tamaulipas	28	Guerrero	28014	5-May-2003
15	26.77952778	-99.35713889	Sitio 04B	12.0 Km. de Carretera Mex-2 rumbo a Antigua Ciudad Guerrero.	ND	Tamaulipas	28	Guerrero	28014	5-May-2003
16	26.81141667	-99.36569444	Sitio 05A	9.4 Km. de Carretera Mex-2 rumbo a Antigua Ciudad Guerrero.	ND	Tamaulipas	28	Guerrero	28014	27-Abr-2003
17	26.81808333	-99.36088889	Sitio 05B	9.4 Km. de Carretera Mex-2 rumbo a Antigua Ciudad Guerrero + 700 m E.	ND	Tamaulipas	28	Guerrero	28014	5-May-2003
18	26.82200000	-99.37052778	Sitio 06	7.8 Km. de Carretera Mex-2 rumbo a Antigua Ciudad Guerrero.	ND	Tamaulipas	28	Guerrero	28014	27-Abr-2003
19	26.84230556	-99.38216667	Sitio 07	5.4 Km. de Carretera Mex-2 rumbo a Antigua Ciudad Guerrero.	ND	Tamaulipas	28	Guerrero	28014	27-Abr-2003
20	26.84230556	-99.38216667	Sitio 07	5.4 Km. de Carretera Mex-2 rumbo a Antigua Ciudad Guerrero.	ND	Tamaulipas	28	Guerrero	28014	5-May-2003
21	26.83836389	-99.38638889	Sitio 08A	3.8 Km. de Carretera Mex-2 rumbo a Antigua Ciudad Guerrero.	ND	Tamaulipas	28	Guerrero	28014	27-Abr-2003
22	26.83836389	-99.38638889	Sitio 08A	3.8 Km. de Carretera Mex-2 rumbo a Antigua Ciudad Guerrero.	ND	Tamaulipas	28	Guerrero	28014	5-May-2003
23	26.85433333	-99.38183333	Sitio 08B	3.8 Km. de Carretera Mex-2 rumbo a Antigua Ciudad Guerrero + 1.3 Km. N.	ND	Tamaulipas	28	Guerrero	28014	5-May-2003
24	26.18275000	-99.53275000	Sitio 09	2.7 Km. W de Carretera 52 Monterrey - Cd. Mier.	ND	Nuevo León	19	Agualeguas	19002	4-May-2003
25	26.16280556	-99.56894444	Sitio 10	3.3 Km. de Congregación Arroyo de Piedra.	ND	Nuevo León	19	Agualeguas	19002	4-May-2003
26	26.15011111	-99.57455556	Sitio 11	1 Km. Congregación Arroyo de Piedra.	ND	Nuevo León	19	Agualeguas	19002	4-May-2003
27	26.30522222	-99.48605556	Sitio 12	5.3 Km. E Agualeguas.	ND	Nuevo León	19	Agualeguas	19002	4-May-2003
28	26.30658333	-99.40969444	Sitio 13	El Rincón, camino Agualegua - La Gloria.	ND	Nuevo León	19	Agualeguas	19002	4-May-2003
29	26.29752778	-99.40125000	Sitio 14	2.2 Km. W de Carretera 52, N de Agualegua.	ND	Nuevo León	19	Agualeguas	19002	4-May-2003
30	26.76613889	-99.48563889	Sitio 15	7.5 Km. a carretera entronque en Km. 154.1 Mex-2.	ND	Tamaulipas	28	Guerrero	28014	5-May-2003
31	26.77808333	-99.46569444	Sitio 16	5 Km. a carretera entronque en Km. 154.1 Mex-2.	ND	Tamaulipas	28	Guerrero	28014	5-May-2003
32	26.65177778	-99.27544444	Sitio 17	4.7 Km. + 3.6 Km. rumbo a Pozo Bonito 1 y Carreterra Mex 2 Km. 136.2.	ND	Tamaulipas	28	Guerrero	28014	5-May-2003
33	26.66055556	-99.28658333	Sitio 18	4.7 Km. + 1.6 Km. rumbo a Pozo Bonito 1 y Carreterra Mex 2 Km. 136.2.	ND	Tamaulipas	28	Guerrero	28014	5-May-2003
34	26.68288889	-99.30038889	Sitio 19	4.7 Km. + 2.1 Km. rumbo a Pozo Explorador 113 y Carreterra Mex 2 Km. 136.2.	ND	Tamaulipas	28	Guerrero	28014	5-May-2003
35	26.65325000	-99.32241667	Sitio 20	1.2 Km. rumbo a Pozo Explorador 113 y Carreterra Mex 2 Km. 136.2.	ND	Tamaulipas	28	Guerrero	28014	5-May-2003

No_ID	Lat. N	Long. W	Site	Locality	Altitude	State	C_Edo	Municipality	C_Mpio	Date
36	26.47322222	-99.30136111	Sitio 21A	Rancho El Canaleño.	ND	Tamaulipas	28	Ciudad Mier	28024	6-May-2003
37	26.46875000	-99.29505556	Sitio 21B	Rancho El Canaleño.	ND	Tamaulipas	28	Ciudad Mier	28024	6-May-2003
38	26.47255556	-99.29747222	Sitio 21C	Rancho El Canaleño.	ND	Tamaulipas	28	Ciudad Mier	28024	6-May-2003
39	26.47202778	-99.29472222	Sitio 21D	Rancho El Canaleño.	ND	Tamaulipas	28	Ciudad Mier	28024	6-May-2003
40	26.41522222	-99.13936111	Sitio 22	Km. 100 Carretera Cd. Mier - Miguel Alemán.	ND	Tamaulipas	28	Ciudad Mier	28024	5-Jun-2003
41	26.43033333	-99.27361111	Sitio 23	9.3 Km. del Poblado XX.	ND	Tamaulipas	28	Ciudad Mier	28024	5-Jun-2003
42	26.40544440	-99.35983333	Sitio 24	5.8 Km. S Cd. Mier + 22.0 Km. W de Carretera rumbo Rancho Huatenpo.	ND	Tamaulipas	28	Ciudad Mier	28024	5-Jun-2003
43	26.40541667	-99.32675000	Sitio 25	5.8 Km. S Cd. Mier + 17.8 Km. W de Carretera rumbo Rancho Huatenpo.	ND	Tamaulipas	28	Ciudad Mier	28024	5-Jun-2003
44	26.42194444	-99.30072222	Sitio 26	5.8 Km. S Cd. Mier + 13.4 Km. W de Carretera rumbo Rancho Huatenpo.	ND	Tamaulipas	28	Ciudad Mier	28024	5-Jun-2003
45	26.43358333	-99.29533333	Sitio 27	5.8 Km. S Cd. Mier + 11.7 Km. W de Carretera rumbo Rancho Huatenpo.	ND	Tamaulipas	28	Ciudad Mier	28024	5-Jun-2003
46	26.40213889	-99.20475000	Sitio 28	5.8 Km. S Cd. Mier + 0.5 Km. W de Carretera rumbo Rancho Huatenpo.	ND	Tamaulipas	28	Ciudad Mier	28024	6-Jun-2003
47	26.41655556	-99.20941667	Sitio 29	5.8 Km. S Cd. Mier + 2.3 Km. W de Carretera rumbo Rancho Huatenpo.	ND	Tamaulipas	28	Ciudad Mier	28024	6-Jun-2003
48	26.31841667	-99.25230556	Sitio 30	Vado 7.7 Km. a carretera y entronque Mex 52 Km. 140.1.	ND	Tamaulipas	28	Ciudad Mier	28024	6-Jun-2003
49	26.30730556	-99.27397222	Sitio 31	5.5 Km. a carretera y entronque Mex 52 Km. 140.1.	ND	Tamaulipas	28	Ciudad Mier	28024	6-Jun-2003
50	26.39250000	-99.34230556	Sitio 32	Km. 134.8 Carretera Mex 52 Monterrey - Cd. Mier + 8.9 Km. W de Carretera rumbo Rancho Huatenpo.	ND	Tamaulipas	28	Ciudad Mier	28024	6-Jun-2003
51	26.37816667	-99.33555556	Sitio 33	Km. 134.8 Carretera Mex 52 Monterrey - Cd. Mier + 6.9 Km. W de Carretera rumbo Rancho Huatenpo.	ND	Tamaulipas	28	Ciudad Mier	28024	6-Jun-2003
52	26.35286111	-99.32225000	Sitio 34	Km. 134.8 Carretera Mex 52 Monterrey - Cd. Mier + 3.6 Km. W de Carretera rumbo Rancho Huatenpo.	ND	Tamaulipas	28	Ciudad Mier	28024	6-Jun-2003
53	26.34280556	-99.32561111	Sitio 35	Km. 134.8 Carretera Mex 52 Monterrey - Cd. Mier + 2.3 Km. W de Carretera rumbo Rancho Huatenpo.	ND	Tamaulipas	28	Ciudad Mier	28024	6-Jun-2003
54	25.84369444	-97.36238889	Sitio 36A	Ejido El Refugio.	ND	Tamaulipas	28	Matamoros	28022	9-Jun-2003
55	25.84936111	-97.36488889	Sitio 36B	Ejido El Refugio.	ND	Tamaulipas	28	Matamoros	28022	9-Jun-2003
56	25.85219444	-97.36427778	Sitio 36C	Ejido El Refugio.	ND	Tamaulipas	28	Matamoros	28022	9-Jun-2003
57	25.60550000	-97.45052778	Sitio 37A	Rancho Los Carrizos.	ND	Tamaulipas	28	Matamoros	28022	10-Jun-2003
58	25.60775000	-97.42052778	Sitio 37B	Rancho Los Carrizos.	ND	Tamaulipas	28	Matamoros	28022	10-Jun-2003
59	25.59013889	-97.38608333	Sitio 37C	Rancho Los Carrizos.	ND	Tamaulipas	28	Matamoros	28022	10-Jun-2003
60	25.56591667	-97.38672222	Sitio 37D	Rancho Los Carrizos.	ND	Tamaulipas	28	Matamoros	28022	10-Jun-2003
61	25.58025000	-97.39769444	Sitio 37E	Rancho Los Carrizos.	ND	Tamaulipas	28	Matamoros	28022	10-Jun-2003
62	25.55691667	-97.41166667	Sitio 37F	Rancho Los Carrizos.	ND	Tamaulipas	28	Matamoros	28022	10-Jun-2003
63	29.29202778	-100.99516670	Sitio 38	Ciudad Acuña.	ND	Coahuila	5	Acuña	5002	2-Jul-2003
64	29.42577778	-101.12505560	Sitio 39	I Km. SW del Monumento a Tlaloc, Presa La Amistad.	ND	Coahuila	5	Acuña	5002	2-Jul-2003
65	29.44197222	-101.07444440	Sitio 40	Arroyo en el Km. 22 Cd. Acuña - Presa La Amistad.	ND	Coahuila	5	Acuña	5002	2-Jul-2003
66	29.26744444	-101.18633330	Sitio 41	Camino a Santa Eulalia.	ND	Coahuila	5	Acuña	5002	2-Jul-2003
67	29.15450000	-100.76472220	Sitio 42	Puente Los Murciélagos, Km. 59 Carretera Mex 2, Cd. Acuña - Piedras Negras.	ND	Coahuila	5	Acuña	5002	3-Jul-2003
68	29.08883333	-100.69483330	Sitio 43	Km. 49.2 Carretera Mex 2, Cd. Acuña - Piedras Negras, 2.2 Km. de Puente Jiménez.	ND	Coahuila	5	Jiménez	5014	3-Jul-2003
69	28.92522222	-100.66091670	Sitio 44	Km. 30 Carretera Mex 2, Cd. Acuña - Piedras Negras.	ND	Coahuila	5	Jiménez	5014	3-Jul-2003
70	28.91938889	-100.65455560	Sitio 45	Km. 29.1 Carretera Mex 2, Cd. Acuña - Piedras Negras.	ND	Coahuila	5	Jiménez	5014	3-Jul-2003
71	28.57608333	-100.48966670	Sitio 46	Km. 159.1 + 2.5 Km. NEN Camino a Santo Domingo.	ND	Coahuila	5	Piedras Negras	5025	3-Jul-2003
72	28.42305556	-100.37852780	Sitio 47	3.8 Km. al NEN del entronque Mex 2 camino a San Vicente.	ND	Coahuila	5	Guerrero	5012	3-Jul-2003
73	28.30691667	-100.35380560	Sitio 48	Km. 125.5 (1.5 Km. S de Guerrero), Carretera Mex 2, Nuevo Laredo - Piedras Negras.	ND	Coahuila	5	Guerrero	5012	3-Jul-2003
74	28.78641667	-100.91452780	Sitio 49	Puente San Jorge.	ND	Coahuila	5	Zaragoza	5038	3-Jul-2003

No_ID	Lat. N	Long. W	Site	Locality	Altitude	State	C_Edo	Municipality	C_Mpio	Date
75	28.05433333	-100.60230560	Sitio 50	Ojo de Agua de San Diego.	366.30	Coahuila	5	Villa Unión	5037	4-Jul-2003
76	28.15233333	-100.63230560	Sitio 51	Ojo de Agua de Guadalupe.	348.00	Coahuila	5	Villa Unión	5037	4-Jul-2003
77	28.21922222	-101.04688890	Sitio 52	Km. 161 Carretera Mex 57, Allende - Sabinas.	565.80	Coahuila	5	Sabinas	5028	4-Jul-2003
78	27.74019444	-101.15936110	Sitio 53	Km. 100 Carretera Mex 57, Sabinas - Monclova.	ND	Coahuila	5	Sabinas	5028	4-Jul-2003
79	27.63877778	-101.22297220	Sitio 54	4.1 Km. del Entronque a Múzquiz camino a Minas de Barroterán.	385.50	Coahuila	5	Sabinas	5028	4-Jul-2003
80	27.55552778	-101.24080560	Sitio 55	4.5 Km. camino a Aura.	416.70	Coahuila	5	Sabinas	5028	4-Jul-2003
81	27.42522500	-101.37070560	Sitio 56	1.5 Km. SW de Obayos.	470.00	Coahuila	5	Escobedo	5008	4-Jul-2003
82	24.80211111	-99.65266670	Sitio 57	1.6 Km. al N de Bachimba.	435.00	Nuevo León	19	Linares	19033	9-Jul-2003
83	24.78400000	-99.70477778	Sitio 58	Ojo de Agua.	503.40	Nuevo León	19	Linares	19033	9-Jul-2003
84	24.68755556	-99.57980556	Sitio 59	5.1 Km. W de La Reforma.	422.40	Nuevo León	19	Linares	19033	9-Jul-2003
85	24.57163889	-99.55847222	Sitio 60	José María Pino Suárez, 1.5 Km. al W de Magueyes.	424.20	Tamaulipas	28	Mainero	28020	9-Jul-2003
86	24.47622222	-99.48511111	Sitio 61	Villagrán.	391.80	Tamaulipas	28	Villagrán	28042	9-Jul-2003
87	24.49908333	-99.43052778	Sitio 62	7.7 Km. de Villagrán rumbo a Garza Valdés	343.50	Tamaulipas	28	Villagrán	28042	9-Jul-2003
88	24.93061111	-99.39586111	Sitio 63	Presa Cerro Prieto	285.00	Nuevo León	19	Linares	19033	9-Jul-2003
89	24.91050000	-99.51941667	Sitio 64	Río Verde.	487.20	Nuevo León	19	Linares	19033	10-Jul-2003
90	24.94911111	-99.45847222	Sitio 65	16 Km. carretera 45 Linares - Guadalupe La Joya.	315.00	Nuevo León	19	Linares	19033	10-Jul-2003
91	25.07475000	-99.36152778	Sitio 66	37.2 Km. carretera Linares - Guadalupe La Joya.	281.10	Nuevo León	19	Linares	19033	10-Jul-2003
92	25.12308333	-99.34450000	Sitio 67	Sitio localizado en 25.12308333 N y -99.3445 W.	247.50	Nuevo León	19	Linares	19033	10-Jul-2003
93	25.23852778	-99.36077778	Sitio 68	3 Km. N entronque Blancas + 0.7 Km. W.	287.40	Nuevo León	19	Linares	19033	10-Jul-2003
94	25.23452778	-99.55730556	Sitio 69	Puerto San Felipe, al E de El Naranjo.	309.90	Nuevo León	19	General Terán	19022	10-Jul-2003
95	25.34158333	-99.54719444	Sitio 70	Km. 37.8 junto al Rancho El Vergel, Carretera Montemorelos - China.	246.00	Nuevo León	19	General Terán	19022	10-Jul-2003
96	24.89100000	-99.71919444	Sitio 71	Río Hualahuises a cruzar camino a Guadalupe Victoria.	438.90	Nuevo León	19	Hualahuises	19029	10-Jul-2003
97	24.94116667	-99.76891667	Sitio 72	Ejido Brasil.	527.40	Nuevo León	19	Hualahuises	19029	11-Jul-2003
98	25.84855556	-99.88844444	Sitio 73	2.9 Km. de la carr. NL 40, entronque Dr. González - Cadereyta Jiménez.	359.10	Nuevo León	19	Doctor González	19016	11-Jul-2003
99	25.79122222	-99.90450000	Sitio 74	9.5 Km. de la carr. NL 40, entronque Dr. González - Cadereyta Jiménez.	316.20	Nuevo León	19	Doctor González	19016	11-Jul-2003
100	25.64058333	-99.94061111	Sitio 75	26.9 Km. de la carr. NL 40, entronque Dr. González - Cadereyta Jiménez.	312.30	Nuevo León	19	Pesquería	19041	11-Jul-2003
101	25.61205556	-99.94694444	Sitio 76	30.4 Km. de la carr. NL 40, entronque Dr. González - Cadereyta Jiménez.	305.10	Nuevo León	19	Cadereyta Jiménez	19009	11-Jul-2003
102	25.58811111	-100.18616670	Sitio 77	Charco Azul en Hacienda San Roque.	520.50	Nuevo León	19	Juárez	19031	23-Jul-2003
103	25.55547222	-100.17080560	Sitio 78	Cañón de Santa Ana en Hacienda Santa Ana.	557.40	Nuevo León	19	Juárez	19031	23-Jul-2003
104	25.55694444	-100.07672220	Sitio 79	San Mateo, 2.5 Km. N camino a Cadereyta Jiménez.	398.10	Nuevo León	19	Cadereyta Jiménez	19009	23-Jul-2003
105	25.51097222	-100.14083330	Sitio 80	Arroyo Sabinas en Hacienda El Mezcal.	398.40	Nuevo León	19	Cadereyta Jiménez	19009	23-Jul-2003
106	25.44111111	-100.10777780	Sitio 81	Los Canelos, Santiago.	404.40	Nuevo León	19	Santiago	19049	23-Jul-2003
107	24.66377778	-99.67288889	Sitio 82	Río Madroño en San Francisco Tenamaxtle.	510.30	Nuevo León	19	Linares	19033	29-Jul-2003
108	24.65869444	-99.67744444	Sitio 83	Río Madroño en la entrada al cañón en San Francisco Tenamaxtle.	561.90	Nuevo León	19	Linares	19033	29-Jul-2003
109	24.62686111	-99.60202778	Sitio 84	6.8 Km. de carretera camino a San Francisco Tenamaxtle.	464.40	Nuevo León	19	Linares	19033	29-Jul-2003
110	25.80161111	-100.05922220	Sitio 85	1.6 Km. N Pesquería.	329.40	Nuevo León	19	Pesquería	19041	31-Jul-2003
111	25.86941667	-99.83897222	Sitio 86	Poblado de Papagayos.	371.40	Nuevo León	19	Doctor González	19016	31-Jul-2003
112	25.89266667	-99.78383333	Sitio 87	0.9 Km. del Entronque a Nuevo Progreso camino a San Benito.	401.70	Nuevo León	19	Doctor González	19016	31-Jul-2003
113	25.85977778	-99.75488889	Sitio 88	6.4 Km. de La Venadera a San Benito.	311.40	Nuevo León	19	Doctor González	19016	31-Jul-2003

No_ID	Lat. N	Long. W	Site	Locality	Altitude	State	C_Edo	Municipality	C_Mpio	Date
114	25.82847222	-99.68925000	Sitio 89	1 Km. NW de San Benito.	234.00	Nuevo León	19	Doctor González	19016	31-Jul-2003
115	25.81311111	-99.67352778	Sitio 90	San Benito.	239.10	Nuevo León	19	Doctor González	19016	31-Jul-2003
116	25.72208333	-99.68883333	Sitio 91	Faldas del Cerro Papagayos en Los Ramones, 6.7 Km. camino a Microondas.	282.60	Nuevo León	19	Los Ramones	19042	31-Jul-2003
117	25.98655556	-100.33661110	Sitio 92	4.5 Km. al W en Hacienda Santa Gertrudis, Salinas Victoria.	597.00	Nuevo León	19	Salinas Victoria	19045	1-Ago-2003
118	26.01566667	-100.32725000	Sitio 93	Km. 30.6 + 2.5 W de la Carretera Monterrey - Colombia	498.90	Nuevo León	19	Salinas Victoria	19045	1-Ago-2003
119	26.05558333	-100.29250000	Sitio 94	1 Km. + 1 Km. E del Entronque Carretera 57 camino a Mamulique.	498.60	Nuevo León	19	Salinas Victoria	19045	1-Ago-2003
120	26.11272222	-100.18769440	Sitio 95	4.7 Km. E de Mamulique.	533.70	Nuevo León	19	Salinas Victoria	19045	1-Ago-2003
121	26.20102778	-100.23425000	Sitio 96	1 Km. S de Uña de Gato.	579.60	Nuevo León	19	Salinas Victoria	19045	1-Ago-2003
122	26.08258333	-100.14197220	Sitio 97	1.5 Km. W del Entronque Mamulique en el Km. 50.6 de Carretera Monterrey - Nuevo Laredo.	540.30	Nuevo León	19	Salinas Victoria	19045	1-Ago-2003
123	26.05672220	-100.38844440	Sitio 98	6.9 Km. Carretera NL #169 + 3.8 Km. al W en Ejido Los Canelos.	619.20	Nuevo León	19	Salinas Victoria	19045	5-Ago-2003
124	26.07994444	-100.36519440	Sitio 99	6.9 Km. Carretera NL #169.	488.40	Nuevo León	19	Salinas Victoria	19045	5-Ago-2003
125	26.16280556	-100.45266670	Sitio 100	1.7 Km. SE Gomas y Mendiola.	565.80	Nuevo León	19	Mina	19037	5-Ago-2003
126	26.21325000	-100.50600000	Sitio 101	6.1 Km. NW Gomas y Mendiola.	608.70	Nuevo León	19	Mina	19037	5-Ago-2003
127	26.18700000	-100.34958330	Sitio 102	Km. 50 Carretera NL #1, Monterrey - Colombia.	633.60	Nuevo León	19	Villaldama	19051	5-Ago-2003
128	26.38605556	-100.44825000	Sitio 103A	Rancho Rincón del Potrero, 2.5 Km. W de Potrero.	604.50	Nuevo León	19	Villaldama	19051	5-Ago-2003
129	25.17016667	-99.30161111	Sitio 104	2 Km. E Guadalupe La Joya.	211.80	Nuevo León	19	General Terán	19022	7-Ago-2003
130	25.12016667	-99.21908333	Sitio 105	Km. 52.8 (Carretera NL 8) + 2.6 Km. E junto a Represa.	214.20	Nuevo León	19	General Terán	19022	7-Ago-2003
131	25.07758333	-99.10761111	Sitio 106	Camino a Presa Los Mimbres, 6.8 Km. a carretera NL 8.	182.70	Nuevo León	19	General Terán	19022	7-Ago-2003
132	25.09650000	-99.10811111	Sitio 107	Camino a Presa Los Mimbres, 4.6 Km. a carretera NL 8.	160.50	Nuevo León	19	General Terán	19022	7-Ago-2003
133	25.11591667	-99.07450000	Sitio 108	4 Km. SW de San Juan de Vaquerías.	159.90	Nuevo León	19	General Terán	19022	7-Ago-2003
134	25.19208333	-99.28847222	Sitio 109	Km. 39.0 (Carretera NL 8) + 3.4 Km. N.	225.00	Nuevo León	19	General Terán	19022	7-Ago-2003
135	25.21252778	-99.24794444	Sitio 110	Rancho Los Jacales, 12 Km. del entronque Las Blancas en el Km. 36.2 Carretera NL 8.	195.00	Nuevo León	19	General Terán	19022	7-Ago-2003
136	26.46105556	-100.42891670	Sitio 111	0.9 Km. al S del Entronque camino al Rancho Aldama, Carretera NL 1.	467.10	Nuevo León	19	Villaldama	19051	8-Ago-2003
137	26.54944444	-100.57975000	Sitio 112	Parque Cañón de Bustamante, 7.3 Km. de Bustamante.	480.00	Nuevo León	19	Bustamante	19008	8-Ago-2003
138	26.53691667	-100.59983330	Sitio 113	Parque Cañón de Bustamante, 9.8 Km. de Bustamante.	513.00	Nuevo León	19	Bustamante	19008	8-Ago-2003
139	26.50027778	-100.52408330	Sitio 114	Entrada a Grutas de Bustamante.	515.40	Nuevo León	19	Bustamante	19008	8-Ago-2003
140	26.38605556	-100.44825000	Sitio 103B	Rancho Rincón del Potrero, 1.8 Km. W de Potrero.	604.50	Nuevo León	19	Villaldama	19051	8-Ago-2003
141	25.70877778	-100.61252780	Sitio 115	Carretera a Saltillo, 6.8 Km. W del Entronque Mex 40 y NL 5 a García.	1014.00	Nuevo León	19	Santa Catarina	19048	13-Ago-2003
142	25.87416667	-100.53036110	Sitio 116	10.9 Km. de García, camino a Grutas.	935.40	Nuevo León	19	García	19018	13-Ago-2003
143	25.83036111	-100.53588890	Sitio 117	5.9 Km. de García + 2.3 Km. E del camino a Grutas.	767.70	Nuevo León	19	García	19018	13-Ago-2003
144	25.76333333	-100.53855560	Sitio 118	10 Km. al SSW de García.	740.70	Nuevo León	19	García	19018	13-Ago-2003
145	25.74850000	-100.54144440	Sitio 119	Km. 7.4 Carretera NL 5 García + 1 Km. al Sur.	732.00	Nuevo León	19	García	19018	14-Ago-2003
146	25.73036111	-100.49852780	Sitio 120	Cerro de La Mitras, 2.2 Km. E del Entronque México 40 y NL 62.	792.00	Nuevo León	19	Santa Catarina	19088	14-Ago-2003
147	25.85544444	-100.42500000	Sitio 121	5.8 Km. al NW en Carretera NL 61 Pedreras.	648.60	Nuevo León	19	Carmen	19010	14-Ago-2003
148	26.00972222	-100.52300000	Sitio 122	Loma Alta en Mina.	623.10	Nuevo León	19	Mina	19037	14-Ago-2003
149	26.01538890	-100.44433330	Sitio 123	Hidalgo, 3.3 Km. al N del Entronque Mex 54 situado en el Km. 27.8 carretera Monterrey - Monclova.	618.60	Nuevo León	19	Hidalgo	19047	14-Ago-2003
150	25.91125000	-100.39261110	Sitio 124	2.9 Km. al S Entronque a Fraccionamiento Valle del Sol, El Carmen.	557.40	Nuevo León	19	Carmen	19010	15-Ago-2003
151	25.92338889	-100.45908330	Sitio 125A	Potrero Chico, 9.2 Km. de la Plaza Principal de Hidalgo.	791.40	Nuevo León	19	Hidalgo	19047	15-Ago-2003
152	25.94733333	-100.47500000	Sitio 125B	Potrero Chico, 4.0 Km. de la Plaza Principal de Hidalgo.	790.50	Nuevo León	19	Hidalgo	19047	15-Ago-2003

No_ID	Lat. N	Long. W	Site	Locality	Altitude	State	C_Edo	Municipality	C_Mpio	Date
153	25.95641667	-100.36480560	Sitio 126	3.1 Km. al N de El Carmen.	608.40	Nuevo León	19	Carmen	19010	15-Ago-2003
154	25.96292222	-100.31425000	Sitio 127	0.5 Km. + 1.1 Km. W de Salinas Victoria, carretera Salinas Victoria - Carmen.	480.90	Nuevo León	19	Salinas Victoria	19045	15-Ago-2003
155	25.63958333	-99.15038889	Sitio 128	Km. 10.6 Carretera NL 4 + 4.7 Km. S en China.	196.50	Nuevo León	19	China	19013	20-Ago-2003
156	25.69402778	-98.99675000	Sitio 129	8.5 Km. W del Entronque Km. 27 Carretera NL 4 China - Méndez.	152.40	Nuevo León	19	China	19013	20-Ago-2003
157	25.51394444	-98.87219444	Sitio 130	2.5 Km. Entronque El Palmito 1 y 2, Km. 42.1 Carretera NL 4 China - Méndez.	125.10	Nuevo León	19	China	19013	20-Ago-2003
158	25.43358333	-98.74738889	Sitio 131	3.0 Km. Entronque El Hueso Carretera NL 4 China - Méndez.	111.00	Nuevo León	19	China	19013	20-Ago-2003
159	25.07094444	-98.46577778	Sitio 132	San Pedro, Méndez.	75.90	Tamaulipas	28	Méndez	28023	20-Ago-2003
160	24.94213889	-97.74419444	Sitio 133	Rancho El Refugio.	6.00	Tamaulipas	28	Matamoros	28022	21-Ago-2003
161	24.71966667	-98.36069444	Sitio 134	Rancho La Becerra, 10.5 Km. W del Entronque en el Km. 159.9 Mex 101 San Fernando - Cd. Victoria.	160.50	Tamaulipas	28	Cruillas	28010	21-Ago-2003
162	24.70180556	-98.31694444	Sitio 135	4.9 Km. W del Entronque en el Km. 159.9 Mex 101 San Fernando - Cd. Victoria.	158.70	Tamaulipas	28	Cruillas	28010	21-Ago-2003
163	24.98902778	-98.18230556	Sitio 136	3.4 Km. S Ejido E. Portes Gil.	112.50	Tamaulipas	28	San Fernando	28035	22-Ago-2003
164	24.99030556	-98.28986111	Sitio 137	Km. 19 Carretera Tamps. 18 San Fernando - Méndez.	64.80	Tamaulipas	28	San Fernando	28035	22-Ago-2003
165	25.03780556	-98.44608333	Sitio 138	4.5 Km. S rumbo a Ejido El Tecolote.	83.70	Tamaulipas	28	San Fernando	28035	22-Ago-2003
166	26.02305556	-100.44061110	Sitio 139	3.9 Km. N del entronque Mex 54 situado en el Km. 27.8 carretera Monterrey - Monclova.	676.80	Nuevo León	19	Hidalgo	19047	31-Ago-2003
167	26.02977778	-100.43000000	Sitio 140	6.0 Km. N del entronque Mex 54 situado en el Km. 27.8 carretera Monterrey - Monclova.	713.10	Nuevo León	19	Hidalgo	19047	31-Ago-2003
168	25.94733333	-100.47500000	Sitio 125B	Potrero Chico, 4.0 Km. de la Plaza Principal de Hidalgo.	790.50	Nuevo León	19	Hidalgo	19047	31-Ago-2003
169	25.56763889	-100.39358330	Sitio 141	14.5 Km. de la Caseta del Parque La Huasteca en Corral de Palma.	829.80	Nuevo León	19	Santa Catarina	19088	1-Sep-2003
170	25.61022222	-100.45252780	Sitio 142	6.0 Km. de la Caseta del Parque La Huasteca en Rancho La Piedra.	756.00	Nuevo León	19	Santa Catarina	19088	1-Sep-2003
171	25.64183333	-100.49422220	Sitio 143	5.8 Km. de la Caseta del Parque La Huasteca en Rancho Sin Nombre.	846.90	Nuevo León	19	Santa Catarina	19088	1-Sep-2003
172	25.64963889	-100.45336110	Sitio 144	0.5 Km. de la Caseta del Parque La Huasteca en la primeras relieves de Montaña.	675.90	Nuevo León	19	Santa Catarina	19088	1-Sep-2003
173	25.32347222	-99.94661111	Sitio 145	Los Aguirre, 12.4 Km. E Allende, Carretera NL. 45.	356.70	Nuevo León	19	Allende	19004	3-Sep-2003
174	25.22900000	-99.92800000	Sitio 146	Congregación Calles, 0.8 Km. carretera NL 93 Montemorelos - Al Fraile.	451.50	Nuevo León	19	Montemorelos	19038	3-Sep-2003
175	25.34555556	-99.77347222	Sitio 147	Rancho Las Lilas, Km. 14 carretera NL 75 General Terán - San Juan.	318.30	Nuevo León	19	General Terán	19022	3-Sep-2003
176	25.36225000	-99.87766667	Sitio 148	Tancoma, 3.2 Km. W de Ejido Villa Hidalgo.	351.60	Nuevo León	19	Montemorelos	19038	3-Sep-2003
177	25.72633333	-99.84633333	Sitio 149	1.5 Km. S + 1.5 Km. W de Santa Maria La Floreña.	267.60	Nuevo León	19	Pesquería	19041	4-Sep-2003
178	25.66852778	-99.68689556	Sitio 150	1.8 Km. rumbo a El Refugio.	295.20	Nuevo León	19	Los Ramones	19042	4-Sep-2003
179	25.62302778	-99.56852778	Sitio 151	2.2 Km. camino a Enrramadas (Km. 76, Mex 40).	218.40	Nuevo León	19	Los Ramones	19042	4-Sep-2003
180	25.56061111	-99.51786111	Sitio 152	3.4 Km. E camino a Campestre Simón Zambrano + 8.1 Km. camino a Enrramadas (Km. 76, Mex 40).	241.20	Nuevo León	19	Los Ramones	19042	4-Sep-2003
181	25.50422222	-99.48222222	Sitio 153	0.6 Km. W de Ejido La Conquista.	187.50	Nuevo León	19	Los Ramones	19042	4-Sep-2003
182	26.06597222	-99.57425000	Sitio 154	Km. 4 de NL 4; 0.5 Km. W de Colonia Charco Redondo.	272.10	Nuevo León	19	Melchor Ocampo	19035	5-Sep-2003
183	25.99950000	-99.56713889	Sitio 155	1 Km. N Martinitos.	272.10	Nuevo León	19	Melchor Ocampo	19035	5-Sep-2003
184	25.93422222	-99.56672222	Sitio 156A	Cerrito El Macho, 5 Km. S de San Vicente.	250.50	Nuevo León	19	Los Herrera	19027	5-Sep-2003
185	25.93736111	-99.56675000	Sitio 156B	Cerrito El Macho, 4.6 Km. S de San Vicente.	239.70	Nuevo León	19	Los Herrera	19027	5-Sep-2003
186	25.92727778	-99.48347222	Sitio 157	2.1 Km. camino a Chapotito.	230.70	Nuevo León	19	Los Herrera	19027	5-Sep-2003
187	25.91891667	-99.39616667	Sitio 158	Los Herrera	150.00	Nuevo León	19	Los Herrera	19027	5-Sep-2003
188	24.99561111	-97.90527778	Sitio 159	Laguna Anda La Piedra en Ejido Francisco Villa.	10.00	Tamaulipas	28	San Fernando	28035	9-Sep-2003
189	24.97333330	-97.87875000	Sitio 160	Laguna Anda La Piedra en Cavazeño.	9.00	Tamaulipas	28	San Fernando	28035	9-Sep-2003
190	24.96805556	-97.86627778	Sitio 161	Laguna Anda La Piedra, 1.8 Km. E del Cavazeño.	5.00	Tamaulipas	28	San Fernando	28035	10-Sep-2003
191	25.00133333	-97.89961111	Sitio 162	Laguna Anda La Piedra, 3.9 Km. NWN del Cavazeño.	9.00	Tamaulipas	28	San Fernando	28035	10-Sep-2003

No_ID	Lat. N	Long. W	Site	Locality	Altitude	State	C_Edo	Municipality	C_Mpio	Date
192	24.98322222	-97.82883333	Sitio 163	Laguna Anda La Piedra, 4.8 Km. E del Cavazeño.	13.00	Tamaulipas	28	San Fernando	28035	10-Sep-2003
193	24.97588889	-97.81200000	Sitio 164	Laguna Anda La Piedra, 6.5 Km. E del Cavazeño.	5.00	Tamaulipas	28	San Fernando	28035	10-Sep-2003
194	26.62569444	-100.48786110	Sitio 165	Km. 100 Carretera Monterrey - Colombia + 1.9 Km. W.	471.00	Nuevo León	19	Lampazos de Naranjo	19032	2-Oct-2003
195	26.81919444	-100.68241670	Sitio 166	Río Candela en Candela.	445.00	Coahuila	5	Candela	5005	2-Oct-2003
196	26.89152778	-100.47527780	Sitio 167	Granja Paquita, Lampazos.	409.00	Nuevo León	19	Lampazos de Naranjo	19032	2-Oct-2003
197	27.01469444	-100.49269440	Sitio 168	700 m E del Ojo de Agua de Lampazos.	361.00	Nuevo León	19	Lampazos de Naranjo	19032	9-Oct-2003
198	27.19644444	-100.38511110	Sitio 169	4.0 Km. NE Horcones.	243.00	Nuevo León	19	Lampazos de Naranjo	19032	9-Oct-2003
199	27.17522222	-100.41622220	Sitio 170	3.1 Km. camino a Est. Lampazos # 1 PEMEX en Horcones.	252.00	Nuevo León	19	Lampazos de Naranjo	19032	9-Oct-2003
200	26.93794444	-100.26472220	Sitio 171	Km. 164 Carretera Monterrey - Colombia + 24.9 Km. al E.	305.00	Nuevo León	19	Anáhuac	19005	9-Oct-2003
201	27.22688889	-100.08350000	Sitio 172	Anáhuac.	210.00	Nuevo León	19	Anáhuac	19005	9-Oct-2003
202	27.60316667	-100.70241670	Sitio 173	500 m al Sur Entronque a Campo Rumania.	282.00	Coahuila	5	Juárez	5015	10-Oct-2003
203	27.53913889	-100.61916670	Sitio 174	600 m W de Don Martín, Juárez.	264.00	Coahuila	5	Juárez	5015	10-Oct-2003
204	27.50019444	-100.52147220	Sitio 175	7.9 Km. W de Sección 220 + 1.4 Km. N.	262.00	Coahuila	5	Juárez	5015	10-Oct-2003
205	27.45213889	-100.46041670	Sitio 176	1.8 Km. al E de Sección 220 + 1.2 Km. N.	253.00	Coahuila	5	Juárez	5015	10-Oct-2003
206	27.42900000	-100.39547220	Sitio 177	Presa Salinillas.	258.00	Nuevo León	19	Anáhuac	19005	10-Oct-2003
207	27.36060000	-100.36666670	Sitio 178	Treinta y Siete Seis; 9.5 Km. E Salinillas + 1 Km. N.	246.00	Nuevo León	19	Anáhuac	19005	10-Oct-2003
208	27.29908333	-100.28325000	Sitio 179	1.9 Km. W de La Capilla.	231.00	Nuevo León	19	Anáhuac	19005	10-Oct-2003
209	25.10350000	-99.09894444	Sitio 180	1.3 Km. NE del Sitio 107, Camino a Presa Los Mimbres.	167.00	Nuevo León	19	General Terán	19022	15-Nov-2003
210	25.11825000	-99.11105556	Sitio 181	Rumbo a Presa Los Mimbres.	186.00	Nuevo León	19	General Terán	19022	15-Nov-2003
211	25.13613889	-99.21647222	Sitio 182	52.2 Km. del entronque de General Terán a Vaquerías + 0.8 Km. camino de terracería a Presa Los Mimbres.	245.00	Nuevo León	19	General Terán	19022	15-Nov-2003
212	24.73111111	-99.37591667	Sitio 183	3 Km. E Lucio Blanco	310.00	Tamaulipas	28	Villagrán	28042	16-Nov-2003
213	25.09961111	-99.10027778	Sitio 184	3.2 Km. camino a Presa Los Mimbres, Vaquerías.	159.00	Nuevo León	19	General Terán	19022	16-Nov-2003
214	25.03272222	-99.37197222	Sitio 185	Km. 32 de Carretera Linares - Guadalupe La Joya.	259.00	Nuevo León	19	General Terán	19022	16-Nov-2003
215	24.50258333	-97.76358333	Sitio 186A	Rancho Las Carreras en Punta de Piedra.	4.00	Tamaulipas	28	San Fernando	28035	25-Nov-2003
216	24.52397222	-97.75572222	Sitio 186B	Rancho Las Carreras en Punta de Piedra.	4.00	Tamaulipas	28	San Fernando	28035	25-Nov-2003
217	24.54025000	-97.76994444	Sitio 186C	Rancho Las Carreras en Punta de Piedra.	4.00	Tamaulipas	28	San Fernando	28035	25-Nov-2003
218	24.52775000	-97.76183333	Sitio 186D	Rancho Las Carreras en Punta de Piedra.	4.00	Tamaulipas	28	San Fernando	28035	26-Nov-2003
219	24.52833333	-97.74763889	Sitio 186E	Rancho Las Carreras en Punta de Piedra.	4.00	Tamaulipas	28	San Fernando	28035	26-Nov-2003
220	24.55147222	-97.86691667	Sitio 187A	Rancho Rincón del Perro en San Fernando.	4.00	Tamaulipas	28	San Fernando	28035	26-Nov-2003
221	24.54983333	-97.85986111	Sitio 187B	Rancho Rincón del Perro en San Fernando.	7.00	Tamaulipas	28	San Fernando	28035	26-Nov-2003
222	24.54266670	-97.85980556	Sitio 187C	Rancho Rincón del Perro en San Fernando.	7.00	Tamaulipas	28	San Fernando	28035	26-Nov-2003
223	24.53761111	-97.85888889	Sitio 187D	Rancho Rincón del Perro en San Fernando.	7.00	Tamaulipas	28	San Fernando	28035	26-Nov-2003
224	24.55602778	-97.86341667	Sitio 187E	Rancho Rincón del Perro en San Fernando.	7.00	Tamaulipas	28	San Fernando	28035	26-Nov-2003
225	24.55963889	-97.86563889	Sitio 187F	Rancho Rincón del Perro en San Fernando.	7.00	Tamaulipas	28	San Fernando	28035	26-Nov-2003
226	24.56555556	-97.86561111	Sitio 187G	Rancho Rincón del Perro en San Fernando.	7.00	Tamaulipas	28	San Fernando	28035	24-Feb-2004
227	24.54555560	-97.87511111	Sitio 187H	Rancho Rincón del Perro en San Fernando.	7.00	Tamaulipas	28	San Fernando	28035	24-Feb-2004
228	24.53527500	-97.87108333	Sitio 187I	Rancho Rincón del Perro en San Fernando.	7.00	Tamaulipas	28	San Fernando	28035	24-Feb-2004
229	24.52380556	-97.85891667	Sitio 187J	Rancho Rincón del Perro en San Fernando.	9.00	Tamaulipas	28	San Fernando	28035	24-Feb-2004

No_ID	Lat. N	Long. W	Site	Locality	Altitude	State	C_Edo	Municipality	C_Mpio	Date
230	24.53694444	-97.85366667	Sitio 187K	Rancho Rincón del Perro en San Fernando.	7.00	Tamaulipas	28	San Fernando	28035	24-Feb-2004
231	24.49094444	-97.74586111	Sitio 186F	Rancho Las Carreras en Punta de Piedra.	4.00	Tamaulipas	28	San Fernando	28035	25-Feb-2004
232	24.50144444	-97.74458333	Sitio 186G	Rancho Las Carreras en Punta de Piedra.	4.00	Tamaulipas	28	San Fernando	28035	25-Feb-2004
233	24.51077778	-97.74330556	Sitio 186H	Rancho Las Carreras en Punta de Piedra.	4.00	Tamaulipas	28	San Fernando	28035	25-Feb-2004
234	24.54563889	-97.74277778	Sitio 186I	Rancho Las Carreras en Punta de Piedra.	4.00	Tamaulipas	28	San Fernando	28035	25-Feb-2004
235	24.52141667	-97.74411111	Sitio 186J	Rancho Las Carreras en Punta de Piedra.	4.00	Tamaulipas	28	San Fernando	28035	25-Feb-2004
236	24.52608333	-97.76969444	Sitio 186K	Rancho Las Carreras en Punta de Piedra.	5.00	Tamaulipas	28	San Fernando	28035	25-Feb-2004
237	24.44463889	-98.32580556	Sitio 188	Ejido El Carmen, junto a Rancho Kikapú (Carretera 180 San Fernando-Soto La Marina).	203.00	Tamaulipas	28	San Fernando	28035	27-Feb-2004
238	24.27191667	-97.95402778	Sitio 189	Rancho Loreto	40.00	Tamaulipas	28	San Fernando	28035	27-Feb-2004
239	24.23361111	-97.96952778	Sitio 190	Entrada a Rancho La Rosa	48.00	Tamaulipas	28	Soto La Marina	28037	27-Feb-2004
240	24.25394444	-98.00791667	Sitio 191	Sitio 191.	63.00	Tamaulipas	28	Soto La Marina	28037	27-Feb-2004
241	24.25750000	-98.01347222	Sitio 192	Sitio 192.	59.00	Tamaulipas	28	Soto La Marina	28037	27-Feb-2004
242	24.27769444	-98.02294444	Sitio 193	Sitio 193.	70.00	Tamaulipas	28	Abasolo		27-Feb-2004
243	24.40013889	-98.04550000	Sitio 194	Sitio 194.	78.00	Tamaulipas	28	Abasolo		28-Feb-2004
244	24.40202778	-98.05055560	Sitio 195	Sitio 195.	73.00	Tamaulipas	28	San Fernando	28035	28-Feb-2004
245	24.35001778	-98.02894444	Sitio 196	Sitio 196.	71.00	Tamaulipas	28	San Fernando	28035	28-Feb-2004
246	24.37830556	-97.99555556	Sitio 197	Sitio 197.	53.00	Tamaulipas	28	San Fernando	28035	28-Feb-2004
247	24.38769444	-97.95227778	Sitio 198	Rancho Loreto	30.00	Tamaulipas	28	San Fernando	28035	28-Feb-2004
248	24.41858333	-97.87194444	Sitio 199	La Florida del Sur	10.00	Tamaulipas	28	San Fernando	28035	28-Feb-2004
249	24.56944444	-97.91619444	Sitio 200	Sitio 200.	ND	Tamaulipas	28	San Fernando	28035	29-Feb-2004
250	25.64933333	-99.07013889	Sitio 201	Km. 19 carretera China - Méndez.	162.00	Nuevo León	19	China	19013	29-Feb-2004
251	25.73944444	-99.21011111	Sitio 202	Km. 118 Carretera China - General Bravo.	156.00	Nuevo León	19	General Bravo		29-Feb-2004
252	25.99625000	-99.16255556	Sitio 203	Km. XX rumbo a Los Aldamas.	ND	Nuevo León	19	Doctor Coss		29-Feb-2004
253	26.41522222	-99.13936111	Sitio 22	Km. 100 Carretera Cd. Mier - Miguel Alemán.	ND	Tamaulipas	28	Ciudad Mier	28024	29-Feb-2004
254	26.43691667	-99.14222222	Sitio 204	Cd. Mier.	74.00	Tamaulipas	28	Ciudad Mier	28024	29-Feb-2004
255	26.55472222	-99.24483333	Sitio 205	Entronque a Cd. Guerrero - Paras.	117.00	Tamaulipas	28	Guerrero	28014	29-Feb-2004
256	25.40244444	-98.56497222	Sitio 206A	Rancho El Calabozo.	124.00	Nuevo León	19	China	19013	1-Mar-2004
257	25.41847222	-98.57155556	Sitio 206B	Rancho El Calabozo.	137.00	Nuevo León	19	China	19013	1-Mar-2004
258	25.40927778	-98.47733333	Sitio 207A	Rancho El Purgatorio.	148.00	Nuevo León	19	China	19013	2-Mar-2004
259	25.38727778	-98.44919444	Sitio 207B	Rancho El Purgatorio.	177.00	Nuevo León	19	China	19013	2-Mar-2004
260	25.38022222	-98.47005556	Sitio 207C	Rancho El Purgatorio.	168.00	Nuevo León	19	China	19013	2-Mar-2004
261	25.40686111	-98.48711111	Sitio 207D	Rancho El Purgatorio.	152.00	Nuevo León	19	China	19013	2-Mar-2004
262	25.41322222	-98.51661111	Sitio 208A	Rancho San Rafael.	133.00	Nuevo León	19	China	19013	2-Mar-2004
263	25.40244444	-98.55316667	Sitio 206C	Rancho El Calabozo.	127.00	Nuevo León	19	China	19013	2-Mar-2004
264	25.38427778	-98.56561111	Sitio 206D	Rancho El Calabozo.	117.00	Nuevo León	19	China	19013	2-Mar-2004
265	24.73111111	-99.37591667	Sitio 183	3 Km. E Lucio Blanco	310.00	Tamaulipas	28	Villagrán	28042	6-Mar-2004
266	24.72738889	-99.34355556	Sitio 209	5.5 Km. de Lucio Blanco + 1.5 Km. rumbo a Rancho San Antonio.	302.00	Tamaulipas	28	Villagrán	28042	6-Mar-2004
267	24.68055556	-99.33833333	Sitio 210	10.5 Km. SE de Lucio Blanco.	314.00	Tamaulipas	28	Villagrán	28042	6-Mar-2004
268	24.95158333	-97.86469444	Sitio 211	Laguna Anda La Piedra.	10.00	Tamaulipas	28	San Fernando	28035	23-Mar-2004
269	24.95583333	-97.88847222	Sitio 212	Laguna Anda La Piedra.	10.00	Tamaulipas	28	San Fernando	28035	23-Mar-2004

No_ID	Lat. N	Long. W	Site	Locality	Altitude	State	C_Edo	Municipality	C_Mpio	Date
270	25.03280556	-97.92602778	Sitio 213	Laguna Anda La Piedra.	11.00	Tamaulipas	28	San Fernando	28035	24-Mar-2004
271	25.00405556	-97.92558333	Sitio 214	Laguna Anda La Piedra.	10.00	Tamaulipas	28	San Fernando	28035	24-Mar-2004
272	25.99602778	-100.04558330	Sitio 215-1	Loma Blanca, 4.9 Km. al WNW de Higueras.	570.00	Nuevo León	19	Higueras	19028	31-Mar-2004
273	25.98136111	-100.03866670	Sitio 216-1	3.1 Km. al WNW de Higueras.	537.00	Nuevo León	19	Higueras	19028	31-Mar-2004
274	25.96908333	-100.02683330	Sitio 217-1	1.2 Km. al WNW de Higueras.	525.00	Nuevo León	19	Higueras	19028	31-Mar-2004
275	25.93705556	-100.00400000	Sitio 218-1	2.5 Km. ESE de Higueras.	499.00	Nuevo León	19	Higueras	19028	31-Mar-2004
276	25.95522222	-99.98663889	Sitio 219	2.8 Km. camino a La Laguna, Higueras.	510.00	Nuevo León	19	Higueras	19028	31-Mar-2004
277	25.91544444	-100.01050000	Sitio 220-1	5.6 Km. SW de Higueras + 1.2 Km. terracería al N.	426.00	Nuevo León	19	Higueras	19028	31-Mar-2004
278	25.99602778	-100.04558330	Sitio 215-2	Loma Blanca, 4.9 Km. al WNW de Higueras.	570.00	Nuevo León	19	Higueras	19028	6-Abr-2004
279	25.98136111	-100.03866670	Sitio 216-2	3.1 Km. al WNW de Higueras.	537.00	Nuevo León	19	Higueras	19028	6-Abr-2004
280	25.96908333	-100.02683330	Sitio 217-2	1.2 Km. al WNW de Higueras.	525.00	Nuevo León	19	Higueras	19028	6-Abr-2004
281	25.93705556	-100.00400000	Sitio 218-2	2.5 Km. ESE de Higueras.	499.00	Nuevo León	19	Higueras	19028	6-Abr-2004
282	25.91544444	-100.01050000	Sitio 220-2	5.6 Km. SW de Higueras + 1.2 Km. terracería al N.	426.00	Nuevo León	19	Higueras	19028	6-Abr-2004
283	25.92580556	-97.29283333	Sitio 221	Ejido El Refugio, camino a Colmenas.	13.00	Tamaulipas	28	Matamoros	28022	21-Abr-2004
284	25.72350000	-97.17430556	Sitio 222	Playa rumbo a Escolleras de Lauro Villar.	1.00	Tamaulipas	28	Matamoros	28022	22-Abr-2004
285	25.71338889	-97.57161111	Sitio 223	Entronque a Puerto El Mezquital.	14.00	Tamaulipas	28	Matamoros	28022	22-Abr-2004
286	25.42291667	-97.41836111	Sitio 224	Rancho Los Amaros.	8.00	Tamaulipas	28	Matamoros	28022	23-Abr-2004
287	25.45133333	-97.43666667	Sitio 225	Presa en Rancho Los Amaros.	1.00	Tamaulipas	28	Matamoros	28022	23-Abr-2004
288	26.33069444	-98.98013889	Sitio 226	La Candelaria, 4 Km. al Sur de Guardados de Arriba.	74.00	Tamaulipas	28	Camargo	28007	14-Jul-2004
289	26.33336111	-98.93800000	Sitio 227	3.5 Km. al Sur de Guardados de Abajo.	62.00	Tamaulipas	28	Camargo	28007	14-Jul-2004
290	26.32077778	-98.90300000	Sitio 228	Loc 228.	67.00	Tamaulipas	28	Camargo	28007	14-Jul-2004
291	26.33041667	-98.90366667	Sitio 229	Loc 229.	67.00	Tamaulipas	28	Camargo	28007	14-Jul-2004
292	26.34177778	-98.90238889	Sitio 230	Canal de Riego en Rancherías.	58.00	Tamaulipas	28	Camargo	28007	14-Jul-2004
293	26.26030556	-98.70619444	Sitio 231	San Francisco.	60.00	Tamaulipas	28	Gustavo Díaz Ordaz	28015	14-Jul-2004
294	26.17530556	-98.67283333	Sitio 232	6.3 Km. al Sur de Valadeces por Tamps 29 + 0.4 Km. E + 0.3 Km. N.	61.00	Tamaulipas	28	Gustavo Díaz Ordaz	28015	14-Jul-2004
295	26.17400000	-98.66372222	Sitio 233	6.3 Km. al Sur de Valadeces por Tamps 29 + 1.4 Km. E.	72.00	Tamaulipas	28	Gustavo Díaz Ordaz	28015	14-Jul-2004
296	26.10580556	-98.53972222	Sitio 234	4.4km al E del puente.	59.00	Tamaulipas	28	Gustavo Díaz Ordaz	28015	14-Jul-2004
297	26.11283333	-98.50488890	Sitio 235	Km. 27.2 Entronque Los Altos + 9.4 Km. al Sur.	58.00	Tamaulipas	28	Gustavo Díaz Ordaz	28015	14-Jul-2004
298	26.13552778	-98.46375000	Sitio 236	Cortázar, 5.8 Km. al Sur de Argüelles.	52.00	Tamaulipas	28	Gustavo Díaz Ordaz	28015	14-Jul-2004
299	25.94100000	-98.29619444	Sitio 237	2.6 Km. rumbo a La Garcita.	66.00	Tamaulipas	28	Reynosa	28032	15-Jul-2004
300	25.87513889	-98.28061111	Sitio 238	Carretera 79 Tamps, a 2.6 Km. camino a Rancho La Presa.	62.00	Tamaulipas	28	Reynosa	28032	15-Jul-2004
301	25.78380556	-98.25558333	Sitio 239	Entronque a Congregación Garza.	60.00	Tamaulipas	28	Reynosa	28032	15-Jul-2004
302	25.78297222	-98.32172222	Sitio 240	Km. 6.7 camino a Congregación Garza.	90.00	Tamaulipas	28	Reynosa	28032	15-Jul-2004
303	25.78197222	-98.33905556	Sitio 241	Km. 8.5 camino a Congregación Garza.	100.00	Tamaulipas	28	Reynosa	28032	15-Jul-2004
304	25.77777778	-98.35502778	Sitio 242	Congregación Garza.	101.00	Tamaulipas	28	Reynosa	28032	15-Jul-2004
305	25.78225000	-98.37344444	Sitio 243	Km. 12.3 camino a Congregación Garza a vereda del Venado.	111.00	Tamaulipas	28	Reynosa	28032	15-Jul-2004
306	25.78766667	-98.41666667	Sitio 244	Km. 16.5 camino a Congregación Garza a vereda del Venado.	140.00	Tamaulipas	28	Reynosa	28032	15-Jul-2004
307	25.95005556	-98.41777778	Sitio 245	Carr. Mex. 40 Km. 200 + 10.3 Km. SE vereda del Venado.	114.00	Tamaulipas	28	Reynosa	28032	15-Jul-2004

No_ID	Lat. N	Long. W	Site	Locality	Altitude	State	C_Edo	Municipality	C_Mpio	Date
308	28.48180556	-100.38547220	Sitio 246	Ojo de Agua en Rodríguez.	237.00	Coahuila	5	Guerrero	5012	16-Jul-2004
309	28.46125000	-100.36800000	Sitio 247	4.1 Km. camino a Rodríguez.	246.00	Coahuila	5	Guerrero	5012	16-Jul-2004
310	28.30691667	-100.35380560	Sitio 48	Km. 125.5 (1.5 Km. S de Guerrero), Carretera Mex 2, Nuevo Laredo - Piedras Negras.	ND	Coahuila	5	Guerrero	5012	16-Jul-2004
311	26.78033333	-99.33738889	Sitio 03-3	15.4 Km. de Carretera Mex-2 en Antigua Ciudad Guerrero.	ND	Tamaulipas	28	Guerrero	28014	17-Jul-2004
312	26.78994444	-99.42125000	Sitio 248	Río Salado cruz con Carretera Mex. 2 Reynosa - Piedras Negras.	87.00	Tamaulipas	28	Guerrero	28014	17-Jul-2004
313	26.53038889	-99.17508333	Sitio 249	Km. 113.2 Carretera Mex. 2 Méndez - Nueva Cd. Guerrero.	68.00	Tamaulipas	28	Guerrero	28014	17-Jul-2004
314	25.01316667	-98.10850000	Sitio 250	3 Km. W de Francisco Villa.	40.00	Tamaulipas	28	San Fernando	28035	5-Ago-2004
315	25.01200000	-98.14333333	Sitio 251	6.6 Km. W de Francisco Villa.	82.00	Tamaulipas	28	San Fernando	28035	5-Ago-2004
316	25.06252778	-98.16858333	Sitio 252	11.6 Km. W del Entronque Juan Antonio en Ampliación La Loma.	62.00	Tamaulipas	28	San Fernando	28035	5-Ago-2004
317	25.05755556	-98.17405556	Sitio 253	12.6 Km. W del Entronque Juan Antonio en Ampliación La Loma.	63.00	Tamaulipas	28	San Fernando	28035	5-Ago-2004
318	25.11619444	-98.13888889	Sitio 254	Benito Juárez.	57.00	Tamaulipas	28	San Fernando	28035	5-Ago-2004
319	25.13952778	-98.21141667	Sitio 255	2 Km. SW de 2 de Junio.	91.00	Tamaulipas	28	San Fernando	28035	5-Ago-2004
320	25.15550000	-98.19483333	Sitio 256	2 de Junio.	87.00	Tamaulipas	28	San Fernando	28035	5-Ago-2004
321	25.17466667	-98.19391667	Sitio 257	2 Km. N de 2 de Junio + 0.5 Km. E camino a Chopote.	78.00	Tamaulipas	28	San Fernando	28035	5-Ago-2004
322	25.20036111	-98.20219444	Sitio 258	Rancho La Peñita.	76.00	Tamaulipas	28	San Fernando	28035	5-Ago-2004
323	25.24066667	-98.20483333	Sitio 259	Rancho Lechuguillas.	74.00	Tamaulipas	28	San Fernando	28035	5-Ago-2004
324	25.23752778	-98.20816667	Sitio 260	0.6 Km. camino a Culebro, Carr. Nacional 97 Reynosa.	69.00	Tamaulipas	28	San Fernando	28035	6-Ago-2004
325	25.44791667	-98.25708333	Sitio 261	Rancho Luis Ricardo, 3.4 Km. al W de la Carretera Nacional 97 Reynosa.	69.00	Tamaulipas	28	Méndez	28035	6-Ago-2004
326	25.45280556	-98.30061111	Sitio 262	Rancho Santa Isabel, 7.9 Km. del entronque Carretera Nacional 97 Reynosa.	77.00	Tamaulipas	28	Méndez	28035	6-Ago-2004
327	25.45602778	-98.25772222	Sitio 263	2.7 Km. camino a Rancho Santa Isabel + 1.3 Km. N.	68.00	Tamaulipas	28	Méndez	28035	6-Ago-2004
328	25.51569444	-98.22569444	Sitio 264	San Fernandeño.	55.00	Tamaulipas	28	Reynosa	28035	6-Ago-2004
329	25.60644444	-98.26866667	Sitio 265	Km. 3.0 camino a Rancho La Llorona Nueva.	67.00	Tamaulipas	28	Reynosa	28032	6-Ago-2004
330	25.60438889	-98.30286111	Sitio 266	Km. 6.4 camino a Rancho La Llorona Nueva.	67.00	Tamaulipas	28	Reynosa	28032	6-Ago-2004
331	25.61155556	-98.31250000	Sitio 267	Km. 7.5 camino a Rancho La Llorona Nueva.	96.00	Tamaulipas	28	Reynosa	28032	6-Ago-2004
332	25.69413889	-98.24694444	Sitio 268	Rancho El Roble.	58.00	Tamaulipas	28	Reynosa	28032	6-Ago-2004
333	25.11619444	-98.13888889	Sitio 254	Benito Juárez.	57.00	Tamaulipas	28	San Fernando	28035	1-Sep-2004
334	24.38597222	-98.44983333	Sitio 269	Km. 5.0 a La Fe del Golfo.	199.00	Tamaulipas	28	Santander Jiménez		11-Sep-2004
335	24.39580558	-98.46991667	Sitio 270	Km. 7.5 a La Fe del Golfo.	214.00	Tamaulipas	28	Santander Jiménez		11-Sep-2004
336	24.83186111	-98.62408333	Sitio 271	8 Km. N de Crullas.	264.00	Tamaulipas	28	Cruillas	28010	11-Sep-2004
337	24.75591667	-98.54355556	Sitio 272	Crullas.	256.00	Tamaulipas	28	Cruillas	28010	11-Sep-2004
338	24.68469444	-97.95877778	Sitio 273	7.3 Km. camino de La Rinconada Vieja a La Florida.	22.00	Tamaulipas	28	San Fernando	28035	12-Sep-2004
339	24.56908333	-97.91613889	Sitio 274	21.7 Km. camino de La Rinconada Vieja a La Florida.	13.00	Tamaulipas	28	San Fernando	28035	12-Sep-2004
340	24.57011111	-98.00213889	Sitio 275	11.1 Km. N de La Diana.	38.00	Tamaulipas	28	San Fernando	28035	12-Sep-2004
341	24.67775000	-98.04861111	Sitio 276	Ejido Puerto Los Ébanos, 4.2 Km. del entronque.	59.00	Tamaulipas	28	San Fernando	28035	12-Sep-2004
342	24.69908333	-98.00013889	Sitio 277	2.9 Km. N del entronque Puerto Los Ébanos.	29.00	Tamaulipas	28	San Fernando	28035	12-Sep-2004
343	25.41819444	-98.57316667	Sitio 207E	Rancho El Purgatorio.	143.00	Nuevo León	19	China	19013	21-Oct-2004
344	25.42900000	-98.55466667	Sitio 207F	Rancho El Purgatorio.	136.00	Nuevo León	19	China	19013	21-Oct-2004
345	25.39419444	-98.58094444	Sitio 207G	Rancho El Purgatorio.	136.00	Nuevo León	19	China	19013	21-Oct-2004
346	25.42525000	-98.52455556	Sitio 208B	Rancho San Rafael.	135.00	Nuevo León	19	China	19013	21-Oct-2004

No_ID	Lat. N	Long. W	Site	Locality	Altitude	State	C_Edo	Municipality	C_Mpio	Date
347	25.43850000	-98.52447222	Sitio 278	Rancho El Porvenir	122.00	Nuevo León	19	China	19013	24-Nov-2004
348	25.99602778	-100.04558330	Sitio 215-1	Loma Blanca, 4.9 Km. al WNW de Higueras.	570.00	Nuevo León	19	Higueras	19028	28-Ene-2005
349	25.96908333	-100.02683330	Sitio 217-1	1.2 Km. al WNW de Higueras.	525.00	Nuevo León	19	Higueras	19028	28-Ene-2005
350	25.86844444	-100.03047222	Sitio 279	Entronque Monterrey Mex 54 y Higueras NL 48 en Marín.	392.00	Nuevo León	19			28-Ene-2005
351	25.84025000	-100.03905556	Sitio 280	Km. 36.4 carretera Mex 54 Monterrey - Miguel Alemán, adelante del Puente Marín.	351.00	Nuevo León	19			28-Ene-2005
352	26.62847222	-100.02413889	Sitio 281	4.1 Km. al Sur de Vallecillos, Km. 120.4 Carretera Méx. 85.	310.00	Nuevo León	19	Vallecillos		8-Mar-2005
353	26.86563889	-99.85450000	Sitio 282	Rancho Los Galemes, entrada Km. 151.6 Carr. Méx 85 + 2.5 Km. al N.	174.00	Nuevo León	19			8-Mar-2005
354	26.89175000	-99.70722222	Sitio 283	Aquiles Serdán, 16.9 Km. al E de la Carretera Mex. 85.	136.00	Nuevo León	19			8-Mar-2005
355	26.86022222	-99.73258333	Sitio 284	12.9 Km. camino a Aquiles Serdán.	144.00	Nuevo León	19			8-Mar-2005
356	26.86058333	-99.73708333	Sitio 285	12.0 Km. camino a Aquiles Serdán.	142.00	Nuevo León	19			8-Mar-2005
357	24.22105556	-98.18897222	Sitio 286	1.9 Km. de Ojo de Agua camino a Enrramadas.	121.00	Tamaulipas	28	Soto La Marina	28037	12-Mar-2005
358	23.55411111	-98.02638889	Sitio 287	1.15 Km. camino a Tepehuajes.	64.00	Tamaulipas	28	Soto La Marina	28037	12-Mar-2005
359	23.55366667	-98.02475000	Sitio 288	1.5 Km. camino a Tepehuajes.	62.00	Tamaulipas	28	Soto La Marina	28037	12-Mar-2005
360	23.55280556	-98.03008333	Sitio 289	800 m camino a Tepehuajes.	64.00	Tamaulipas	28	Soto La Marina	28037	12-Mar-2005
361	23.80508333	-99.03000000	Sitio 290	Km. 73.7 Carretera Méx. 80 Cd. Victoria - Monterrey.	198.00	Tamaulipas	28	Cd. Victoria		12-Mar-2005
362	27.85897222	-99.88336111	Sitio 291	Treviño Ranch.	162.00	Texas	99	Webb	99999	16-Mar-2005
363	27.86852778	-99.87250000	Sitio 292	Treviño Ranch.	171.00	Texas	99	Webb	99999	16-Mar-2005
364	27.87936111	-99.86997222	Sitio 293	Treviño Ranch.	185.00	Texas	99	Webb	99999	16-Mar-2005
365	27.90813889	-99.85133333	Sitio 294	Treviño Ranch.	173.00	Texas	99	Webb	99999	17-Mar-2005
366	27.90208333	-99.85236111	Sitio 295	Treviño Ranch.	178.00	Texas	99	Webb	99999	17-Mar-2005
367	27.90000000	-99.85355556	Sitio 296	Treviño Ranch.	184.00	Texas	99	Webb	99999	17-Mar-2005
368	27.89780556	-99.85230556	Sitio 297	Treviño Ranch.	185.00	Texas	99	Webb	99999	17-Mar-2005
369	27.88788889	-99.85727778	Sitio 298	Treviño Ranch.	182.00	Texas	99	Webb	99999	17-Mar-2005
370	27.88491667	-99.85944444	Sitio 299	Treviño Ranch.	190.00	Texas	99	Webb	99999	17 Mar-2005
371	27.88091667	-99.85250000	Sitio 300	Treviño Ranch.	201.00	Texas	99	Webb	99999	17-Mar-2005
372	27.88911111	-99.84427778	Sitio 301	Treviño Ranch.	208.00	Texas	99	Webb	99999	17-Mar-2005
373	27.89483333	-99.84816667	Sitio 302	Treviño Ranch.	190.00	Texas	99	Webb	99999	17-Mar-2005
374	27.77891667	-99.95725000	Sitio 303	Rancho San Emeterio.	194.00	Coahuila		Hidalgo		17-Mar-2005
375	23.55280556	-98.03008333	Sitio 289	0.8 Km. camino a Tepehuajes.	64.00	Tamaulipas	28	Soto La Marina	28037	1-Abr-2005
376	23.55297222	-98.02913889	Sitio 304	0.9 Km. camino a Tepehuajes.	43.00	Tamaulipas	28	Soto La Marina	28037	1-Abr-2005
377	23.56038889	-98.02705556	Sitio 305	1.1 Km. camino a Tepehuajes.	43.00	Tamaulipas	28	Soto La Marina	28037	1-Abr-2005
378	23.55372222	-98.03436111	Sitio 306	0.45 Km. camino a Tepehuajes + 200 m N.	49.00	Tamaulipas	28	Soto La Marina	28037	1-Abr-2005
379	23.54936111	-98.03283333	Sitio 307	0.45 Km. camino a Tepehuajes + 200 m S.	51.00	Tamaulipas	28	Soto La Marina	28037	1-Abr-2005
380	23.55680556	-98.04655556	Sitio 308	Arroyo en San José de las Rucias.	38.00	Tamaulipas	28	Soto La Marina	28037	1-Abr-2005
381	23.80622222	-98.06355556	Sitio 309	Carretera Tamps 52, Km. 14.7 + 1.1 Km. camino a Ejido El Capote.	36.00	Tamaulipas	28	Soto La Marina	28037	1-Abr-2005
382	23.67988889	-98.12988889	Sitio 310	Carretera Mex. 180, Km. 134.1 + 3.3 Km. camino a Rancho La Bonita.	51.00	Tamaulipas	28	Soto La Marina	28037	2-Abr-2005
383	23.61069444	-98.07825000	Sitio 311	0.5 Km. camino a Tres de Abril.	40.00	Tamaulipas	28	Soto La Marina	28037	2-Abr-2005
384	23.61450000	-98.07150000	Sitio 312	1.3 Km. camino a Tres de Abril.	29.00	Tamaulipas	28	Soto La Marina	28037	2-Abr-2005
385	23.63138889	-98.70444440	Sitio 313	5.2 Km. camino a Tres de Abril + 800 m N.	26.00	Tamaulipas	28	Soto La Marina	28037	2-Abr-2005
386	23.63061111	-98.06013889	Sitio 314	3.5 Km. camino a Tres de Abril + 150 m S.	33.00	Tamaulipas	28	Soto La Marina	28037	2-Abr-2005

No_ID	Lat. N	Long. W	Site	Locality	Altitude	State	C_Edo	Municipality	C_Mpio	Date
387	23.66022222	-98.45444440	Sitio 315	7.1 Km. camino a Tres de Abril.	40.00	Tamaulipas	28	Soto La Marina	28037	2-Abr-2005
388	23.71025000	-98.21072222	Sitio 316	Carretera Mex. 180, Km. 142 Soto La Marina - Tampico.	42.00	Tamaulipas	28	Soto La Marina	28037	2-Abr-2005
389	24.86441667	-99.33452778	Sitio BSI-1	Baños de San Ignacio.	261.00	Nuevo León	19	Linares	19033	8-Abr-2005
390	24.86683333	-99.32816667	Sitio BSI-2	Manantial cerca del Baño de San Ignacio.	251.00	Nuevo León	19	Linares	19033	8-Abr-2005
391	24.77152778	-98.00236111	Sitio 317	Km. 18.7 antes del Puente camino San Fernando a Carbonera.	25.00	Tamaulipas	28	San Fernando	28035	14-Abr-2005
392	24.33336111	-97.99086111	Sitio 318	Rancho Loreto.	45.00	Tamaulipas	28	Soto La Marina	28037	14-Abr-2005
393	24.32083333	-97.99216667	Sitio 319	Rancho Loreto.	45.00	Tamaulipas	28	Soto La Marina	28037	14-Abr-2005
394	24.33375000	-97.99488889	Sitio 320	Rancho Loreto.	45.00	Tamaulipas	28	Soto La Marina	28037	14-Abr-2005
395	24.33677778	-97.99566667	Sitio 321	Rancho Loreto.	48.00	Tamaulipas	28	San Fernando	28035	14-Abr-2005
396	24.34575000	-97.98200000	Sitio 322	Rancho Loreto.	41.00	Tamaulipas	28	San Fernando	28035	14-Abr-2005
397	24.31113889	-97.99711111	Sitio 323	Rancho Loreto.	42.00	Tamaulipas	28	Soto La Marina	28037	15-Abr-2005
398	24.30788889	-98.00161111	Sitio 324	Rancho Loreto.	54.00	Tamaulipas	28	Soto La Marina	28037	15-Abr-2005
399	24.30600000	-98.00538889	Sitio 325	Rancho Loreto.	51.00	Tamaulipas	28	Soto La Marina	28037	15-Abr-2005
400	24.30480556	-98.00597222	Sitio 326	Rancho Loreto.	53.00	Tamaulipas	28	Soto La Marina	28037	15-Abr-2005
401	24.31844444	-98.01952778	Sitio 327	Rancho Loreto.	58.00	Tamaulipas	28	Soto La Marina	28037	15-Abr-2005
402	24.32719444	-98.01177778	Sitio 328	Rancho Loreto.	54.00	Tamaulipas	28	San Fernando	28035	15-Abr-2005
403	24.31669444	-97.99794444	Sitio 329	Rancho Loreto.	48.00	Tamaulipas	28	Soto La Marina	28037	15-Abr-2005
404	24.34602778	-97.99594444	Sitio 330	Rancho Loreto.	49.00	Tamaulipas	28	San Fernando	28035	15-Abr-2005
405	24.36486111	-98.00258333	Sitio 331	Rancho Loreto.	53.00	Tamaulipas	28	San Fernando	28035	15-Abr-2005
406	24.36180556	-98.01113889	Sitio 332	Rancho Loreto.	55.00	Tamaulipas	28	San Fernando	28035	15-Abr-2005
407	24.35186111	-98.01847222	Sitio 333	Rancho Loreto.	65.00	Tamaulipas	28	San Fernando	28035	15-Abr-2005
408	24.37100000	-98.00355556	Sitio 334	Rancho Loreto.	52.00	Tamaulipas	28	San Fernando	28035	16-Abr-2005
409	24.34586111	-98.02536111	Sitio 335	Rancho Loreto.	59.00	Tamaulipas	28	San Fernando	28035	16-Abr-2005
410	24.36241667	-98.00944444	Sitio 336	Rancho Loreto.	53.00	Tamaulipas	28	San Fernando	28035	16-Abr-2005
411	24.34513889	-98.03533333	Sitio 337	Rancho Loreto.	62.00	Tamaulipas	28	San Fernando	28035	16-Abr-2005
412	24.33508333	-98.04927778	Sitio 338	Rancho Loreto.	80.00	Tamaulipas	28	San Fernando	28035	16-Abr-2005
413	24.32063889	-98.05091667	Sitio 339	Rancho Loreto.	91.00	Tamaulipas	28	San Fernando	28035	16-Abr-2005
414	24.34202778	-98.00563889	Sitio 340	Rancho Loreto.	49.00	Tamaulipas	28	San Fernando	28035	17-Abr-2005
415	24.34486111	-97.99766667	Sitio 341	Rancho Loreto.	51.00	Tamaulipas	28	San Fernando	28035	17-Abr-2005
416	24.33841667	-97.99736111	Sitio 342	Rancho Loreto.	46.00	Tamaulipas	28	San Fernando	28035	17-Abr-2005
417	24.36188889	-98.01116667	Sitio 343	Rancho Loreto.	52.00	Tamaulipas	28	San Fernando	28035	17-Abr-2005
418	24.40058333	-98.04569444	Sitio 344	10.5 Km. al de la comunidad "América del Norte".	67.00	Tamaulipas	28	Abasolo		17-Abr-2005
419	25.47325000	-98.69675000	Sitio 345	Rancho La Coma.	103.00	Nuevo León	19	China	19013	24-May-2005
420	25.38488889	-98.54372222	Sitio 346 A	Rancho San Rafael.	114.00	Nuevo León	19	China	19013	24-May-2005
421	25.38422222	-98.54230556	Sitio 346 B	Rancho San Rafael.	116.00	Nuevo León	19	China	19013	24-May-2005
422	25.38769444	-98.55369444	Sitio 347	Rancho San Rafael.	116.00	Nuevo León	19	China	19013	24-May-2005
423	25.42452778	-98.54252778	Sitio 348	Rancho San Rafael.	120.00	Nuevo León	19	China	19013	24-May-2005
424	25.41436111	-98.47255556	Sitio 349	Rancho San Rafael.	121.00	Nuevo León	19	China	19013	24-May-2005
425	25.48080556	-98.70947222	Sitio 350	Rancho la Coma.	112.00	Nuevo León	19	China	19013	25-May-2005
426	25.40494440	-98.67158333	Sitio 351	Rancho San Juanito.	112.00	Nuevo León	19	China	19013	25-May-2005

No_ID	Lat. N	Long. W	Site	Locality	Altitude	State	C_Edo	Municipality	C_Mpio	Date
427	24.36188889	-98.01116667	Sitio 343	Rancho Loreto.	52.00	Tamaulipas	19	San Fernando	28035	12-Jul-2005
428	25.85350000	-100.37977778	Sitio 352	Sierra San Miguel.	540.00	Nuevo León	19	Hidalgo	19047	3-Ago-2005
429	25.86969444	-100.40150000	Sitio 353	Sierra San Miguel.	661.00	Nuevo León	19	Hidalgo	19047	3-Ago-2005
430	25.87530556	-100.40022222	Sitio 354	Sierra San Miguel.	725.00	Nuevo León	19	Hidalgo	19047	3-Ago-2005
431	25.87269444	-100.40063889	Sitio 355	Sierra San Miguel.	749.00	Nuevo León	19	Hidalgo	19047	3-Ago-2005
432	23.81111111	-98.50561111	Sitio 356	Km. 30 Carretera rápida Cd- Victoria a Soto La Marina.	354.00	Tamaulipas	28	Soto La Marina	28037	5-Ago-2005
433	23.66591667	-98.15683333	Sitio 357	Km. 135 Carretera Mex 180 Soto La Marina - Tampico.	62.00	Tamaulipas	28	Soto La Marina	28037	5-Ago-2005
434	23.63994444	-98.12561111	Sitio 358	Km. 130.4 Carretera Mex 180 Soto La Marina - Tampico.	47.00	Tamaulipas	28	Soto La Marina	28037	5-Ago-2005
435	23.63611111	-98.05783333	Sitio 359	4.1 Km. camino a Tres de Abril frente a Rancho Ganadero Santa Mónica.	30.00	Tamaulipas	28	Soto La Marina	28037	5-Ago-2005
436	23.63222222	-98.07488889	Sitio 360	3.8 Km. camino a Tres de Abril y 1.4 Km. N en Rancho de Homero Hernández.	22.00	Tamaulipas	28	Soto La Marina	28037	5-Ago-2005
437	23.62888889	-98.06705556	Sitio 361	3.8 Km. camino a Tres de Abril y 0.4 Km. N en Rancho de Homero Hernández.	34.00	Tamaulipas	28	Soto La Marina	28037	5-Ago-2005
438	23.58388889	-98.07461111	Sitio 362	Ejido 10 de Abril, 1.1 Km. al W y Km. 122.05 Carretera Mex 180 Soto La Marina - Tampico.	36.00	Tamaulipas	28	Soto La Marina	28037	5-Ago-2005
439	23.53677778	-98.02983333	Sitio 363	Rancho Santo Domingo, Km. 114.7 Carretera Mex 180 Soto La Marina - Tampico.	60.00	Tamaulipas	28	Soto La Marina	28037	5-Ago-2005
440	23.41505556	-98.04022222	Sitio 364	Km. 99 Carretera Mex 180 Soto La Marina - Tampico + 1.3 Km. W camino a San Felipe.	88.00	Tamaulipas	28	Soto La Marina	28037	5-Ago-2005
441	23.50594444	-98.02144444	Sitio 365	El Potosino, Km. 110.8 Carretera Mex 180, Soto La Marina - Tampico.	66.00	Tamaulipas	28	Soto La Marina	28037	5-Ago-2005
442	23.77975000	-98.25366667	Sitio 366	Rancho Los Pilares - Los Cañones, Km. 62 Carretera rápida Cd. Victoria - Soto La Marina.	45.00	Tamaulipas	28	Soto La Marina	28037	6-Ago-2005
443	23.61477778	-98.08822222	Sitio 367	Rancho San Carlos, Km. 125.5 Carretera Mex 180, Soto La Marina - Tampico.	38.00	Tamaulipas	28	Soto La Marina	28037	6-Ago-2005
444	23.75900000	-98.22652778	Sitio 368	Km. 66 Carretera rápida Cd- Victoria a Soto La Marina, 2 Km. del entronque.	37.00	Tamaulipas	28	Soto La Marina	28037	6-Ago-2005

APPENDIX 3

REPORT OF RARE PLANTS, THREATENED & IN DANGER OF EXTINCTION INCLUDED IN THIS PROJECT, FROM LISTS BY THE USFWD TEXAS, TEXAS PARK & WILDLIFE DEPARTMENT, THE NATURE CONSERVANCY (TNC), TAMAULIPAS THORNSCRUB ECO-REGIONAL PLAN (MET, INCLUDES MEXICO AND TEXAS), STATE OF TAMAULIPAS (G. MALDA BARRERA), AND SPECIES LISTED IN MEXICAN LAWS (MEX) (NOM-059-SEMARNAT-2001).

FAMILY	SPECIES	OBSERVATIONS	This Project	TPW	US	TNC	MET	TAMPS	MEX
Acanthaceae	*Justicia runyonii*			X		X		X	
Acanthaceae	*Louterimium tamaulipense*							X	
Acanthaceae	*Yeatesia platystegia*					X	X		
Aceraceae	*Acer skutchii*							X	X
Agavaceae	*Agave bracteosae*						X		X
Agavaceae	*Agave victoria-reginae*						X		X
Agavaceae	*Manfreda longiflora*			X		X	X		X
Agavaceae	*Manfreda sileri*	No Mexico specimens at TEX				X	X		
Asclepiadaceae	*Asclepias prostrata*			X		X		X	
Asclepiadaceae	*Matelea brevicornata*	No Mexico specimens at TEX				X	X		
Asclepiadaceae	*Matelea parviflora*	No Mexico specimens at TEX				X	X		
Asclepiadaceae	*Matelea radiata*	No Mexico specimens at TEX				X			
Asclepiadaceae	*Matelea sagittifolia*	No Mexico specimens at TEX				X	X		
Asteraceae	*Ambrosia cheiranthifolia*	No Mexico specimens at TEX		X	X	X		X	
Asteraceae	*Coreopsis nuecensis*	No Mexico specimens at TEX				X			
Asteraceae	*Eupatorium richardsonii*							X	
Asteraceae	*Grindelia oolepis*	No Mexico specimens at TEX				X	X		
Asteraceae	*Helianthus praecox* subsp. *Hirtus*	No Mexico specimens at TEX				X	X		
Asteraceae	*Hymenopappus carrizoanus*	No Mexico specimens at TEX				X	X		
Asteraceae	*Shinnersia rivularis*						X		
Asteraceae	*Tetraneuris turneri*					X	X		
Asteraceae	*Thelesperma burridgeanum*	No Mexico specimens at TEX				X	X		
Asteraceae	*Thymophylla tephroleuca*	No Mexico specimens at TEX		X	X	X	X		
Asteraceae	*Trichocoronis rivularis*					X			
Asteraceae	*Trichocoronis wrightii* var. *Wrightii*					X	X		
Asteraceae	*Vervesina richardsinii*							X	
Betulaceae	*Ostrya virginiana*						X		X
Boraginaceae	*Omphalodes richardsonii*							X	
Brassicaceae	*Lesquerella thamnophila*		X	X	X	X			

FAMILY	SPECIES	OBSERVATIONS	This Project	TPW	US	TNC	MET	TAMPS	MEX
Brassicaceae	*Selenia grandis*	No Mexico specimens at TEX				X	X		
Brassicaceae	*Thelypodiopsis shinnersii*					X	X		
Bromeliaceae	*Pictairnia tuerckheimeii*							X	
Bromeliaceae	*Tillandsia baileyi*			X		X			
Bromeliaceae	*Tillandsia ionantha*							X	
Cactaceae	*Ariocarpus agavoides*							X	
Cactaceae	*Ariocarpus kotschobeyanus*						X	X	X
Cactaceae	*Ariocarpus retusus*						X	X	X
Cactaceae	*Ariocarpus scapharostris*						X		
Cactaceae	*Ariocarpus trigonus*						X	X	X
Cactaceae	*Astriphytum capricorne*						X		X
Cactaceae	*Astrophytum asterias*	Not examined		X	X	X	X	X	X
Cactaceae	*Astrophytum myriostigma*						X	X	X
Cactaceae	*Astrophytum ornatum*						X		X
Cactaceae	*Aztekium hintonii*						X		X
Cactaceae	*Coryphanta delicada*							X	X
Cactaceae	*Coryphanta echinoidea*							X	
Cactaceae	*Coryphanta grata*							X	X
Cactaceae	*Coryphantha macromeris* var. *runyonii*	Not examined				X			
Cactaceae	*Coryphantha sulcata* var. *nickelsiae*	Not examined				X		X	
Cactaceae	*Digitostigma caput-medusae*						X		
Cactaceae	*Dolichotele melaleuca*							X	
Cactaceae	*Echinocereus papillosus* var. *angusticeps*	Not examined		X		X			
Cactaceae	*Echinocereus papillosus* var. *papillosus*	Not examined				X			
Cactaceae	*Echinocactus platyacanhus*							X	X
Cactaceae	*Echinocereus knippelianus*							X	
Cactaceae	*Echinocereus poselgeri*						X		X
Cactaceae	*Echinocereus reichenbachii* var. *alberti*	Not examined		X		X	X		
Cactaceae	*Echinocereus reichenbachii* var. *fitchii*	Not examined		X		X	X	X	X
Cactaceae	*Epithelantha micromeres*						X		X
Cactaceae	*Ferocactus hamatacanthus*						X		
Cactaceae	*Ferocactus pilosus*						X		X

FAMILY	SPECIES	OBSERVATIONS	This Project	TPW	US	TNC	MET	TAMPS	MEX
Cactaceae	*Ferocactus stainesii*							X	
Cactaceae	*Geohintonia mexicana*						X		
Cactaceae	*Leuchtembergia principis*						X	X	X
Cactaceae	*Lophophora williamsii*						X	X	
Cactaceae	*Mammillaria albicoma*							X	X
Cactaceae	*Mammillaria baumii*							X	X
Cactaceae	*Mammillaria camenae*							X	
Cactaceae	*Mammillaria candida*							X	
Cactaceae	*Mammillaria klissingiana*							X	X
Cactaceae	*Mammillaria laui*							X	X
Cactaceae	*Mammillaria plumosa*						X	X	X
Cactaceae	*Mammillaria prolifera*							X	
Cactaceae	*Mammillaria roseoalba*							X	X
Cactaceae	*Mammillaria sanchez-mejoradae*						X		X
Cactaceae	*Neobuxbaumia euphorbioides*							X	
Cactaceae	*Neolloydia gielsdorfiana*							X	
Cactaceae	*Neolloydia saueri*							X	
Cactaceae	*Neolloydia schmiedickeana*							X	
Cactaceae	*Neolloydia subterranea*							X	
Cactaceae	*Neolloydia viereckii*							X	
Cactaceae	*Obregonia denegrii*							X	X
Cactaceae	*Opuntia engelmannii* var. *flexospina*	Not examined				X			
Cactaceae	*Pelecyphora pseudopectinata*							X	
Cactaceae	*Pelecyphora strombiiliformis*						X	X	
Cactaceae	*Strombocactus disciformis*						X		
Cactaceae	*Thelocactus bicolor flavidispinus*							X	
Cactaceae	*Thelocactus conothelos*							X	
Cactaceae	*Thelocactus rinconensis var. nidulans*						X		X
Cactaceae	*Thelocactus macdowellii*						X		X
Cactaceae	*Turbinicarpus dickisoniae*						X		
Cactaceae	*Turbinicarpus gielsodorfianus*							X	
Cactaceae	*Turbinicarpus pseudopectinatus*						X		X
Cactaceae	*Turbinicarpus saueri ssp. gonzalezi*						X		X
Cactaceae	*Turbinicarpus saueri ssp. septentrionales*						X		X
Cactaceae	*Turbinicarpus schmiedickeanus*						X		X
Cactaceae	*Turbinicarpus subterraneus*						X		X

FAMILY	SPECIES	OBSERVATIONS	This Project	TPW	US	TNC	MET	TAMPS	MEX
Cactaceae	*Turbinicarpus valdezianus*						X		X
Cactaceae	*Turbinicarpus viereckii*						X		X
Cactaceae	*Turbinicarpus ysabelae*						X		X
Cactaceae	*Turbinicarpus zaragozae*						X		X
Cactaceae	*Wilcoxia tamaulipense*							X	
Caryophyllaceae	*Paronychia congesta*	No Mexico specimens at TEX				X	X		
Caryophyllaceae	*Paronychia jonesii*	No Mexico specimens at TEX				X	X		
Caryophyllaceae	*Paronychia lundellorum*	No Mexico specimens at TEX				X	X		
Caryophyllaceae	*Paronychia maccartii*	No Mexico specimens at TEX				X			
Caryophyllaceae	*Paronychia setacea*	No Mexico specimens at TEX				X	X		
Cochlospermaceae	*Amoreuxia wrightii*							X	X
Commelinaceae	*Tradescantia buckleyi*						X		
Crassulaceae	*Lenophyllum texanum*					X	X		
Cucurbitaceae	*Cucurbita fraterna*							X	
Cucurbitaceae	*Cucurbita pedatifolia*							X	
Cycadaceae	*Ceratozamia kusteriana*							X	
Cycadaceae	*Dioon edule*							X	
Cycadaceae	*Zamia fischerii*							X	
Cyperaceae	*Eleocharis austrotexana*						X		
Cyperaceae	*Eleocharis brachycarpa*	No Mexico specimens at TEX				X	X	X	
Chenopodiaceae	*Atriplex klebergorum*	No Mexico specimens at TEX				X			
Dioscoraceae	*Dioscorea convolvulaceae*							X	
Ebanaceae	*Diospyros riojae*							X	X
Ericaceae	*Camarostaphylis sharpii*							X	
Ericaceae	*Macromeria alba*							X	
Euphorbiaceae	*Acalypha tamaulipensis*							X	
Euphorbiaceae	*Adelia vaseyi*			X		X	X	X	
Euphorbiaceae	*Argythamnia argyraea*	No Mexico specimens at TEX				X	X		
Euphorbiaceae	*Croton corrí*	No Mexico specimens at TEX				X			
Euphorbiaceae	*Euphorbia innocua*	No Mexico specimens at TEX				X	X		
Euphorbiaceae	*Euphorbia johnstonii*						X		
Euphorbiaceae	*Manihot walkerae*		X	X	X	X		X	
Euphorbiaceae	*Phyllanthus abnormis* var. *riograndensis*	No Mexico specimens at TEX				X			
Euphorbiaceae	*Phyllanthus barbera*							X	
Fabaceae	*Astragalus reflexus*	No Mexico specimens at TEX				X	X		
Fabaceae	*Bauhinia lunarioides*	No Mexico specimens at TEX				X			

FAMILY	SPECIES	OBSERVATIONS	This Project	TPW	US	TNC	MET	TAMPS	MEX
Fabaceae	*Caesalpinea caudata*						X		
Fabaceae	*Caesalpinea phyllanthoides*					X		X	
Fabaceae	*Calliandra biflora*					X			
Fabaceae	*Desmodium lindheimieri*							X	
Fabaceae	*Hoffmanseggia drummondii*					X	X		
Fabaceae	*Pomaria austrotexana*	No Mexico specimens at TEX				X	X		
Fagaceae	*Fagus mexicana*							X	
Fabaceae	*Rhynchosia tamaulipensis*						X		
Frankeniaceae	*Frankenia johnstonii*			X	X	X		X	X
Juglandaceae	*Carya ovata var. mexicana*							X	
Juglandaceae	*Juglans major*						X		
Juglandaceae	*Juglans mollis*							X	
Lamiaceae	*Brazoria arenaria*	No Mexico specimens at TEX				X			
Lamiaceae	*Physostegia correllii*					X			
Laureaceae	*Litsea glaucensces*						X		X
Liliaceae	*Anthericum chandleri*							X	
Liliaceae	*Beaurcarnea inermes*							X	
Liliaceae	*Beaurcarnea recurvata*							X	
Liliaceae	*Echeandia chandleri*	Specimens on loan				X			
Liliaceae	*Echeandia texensis*	On loan				X			
Liliaceae	*Yucca tenuistyla*						X		
Magnoliaceae	*Magnolia schiedeana*							X	X
Malvaceae	*Abutilon procerum*							X	
Meliaceae	*Cedrela odorata*							X	
Nyctaginaceae	*Abronia ameliae*					X	X		
Nyctaginaceae	*Acleisanthes crassifolia*								
Nyctaginaceae	*Boerhavia mathisiana*					X			
Olaceae	*Fraxinus udhei*						X		
Orchidaceae	*Encylia mariae*							X	
Orchidaceae	*Isochilus linearis var. unilateralis*							X	
Orchidaceae	*Laelia anceps*							X	X
Orchidaceae	*Malaxis ehrenbergii*							X	
Orchidaceae	*Stanhopera tigrina*							X	X
Palmae	*Brahea decumbens*							X	
Palmae	*Brahea dulcis (=B. berlandieri)*							X	
Palmae	*Chamaedoera aff. pringlei*							X	
Palmae	*Chamaedoera radicalis*							X	

FAMILY	SPECIES	OBSERVATIONS	This Project	TPW	US	TNC	MET	TAMPS	MEX
Palmae	*Sabal mexicana*							X	
Passifloraceae	*Passiflora conzattiana*							X	
Pinaceae	*Abies guatemalensis*							X	X
Pinaceae	*Abies vejarii*							X	X
Poaceae	*Willkommia texana var. texana*						X		
Podocarpaceae	*Podocarpus reichei*							X	
Polemoniaceae	*Gilia ludens*						X		
Polygonaceae	*Eriogonum greggii*			X		X			
Polygonaceae	*Polygonum striatulum*	No Mexico specimens at TEX				X	X		
Pontederiaceae	*Heteranthera mexicana*					X			X
Rosaceae	*Prunus minutiflora*	No Mexico specimens at TEX				X	X		
Rosaceae	*Prunus texana*	No Mexico specimens at TEX				X	X		
Rubiaceae	*Houstonia correllii*	No Mexico specimens at TEX				X	X		
Rubiaceae	*Houstonia croftiae*	No Mexico specimens at TEX				X	X		
Sapindaceae	*Cardiospermum dissectum*			X		X		X	
Sterculiaceae	*Ayenia limitaris*		X	X	X	X	X	X	
Taxaceae	*Taxus globosa*						X	X	X
Verbenaceae	*Citharexylum spathulatum*	No Mexico specimens at TEX				X		X	
		TOTAL	**3**	**17**	**7**	**68**	**85**	**95**	**51**

There is a total of 189 species and subspecies threatened or danger extinction for Northeastern of Mexico and Texas included in the Tamaulipas Thornscrub region and its periphery.

APPENDIX 4

HISTORICAL RECORDS OF SPECIES OF RARE PLANTS IN MEXICO.

Abies guatemalensis

HIDALGO: Cerro de las Cruces, near Agua Blanca. Pine – Oak Forest. 22-Feb-1964. L. González 367, (UNL-2063).

Abies vejarii

COAHUILA: La Siberia, San Antonio de las Alazanas, Arteaga. *Pinus, Abies* and *Pseudotsuga* Forest. Alt. 2200 m. 10-Oct-1970. M. A. Capo 60, (UNL-6826).

COAHUILA: La Siberia, San Antonio de las Alazanas, Arteaga. *Pinus, Abies* and *Pseudotsuga* Forest. Alt. 2200 m. 10-Oct-1970. M. A. Capo 60, (UNL-6827).

COAHUILA: La Siberia, San Antonio de las Alazanas, Arteaga. *Pinus, Abies* and *Pseudotsuga* Forest. Alt. 2200 m. 10-Oct-1970. M. A. Capo 60, (UNL-6828).

COAHUILA: La Siberia, San Antonio de las Alazanas, Arteaga. *Pinus, Abies* and *Pseudotsuga* Forest. 13-Sept-1970. M. A. Capo, (UNL-6829).

COAHUILA: Cañón de las Alazanas, San Antonio de las Alazanas, Arteaga. Alt. 2800 m. 9-Abr-1963. A. May Nah 90, (UNL-6871).

COAHUILA: Cañón de las Alazanas, San Antonio de las Alazanas, Arteaga. Alt. 2800 m. 9-Abr-1963. A. May Nah 90, (UNL-18325).

NUEVO LEÓN: Mesa Grande, La Encanada, Zaragoza. Pine Forest, Alt. 2400 m. 13-Jun-1980. M. Ávalos M., (UNL-13621).

NUEVO LEÓN: Mesa Grande, La Encanada, Zaragoza. Pine Forest, Alt. 2400 m. 13-Jun-1980. Rodolfo Nájera S., (UNL-13629).

Acleisanthes crassifolia.

NUEVO LEÓN: Near Rancho Padre Enrique, Lampazos de Naranjo. 5-Oct-1975. S. González E. y A. M. Bailey 101, (UNL-7467). Re-identification as A. obtained by Oscar Briones 6-Jun-1983.

NUEVO LEÓN: Near Rancho Padre Enrique, Lampazos de Naranjo. 5-Oct-1975. S. González E. y A. M. Bailey 101, (UNL-7468). Re-identification as A. obtained by Oscar Briones 6-Jun-1983.

Adelia vaseyi

TAMAULIPAS: Highway 101, between Ciudad Victoria and Matamoros, 21 May 1965, *D. Ahshapanek 491* (TEX-LL).

TAMAULIPAS: 21 mi N of Victoria on the Villegran highway, 3 mi S of the Río Purificación crossing, low brush on caliche hills, infrequent shrubs to 6 ft. tall. erect and not much branched, 3 May 1960, *M. C. Johnston & J. Crutchfield 5437* (TEX-LL).

TAMAULIPAS: 4 mi W of Casas on the new Victoria - Soto La Marina highway, 28 Sep 1960, *M. C. Johnston & J. Crutchfield 5764* (TEX-LL).

TAMAULIPAS: 3 km al N del Ejido El Azteca, Gómez Farías. Medium subcaducifolia disturbed tropical forest. 24-Nov-1983. L. Hernández 833, (UNL-18395).

Agave bracteosa

NUEVO LEÓN: Near Monterrey, 1879-80. E. Palmer (Notype: Tab. 8581 Cambridge Botanical Garden).
NUEVO LEÓN: Near Monterrey, Dry calcareous mountain walls. 5-Jun-1889. C. G. Pringle, (UNL-001).
NUEVO LEÓN: Near Monterrey, Dry calcareous mountain walls. 16-Jul-1889. C. G. Pringle, (UNL-001).
NUEVO LEÓN: Cerro Las Mitras, Monterrey. Hábitat Matorral rosetófilo. Southern slope growing on rocky walls. Alt. 1100 m. 25-May-1980. Ernesto Ramírez Álvarez 0115, (UNL-011242).
NUEVO LEÓN: Cerro Las Mitras, Monterrey. Hábitat Matorral rosetófilo. Southern slope growing on rocky walls. Alt. 1100 m. 25-May-1980. Ernesto Ramírez Álvarez 0115, (UNL-011243).
NUEVO LEÓN: Cerro Las Mitras, Monterrey. Hábitat Matorral rosetófilo. Growing on rocky walls on southern slope. Alt. 1100 m. 25-May-1980. Ernesto Ramírez Álvarez 0115, (UNL-011154).

Agave victoria-reginae

COAHUILA: 15 miles (24 km) northeast of Saltillo Gentry, Barclay & Arguelles 20043 DES, MEXU. June 10 – July 5, 1963. Elevation 4,000 -5,000 feet, shrub and succulents desert on limestone.
NUEVO LEÓN: La Huasteca, Santa Catarina. Matorral micrófilo. Steep area, between rocks. 24-May-1979. C. de León y E. Campos, (UNL-10101).
NUEVO LEÓN: La Huasteca, Santa Catarina. Matorral micrófilo. Steep area, between rocks. 24-May-1979. C. de León y E. Campos, (UNL-10102).

Amoreuxia wrightii

NUEVO LEÓN: 6 km E of Rancho Santa Isabel. Lampazos de Naranjo. Shrubs with strong and tuberosa roots with orange flower. Alt. 450 m. 29-Sept-1980. Oscar L. Briones V. 326, (UNL-12380).
NUEVO LEÓN: Cerro de Las Mitras, Monterrey. 15-May-1980. Ernesto Ramírez A. 180, (UNL-011083).
NUEVO LEÓN: Cerro de Las Mitras, Monterrey. 15-May-1980. Ernesto Ramírez A. 180, (UNL-011084).
NUEVO LEÓN: Km 95 highway Monterrey – Sabinas, Sabinas Hidalgo. 12-Sept. 1982. N.L. Bendeck 131, (UNL-15929).
NUEVO LEÓN: 3 km E of Hotel Nueva Castilla, El Carmen. Open grassland of *Bouteloua trifida*. Flowering. 30-May-1985. Arturo Contreras Arquieta, (UNL-18549).
NUEVO LEÓN: Marín, 11-May-1981. Jesús S. Berlanga, (UNL-FA-0170).
NUEVO LEÓN: San Nicolás de los Garza. 8-Jun-1984. Ángel Guadalupe Vega N., (UNL-FA-0871).
NUEVO LEÓN: Marín. 11-May-1984. Idelfonso Magallanes, (UNL-FA-0169).
NUEVO LEÓN: Disturbed area of Cd. Guadalupe. 21-Sept-1986. Sergio R. Rodríguez T., (UNL-FA-1608).

Anthericum chandleri

COAHUILA: Low parts of Sierra Zapalinamé, Saltillo. Tall bush of *Amelanchier*. Alt. 1870. 29-Jul-1976. Jorge S. Marroquín 3637, (UNL-12677).
COAHUILA: Low parts of Sierra Zapalinamé, Saltillo. Tall bush of *Amelanchier*. Alt. 1870. 29-Jul-1976. Jorge S. Marroquín 3637, (UNL-12699).
NUEVO LEÓN: 1 km NE of Agua Grande, Santiago. Open oak forest. Alt. 2000 m. 28-Aug-1986. R. Rodríguez L. 291, (UNL-19508).

Ariocarpus kotschoubeyanus

COAHUILA: 1.5 km crossroad of highway Parras to Hipólito. Growing in a disturbed area, probable crop, abundant flowering prickly pear. Javier Sauceda Méndez 56., (UNL-019396).
NUEVO LEÓN: Road to La Unión, Dr. Arroyo. 3-May-1980. Abundant in cleared area. R. E. Hernández V. 121, (UNL-10785).
NUEVO LEÓN: 3 km before arriving at La Unión, Dr. Arroyo. Alt. 1720 m. Matorral inerme parvifolio de *Larrea tridentata*. 3-May-1980. R. E. Hernández V. 130, (UNL-011884).

Ariocarpus retusus

COAHUILA: Entrance to Valles de San Marcos, Sierra de la Paila. Alt. 1100 m. 6-Mar-1987. Javier Sauceda Méndez 61, (UNL-019538).
NUEVO LEÓN: Road to Mesa de González, Dr. Arroyo. Alt. 1910 m. Matorral Crasirosulifolio espinoso de *Agave lechuguilla*. 9-Sep-1980. R. E. Hernández V. 154, (UNL-011923).
NUEVO LEÓN: San Pablo de Ruedas, Dr. Arroyo. Alt. 1670 m. Matorral mediano espinoso de *Acacia* sp. 8-Jun-1979. M. González F. 1904, (UNL-10244).
NUEVO LEÓN: Rayones.
NUEVO LEÓN: Izotal between Santa Ana and Santa Rita, Dr. Arroyo. Disturbed area, very rocky, small hills, infrequent plant. 16-Mar-1980. R. E. Hernández V. 127, (UNL-11050).
NUEVO LEÓN: El Ramal, La Huasteca, Santa Catarina. Matorral mediano subinerme. 10-Oct-1986. Javier Sauceda Méndez 44, (UNL-019311).
SAN LUIS POTOSÍ: 3 km N of El Molero, Moctezuma. Matorral de *Larrea, Opuntia* y *Agave*. Flores en axila de los tubérculos. 12-Nov-1981. Javier S. Robles 7, (UNL-014181).

Ariocarpus trigonus

NUEVO LEÓN: Santa Ana. Dr. Arroyo. Alt. 1690 m. Matorral inerme parvifolio de *Larrea tridentata*. 16-Sep-1978. R. E. Hernández V. 152, (UNL-011921).
TAMAULIPAS: San Antonio.
TAMAULIPAS: Jaumave.
SAN LUIS POTOSÍ: Ojo de Agua Moctezuma. 24-Oct-1969. Francisco Javier Pineda, (UNL-FA-0105).

Asclepias prostrata

TAMAULIPAS: Papalote de Mirandena, 3 mi SSW of headquarters, Loreto Ranch, prairie on sandy loam shallowly overlying caliche, 24°20'N, 98°W, 16 Sep 1960, *M. C. Johnston & J. R. Crutchfield 5573* (holotype at TEX-LL, per type article). *Lesquerella thamnophila*, *Manfreda longiflora* and *Manihot walkerae* were also collected from this site on this date.
TAMAULIPAS: N of Los Rayones on Mex 101 ca. 0.3 mi (0.5 km) N of the Soto La Marina cutoff (Mex 180), low stiff shrubbery on calichified conglomerate substrate, 185 m [elev.], N24°28'10", W98°20'27"; prostrate perennial with large rootstalk, 11 Jul 1991, *M. Mayfield, A. Hempel & A. Jack 769* (TEX-LL).

Astrophytum caprincorne

NUEVO LEÓN: Rancho Palo Blanco, Ejido E. Zapata, Mina. Matorral mediano subespinoso. Alt. 700 m. 31-Mar-1979. J. L. Elizondo, (UNL-8863).

NUEVO LEÓN: Rancho Palo Blanco, Ejido E. Zapata, Mina. Matorral mediano subespinoso. Alt. 700 m. 13-Mar-1979. J. L. Elizondo, (UNL-8864).
NUEVO LEÓN: Rancho Palo Blanco, Ejido E. Zapata, Mina. Matorral mediano subespinoso. Alt. 700 m. 31-Mar-1979. J. L. Elizondo, (UNL-9527).

Astrophytum caprincorne var. crassispinum

COAHUILA: Southern slope at Sierra de la Madera, Cuatro Ciénegas. Alt. 750 m. Matorral mediano subinerme, plants with beginnings of primordios florales. 7-Mar-1987. Javier Sauceda Méndez 72, (UNL-019557).

Ayenia limitaris

COAHUILA: Muzquiz, Yuda Spring, 18 Sep 1936, *E. G. Marsh, Jr. 949* (TEX-LL).
DURANGO: Topia, Municipio Topia, alt. 1450-1800 m.a.s.l., 1.5 m tall bush, immature fruits, abundant, veg. Disturbed oak forest, yellow clay soil, 19 Sep 1985, *P. Tenorio L., C. Romero de T., J. Ignacio S. & P. Davila 9848* (TEX-LL). Det. by P. Fryxell 1991.
TAMAULIPAS: Municipio Soto La Marina, on road to Tepeguaje, 1.5 km from main highway, in brush, subshrub to 1 m tall, flowers greenish yellow, scarce, 16 Sep 1981, *P. A. Fryxell 3669* (TEX-LL). Det. by C. L. Cristobal 1982.

Ayenia microphylla

NUEVO LEÓN: Sección Mesa, Lampazos de Naranjo. 4-Oct-1975. S. González y A. M. Bailey 223, (UNL-7396).
NUEVO LEÓN: S. S. José Nuncias, Cañón Casa Blanca, Santa Catarina. Open forest of *Pino catarinae.* Alt. 1230 m. 31-Ago-1981. Oscar Briones 754, (UNL-14269).

Bauhinia lunaroides

COAHUILA: Rancho El Rincón, Múzquiz. Alt. 1400-2100 m. 23-May-1992. S. Aguilar R. 277 y D. L. Doan, (UNL-022516).
NUEVO LEÓN: Aprox. 4 km S of Casa Blanca, Santa Catarina. Bush. Alt. 1200 m. 5-Nov-1983. A. González Sánchez, (UNL-21694).
NUEVO LEÓN: Between San Francisco and Rancho Viejo, Linares. *Quercus* Forest. 1-Jun-1986. A. Eduardo Estrada C. 478, (UNL-19648).
NUEVO LEÓN: Ejido Santa Rosa, Iturbide. Pine- Oak Forest. Alt. 1600 m. 20-May-1986. A. Eduardo Estrada C. 455, (UNL-19647).
NUEVO LEÓN: Rancho Los Ángeles, highway Linares – Iturbide, Linares. *Quercus* Forest. Alt. 1200 m. 6-Aug-1986. A. Eduardo Estrada C. 617, (UNL-19645).
NUEVO LEÓN: Los Pinos, Linares. *Quercus* Forest. Alt. 1400 m. 27-Aug-1986. A. Eduardo Estrada C. 635, (UNL-19644).
NUEVO LEÓN: 3 km N of El Ebanito, Linares. Alt. 700 m. 1-Aug-1986. A. Eduardo Estrada C. 548, (UNL-19643).
NUEVO LEÓN: Ejido Santa Rosa, Iturbide. Alt. 1600 m. 20-May-1986. A. Eduardo Estrada C. 455, (UNL-19642).
NUEVO LEÓN: Cañón Río San Roque, Villa Juárez. Damp canyon, permanent flow. Alt. 600 m. 28-Aug-1970. Jorge S. Marroquín 414, Glafiro Alanís F. y J. Medina, (UNL-5839).
NUEVO LEÓN: Cañón Río San Roque, Villa Juárez. Damp canyon, permanent flow. Alt. 600 m. 28-Aug-1970. Jorge S. Marroquín 414, Glafiro Alanís F. y J. Medina, (UNL-5840).

NUEVO LEÓN: Cañón Río San Roque, Villa Juárez. Damp canyon, permanent flow. Alt. 600 m. 28-Aug-1970. Jorge S. Marroquín 414, y Glafiro Alanís F., (UNL-7319).
NUEVO LEÓN: Pueblo Viejo, La Palma, Linares. Pine – Oak Forest. 10-Oct-1980. E. Villanueva M., (UNL-13746).
NUEVO LEÓN: S. S. José Nuncias, Cañón Casa Blanca, Santa Catarina. Open *Pino catarinae* Forest. Alt. 1230 m. 31-Aug-1981. Oscar Briones 753, (UNL-14268).
NUEVO LEÓN: La Ciénega de González, Santiago. Alt. 1200 m. 7-Jun-1981. A. M. Valdéz, (UNL-15255).
NUEVO LEÓN: Puerto Genovevo, Santiago. Ruderal, Alt. 1040 m. 7-Jun-1981. A. González Sánchez, (UNL-18167).

Beaucarnea inermes

SAN LUIS POTOSÍ: Estación Micas. Caliza slope with deciduous tropical forest vegetation. Alt. 300 m. 21-Jan-1956. J. Rzedowski 7021, (UNL-2018).
SAN LUIS POTOSÍ: Near De Chupaderos, Cd. Del Maíz. Caliza slope with subdeciduous tropical forest vegetation. Alt. 600 m. 30-Jun-1959. J. Rzedowski 11109, (UNL-2939).
VERACRUZ: Highway Lencero El Castillo, Emiliano Zapata. Secondary oak forest, clay soil. Alt. 900 m. 7-Oct-1976. M. G Zola B. 862, (UNL-9286).

Boerhavia mathisiana

TAMAULIPAS: 5 mi W of Loreto on overgrazed prairie on sandy loam, elev. 100 ft., infrequent herbs, 8 Feb 1960, *M. C. Johnston & J. Crutchfield 5074-B* (TEX-LL). Ann. as *Boerhavia mathisiana* by R. Spellenberg, 1986.
TAMAULIPAS: southwestern slope of limestone ridge between Sierra de San Carlos and Sierra de Tamaulipa, 7 mi NE of Padilla, elev. 1100 ft., 13 Nov 1959, *M. C. Johnston & J. Graham 4698* (TEX-LL). Ann. as *Boerhavia mathisiana* by R. Spellenberg, 1986.

Brahea berlandieri

NUEVO LEÓN: Sierra de Lampazos, entrance by Río Santa Isabel. E slope of mountain range; 1-4 m tall Palm, leaf 1.5 m long. Alt. 800-1000 m. 28-Apr-1980. Oscar Briones 151, (UNL-13605).
NUEVO LEÓN: Sierra de Lampazos, entrance by Río Santa Isabel. E slope of mountain range; 1-4 m tall Palm, leaf 1.5 m long. Alt. 800-1000 m. 28-Apr-1980. Oscar Briones 151, (UNL-13889).

Brahea dulcis

COAHILA: Cañon de San Lorenzo, Saltillo. Chaparral, abundant in steep slopes. 22-Jan-1982. Andrés Rodríguez, Leopoldo Arce Muñoz y Tamistocles Muñoz, (UNL-14904).
COAHILA: Cañon de San Lorenzo, Saltillo. Chaparral. 22-Jan-1982. Andrés Rodríguez y Leopoldo Arce Muñoz, (UNL-14905).
SAN LUIS POTOSÍ: km 282 highway San Luis Potosí before Morelos, Cd. Maíz. Caliza slope with secondary vegetation. 21-Mar-1956. J. Rzedowski (UNL-1962).

Caesalpinea caudata

NUEVO LEÓN: Rancho San José, Anáhuac. 20-Apr-1991. L. A. Flores M., (UNL-21236).
NUEVO LEÓN: Rancho San José, Anáhuac. 20-Apr-1991. M. A. Valdéz M., (UNL-21237).
NUEVO LEÓN: 26 mi E of General Bravo, 27 Nov. 1966, Ripley & Barneby 14783A (NY!).

TAMAULIPAS: 24 km S of Nuevo Laredo, 24 March 1962, Domínguez & McCart 8206 (TEX!)
TAMAULIPAS: Near Nuevo Laredo, 29 March 1962, Parking & May 3124 (F!)
TAMAULIPAS: 37 mi S Nuevo Laredo, 17 March 1962, Rivas *et al.* 8121 (TEX!).

Caesalpinea phyllanthoides

TAMAULIPAS: 5 mi W of Loreto on overgrazed prairie on sandy loam, elev. 100 ft.; mostly covered by the sand, only the upper parts emergent; 8 Feb 1960, *M. C. Johnston 5071* (TEX-LL & MEXU). Annotated by Imre J. Eifert, 1977.
TAMAULIPAS: 5 mi S of San Carlos on the road to Padilla, elev. 1600 ft.; calcareous terraces of the Arroyo de San Carlos; 13 Dec 1959, *M. C. Johnston & J. Crutchfield 4997-A* (TEX-LL). Annotated by Imre J. Eifert, 1977.
TAMAULIPAS: 11 mi N of Soto la Marina on the road to Jimenez, elev. 700 ft.; limestone hill with short brush; sterile specimen, 12 Dec 1959, *M. C. Johnston & J. Crutchfield 4978-B* (TEX-LL). Annotated by Imre J. Eifert, 1977.
TAMAULIPAS: 6 mi E of Panales, 12 mi E of Matamoras-Victoria highway on the road to Loreto; short brush on caliche hillside; abundant "shrubs" actually straggling up through thorn shrubs to heights of 2-3 ft., more or less scandent; 26 Apr 1960, *M. C. Johnston & J. Crutchfield 5343* (TEX-LL & MEXU). Annotated by Imre J. Eifert, 1977.
TAMAULIPAS: San Jose, 17 Feb 1939, *H. LeSueur 192* (TEX-LL). Annotated by Imre J. Eifert, 1977.
TAMAULIPAS: Cerro de la Tamaulipeca, nr. San Miguel, 26 July 1930, Bartlett 10616 (F!).
TAMAULIPAS : Morales, 15 Feb. 1939, Le Sueur 191 (F!).
TAMAULIPAS : Mpio. Santander Jimenez, 26 km NE of Nueva Ciudad Padilla, 16 Aug. 1986, Nee 32666 (K!, NY!).
TAMAULIPAS : Hacienda Buena Vista, 18 June 1919, Wooton s.n. (holotype US!, isotype NY!).

Calliandra biflora

TAMAULIPAS: 20 mi E of the San Fernando - Santander Jimemez highway on the road to Loreto (11 mi W of Loreto), prairie on shallow reddish sandy loam, with much low Calliandra shrubbery and scattered mottes of taller brush, 15 Sep 1960, *M. C. Johnston & J. Crutchfield 5540* (TEX-LL, Jan 2002). Ann. as det., B. L. Turner 2000.

Cardiospermum dissectum

CHIHUAHUA: [to state only], 4 Sep 1935, *H. LeSueur MEX 79* (TEX-LL).
CHIHUAHUA: flowers white; perennial; 13 mi W of Chihuahua, road to Santa Isabel, elev. 5300 ft., 20 Aug 1939, *S. S. White 2455* (TEX-LL).
CHIHUAHUA: 22 km S of Valle Zaragoza on road to Hidalgo del Parral, 27°20'N, 105°46'W, alt. 1675 m, mattoral inerme (subdesiertico), limestone-like bedded volcanic ash, calcareous gravelly soil, with *Forestiera angustifolia*, *Rhus microphylla*, *Cassia wislizenii*, *Acacia glandulosa*, *Ephedra antisyphilitica*, *Parthenium incanum*, 21 Jun 1973, *M. C. Johnston, T. L. Wendt, and F. Chiang C. 11430* (TEX-LL).
CHIHUAHUA: ca. 30 airmiles SW of Cd. Chihuahua, ca 2 roadmiles W of General Trias (=Santa Isabel) along Hwy 16, on disturbed hillsides - flats, with grasses, scattered oaks, herbs, [elev.] 1700 m, near 28°19'N, 106°23'W, 9 Sep 1980, *J. Henrickson & P. Bekey 18440* (TEX-LL).
CHIHUAHUA: 39 mi W of Cuahtemoc on Rt. 16, ocotillo-juniper scrub, mountains, 22 Aug 1967, *T. Stuessy 1095* (TEX-LL).

DURANGO: 2 mi SW of Nazas, in slopes above canyon, frequent in arroyo, with *Larrea, Acacia, Fouquieria, Opuntia, Cordia, Leucophyllum, Colubrina, Jatropha,* etc., soil reddish sandy clay, 4900 ft., near 25°09'N, 103°44'W, 13 Aug 1973, *J. Henrickson & T. Wendt 12325* (TEX-LL).

TAMAULIPAS: 29 mi out of Reynosa on the road to San Fernando, shallow sandy loam over caliche, 19 Oct 1959, *M. C. Johnston & J. Graham 4346B* (TEX-LL). [This would be S of Reynosa on MEX 87.]

Carlowrghtia henricksonii

TAMAULIPAS: 3 mi W of Morales and 19 mi E of the Matamoros – Victoria highway on road to Loreto, 26 Apr 1960, Johnston & Crutchfield 5357 (US! Holotype; MiCH!, TEX! Isotypes).

TAMAULIPAS: 11 mi W Loreto, Johnston & Crutchfield 5528B (TEX, US.

TAMAULIPAS: Buena Vista Had. Wooton s.n. (US).

Carya ovata

NUEVO LEÓN: Sierra de Picachos, 15 km N of Higueras. 5-Jul-1982. Juan Antonio Martínez G., (UNL-FA-1161 al UNL-FA-1165).

Carya ovata var. mexicana

TAMAULIPAS: Sierra de Guatemala, Gómez Farías. Alt. 3750 m. 7-Jun-1971. J. R. Sullivan, (UNL-6164).

Coryphantha nickelsiae

NUEVO LEÓN: El Ramal, La Huasteca, Santa Catarina. Matorral mediano subinerme. 10-Oct-1986. Javier Sauceda Méndez 47, (UNL-019308).

NUEVO LEÓN: 6 km E of Rancho Santa Isabel, Lampazos de Naranjo. Matorral rosetófilo de *Agave lechuguilla*. Alt. 500 m. 29.-Sept-1980. Oscar Briones, (UNL-011723).

NUEVO LEÓN: Sierra del Rincón del Arco, Mina. Matorral crasirosulifolio espinoso. Alt. 800 m. 12-Apr-1979. J. L. Eliznondo, (UNL-11954).

NUEVO LEÓN: Sierra del Rincón del Arco, Mina. Matorral inerme parvifolio. 20-Apr-1983 L. Lorea T., (UNL-17923).

NUEVO LEÓN: La Cruz, al N de Icamole, García. Matorral mediano subinerme, Alt. 653 m. 24-May-1984. Javier Sauceda Méndez 9, (UNL-016608).

Coryphantha sulcata

NUEVO LEÓN: Ejido El Chapote, Lampazos de Naranjo. Matorral mediano subinerme de *Leucophyllum* y *Acacia*. Alt. 420 m. 29-Sept-1980. Leticia Sánchez C., (UNL-011900).

NUEVO LEÓN: Ejido El Chapote, Lampazos de Naranjo. Matorral mediano subinerme de *Leucophyllum* y *Acacia*. Alt. 420 m. 29-Sept-1980. Leticia Sánchez C., (UNL-011901).

Dasilyrion longissimum

NUEVO LEÓN: Mier y Noriega.

Desmodium lindheimeri

NUEVO LEÓN: Parque Natural La Estancuela, Monterrey. Hábitat ripário. 23-Sept-1996. N. Ontiveros y R. Díaz, (UNL-023396).
NUEVO LEÓN: Parque Natural La Estancuela, Monterrey. Hábitat ripário. 23-Sept-1996. N. Ontiveros y R. Díaz, (UNL-023397).
NUEVO LEÓN: 5 km S of La Ciénega de González, Santiago. Bosque caducifolio. Alt. 1330 m. 24-Sept-1986. Ramón Rodríguez L. 350, (UNL-23612).
NUEVO LEÓN: 5 km S of La Ciénega, Santiago. Bosque caducifolio. Alt. 1330 m. 24-Sept-1986. Ramón Rodríguez L. 350, (UNL-19418).
NUEVO LEÓN: 5 km S of La Ciénega, Santiago. Bosque caducifolio. Alt. 1330 m. 24-Sept-1986. Ramón Rodríguez L. 350, (UNL-19419).
NUEVO LEÓN: 5 km S of La Ciénega, Santiago. Bosque caducifolio. Alt. 1330 m. 24-Sept-1986. Ramón Rodríguez L. 350, (UNL-19420).
NUEVO LEÓN: Cerro el Borrego, Santiago. Bosque de *Pinus – Carya*. Alt. 930 m. 23-Sept-1986. Ramón Rodríguez L. 327, (UNL-19225).
NUEVO LEÓN: 24 km South of Linares, foothills of the Sierra Madre Oriental, Linares. A. Eduardo Estrada C. 691, (UNL-19712).
NUEVO LEÓN: 24 km South of Linares, foothills de la Sierra Madre Oriental, Linares. *Quercus* Forest. sp. 25-Sept-1986. A. Eduardo Estrada C. 693, (UNL-19703).
NUEVO LEÓN: Ejido Rancho Viejo and Las Palmas, Linares. Oak Forest. Alt. 870 m. 9-Oct-1980. J. Ortiz D., (UNL-023977).
NUEVO LEÓN: Ejido La Hacienda, Linares. 23-Sept-1986. A. Eduardo Estrada C. 667, (UNL-19711).
NUEVO LEÓN: Zaragoza. Damp oak forest. 1-Aug-1979. Santiago Salazar, (UNL.10149).
NUEVO LEÓN: El Salto, Zaragoza. Ruderal, Alt. 1500 m. 21-Sept-1982. B. A. Treviño Garza 148, (UNL.18027).
NUEVO LEÓN: Rincón de la Sierra, Guadalupe. Damp canyon, permanent flow. Alt. 600 m. 24-Oct-1970. Jorge S. Marroquín 504, Glafiro Alanís F. y J. Medina, (UNL-4687).
NUEVO LEÓN: Los Pinos, Linares. *Pinus* and *Quercus* Forest. Alt. 1000 m. 12-Oct-1980. J. Ortiz D., (UNL-17632).
NUEVO LEÓN: Recorrido Rancho Viejo El Pinar. Alt. 1200 m. 10-Oct-1980. J. Ortiz y E. Villanueva, (UNL-17668).
NUEVO LEÓN: Ejido Rancho Viejo and Las Palmas, Linares. Oak Forest. Alt. 870 m. 9-Oct-1980. J. Ortiz D., (UNL-017636).
NUEVO LEÓN: Ejido Santa Rosa, Iturbide. Alt. 1500 m. 29-Aug-1989. A. Eduardo Estrada C., (UNL-21391).

Digitostigma caput-medusae

NUEVO LEÓN: Doesn't specify the locality to avoid extinction. Only 129 individuals are known, distributed in three population nucleus. Tamaulipas Thornscrub, between 100 and 200 m. 28-Aug-2001. Manuel Nevares de los Reyes y Carlos Velazco Macías, (UNL-023704 Holotipo), (UNL-023705 Isotipo) and other material ((UNL-023707 y UNL-023708).

Dioon edule

NUEVO LEÓN: Cañón de Iturbide, Iturbide. 25-Abr-1962. H. Sánchez, (UNL-5613).
NUEVO LEÓN: Cañón de Iturbide, Iturbide. 25-Abr-1962. H. Sánchez, (UNL-5614).
NUEVO LEÓN: Cañón de Iturbide, Iturbide. Matorral submontano. 25-Mar-1962. H. Sánchez, (UNL-894).

NUEVO LEÓN: Las Crucitas, Linares. Matorral mediano espinoso. Alt. 540 m. 1-Sept-1978. J. Tamez G. 322, (UNL-8526).

NUEVO LEÓN: Las Crucitas, Linares. Matorral mediano espinoso. Alt. 540 m. 1-Sept-1978. J. Tamez G. 322, (UNL-8527).

NUEVO LEÓN: Monterrey (collected in gardens). 2-Oct-1969. Carlos Echard B., (UNL-FA-0275 y UNL-FA-0276). Probably from Iturbide, Nuevo León.

SAN LUIS POTOSÍ : El Clarín, Tamasopo. 30-Jun-1962. F. Medellín Leal 1307., (UNL-7080).

TAMAULIPAS: Gómez Farías, road to town. Damp forest. 29-Nov-1979. A. E. Céspedes y E. Salguero, (UNL-10184).

TAMAULIPAS: Mountain roads, Sierra Madre Oriental. Selva mediana subdecidua. Without date. Jorge S. Marroquín, (UNL-3524).

Echinicereus reichenbachi.

NUEVO LEÓN: Villa de García. 18-Dec-1969. Francisco Javier Pineda, (UNL-FA-0109).

Echinocereus poselgeri

NUEVO LEÓN: Rancho Santa Delfina, southern area of Anáhuac. 26-Mar-1991. Laura A. Flores M., (UNL-021210).

NUEVO LEÓN: San Antonio de las Mitras, García. Matorral mediano subinerme. Alt. 600 m. 17-Feb-1989. Javier Sauceda Méndez 87, (UNL-020752).

NUEVO LEÓN: San José. García. Matorral mediano subinerme. Alt. 600 m. 17-Feb-1989. Javier Sauceda Méndez 88, (UNL-020813).

NUEVO LEÓN: Las Estacas, Mina. Agrupación de halófitas. Alt. 630. 11-Abr-1979. J. L. Elizondo, (UNL-9532).

NUEVO LEÓN: San José. García. Matorral mediano subinerme. Alt. 600 m. 17-Feb-1989. Javier Sauceda Méndez, (UNL-19327).

NUEVO LEÓN: Al W de Sierra de Gomas, Bustamante. 6-Jul-1975., (UNL-7443).

NUEVO LEÓN: Marín. 15-Abr-1981. Pedro Luján, (UNL-FA-0128).

NUEVO LEÓN: Rancho Yalmar, Santa Catarina. 29-Abr-1981. Gabriel Cuellar, (UNL-FA-0129).

Epithelantha micromeris

COAHUILA: Exp. SW of Sierra de Paila. Alt. 1100 m. 6-Mar-1987. Javier Sauceda Méndez 67, (UNL-019545).

NUEVO LEÓN: 4 km W of Soledad, García. Matorral inerme parvifolio, Alt. 850 m. 19-Nov-1984. Javier Sauceda Méndez 38, (UNL-18722).

NUEVO LEÓN: 4 km W of Soledad, García. Matorral inerme parvifolio, Alt. 850 m. 19-Nov-1984. Javier Sauceda Méndez 38, (UNL-016602).

NUEVO LEÓN: El Ramal, La Huasteca, Santa Catarina. Matorral mediano subinerme. 10-Oct-1986. Javier Sauceda Méndez 43, (UNL-19307).

NUEVO LEÓN: Mesa Colorada East of Icamole, García. Matorral crasirosulifolio espinoso. 20-Oct-1984. Javier Sauceda Méndez 29, (UNL-16552).

NUEVO LEÓN: La Cruz, North of Icamole, García. Matorral mediano subinerme. Alt. 653 m. 24-May-1984. Javier Sauceda Méndez 11, (UNL-16552).

COAHUILA: Gravel hilltop, grassland and small shrub area, at the top of the winding road 30 mi SW of Monterrey, infrequent, 1 Dec 1945, *F. A. Barkley & B. H. Warnock 14731M* (TEX-LL). Annotated by J. L. Reveal, 1972.

COAHUILA: Sierra La Gavia, Cañon La Gavia at Rancho La Gavia, 101°15'W, 26°20'N, *Juglans* and *Quercus* Forest, 1500 m, 10 Sep 1987, *J. A. Villareal & M. A. Carranza 4021* (TEX-LL).

COAHUILA: On rocky slopes just N of north portal of Tres Ríos Pass, route 75, 1 May 1959, *D. S. Correll & I. M. Johnston 21304* (TEX-LL).

COAHUILA: 3 km W of San Juan de la Vaquería, on road to General Cepeda, 25°16'N, 101°15'W, alt. 1825 m, caliche, with *Condalia viridis*, *Berberis trifoliolata*, *Larrea*, 5 Jul 1972, *F. Chiang, T. Wendt & M. C. Johnston* 8263 (TEX-LL).

COAHUILA: 1 km N of Rancho de la Gavia on N side of Sierra de la Gavia, 26°20'N, 101°14'W, alt. 1200 m, chaparral, steep encanyoned limestone conglomerate fan, calcareous loam, with *Vauquilinia corymbosa*, *Amelanchier denticulata*, *Agave lechuguilla*, *Opuntia leptocaulis*, 18 Mar 1973, *M. C. Johnston, T. L. Wendt & F. Chiang 10277-H* (TEX-LL).

COAHUILA: 2 mi SW of Nueva Agua on Hwy 54, on recently burned W-facing slope, with *Larrea tridentata*, *Flourensia cernua* and tree *Yucca*, infrequent perennial, perianth red, 25 Oct 1974, *J. Smith, M. Butterwick & M. Whalen 407-B* (TEX-LL).

COAHUILA: Stony hilltop 45 km SW of Monterrey, sparse, 28 Feb 1946, *F. A. Barkley & J. C. Johnson & 15258A-M* (TEX-LL).

COAHUILA: Rocky limestone valley 23 mi SW of Monterrey, 1 Dec 1945, *F. A. Barkley & B. H. Warnock 14866M* (TEX-LL).

COAHUILA: Coarse gravel and talc-like soil along wash, 27 mi SW of Monterrey, infrequent, 1 Dec 1945, *F. A. Barkley & B. H. Warnock 14716M* (TEX-LL).

COAHUILA: 20 mi E of Saltillo, ravine bottom dominated by *Acacia*, 27 May 1983, *M. Lavin, K. Lavin & J. Grimes s.n.* (TEX-LL).

NUEVO LEÓN: 25 km SW of Monterrey on Monterrey-Saltillo Highway 54, 27 May 1966, *J. S. Wilson 10875* (TEX-LL).

NUEVO LEÓN: Estación Mariposa (microondas) between Saltillo and Monterrey, 30 May 1981, *M. Lane & M. Leidig 2881* (TEX-LL).

NUEVO LEÓN: Monterrey -> Saltillo + 30 km, Villa de García, open chaparral, alt. 1195 m, flowers white, 0.2 m [tall], scattered clumps, 30 Sep 1996, *Hinton et al. 25956* (TEX-LL).

NUEVO LEÓN: Scattered on open grassy slopes, Puerta de San Lazaro, Sierra de San Lazaro, Municipio de Castanos, 31 Aug 1939, *C. H. Muller 3073* (TEX-LL).

NUEVO LEÓN: La Escondida, E of Aramberri, shrubby hillside, flowers yellow, 0.4 m [tall], small colonies, alt. 1395 m, 16 Sep 1993, *Hinton et al. 23624* (TEX-LL).

NUEVO LEÓN: 84 mi from jct. Hwy 57 and road to Dr. Arroyo, mixed alluvial limestone gyp along roadside, 5 Sep 1971, *J. D. Bacon, W. R. Leverich & B. L. Turner 11312* (TEX-LL).

NUEVO LEÓN: 9 km W of Villa Garcia toward Icamole, 25°52'N, 100°39'30"W, alt. 800 m, mezquital, agriculturally disturbed calichified calcareous gravel fan, [soil] calichified limestone gravel and finer textured [illegible], with *Prosopis glandulosa*, *Lycium*, *Yucca*, 4 Jul 1973, *M. C. Johnston, T. L. Wendt, F. Chiang C. 11601-B* (TEX-LL).

NUEVO LEÓN: Along Mexico Highway 40 between Saltillo and Monterrey, ca. 1 mi WE of the summit at cuesta de Aves, Sierra Madre Oriental, on broken limestone rocky soil, associated with scattered shrubs and grasses at ca. 1200 m elev., 22 Sep 1973, *J. L. Reveal & N. D. Atwood 3382* (TEX-LL).

NUEVO LEÓN: Cañon de la Huasteca, [elev.] 1300 m., Santa Catarina, shale hillside, flowers yellow, procumbent, a few plants, 15 Jul 1992, *Hinton et al. 22156* (TEX-LL).

Euphorbia innocua

NUEVO LEÓN: Rancho San José, Anáhuac. 20-Abr-1991. F. Silva M., (UNL-21294).

Euphorbia johnstonii

NUEVO LEÓ: Monterrey Hwy 65 km S of Nuevo Laredo in hard, sandy marland silt, 7-Apr-1962, Domínguez M. and McCart 8243 (TEX).

TAMAULIPAS: 47 mi (76 km) S of the bridge at Raynosa on the San Fernando Hwy (Mex 97), 29 mi (47 km) N of the jet, with Mex 101, between the towns of Alfredo V. Bonfil and Pedro J. Méndez. Caliche cuesta with dark, fine grained, loamy soils. Elev. 59 m. N 25° 26' 26" W 98° 13' 22", 11 Jul-1991, Mayfield *et al*. 762 (Holotype: TEX; Isotype MEXU, URV, US).

TAMAULIPAS: 10 mi E of Abasolo on the road to La Pesca, near Los Añejos, 900 ft, caliche upland of the Goliad Cuesta, 6-Feb-1960, *(J. R. Crutchfield and) Johnston 5041* (TEX)

TAMAULIPAS: 13 mi E of the Abasolo turnoff on the Santander Jiménez – Pesca road, 15-Dec-1960, (*J. R. Crutchfield* and) Johnston 6140b (TEX)

TAMAULIPAS: 3 mi W of Morales, 19 mi E of the Matamoros – Victoria Hwy on the road to Loreto, calichfield sand upland with short brush and praire openings on the deeper sand, frequent perennials, 26-Apr-1960, *(J. R. Crutchfield and) Johnston 5346* (TEX).

TAMAULIPAS: Km 164 on Matamoros – Victoria Hwy 101, rocky roadside, *Leucophyllum* dominant, 22-Apr-1971. Richardson 1415 (TEX).

TAMAULIPAS: 48 mi from Reynosa on the San Fernando road, 27 mi from Matamoros –San Fernando Hwy turnoff brush on caliche spot, 19-Oct-1959, Johnston and Graham 4381 (TEX).

TAMAULIPAS: 47 mi S of Reynosa on the road San Fernando, short bursh on caliche outcrop, abundant perennial herbs, 25-Apr-1960, *(J. R. Crutchfield and) Johnston 5333* (TEX).

Fagus mexicana

HIDALGO: Zacatlamaya, Zacualtipan. 40 m. tall tree. 10-Jan-1939. Max Martínez 800, (TEX-LL 370397 - Isotype).

TAMAULIPAS: Gómez Farías, casa de Piedra, Estación Canindos, 4 km NW of San José. Bosque caducifolio con *Fagus, Quercus* and Pinus. 20 m trees, sterile. Alt. 1570 m. 25-Jan-1994. L. Hernández 3092, (UNL-022086).

TAMAULIPAS: Sierra de Guatemala, Gómez Farías. Damp Pine-Oak forest area. Alt. 4800 – 5700 m (creo que lo correcto son pies de altuta?). 21-Jun-1971. Ames Rodney Sullivan, (UNL-6163).

Frankenia johnstonii

NUEVO LEÓN: ca. 100 km NW of Monterrey, near MEX 53, gyp soil, type locale, 22 May 1972, *[A. M.] Powell & [B. L.] Turner 2311* (TEX-LL). Originally determined *F. leverichii*; annotated to *F. johnstonii* by Molly Whalen, 1980.

NUEVO LEÓN - COAHUILA BORDER: 100 km NW of Monterrey on Hwy 53, occurring on a gypsum outcrop; plants are abundant at this locality, i.e., several hundred individuals occur here; plants low dwarf subshrubs, 6 in. - 2.5 ft. in diameter and usually 1 ft. tall; associates include *Sesuvium verrucosum*, *Suaeda* sp., *Allenrolfea* sp., *Sartwellia* sp., *Atriplex canescens* and *Selinocarpus* sp., 23 Jul 1977, *M. Whalen & G. Steck 449* (TEX-LL).

NUEVO LEÓN - COAHUILA BORDER: 100 km NW of Monterrey on Hwy 53, occurring on a gypsum outcrop; plants are abundant at this locality, i.e., several hundred individuals occur here; plants low dwarf subshrubs, 6 in. - 2.5 ft. in diameter and usually 1 ft. tall; associates include *Bahia*, *Nerisyrenia*, *Suaeda, Tiquilia, Allenrolfea occidentalis, Machaeranthera johnstonii, Sesuvium verrucosum*, 1 Oct 1978, *M. Whalen & R. Hilsenbeck 524* (TEX-LL).

NUEVO LEÓN: 16 km N of Rancho Estacas, on the road to Rancho Lechuguillal, 26°30'N, 100°48'30"W, alt. 650 m, matorral desiertico inerme, gypsum flat, [soil] gypsiferous loam, with *Suaeda, Nerisyrenia, Selinocarpus, Lycium, Sporobolus, Frankenia*, 16 Mar 1973, *M. C. Johnston, T. L. Wendt & F. Chiang 10215* (TEX-LL). Originally determined *F. leverichii*; annotated to *F. johnstonii* by Molly Whalen, 1980.

NUEVO LEÓN: N of Monterrey - Monclova Hwy 53, 7 mi N of Rancho las Estacas on one of several roads leading N from headquarters-- this road passes two watering holes and ends here; growing on gypsum loam in *Larrea, Opuntia, Fouquieria* grassland association, [elev.] 650 m, 26°25'N, 100°50'W, 18 Oct 1993, *T. F. Patterson, A. Prather & A. Hempel 7433* (TEX-LL).

Fraxinus udhei

NUEVO LEÓN: Montemorelos. (collected in a garden). 3-Apr-1980. Miguel A. García Porras, (UNL-FA-0565).

Heteranthera mexicana

COAHUILA: Juarez, about 100 miles north from Monclova, on the Sabinas River. 23 Sep 1880, *E. Palmer 1324.* New York Botanical Garden Isotype 247525 & 247526.

NUEVO LEÓN: Near ephemeral lake, between Monterrey and Reynosa, Nov 1960, *R. F. Smith M316* (TEX-LL).

TAMAULIPAS: 14 mi E of Mante toward Gonzales, elev. 600 ft., shallow clay loam over caliche, abundant annuals around one pond along right-of-way, 10 Dec 1959, *M. C. Johnston 4911* (TEX-LL).

TAMAULIPAS: Nuevo Progreso Río la Esperanza, Municipio Aldama, alt. 150 m, aquatic vegetation, 20 cms tall weed, purple flower, rooted in mud, 29 Oct 1986, *M. Martinez 01414* (TEX-LL).

TAMAULIPAS: Nuevo Progreso Río la Esperanza, Municipio Aldama, alt. 150 m, aquatic vegetation, 20 cms tall weed, white flower, rooted in mud, 29 Oct 1986, *M. Martinez 01413* (TEX-LL).

Hoffmannseggia drummondii

TAMAULIPAS: 12 mi N of Soto La Marina on the road to Jimenez, elev. 600 ft., roadside, 12 Dec 1959, *M. C. Johnston & J. Crutchfield 2987* (TEX-LL). Annotated by B. B. Simpson, 2000.

TAMAULIPAS: Morales, 15 Feb 1939, *H. LeSueur 193* (TEX-LL). Annotated by B. B. Simpson, 2000.

TAMAULIPAS: Sandy ridges S of Lomas de Real, 7 mi N of main highway on dirt road which turns off just N of Altamira, brush with some prairie openings, frequent sprawling much-branched perennials, flowers yellow with some red, no fruit yet, 27 Oct 1959, *M. C. Johnston & J. Graham 4535* (TEX-LL). Annotated by B. B. Simpson, 2000.

TAMAULIPAS: Sandy prairie over caliche near Papalote de Mirandena, 3 mi SSW of headquarters, Loreto Ranch, 24°20'N, 98°W, 16 Dec 1960, *M. C. Johnston & J. R. Crutchfield 6150* (TEX-LL). Annotated by B. B. Simpson, 2000.

TAMAULIPAS: 5 mi W of Loreto on overgrazed prairie on sandy loam, elev. 100 ft., abundant locally, 8 Feb 1960, *M. C. Johnston & J. Crutchfield 5072* (TEX-LL). Annotated by B. B. Simpson, 2000.

TAMAULIPAS: 11 mi N of Manuel toward Aldama, elev. 850 ft., heavy clay roadside through mesquite brush, 10 Dec 1959, *M. C. Johnston 4934* (TEX-LL). Annotated by B. B. Simpson, 2000.

Juglans major

JALISCO: Brecha El Chante, Manantlán El Grullo. Tropical forest. Alt. 1800 m. 14-Apr-1975. Carlos L. Díaz Luna 5799, (UNL-9469).

Juglans mollis

NUEVO LEÓN: Chipinque, Garza García. 13-Sept-1967. H. Sánchez, (UNL-2839).
NUEVO LEÓN: Between la Escondida and Dr. Arroyo, Dr. Arroyo. Mixed Pine-Oak forest. Alt. 1780 m. 26-Apr-1970. Jorge S. Marroquín 1819, (UNL-3408).
NUEVO LEÓN: Between la Escondida and Dr. Arroyo, Dr. Arroyo. Mixed Pine – Oak forest. Alt. 1780 m. 26-Abr-1970. Jorge S. Marroquín 1819, (UNL-3409).
NUEVO LEÓN: La Lagunita, Aramberri. Mixed Pine – Oak forest. Alt. 1780 m. 26-Abr-1970. Jorge S. Marroquín 1806, (UNL-4533).
NUEVO LEÓN: La Lagunita, Aramberri. Mixed Pine – Oak forest. Alt. 1780 m. 26-Abr-1970. Jorge S. Marroquín 1806, (UNL-3406).
NUEVO LEÓN: Cola de Caballo Stream, Santiago. 6-Mar-1965. Jorge S. Marroquín 938, (UNL-3147).
NUEVO LEÓN: Cola de Caballo Stream, Santiago. 6-Mar-1965. Jorge S. Marroquín 938, (UNL-4065).
NUEVO LEÓN: San Antonio Stream, 5 km before flowing into Presa La Boca, Santiago. Bosque caducifolio de *Taxodium mucronatum*. Alt. 430 m. 10-May-1981. N. Moreno 196, (UNL-16467).
NUEVO LEÓN: El Santo, Zaragoza. Bosque caducifolio de *Platanus* y *Quercus*. Alt. 1500 m. 23-Apr-1982. Oscar Briones, (UNL-17930).
NUEVO LEÓN: El Santo, Zaragoza. Bosque caducifolio de *Platanus* y *Quercus*. Alt. 1500 m. 23-Apr-1982. Oscar Briones 886, (UNL-17854).
NUEVO LEÓN: Parque Ecológico Chipinque, San Pedro, Garza García. Oak forest. Alt. 840 m. 29-Mar-1994. M. A. Guzmán, (UNL-021790).
NUEVO LEÓN: Parque Ecológico Chipinque, San Pedro, Garza García. Oak forest. Alt. 840 m. 29-Mar-1994. M. A. Guzmán, (UNL-021828).
NUEVO LEÓN: Parque Ecológico Chipinque, San Pedro, Garza García. Oak forest. Alt. 840 m. 29-Mar-1994. M. A. Guzmán, (UNL-023894).
NUEVO LEÓN: Brecha El Pinar, Chipinque, San Pedro, Garza García. Oak – pine forest. Alt. 1300 m. 7-Sept-1994. M. González, M. A. Guzmán y R. Díaz, (UNL-021894).
NUEVO LEÓN: Brecha El Pinar, Chipinque, San Pedro, Garza García. Oak – pine forest. Alt. 1300 m. 7-Sept-1994. M. González, M. A. Guzmán y R. Díaz, (UNL-023735).
NUEVO LEÓN: Brecha La Manzanita, Chipinque, San Pedro, Garza García. Oak – pine forest. Alt. 1400 m. 23-Apr-1994. M. González, M. A. Guzmán y Glafiro Alanís Flores, (UNL-021800).
NUEVO LEÓN: 2 km W of Yerbaniz, Santiago. Nogales forest, damp landscape. 7-Aug-1964. Jorge S. Marroquín 555, (UNL-1400).
NUEVO LEÓN: 2 km W of Yerbaniz, Santiago. Nogales forest, shoreline. 7-Aug-1964. Jorge S. Marroquín 555, (UNL-1401).
NUEVO LEÓN: Paraje de Los Osos, Sierra Madre Oriental, Santiago. Nogales forest on shoreline. Without date. Jorge S. Marroquín 534, (UNL-1402).
NUEVO LEÓN: Hacienda Vista Hermosa, Cola de Caballo, Santiago. Bosque caducifolio. 19-May-1965. E. Ballesteros, (UNL-4468).
NUEVO LEÓN: 5 km S of la Ciénega, Santiago. Bosque cadicifolio de afinidad ripária. Alt. 1330 m. 27-Aug-1986. R. Rodríguez L. 283, (UNL-19380).
NUEVO LEÓN: Agua Grand, Santiago. Oak, nogal and abeto forest. Alt. 2100 m. 27-Aug-1986. R. Rodríguez L. 298, (UNL-19500).
HIDALGO: Hill W of Agua Fría Grand, near Jacala, Jacala. Matorral arbustivo de *Juniperus*. 21-Jun-1964. L. González Quintero 925, (UNL-3755).

Justicia runyonii

NUEVO LEÓN: 3 km SE of Ejido El Guajolote, Linares. Vegetación ripária; Alt. 50 m. 18-Jul-1986. A. Eduardo Estrada C. 572, (UNL-18911).

SAN LUIS POTOSI: 3 mi S of the Tamaulipas line on the Antiguo Moreles - Valles highway, brush of *Acacia rigidula*, etc. on shale outcrop, perennials in low area near road, 25 Oct 1959, *M. C. Johnston & J. Graham 4496* (TEX-LL).

SAN LUIS POTOSI: 11 mi W of Ebano, deep brush on heavy clay soil, frequent weedy perennials in partial shade at the edge of the clearing, 23 Sep 1960, *M. C. Johnston 5684* (TEX-LL).

TAMAULIPAS: 4 mi N of Tomaseno on the Victoria - Villegran highway, forest on clay flat, elev. 1600 ft., 12 Nov 1959, *M. C. Johnston & J. Graham 4678* (TEX-LL).

TAMAULIPAS: 37 km from Tampico on the Mante highway, brush with much mesquite and granjeno on heavy clay soil, lowlands, infrequent herbs to 1 ft. tall in swale, shade, 27 Sep 1959, *M. C. Johnston & J. Graham 4092* (TEX-LL).

TAMAULIPAS: Mesa de Llera, 31 Nov 1946, *M. C. Johnston s.n.* (TEX-LL).

TAMAULIPAS: At KM 647 on top of the Mesa de Llera, elev. ca. 2000 ft., badly disturbed brush on black clay derived from basalt, common perennials along road, 21 Oct 1959, *M. C. Johnston & J. Graham 4403* (TEX-LL).

TAMAULIPAS: 2 mi W of Mante-Victoria highway on the road to Gomez Farias, dense woods on clay flats, abundant weeds in semi-shade of old roadway, 26 Sep 1960, *M. C. Johnston 5731* (TEX-LL).

TAMAULIPAS: On side of mesa, Cuesta de Llera, km 660 of highway, 25 Sep 1943, *C. L. Lundell & A. A. Lundell 12488* (TEX-LL).

TAMAULIPAS: Cuesta El Salero, further on from Ejido Mariano Escobedo, Hidalgo. Bush found next to road with abundant colonies. Bush, redish orange flowers. 23-Oct-1991. A. Eduardo Estrada C. 2192, (UNL-021360).

Lenophyllum texanum

NUEVO LEÓN: Growing at the base of *Opuntia leptocaulis*, desert scrub by wet stream having some puddles, 12 mi W of China, 27 Feb 1944, *F. A. Barkley 14480* (TEX-LL).

NUEVO LEÓN: Cañon de Bustamante, Arroyo Huisache along the Sabinas River, 7.2 km W of Bustamante, 26°32'N, 100°34'W, growing in crevices on dry rocky hillside, Fouquieria, Agave, Prosopis, Opuntia, elev. 550 m, flowers yellow; scattered; 16 Oct 1992, *A. Prather & A. Hempel 1293* (TEX-LL).

TAMAULIPAS: Coastal Plains near Rio Grande, Dec 1938, H. LeSueur 158 (TEX-LL).

Physaria (= Lesquerella) thamnophila

TAMAULIPAS: Papalote de Mirandena, 3 mi SSW of headquarters, Loreto Ranch, prairie on sandy loam shallowly overlying caliche, 24°20'N, 98°W, 16 Sep 1960, *M. C. Johnston & J. Crutchfield* 5556 (TEX-LL). Originally determined *L. argyraea*; annotated to *L. thamnophila* by Guy Nesom, 1989. *Asclepias prostrata*, *Manfreda longiflora* and *Manihot walkerae* were also collected from this site on this date.

Leucherbergia principis

NUEVO LEÓN: Near Divider, Dr. Arroyo. Alt. 1750 m. Matorral crasirosulifolio espinoso de *Agave lechuguilla*. 10-Sept-1980. R. E. Hernández V. 129, (UNL-011883).

Litsea glaucocescens

NUEVO LEÓN: El Salto, 3 – 4 km from Zaragoza. Bosque mediano subcadicucifolio. 21-Mar-1971. Jorge S. Marroquín 2118, (UNL-5181).

NUEVO LEÓN: El Salto, 3 – 4 km from Zaragoza. Bosque mediano subcadicucifolio. 21-Mar-1971. Jorge S. Marroquín 2118, (UNL-5182).

NUEVO LEÓN: El Salto, 3 – 4 km from Zaragoza. Bosque mediano subcadicucifolio. 21-Mar-1971. Jorge S. Marroquín 2118 y J. Hinojosa, (UNL-5188).

NUEVO LEÓN: El Salto, 3 – 4 km from Zaragoza. Bosque mediano subcadicucifolio. 21-Mar-1971. Jorge S. Marroquín 2118 y J. Hinojosa, (UNL-5189).

TAMAULPAS: Road to Rancho El Cielo, Gómez Farías. *Liquidambar - Quercus* Forest. Alt. 1100 m. 20-Apr-1988. A. Eduardo Estrada C., (UNL-21502).

TAMAULPAS: Road to Rancho El Cielo, Gómez Farías. *Liquidambar - Quercus* Forest. Alt. 1100 m. 20-Apr-1988. A. Eduardo Estrada C. 1394 y Jaime Flores, (UNL-23513).

ZACATECAS: Sierra Morones, Barranca de Alamitos Sánchez Román, Joaquín Amaro. Alt. 2300 m. 3-Mar-182. D. Castillo Quintanilla, (UNL-15215).

Lophophora williamsi

COAHUILA: Southern slope of Sierra de la Madera, Cuatro Ciénegas. Alt. 750 m. Matorral mediano subinerme. Flowering Cactus. 7-Mar-1987. Javier Sauceda Méndez 73, (UNL-019555).

NUEVO LEÓN: El Tepozan, Mina. Matorral mediano subespinoso. Alt. 580 m. 10-Apr-1979. M. González F., (UNL-08877).

NUEVO LEÓN: El Tepozan, Mina. Matorral mediano subespinoso. Alt. 680 m. 26-Apr-1979. M. González F. 0974, (UNL-09704).

NUEVO LEÓN: Los Fierros, García. Matorral crasirosulifolio espinoso Alt. 850 m. 24-Feb-1984. Javier Sauceda Méndez 22, (UNL-016592).

SAN LUIS POTOSÍ: Ojo de Agua Moctezuma. 18-Dec-1969. Francisco Javier Pineda, (UNL-FA-0114).

Magnolia schiedeana

JALISCO: Arroyo de San Lorenzo, Tezistanzapopan. *Quercus* Forest, damp canyon. 10-Jan-1974. C. L. Díaz Luna 4648, (UNL-11022).

TAMAULPAS: Gómez Farías, Sierra de Guatemala, Rancho del Cielo Biological Station of Texas. 8-Jun-1971. F. L. Karst 385, (UNL-6162).

TAMAULIPAS: Gómez Farías. 15-Apr-1993. Sergio R. Rodríguez Tijerina, (UNL-FA-2289 y UNL-FA-2289).

Mammillaria plumosa

NUEVO LEÓN: El Ramal, La Huasteca, Santa Catarina. Matorral *Helietta – Acacia – Agave lechuguilla.* 10-Oct-1986. Javier Sauceda Méndez 90, (UNL-020864).

Manfreda longiflora

TAMAULIPAS: Papalote de la Mirandena, 3 mi SSW of headquarters, Loreto Ranch, prairie on sandy loam shallowly overlying caliche, 24°20'N, 98°W, 16 Sep 1960, *M. C. Johnston & J. Crutchfield 5548-A* (TEX-LL). *Asclepias prostrata*, *Lesquerella thamnophila* and *Manihot walkerae* were also collected from this site on this date.

TAMAULIPAS: 16 mi E of San Fernando - Santander Jimemez Highway on the road to Loreto, caliche "prairie" with very shallow reddish sandy loam, much low *Calliandra* shrubbery and scattered mottes of taller brush, frequent perennials, 15 Sep 1960, *M. C. Johnston & J. Crutchfield 5521* (TEX-LL).

Manihot walkerae

TAMAULIPAS: sandy prairies overlying caliche on the Rancho Loreto, frequent perennials to 1 ft. tall, growing up through protective thorny shrubs on the overgrazed prairies; of the many plants, only this was beginning to flower; 26 Apr 1960, *M. C. Johnston 5363-B* (TEX-LL).

TAMAULIPAS: Papalote de Mirandena, 3 mi SSW of headquarters, Loreto Ranch, prairie on sandy loam shallowly overlying caliche, 24°20'N, 98°W, 16 Sep 1960, *M. C. Johnston & J. Crutchfield 5572-B* (TEX-LL). *Asclepias prostrata*, *Lesquerella thamnophila* and *Manfreda longiflora* were also collected from this site on this date.

Matelea brevicoronata

NUEVO LEÓN: Carretera Zuazua – Marín, before Marín. Alt. 393 m. 22-Sep-93. Sergio R. Rodríguez Tijerina 024, (UNL-FA-2073).

Ostrya virginiana

NUEVO LEÓN: Falda N of Cerro de las Mitras, Monterrey. Alt. 800 m, associated with *Qunercus, Cornus,* and *Decatropis*. Árbol caducifolio, 8 m tall. 10-Jan-1982. H. Milonás, (UNL-15322).

NUEVO LEÓN: Falda N of Cerro de las Mitras, Monterrey. Alt. 800 m, associated with *Qunercus, Cornus,* and *Decatropis*. Árbol caducifolio, 8 m tall. 10-Jan-1982. H. Milonás, (UNL-15323).

VERACRUZ: 2 km SW of Banderilla, Rancho La Mesa Banderilla. Bosque caducifolio, primary, redish clay soil. Tree, perenial, 15 m abundant, brown fruit. Alt. 1450 m. Col. M. G. Zola., Det. K. Carroll, (UNL-9243).

VERACRUZ: 11.5 km NE of Banderilla, Rancho La Mesa Banderilla. Bosque caducifolio, primary, redish clay soil. Tree, perenial, 15 m abundant, greenish flower, brown fruit. Alt. 1400 m. Col. W. Márquez R. 881, Det. L. I. Nwvling, (UNL-13395).

Paronychia setacea

CHIHUAHUA: Rancho Experimental La Campana, Cihuaual 1.5 km E of highway Panamericana. Open medium grassland of *Bouteloua gracilis*. Alt. 1540 m. 10-Oct-1976. M. Socorro González E. 787, (UNL-8064).

Physostegia correllii

COAHUILA: In rich damp soil under cypresses, Melchor Muzquiz, lavender flowers, 4 Jul 1963, *D. Latorre 47* (TEX-LL). Orig. det. *Dracocephalum* sp.; ann. as *P. correllii* by R. W. Sanders in 1977 and by P. D. Cantino in 1980.

COAHUILA: Río San Rodrigo, aprox. 25 km al N de Zaragoza por la carr. 29 (Zaragoza-Acuña), 28°43'N y 100°55'W, alt. 330 m; vegetación: *Platanus glabrata, Morus celtidifolia, Fraxinus, Bumelia lanuginosa, Celtis, Juglans, Acacia farnesiana, A. rigidula, Mimosa texana, Ungnadia speciosa*; 9 Sep 1995, *M. A. Carranza 2572* (TEX-LL). Det. J. A. Villareal.

NUEVO LEÓN: In clay loam, dense shade of Cercado, 14 Jul 1946, *C. Salinas, C. Rowell & F. A. Barkley 16M13 and 16M14* (TEX-LL).

NUEVO LEÓN: Near Monterrey, 14 Jul 1888, C. G. Pringle s.n. (TEX-LL). Orig. det. *P. virginiana* var. *obovata*; ann. as *P. correllii* by R. W. Sanders in 1977 and by P. D. Cantino in 1980.

NUEVO LEÓN: Aramberri, N of 999 m, [habitat=] IRF, flowers purple, 0-8 m, small colonies, 1 Sep 1990, *Hinton et al. 20536* (TEX-LL).

COAHUILA: Muzquiz, 1936, *E. G. Marsh s.n.* (TEX-LL). Orig. det. *Dracocephalum* sp.; ann. as *P. correllii* by R. W. Sanders in 1977 and by P. D. Cantino in 1980.

Podocarpus reichei

HIDALGO: 9 km W of Huauchinango on highway to Tulancingo. Pine – Oak Forest; Alt. 2050 m. 2-Nov-1966. J. Rzedowski 23426, (UNL-2888).

VERACRUZ: Naolinco. 9-Sept-1976. F. Ventura A. 13210, (UNL-08703).

VERACRUZ: Naolinco. Oak forest in cañada. 24-Apr-1976., (UNL-08703).

VERACRUZ: Between los Ocotes and Agua de la Calabaza, Huayacocotla. Bosque mesófilo de montaña. 22-Feb-1980. I. A. Vargas 224, (UNL-015749).

Rhynchosia tamaulipensis

NUEVO LEÓN: Near Dulces Nombres, 13 Aug 1946, Meyer & Rogers 2959 in part (MO).

TAMAULIPAS: Sierra de Tamaulipas, region de Rancho Las Yucas, ca 40 km NNW of Aldama, 14 Dic 1957; Dresser 2413 (GH, MEXU, MICH, MO, UC).

TAMAULIPAS: Villa de Casas on road from Rancho Las Yucas to Santa Maria de los Nogales an Hac. Acuña, 22 Sep 1956, Martínez & Loyando F-2052 (TEX)

TAMAULIPAS: 5 km from San Fernando on the Victoria hwy, 7 Oct 1956, Martínez & Loyando F-2388 (TEX)

Taxus globosa

NUEVO LEÓN: El Tejocote, 3.7 km Southeast of Laguna de Sánchez, Santiago. *Pinus – Quercus* Forest. Alt. 2060 m. 10-Jul-1977. Vicente Valdéz T. 526, (UNL-12318).

NUEVO LEÓN: Sierra Madre Oriental, near San Isidro, logging road to Laguna de Sánchez, Santiago. Alt. 2050 m. 12-Oct-1979. Jorge S. Marroquín 3703, (UNL-10522).

NUEVO LEÓN: Sierra Madre Oriental, near San Isidro, logging road to Laguna de Sánchez, Santiago. Mixed Pine – Oak forest. Alt. 2050 m. 12-Oct-1979. Jorge S. Marroquín 3703, (UNL-10523).

NUEVO LEÓN: Agua de Los Cocones, La Encantada, Zaragoza. *Pinus – Pseudotsuga* Forest. 7-Mar-1982. María Concepción Herrera, (UNL-17816).

NUEVO LEÓN: Agua de Los Cocones, La Encantada, Zaragoza. *Pinus – Pseudotsuga* Forest. 7-Mar-1982. María Concepción Herrera, (UNL-023837).

NUEVO LEÓN: Ca. Crossroad to Villa de Santiago, Laguna de Sánchez, Santiago. 27-Aug-1995. Salvador Contreras Balderas, (UNL-023228).

SAN LUIS POTOSÍ: Arroyo del Tapaxtle, Ejido Milpitas S of Mesa de San Isidro, Río Verde. Next to stream, clay-limestone soil almost humus. 7-Dic-1975. J. A. López, (UNL-7861).

SAN LUIS POTOSÍ: Arroyo del Tapaxtle, Ejido Milpitas al S de Mesa de San Isidro, Río Verde. Next to stream, clay-limestone soil almost humus. 7-Dic-1975. J. A. López, (UNL-7862).

SAN LUIS POTOSÍ: Arroyo del Tapaxtle, Ejido Milpitas al S de Mesa de San Isidro, Río Verde. Next to stream, clay-limestrone soil almost humus. 7-Dic-1975. J. A. López, (UNL-7863).

Tetraneuris turneri

COAHUILA: Municipio Allende, Hwy 47, 0.4 mi S of El Infante, 15 May 1982, *L. J. Dorr & T. L. Atkins 2222* (TEX-LL, Jan 2002). Orig. det. *Hymenoxys scaposa*; ann. to *H. turneri* by B. L. Turner, 1982.

Thelocactus conothele var. aureantans

NUEVO LEÓN: Highway Aramberri – Linares. Matorral inerme parvifolio. 21-Mar-1982. Gerardo Rodríguez Lozano, (UNL-015764).

Thelocactus conothele var. conothele

NUEVO LEÓN: Agua Nueva, Dr. Arroyo. Matorral crasirosulifolio espinoso de *Dasylirion longissinum* y *Quercus* sp. Alt. 2250 m. 14-Feb-1980. R. E. Hernández V. 167, (UNL-011919).

Thelocactus rinconensis

NUEVO LEÓN: Estación PEMEX – Cuesta de los Muertos, García. Matorral mediano subinerme. Alt. 1100 m. 3-Nov-1984. Javier Sauceda Méndez 31, (UNL-17261).
NUEVO LEÓN: Km 6. highway to Grutas de García, García. Matorral mediano subinerme, rocky ground. Alt. 600 m. 13-Jun-1981. R. E. Hernández V. 169, (UNL-12469).
NUEVO LEÓN: Southern slope Cerro de Las Mitras, Monterrey. Rupícola, Alt. 700 m. 15-May-1980. E. Ramírez H., (UNL-010799).

Thelypodiopsis shinnersii

TAMAULIPAS: Ca. 25 km W of Adelaida, base of Sierra Madre Oriental, along road, N-facing canyon slope, flowers white, 19 Jul 1985, *S. Ginzbarg, A. Whittemore & A. McDonald 109* (TEX-LL).
TAMAULIPAS: Mountains along route 70, ca. 6 mi S of Ciudad Victoria, one plant ca. 30 cm. tall, open sun, flowers white, 6 Apr 1961, *R. M. King 4510* (TEX-LL).
TAMAULIPAS: Region of Ranchos Las Yucas, ca. 40 km NNW of Aldamia, Municipio de Aldamia, 25 Jul 1957, *Dressler 2014* (GH) and 16 Oct 1957, *Dressler 2427* (GH). [Both specimens cited in Rollins 1982].
TAMAULIPAS: 9 mi S of Ciudad Victoria, 9 Feb 1961, *McGregor 16296* (GH). [Specimen cited in Rollins 1982].

Tillandsia baileyi

NUEVO LEÓN: Sierra de la Silla, in front of El Mezcal, Cadereyta Jiménez. 28-May-1978. Alt. 650. José Moya Rodríguez 160, (UNL-17005). This species is *Tillandsia* sp.
TAMAULIPAS: Gómez Farías. Selva tropical secundaria subereniforme. Epifita sobre oejon Fam. Laguminosae. Salvador González, (UNL-10081). In my interpretation this is an identification error, this species is *Tillandsia* aff. *ionantha* var. *ionantha*.
TAMAULIPAS: 50 mi S of Matamoros, Dec 1938, *H. LeSueur 66* (TEX-LL).

Trichocoronis rivularis

COAHUILA: Semi-aquatic along stream edge, scattered to common, with white heads, rooting at nodes, San Juan de Sabinas, Río Sabinas W of San Juan de Sabinas where it crosses highway, 400 m.n.m., 20 Apr 1984, *C. P. Cowan 4624* (TEX-LL).
COAHUILA: Muzquiz, 15 Dec 1936, *E. G. Marsh 1073* (TEX-LL).
NUEVO LEÓN: Limestone soil of Cañon Haujuco, E of Villa Santiago in the valley of Río San Juan, in deep sluggish water in sunny location, 26 Feb 1946, *J. C. Johnson & F. A. Barkley 16067M* (TEX-LL).
NUEVO LEÓN: Ojo de Agua, 4 mi NE of Sabinas Hidalgo, in rich loam, 17 Mar 1962, *J. G. Rivas, P. Ostos & W. L. McCart 8112* (TEX-LL).

NUEVO LEÓN: Río San Juan, near Los Cavazos, Santiago. Aquatic habitat. Zona marginal del río arraigada emergente; calenzuelas blancas asociadas a *Myriophyllum – Rorippa – Spilanthes*, sustrato cenegoso. Alt. 450 m. 27-Apr-1980. Norberto Moreno P., (UNL-12173).

NUEVO LEÓN: Río San Juan, near Los Cavazos, Santiago. Aquatic habitat. Zona marginal del río arraigada emergente; calenzuelas blancas asociadas a *Myriophyllum – Rorippa – Spilanthes*, sustrato cenegoso. Alt. 450 m. 27-Apr-1980. Norberto Moreno P., (UNL-12174).

Trichocoronis wrightii var. *wrightii*

TAMAULIPAS: El Canelo Ranch, 24 mi S of San Fernando on the Matamoros highway, abundant fibrous-rooted perennials in a heavy clay resaca bottom which is dry at this season, ca. 2 mi W of headquarters, 26 Apr 1960, *M. C. Johnston & J. Crutchfield 5340* (TEX-LL).

TAMAULIPAS: Low shrub oak forests 2 mi NE of Altamira, abundant roadside weeds, open sun, flowers white, 3 Mar 1961, *R. M. King 1960* (TEX-LL).

TAMAULIPAS: Pond 60 mi S of Matamoros, 10 Feb 1939, *H. LeSueur 515* (TEX-LL).

Turbinicarpus saueri ssp. *gonzalezi*

TAMAULIPAS: Type locality: ca 25 km situ meridio-orinetali ab oppodo Linares; altitudinace ca 300 m s. m., 15 June 2002, Leg. M. A. González-Botello *et al*. 650. Holotypus in Herbarium CFNL (Facultad de Ciencias Forestales, U.A.N.L., México) asservatur.

Turbinicarpus saueri ssp. *septentrionales*

NUEVO LEÓN: Type locality: valley north of Monterrey on the way to Bustamante. Holotypus: G.S. Hinton No. 28256 collected by Hinton on 28-May-2004.

Yeatesia platystegia

NUEVO LEÓN: Municipio Bustamante; along switchback or road below the Grutas de Bustamante; ravines and bluffs along road from opening of cave to ca. 4 road km below cave, oak / *Cercis* / *Brahea* / *Ungnadia* / *Fraxinus greggii*, dark rich rocky [soil] on talus slopes, elev. 1000 m, 26°30'00"N, 100°31'20"W, fairly abundant on moist open slopes, 18 Mar 1994, *M. H. Mayfield, C. Ferguson & A. L. Hempel 1933* (TEX-LL).

NUEVO LEÓN: Municipio Bustamante, Sierra Gomas, Bustamante Canyon, northern exposure, in a large arroyo on limestone-derived soils, in a Tamaulipan scrub association, 800-1100 m, 26°33'N, 100°33'W, 13 Aug 1988, *T. F. Patterson 6601* (TEX-LL).

At the end of the project, the localities with rare plants found in this study will be added to the list.

New species have been added, especially for the Tamaulipas Thornscrub Eco-regional Plan; therefore, historical reports for the species are in a continuous process.

PROJECT / PROYECTO

Status, Distribution and Conservation of Three Species of Rare Plants of the Lower Rio Grande in Mexico.

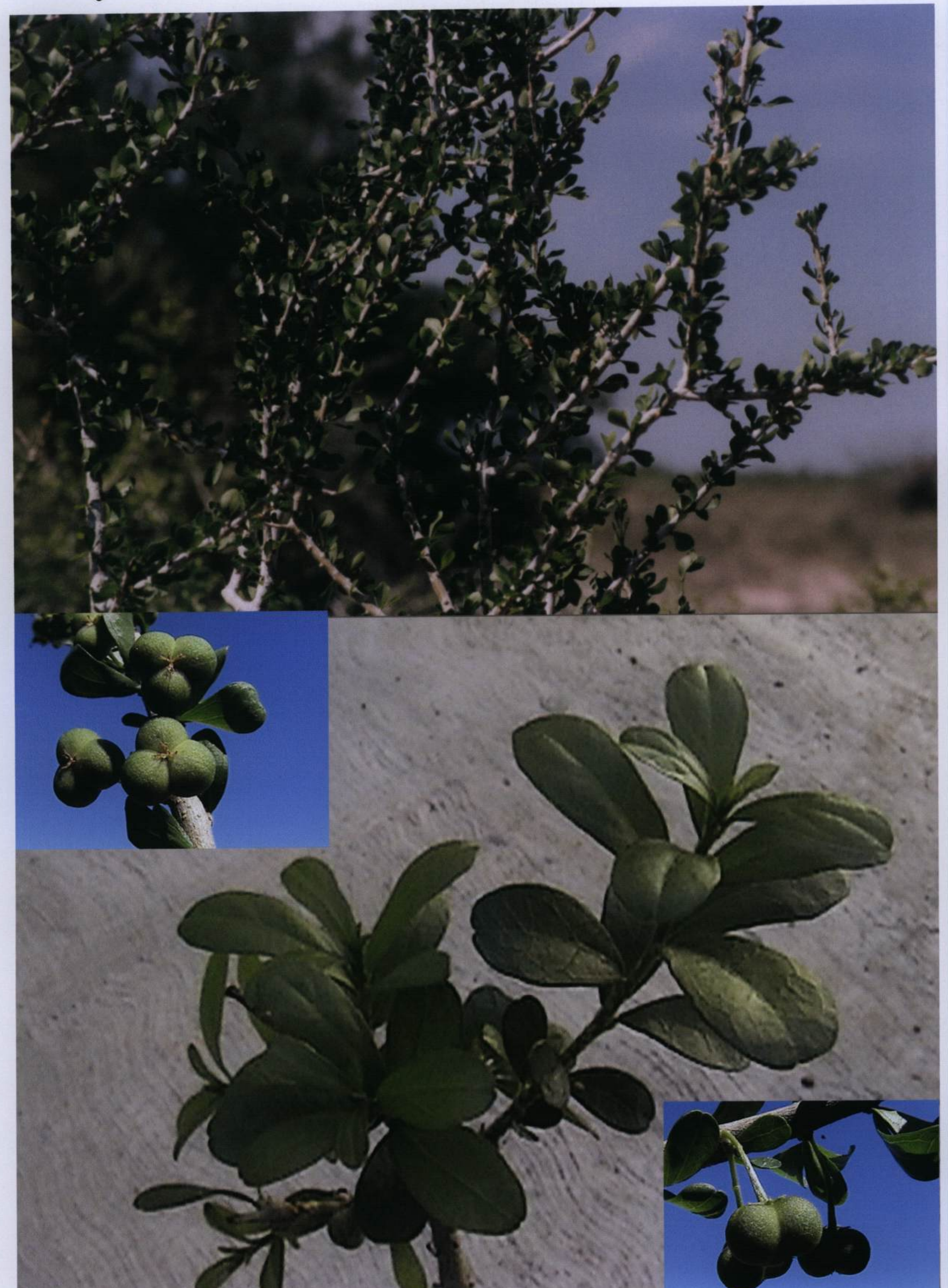
Estatus, Distribución y Conservación de Tres Especies de Plantas Raras del Bajo Río Bravo en México.

APPENDIX 5 / APÉNDICE 5

With additional records of other species of rare plants of importance for Mexico-USA.
Con registros adicionales de otras especies de plantas raras de importancia para México-USA.

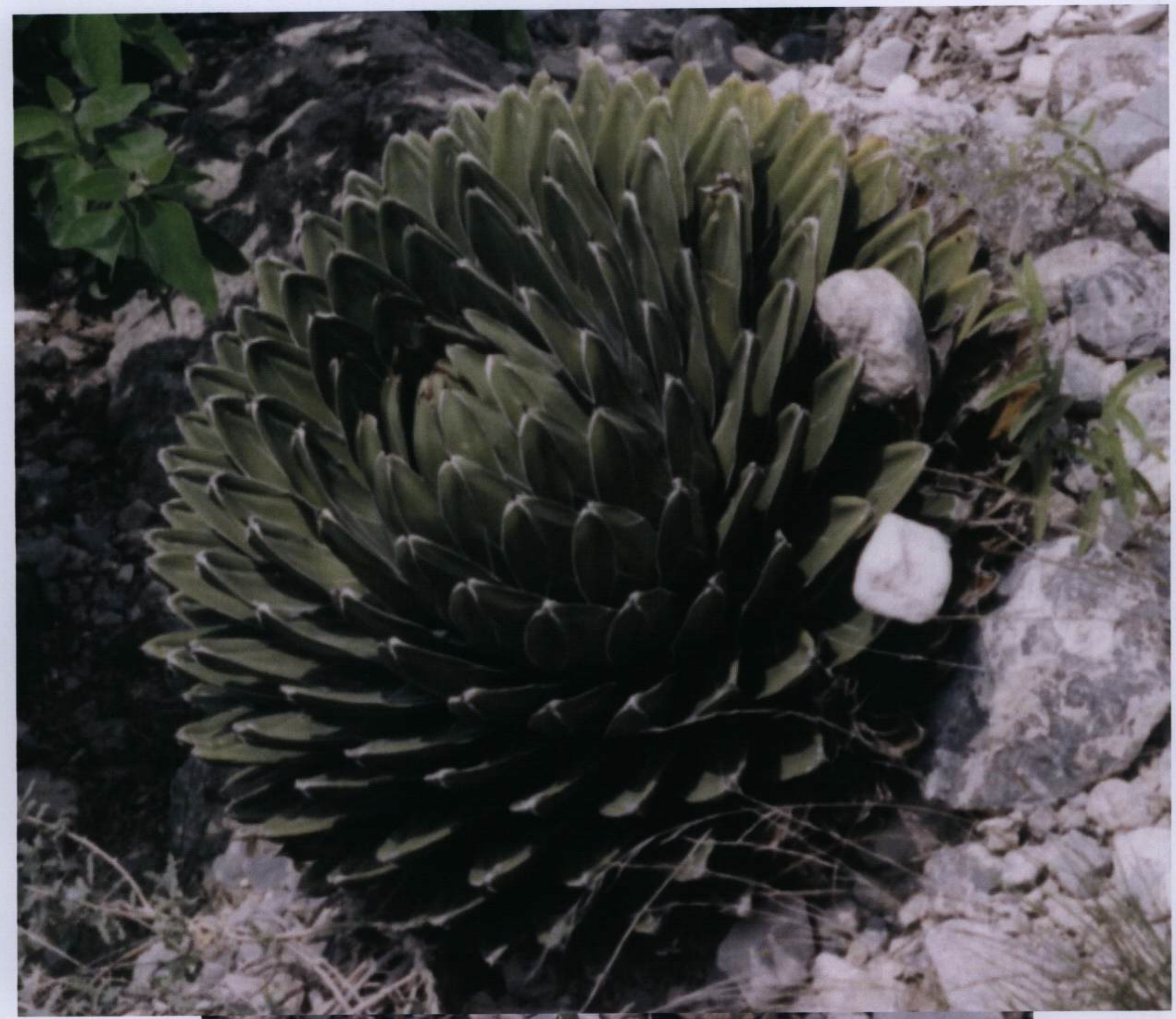
PHOTOGRAPHIC ATLAS / ATLAS FOTOGRÁFICO

Vasey adelia *Adelia vaseyi*



Agave bracteosa Maguey huasteco

Queen Victoria Agave *Agave victoria-reginae* Maguey reina



Yellow Show	*Amoreuxia wrightii*	Vista Amarilla

Cactus ***Ariocarpus trigonus*** **Biznaga maguey chautle**

Prostrate milkweed *Asclepias prostrata*

Star cacti *Astrophytum asterias* Cactus estrella

Astrophytum capricorne Biznaga algodoncillo de estropajo

Texas Ayenia ***Ayenia limitaris***






Berlandier Palm ***Brahea berlandieri*** **Palma de Montaña**

Caesalpinea caudata

South Texas Rushpea *Caesalpinea phyllanthoides*

Calliandra biflora

Little-flower spider-wort *Callisia micrantha*

Chihuahua balloon-vine ***Cardiospermum dissectum***

Coryphantha difficilis **Biznaga**

Runyon cory cactus

Coryphantha macromeris var. runyoni

Biznaga de Runyon

Coryphantha nickelsiae **Biznaga**

Coryphantha pseudoechinus **Biznaga**

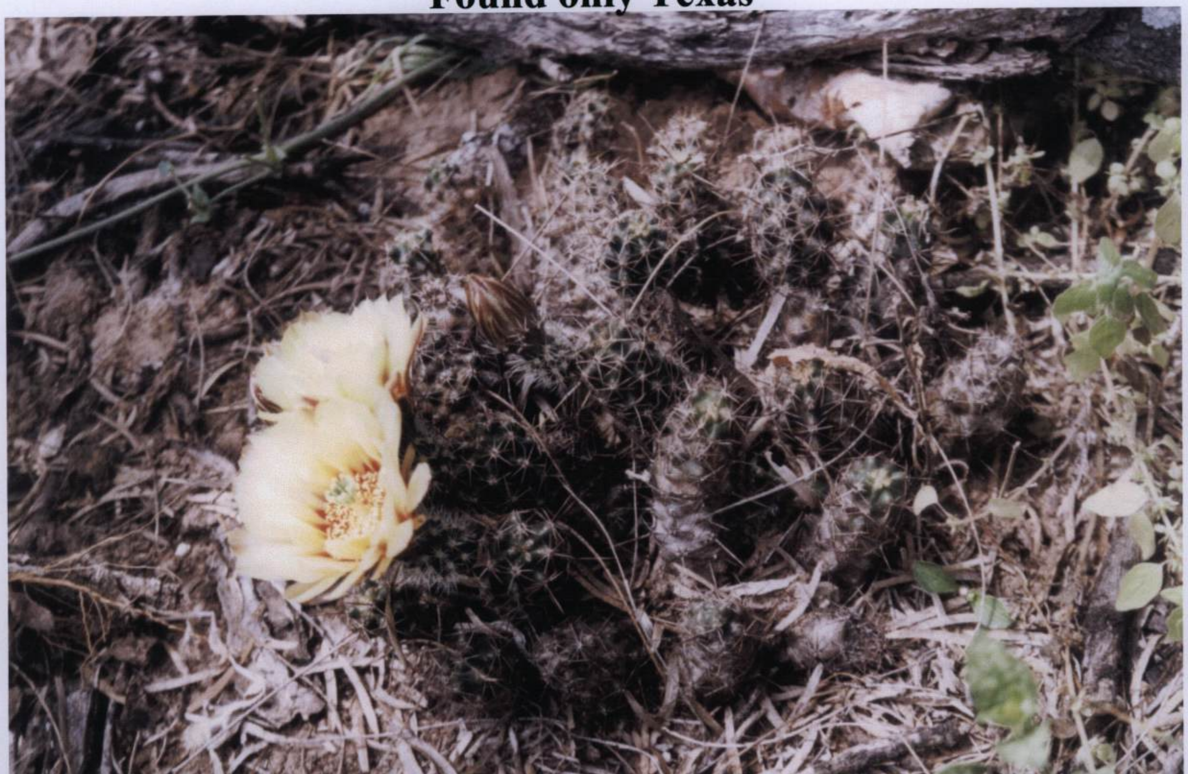
Coryphantha sulcata **Biznaga**

Dioon edule **Chamal**

Small papillosus, alicoche

Echinocereus papillosus var. angusticeps

Found only Texas



Papillosus cactus ***Echinocereus papillosus var. papillosus***

Pensil cactus ***Echinocereus poselgeri***

Fitch's hedgedog cactus *Echinocereus reichenbachii var. fitchii*

Epithelanta micromeris **Biznaga blanca chilona**

Gragg's wildbuckwheat *Eriogonum greggi*

Johnston *Euphorbia johnstonii*

Johnston's frankenia *Frankenia johnstonii* Frankenia

Hoffmanseggia drummondii

Correll's bluet ***Houstonia correllii***

Found only Texas

Lenophyllum Texas	***Lenophyllum texanum***	

Peyote *Lophophora williamsi* Peyote

Mammillaria plumosa **Biznaga plumosa**

Runyon's huaco *Manfreda longiflora* Amole de río

Huaco ***Manfreda sileri*** **Amole**

Walker's manioc *Manihot walkerae*

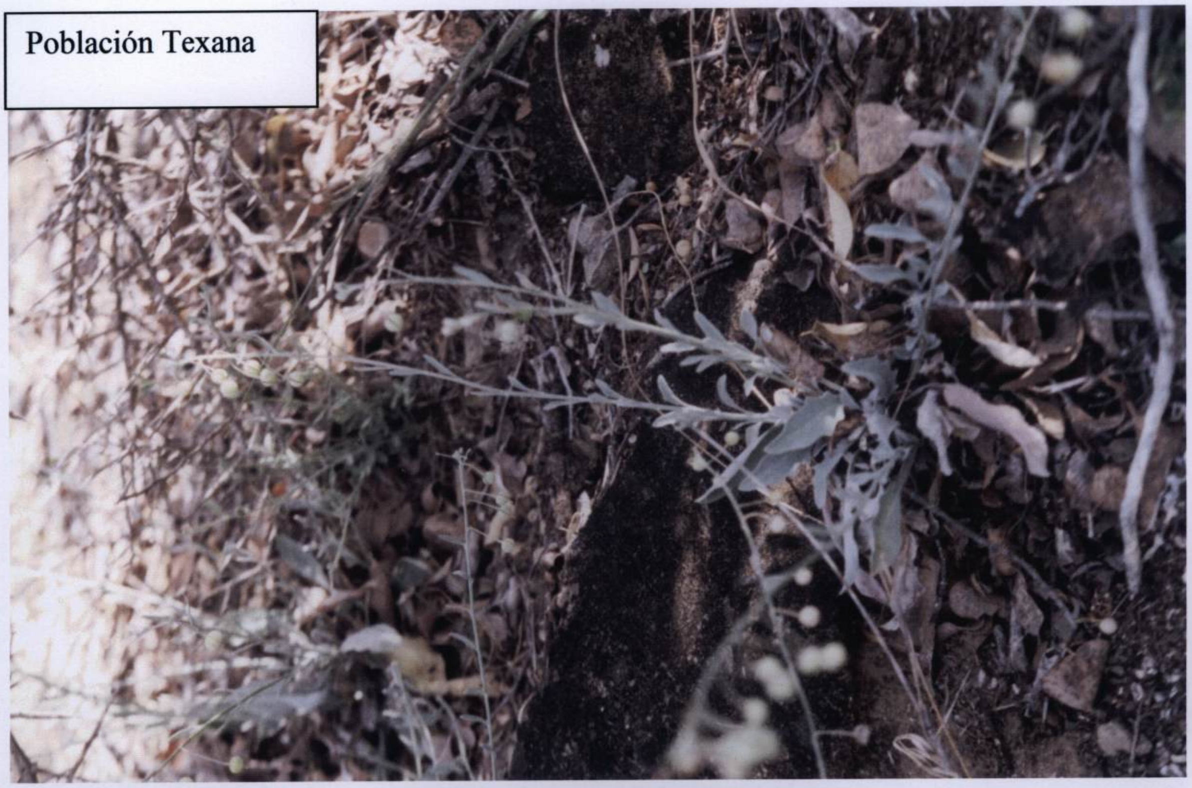
Short-crown milkvine *Matelea brevicoronata*

Matelea parviflora

Matelea sp.

Zapata bladderpod *Physaria thamnophila*

Población Texana



Población Mexicana

Stinking rushpea *Pomaria austrotexana*

Thelocactus rinconensis var. niludans

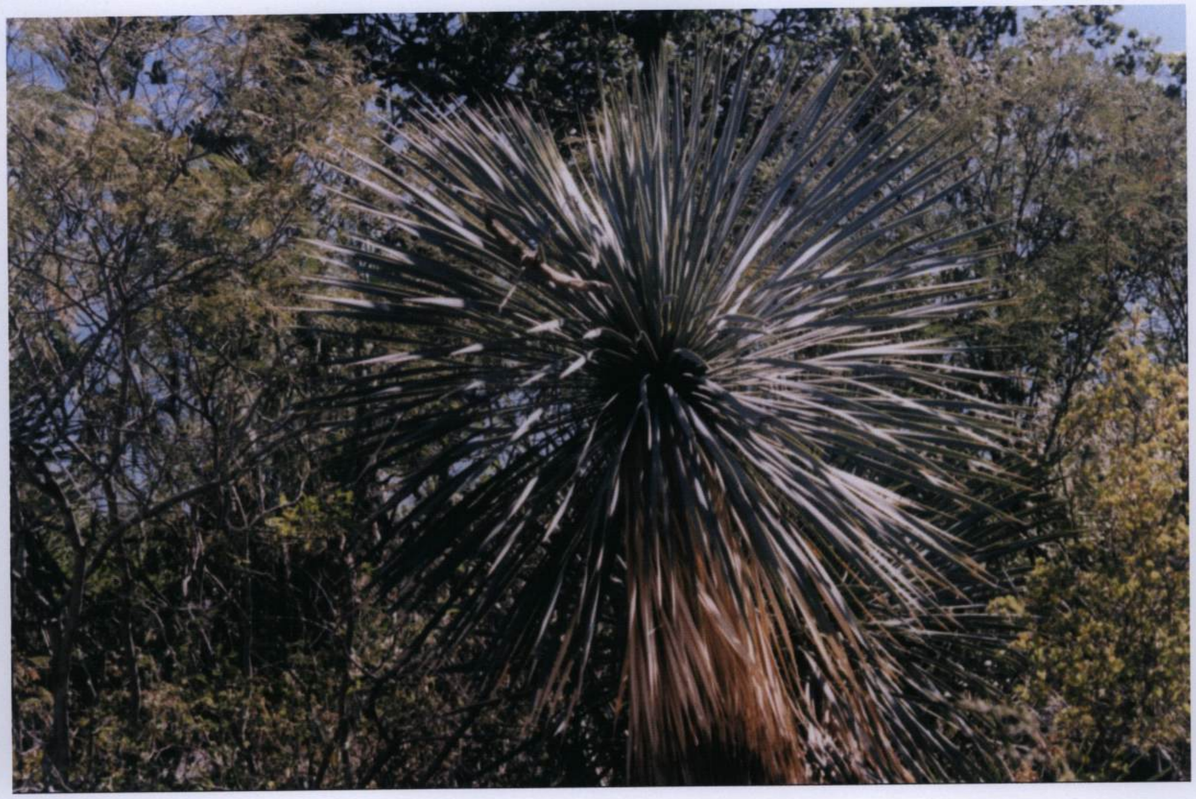
Biznaga pezón de la Rinconada

Bailey Ball Moss ***Tillandsia baileyi***

Ball *Tillandsia ionantha var. ionantha*

Turbinicarpus saueri ssp. *septentrionalis* **Biznaga**

Beaket Yucca *Yucca thompsoniana* **Yuca de Thmpson, Palmito**



PRONATURA

TEXAS PARKS & WILDLIFE

The Nature Conservancy
SAVING THE LAST GREAT PLACES ON EARTH

APPENDIX 6 / APÉNDICE 6

Other species not identified and that some very rare in Tamaulipan Thornscrub, Northeastern Mexico.

Otras especies de plantas no identificadas que se mostraron muy raras en el Matorral Espinoso Tamaulipeco, Noreste de México.

Agave sp. **Maguey**

Agave sp. ó *Yucca* sp.

Commelina sp

Not Identified

Not Identified

PRONATURA

TEXAS PARKS & WILDLIFE

The Nature Conservancy

SAVING THE LAST GREAT PLACES ON EARTH

APPENDIX 7 / APÉNDICE 7

Copy in the agreements of conservation signed by the owners of property (Ranch & Ejidos).

Copias de los acuerdos firmados por los dueños de predios (Ranchos y Ejidos).

H. Matamoros, Tamps. miércoles 10 de agosto del 2005

M. C. Magdalena Rovalo Merino
Directora de Pronatura Noreste, A. C.
Loma Larga No. 235. Col. Loma Larga
Monterrey, N. L. C. P.- 64710
P r e s e n t e.-

A través de la presente reciba un cordial saludo y hacerle extensa nuestra ACEPTACIÓN en la participación del proyecto conservación de plantas raras, en el cual se pretenden conservar las escasas colonias que todavía existen.

Estamos enterados que han realizado estudios ecológicos para localizar la presencia de estas plantas en Tamaulipas y que han encontrado algunas de estas especies dentro de nuestra propiedad.

Sabemos que Pronatura Noreste A. C. es una asociación que trabaja en la conservación de los recursos naturales, por lo cual, esperamos vernos beneficiados con nuestra participación en el presente proyecto.

Sin más por el momento, quedo de usted.

Sr. Pedro Rosales Martínez

Pedro Rosales

COMISARIADO EJIDAL
EJIDO VICENTE GUERRERO
MPIO. DE [illegible]

Comisariado Ejidal
Ejido Vicente Guerrero. Reynosa, Tamps.

C. c. p. Archivo

H. Matamoros, Tamps. lunes 15 de agosto del 2005

M. C. Magdalena Rovalo Merino
Directora de Pronatura Noreste, A. C.
Loma Larga No. 235. Col. Loma Larga
Monterrey, N. L. C. P.- 64710
P r e s e n t e.-

A través de la presente reciba un cordial saludo y hacerle extensa nuestra ACEPTACIÓN en la participación del proyecto conservación de plantas raras, en el cual se pretenden conservar las escasas colonias que todavía existen.

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Sin más por el momento, quedo de usted.

Sr. Armando Acuna Maraza
Propietario Particular
Ejido San José de las Rusias. Soto la Marina, Tamps.

C. c. p. Archivo

H. Matamoros, Tamps. lunes 15 de agosto del 2005

M. C. Magdalena Rovalo Merino
Directora de Pronatura Noreste, A. C.
Loma Larga No. 235. Col. Loma Larga
Monterrey, N. L. C. P.- 64710
P r e s e n t e.-

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Sin más por el momento, quedo de usted.

Sr. Jesús Alberto Acuña Bernal

Propietario Particular
Ejido San José de las Rusias. Soto la Marina, Tamps.

C. c. p. Archivo

H. Matamoros, Tamps. miércoles 10 de agosto del 2005

M. C. Magdalena Rovalo Merino
Directora de Pronatura Noreste, A. C.
Loma Larga No. 235. Col. Loma Larga
Monterrey, N. L. C. P.- 64710
P r e s e n t e.-

A través de la presente reciba un cordial saludo y hacerle extensa nuestra ACEPTACIÓN en la participación del proyecto conservación de plantas raras, en el cual se pretenden conservar las escasas colonias que todavía existen.

Estamos enterados que han realizado estudios ecológicos para localizar la presencia de estas plantas en Tamaulipas y que han encontrado algunas de estas especies dentro de nuestra propiedad.

Sabemos que Pronatura Noreste A. C. es una asociación que trabaja en la conservación de los recursos naturales, por lo cual, esperamos vernos beneficiados con nuestra participación en el presente proyecto.

Sin más por el momento, quedo de usted.

Sr. Lic. Luis Esteban García Villalón

Propietario Rancho Loreto
San Fernando, Tamps.

C. c. p. Archivo

PROYECTO

ESTATUS, DISTRIBUCIÓN Y CONSERVACIÓN DE TRES ESPECIES DE PLANTAS RARAS, NORESTE DE MÉXICO.

INFORME

IMPORTANCIA BIOLÓGICA PARA LA CONSERVACIÓN DE ESPECIES EN RIEGO DEL RANCHO LORETO EN SAN FERNANDO, TAMAULIPAS, MÉXICO.

ALBERTO CONTRERAS ARQUIETA
Pronatura Noreste, A.C.

Chris Best
Plant Ecologist, U.S. Fish and Wildlife Service, Alamo, TX.

Elena Castelo Patterson
Botanist, Universidad Autónoma Nacional de México.

Joél Hernández Peña
Biologist, Pronatura NE, Matamoros, Tamaulipas.

Tom Patterson
Botanist, South Texas College, Rio Grande City, TX.

Dana Price
Botanist, Texas Parks and Wildlife Department, Austin, TX.

Monterrey, Nuevo León 11 Julio del 2005

IMPORTANCIA BIOLÓGICA PARA LA CONSERVACIÓN DE ESPECIES EN RIEGO, ESPECIES RARAS Y ENDÉMICAS DEL RANCHO LORETO.

Una visita al Rancho Loreto se llevo a cabo del 14 al 17 de abril del 2005, con el objetivo de buscar y conocer mas sobre las condiciones de hábitat de varias especies de plantas raras y endémicas, incluye dos en los listados de especies en peligro para U.S. Fish & Wildlife Service y The Texas Park & Wildlife Department, reportados para la Región de Loreto (Johnston, 1963). Después de más de 40 años, no hay estudios biológicos recientes de ningún tipo, que nos den información sobre el estatus de estas especies, así como de riqueza biológica existente en la zona.

La mayor parte de la cobertura vegetal de la planicie costera del Golfo de México en Tamaulipas, están fuertemente impactada por las diversas prácticas agropecuarias, principalmente por la agricultura, teniendo mas del 85 % deforestado y en casi 90 % de la vegetación ribereña en las corrientes de agua.

Debido a este cambio en el uso de suelo, y gracias al apoyo de la Sección 6 del U.S. Fish & Wildlife Service, Texas Park & Wildlife Department y The Nature Conservacy, estamos haciendo el estudio de la especies raras y endémicas en el Noreste de México, principalmente en los suelos de caliche, por ser sitios de endemismos, por lo que se establecieron contactos con dueños de ranchos para poder hacer las evaluaciones biológicas y ecológicas, principalmente de la vegetación del sitio y en búsqueda de las plantas raras y sus condiciones ambientales.

De muchas especies que se encuentran en peligro de extinción en Texas, no se conoce primeramente si existen estas especies en México y si se encuentran estas especies, bajo que condiciones ambientales viven y cual es su distribución.

Carr (2002) durante una reunión en Texas presentó la distribución y los registros conocidos para estas tres especies de plantas raras, encontrándose los siguientes reportes para México:

> *Ayenia limitaris:* TAMAULIPAS: Municipio Soto La Marina, on road to Tepeguaje, 1.5 km from main highway, in brush, subshrub to 1 m tall, flowers greenish yellow, scarce, 16 Sep 1981, *P. A. Fryxell 3669* (TEX-LL). Det. by C. L. Cristobal 1982.
>
> *Manihot walkerae:* TAMAULIPAS: sandy prairies overlying caliche on the Rancho Loreto, frequent perennials to 1 ft. tall, growing up through protective thorny shrubs on the overgrazed prairies; of the many plants, only this was beginning to flower; 26 Apr 1960, *M. C. Johnston 5363-B* (TEX-LL). Papalote de Mirandena, 3 mi SSW of headquarters, Loreto Ranch, prairie on sandy loam shallowly overlying caliche, 24°20'N, 98°W, 16 Sep 1960, *M. C. Johnston & J. Crutchfield 5572-B* (TEX-LL). *Asclepias prostrata*, *Physaria thamnophila* and *Manfreda longiflora* were also collected from this site on this date.
>
> *Physaria thamnophila:* TAMAULIPAS: Papalote de Mirandena, 3 mi SSW of headquarters, Loreto Ranch, prairie on sandy loam shallowly overlying caliche, 24°20'N, 98°W, 16 Sep 1960, *M. C. Johnston & J. Crutchfield* 5556 (TEX-LL). Originally determined *L. argyraea*; annotated to *P. thamnophila* by Guy Nesom, 1989. *Asclepias*

prostrata, *Manfreda longiflora* and *Manihot walkerae* were also collected from this site on this date.

Mayfield (1991) describió una nueva especies, *Euphorbia johnstonii*, para Tamaulipas, algunos registros son para la región de Loreto.

Daniel (1983) describió una especie endémica para la región de Loreto, *Carlowrightia herinckonii.*

González- Medrano y colaboradores en 1993 encontró dos localidades para *Manihot walkerae* a 4 y a 6 km NE de Ejido Morales, Abasolo, Tamaulipas, (Herbario del IB-UNAM).

Descripción de la Región de Loreto, San Fernando, Tamaulipas.

Muchas de las especies de plantas raras del sur de Texas y Noreste de México son endémicas a la formación de caliche (formación de carbonato de calcio con una mezcla de arena y otros materiales transportados por acción eólica) y arena de una antigua playa marina. Este suelo es generalmente de color rojizo a café-rojizo

El Rancho Loreto (Figura 1) se sitúa en los municipios de Abasolo, San Fernando y Soto La Marina, cuya extensión es de 25,000 ha. Se localiza a 37 km de San Fernando, entrando por la carretera estatal que va La Carbonera y luego el camino al Ejido La Florida. También se puede entrar por la Carretera MEX 180 y por terracería a Ejido Morales.

El primer estudio de la vegetación fue realizado por el botánico Luis Berlandier en febrero de 1831, que atravesó por Loreto de Soto La Marina a San Fernando. Posteriormente el siguiente estudio fue el de Marshall Johnston, que entre 1959-1960 trabajo en los pastizales de arena-caliche en Loreto (Johnston, 1963). Algunas especies que llaman la atención son *Physaria thamnophila* (=*Lesquerella thamnophila*), conocida solo de pequeñas áreas en los condados de Starr y Zapata en Texas. En este sitio de vegetación único, también encontramos a *Manihot walkerae, Manfreda longiflora, Boerhavia mathisiana, Asclepias prostrata* y recientemente a *Euphorbia johnstonii*, todas ellas listadas como especies en peligro.

Loreto es un sitio de caliche (50%) y arena de formación del plioceno, donde los mosaicos de vegetación formados por pastizales y matorral espinoso, dejando espacios abiertos llamados praderas, entre 50 - 100 acres con pequeños manchones de matorral. En los últimos 100 años se ha observado que por las actividades ganaderas la vegetación maderable esta substituyendo a los pastizales.

Para la fauna de vertebrados es también muy importante este sitio debido alas buenas condiciones de hábitat, especialmente para ocelote, leoncillo, margay, gato montes, zorra, venado cola blanca, diversas aves, tortuga terrestre, entre otros grupos de animales.

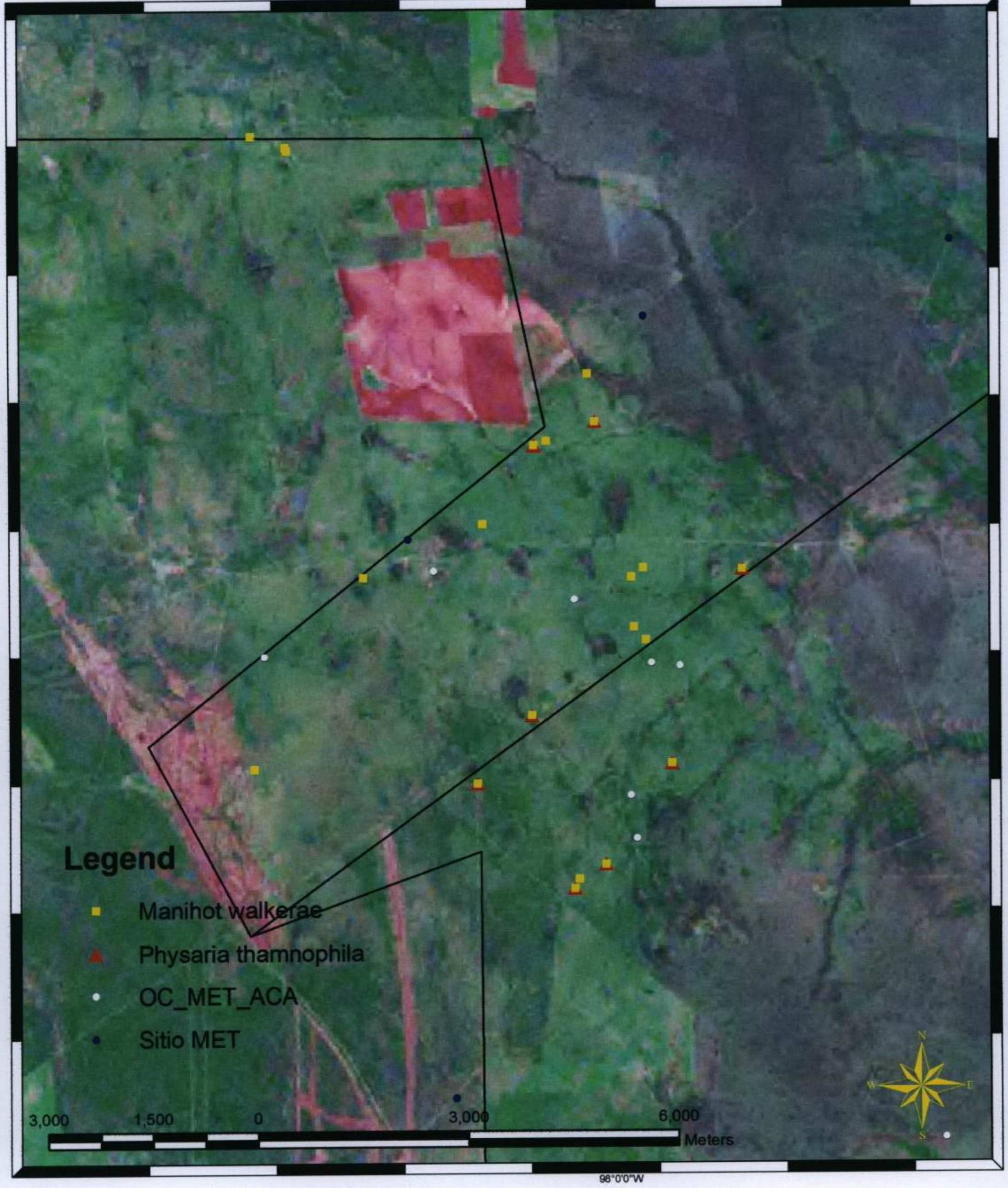

Figura 1. Localización del Rancho Loreto en San Fernando, Tamaulipas, México. Los puntos negros son los sitios de muestreo dentro y fuera del rancho. Los registros de *Manihot walkerae* (círculos amarillos), registros de *Physaria thamnophila* (triángulos rojos); otras especies de plantas raras (puntos blancos) y sitios de colecta (círculos negros).

RESULTADOS

Durante el trabajo de campo, se realizaron 24 sitios de muestreo, encontrando 235 especies, de las cuales 133 están en áreas de caliche (Figura 2), 97 en matorral (Figura 3) y 74 es praderas (Figura 4). Las condiciones de la vegetación son muy buena en este rancho, ya que en la mayor parte de los ranchos de la región, el cambio en el uso de suelo es eminente, ya sea por las actividades de agricultura y la ganadería.

Las buenas condiciones ambientales el Rancho Loreto, se deben a las buenas prácticas de manejo de pastoreo que tienen en el ganado vacuno y por la rotación en potreros, lo que permiten la recuperación de la vegetación en el suelo, por lo que esta región se encuentra dentro del Sitio Prioritario Terrestre en el Plan Ecorregional sobre el Matorral Espinoso Tamaulipeco para la conservación de la diversidad biológica.

Las especies de interés para la conservación son 17 especies, especialmente *Carlowrghtii henricksonii*, que es endémica de la región de Loreto, las demás especies como *Asclepias prostrata, Physaria thamnophila* y *Manihot walkerae* entre otras, se encuentran en otros sitios de Nuevo León, Tamaulipas y Texas (Cuadro 1, Figura 5).

En Loreto se reportaron 12 especies que no se habían encontrado anteriormente en praderas (Cuadro 2), así como, es importante por que existen especies que tienen su límite norteño o sureño de distribución como: *Croton reflexifolius, Euphorbia villifera, Caesalpinia platyloba, Diphysa microphylla, Myrcianthes fragrans, Schoepfia schreberi, Agonandra obtusifolia* y *Sideroxylum palmeri*. Especies reportadas con anterioridad y que en esta visita nos se encontraron están: *Manfreda longiflora* y *Boerhavia mathisiana*; lo que aumentan a 19 las especies de interés en la conservación.

En esta región es muy importante por la gran diversidad de plantas como leguminosas (Familia Fabaceae con 48 especies) y de pastos (Familia Poaceae con 28 especies); además de la Familia Euphorbiaceae con 24 especies, que es donde se localizan las especies que viven en estas condiciones de hábitat formado por caliche y arenas, incluye varias especies de plantas raras y endémicas.

Se encontró una especie tropical, *Byrsonima crassifolia*, no reportado anteriormente para Tamaulipas, es un árbol de 4 a 10 m de altura, caducifolio. Florecen de marzo a julio. Frutos: en infrutescencias péndulas de 10 a 15 cm de largo; drupas globosas de 17 a 20 mm de diámetro, maduran de abril a octubre. Se usa en como cerca viva. Su principal producto es el fruto, muy apreciado como complemento alimenticio. Los frutos se comen crudos o en conserva y fermentados producen un licor de agradable sabor, jaleas, nieves y paletas, refrescos, atoles y dulces. La madera es dura y flexible y se utiliza para leña y carbón. Aporta gran cantidad de materia orgánica de fácil desintegración, protegiendo de manera efectiva al suelo, mejorando la calidad y proporcionando hábitat y alimento a la fauna silvestre.

CONCLUSIONES

El Rancho Loreto se encuentra en una zona de alto endemismo debido a que se sitúa entre dos provincias biogeográficas que es la Neártica y la Neotripical, aunado a las condiciones geológicas (caliche. Arenas, conglomerados y sedimentario), climáticas (temperatura y precipitación) y de vegetación. Una riqueza de más de 230 especies (Apéndice 1) de las cuales 19 tienen algún status de riesgo (Cuadro 1), tanto en México como en Estados Unidos, o son consideradas "raras" debido a que no se conocen muchos datos biológicos, ecológicos y de distribución. Debido a esta riqueza y las buenas condiciones de hábitat esta localizado en el Sitio Prioritario Terrestre para la conservación de la biodiversidad en la "Evaluación ecológica sobre el Matorral Espinoso Tamaulipeco" en el Noreste de México y Texas. Una especie es endémica para la región de Loreto, la planta de la familia Acanthaceae, *Carlowrightia henricksonii*, y para *Byrsonima crassifolia* de la familia Malpighiaceae es el registro mas norteño conocido.

Recomendamos buscar algún mecanismo de conservación legal en el Rancho Loreto por su dueño (Anexo 1, Oficio de aceptación en el Programa de Conservación de Especies en categoría de riesgo) y que este puede ser acreedor de los pagos de servicios ambientales, así como de otros apoyos por parte de las instituciones públicas, que derivan de este predio para mantenerlo en estas excelentes condiciones ecológicas y biológicas, y que pueden mejorar el hábitat bajo un manejo adecuado.

Figura 2. Vegetación en suelos de caliche en Rancho Loreto, San Fernando, Tamaulipas.

Figura 3. Vegetación de matorral espinoso formados por *Acacias*, en el Rancho Loreto, San Fernando, Tamaulipas.

Figura 4. **Praderas y pastizales con islotes de matorral espinoso en buenas condiciones en Rancho Loreto, San Fernando, Tamaulipas.**

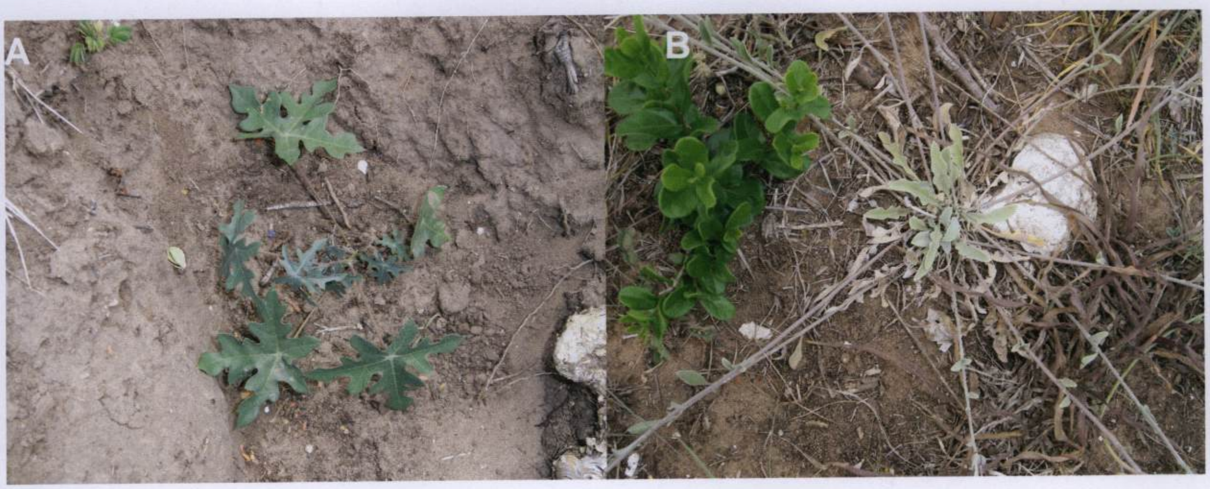

Figura 5. **Algunas especies raras y endémicas localizadas en Rancho Loreto, San Fernando, Tamaulipas. A) *Manihot walkerae* y B) *Physaria thamnophila*.**

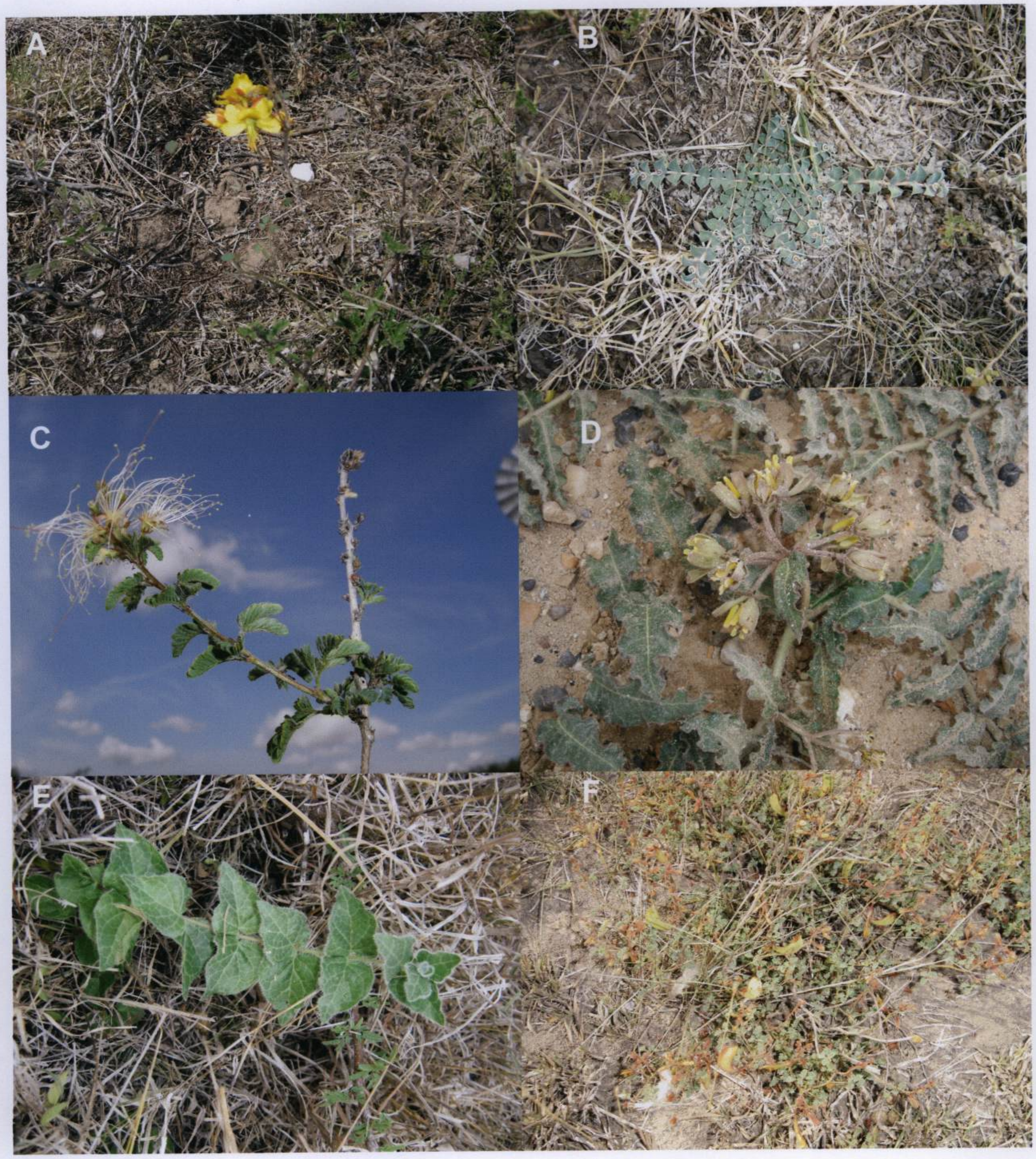

Figura 6. **Algunas especies raras y endémicas localizadas en Rancho Loreto, San Fernando, Tamaulipas. A) *Caesalpinia phyllanthoides*, B) *Euphorbia johnstonii*, C) *Calliandra biflora*, D) *Asclepias prostrata*, E) *Matelea brevicoronata* y F) *Hoffmanseggia drummondii*.**

Cuadro 1. Especies raras, endémicas u objetos de conservación en el Rancho Loreto, San Fernando, Tamaulipas, México.

ID	Familia	Género	Especie	Variedad o ssp
1	Acanthaceae	*Carlowrightia*	*henricksonii*	
2	Agavaceae	*Manfreda*	*sileri*	
3	Aristolochiaceae	*Aristolochia*	*sp.*	
4	Asclepiadaceae	*Asclepios*	*prostrata*	
5	Asclepiadaceae	*Matelea*	*brevicoronata*	
6	Brassicaceae	*Pisaría*	*thamnophila*	
7	Bromeliaceae	*Tillandsia*	*baileyi*	
8	Bromeliaceae	*Tillandsia*	*ionantha*	*ionantha*
9	Euphorbiaceae	*Adelia*	*vaseyi*	
10	Euphorbiaceae	*Euphorbia*	*johnstonii*	
11	Euphorbiaceae	*Manihot*	*walkerae*	
12	Fabaceae	*Caesalpinea*	*phyllanthoides*	
13	Fabaceae	*Caesalpinea*	*platyloba*	
14	Fabaceae	*Calliandra*	*biflora*	
15	Fabaceae	*Hoffmansseggia*	*drummondii*	
16	Fabaceae	*Pomaria*	*austrotexana*	
17	Sapindaceae	*Cardiospernum*	*dissectum*	

Cuadro 2. Especies que se desconocían que habitaran praderas, localizadas en el Rancho Loreto, San Fernando, Tamaulipas, México.

ID	Especie
1	*Argythamnia neomexicana*
2	*Bidens odorata var. rosea*
3	*Centrosema virginuanum*
4	*Croton watosnii*
5	*Cyperus sp.*
6	*Diphysa microphylla*
7	*Galactica sp.*
8	*Polygala glandulosa*
9	*Schoepfia schreberi*
10	*Stylosanthes viscosa*
11	*Thelesperma megapotamicum var. ambiguum*
12	*Thymophilla penchaeta*

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APÉNDICE 1

Inventario florístico del Rancho Loreto, San Fernando, Tamalipas. Las especies con recuadros celestes son las consideradas raras, endémicas y en alguna categoría de riesgo en la NOM-059-SEMARNAT-2001, IUCN, U.S. Fish & Wildlife Service y The Texas Park & Wildlife Department.

ID	Familia	Género	Especie	Variedad o ssp	Matorral	Caliche	Praderas
1	Acanthaceae	*Carlowrightia*	*henricksonii*			1	1
2	Acanthaceae	*Dyschoriste*	*crenulata*			1	
3	Acanthaceae	*Elytraria*	*bromoides*			1	
4	Acanthaceae	*Justicia*	*Turneri*			1	
5	Acanthaceae	*Ruellia*	*sp. 1*			1	
6	Acanthaceae	*Ruellia*	*sp. 2*			1	
7	Acanthaceae	*Sternandrium*	*dulce*			1	
8	Achatocarpaceae	*Phaulothamnus*	*spinescens*		1		
9	Agavaceae	*Manfreda*	*sileri*		1		
10	Agavaceae	*Yucca*	*treculeana*		1	1	
11	Apocynaceae	*Macrosiphonia*	*lanuginosa*	*macrosiphon*		1	1
12	Aristolochiaceae	*Aristolochia*	*sp.*			1	
13	Asclepiadaceae	*Asclepias*	*prostrata*			1	
14	Asclepiadaceae	*Cynanchum*	*barbigerum*			1	1
15	Asclepiadaceae	*Matelea*	*brevicoronata*			1	
16	Asteraceae	*Acourtia*	*runciniata*		1	1	
17	Asteraceae	*Bidens*	*odorata*	*rosea*		1	
18	Asteraceae	*Chaetopappa*	*bellioides*			1	
19	Asteraceae	*Dyssodia*	*tenuiloba*			1	
20	Asteraceae	*Florentina*	*tripteris*			1	
21	Asteraceae	*Latris*	*mucronata*			1	
22	Asteraceae	*Melampodium*	*cinereum*			1	1
23	Asteraceae	*Palafoxia*	*texana*		1		
24	Asteraceae	*Simsia*	*calva*			1	1
25	Asteraceae	*Thelesperma*	*megapotamicum*	*ambiguum*		1	
26	Asteraceae	*Viguiera*	*stenoloba*		1		
27	Asteraceae	*Wedelia*	*texana*			1	1
28	Astreraceae	*Aphanosthephus*	*sp.*		1		
29	Astreraceae	*Thymophilla*	*pentachaeta*			1	1
30	Astreraceae	*Zexmenia*	*sp.*		1		
31	Borraginaceae	*Cordia*	*boissieri*		1	1	
32	Borraginaceae	*Heliotropium*	*angiospermae*		1		
33	Borraginaceae	*Heliotropium*	*confertifolium*			1	
34	Brassicaceae	*Physaria*	*thamnophila*			1	1
35	Bromeliaceae	*Bromelia*	*pinguin*		1		
36	Bromeliaceae	*Tillandsia*	*baileyi*		1		
37	Bromeliaceae	*Tillandsia*	*ionantha*	*ionantha*	1		
38	Bromeliaceae	*Tillandsia*	*unsinoides*		1		
39	Cactaceae	*Acanthocereus*	*tetragonus*		1	1	1
40	Cactaceae	*Ancistrocactus*	*Sheeri*		1		
41	Cactaceae	*Cylindropuntia*	*leptocaulis*		1	1	1
42	Cactaceae	*Echinocactus*	*texensis*		1	1	

ID	Familia	Género	Especie	Variedad o ssp	Matorral	Caliche	Praderas
43	Cactaceae	*Echinocereus*	*enneacanthus*		1		
44	Cactaceae	*Ferocactus*	*hamatacanthus*	*sinuatus*	1		
45	Cactaceae	*Opuntia*	*engelmannii*	*lindheimeri*	1		
46	Cactaceae	*Selenicereus*	*spinulosus*		1		
47	Cactaceae	*Stenocereus*	*griseus*		1		
48	Capparaceae	*Capparis*	*incana*		1		1
49	Commelinaceae	*Commelina*	*sp.*			1	
50	Commelinaceae	*Tradescantia*	*elegans*		1		
51	Convolvulaceae	*Convolvulus*	*equitans*				1
52	Convolvulaceae	*Evolvulus*	*alsinoides*			1	
53	Convolvulaceae	*Evolvulus*	*cericeus*		1	1	
54	Convolvulaceae	*Evolvulus*	*sp.*			1	
55	Convolvulaceae	*Ipomea*	*cordatogtriloba*		1	1	
56	Convolvulaceae	*Ipomea*	*Sinuata*		1		
57	Convolvulaceae	*Ipomea*	*sp.*			1	
58	Convolvulaceae	*Merremia*	*dissecta*			1	1
59	Cucurbitaceae	*Cucurbitaceae*	*sp.*			1	
60	Cucurbitaceae	*Doyerea*	*emetocanthartica*		1		
61	Cucurbitaceae	*Iberville*	*lindheineri*		1		
62	Cyperaceae	*Cyperus*	*sp.*			1	1
63	Ebenaceae	*Diospyros*	*palmeri*		1		
64	Ebenaceae	*Diospyros*	*sp.*		1		
65	Ebenaceae	*Diospyros*	*texana*			1	1
66	Euphorbiaceae	*Acalypha*	*radians*				1
67	Euphorbiaceae	*Adelia*	*Vaseyi*		1		
68	Euphorbiaceae	*Argythamnia*	*neomexicana*			1	
69	Euphorbiaceae	*Argythamnia*	*sp.*				1
70	Euphorbiaceae	*Bernardia*	*myricaefolia*		1		
71	Euphorbiaceae	*Cnidoscolus*	*herbaceum*		1		1
72	Euphorbiaceae	*Croton*	*cortesianus*			1	
73	Euphorbiaceae	*Croton*	*humilis*		1		
74	Euphorbiaceae	*Croton*	*incanus*			1	
75	Euphorbiaceae	*Croton*	*reflexifolius*				1
76	Euphorbiaceae	*Croton*	*sp.*				1
77	Euphorbiaceae	*Croton*	*watsonii*			1	
78	Euphorbiaceae	*Euphorbia*	*diseca*			1	
79	Euphorbiaceae	*Euphorbia*	*hirta*			1	
80	Euphorbiaceae	*Euphorbia*	*johnstonii*			1	
81	Euphorbiaceae	*Euphorbia*	*sp. 1*			1	
82	Euphorbiaceae	*Euphorbia*	*sp. 2*			1	
83	Euphorbiaceae	*Euphorbia*	*sp. 3*				1
84	Euphorbiaceae	*Euphorbia*	*vellifera*			1	
85	Euphorbiaceae	*Jatropha*	*dioica*		1	1	
86	Euphorbiaceae	*Manihot*	*walkerae*		1	1	1
87	Euphorbiaceae	*Pedilanthus*	*tythymaloides*		1		
88	Euphorbiaceae	*Tragia*	*amblyodonta*			1	
89	Euphorbiaceae	*Tragia*	*sp.*			1	
90	Fabaceae	*Acacia*	*berlandieri*		1	1	
91	Fabaceae	*Acacia*	*farnesciana*		1		
92	Fabaceae	*Acacia*	*greggii*		1		

ID	Familia	Género	Especie	Variedad o ssp	Matorral	Caliche	Praderas
93	Fabaceae	*Acacia*	*rigidula*		1	1	1
94	Fabaceae	*Acacia*	*sp.*			1	
95	Fabaceae	*Acacia*	*sphaerocephala*		1		
96	Fabaceae	*Caesalpinea*	*drummondii*			1	1
97	Fabaceae	*Caesalpinea*	*mexicana*		1		
98	Fabaceae	*Caesalpinea*	*phyllanthoides*			1	
99	Fabaceae	*Caesalpinea*	*platyloba*			1	
100	Fabaceae	*Caesalpinea*	*wootonii*		1		
101	Fabaceae	*Calliandra*	*americana*		1		
102	Fabaceae	*Calliandra*	*biflora*			1	1
103	Fabaceae	*Calliandra*	*conferta*			1	1
104	Fabaceae	*Calliandra*	*tergemina*	*emarginata*		1	1
105	Fabaceae	*Centrosema*	*virginianum*				1
106	Fabaceae	*Cercidium*	*macrum*			1	
107	Fabaceae	*Chamaecrista*	*flexuosa*	*texana*			1
108	Fabaceae	*Chamaecrista*	*greggii*			1	
109	Fabaceae	*Coursetia*	*axillaris*		1		
110	Fabaceae	*Dalea*	*aurea*			1	
111	Fabaceae	*Dalea*	*nana*			1	
112	Fabaceae	*Dalea*	*pogonopthera*		1	1	
113	Fabaceae	*Dalea*	*scandens*	*paucifolia*		1	
114	Fabaceae	*Desmanthus*	*virgatus*		1	1	
115	Fabaceae	*Diphysa*	*microphylla*			1	
116	Fabaceae	*Ebanopsis*	*ebano*		1		
117	Fabaceae	*Eysenhardtia*	*texana*		1		
118	Fabaceae	*Galactia*	*canescens*				1
119	Fabaceae	*Galactia*	*marginalis*				1
120	Fabaceae	*Havardia*	*pallens*		1	1	
121	Fabaceae	*Hoffmanseggia*	*drummondii*			1	
122	Fabaceae	*Indigoflora*	*miniata*			1	
123	Fabaceae	*Mimosa*	*latridens*			1	
124	Fabaceae	*Mimosa*	*malacophylla*		1		
125	Fabaceae	*Neptunia*	*sp.*			1	
126	Fabaceae	*Paintera*	*elachistophylla*		1		
127	Fabaceae	*Parkinsonia*	*texana*	*macra*	1		
128	Fabaceae	*Pomaria*	*austrotexana*			1	
129	Fabaceae	*Pomaria*	*wootonii*		1		
130	Fabaceae	*Prosopis*	*glandulosa*	*glandulosa*	1		
131	Fabaceae	*Rhynchosia*	*americana*			1	1
132	Fabaceae	*Rhynchosia*	*senna*				1
133	Fabaceae	*Senna*	*sp.*			1	
134	Fabaceae	*Tephrosia*	*potosina*				1
135	Fabaceae	*Vicia*	*sp.*			1	
136	Fabaceae	*Zornia*	*gemella*				1
137	Fabaceae	*Zornia*	*reticulata*				1
138	Flacourtiaceae	*Neopringlea*	*integrifolia*		1		
139	Flacourtiaceae	*Xylosma*	*flexuosa*			1	
140	Hydrophyllaceae	*Nama*	*hispida*		1		
141	Krameriaceae	*Krameria*	*lanceolata*			1	
142	Krameriaceae	*Krameria*	*ramosissima*			1	1

ID	Familia	Género	Especie	Variedad o ssp	Matorral	Caliche	Praderas
143	Labiatae	*Monarda*	*sp.*		1		
144	Lamiaceae	*Salvia*	*coccinea*		1		
145	Lamiaceae	*Teucrium*	*cubense*		1		
146	Liliaceae	*Smilax*	*bona-nox*		1		
147	Linaceae	*Linum*	*sp.*			1	1
148	Loasaceae	*Cevalia*	*sinuata*			1	
149	Malpighiaceae	*Byrsonima*	*crassifolia*		1		
150	Malpighiaceae	*Galphimia*	*angustifolia*			1	
151	Malpighiaceae	*Malpighia*	*glabra*			1	1
152	Malvaceae	*Abutilum*	*sp.*			1	
153	Malvaceae	*Hibiscus*	*martianus*		1		
154	Malvaceae	*Meximalva*	*filipes*		1		
155	Malvaceae	*Sida*	*ciliaris*			1	
156	Malvaceae	*Sida*	*sp.*			1	1
157	Malvaceae	*Sida*	*tragiifolia*		1		
158	Myrtaceae	*Myrcianthes*	*coccinea*		1		
159	Oleaceae	*Forestiera*	*angustifolia*			1	1
160	Oleaceae	*Schoepfia*	*schreberi*		1		
161	Onagraceae	*Gaura*	*sp.*				1
162	Onagraceae	*Oenothera*	*sp.*			1	
163	Onagraceae	*Onagraceae*	*sp.*			1	
164	Opiliaceae	*Agonandra*	*obtusifolia*		1		
165	Oxalidaceae	*Oxalis*	*berlandieri*		1	1	
166	Oxalidaceae	*Oxalis*	*sp.*				1
167	Passifloraceae	*Passiflora*	*tenuiloba*			1	
168	Poaceae	*Asistida*	*purpurea*	*purpurea*		1	1
169	Poaceae	*Bothriochloa*	*pertusa*			1	1
170	Poaceae	*Bouteloua*	*curtipendula*			1	1
171	Poaceae	*Bouteloua*	*hirsuta*			1	1
172	Poaceae	*Bouteloua*	*radicosa*			1	1
173	Poaceae	*Bouteloua*	*rigidiseta*			1	
174	Poaceae	*Bouteloua*	*sp.*			1	
175	Poaceae	*Bouteloua*	*trifida*			1	
176	Poaceae	*Cenchrus*	*incertus*		1		
177	Poaceae	*Cenchrus*	*spinifex*			1	1
178	Poaceae	*Chloris*	*cucullata*				1
179	Poaceae	*Dicanthium*	*annulatum*		1		
180	Poaceae	*Digitaria*	*cognata*			1	
181	Poaceae	*Elionurus*	*tripsacoides*	*tripsacoides*		1	1
182	Poaceae	*Eragrostis*	*secundiflora*	*oxylepis*		1	1
183	Poaceae	*Eragrostis*	*sessilispica*				1
184	Poaceae	*Helionuras*	*tripsoquelis*				1
185	Poaceae	*Heteropogon*	*contortus*			1	1
186	Poaceae	*Hilaria*	*belangeri*	*belangeri*			1
187	Poaceae	*Panicum*	*maximum*		1		
188	Poaceae	*Paspalum*	*setaceum*	*ciliatifolium*		1	1
189	Poaceae	*Pennisetum*	*ciliare*	*ciliare*	1		
190	Poaceae	*Schizachyrium*	*scoparium*	*littorale*			1
191	Poaceae	*Setaria*	*sp.*		1		
192	Poaceae	*Trachypogon*	*spicatus*			1	1

ID	Familia	Género	Especie	Variedad o ssp	Matorral	Caliche	Praderas
193	Poaceae	*Tridens*	*muticus*			1	
194	Poaceae	*Tridens*	*sp.*			1	
195	Poaceae	*Tridens*	*texanus*			1	1
196	Polygalaceae	*Polygala*	*alba*		1		
197	Polygalaceae	*Polygala*	*glandulosa*			1	
198	Polygalaceae	*Polygala*	*nitida*	*tamaulipana*		1	
199	Polygalaceae	*Polygala*	*palemeri*		1		
200	Polygalaceae	*Polygala*	*sp.*			1	1
201	Renunculaceae	*Clematis*	*drummondi*		1		
202	Rhamnaceae	*Colubrina*	*texensis*			1	
203	Rhamnaceae	*Condalia*	*hookeri*		1	1	1
204	Rhamnaceae	*Karwinskia*	*humboldtiana*		1	1	
205	Rhamnaceae	*Ziziphus*	*obtusifolia*		1		
206	Rubiaceae	*Hedyotis*	*nigricans*			1	
207	Rubiaceae	*Randia*	*latifolia*				1
208	Rubiaceae	*Randia*	*rhagocarpa*		1		
209	Rubiaceae	*Randia*	*sp.*		1		
210	Rubiaceae	*Richardia*	*sp.*			1	
211	Rubiaceae	*Richardia*	*trioccoca*			1	
212	Rutaceae	*Zanthoxylum*	*fagara*		1	1	1
213	Sapindaceae	*Cardiospernum*	*dissectum*			1	
214	Sapindaceae	*Serjania*	*brachycapa*		1		
215	Sapindaceae	*Urvillea*	*ulmaceae*			1	
216	Sapotaceae	*Sideroxylon*	*celastrinum*		1	1	1
217	Sapotaceae	*Sideroxylon*	*palmeri*		1		
218	Scrophulariaceae	*Leucophyllum*	*frutescens*		1	1	
219	Simaroubaceae	*Castela*	*erecta*	*texana*	1		1
220	Solanaceae	*Petunia*	*parviflora*			1	
221	Sterculiaceae	*Ayenia*	*pilosa*				1
222	Sterculiaceae	*Waltheria*	*indica*			1	1
223	Turneraceae	*Turnera*	*difussa*	*aphrodisiaca*		1	1
224	Ulmaceae	*Celtis*	*laevigata*		1		
225	Ulmaceae	*Celtis*	*pallida*		1		
226	Urticaceae	*Urtica*	*sp.*				1
227	Verbenaceae	*Citharexylum*	*berlandieri*		1		1
228	Verbenaceae	*Lantana*	*achyranthifolia*				1
229	Verbenaceae	*Lantana*	*urticoides*				1
230	Verbenaceae	*Lantana*	*velutina*			1	1
231	Verbenaceae	*Limpia*	*alba*		1		
232	Verbenaceae	*Limpia*	*graveolens*			1	
233	Verbenaceae	*Verbena*	*sp.*			1	
234	Zygophyllaceae	*Guajacum*	*angustifolium*		1		
235	Marcilaceae	*Marsilia*	*macropoda*		1		
					97	133	74

Anexo 1

H. Matamoros, Tamps. miércoles 10 de agosto del 2005

M. C. **Magdalena Rovalo Merino**
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P r e s e n t e.-

A través de la presente reciba un cordial saludo y hacerle extensa nuestra ACEPTACIÓN en la participación del proyecto conservación de plantas raras, en el cual se pretenden conservar las escasas colonias que todavía existen.

Estamos enterados que han realizado estudios ecológicos para localizar la presencia de estas plantas en Tamaulipas y que han encontrado algunas de estas especies dentro de nuestra propiedad.

Sabemos que Pronatura Noreste A. C. es una asociación que trabaja en la conservación de los recursos naturales, por lo cual, esperamos vernos beneficiados con nuestra participación en el presente proyecto.

Sin más por el momento, quedo de usted.

Sr. Lic. Luis Esteban García Villalón

Propietario Rancho Loreto
San Fernando, Tamps.

C. c. p. Archivo