

NATURAL RESOURCES AND PHYSICAL ENVIRONMENT
OF
INDIO MOUNTAINS RESEARCH STATION (IMRS),
SOUTHEASTERN HUDSPETH COUNTY, TEXAS
A HANDBOOK FOR STUDENTS AND RESEARCHERS

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INTRODUCTION

It is our pleasure to welcome students and visitors to the Indio Mountains Research Station (IMRS; Indio Ranch). A key mission of this facility is to provide a viable research and learning experience in the Chihuahuan Desert. We hope that this manual will assist you in planning your activities. The Station Director upon entering IMRS will probably give you a short lecture. Please pay attention to your activities, as Indio Ranch is not without potential hazards and long-term research projects are underway that could be disturbed if one is careless.

Indio Mountains Research Station came into being because of the generosity of a benefactor and the far-sighted vision of former UTEP President Haskell Monroe. Upon his death in 1907, the will of Boston industrialist Frank B. Cotton placed his estate, including land holdings in Hudspeth and Culberson Counties, into a trust for the education of Boston women. Never able to meet such lofty expectations, the executor of the estate transferred the Texas property to UTEP (then Texas College of Mines) in 1937 for back taxes owed on the land. In 1984, most of the scattered parcels of land in Hudspeth and Culberson Counties were part of a land exchange with an adjacent owner to form a consolidated, contiguous tract of 38,238 acres. In 1987, at the urging of Biology Department Chairman Jack Bristol and Assistant to the President Wynn Anderson, former President Haskell Monroe proposed that the lands be managed with an emphasis on “research and instruction for the biological and geological sciences” at UTEP. In 1991, then current UTEP President Diana Natalicio reaffirmed and broadened its educational purpose and approved a basic mission organization and goals statement for IMRS. In 1992, UTEP gained management responsibilities for the land from the UT System, so IMRS became a stable educational extension of the UTEP campus. An additional gift of two adjacent sections from Allar Corporation in 1992 added an additional 1280 acres to IMRS, which brought total holdings to 39,518 acres. Recent funding from National Science Foundation and other sources provided new facilities to IMRS, which enhanced its educational mission and field research activities in not only the Biological and Geological Sciences, but in Archeology/Anthropology and Environmental Sciences as well. In 2020, another 1280 acres (2 sections) were purchased from the Chantal and Sofia Ann Slattery trust that included Rio Grande frontage bringing the present total acreage of IMRS to 40,798. The IMRS website, which contains additional information is accessible through www.utep.edu/indio. IMRS and UTEP are members of the Chihuahuan Desert Biosphere Reserve. Other members are the Biosphere Reserves of Mapimi in Mexico, Big Bend National Park, and the Jornada Experimental Range (near Las Cruces, New Mexico). For information on IMRS and opportunities for visitation, contact either the Director, Dr. Jerry D. Johnson, Department of Biological Sciences, The University of Texas at El Paso, El Paso, Texas 79968; 915-747-6984, 915-497-2171 (cell); jjohnson@utep.edu, or Co-Director, Dr. Vicente Mata-Silva; 915-637-3163 (cell); vmata@utep.edu.

All sections below will include a listing of literature cited after those sections along with other relevant references that can be used by students and researchers using IMRS.

COLLECTING IMRS RESOURCES

The collection and preservation of biological materials is an integral part of the learning experience and permitted on IMRS properties within the context of approved research projects

and educational activities. One should understand that most species are protected by state and federal laws and would require a hunting license or permit to take them. Furthermore, some research could be jeopardized if marked individuals under current study were removed from the population. IMRS Directors will review proposed studies and alert or notify individuals to what can and cannot be taken. No collecting of any IMRS resources is permitted without Director's permission.

Biological materials taken should receive proper preservation and disposition, and have adequate locality data. UTEP Biodiversity Collections is one proper depository and will willingly receive and curate specimens for long-term storage. Visitors may wish to take specimens back to their own institution or museum, which is permitted. A requirement is to submit, within reasonable time, a collections list, especially identified material not on inventory lists reported below. **We do not permit taking biological specimens for personal use (i.e., for pets, gardens, souvenirs, or for commercial purposes).**

We discourage taking fossils, especially for souvenirs. If one is interested in removing fossil material from IMRS, the following criteria is required:

1. The collector must know the formation from which the fossils are taken.
2. The collector must obtain GPS coordinates for the sample locality.
3. The fossils will be deposited in a research collection (at UTEP or elsewhere).
4. The list of specimens removed from IMRS is given to the IMRS Director.

Cultural artifacts are scattered over IMRS from past activities of indigenous humans and from more recent ranching and mining ventures. All IMRS archaeological artifacts will be left undisturbed. We request that anyone finding evidence of prehistoric human occupation, such as pottery fragments, scatters of lithic materials, or actual sites of habitation, obtain GPS coordinates for the find and give that information to the station Director.

POLICIES FOR THE PROTECTION OF RESOURCES

IMRS Director will approve research and educational projects, which is necessary to reduce impacts on the physical environment and biological resources and reduce conflicts with educational programs and ongoing research projects.

1. Any indiscriminant collecting of plant, animal, mineral, fossil and cultural material is prohibited, except within the context of approved projects.
2. Off-road vehicle activities are prohibited. SUV and ATV users must access sites using existing roads; off-road sites must be reached only by foot.
3. When collecting by turning rocks, downed wood, sotol and yucca logs, or other natural objects, they will be returned to their original position (see Pike et al., 2010).
4. When temporary pit-fall traps are used, all must be removed when project is completed; flagging should also be removed. Personnel involved with long-term pit-fall trapping projects should close traps when they leave IMRS for more than one day.
5. Use of enduring markers such as spray paint, digging large holes to recover plants and animal material, and prying apart boulders are not permitted.

6. Open campfires are not permitted, except in specified firepits; firewood must be brought in; use of native fuels found on the property is not allowed.
7. Trash must be removed off site. For convenience, Van Horn has community dumpsters.
8. Hunting is not permitted on IMRS unless approved by a Co-Director and a hunting lease is obtained through The University of Texas Lands Office.
9. State or federal permits are required to work with most organisms, and appropriate laws will be followed.
10. Camping within 500 feet of the limited watering holes for wildlife is prohibited (e.g., Squaw Spring and all earthen tanks).

Exceptions to the above rules: One may petition to “bend” some of the above rules. The case for doing so will be presented to a Station Co-Director for approval.

PHYSICAL SETTING

Indio Mountains Research Station headquarters (IMRS HQ) is in the southeast tip of Hudspeth County about 40 km southwest of Van Horn, Texas. IMRS now consists of 40,798 acres. It contains most of the Indio Mountains, which is the lower southern spur of the Eagle Mountains, located to the north, and the recently purchased two sections adjoining the Rio Grande containing The Box Canyon. Elevations range from 900 to 1,600 m.

IMRS is within the Basin and Range Physiographic Province of North America. The topography is mostly the result of block faulting. Tilted beds of mostly Cretaceous limestone are observed in several directions from IMRS HQ. Volcanic activity has further shaped the terrain and will be briefly discussed below. Block faulting, folding, volcanic activity, and contraction and extensional events in the earth’s crust have shaped IMRS’s present terrain (see below).

CHIHUAHUAN DESERT

IMRS is situated within the Chihuahuan Desert portion located in Trans-Pecos, Texas adjacent to the Rio Grande on the south and southwest. Many interpretations of the exact delineation of the entire Chihuahuan Desert have been proposed (see Schmidt, 1979, for a review). The description below will follow the climatic delineation proposed by Schmidt, 1979.

Schmidt, 1979, gathered climatic data from several hundred stations in Mexico and southwestern USA to establish a delineation of the Chihuahuan Desert. He used the Martonne Index of Aridity in his evaluation. Values < 5 are considered to be true desert and those at >10 are grassland. He found that what he considered Chihuahuan Desert sites had an average Martonne Index of Aridity of 7.9 (4.7–10.0 range). He found the climate of the Chihuahuan Desert to be surprisingly uniform. Average precipitation is 235 mm with a narrow range of variation (67% range is 225–275 mm). The average annual temperature is 18.6 C. The reason for uniformity of climate in part is due to: 1) a base elevation of about 1,200 m throughout much of the Desert; 2) orographic effects due to large mountain masses to the east and west; 3) being nearly equidistant between the Pacific Ocean (and Gulf of California) and Gulf of Mexico; 4) having few through-flowing rivers to form erosional lowlands; and 5) being low latitude such that frontal activity is minimal (i.e., most rainfall is from summer monsoon season).

The Chihuahuan Desert extends from the Rio Grande Valley south of Albuquerque, New Mexico, southwestern New Mexico, and an isolated pocket around Pecos, Texas, south through much of the eastern half of Chihuahua, western two-thirds of Coahuila to extreme eastern Durango and southern Coahuila at the transverse extension of the Sierra Madre Oriental. The Chihuahuan Desert as thus defined has an area of 355,000 km². About 75% of the area is in Mexico and makes up 13% of the area of that country. Somewhat controversial is inclusion into the Chihuahuan Desert of an arid area of Mexico south of the transverse extension of the Sierra Madre Oriental, mostly within the states of Zacatecas and San Luis Potosi (Henrickson and Johnston, 1997). That area, called the Saladan, is higher than the Chihuahuan Desert to the north and has a richer flora.

CLIMATE

Indio Mountains Research Station established a weather station in 2006 to collect data. That data may be available from the Director and eventually on the IMRS web site. Schmidt, 1995, has described the climate of Trans-Pecos, Texas, so we have drawn mostly upon information in that source for the account below. De La Cerda, 2011, produced a thesis on influences of orography, weather patterns, and water availability on IMRS.

Precipitation over the Trans-Pecos region of Texas is scant because of subtropical high pressure, orographic barriers, and continentality. Precipitation in El Paso (1,230 m elev.) annually averages 230 mm, that of Marathon (1,230 m elev.) is 375 mm, and the average for the entire Trans-Pecos is about 300 mm. The average rainfall for sites throughout the Chihuahuan Desert is 235 mm, with a 67% range of sites receiving 235–275 mm annually (Schmidt, 1979). More than 70% of the rainfall occurs during the warmest months (June-September). More than half of the moisture yielding precipitation in the Chihuahuan Desert is derived from tropical storms that lift moisture into the troposphere passing over orographic barriers.

Solar insolation in the Trans-Pecos is very high, with El Paso (the “Sun City”) averaging 84% of days per year with sunshine (highest locality in the U.S.). The average annual temperature in the Trans-Pecos is 18° C. The Trans-Pecos is characterized by the highest average maximum temperatures in the winter and the lowest average maximum temperatures in the summer compared to other sites in Texas. El Paso is characterized by having 18 days with the maximum temperature >38° C and 50 days with the lowest temperatures below freezing. Just down the Rio Grande at Presidio, 121 days during an average year are greater than 38° C. The coolest months in the Trans-Pecos average 7–12° C. Cold fronts can drop the average temperature to 6° C. The growing season in the Trans-Pecos is 220–240 days. The last frost is generally in the 3rd week of March and the end of the growing season is normally during the 2nd week of November.

Over about two-thirds of the year winds in the Trans-Pecos are generally westerly. In July and August, the westerly flow is interrupted by easterly flowing winds that bring in moisture from the Gulf of Mexico, thereby increasing humidity. Easterly airflow fades out in September and is normally gone by October.

Thornthwaite, 1931, places the area within the E.B.'d (aird mesothermal with no surplus water (Johnson II et al., 1977). The Precipitation/Evaporation index is less than 16 and the moisture deficiency is between 40% and 60% (Thornthwaite, 1948; Johnson II et al., 1977). Using the Koeppen Climatic Classification, the climate of the area is "BWK" (dry; desert; mean annual temperature less than 64.4° F) (Underwood, 1963). A more detailed Koeppen Classification (Russell, 1945) places the area in "BWSCw" (mesothermal desert steppe with winter dry season).

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GEOLOGY

Formation of the Indio Mountains. In the Cretaceous, in the area of what is now the Indio Mountains was a shallow sea filling what is now known as the Chihuahuan Trough. At the eastern edge of the Chihuahuan Trough, sediments were deposited that eventually gave rise to the 3,210 m section of Cretaceous rocks exposed in IMRS today (Underwood, 1963; Wallace, 1972; Reaser, 1974; Price et al., 1985). Sediments were derived from nearby land and thus many of the beds have a sand and pebble composition that reflect that erosional source, while other beds are of more typical marine limestone origin. During the Laramide Orogeny from the Late Cretaceous into the Early Tertiary, the area was deformed primarily by thrust faulting, folding and some strike-slip faulting (Wallace, 1972; Price et al., 1985). The next event to shape the area was volcanic activity during the Oligocene. Although calderas were located no closer than seven miles north of the central Indio Mountains, their eruptions deposited ash on the area to form tuffs and trachytes (welded tuffs) (Price et al., 1985). The rimrock of Flat Top Mountain that is visible southeast of IMRS HQ is made of trachyte (Wallace, 1972). In the Middle and Late Tertiary, the extensional block faulting that gave rise to the Basin and Range Physiographic Province put finishing touches on the present shape of the Indio Mountains, except for normal erosional processes (Price et al., 1985; Rohrbaugh, 2001). Of note is the "Indio Fault" that

divides the range into an eastern block and a western block (Wallace, 1972). The vertical slippage along that fault was over 7000 feet. Carciumaru and Ortega, 2008, commented on the geologic structure of the northern margin of the Chihuahua Trough, including the Indio Mountains, and found evidence for controlled deformation during the Laramide Orogeny.

Stratigraphy. The stratigraphy of the Indio Mountains consists of a 3,210 m Cretaceous section, four layers of Oligocene volcanic tuffs, trachytes, and Tertiary to Recent alluvial sediments (Underwood, 1963; Wallace, 1972; Reaser, 1973). Underwood, 1963, divided the Cretaceous section into eight formations. Some of the beds are carbonate (limestone) and others are siliclastic (sandstones and conglomerates). Youngest formation is the Buda Limestone, and oldest is the Yucca Formation of siliclastic conglomerate that can be observe in the bottom of Echo Canyon and just east of IMRS HQ.

The Yucca Formation is the oldest formation in the Indio Mountains (Underwood, 1963). This formation is 621 m thick (Price et al., 1985). It is siliclastic and without fossils. It has four mapable members as follows (Price et al., 1985):

Y1 Basal conglomerate

Y2 Conglomerate with interbedded small amounts of sandstone

Y3 Sandstone interbedded with small amounts of conglomerate

Y4 Sandstone and sandy siltstone that include clay drapes, ripple marks and burrows.

At the upper contact of the Yucca Formation with the younger Bluff Formation is a 60 m thick fossiliferous section of limestone and shale that is not assigned to either formation and is referred to as a “transition zone.”

The Bluff Formation is 239 m thick in the Indio Mountains (Wallace, 1972). The lower part is described as being light gray oolitic limestone with sparry calcite cement. The middle of the Bluff Formation is of alternating layers of fossiliferous limestone and quartz sandstone. The upper part of the Bluff Formation is mostly fossiliferous micritic limestone (Underwood, 1962, 1963; Wallace, 1972). Above the Bluff Formation is the Cox Sandstone. It caps the central ridge of the Indio Mountains and is 380 m thick (Underwood, 1962, 1963; Wallace, 1972). It is described as being light but variable in color and quartz sandstone with thin beds of limestone and conglomerate (Wallace, 1972). Above the Cox Sandstone are remaining formations consisting of Finlay Sandstone (120 m thick), Benavides Formation (36 m thick), Espy Limestone (328 m thick), Eagle Mountains Sandstone (23 m thick) and Buda Limestone (youngest; 65 m thick). Underwood, 1962, 1963, describe those formations in detail.

Mining. Sporadic exploration has occurred in the area since the early 1900’s. In the late 1940’s, Walter Rossman of Kerrville, Texas, prospected at Black Diamond Mine and Rossman Prospect, sinking a vertical shaft to a depth of 100 ft. (Wallace, 1972). Cecil Geaslin and Walter Mayfield of Van Horn, Texas, examined the Carpenter Prospect and the Purple Sage Mine. In the 1950’s the Carpenter Exploration Company sank the Purple Sage shaft to a depth of 175 feet (Wallace, 1972). Wallace learned from Geaslin that two rail cars of ore were shipped for processing (Wallace, 1972). The Carpenter Prospect ore was about 2.5% copper and that from the Purple Sage Mine contain insufficient amounts to offset the shipping costs from Scott’s Crossing.

In 1970, the Duval Corporation conducted a geochemical survey and drilled a 2,250 ft. hole near the Rossman Prospect in an attempt to check for mineralization and intercept Permian limestone. They did find limestone of unknown age at 1,880 ft., but no significant mineralization was found (Wallace, 1972).

Paleontology. At the top of the Yucca Formation is a fossiliferous bed of limestone and shale that contains: *Actinastrea* sp., *Microsolena texana* Wells, *Unio* sp., *Cardium* sp., *Arctica* sp., *Ostrea* sp., *Exogyra quitmanensis* Cragin, *Corbula* sp., *Toucasia* sp., *Turritella* sp., *Trigonia* sp., and *Lima* sp. (Wallace, 1972). Within the upper part of the Bluff Formation is a fossiliferous micritic limestone layer that contains: *Orbitolina* sp., miliolid foraminifera, *Pecten* sp., *Cyprimeria* sp., *Hemiaster* sp., *Enallaster* sp. *Holectypus* sp., and ostracods (Wallace, 1972). In a zone of limestone near the top of the Cox Sandstone, *Exogyra texana* Roemer, *Gryphaea washitaensis* Hill, and *Toucasia* sp. occur (Wallace, 1972). Underwood, 1962, 1963, list fossils in the upper Cretaceous strata for which an abbreviated summary is available in Table 1. It should be noted that some beds in the Cretaceous sequence were of terrestrial origin as evidenced by the finding of a fossil cycad strobilus or cone. Ager et al., 1963, described a new species of Cretaceous brachiopod from IMRS, *Lamellaerhynchia indi*, from the Yucca and Bluff formations.

Elsewhere on IMRS, the volcanic tuffs have preserved an Oligocene soil surface where *Meshippus* sp., oreodont remains, and the land snail *Humboldtiana* sp. have been found (Wallace, 1972; Underwood and Wilson, 1974). At the south end of IMRS near the Rio Grande, as many as three Cenozoic alluvial terraces are present and eroded that should contain fossils.

Table 1: Partial inventory of the Upper Cretaceous fauna by formation.

Taxon	Upper Cretaceous Formations							
	Yucca	Bluff	Cox	Finlay	Benavides	Espey	Eagle	Buda
Foraminifera:								
<i>Dictyoconus walnutensis</i>				X				
<i>Haplostiche texana</i>							X	
<i>Orbitolena</i> sp.		X						
Coelenterate: Anthozoans								
<i>Isoastrea whitneyi</i>	X							
<i>Microsolena texana</i>	X							
<i>Polytremacias cf. hancockensis</i>	X							
Brachiopoda								
<i>Kingena wacoensis</i>						X		
<i>Lamellaerhynchia indi</i>	X	X						
Mollusca: Cephalopoda								
<i>Acathohoplites</i> sp.	X							
<i>Budaiceras</i> sp.								X
<i>Engonoceras</i> sp.			X	X				
<i>Eopachydiscus</i> sp.						X		
<i>Eradiolites davidsoni</i>				X				
<i>Goodhallites cf. aquilerae</i>						X		
<i>Metengonoceras</i> sp.							X	
<i>Mortoniceras</i> sp.						X		

<i>Oxytropidoceras autocarinatum</i>									X
<i>Oxytropidoceras belknapi</i>									X
<i>Oxytropidoceras bravoense</i>									X
<i>Oxytropidoceras cf. chihuahuanensis</i>				X					X
<i>Oxytropidoceras geniculatum</i>									X
<i>Oxytropidoceras cf. trinitense</i>									X
<i>Pervinquieria equidistans</i>									X
<i>Pervinquieria sp.</i>				X					
Mollusca: Gastropods									
<i>Actaeonella texana</i>				X					
<i>Alipes sp.</i>									X
<i>Aptyxiella sp.</i>	X								
<i>Cerithium cf. bosquense</i>								X	
<i>Lunatia sp.</i>				X					
<i>Natica sp.</i>	X								
<i>Nerinea sp.</i>	X		X	X					
<i>Turritella sp.</i>	X							X	X
<i>Tylostoma harrisi</i>									X
<i>Tylostoma sp.</i>	X	X	X	X	X	X	X		
Mollusca: Pelecypods									
<i>Alectryonia carinata</i>					X				X
<i>Anatina sp.</i>	X	X							
<i>Anchura sp.</i>									X
<i>Arctica roemeri</i>			X						
<i>Arctica sp.</i>	X								
<i>Astarte cf. roemeri</i>			X						
<i>Cardium sp.</i>	X								
<i>Corbula sp.</i>	X								
<i>Crassatellites sp.</i>	X								
<i>Cyprimeria sp.</i>	X	X							
<i>Exogyra cartledgei</i>								X	
<i>Exogyra plexa</i>							X		
<i>Exogyra quitmanensis</i>	X	X					X		
<i>Exogyra texana</i>		X	X	X	X	X			
<i>Gryphaea corrugate</i>							X		
<i>Gryphaea graysonana</i>								X	
<i>Gryphaea mucronata</i>			X						
<i>Gryphaea navia</i>						X			
<i>Gryphaea washitaensis</i>			X					X	
<i>Homomya sp.</i>	X	X							
<i>Lima scumardi</i>									X
<i>Lima sp.</i>	X								
<i>Monopleura sp.</i>			X						
<i>Ostrea sp.</i>	X	X	X						
<i>Pecten georgetowensis</i>								X	
<i>Pecten irregularis</i>			X						
<i>Pecten cf. subalpina</i>							X		
<i>Pecten texanus</i>								X	
<i>Pecten sp.</i>	X	X					X		X
<i>Pholadomaya sancti-sabae</i>								X	
<i>Pholadomya shattacki</i>									X
<i>Protocardia sp.</i>	X	X	X						
<i>Requinea sp.</i>					X				
<i>Sphaera sp.</i>							X		

<i>Tapes</i> sp.		X			
<i>Toucasia</i> cf. <i>patagata</i>				X	
<i>Toucasia</i> cf. <i>texana</i>				X	
<i>Toucasia</i> sp.	X		X		
<i>Trigonia</i> <i>mearnsi</i>	X				
<i>Trigonia</i> <i>stolleyi</i>	X				X
<i>Trigonia</i> sp.	X	X			X
<i>Unio</i> sp.	X				

Echinodermata: Echinoids

<i>Actinastrea</i> <i>whitneyi</i>	X				
<i>Actinastrea</i> sp. A	X				
<i>Actinastrea</i> sp. B	X				
<i>Actinastrea</i> sp. C	X				
<i>Enallaster</i> cf. <i>texanus</i>					X
<i>Enallaster</i> sp.		X		X	
<i>Epiaster</i> cf. <i>elegans</i>				X	
<i>Hemiaster</i> cf. <i>elegans</i>				X	
<i>Hemiaster</i> sp.		X			X
<i>Holaster</i> <i>simplex</i>				X	
<i>Holectypus</i> cf. <i>planatus</i>				X	
<i>Holectypus</i> sp.		X		X	
<i>Pedinopsis</i> sp.				X	
<i>Salenia</i> sp.				X	
<i>Tetragramma</i> sp.				X	

SOILS

The only early survey report we are aware of for the IMRS area is a review of Trans-Pecos soils by Carter et al., 1928. The soils of the area are mapped as either “mostly limestone” (essentially bedrock areas) or “Reeves of very gravelly loam.” The latter is composed almost entirely of rounded gravel with small fine-earth content. It is a common soil type found on ancient terraces bordering the Rio Grande. United States Department of Agriculture, Natural Resources Conservation Service, 2013, did an extensive soil report on Hudspeth County, Texas.

Johnson II et al., 1977, reviewed some soil maps produced by the Department of Agriculture and the Texas Agricultural Experiment Station, Texas A&M University, and discusses the Harkey-Glendale Association found along the flood plain of the Rio Grande. This is a deep, nearly level, calcareous, loamy soil found near the Rio Grande.

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CULTURAL RESOURCES

The cultural resources on IMRS span a long time period, from perhaps the Paleo-American or Paleo-Indian stage (ca. 10,000-6,000 B.C.) to the modern activities of ranching and mining. About 62 Native American sites are documented on IMRS (Carmichael and Unsinn, 2000). Most Native American sites consist of small ring middens and large sheet middens of fire-cracked rock known to be associated with the pit baking of succulent plants; Carmichael and Unsinn, 2000, also reported lithic and ceramic scatters.

An introduction to the archeological resources of this part of Trans-Pecos Texas are found in papers by Greer, 1965, Johnson II et al., 1977, Hedrick, 1988, and Carmichael and Unsinn, 2000, who covers sites documented on IMRS.

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PLANT COMMUNITIES

The plant communities of the IMRS have not been studied or mapped, except for an overview classification by Escamilla, 2012, as part of a dissertation on land cover change. Most of the following alerts students and visitors to some information sources and to what we think is represented on IMRS.

Henrickson and Johnston (1983) would classify IMRS vegetation as Chihuahuan Desert Scrub. Some units that appear to be represented on IMRS following their scheme are:

- Larrea* scrub (dominant around the ranch house).
- Mixed desert scrub.
- Canyon scrub.
- Lechuguilla scrub (in areas of limestone outcrops).
- Prosopis-Atriplex* scrub (in flat areas with deep soil).
- Riparian Woodlands (something near to that at Squaw Spring).

The Texas Natural Heritage Program series level plant communities (Anonymous, 1993) indicates the following should occur on IMRS:

- Apache plume series (in arroyos).
- Creosote-mariols series (on well-drained slopes with limestone substrate).
- Creosote series (*Larrea*, *Atriplex*, *Flourensia*, *Acacia*, *Parthenium*) (something similar occurs around HQ, but it is not a perfect match).
- Lechuguilla-sotol series (occurs on thin soils on limestone).
- Mesquite-saltbush series (occurs in areas of deep soil).
- Viscid acacia series (occurs on some gravel benches).

The Association for Biodiversity Information's, 2001, international classification of ecological communities for the Chihuahuan Desert region, offers the following:

- Larrea tridentata* shrubland alliance
- Atriplex canescens* shrubland alliance
- Fallugia paradoxa* intermittently flooded shrubland alliance
- Acacia neovernicosa* shrubland alliance
- Prosopis glandulosa* shrubland alliance
- Chilopsis linearis* shrubland alliance

The above are described in some detail on the Web along with others that may occur on IMRS. Some unadulterated grassland may occur on IMRS property, but must be limited because we have not observed it for determining its numerically dominant species, so it is not considered herein. Escamilla, 2012, assessed landcover changes on IMRS.

LITERATURE CITED AND SELECTED REFERENCES: PLANT COMMUNITIES

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SUMMARY OF THE BIOTA

Authorities follow scientific names. Common names are ones commonly found in the literature. Most localities listed with records of taxa are identified in the IMRS Gazetteer section. Authorities follow species names. * refers to introduced species, ** refers to fossils, @ refers to species with questionable information. Collectors and sometimes field numbers are in brackets. Common names are from literature sources or made up from names associated with species. Vouchers are mostly in UTEP herbarium. Logan M. Horne (UTEP) added several species and localities beginning in 2021.

LICHENS

Compiled by Richard D. Worthington

Collections referenced below are deposited at UTEP and COLO. Thanks to W.A. Weber, M. Schulz, and C.M. Wetmore for determinations on many of the lichens. Family common names are not given.

ACAROSPORACEAE

- Acarospora fuscata* (Schrader) Arnold **Brown Cobblestone Lichen**
 [McGoldrick 90].
Note: Substrate volcanic rock.
- Acarospora schleicheri* (Acharius) Massalongo **Schleicher's Cracked Lichen**
 [McGoldrick 89, 101, 115].
Note: Substrate volcanic rock, sandstone and conglomerate.
- Sarcogyne regularis* Körber **Frosted Grain-spored Lichen**
 [Worthington 21652, 31913].
Note: Substrate limestone flakes on pavement.

CANDELARIACEAE

- Candelina submexicana* (De Lesd.) Poelt **Candelina Lichen**
 [McGoldrick 91; Worthington 21671].
Note: Substrate igneous rock.

COLLEMATACEAE

- Collema tenax* (Swartz) Acharius **Black Jelly Lichen**
 [Worthington 31908].
Note: Substrate dirt on limestone outcrop.
- Collema texanum* Tuckerman **Texas Jelly Lichen**
 [Worthington 21676, 21678, 21702].
Note: Substrate limestone.

HYMENELIACEAE

- Circinaria contorta* (Hoffmann) Nordin, Savić, and Tibel **Chiseled Sunken-disk Lichen**
 [McGoldrick 118 (COLO)].
- Lobothallia alphoplaca* (Wahlenberg) Hafellner **Variable Sunken-disk Lichen**
 [Worthington 21666].
Note: *Aspicilia alphoplaca* (Wahlenberg) Poelt and Leuckert is a synonym. Substrate rock.

LECANORACEAE

- Lecanora bipruinosa* Fink **Rim Lichen**
 [McGoldrick 93].
Note: Substrate sandstone.
- @*Lichiella nigritella* (Lettau) Moreno and Egea
 [Worthington 21699, 21700]
Note: *Gonohymenia nigritella* (Lettau) Henssen is a synonym. Substrate limestone.

<i>Pleopsidium chlorophanum</i> (Wahlenberg) Zopf [Worthington (UTEP).	Gold Cobblestone Lichen
<i>Acarospora texana</i> Magnusson [Worthington]	Texas Acarospora Lichen
LICHENACEAE	
<i>Heppia lutos</i> (Acharius) Nylander [McGoldrick 111; Worthington 21680]. Note: Removed from the family Heppiaceae by Schultz and Büdel, 2003. Substrate on dirt in limestone cracks.	Pale Soil Ruby Lichen
<i>Lichinella granulosa</i> Schultz [Schultz, 2005; Schultz 16292c]. Note: Substrate calcareous sandstone.	Grainy Rock Licorice Lichen
<i>Lichinella minnesotensis</i> (Fink) Esslinger [Schultz, 2005, mapped].	Minnesota Rock Licorice Lichen
@ <i>Lichinella sinaica</i> (Martin and Galun) Moreno and Egea [Schultz, 2005; Schultz 16306]. Note: Substrate limestone.	
@ <i>Lichinella stipulata</i> Nylander [Schultz, 2005].	
<i>Peccania arizonica</i> (Tuckerman) Herre [McGoldrick 106]. Note: Substrate limestone.	Arizona Peccania Lichen
@ <i>Phloeopeccania major</i> Henssen and Weber [<i>nomen in edit</i>] [McGoldrick 97, 107] Note: Substrate limestone.	
<i>Pterygiopsis atra</i> Vanio [Schultz, 2006, Schultz 16311a; Worthington 31911]. Note: Substrate limestone.	Pterygiopsis Lichen
<i>Pterygiopsis canariensis</i> Henssen [Schultz, 2006; Schultz 16317d; Worthington (UTEP)].	
<i>Thyrea confuse</i> Henssen [Worthington 31910]. Note: <i>Thyrea pulvinata</i> of American authors. Substrate limestone.	Confused Limestone Lichen
<i>Thyrea pachyphylla</i> (Müller Argoviensis) Henssen [Worthington 31909]. Note: Substrate limestone.	
PARMELIACEAE	
<i>Xanthoparmelia novomexicana</i> (Gyelnik) Hale [Worthington 21684]	New Mexico Rock-shield Lichen
<i>Xanthoparmelia psoromifera</i> (Kurok) Hale [Worthington 21682, 21682B; McGoldrick 83].	Xanthoparmelia Lichen
<i>Xanthoparmelia subdecipiens</i> (Vainio) Hale [Lieb 1000; McGoldrick 121; Worthington 21682A].	Deceiving Rock-shield Lichen
PELTULACEAE	
<i>Peltula sp.</i> [McGoldrick 98]. Note: Substrate sandstone.	
PHYSICIACEAE	
<i>Buellia punctata</i> (Hoffmann) Coppins and Schreideggar [Worthington 21698]. Note: Substrate limestone.	Tiny Button Lichen
<i>Buellia retrovertens</i> Tuckerman [McGoldrick 103; Worthington 21670]. Note: Substrate igneous rock.	Disk Lichen

<i>Physcia biziana</i> (Massalongo) Zahlbr. [Lieb 1058]. Note: Substrate bark of shrub.	Rosette Lichen
PLACYNTHIACEAE	
<i>Placynthium nigrum</i> (Hudson) Gray [Worthington 31907]. Note: Substrate limestone.	Blackthread Lichen
PSORACEAE	
<i>Psora crenata</i> (Taylor) Reinke [McGoldrick 112]. Note: Substrate dirt in limestone cracks.	Crenate Fishscale Lichen
<i>Psora pseudorusseii</i> Timdal [Worthington 21669, 21701, 31904]. Note: Substrate limestone.	False Russel's Fishscale Lichen
RAMALINACEAE	
<i>Toninia squalida</i> (Acharius) Massalongo [McGoldrick 80]. Note: Familia synonymous with Biatoraceae by some.	Squalid Bruised Lichen
TELOSCHISTACEAE	
<i>Caloplaca galactophylla</i> (Tuckerman) Zahlbruckner [Worthington 31905]. Note: Substrate limestone.	Firedot Lichen
<i>Caloplaca microphyllina</i> (Tuckerman) Hasse [Worthington 21677]. Note: Substrate on wood.	Orange Lichen
<i>Caloplaca rubelliana</i> (Acharius) Lojka [McGoldrick 95]. Note: Substrate sandstone	Rose Gold Lichen
<i>Caloplaca squamosa</i> (B. de Lesd.) Zahlbruckner [Worthington 21672; Wetmore, 2003]. Note: Substrate igneous rock.	SunBurst Lichen
VERRUCARIACEAE	
<i>Dermatocarpon minutum</i> (Linnaeus) Mann [Worthington 21667]. Note: Substrate rock.	Leather Lichen
<i>Endocarpon pusillum</i> Hedwig [McGoldrick 96; Worthington 31906;]. Note: Substrate on dirt in limestone cracks.	Scaly Stippled Lichen
<i>Placidium</i> sp. [Worthington 21673, 21674].	
<i>Staurothele drummondii</i> (Tuckerman) Tuckerman [Worthington 21668]. Note: Substrate limestone.	Drummond's Rock Pimple Lichen
Note: Several collections originally identified as <i>Catapyrenium lachneum</i> need review.	

NONVASCULAR PLANTS

Compiled by Richard D. Worthington

PHYLUM: BRYOPHYTA (Mosses)

We thank William A. Weber for determinations of our moss specimens. A set of duplicate specimens is at COLO. We thank Richard H. Zander for determining *Pseudocrossidium* while reviewing duplicates at COLO.

BRYACEAE

Bryum argenteum Hedwig Silver Moss
[Worthington 21694].

FUNARIACEAE

Funaria flavicans Michaux Funeria Moss
[Worthington 21688].

GRIMMIACEAE

Grimmia pulvinata (Hedwig) Smith Pulvinate Dry Rock Moss
[Worthington 21665].

Jaffuelobryum wrightii (Sullivant) Sullivan and Lesquereux Wright's Jaffuelobryum Moss
[Worthington 21664, 21691].

POTTIACEAE

Pseudocrossidium crinitum (Schultz) Zander Pseudocrossidium Moss
[Lieb (UTEP); Worthington 21690].

Note: *Tortula aurea* Bartram is a synonym.

Syntrichia ruralis (Hedwig) Weber and Mohr Twisted Moss
[Worthington 21686, 21687, 21696].

Note: *Tortula ruralis* (Hedwig) Gaertn is a synonym.

Tortula mucronifolia Schwaegr. Mucronleaf Tortula Moss
[Worthington 21692].

Weissia ligulaefolia (Bartram) Grout Liguleleaf Weissia Moss
[Worthington 21697].

PHYLUM: HEPATOPHYTA (Liverworts)

AYTONIACEAE

Plagiochasma rupestre (Forster and Forster) Steph. Cliff Waxwort Liverwort
[Worthington 21685].

VASCULAR PLANTS

Revised and expanded since Lieb et al., 1996, by Richard D. Worthington, and others.

PHYLUM: PTERIDOPHYTA (Ferns)

PTERIDACEAE (Brake Fern Family)

Adiantum capillus-veneris Linnaeus Southern Maidenhair Fern
[Worthington 25507].

Note: This species grows among rocks in streambed at Squaw Spring.

Astrolepis cochisensis (Goodding) Benham and Windham Cochise Scaly Cloakfern
[Lieb 814, 846].

Astrolepis integerrima (Hook) Benham and Windham Wavyleaf Cloakfern
[Lieb 931].

Astrolepis sinuata (Lagasca and Swartz) Benham and Windham Bulb Lipfern
[Worthington 13568, 21644].

Cheilanthes eatonii Baker Eaton's Lipfern
[Lieb 932; Worthington 21646].

<i>Cheilanthes feei</i> Moore [Lieb 928].	Lipfern, Fee Lipfern
<i>Pellaea intermedia</i> Mettenius and Kuhn [Lieb 937; Worthington 30682].	Creeping Cliffbrake

PHYLUM: LYCOPODIOPHYTA (Spikemosses)

SELAGINELLACEAE (Spikemoss Family)

<i>Selaginella lepidophylla</i> (Hook and Greville) [Lieb 930]. Note: Common on north-facing conglomerate near ranch House.	Resurrection Plant
<i>Selaginella peruviana</i> (Milde) Hieron [Worthington 31920].	Peruvian Spikemoss

PHYLUM: CONIFEROPHYTA (Conifers)

CUPRESSACEAE (Cypress Family)

<i>Juniperus pinchotii</i> Sudworth [Garza, 2018; Lieb 933]. Records: Oak-Juniper Arroyo, 2017, K. Garza (UTEP).	Red Berry Juniper
<i>Juniperus coahuilensis</i> (Martinez) Records: Juniper Groove, 2017, K. Garza (UTEP).	Coahuila Juniper

PHYLUM: GNETOPHYTA (Gnetophytes)

EPHEDRACEAE (Mormon-tea Family)

<i>Ephedra aspera</i> Engelmann and Watson [Lieb 1079, 1355]. Note: One collection from near Flat Top Mountain [Worthington 30676], may be a different species.	Mormon-tea
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PHYLUM: MAGNOLIOPHYTA (Flowering Plants)

Powell and Worthington, 2018, published a large volume on flowering plants of Trans-Pecos, Texas.

CLASS: MAGNOLIOPSIDA (Dicots)

ACANTHACEAE (Acanthus Family)

<i>Ruellia parryi</i> Gray [Lieb 985, 1298; Worthington 23342].	Parry's Wild-petunia
<i>Stenandrium barbatum</i> Torrey and Gray [Lieb 1018].	Early Shaggytuft

AMARANTHACEAE (Amaranthus Family)

* <i>Amaranthus blitoides</i> Watson [Worthington 25933].	Prostrate Pigweed
<i>Amaranthus palmeri</i> Watson [Lieb 1352].	Palmer's Amaranth; Pigweed
<i>Froelichia arizonica</i> Thornber and Standley [McGoldrick 53].	Arizona Snakecotton

<i>Tidestromia lanuginosa</i> (Nuttall) Standley [McGoldrick 50].	Woolly Honeysweet
<i>Tidestromia suffruticosa</i> (Torrey) Standley [Lieb 1208].	Shrubby Honeysweet
ANACARDIACEAE (Sumac Family)	
<i>Rhus microphylla</i> Engelman and Gray [Lieb 1116].	Littleleaf Sumac
<i>Rhus virens</i> Lindheimer and Gray [Lieb 929; Worthington 17842].	Evergreen Sumac
APOCYNACEAE (Dogbane Family)	
<i>Telosiphonia macrosiphon</i> (Torrey) Henrickson [Lieb 824].	Rock-trumpets
Note: <i>Macrosiphonia macrosiphon</i> (Torrey) Heller is a synonym.	
ARISTOLOCHIACEAE (Pipevine Family; Birthwort Family)	
<i>Aristolochia wrightii</i> Seemann [Lieb 808].	Wright's Dutchman's-pipe
ASCLEPIADACEAE (Milkweed Family)	
<i>Asclepias asperula</i> (Decne.) Woodson Note: Purple Sage Mine, 30 April 2010 V. Mata-Silva (UTEP). Some put it in Dogbane Family, Apocynaceae.	Spider Antelope-horns Wilkweed
<i>Asclepias macrotis</i> Torrey [Lieb 991].	Long-hoof Milkweed
<i>Asclepias oenotheroides</i> Schlttdl. and Cham. Records: Near Purple Sage Mine, 27 August 2016, V. Mata-Silva (UTEP).	Zizotes Milkweed
<i>Asclepias subverticillata</i> (Gray) Vail [Lieb 1001].	Horsetail Milkweed
<i>Sarcostemma crispum</i> Bentham [Lieb 1183].	Wavyleaf Milkvine
ASTERACEAE [COMPOSITAE] (Sunflower Family)	
<i>Ageratina wrightii</i> (Gray) King and Robins [Lieb 1181].	Wright's Snakeroot
Note: <i>Eupatorium wrightii</i> Gray is a synonym.	
<i>Ambrosia confertiflora</i> De Candolle [Lieb 1006; Worthington 17949].	Weak-leaf Ragweed
<i>Aphanostephus ramosissimus</i> De Candolle [McGoldrick 58].	Low Faintcrown
<i>Artemisia ludoviciana</i> Nuttall [Worthington 17473].	Wormwood
<i>Baccharis salicifolia</i> (Ruiz and Pavon) Persoon [Worthington 17469].	Willow Baccharis
Note: <i>Baccharis glutinosa</i> Persoon is a synonym.	
<i>Baccharis salicina</i> Torrey and Gray [Lieb 1011; Worthington 17479].	Great Plains Seep Willow
<i>Bahia absinthifolia</i> Bentham [Worthington 17454].	Hairy-seed Bahia
<i>Bahia pedata</i> Gray [Lieb 1140].	Blunt-scale Bahia
<i>Baileya multiradiata</i> Harvey and Gray [McGoldrick 64].	Desert Marigold
<i>Chaetopappa ericoides</i> (Torrey) Nesom [Lieb 1213].	Sand Aster
Note: <i>Leucelene ericoides</i> (Torrey) Greene is a synonym.	
<i>Chrysactina mexicana</i> Gray [Lieb 1211].	Damianita

<i>Cirsium ochrocentrum</i> Gray [Worthington 17490].	Yellow-spine Thistle
<i>Cirsium undulatum</i> (Nuttall) Sprengel [Lieb 856, 1044].	Wavy-leaf Thistle
<i>Conoclinium greggii</i> (Gray) Small [Lieb 1045; Worthington 17452]. Note: <i>Eupatorium greggii</i> Gray is a synonym.	Mist-flower
* <i>Conyza canadensis</i> (Linnaeus) Cronquist [Worthington 17461].	Canadian Horseweed
<i>Diaperia verna</i> (Rafinesque) Morefield [Lieb 1097, 1124; Worthington 30681].	Spring Pigmycudweed
<i>Erigeron divergens</i> Torrey and Gray [Lieb 1102, 1211].	Spreading Fleabane Daisy
<i>Erigeron modestus</i> Gray [Lieb 1241].	Plains Fleabane Daisy
<i>Erigeron tracyi</i> Greene [Lieb 810, 1201].	Running Fleabane Daisy
<i>Flourensia cernua</i> De Candolle [Lieb 1344].	Tarbrush
<i>Gaillardia pinnatifida</i> Torrey [Lieb 1215].	Red-dome Blanket-flower
<i>Gutierrezia microcephala</i> (De Candolle) Gray [Worthington 17466].	Thread-leaf Snakeweed
<i>Gutierrezia sphaerocephala</i> Gray [Lieb 1179].	Round-head Snakeweed
<i>Gymnosperma glutinosum</i> (Sprengel) Lessing [Worthington 17485].	Gumhead
<i>Hedosyne ambrosiifolia</i> (Gray) Strother [Lieb 1035]. Note: <i>Iva ambrosiifolia</i> (Gray) Gray is a synonym.	Ragged Marsh-elder
<i>Helenium microcephalum</i> De Candolle [Lieb 1012].	Small-head Sneezeweed
<i>Helianthus ciliaris</i> De Candolle [Lieb 1197].	Texas Blueweed
<i>Isocoma pluriflora</i> (Torrey and Gray) Greene [Lieb 1032]. Note: <i>Isocoma wrightii</i> (Gray) Wooton and Standley is a synonym.	Southern Jimmyweed
<i>Jefea brevifolia</i> (Gray) Strother [Worthington 17465]. Note: <i>Zexmenia brevifolia</i> Gray is a synonym.	Boss Daisy
<i>Laennecia coulteri</i> (Gray) Nesom [Worthington 23364]. Note: <i>Conyza coulteri</i> Gray is a synonym.	Coulter's Woolwort
<i>Machaeranthera tanacetifolia</i> (Kunth) Nees [Lieb 1219].	Tahoka-daisy
<i>Melampodium leucanthum</i> Torrey and Gray [Lieb].	Plains Blackfoot-daisy
<i>Nicolletia edwardsii</i> Gray [McGoldrick 11, 21].	Edward's Nicollet
<i>Packera tampicana</i> (De Candolle) Jeffrey [Lieb 934, 935, 1091].	Great Plains Ragwort
<i>Parthenium confertum</i> Gray [McGoldrick 70].	Gray's Feverfew
<i>Parthenium incanum</i> Kunth [McGoldrick 42].	Mariola

<i>Pectis angustifolia</i> Torrey [McGoldrick 13, 49].	Lemonweed
<i>Porophyllum scoparium</i> Gray Note: It grows in arroyos near IMRS HQ, but not vouchered.	Trans-Pecos Poreleaf
<i>Psathyrotopsis scaposa</i> (Gray) Robins. [Lieb, UTEP]. Note: <i>Psathyrotes scaposa</i> Gray is a synonym.	Naked Turtleback
<i>Pseudognaphalium stramineum</i> (Kunth) Weber [Worthington 17478]. Note: <i>Gnaphalium chilense</i> Sprengel is a synonym.	Cotton-batting-plant
<i>Psilactis asteroides</i> Gray [Lieb 1195]. Note: <i>Machaeranthera boltoniae</i> (Greene) Turner and Horne is a synonym.	New Mexico Ray-aster
<i>Psilostrophe gnaphalioides</i> De Candolle [Worthington 32537].	Dudweed
<i>Sartwellia flaveriae</i> Gray [Lieb 1198].	Thread-leaf Glow-wort
<i>Senecio flaccidus</i> Lessing [Lieb 1100]. Note: <i>Senecio douglasii</i> De Candolle is a synonym.	Thread-leaf Groundsel
* <i>Sonchus oleraceus</i> Linnaeus [Worthington 23362].	Common Sow-thistle
<i>Symphotrichum subulatum</i> (Michaux) Nesom [Lieb 1349; Worthington 17455]. Note: <i>Aster subulatus</i> Michaux is a synonym.	Seaside Aster
<i>Tetraneuris scaposa</i> De Candolle [Lieb 1139]. Note: <i>Hymenoxys scaposa</i> (De Candolle) Parker is a synonym.	Naked Rubberweed
<i>Thelesperma longipes</i> Gray [Lieb 835].	Long-stalk Greenthread
<i>Thelesperma megapotamicum</i> (Sprengel) Kuntze [Worthington 17475].	Navajo-tea; Hopi-tea
<i>Thymophylla acerosa</i> (De Candolle) Strother [Lieb 845, 1263]. Note: <i>Dyssodia acerosa</i> De Candolle is a synonym.	Prickle-leaf Dogweed
<i>Thymophylla pentachaeta</i> (De Candolle) Small [Lieb 839; McGoldrick 65]. Note: <i>Dyssodia pentachaeta</i> De Candolle is a synonym.	Parralena
<i>Trixis californica</i> Kellogg [Lieb 927].	California Threefold
<i>Verbesina encelioides</i> (Cavanilles) Bentham, Hooker, and Gray [Lieb 1021].	Cowpen Daisy
<i>Viguiera dentata</i> (Cavanilles) Sprengel [Lieb 1037; Worthington 17470].	Toothed Goldeneye
<i>Viguiera stenoloba</i> Blake [Worthington 17476].	Skeleton Goldeneye
<i>Xanthisma spinulosum</i> (Pursh) Morgan and Hartmen [Lieb 830; Worthington 17457]. Note: <i>Macharanthera pinnatifida</i> is a synonym.	Cutleaf Goldenweed
<i>Xanthium strumarium</i> Linnaeus [Lieb 1004].	Rough Cocklebur
<i>Zinnia acerosa</i> (De Candolle) Gray [Lieb 998, 1038].	Desert Zinnia

BERBERIDACEAE (Barberry Family)

Berberis trifoliolata Moricand
[Worthington 13564].

Laredo Oregon-grape

Note: *Mahonia trifoliolata* (Moricand) Fedde is a synonym.

BIGNONIACEAE (Catalpa Family; Bignonia Family)

Chilopsis linearis (Cavanilles) Sweet
[Lieb 1309].

Desert-willow

Tecoma stans (Linnaeus) Jussieu and Kunth
[Lieb 1328].

Yellow Trumpet-bush

BORAGINACEAE (Borage Family)

Cryptantha crassisepala (Torrey and Gray) Greene
[Lieb 1095].

Thick-sepal Cat's-eye

Cryptantha mexicana (Brandege) Johnston
[Lieb 1114].

Mexican Cat's-eye

Heliotropium curassavicum Linnaeus
[Lieb 1010; McGolderick 44].

Seaside Heliotrope

Lappula occidentalis (Watson) Greene
[Lieb 1135].

Spiny Sheepbur

Note: *Lappula redowskii* (Hornemann) Greene is a synonym.

Lithospermum incisum Lehmann
[Lieb 1077; Worthington 21642].

Fringed Groomwell

Tiquilia canescens (De Candolle) Richards.
[Lieb 831].

Wooly Crinklemat

Tiquilia gossypina (Wooton and Standley) Richards.
[Worthington 32436].

Texas Crinklemat

Tiquilia greggii (Torrey) Richards.
[Lieb 844].

Plumed Crinklemat

Tiquilia hispidissima (Torrey) Richards.
[Worthington 32533].

Hairy Crinklemat

BRASSICACEAE [CRUCIFERAE] (Mustard Family)

Descurainia pinnata (Walter) Britton
[Lieb 1073].

Tansy Mustard

Dimorphocarpa wislizeni (Engelmann) Rollins
[McGoldrick 63].

Spectacle-pod

Draba cuneifolia Nuttall
[Worthington 21649].

Wedgeleaf Ehitlow-grass

**Eruca vesicaria* (Linnaeus) Cavanilles
[Lieb 1117].

Garden Rocket

Lepidium alyssoides Gray
[Lieb 917, 1118].

Mesa Pepperweed

Lepidium lasiocarpum Nuttall
[Lieb 1078].

Wright's Pepperweed

Lesquerella fendleri (Gray) Watson
[Lieb 822].

Fendler's Bladderpod

Note: *Physaria fendleri* (Gray) O'Kane and Al-Shehbaz is a synonym.

Lesquerella gordonii (Gray) Watson
[McGoldrick 57].

Gordon's Bladderpod

Note: *Physaria gordonii* (Gray) O'Kane and Al-Shehbaz is a synonym.

Lesquerella purpurea (Gray) Watson
[Lieb 936, 1090].

Purple Bladderpod

Note: *Physaria purpurea* (Gray) O'Kane and Al-Shehbaz is a synonym.

Nerisyrenia camporum (Gray) Greene
[Lieb 1072, 1084].

Bicolored Fan-mustard

**Sisymbrium irio* Linnaeus
[Worthington 21653].

London Rocket

<i>Streptanthus carinatus</i> Wright [Lieb 1076].	Lyer-leaf Jewel-flower
BUDDLEJACEAE (Butterfly-bush Family)	
<i>Buddleja scordioides</i> Kunth [Lieb 1036].	Escobilla
<i>Buddleja marrubifolia</i> Bentham Reports: near Prospect Pits, 30 July 2016, V. Marta-Silva (UTEP).	Wooly Butterfly-bush
CACTACEAE (Cactus Family)	
<i>Ariocarpus fissuratus</i> (Engelmann) Schumman [Worthington 17493].	Living Rock Cactus
<i>Corynopuntia schottii</i> (Engelmann) Kunth Reports: Rattlesnake Tank, IMRS HQ, V. Mata-Silva (UTEP).	Dog Cholla
<i>Coryphantha dasyacantha</i> (Engelmann) Orcutt [Anderson (UTEP)].	
<i>Cylindropuntia leptocaulis</i> (De Candolle) Kunth [Lieb 1295]. Note: <i>Opuntia leptocaulis</i> De Candolle is a synonym. As many as two additional species in this genus remain to be vouchered.	Desert Christmas Cactus
<i>Cylindropuntia imbricata</i> (Haworth) Kunth Records: Near Rattlesnake Tank, V. Mata-Silva (UTEP).	Tree Cholla
<i>Echinocactus horizonthalonius</i> Lemaire [Worthington 21655].	Turk's Head Cactus
<i>Echinocereus coccineus</i> Engelmann [Lieb 1052].	Scarlet Hedgehog Cactus
<i>Echinocereus enneacanthus</i> Engelmann [Anderson (UTEP)].	Pitaya Cactus
<i>Echinocereus pectinatus</i> (Scheidweiler) Engelmann [Lieb 1230].	Rainbow Hedgehog Cactus
<i>Echinocereus stramineus</i> (Engelmann) Seitz [Lieb 1222].	Strawberry Hedgehog Cactus
<i>Epithelantha micromeres</i> (Engelmann) Weber [Anderson (UTEP); Worthington 21657].	Ping-pong-ball Cactus
<i>Escobaria tuberculosa</i> (Engelmann) Britton and Rose [Lieb 851].	White Foxtail Cactus
<i>Mammillaria heyderi</i> Muehlenpfordt [Anderson (UTEP)].	Little Nipple-cactus
<i>Mammillaria lasiacantha</i> Engelmann [Lieb 956].	Lacy-spine Nipple-cactus
<i>Opuntia engelmannii</i> Salm-Dyck [Lieb 1226].	Engelmann's Prickly-pear
<i>Opuntia macrocentra</i> Engelmann [Lieb 1050].	Purple Prickly-pear
<i>Opuntia phaeacantha</i> Engelmann [Lieb 1221].	Plains Prickly-pear
<i>Opuntia rufida</i> Engelmann [V. Mata-Silva (UTEP)].	Blind Prickly-pear
<i>Sclerocactus warnockii</i> (Benson) Taylor [Lieb 1144].	Warnock's Fishhook Cactus
<i>Sclerocactus uncinatus</i> (Galeotti) Taylor [Lieb 1108; Worthington 21656].	Chihuahuan Fish-hook Cactus
CAPPARIDACEAE [CAPPARACEAE] (Caper Family)	
<i>Polanisia dodecandra</i> (Linnaeus) De Candolle [McGoldrick 24].	Red-wisker Clammyweed

CARYOPHYLLACEAE (Pink Family)	
<i>Spergularia marina</i> (Linnaeus) Bessor [Lieb 1101]	Salt-marsh Sand-spurrey
CHENOPODIACEAE (Goosefoot Family)	
<i>Atriplex canescens</i> (Pursh) Nuttall [McGoldrick 43].	Four-wing Saltbush
<i>Chenopodium incanum</i> (Watson) Heller [Worthington 17477].	Mealy Goosefoot
CONVOLVULACEAE (Morning Glory Family)	
<i>Evolvulus alsinoides</i> Linnaeus [Lieb 1205].	Slender Morning Glory
CROSSOSOMATAACEAE (Crossosoma Family)	
<i>Glossopetalon spinescens</i> Gray [Worthington 13570].	Spiny Greasebush
CUCURBITACEAE (Gourd Family)	
<i>Ibervillea tenuisecta</i> (Gray) Small [Lieb 976].	Deer-apples
CUSCUTACEAE (Dodder Family)	
<i>Cuscuta indecora</i> Choisy [Lieb 1359].	Large-seed Dodder
EUPHORBIACEAE (Spurge Family)	
<i>Argythamnia neomexicana</i> Müller-Argoviensis [Lieb 1127].	New Mexico Silverbush
<i>Bernardia obovata</i> Johnston [Lieb (UTEP)].	Desert Bernardia
<i>Croton dioicus</i> Cavanilles [Lieb 838].	Grassland Croton
<i>Croton fruticulosus</i> Engelman [Lieb 1042; Worthington 17464].	Bush Croton
<i>Croton pottsii</i> (Klotzsch) Müller-Argoviensis [Lieb 925].	Leatherweed
<i>Chamaesyce arizonica</i> (Engelman) Arthur [Lieb 1089].	Arizona Spurge
<i>Chamaesyce fendleri</i> (Torrey and Gray) Small [Lieb 1110].	Fendler's Spurge
<i>Chamaesyce lata</i> (Engelman) Small [Lieb 1138].	Hoary Spurge
<i>Chamaesyce serpyllifolia</i> (Persoon) Small [McGoldrick 47].	Thyme-leaf Spurge
<i>Chamaesyce stictospora</i> (Engelman) Small [Lieb 1022].	Slim-seed Spurge
<i>Euphorbia antisiphilitica</i> Zuccarini [Lieb 1279].	Candelilla
<i>Euphorbia exstipulata</i> Engelman [McGoldrick 22].	Square-seed Spurge
<i>Euphorbia spathulata</i> Lamarck [Lieb 1096].	Warty Spurge
<i>Jatropha dioica</i> Sesse [Lieb 832].	Leather Stem
<i>Phyllanthus polygonoides</i> Nuttall [Lieb 834A, 1326].	Smartweed Leaf-flower
<i>Tragia amblyodonta</i> (Müller-Argoviensis) Pax and Hoffman [Lieb 1312].	Dog-tooth Noseburn

<i>Tragia ramosa</i> Torrey	Desert Tragia
Records. Oak Arroyo, 29 August 2017, K. Garza (UTEP)	
FAGACEAE (Oak Family)	
<i>Quercus pungens</i> Leibman	Sandpaper Oak
[Lieb 1311; Worthington 21645].	
FABACEAE [LEGUMINOSAE] (Legume Family)	
<i>Astragalus emoryanus</i> (Rydberg) Cory	Red-stemmed Peavine
[Lieb 1272].	
<i>Astragalus nuttallianus</i> De Candolle	Nuttall's Milkvetch
[Lieb 1093, 1106].	
<i>Calliandra conferta</i> Bentham	Rio Grande Stickpea
[Lieb 989].	
<i>Dalea formosa</i> Torrey	Feather-plume
[Lieb 947, 1088].	
<i>Dalea neomexicana</i> (Gray) Cory	New Mexico Prairie-clover
[Lieb 1112].	
<i>Dalea wrightii</i> Gray	Wright's Prairie-clover
[Lieb 1223].	
<i>Lupinus havardii</i> Watson	Big Bend Bluebonnet
[Lieb 809].	
<i>Mimosa borealis</i> Gray	Fragrant Mimosa
[Lieb 818; McGoldrick (UTEP)].	
<i>Mimosa emoryana</i> Bentham	Emory's Mimosa
[Lieb 843].	
<i>Mimosa turneri</i> Barneby	Desert Mimosa
[Anderson 56; Lieb 993].	
<i>Prosopis glandulosa</i> Torrey	Honey Mesquite
[Lieb 1209].	
<i>Prosopis pubescens</i> Bentham	Screwbean Mesquite
[Worthington 17480].	
<i>Rhynchosia senna</i> Gillies and Hooker	Texas Snout-bean
[Lieb 990].	
<i>Senegalia greggii</i> (Gray)	Catclaw
[Lieb 849, 1003].	
Note: <i>Acacia greggii</i> is a synonym.	
<i>Senna durangensis</i> (Rose) Irwin and Barneby	Durango Senna
[Lieb 1141].	
<i>Vachellia constricta</i> (Bentham) Seigler and Ebinger	Whitethorn Acacia
[Lieb 848].	
Note: <i>Acacia constricta</i> is a synonym. Ebinger and Seigle, 2005, placed it into <i>Vachellia</i> .	
<i>Vachellia neovernicosa</i> (Isley)	Viscid Acacia
[Lieb 1229].	
Note: <i>Acacia neovernicosa</i> is a synonym. Ebinger and Seigle, 2005, considered it a synonym of <i>V. vernicosa</i> .	
FOUQUIERIACEAE (Ocotillo Family)	
<i>Fouquieria splendens</i> Engelmann	Ocotillo
[Lieb 1220].	
GENTIANACEAE (Gentian Family)	
<i>Eustoma exaltatum</i> (Linnaeus) Salisbury and Don	Prairie Gentian
[Worthington 17452].	
<i>Zeltnera arizonica</i> (Gray) Mansion	Arizona Centaury
Records: Corral Tank, 3 April 2018, V. Mata-Silva (UTEP).	

GERANIACEAE (Geranium Family)

Erodium texanum Gray Texas Filaree
[Lieb (UTEP)].

HYDROPHYLLACEAE (Waterleaf Family)

Nama havardii Gray Havard's Fiddleleaf
[Lieb 1276].

Nama hispidum Gray Purple Roll-leaf
[Lieb 1076].

Phacelia coerulea Greene Notched Scorpion-weed
[McGoldrick 55].

Phacelia integrifolia Torrey Gypsum Scorpion-weed
[Lieb 1130, 1080].

KOEBERLINIACEAE (Crucifixion-thorn Family)

Koeberlinia spinosa Zuccarini Crucifixion-thorn
[Lieb 1296].

KRAMERIACEAE (Ratany Family)

Krameria erecta Willdenow and Schultes Range Ratany
[Lieb 823].

Note: *Krameria glandulosa* Rose and Painter is a synonym.

Krameria grayi Rose and Painter White Ratany
[Lieb 994].

LAMIACEAE [LABIATAE] (Mint Family)

Hedeoma drummondii Bentham Drummond's False-pennyroyal
[Lieb 1131].

Hedeoma nana (Torrey) Briq. Dwarf False-pennyroyal
[Lieb 840].

**Marrubium vulgare* Linnaeus Horehound
[Lieb 1002].

Salvia reflexa Horneman Lanceleaf Sage
[Lieb 1346].

LINACEAE (Flax Family)

Linum puberulum (Engelmann) Heller Plains Flax
[Lieb 1120; McGoldrick 73].

Linum rupestre (Gray) Engelmann and Gray Rock Flax
[Lieb 984].

LOASACEAE (Stick Leaf Family)

Cevallia sinuate Lagasca Stinging-serpent
[McGoldrick 46].

Mentzelia multiflora (Nuttall) Gray Adonis Blazingstar
[Lieb 1109].

Mentzelia saxicola Thompson and Zavortink El Paso Blazingstar
[Lieb 1324].

MALPIGHIACEAE (Malpighia Family)

Janusia gracilis Gray Propeller-plant

Note: It has not been vouchered, but observed northeast of IMRS
HQ in Bailey Evans Arroyo.

MALVACEAE (Mallow Family)

Abutilon malacum Watson Yellow Indian-mallow
[Lieb 1239].

Abutilon parvulum Gray Dwarf Indian-mallow
[Anderson (UTEP); Worthington 2593].

<i>Ayenia microphylla</i> Gray	Dense Ayenia
Records: Prospect Pits, between pitfall traps P3-6 and P4-5, 9 October 2016, V. Mata-Silva (UTEP).	
<i>Hibiscus coulteri</i> Harvey and Gray	Desert Rose-mallow
[Anderson (UTEP); Worthington 32528].	
<i>Hibiscus denudatus</i> Bentham	Palefaces
[McGoldrick 27].	
<i>Malvella leprosa</i> (Ortega) Krapovickas	Alkali Mallow
[Anderson (UTEP); Worthington 32103].	
<i>Sida abutilifolia</i> Miller	Spreading Fan-petal
[McGoldrick 14].	
Note: <i>Sida filicaulis</i> Torrey and Gray is a synonym.	
<i>Sphaeralcea angustifolia</i> (Cavanilles) Don	Copper Globemallow
[McGoldrick 3].	
<i>Sphaeralcea fendleri</i> Gray	Fendler's Globemallow
[Lieb 1214].	
NYCTAGINACEAE (Four O'Clock Family)	
<i>Aclesanthes chenopodioides</i> (Gray) Levin	Goosefoot Moonpod
[Lieb 1033].	
Note: <i>Ammocodon chenopodioides</i> (Gray) Standley is a synonym.	
<i>Acleisanthes longiflora</i> Gray	Angel's Trumpets
[Lieb 837; Mcgoldrick 19; Worthington 11948].	
<i>Allionia incarnata</i> Linnaeus	Trailing Windmills
[Lieb 1017].	
<i>Boerhavia anisophylla</i> Torrey	Wineflower
[Worthington 23346].	
<i>Boerhavia intermedia</i> Jones	Five-wing Spiderling
[Lieb 1030; McGoldrick 18].	
<i>Cyphomeris gypsophiloides</i> (Martens and Galeotti) Standley	Delicate Darling
[Lieb 1200].	
<i>Nyctaginea capitata</i> Choisy	Devil's Bouquet
[Lieb 1016].	
OLEACEAE (Olive Family)	
<i>Forestiera angustifolia</i> Torrey	Texas Swampprivet
[Lieb 1047; Worthington 13569].	
<i>Menodora scabra</i> Gray	Rough Menodora
[McGoldrick 52].	
ONAGRACEAE (Primrose Family)	
<i>Camissonia chamaenerioides</i> (Gray) Raven	Fireweed Suncup
[Lieb 1283].	
<i>Oenothera brachycarpa</i> Gray	Desert Evening Primrose
[Lieb 816, 992; McGoldrick (UTEP)].	
<i>Oenothera curtiflora</i> Wagner and Hoch	Velvetweed
[Lieb 1218].	
Note: <i>Gaura mollis</i> and <i>G. parviflora</i> are both synonyms.	
<i>Oenothera primiveris</i> Gray	Early Evening Primrose
[Lieb 1081].	
OROBANCHACEAE (Broomrape Family)	
<i>Orobanche cooperi</i> (Gray) Heller	Desert Broom-rape
[Lieb 825, 1051, 1353].	
PAPAVERACEAE (Poppy Family)	
<i>Argemone chisosensis</i> Ownbey	Chisos Mountain Pricklypoppy
[Lieb 1126; McGoldrick 72].	

PEDALIACEAE (Benne Family)

Proboscidea parviflora (Wooton) Wooton and Standley
[McGolderick 41].

Wooton's Devil's-claw

Note: Some retain this in the family Martyniaceae.

PLANTAGINACEAE (Plantain Family)

Plantago patagonica Jacquin
[Lieb 1082].

Woolly Plantain

POLEMONIACEAE (Phlox Family)

Giliastrum acerosum (Gray) Rydberg
[Lieb 1360].

Spiny Blue-bowls

Note: *Gilia rigidula* Bentham is a synonym.

Gilia stewartii Johnston
[Lieb 1113, 1284].

Stewart's Gilia

Ipomopsis longiflora (Coulter) Grant
[Lieb 1029].

Blue Trumpets

POLYGALACEAE (Milkwort Family)

Polygala barbeyana Chodat
[Lieb 981, 999; Worthington 23344].

Blue Milkwort

Note: *Polygala longa* Blake is a synonym.

Polygala macradenia Gray
[Lieb 1143].

Glandular Milkwort

Polygala scoparioides Chodat
[Lieb 833, 1085].

Broom Milkwort

POLYGONACEAE (Knotwort Family; Buckwheat Family)

Eriogonum abertianum Torrey
[McGoldrick 60].

Abert's Wild-buckwheat

Eriogonum rotundifolium Bentham
[Lieb 1104].

Saucer-leaf Wild-buckwheat

Eriogonum tenellum Torrey
[Worthington 23350].

Tall Wild-buckwheat

**Polygonum aviculare* Linnaeus
[Lieb 1111, 1225; Worthington 23366].

Yard Knotweed

Polygonum pennsylvanicum Linnaeus
[Lieb 926].

Pinkweed

Rumex maritimus Linnaeus
[Lieb 1009].

Golden Dock

PORTULACACEAE (Purslane Family)

**Portulaca oleracea* Linnaeus
[Worthington 17481].

Garden Purslane

Portulaca pilosa Linnaeus
[Worthington 17481].

Kiss-me-quick

Portulaca suffrutescens Engelm
[McGoldrick 4].

Shrubby Purslane

Talinum aurantiacum Engelm
[Lieb 1299].

Orange Flameflower

RANUNCULACEAE (Crowfoot Family; Buttercup Family)

Clematis drummondii Torrey and Gray
[Lieb 1237].

Drummond's Virgin's-bower

RESEDACEAE (Mignonette Family)

Oligomeris linifolia (Vahl) Macbride
[Lieb 1103, 1123].

Lineleaf Whitepuffs

RHAMNACEAE (Buckthorn Family)

Condalia ericoides (Gray) Johnston **Javalena-bush**
[Lieb 1119].

Ziziphus obtusifolia (Hooker, Torrey, and Gray) Gray **Lotebush**
[Worthington 25508].

ROSACEAE (Rose Family)

Fallugia paradoxa (Don) Endlicher and Torrey. **Apache-plume**
[Lieb 828].

RUBIACEAE (Madder Family)

Galium proliferum Gray **Limestone Bedstraw**
[Lieb 1132].

Stenaria nigricans (Lamarck) Terrell **Diamond Flower**
[Worthington 30680].

Note: *Hedyotis nigricans* (Lamarck) Fosberg is a synonym.

RUTACEAE (Citrus Family)

Thamnosma texana (Gray) Torrey **Texas Rue**
[Lieb 834].

SALICACEAE (Willow Family)

Salix gooddingii Ball **Goodding's Willow**
[Lieb 817].

SCROPHULARIACEAE (Figwort Family)

Castilleja integra Gray **Southwestern Indian Paintbrush**
[Lieb 815].

Castilleja nervata Eastwood **Trans-Pecos Indian Paintbrush**
[Lieb 982; Worthington 32564]

Leucophyllum minus Gray **Big Bend Texas Sage**
[Lieb 987].

Maurandya antirrhiniflora Humb. Bonpl., and Willdenow. **Climbing Snapdragon**

Records: Arroyo southeast of Red Tank, 18 November 2016,
V. Mata-Silva (UTEP).

Mercardonia procumbens (Mill.) Small **Baby Jump-up**

Records: Road Tank, 11 June 2016, V. Mata-Silva (UTEP).

Veronica perigrina Linnaeus **Neckweed**
[Lieb 1122].

SOLANACEAE (Potato Family; Nightshade Family)

Chamaesaracha crenata Rydberg **Toothed Five Eyes**
[Lieb 977, 1105; McGolderick 16].

Chamaesaracha edwardsiana Averett **Edwards Plateau Five Eyes**
[Lieb 821].

Chamaesaracha villosa Rydberg **Trans-Pecos Five Eyes**
[Anderson (UTEP)].

Lycium puberulum Gray **Downy Desert-thorn**
[Lieb 1115].

Lycium torreyi Gray **Torrey's Wolfberry**
[Lieb 1281; McGoldrick 75].

Nicotiana trigonophylla Dunal **Desert Tobacco**
[Lieb 1044].

Quincula lobata (Torrey) Rafinesque **Chinese Lanterns**
[Lieb 1125; McGoldrick 20].

Note: *Physalis lobata* Torrey is a synonym.

Solanum elaeagnifolium Cavanilles **Silverleaf Nightshade**
[Lieb 1310].

<i>Solanum triquetrum</i> Cavanilles [Anderson (UTEP); Worthington 25939;].	Texas Nightshade
TAMARICACEAE (Tamarisk Family)	
* <i>Tamarix chinensis</i> Loureiro [Lieb 1007; Worthington 17453]. Note: Grove along the Rio Grande and introduced to Squaw Creek Canyon near Squaw Spring. <i>Tamarix ramosissima</i> Ledebour is a synonym.	Saltcedar
ULMACEAE (Elm Family)	
<i>Celtis reticulata</i> Torrey [Worthington 23369].	Western Hackberry
VERBENACEAE (Vervain Family)	
<i>Aloysia gratissima</i> (Gillies and Hooker) Troncoso [Lieb 1216].	White Beebush
<i>Aloysia wrightii</i> (Gray) Heller and Abrams [Lieb 1328].	Wright's Beebush
<i>Glandularia bipinnatifida</i> (Nuttall) Nuttall [Lieb 1092]. Note: <i>Verbena wrightii</i> Gray is a synonym.	Dakota Vervain
* <i>Phyla nodiflora</i> (Linnaeus) Greene [Lieb 1008; Worthington 17460]. Note: <i>Phyla incisa</i> Small is a synonym.	Turkey-tangle
<i>Tetradlea coulteri</i> Gray [McGoldrick 23].	Coulter's Wrinklefruit
<i>Verbena bracteata</i> Cavanilles, Lagasca, and Rodriguez [Lieb 1034; Worthington 32560].	Carpet Vervain
VISCACEAE (Mistletoe Family)	
<i>Phoradendron serotinum</i> (Rafinesque) Johnston [Lieb 1041].	Christmas Mistletoe
VITACEAE (Grape Family)	
<i>Vitis arizonica</i> Engelm [Lieb 1280].	Arizona Grape
ZYGOPHYLLACEAE (Caltrop Family)	
<i>Kallstroemia grandiflora</i> Torrey and Gray [McGoldrick 1].	California Caltrop
<i>Larrea tridentata</i> (De Candolle) Coville [Worthington 32557].	Creosotebush
* <i>Peganum harmala</i> Linnaeus [Lieb 1023, 1212]. Note: A stand of this toxic plant is established at Double Tank Corral.	African-rue

CLASS: LILIOPSIDA (Monocots)

AGAVACEAE (Agave Family)	
<i>Agave lechuguilla</i> Torrey Note: Even though this species is unvouchered, it is quite abundant on IMRS. Lechuguilla scrub is one of the most common plant communities.	Lechuguilla
<i>Agave parryi</i> Engelm [J.D. Johnson (UTEP)]. Note: <i>Agave neomexicana</i> (Wooten and Standley) Ullrich is a synonym. Records: This species is rare on IMRS, but occurs west of Double Tank Corral along Main Road. The small cluster froze to death in 2011.	New Mexico Agave
<i>Yucca faxoniana</i> Sargent [Lieb 1048].	Eve's Needle

<i>Yucca treculiana</i> Carrière [Lieb 1049, 1046]. Note: <i>Yucca torreyi</i> Shafer is a synonym. Hybrids may occur on IMRS between this species and <i>Y. faxoniana</i> .	Torrey's Yucca
<i>Yucca baccata</i> Torrey in Emory [V. Mata-Silva (UTEP)].	Banana Yucca
COMMELINACEAE (Spiderwort Family)	
<i>Commelina erecta</i> Linnaeus [McGoldrick 17].	White-mouth Dayflower
CYPERACEAE (Sedge Family)	
<i>Eleocharis microformis</i> Buckley [Worthington 17456].	Buckley's Dwarf Spike-rush
<i>Eleocharis palustris</i> (Linnaeus) Roemer and Schultes [Lieb 622; Worthington 32556]. Note: Thanks to Stanley Jones for ID.	Marshy Spike-rush
JUNCACEAE (Rush Family)	
<i>Juncus torreyi</i> Coville [Lieb 852].	Torrey's Rush
LILIACEAE (Lilly Family)	
<i>Allium macropetalum</i> Rydberg [McGoldrick 56].	Arizona Onion
NOLINACEAE	
<i>Dasyliion leiophyllum</i> Engelmann and Trelease [Lieb 1297, 1300; Worthington 17468].	Green Sotol
<i>Nolina erumpens</i> (Torrey) Watson [Worthington 17491].	Beargrass
POACEAE (GRAMINEAE) (Grass Family)	
<i>Aristida purpurea</i> Nuttall [Lieb 1031; McGoldrick 7, 31, 36; Worthington 17467, 17486].	Nealley's Threeawn
<i>Bothriochloa laguroides</i> (De Candolle) Herter [Worthington 17463].	Silver Bluestem
<i>Bouteloua barbata</i> Lagasca [McGoldrick 35].	Sixweeks Grama
<i>Bouteloua breviseta</i> Vasey [McGoldrick 34].	Gyp Grama
<i>Bouteloua eriopoda</i> (Torrey) Torrey [McGoldrick 30].	Black Grama
<i>Bouteloua gracilis</i> (Willdenow and Kunth) Lagasca and Griffiths [McGoldrick 9].	Blue Grama
<i>Bouteloua trifida</i> Thurber [Worthington 32534].	Red Grama
* <i>Cenchrus ciliaris</i> Linnaeus [McGoldrick 6]. Records: This exotic species is established around IMRS HQ, especially in corral near Jerry Johnson multipurpose building, J.D. Johnson (UTEP).	
* <i>Chloris virgata</i> Swartz [Lieb 1020; McGoldrick 39].	Showy Windmillgrass
* <i>Cynodon dactylon</i> (Linnaeus) Persoon [Lieb 1343; Worthington 17472].	Bermudagrass
<i>Dasyochloa pulchella</i> (Kunth) Willdenow and Rydberg [McGoldrick 40]. Note: <i>Erioneuron pulchellum</i> (Willdenow and Rydberg.) Tateoka and <i>Digitaria californica</i> (Bentham) Henrard are synonyms.	Fluffgrass
<i>Trichachne californica</i> (Bentham) Chase [McGoldrick 29A].	Arizona Cottontop

<i>*Echinochloa colona</i> (Linnaeus) Link [Worthington 17496].	Jungle-rice
<i>*Echinochloa crus-galli</i> (Linnaeus) Beauvois [Lieb 1025].	Large Barnyardgrass
<i>*Eragrostis cilianensis</i> (Allioni) Latati and Janchen [Lieb 1026].	Stinkgrass
<i>Erioneuron pilosum</i> (Buckley) Nash [Lieb 820]	Hairy Tridens
<i>Heteropogon contortus</i> (Linnaeus) Beauvois, Roemer, and Schultes [Lieb 924].	Tanglehead
<i>Leptochloa dubia</i> (Kunth) Nees [Lieb 1347; Worthington 17471].	Green Sprangletop
<i>Leptochloa fusca</i> (Linnaeus) Kunth [Lieb 1024]. Note: <i>Leptochloa fascicularis</i> is a synonym..	Malabar Sprangletop
<i>Muhlenbergia arenacea</i> (Buckley) Hitchcock [Lieb 1187].	Ear Muhly
<i>Muhlenbergia fragilis</i> Swallen [Worthington 25937].	Delicate Muhly
<i>*Panicum antidotale</i> Retzius [McGoldrick 2].	Blue Panicum
<i>Panicum hallii</i> Vasey [Worthington 32539].	Hall's Panicum
<i>Panicum hirticaule</i> Presl [McGoldrick 28].	Mexican Witchgrass
<i>Panicum obtusum</i> Kunth [Lieb 1019].	Vine Mesquite
<i>*Pennisetum ciliare</i> (Linnaeus) Link [J.D. Johnson (UTEP)].	Buffelgrass
<i>*Polypogon viridis</i> (Gouan) Breistroffer [Lieb 813]. Note: <i>Agrostis semiverticillata</i> (Forsskal) Christensen is a synonym.	Water Polypogon
<i>Scleropogon brevifolius</i> Philippi [McGoldrick 10].	Burrograss
<i>Setaria leucopila</i> (Scribner and Merrill) Schumann [McGoldrick 33].	Plains Bristlegrass
<i>Sporobolus airoides</i> (Torrey) Torrey [Worthington 17474].	Alkali Sacaton
<i>Sporobolus contractus</i> Hitchcock [Worthington 17489].	Spike Dropseed
<i>Sporobolus cryptandrus</i> (Torrey) Gray [Worthington 17487; McGoldrick 29B].	Sand Dropseed
<i>Sporobolus flexuosus</i> (Thurber and Vasey) Rydberg. [McGoldrick 38].	Mesa Dropseed
<i>Tridens albescens</i> (Vasey) Wooten and Standley [Worthington 17497].	White Tridens
<i>Tridens muticus</i> (Torrey) Nash [Lieb 1342; McGoldrick 37].	Slim Tridens
POTAMOGETONACEAE (Pondweed Family)	
<i>Stackenia pectinata</i> (Linnaeus) Borner [Lieb 1227]. Note: <i>Potamogeton pectinatus</i> Linnaeus is a synonym. Thanks to C.B. Hellquist for ID.	Sago Pondweed

TYPHACEAE (Cattail Family)

Typha domingensis Persoon
[Worthington 17458].

Southern Cattail

Records: Common around Squaw Spring.

PROTOZOANS AND ANIMALS

Esposito, 2012, produced a study on the role of isolation and disturbance on the diversity of aquatic microinvertebrates on IMRS.

PHYLUM: PROTOZOA

SUBPHYLUM: SPOROZOA

ORDER: COCCIDIA

EIMERIIDAE (Enteric Coccidia Family)

Eimeria sexlineata Shrock and Tucker
[Carranza, 1997]

Prairied Racerunner Eimeria

Note: Reported to infect the Little Striped Whiptail lizard, *Aspidoscelis inornata*, on IMRS.

PHYLUM: PLATYHELMINTHES (Flatworms)

CLASS: TREMATODA (Tapeworms)

ANOPLOCEPHALIDAE (Unarmed Scolex Tapeworm Family)

Oocharistica sp.

Note: Reported by Carranza, 1997, to infect *Aspidoscelis inornata*, *A. exsanguis* and *A. tessellata* on IMRS.

PHYLUM: NEMATODA (Roundworms)

OXYURIDAE (Pinworm Family)

Pharyngodon warneri Harwood

Werner's Pinworm

Note: Reported by Carranza, 1997, to infect *Aspidoscelis exsanguis* and *A. inornata* on IMRS.

Pharyngodon cnemidophori Read and Armein

Whiptail Pinworm

Note: Mata-Silva et al., 2008, reported one individual from an *Aspidoscelis marmorata* on IMRS.

PHYSALOPTERIDAE (Spirurian Nematodes)

Abbreviata terrapenis Hill

Note: Reported by Carranza, 1995, to infect *Aspidoscelis inornata*, *A. exsanguis* and *A. tessellata* and by Mata-Silva et al., 2008, to infect *Aspidoscelis marmorata* and *A. tessellata* on IMRS.

PHYLUM: ROTIFERA (Rotifers)

Compiled by Elizabeth Walsh (1 January 2017). No common names were given.

CLASS: MONOGONONTA (Single Gonad Rotifers)

ASPLANCHNIDAE

Asplanchna sp.

Records: Corral Tank; Peccary Tank; Red Tank.

Asplanchna brightwelli

Records: Peccary Tank.

Asplanchna intermedia

Records: Rattlesnake Tank.

Asplanchna multiceps

Records: Corral Tank.

BRACHIONIDAE

Brachionus angularis

Records: Corral Tank.

Brachionus quadridentatus

Records: Corral Tank; Peccary Tank.

Platylabus quadricornis

Records: Corral Tank.

COLLOTHECIDAE

Collotheca campanulata

Records: Corral Tank.

Collotheca coronetta

Records: Squaw Spring.

Collotheca ornata

Records: Red Tank.

Collotheca trilobata

Records: Corral Tank.

EPIPHANIDAE

Epiphanes branchionis

Records: Corral Tank; Peccary Tank; Rattlesnake Tank.

Rhinoglena ovigera

Records: Peccary Tank; Red Tank.

EUCLANIDAE

Euchlanis dilatata

Records: Corral Tank; Peccary Tank.

FLOSCULARIIDAE

Ptygura sp.

Records: Red Tank.

HEXARTRIDAE

Hexarthra mira

Records: Bailey Evens Canyon, near IMRS HQ; Red Tank; Squaw Spring.

Note: Bailey Evens Canyon specimens found in a rock pool.

Hexarthra oxyuris

Records: Peccary Tank, Red Tank

LECANIDAE

Lecane bulla

Records: Corral Tank; Squaw Spring.

Lecane luna

Records: Corral Tank; Peccary Tank; Red Tank.

Lecane quadridentata

Records: Corral Tank; Red Tank; Squaw Spring.

NOTOMMATIDAE

Cephalodella gibba.

Records: Corral Tank.

Cephalodella catellina

Records: Peccary Tank.

Cephalodella sterea

Records: Peccary Tank.

Cephalodella tenuiseta

Records: Red Tank.

PROALIDAE

Proales sp.

Records: Squaw Spring.

Encentrum sp.

Records: Squaw Spring.

SYNCHAETIDAE

Polyarthra dolichoptera

Records: Peccary Tank.

Polyarthra vulgaris

Records: Corral Tank; Squaw Spring.

TRICHOCERCIDAE

Trichocerca similes

Records: Corral Tank.

TROCHOSPHAERIDAE

Filina cornuta

Records: Peccary Tank.

Filina pejleri

Records: Corral Tank; Peccary Tank.

Filina sp.

Records: The Narrows Twin Tanks.

CLASS: BDELLOIDEA (Bdelloid Rotifers)

PHILODINIDAE

Philodina megalotrocha

Records: Squaw Spring.

PHYLUM: ANNELIDA (Annelids)

CLASS: HIRUDINEA (Leeches)

ERPOBDELLIDAE (Hundiglar Leech Family)

Erpobdella punctata (Leidy)

Spotty Hundiglar Leech

Records: Pirtle Tank [Lieb (UTEP)].

Note: Thanks to Donald J. Klemm for ID.

PHYLUM: MOLLUSCA (Molluscs)

Compiled by Richard D. Worthington

ORDER: BASOMMATOPHORA

PHYSIDAE (Bladder Snail Family)

Physella virgata (Gould)

Proteaan Physa

Records: Squaw Spring [Worthington (UTEP)].

PLANORBIDAE (Rams-horn Snail Family)

Planorbella tenuis (Dunker)

Mexican Rams-horn

Records: Double Tank Corral, Red Tank [Worthington (UTEP)].

ORDER: STYLOMMATOPHORA

BULIMULIDAE (Tree Snail Family)

Rabdotus alternatus (Say)

Strpped Rabdotus

[Lieb (UTEP)].

HELICODISCIDAE (Toothy Coil Snail Family)

Lucilla singleyana (Pilsbry)

Smooth Coil

Records: In drift near Double Tank Corral [Worthington (UTEP)].

HUMBOLDTIANIDAE (Terrestrial Air-breathing Snail Family)

***Humboldtiana* sp.

Note: Underwood and Wilson, 1974, report fossil shells from early Oligocene volcanic tuff from a site on or very near IMRS.

PUPILLIDAE (Chrysalis Snail Family)

Gastrocopta ashmun (Sterki)

Sluice Snaggletooth

Records: From drift near Double Tank Corral [Worthington (UTEP)].

SUCCINEIDAE (Amber Snail Family)

Succinea grosvenorii Lea

Santa Rita Amber Snail

Records: Limestone talus on upper wall of Echo Canyon [Worthington (UTEP)].

Note: The identification is tentative as living material is required for positive ID.

Succinea luteola Gould

Mexico Amber Snail

Records: Double Tank Corral [Worthington (UTEP)].

UROCOPTIDAE (Urocoptid Land Snail Family)

Holospira pasonis Dall

Robust Holospira Land Snail

Records: Base of rimrock on north end of Flat Top Mountain, 18 August 2001 [Worthington (UTEP)].

Metastoma roemeri (Pfeifer)

Distorted Metastoma Land Snail

Records: Base of limestone cliffs at Squaw Spring and upper Echo Canyon [Worthington (UTEP)].

ZONITIDAE (True Glass Snail Family)

Hawaiiia minuscula (Binney)

Minute Gem Glass Snail

Records: From drift near Double Tank Corral [Worthington (UTEP)].

PHYLUM: ARTHROPODA (Arthropods)

Lenhart et al., 2010, identified arthropods and other small animals eaten by Pallid Bats, *Antrozous pallidus*, on IMRS. Davis, 2003, did a study on limnology and macroinvertebrates of Squaw Spring. Evans, 2008, produced a field guide to insects and spiders.

SUBPHYLUM: CHELICERATA (Scorpions and Spiders)

ORDER: SCORPIONES (Scorpions)

BUTHIDAE (Buthid Scorpion Family)

Centruroides vittatus (Say) **Striped Centruroides Scorpion**
[Maldonado et al., 2006; Gardea and Hill, 1996; Grimsley et al., 1991;
V. Mata-Silva (UTEP); J.D. Johnson (UTEP)].

VAEJOVIDAE (Vaejovid Scorpion Family)

Chihuahuanus crassimanus Pocock **Thick-handed Scorpion**
[Mata-Silva (UTEP)].

Chihuahuanus russelli Williams **Russell's Scorpion**
[Maldonado et al. 2006; Grimsley et al., 1991].

Paruroctonus gracilior (Hoffman) **Chihuahuan Slentertailed Scorpion**
[Maldonado et al., 2006; Grimsley et al., 1991].

Pseudouroctonus apacheanus Gertsch and Soleglad **Apache Forest Scorpion**
[Maldonado et al., 2006; Gardea and Hill, 1996; Grimsley et al., 1991].

Note: Stockwell (1992) removed this species from *Uroctonus*.

Vaejovis coahuilae Williams **Lesser Stripetail Scorpion**
[Maldonado et al., 2006; Gardea and Hill, 1996; Grimsley et al., 1991;
V. Mata-Silva (UTEP)].

Note: Some consider it in the Genus Hoffmannius.

Vaejovis intermedius (Borelli) **Intermediate Scorpion**
[Maldonado et al., 2006; Gardea and Hill, 1996; Grimsley et al., 1991].

Records: Talus slope north of Peccary Tank [Lieb (UTEP)].

Note: Thanks to Mark Zillig for ID.

Vaejovis springerus (Wood) **Striped-tailed Scorpion**
[Maldonado et al., 2006; Grimsley et al., 1991].

Note: Grimsley visited the station and collected most of the above species in 1991.
Scorpions collected by Gardea and Hill and Mata-Silva were identified by
D. Sissom. Maldonado et al., 2006, produced a photographic atlas depicting
all species except *C. crassimannus*.

ORDER: AMBLYPYGI (Whip Spiders)

PHRYNIDAE (Whip Spinder Family)

Phrynus operculatus Pocock **Tailless Whip Spider**
[Lenhart (UTEP); J.D. Johnson and Riveroll (UTEP); Maldonado et al., 2006].
Records: Found near IMRS HQ in pit-fall traps.

ORDER: UROPYGI (Vinegaroons)

THELYPHONIDAE (Vinegaroon Family)

Mastigoproctus giganteus (Lucas) **Giant Vinegaroon**
[Maldonado et al., 2006]
Note: Occasionally found on IMRS.

ORDER: ARANEAE (Spiders)

ARANEIDAE (Orb-weaver Family)

Neoscona oaxacensis (Keyserling) **Western Spotted Orb-weaver**
[Maldonado et al., 2006; Worthington (UTEP)].

FILISTATIDAE (Crevice Weaver Family)

Kukulcania hibernalis (Hentz) **Southern House Spider**
[Maldonado et al., 2006; Worthington (UTEP)].

GNAPHOSIDAE (Ground Spider Family)

[Maldonado et al., 2006].

HETEROPODIDAE (Crab Spider Family)

Olios sp.
[Maldonado et al., 2006].

LYCOSIDAE (WOLF SPIDER Family)

Geolycosa sp. **Burrowing Wolf Spider**
[Maldonado et al., 2006].

Pardosa sp. **Thin-Legged Wolf Spider**
[Maldonado et al., 2006; Worthington (UTEP)].

PHOLCIDAE (Daddy-Longleg Spider Family)

Polcus sp. **Daddy-Longleg Spider**
[Maldonado et al., 2006].

SALTICIDAE (Jumping Spider Family)

Metacryba taeniola **Jumping Spider**
[Maldonado et al., 2006].

SELENOPIDAE (Wall Crab Spiders)

Selenops actophilus Chamberline **World Crab Spider**
[Maldonado et al., 2006].

SICARIIDAE (Recluse Spider Family)

Loxosceles blanda (Gertsch and Ennick) **Big Bend Recluse Spider**
[Maldonado et al., 2006 as *Loxoscelus* sp.]

Note: Our material is at New Mexico State University for verification.
Commonly encountered in pit-fall traps; it is venomous.

TETRAGNATHIDAE (Longjawed Orbweaver Family)

Tetragnatha laboriosa Hentz **Silver Longjawed Orbweaver**
[Maldonado et al., 2006; Worthington (UTEP)].

Tetragnatha nitens (Audouin) Savigey **Brown Longjawed Orbweaver**
[Maldonado et al., 2006; Worthington (UTEP)].

Tetragnatha sp.
[Lieb (UTEP)].

THERAPHOSIDAE (Tarantula Family)

Aphonopelma sp.
[Maldonado et al., 2006].
Note: Hamilton et al., 2016, produced a monograph on the genus *Aphonopelma*.
Cooper et al., 2019, has a key to the Tarantulas of IMRS.

THERIDIIDAE (Cobweb Weaver Family)

Latrodectus hesperus Chamberlin and Ivie **Western Black Widow Spider**
[Maldonado et al., 2006; Worthington (UTEP)].

Steatoda sp. **Cobweb Spider**
[Maldonado et al., 2006].

THOMISIDAE (Crab Spiders)

Misumenops sp.
[Maldonado et al., 2006; Worthington (UTEP)].

Xysticus sp.

[Maldonado et al., 2006].

Note: Thanks to David Richman (NMSU) for ID.

ORDER: OPILIONES (Harvestmen)

SCLEROSOMATIDAE (World Harvestmen Family)

Eurybunus sp. (undescribed)

[Maldonado et al., 2006; Mackay et al., 1992].

Trachyrhinus marmoratus Banks

Desert Harvestman

[Maldonado et al., 2006; MacKay et al., 1992].

ORDER: PSEUDOSCORPIONES (Pseudoscorpions)

We have one collection awaiting ID.

ORDER: SOLIFUGAE (Windscorpions; Sun Spiders)

EREMOBATIDAE

Eremobates sp.

Windscorpion

[Maldonado et al., 2006].

Note: two families and 26 species reported from Texas. One large species is frequently seen at night around IMRS HQ. We have collections awaiting ID.

ORDER: ACARI (Mites and Ticks)

ERYTHRAEIDAE

Leptus sp.

[Maldonado et al., 2006; Mackay et al., 1992].

Note: Parasitic on Desert Harvestmen, *Trachyrhinus marmoratus*.

TROMBICULIDAE (Chigger Mites)

[Lukefahr, 2013].

Note: We thank Dr. Cal Welbourn from Florida Department of Agriculture and Consumer Services for identifying chiggers listed below.

Acomatacarus arizonensis Ewing

Arizona Chigger Mite

Note: Sometimes incorrectly placed in the genus *Odontacarus*. Lizard parasite.

Eutrombicula alfreddugési Oudemans

Dugés's Chigger Mite

Note: Most common chigger on lizards on IMRS, J.D. Johnson (UTEP).

Hyponeocula deserticola Tanigoshi and Loomis

Desert Chigger Mite

Note: Found on *Aspidoscelis marmorata*, Coachwhip snakes, pocket mice, and pocket gophers.

TROMBIDIIDAE (Velvet Mites)

Dinothrobium sp.

[Lenhart (UTEP); Maldonado et al., 2006].

Note: Collections are not yet determined to species.

AGRASIDAE (Soft Ticks)

[Lenhart (UTEP)].

Note: Collections are not yet determined. These ticks are parasitic on mammals, including the Rock Pocket Mouse, *Chaetodipus intermedius*.

SUBPHYLUM: DIANTENNATA

CLASS: CRUSTACEA (Crustaceans)

SUBCLASS: BRANCHIOPODA

Thanks to D. Christopher Rogers for ID of our Anostraca and Notostraca.

ORDER: ANOSTRACA (Fairy Shrimp)

STREPTOCEPHALIDAE (Brine Shrimp Family)

Streptocephalus mackini Moore

Mackin's Fairy Shrimp

Records: Red Tank, Worthington (UTEP).

ORDER: NOTOSTRACA (Tadpole Shrimp)

TRIOPSIDAE (American Tadpole Shrimp Family)

Triops longicaudatus (LeConte)

Long-tailed Tadpole Shrimp

Records: Red Tank, Worthington (UTEP).

ORDER: CLADOCERA (Water Fleas)

DAPHNIDAE (Daphnia Family)

Ceriodaphnia reticulata (Jurine)

Reticulated Water Flea

Note: Reported by Elizabeth Walsh (UTEP).

Simocelphalus sp.

Note: Reported by Elizabeth Walsh (UTEP).

SUBCLASS: OSTRACODA (Seed Shrimp)

Ostracods are in the waters coming from Squaw Spring, but no attempt has been made to identify them.

SUBCLASS: COPEPODA – None Identified

SUBCLASS: MALACOSTRACA – None Identified

SUBPHYLUM: TRACHEATA

CLASS: MYRIAPODA (Centipedes and Millipedes)

SUBCLASS: CHILOPODA (Centipedes)

Maldonado, 1998, collected the below three centipede species on IMRS, but disposition of vouchers are unknown to us.

SCUTIGERIDAE (House Centipedes)

Scutigera coleoptrata (Linnaeus)

Deadly House Centipede

[Maldonado et al, 2006].

SCOLOPENDRIDAE (Large Terrestrial Centipedes)

- Arthrorhabdus pygmaeus* Pocock Desert Pygmy Centepede
[Maldonado et al, 2006; Maldonado, 1998].
- Scolopendra heros* Girard Giant Desert Centepede
[Maldonado et al., 2006; Maldonado, 1998].
Note: A photographic voucher is in Maldonado, 1998. Johnson, Johnson,
and Riveroll, Jr., 2007, reported *S. heros* eating a Ground Snake,
Sonora semiannulata.
- Scolopendra polymorpha* Wood Common Desert Centepede
[Maldonado et al., 2006; Maldonado, 1998].
Note: Photo voucher is in Maldonado, 1998.

SUBCLASS: DIPLOPODA (Millipedes)

SPIROSTREPTIDAE

- Orthoporus ornatus* (Girard) Desert Millipede
[Maldonado et al., 2006; Lieb (UTEP)].
Note: This large brown millipede is common throughout the region and frequently seen
crawling on the ground after rains.

CLASS: INSECTA (Insects)

Compiled primarily by Richard D. Worthington, Paul A. Lenhart, Eric G. Chapman (Univ. Kentucky), and entomologists that participated in the Texas A&M University (TAMU) Entoblitz field trip to IMRS, 12 and 13 April 2002. Entomologist from all over Texas participated. Voucher specimens for most species cited below are assumed to be in the TAMU Entomology Collection, but exact localities on IMRS where they were found are not given. Baqla, 2017, produced a UTEP MS Thesis on IMRS grasshoppers.

ORDER: COLEOPTERA (Beetles)

ANTHICIDAE (Antlike Flower Beetle Family)

- Neoeurygenius* sp.
[E.G. Riley, TAMU Entoblitz 2002].
- Notoxus calcaratus* Horn
[Lenhart (UTEP)].
- Vacusus confinis* (LeConte)
[E.G. Riley, TAMU Entoblitz 2002].

BOSTRICHIDAE (Horned Powder-post Beetle Family)

Note: Collections from IMRS are not yet identified.

BUPRESTIDAE (Jewel Beetle Family)

- Acmaeodera auritincta* Fall
[Worthington (UTEP)].
Records: Squaw Spring, 8 September 2018, V. Mata-Silva (UTEP).
Note: Thanks to Norm Woodbury for ID.
- Acmaeodera mixta* LeConte Metalic Wood-boring Beetle
[Worthington (UTEP)].
- @*Acmaeodera quadrivittatoides* Nelson and Westcott
[E.G. Riley, TAMU Entoblitz 2002; Worthington (UTEP)].
- @*Agrilus pulchellus* Bland
[E.G. Riley, TAMU Entoblitz 2002].
- Chrysobothris exesa* LeConte Large Yellowish Buprestid Beetle
[E.G. Riley, TAMU Entoblitz 2002].

- @Chrysobothris lateralis* Waterhouse
[E.G. Riley, TAMU Entoblitz 2002].
- Chrysobothris merkelii* Horn
[E.G. Riley, TAMU Entoblitz 2002].
- @Gyascutus caelatus* (LeConte)
[Lenhart (UTEP)].
- Lampetis drummondi* Laporte and Gory
[McClure (UTEP)].
- Thrincopyge alacris* LeConte
[E.G. Riley, TAMU Entoblitz 2002].
- BRACHYPSECTRIDAE (Texas Beetle Family)**
- Brachypsectra fulva* LeConte
[Lenhart (UTEP)].
- Note:** Very rare beetle found under yucca logs. Adults can be attracted to UV lights.
- CANTHARIDAE (Soldier Beetle Family)**
- Cantharis* sp.
[Herrera (UTEP)].
- Chauliognathus basalis* LeConte
[McClure (UTEP); Worthington (UTEP)].
- CARABIDAE (Ground Beetle Family)**
- Agonum extensicolle* (Say)
[Lenhart (UTEP)].
- Note:** Needs verification.
- Bembidion* sp. (2X spp.)
E.G. Riley, TAMU Entoblitz 2002.
- Brachinus* sp.
[Lenhart (UTEP)].
- Bradycellus* sp.
[E.G. Riley, TAMU Entoblitz 2002].
- Calosoma peregrinator* Guérin-Méneville
[Lenhart (UTEP)].
- Chlaenius* sp.
[Lenhart (UTEP); Horne (UTEP) 2021, corrected misspelling].
- Cicindelidia ocellata* (Kluge)
[Worthington (UTEP)].
- Cicindelidia sedecimpunctata* (Kluge)
[Herrera (UTEP); McClure (UTEP); Perez (UTEP); Worthington (UTEP)].
- Discoderus impotens* (LeConte)
[E.G. Riley, TAMU Entoblitz 2002].
- Elaphropus* sp.
[E.G. Riley, TAMU Entoblitz 2002].
- Helluomorphoides* sp.
[Lenhart (UTEP)].
- Lebia* sp.
[Lenhart (UTEP)].
- Panagaeus sallei* Chaudoir
[Lenhart (UTEP)].
- Parvendela lemniscata* (LeConte)
[Lenhart (UTEP)].
- Tetracha carolina* (Linnaeus)
[Leaton (UTEP); McClure (UTEP)].
- Note:** Additional collections are not yet determined to species.
- Merkel's Buprestid Beetle**
- Drummond's Buprestid Beetle**
- Spry Buprestid Beetle**
- Texas Beetle**
- Colorado Soldier Beetle**
- Galerita Beetle**
- Traveling Caterpillar Hunter Beetle**
- Ocellated Tiger Beetle**
- Western Red-bellied Tiger Beetle**
- Impotent Ground Beetle**
- Salle's Hairy Ground Beetle**
- White-striped Tiger Beetle**
- Carolina Metallic Tiger Beetle**

CERAMBYCIDAE (Long-horned Beetle Family)

<i>Aneflomorpha weneri</i> Chemsak Note: ID by Eric G. Chapman, 2014, Univ. Kentucky.	Werner's Long-horned Beetle
<i>Aneflus obscurus</i> (LeConte) Records: 8 July 2017, IMRS HQ, V. Mata-Silva (UTEP). Note: ID by Eric G. Chapman, 2014, Univ. Kentucky; V. Belov, 2021, Auburn Univ.	Obscure Long-horned Beetle
<i>Anelaphus moestus</i> Casey Note: ID by Eric G. Chapman, 2014, Univ. Kentucky.	August Long-horned Beetle
<i>Anelaphus piceum</i> (Chemsak) Note: ID by Eric G. Chapman, 2014, Univ. Kentucky.	Chemsak's Long-horned Beetle
<i>Crossidius coralinus</i> (LeConte) [Worthington (UTEP)].	Coraline Long-horned Beetle
<i>Derobrachus hovorei</i> Santos-Silva [Santos-Silva, 2007; V. Mata-Silva (UTEP)].	Palo Verde Root Borer
<i>Eustromula validum</i> (LeConte) Note: ID by Eric G. Chapman, 2014, Univ. Kentucky.	Desert Long-horned Beetle
<i>Haplidus laticeps</i> Knull [E.G. Riley, TAMU Entoblitz 2002].	Wide-headed Long-horned Beetle
<i>Megacyllene antennata</i> (White) Note: ID by Eric G. Chapman, 2014, Univ. Kentucky.	Roundnecked Long-horned Beetle
<i>Methia</i> sp. Note: ID by Eric G. Chapman, 2014, Univ. Kentucky.	
<i>Monielemma armatum</i> Bland [McClure (UTEP); V. Mata-Silva (UTEP)].	Cactus Long-horned Beetle
<i>Oncideres rhodosticta</i> Bates [Lenhart (UTEP)].	Mesquite Girdler
<i>Sphaenothecus bilineatus</i> (Gory) [Leaton (UTEP); Lieb (UTEP); Perez (UTEP)].	Double-banded Bycid
<i>Stenaspis solitaria</i> Say [Hovore et al., 1987; Horne (UTEP)]. Records: IMRS HQ.	Say's Solitary Black Bycid
<i>Sternidius mimeticus</i> (Casey) Note: ID by Eric G. Chapman, 2014, Univ. Kentucky. Needs verification as members of the genus are difficult to differentiate.	Spotted Apple Tree Borer
<i>Tragidion</i> sp. [Lenhart (UTEP)]. Note: Mimic of Tarantula Hawk wasp, <i>Pepsis</i> sp. Additional species need ID.	

CHRYSOMELIDAE (Leaf Beetles)

<i>Acanthoscelides</i> sp. (2X sp.) [E.G. Riley, TAMU Entoblitz 2002].	
<i>Algarobius prosopis</i> (LeConte) [E.G. Riley, TAMU Entoblitz 2002].	Masked Leaf Beetle
<i>Calligrapha</i> sp. [Lenhart (UTEP)].	
<i>Chaetocnema</i> sp. [Worthington (UTEP)].	
<i>Chaetocnema ectypa</i> Horn [E.G. Riley, TAMU Entoblitz 2002].	Desert Corn Flea Beetle
<i>Diabrotica</i> sp. [Lenhart (UTEP)].	
<i>Disonycha</i> sp. [Lenhart (UTEP)].	
<i>Epitrix hirtipennis</i> (Melsheimer) [E.G. Riley, TAMU Entoblitz 2002].	Tobacco Flea Beetle

<i>Glyptina</i> sp. [E.G. Riley, TAMU Entoblitz 2002].	
<i>Monoxia</i> sp. E.G. Riley, TAMU Entoblitz 2002.	
<i>Pachybrachis</i> sp. (3X sp.) [E.G. Riley, TAMU Entoblitz 2002].	
<i>Pachybrachis haematodes</i> Suffrian [E.G. Riley, TAMU Entoblitz 2002].	Bloody Pachy Beetle
<i>Pachybrachis subvittatus</i> LeConte [E.G. Riley, TAMU Entoblitz 2002].	Case-bearing Scriptured Leaf Beetle
<i>Paranapiacaba tricineta</i> (Say) [Herrera (UTEP); Worthington (UTEP)].	Checkered Melon Beetle
<i>Phyllotreta</i> sp. [E.G. Riley, TAMU Entoblitz 2002].	
<i>Pteleon brevicornis</i> (Jacoby) [Lieb (UTEP)].	Short-horned Pteleon
<i>Stator</i> sp. [E.G. Riley, TAMU Entoblitz 2002].	
CLERIDAE (Checkered Beetle Family)	
<i>Cymatodera</i> sp. (2X sp.) [Lenhart (UTEP); E.G. Riley, TAMU Entoblitz 2002].	
<i>Cymatodera dietrichi</i> Barr [E.G. Riley, TAMU Entoblitz 2002].	Dietrich's Checkered Beetle
<i>Phyllobaenus</i> sp. [E.G. Riley, TAMU Entoblitz 2002].	
<i>Phyllobaenus rudis</i> (Gorham) [E.G. Riley, TAMU Entoblitz 2002].	Rude Checkered Beetle
COCCINELLIDAE (Ladybird Beetle Family)	
<i>Novius virginalis</i> (Wickham) [E.G. Riley, TAMU Entoblitz 2002].	Virginal Ladybird Beetle
<i>Chilocorus cacti</i> (Linnaeus) [E.G. Riley, TAMU Entoblitz 2002; Worthington (UTEP)].	Cactus Ladybird Beetle
<i>Coleomegilla maculata</i> (Degeer) [Worthington (UTEP)].	Spotted Pink Ladybird Beetle
<i>Hippodamia convergens</i> Guérin-Ménéville [Worthington (UTEP)]. E.G. Riley, TAMU Entoblitz 2002.	Convergent Ladybird Beetle
<i>Hyperaspidius</i> sp. [E.G. Riley, TAMU Entoblitz 2002].	
<i>Hyperaspis</i> sp. [E.G. Riley, TAMU Entoblitz 2002].	
<i>Olla v-nigra</i> (Mulsant) [E.G. Riley, TAMU Entoblitz 2002; Worthington (UTEP)].	Ashy Gray Ladybird Beetle
<i>Rhizobius lophanthae</i> (Blaisdell) [E.G. Riley, TAMU Entoblitz 2002].	Purple Scale Predator
<i>Scymnus</i> sp. [E.G. Riley, TAMU Entoblitz 2002].	
<i>Selvadius</i> sp. [E.G. Wiley, TAMU Entoblitz 2002].	
<i>Stethorus</i> sp. [E.G. Wiley, TAMU Entoblitz 2002].	
CRYPTOPHAGIDAE (Silken Fungus Beetle Family)	
<i>Anchicera</i> sp. [E.G. Riley, TAMU Entoblitz 2002].	
<i>Cryptophagus</i> sp. [E.G. Riley, TAMU Entoblitz 2002].	

CURCULIONIDAE (Snout Beetle and Weevil Family)

- Cleonus quadrilineatus* (Chevrolat)
[Worthington (UTEP)]. **Four-lined Loco Weevil**
- Gerstaeckeria* sp.
[Lenhart (UTEP)].
- Ophyrastes* sp. (2X sp.)
[Lenhart (UTEP); E.G. Riley, TAMU Entoblitz 2002].
- Pandeleteinus elytroplanatus* Howden
[E.G. Riley, TAMU Entoblitz 2002]. **Broad-nosed Weevil**
- Peltohorus polymitus* (Boheman)
[E.G. Riley, TAMU Entoblitz 2002].
- Sibinia* sp.
[E.G. Riley, TAMU Entoblitz 2002].
- Rhinostomus frontalis* (LeConte)
[E.G. Riley, TAMU Entoblitz 2002]. **Yucca Weevil**
- Note:** Additional species remain to be identified.

DERMESTIDE (Carpenter Beetle Family)

- Cryptorhopalum* sp.
[E.G. Riley, TAMU Entoblitz 2002].
- Novelsis* sp.
[E.G. Riley, TAMU Entoblitz 2002].
- Dermestes marmoratus* Say
[Lenhart (UTEP)]. **Common Carrion Beetle**
- Note:** Found on carrion.

DYTISCIDAE (Predaceous Diving Beetle Family)

- Bidessus* sp.
[Davis, 2003].
- Deronectes* sp.
[Davis, 2003].
- Dysticus habilis* Say
[Larson et al., 2000; L.M. Horne (UTEP)]. **Swift Diving Beetle**
- Record:** Squaw Spring
- Eretes sticticus* (Linnaeus)
[Davis, 2003; Perez (UTEP)]. **Western Eretes**
- Laccophilus fasciatus* Aubé
[E.G. Riley, TAMU Entoblitz 2002]. **Banded Predaceous Diving Beetle**
- Laccophilus horni* Van den Branden
[E.G. Riley, TAMU Entoblitz 2002]. **Horn's Predaceous Diving Beetle**
- Laccophilus pictus* Laporte
[E.G. Riley, TAMU Entoblitz 2002]. **Painted Predaceous Diving Beetle**
- Neoclypeodytes* sp.
[E.G. Riley, TAMU Entoblitz 2002].
- Neoclypeodytes cinctellus* (LeConte)
[E.G. Riley, TAMU Entoblitz 2002].
- Platambus semivittatus* (LeConte)
[E.G. Riley, TAMU Entoblitz 2002].
- Rhantus gutticollis* (Say)
[E.G. Riley, TAMU Entoblitz 2002].
- Thermonectus marmoratus* (Hope)
[Davis, 2003; Herrera (UTEP); E.G. Riley, TAMU Entoblitz 2002; Worthington (UTEP)]. **Sunburst Diving Beetle**
- Uvarus* sp.
[E.G. Riley, TAMU Entoblitz 2002].

ELATERIDAE (Click Beetle Family)

Paradonis sp.

[Lenhart (UTEP); E.G. Riley, TAMU Entoblitz 2002].

Note: Some collections are not yet determined.

ENDOMYCHIDAE (Handsome Fungus Beetle Family)

Holoparamecus sp.

[E.G. Riley, TAMU Entoblitz 2002].

GEOTRUPIDE (Earth-boring Dung Beetle Family)

[Lenhart (UTEP)].

Note: Collections are not yet determined.

GYRINIDAE (Whirligig Beetle Family)

Dineutes sp.

[Lenhart (UTEP)].

Gyrinus sp.

[Lenhart (UTEP)].

HALIPLIDAE (Crawling Water Beetle Family)

Pelodytes dispersues Roberts

[Davis, 2003; E.G. Riley, TAMU Entoblitz 2002].

HETEROCERIDAE (Variegated Mud-Loving Beetle Family)

Heterocerus sp.

[Lenhart (UTEP)].

HISTERIDAE (Clown Beetle Family)

Hololepta sp.

[Lenhart (UTEP)].

Note: Found on carrion. Additional collections are not yet determined.

HYBOSORIDAE (Scavenger Scarab Beetle Family)

Hybosorus illigeri Reiche

[Worthington (UTEP)].

Small Scavenger Scarab Beetle

HYDROPHILIDAE (Water Scavenger Beetle Family)

Additional collections are not yet determined.

Berosus sp. (3X sp.)

[Davis, 2003; E.G. Riley, TAMU Entoblitz 2002].

Berosus blechrus Leech

[E. G. Riley, TAMU Entoblitz 2002].

Palpicorn Water Scavenger Beetle

Berosus hoplites (Sharp)

[E.G. Riley, TAMU Entoblitz 2002].

Hoplites Water Scavenger Beetle

Berosus miles LeConte

[E.G. Riley, TAMU Entoblitz 2002].

Miles' Water Scavenger Beetle

Chaetarthria sp.

[E.G. Riley, TAMU Entoblitz 2002].

Helochares sp.

[E.G. Riley, TAMU Entoblitz 2002].

Paracymus sp.

[E.G. Riley, TAMU Entoblitz 2002].

Hydrophilus triangularis Say

[Lenhart (UTEP)].

Giant Black Water Scavenger Beetle

Tropisternus ellipticus (LeConte)

[E.G. Riley, TAMU Entoblitz 2002].

Small Hydrophilid Beetle

Tropisternus lateralis (Fabricius)

[E.G. Riley, TAMU Entoblitz 2002].

Strudulating Water Scavenger Beetle

LAEMOPHLOEIDAE (Lined Flat Bark Beetle Family)

Cryptolestes sp.

[E.G. Riley, TAMU Entoblitz 2002].

LAMPYRIDAE (Firefly Beetle Family)

Lucidota punctata LeConte

[Worthington (UTEP)].

Punctated Firefly Beetle

Pleotomus nigripennis LeConte

[Lenhart (UTEP)].

Black-winged Firefly Beetle

LATRIDIIDAE (Minute Brown Scavenger Beetle Family)

Melanophthalma sp.

[E.G. Riley, TAMU Entoblitz 2002].

LYCIDAE (Net-winged Beetle Family)

Lycus fernandezi Duges

Fernandez's Net-winged Beetle

Records: Big arroyo after Y on road to windmill, 9 August 2016, V. Mata-Silva (UTEP).

Note: Thanks to Blaine Mathison for ID. Most collections are not yet determined.

MELOIDAE (Blister Beetle Family)

Cysteodemus wizlizeni LeConte

Black Bladder-bodied Meloid

[Pinto, 1984].

Records: Lonely Tank; found dead May 2021, L.M. Horne (UTEP).

Epicauta atrivittata (LeConte)

Oasis Ranch Blister Beetle

Records: Rattlesnake Tank, 7 May 2016, V. Mata-Silva (UTEP).

IMRS HQ, 17 June 2016, J.D. Johnson (UTEP).

Note: All on Mequite flowers and leaves.

Epicauta corvina LeConte

Burning Blister Beetle

[Hollebeke (UTEP); McClure (UTEP)].

Lytta sp.

[Lenhart (UTEP); *Pleurospasta* sp., Worthington (UTEP)].

Nemognatha nigripennis LeConte

Black-winged Blister Beetle

[E.G. Riley, TAMU Entoblitz 2002].

Pleuropasta reticulata Van Dyke

Netted Blister Beetle

Records: Near Peccary Tank, 25 September 2015, V. Mata-Silva (UTEP).

Note: Thanks to John S. Ascher for ID. Additional collections are not determined.

MELYRIDAE (Soft-winged Flower Beetle Family)

Attalus sp. (2X sp.)

[E. G. Riley, TAMU Entoblitz 2002].

Red-bellied Soft-winged Flower Beetle

Attalus rufiventris Horn

[E.G. Riley, TAMU Entoblitz 2002].

Attalus serraticornis Fall

Serrated Horn Soft-winged Flower Beetle

[E.G. Riley, TAMU Entoblitz 2002].

Attalusinus sp.

[E.G. Riley, TAMU Entoblitz 2002].

Callops sp. (2X sp.)

[Worthington (UTEP); E.G. Riley, TAMU Entoblitz 2002].

Cradytes sp.

[E.G. Riley, TAMU Entoblitz 2002].

Dasytes sp.

[E.G. Riley, TAMU Entoblitz 2002].

Radalus lecontei Casey

Leconte's Soft-winged flower Beetle

[E.G. Riley, TAMU Entoblitz 2002].

MORDELLIDAE (Tumbling Flower Beetle Family)

Collections not yet determined.

MYCTERIDAE (Palm and Flower Beetle Family)

Mycterus canescens Horn

Grayish-white Palm and Flower Beetle

[E.G. Riley, TAMU Entoblitz 2002].

NITIDULIDAE (Sap-feeding Beetle Family)

@ *Carpophilus* sp.

[E.G. Riley, TAMU Entoblitz 2002].

Conotelus sp.
[E.G. Riley, TAMU Entoblitz 2002].

Cybocephalus sp.
[E.G. Riley, TAMU Entoblitz 2002].

Note: Additional collections not yet determined. Commonly found in *Opuntia* flowers.

OEDEMERIDAE (False Blister Beetle Family)

Our collections are not yet determined.

PHENGODIDAE (Glowworm Beetle Family)

Phengodes sp.
[Lenhart (UTEP)].

Note: The orange and black striped larval females are specialist predators on Millipedes. Males are rare and possess reduced elytra, plumose antennae, and sickle-shaped mandibles. Additional collections are not yet determined.

PTINIDAE (Death-watch and Spinder Beetle Family)

Gastrallus fasciatus White **Banded Death-watch Beetle**
[E.G. Riley, TAMU Entoblitz 2002].

Tricorynus estriatus (Horn) **Unlined Death-Watch Beetle**
[E.G. Riley, TAMU Entoblitz 2002].

Tricorynus sp.
[E.G. Riley, TAMU Entoblitz 2002].

RHIPIPHORIDAE (Wedge-shaped Beetle Family)

Rhipiphorus sp.
[E.G. Riley, TAMU Entoblitz 2002].

SALPINGIDAE (Narrow-waisted Bark Beetle Family)

Elacatis sp.
[E.G. Riley, TAMU Entoblitz 2002].

SCARABAEIDAE (Lamellicorn Beetle Family)

Subfamily: APHODIINAE (Aphodiine Dung Beetles)

Ataenius sp.
[Lenhart (UTEP); E.G. Riley, TAMU Entoblitz 2002].

Note: Collections are not yet determined.

Subfamily: CETONIINAE (Fruit and Flower Chafers)

Cotinus mutabilis Gory and Percheron **Fig eater Beetle**
[Herrera (UTEP); E.G. Riley, TAMU Entoblitz 2002].

Euphoria sp.
[Lenhart (UTEP)].

Subfamily: DYNASTINAE (Rhinoceros Beetles)

Oxygryllus ruginasus (LeConte) **Reddish June Beetle**
[Worthington (UTEP)].

Subfamily: MELOLONTHINAE (May Beetles)

Diplotaxis sp. (2X sp.)
[Worthington (UTEP); E.G. Riley, TAMU Entoblitz 2002].

Phyllophaga ignava (Horn) **Lazy May Beetle**
[Worthington (UTEP)].

Subfamily: SCARABAEINAE (Dung Beetles)

We thank E.G. Riley for making determinations.

Canthon sp.
[Lenhart (UTEP)].

Onthophagus gazelle (Fabricius) **Gazelle Scarab Beetle**
[Lenhart (UTEP)]

SCRAPTIIDAE (False Flower Beetle Family)

Thanks to E.G. Riley, TAMU Entoblitz 2002 for generic determinations.

Canifa sp.
Naucles sp.
Pentaria sp.
Scraptia sp.

SILPHIDAE (Carrion Beetle Family)

Nicrophorus marginatus Fabricius
[Lenhart (UTEP)].

Records: Partial remains found in a pit-fall trap at IMRS HQ.

Marginated Burying Beetle

STAPHYLINIDAE (Rover Beetle Family)

Note: Collections not yet determined.

TENEBRIONIDAE (Darkling Beetle Family)

Note: Additional collections not yet determined.

Asbolus mexicanus (Champion)
[Aalbu, 1985; J.J. Mead (UTEP)].

Records: IMRS HQ.

Mexican Darkling Beetle

Blapstinus sp.
[E.G. Riley, TAMU Entoblitz 2002].

Centrioptera texana Blaisdell
[Lieb (UTEP)].

Texas Darkling Beetle

Cynaenus angustus (LeConte)
[E.G. Riley, TAMU Entoblitz 2002].

Larger Black Flour Beetle

Eleodes sp.
[Lenhart (UTEP)].

Eleodes longicollis LeConte
[Triplehorn et al., 2009; Horne (UTEP)].

Desert Stink Beetle

Eleodes spinipes Solier
[E.G. Riley, TAMU Entoblitz 2002].

Large Darkling Beetle

Embaphion contusum LeConte
[Lenhart (UTEP)].

Subdued Darkling Beetle

Harpalus rufipes (De Geer)
[Lenhart (UTEP)].

Strawberry Seed Darkling Beetle

Hymenorus sp.
[E.G. Riley, TAMU Entoblitz 2002].

Philolithus sordidus (LaConte)
[Lenhart (UTEP)].

Mean Darkling Beetle

Stenomorpha obliterated (Champion)
[Lenhart (UTEP); E.G. Riley TAMU Entoblitz 2002].

Invisible Darkling Beetle

Triorophus laevis LeConte
[V. Mata-Silva (UTEP)].

Smooth Darkling Beetle

Triorophus nodiceps LeConte
[E.G. Riley, TAMU Entoblitz 2002].

Knotty Darkling Beetle

TROGIDAE (Hide Beetle Family)

Omorgus suberosus (Fabricius)
[Herrera (UTEP)].

Note: Found on carrion.

Hastate Hide Beetle

TROGOSSITIDAE (Bark-gnawing Beetle Family)

Note: Collections are not yet determined.

ZOPHERIDAE (Ironclad Beetle Family)

Bitoma gracilis (Sharp)
[E.G. Riley, TAMU Entoblitz 2002].

Cylindrical Bark Beetle

Hyporhagus sp.
[E.G. Riley, TAMU Entoblitz 2002].

ORDER: DERMAPTERA (Earwigs)

ANISOLABIDIDAE (Earwig Family)

Euborellia annulipes (Lucas)
[Lenhart (UTEP)].

Ring-legged Earwig

LABIDURIDAE (Striped Earwig Family)

Labidura repara (Pallas)
[Perez (UTEP); Lenhart (UTEP)].

Shore Earwig

SPONGIPHORIDAE (Little Earwig Family)

Vostox apicedentatus (Caudell)
[Lenhart (UTEP)].

Toothed Earwig

ORDER: MANTODEA (Mantids)

MANTIDAE (Mantids)

Litaneutria sp.
[Lenhart (UTEP)].
Stagmomantis californica Rehn and Hebard
[McClure (UTEP)].

California Mantis

ORDER: BLATTODEA (Cockroaches and Termites)

CORYDIIDAE (Sand Cockroach Family)

Note: Males in this family are winged and attracted to lights at night. Females are wingless and burrow in sandy areas. Some collections not yet determined to species.

Arenivaga sp.
[Lenhart (UTEP)].

Desert Cockroach

Note: Collections not yet determined to species.

Eremoblatta sp.
[Lenhart (UTEP)].

ECTOBIIDAE (German Cockroach Family)

Blatella sp.
[Lenhart (UTEP)].

RHINOTERMITIDAE (Subterranean Termite Family)

[Lenhart (UTEP)].

Note: Collections not yet determined.

TERMITIDAE (Higher Termite Family)

Note: Termites made up the majority of food items eaten by two Teiid lizards, *Aspidoscelis marmorata* and *Aspidoscelis tessellata* on IMRS (Mata-Silva, 2005; Mata-Silva et al., 2013).

Gnathamitermes sp.
[Lenhart (UTEP)].

Tube-building Termites

Note: Additional collections are not yet determined.

ORDER: DIPTERA (Flies)

ASILIDAE (Robber Fly Family)

Efferia argyrosoma (Hine)
[Worthington (UTEP)].

Efferia kelloggi (Wilcox)
[Worthington (UTEP)].

Kellogg's Robber Fly

Efferia luna (Wilcox)
[Worthington (UTEP)].
Efferia tuberculata (Coquillet)
[Worthington (UTEP)].
Note: Thanks to Gregg Forbes for ID.

Mallophora sp.
[Lenhart (UTEP)].

Ospriocerus sp.
[Lenhart (UTEP)].

Proctacanthella exquisite (Osten-Sacken)
[Lenhart (UTEP)].
Note: Thanks to Eric Fisher for ID.

BIBIONIDAE (March Fly Family)

[Lenhart (UTEP)].

Note: Collections not yet determined to species

BOMBYLLIDAE (Bee Fly Family)

[Lenhart (UTEP)].

Note: Collections not yet determined to species.

Anthrax sp.
[L.M. Horne (UTEP)]

CALLIPHORIDAE (Blow Fly Family)

[Lenhart (UTEP)].

Note: Collections not yet determined to species.

CHAOBORIDAE (Phantom Midge Family)

Chaoborus sp.
[Davis, 2003].

CHIRONOMIDAE (Non-biting Midge Family)

Chironomus sp.
[Davis, 2003].

Pentaneura sp.
[Davis, 2003].

CULICIDAE (Mosquito Family)

Anopholes sp.
[Davis, 2003].

Culista inornata (Williston)
[Davis, 2003].

Uranotaenia sp.
[Davis, 2003]

Winter Marsh Mosquito

DOLICHOPIDIDAE (Longlegged Fly Family)

[Lenhart (UTEP)].

Note: Collections not yet determined to species.

DROSOPHILIDAE (Fruit Fly Family)

[Lenhart (UTEP)].

Note: Collections not yet determined to species.

MUSCIDAE (House Fly Family)

Musca domestica Linnaeus
[Lenhart (UTEP)].

House Fly

Stomoxys calcitrans (Linnaeus)
[Lenhart (UTEP)]

Stable Fly

MYDIDAE (Mydas Fly Family)

[Lenhart (UTEP)].

Note: Collections not yet determined to species.

NERIIDAE (Cactus Fly Family)

Odontoloxozus longicornis (Coquillett)
[Lenhart (UTEP)].

Longhorn Cactus Fly

NYCTERIBIIDAE (Bat Fly Family)

Basilis antrozoi (Townsend)
[Lenhart (UTEP)].

Note: These wingless spider-like flies are ectoparasites on Pallid Bats.

OESTRIDAE (Bot Fly Family)

Cuterebra sp.
[Lenhart (UTEP)].

Note: The larvae, which can be 2.5 cm long, infest the skin of Mammals. Adults are short lived, do not feed, and are seldom seen.

SARCOPHAGIDAE (Flesh Fly Family)

Sarcophaga sp.
[Lenhart (UTEP)].

Note: Collections not yet determined to species.

SIMULIIDAE (Black Fly Family)

Simulium sp.
[Davis, 2003].

STRATIOMYIDAE (Soldier Fly Family)

[Lenhart (UTEP)].

Note: Collections not yet determined to species.

SYRPHIDAE (Flower Fly Family)

Copestylum mexicana (Macquart)
[Lenhart (UTEP)].

Mexican Flower Fly

Eristalis tenax (Linnaeus)
[Barton, López, and Villaseñor, UTEP Field Biology, 2007].

Drone Fly

Note: Additional collections not yet determined to species.

TABANIDAE (Horse and Deer Fly Family)

Tabanus punctifer Osten Sacken
[Lenhart (UTEP)].

Western Horse Fly

TIPULIDAE (Crane Fly Family)

Prionocera sp.
[Davis, 2003].

TACHINIDAE (Parasitic Fly Family)

Archytas metallicus (Robineau-Desvoidy)
[Lenhart (UTEP)].

Metallic Bistle Fly

Records: Near Squaw Spring, 18 August 2017, V. Mata-Silva (UTEP).

Note: Thanks to John F. Carrn for ID.

ORDER: EPHEMEROPTERA (Mayflies)

Collections not yet determined to species.

ORDER: HEMIPTERA (True Bugs)

SUBORDER: AUCHENORRHYNCHA (Cicadas, Planthopper, Leafhopper, and Treehopper Families)

CICADELLIDAE (Leafhopper Family)

[Lenhart (UTEP)].

Note: Collections not yet determined to species.

CICADIDAE (Cicada Family)

Beameria venosa (Uhler)

[P. Lenhart (UTEP); V. Mata-Silva (UTEP)].

Aridland Cicada

Cacama valvata (Uhler)

[Lenhart (UTEP); Worthington (UTEP)].

Common Cactus Dodger

Diceroprocta eugraphica (Davis)

[Lenhart (UTEP); V. Mata-Silva (UTEP)].

Scrub Cicada

Hadoa townsendii (Uhler)

[Lenhart (UTEP)].

Townsend's Cicada

Note: Thanks to Allen F. Sandborn for ID.

CIXIIDAE (Cixiid Planthopper Family)

[Dash (UTEP)].

Note: Collections not yet determined to species.

DELPHACIDAE (Delphacid Planthopper Family)

[Dash (UTEP)].

Note: Collections not yet determined to species.

DERBIDAE (Derbid Planthopper Family)

Cedusa sp.

[Dash (UTEP); Lenhart (UTEP)].

Note: Collections not yet determined to species.

FULGORIDAE (Fulgorid Planthopper Family)

Publicia sp.

[Lenhart (UTEP)].

Publicia filginosa (Oliver)

Records: Near junction to Purple Sage Mine Road and Main Road,
24 September 2016, V. Mata-Silva (UTEP).

Note: Thanks to Yurika Alexander for ID

MEMBRACIDAE (Treehopper Family)

[Lenhart (UTEP)].

Note: Collections not yet determined to species.

SUBORDER: HETEROPTERA (Aquatic and Semiaquatic Bugs)

ALYDIDAE (Broad-headed Bug Family)

[Lenhart (UTEP)].

Note: Collections not yet determined to species.

BELASTOMATIDAE (Giant Water Bug Family)

Leptocerus medius (Guérin-Méneville)

[Davis, 2003; Mata-Silva et al., 2012; Menke, 1963; Herrera (UTEP);
Horne (UTEP); McClure (UTEP); Worthington (UTEP)].

Giant Water Bug

Records: Squaw Spring, Corral Tank, Red Tank; rarely under lights at IMRS HQ.

COREIDAE (Leaf-footed Bug Family)

Additional collections not yet determined.

Acanthocephala thomasi Uhler

[Lenhart (UTEP)].

Giant Agave Bug

Chelinidea vittiger Uhler

[Lenhart (UTEP)].

Cactus Coreid

Leptoglossus clypealis Heidemann

[Brailovsky, 2014; L.M. Horne (UTEP); Lenhart (UTEP)].

Western Leaf-footed Bug

Narnia sp.

[Lenhart (UTEP)].

CORIXIDAE (Water Boatman Family)

Graptocorixa abdominalis (Say)

[Davis, 2003].

Record: Squaw Spring.

Note: Another collection not identified to species.

CYDNIDAE (Burrowing Bugs)

Pangaeus bilineatus (Say)

[Worthington (UTEP)].

Peanut Burrower Bug

GERRIDAE (Water Strider Family)

Gerris marginatus Say

[Davis, 2003].

Records: Squaw Spring.

Marginal Water Strider

GELASTOCORIDAE (Toad Bug Family)

Gelastocoris rotundus Champion

[Davis, 2003].

Record: Squaw Spring.

Round Toad Bug

LARGIDAE (Bordered Plant Bug Family)

Largus sp.

[Lenhart (UTEP)].

MIRIDAE (Plant Bug Family)

(Lenhart (UTEP)).

Note: Our collections are not yet determined.

NABIDAE (Damsel Bug Family)

[Lenhart (UTEP)].

Note: Our collections are not yet determined.

NAUCORIDAE (Creeping Water Bug Family)

Ambrysus circumcinctus Montandon

[Davis, 2003; Worthington (UTEP)].

Record: Squaw Spring.

Belted Creeping Water Bug

NEPIDAE (Waterscorpion Family)

Ranatra sp.

[Lenhart (UTEP)].

NOTONECTIDAE (Backswimmer Family)

Buenoa sp.

[Lenhart (UTEP)].

Notonecta lobata Hungerford

[Davis, 2003; Worthington (UTEP)].

Records: Squaw Spring.

Note: Thanks to Fred Truxal for ID.

Notonecta unifasciata Guérin-Méneville

[Davis, 2003].

Records: Squaw Spring and identified at TAMU.

Redbacked Backswimmer

PENTATOMIDAE (Stink Bug Family)

Brochymena sp.

[Lenhart (UTEP)].

Chlorochroa sp. (2X sp.)

[Lenhart (UTEP); Worthington (UTEP)].

Mecidea sp.

[Lenhart (UTEP)].

Murgantia histrionica (Hahn)

[Lenhart (UTEP)].

Harlequin Bug

REDUVIIDAE (Assassin Bug Family)

<i>Apiomerus</i> sp. [Lenhart (UTEP)].	Bee Assassin
<i>Phymata</i> sp. [Lenhart (UTEP)].	Ambush Bug
<i>Rasahus</i> sp. [Lenhart (UTEP)].	
<i>Rhiginia</i> sp. [Lenhart (UTEP)].	
<i>Sinea</i> sp. [Lenhart (UTEP)].	
<i>Triatoma rubida</i> (Uhler) [Lenhart (UTEP)].	Bloodsucking Conenose
<i>Zelus renardii</i> Kolenati [Worthington (UTEP)].	Leafhopper Assassin Bug

VELIIDAE (Small Water Strider Family)

<i>Microvelia</i> sp. [Davis, 2003].	
Record: Squaw Spring and identified at TAMU.	

SUBORDER: STERNORRHYNCHA

APHIDIDAE (Aphid Family)

[Lenhart (UTEP)].
Note: Collections not yet determined to species.

DACTYLOPIIDAE (Cochineal Scale Family)

[Lenhart (UTEP)].
Note: Collections not yet determined to species.

PSEUDOCOCCIDAE (Mealybug Family)

[Lenhart (UTEP)].
Note: Collections not yet determined to species.

ORDER: HYMENOPTERA (Bees, Ants, Wasps, and Sawflies)

ANDRENIDAE (Miner Bee Family)

<i>Perdita stathamae</i> Timberlake [John Neff, TAMU Entoblitz 2002].	Lost Miner Bee
<i>Ptotoxaea gloriosa</i> (Fox) Records: Near Rattlesnake Tank, 9 July 2013, V. Mata-Silva (UTEP). Note: Thanks to John S. Ascher for ID.	Glorious Protoxea

APIDAE (Bee Family)

Additional collections not yet determined to species.	
<i>Anthophora californica</i> Cresson [John Neff, TAMU Entoblitz 2002].	California Digger Bee
<i>Apis mellifera</i> Linnaeus [John Neff, TAMU Entoblitz 2002]. Note: Mata-Silva, Johnson, and Juarez-Reina, 2006, reported honeybee killing a Texas Earless Lizard, <i>Cophosaurus texanus</i>].	Western Honeybee
<i>Centris atripes</i> Mocsáry [John Neff, TAMU Entoblitz 2002].	Black-footed Oil-digger Bee
<i>Ceratina neomexicana</i> Cockrell [John Neff, TAMU Entoblitz 2002].	New Mexico Small Carpenter Bee

<i>Nomada</i> sp. [John Neff, TAMU Entoblitz 2002].	
<i>Townsendiella pulchra</i> Crawford [John Neff, TAMU Entoblitz 2002].	Townsend's Cuckoo Bee
<i>Xylocopa californica</i> Cresson [John Neff, TAMU Entoblitz 2002].	Western Carpenter Bee
BETHYLIDAE (Flat Wasp Family) [Lenhart (UTEP)].	
Note: Collections not yet determined to species.	
BRACONIDAE (Braconid Wasp Family) [Lenhart (UTEP)].	
Note: Collections not yet determined to species.	
CABRONIDAE (Square-headed Wasps) <i>Phylanthus gibbosus</i> (Fabricius)	Beewolf Square-headed Wasp
Records: IMRS HQ, 21 October 2016, V. Mata-Silva (UTEP).	
Note: Thanks to John Ascher for ID'	
CHRYSIDIDAE (Cuckoo Wasp Family) [Lenhart (UTEP)].	
Note: Collections not yet determined to species.	
CHYPHOTIDAE (Chyphotid Wasp Family) [Lenhart (UTEP)].	
Note: Collections not yet determined to species.	
COLLETIDAE (Yellow-faced Bee Family) Other collections not yet determined to species.	
<i>Colletes phaceliae</i> Cockrell [John Neff, TAMU Entoblitz 2002].	Scorpionweed Plasterer Bee
<i>Hylaeus episcopalis</i> Cockrell [John Neff, TAMU Entoblitz 2002].	Coquillett's Masked Bee
FORMICIDAE (Ant Family) <i>Novomessor cockerelli</i> Andre [Hollebeke, 1991; V. Mata-Silva (UTEP); Riveroll (UTEP)].	Cockerell's Red Ant
<i>Camponotus festinatus</i> (Buckley) [Hollebeke, 1991].	Desert Carpenter Ant
<i>Camponotus ulcerosus</i> Wheeler [Lenhart (UTEP); Riveroll (UTEP)].	Ulcerous Carpenter Ant
<i>Crematogaster depilis</i> Wheeler [Morgan (UTEP)].	Hairless Acrobat Ant
<i>Crematogaster laeviuscula</i> Mayr [Morgan (UTEP)].	Shiny Acrobat Ant
<i>Crematogaster larrea</i> Buren [Morgan (UTEP)].	Creosote Acrobat Ant
<i>Cyphomyrmex wheeleri</i> Forel [Lenhart (UTEP)].	Wheeler's Fungus-growing Ant
<i>Dorymyrmex insanus</i> Buckley [Hollebeke, 1991].	Crazy Pyramid Ant
<i>Forelius mccooki</i> McCook [Hollebeke, 1991].	McCook's Asbestos Ant
<i>Forelius pruinosus</i> (Roger) [V. Mata-Silva (UTEP)].	High Noon Asbestos Ant
<i>Hypoponera opaciceps</i> (Mayr) [Dash (UTEP)].	Granulate Mini-ponerine Ant
<i>Monomorium cyaneum</i> Wheeler [Hollebeke, 1991].	

<i>Myrmecocystus depilis</i> Forel [Hollebeke, 1991].	Hirless Honeypot Ants
<i>Myrmecocystus flaviceps</i> Wheeler [Hollebeke, 1991].	Yellow-Headed Honeypot Ant
<i>Myrmecocystus mimicus</i> Wheeler [Hollebeke, 1991].	Farcical Honeypot Ant
<i>Myrmecocystus romainei</i> Snelling [V. Mata-Silva (UTEP)].	Romainian Honeypot Ant
<i>Neivamyrmex</i> sp. [Dash (UTEP)].	Common Army Ants
Reports: Squam Spring. Note: Raiding swarms of army ants were observed; males attracted to lights.	
<i>Odontomachus clarus</i> Roger [W.A. Mackay (UTEP)].	Clear Trap-jawed Ant
@ <i>Pheidole soritis</i> Wheeler [Hollebeke, 1991].	
<i>Pogonomyrmex apache</i> (Wheeler) [Riveroll (UTEP)].	Apache Harvester Ant
<i>Pogonomyrmex barbatus</i> (Smith) [V. Mata-Silva (UTEP)].	Red Harvester Ant
@ <i>Pogonomyrmex imberbicus</i> Wheeler [V. Mata-Silva (UTEP); Worthington (UTEP)].	
<i>Pogonomyrmex maricopa</i> Wheeler [Riveroll (UTEP)].	Maricopa Harvester Ant
<i>Pogonomyrmex rugosus</i> (Emery) [Riveroll (UTEP)].	Rough Harvester Ant
<i>Solenopsis aurea</i> Wheeler [Hollebeke, 1991].	Golden Fire Ant
<i>Solenopsis molesta</i> (Say) [Hollebeke, 1991].	Grease Ant
<i>Temnothorax bristoli</i> Mackay [Mackay, 2000].	Bristol's Acorn Ant
Note: The type locality is on IMRS.	
<i>Temnothorax liebi</i> Mackay [Mackay, 2000].	Lieb's Acorn Ant
Note: The type locality is on IMRS.	
@ <i>Tetramorium hispidum</i> (Wheeler) [V. Mata-Silva (UTEP)].	
Note: Hollebeke, 1991, yielded specimens verified by W.A. Mackay (UTEP). Presumably, vouchers are in the W.A. Mackay collection at UTEP.	
HALICTIDAE (Sweat Bee Family)	
<i>Lasioglossum sepmicaeruleum</i> (Cockerell) [John Neff, TAMU Entoblitz 2002].	Half-blue Metallic Sweat Bee
<i>Lasioglossum morrilli</i> (Cockerell) [John Neff, TAMU Entoblitz 2002].	Morrill's Sweat Bee
<i>Lasioglossum sisymbrii</i> (Cockerell) Records: IMRS HQ, 11 June 2017, V. Mata-Silva (UTEP). Note: Thanks to John S. Ascher for ID	Tansy Mustard Sweat Bee
ICHNEUMOPNIDAE (Ichneumon Wasp Family)	
[Lenhart (UTEP)]. Note: Collections not yet determined to species.	
MEGACHILIDAE (Leafcutter Bee Family)	
<i>Anthidium sockerelli</i> Schwartz [John Neff, TAMU Entoblitz 2002].	Sockerell's Leafcutter Bee

<i>Ashmeadiella erema</i> Michener [John Neff, TAMU Entoblitz 2002].	Desert Leafcutter Bee
<i>Ashmeadiella bigeloviae</i> (Cockerell) [John Neff, TAMU Entoblitz 2002].	Bigelov's Leafcutter Bee
<i>Lithurgus</i> sp. (Lenhart (UTEP)). Note: Thanks to Eric Eaton for ID. Other collections not yet determined to species.	
<i>Megachile odontostoma</i> Cockerell [John Neff, TAMU Entoblitz 2002].	
<i>Megachile prosopidis</i> Cockerell [John Neff, TAMU Entoblitz 2002].	
<i>Megachile gentilis</i> Cresson [John Neff, TAMU Entoblitz 2002].	Common Leafcutter Bee
<i>Megachile lippiae</i> Cockerell [Dash (UTEP); John Neff, TAMU Entoblitz 2002].	
<i>Megachile newberryae</i> Cockerelle [John Neff, TAMU Entoblitz 2002].	Newberry's Leafcutter Bee
<i>Megachile polycaris</i> Say [John Neff, TAMU Entoblitz 2002].	Thumbed Leafcutter Bee
<i>Megachile sidalceae</i> Cockerelle [Dash (UTEP)]. Records: Near IMRS HQ. Note: Thanks to J. S. Ascher for ID.	Silver-tailed Petalcutter Bee
<i>Osmia</i> sp. [John Neff, TAMU Entoblitz 2002].	
<i>Osmia subfasciata</i> Cresson [John Neff, TAMU Entoblitz 2002].	Punctate Mason Bee
MELITTIDAE (Melittid Bees)	
<i>Hesperapis larreae</i> Cockerell [John Neff, TAMU Entoblitz 2002].	Creosote Evening Bee
MUTILLIDAE (Velvet Ant Family)	
<i>Dasymutilla</i> sp. [Lenhart (UTEP)].	
<i>Dasymutilla gloriosa</i> (Saussure) [Lenhart (UTEP)].	Thistledown Velvet Ant
Note: Additional collections not yet determined to species.	
POMPILIDAE (Spider Wasp Family)	
<i>Pepsis</i> sp. [Lenhart (UTEP)].	
Note: Collections not yet determined to species.	
SCOLIIDAE (Scoliid Wasp Family)	
<i>Scolia</i> sp. [Lenhart (UTEP)].	
Note: Collections not yet determined to species.	
SPHECIDAE (Threadwaisted Wasp Family)	
<i>Ammophila</i> sp. [Lenhart (UTEP)].	
<i>Sceliphron caementarium</i> (Drury) [Lenhart (UTEP)].	Black and Yellow Muddauber Wasp
<i>Sphecius grandis</i> Say [Lenhart (UTEP)].	Western Cicada Killer Wasp
<i>Sphex pensylvanicus</i> (Linnaeus) Records: Squaw Spring, 22 September 2017, V. Matta-Silva (UTEP). Note: Thanks to John S. Ascher for ID.	Great Black Wasp
Note: Additional collections not yet determined to species.	

TIPHIIDAE (Tiphid Wasp Family)

[Lenhart (UTEP)].

Note: Collections not yet determined to species.

VESPIDAE (Hornets/Paper Wasps)

Note: Additional collections not yet determined to species.

Eumenes sp.

[Lenhart (UTEP)].

Eurodynerus sp.

[Lenhart (UTEP)].

Polistes apachus Saussure

[Bequaert, 1940; Horne (UTEP)].

Apache Paper Wasp

Polistes comanchus Saussure

[Bequaert, 1940; Lenhart (UTEP)].

Comanche Paper Wasp

Polistes flavus Cresson

[Bequaert, 1940; Dash (UTEP), Lenhart (UTEP)].

Yellow Paper Wasp

ORDER: ISOPTERA (Termites)

Note: Unidentified termites made up the majority of the food items eaten by *Aspidoscelis marmorata* and *A. tessellata* on IMRS (Mata-Silva, 2005; Mata-Silva et al., 2013).

ORDER: LEPIDOPTERA (Moths and Butterflies)

CRAMBIDAE (Crambid Snout Moths Family)

Epipagis fenestralis (Hübner)

[Worthington (UTEP)].

Orange Epipagis Moth

Mimoschinia rufofascialis (Stephens)

[Worthington (UTEP)].

Rufus-banded Crambid Moth

@*Majavia achemonalis* (Barnes and McDunnough)

Records: IMRS HQ, 6 October 2017, V. Mata-Silva (UTEP).

Note: Thanks to Khhl Austin for ID.

EREBIDAE (Erebid Moths)

Ascalapha odorata (Linnaeus)

Records: Squaw Spring, 9 July 2013, V. Mata-Silva (UTEP).

Note: Thanks to Brandon Woo for ID.

Black Witch Moth

Cisthene angelus (Dyar)

[Worthington (UTEP)]

Angel Lichen Moth

Pygarctia murina (Stretch)

[Worthington (UTEP)]

Mousey Tiger Moth

GEOMETRIDAE (Geometer Moth Family)

Chlorospilates bicoloraria Packard

[Worthington (UTEP)].

Bicolored Chloraspilates Moth

Glaucina sp.

[Worthington (UTEP)].

Rindgea cyda Druce

[Worthington (UTEP)].

Mesquite Looper Moth

Semiothisa sp.

[Worthington (UTEP)].

Speranza pallipennata (Barnes and McDunnough)

Records: IMRS HQ, 8 July 2017, V. Mata-Silva (UTEP).

Note: Thanks to Kyhl Austin for ID.

LYCAENIDAE (Hairstreak, Copper, and Blue Butterfly Family)

Echinargus isola (Reakirt) Reakirt's Blue Butterfly
[Worthington (UTEP)].

HESPERIIDAE (Skipper Butterfly Family)

Copaeodes aurantiacus (Hewitson) Orange Skipperling Butterfly
[Worthington (UTEP)].

Pygrus albescens Plotz White Checkered Skipper Butterfly
[Worthington (UTEP)].

NOCTUIDAE (Owlet Moth Family)

Basilodes chrysopsis Grote
[Worthington (UTEP)].

Cobubantha orthozona (Hampson)
[Worthington (UTEP)].

Copanarta aurea (Grote)
[Worthington (UTEP)].

Euscirrhopterus cosyra (Druce) Staghorn Cholla Moth
[Worthington (UTEP)].

Helicoverpa zea (Boddie) Corn Earworm Moth
[Worthington (UTEP)].

Records: IMRS HQ, 8 July 2017, V. Mata-Silva (UTEP).

Note: Thanks to Kyhl Austin for ID.

Lacinipolia buscki (Barnes and Benjamin)
[Worthington (UTEP)].

Leucocnemis perfundis (Smith)
[Worthington (UTEP)].

Lineostriastiria hachita (Barnes)
Records: IMRS HQ, 7 October 2017, V. Mata-Silva (UTEP).

Marathyssa inflicta (Walker) Dark Marathyssa Moth
[Worthington (UTEP)].

Mastigrogramma rubrosuffusa Grote
[Worthington (UTEP)].

Policocnemis unguulatus (Benjamin)
Records: IMRS HQ, 18 August 2017, V. Mata-Silva (UTEP).
Note: Thanks to Bob Biagi for ID.

Ponometia cuta (Smith) Cuta Bird Dropping Moth
[Worthington (UTEP)].

Records: IMRS HQ, 8 July 2017, V. Mata-Silva (UTEP).

Note: Thanks to Kyhl Austin for ID.

Ponometia libedis (Smith) Libedis Bird Dropping Moth
[Worthington (UTEP)].

NYMPHALIDAE (Brush-footed Butterfly Family)

Chlosyne chinatiensis (Tinkham) Chinati Checkerspot Butterfly
[Perez (UTEP); McClure (UTEP)].

Danaus gilippus (Cramer) Queen Butterfly
[Lenhart (UTEP)].

Euptoieta claudia (Cramer) Variegated Fritillary Butterfly
Records: Corral Tank area, 1 April 2016, Garza (UTEP).

Junonia coenia (Hübner) Common Buckeye Butterfly
Records: Oak Arroyo, 30 July 2017, Garza (UTEP).

Phycioides phaon (Edwards) Phaon Crescent Butterfly
[Worthington (UTEP)].

Vanessa atalanta (Linnaeus) Red Admiral Butterfly
[Lenhart (UTEP)].

Vanessa cardui (Linnaeus) Painted Lady Butterfly
Records: Prospect Pits Arroyo, 13 November 2016, Garza (UTEP).

PAPILIONIDAE (Swallowtail Butterfly Family)

Battus philenor (Linnaeus) Blue Swallowtail Butterfly

Records: Squaw Spring, 19 July 2014, V. Mata-Silva (UTEP).

Papilio polyxenes Fabricius Black Swallowtail Butterfly
[Lenhart (UTEP)].

PIERIDAE (Sulphur, White, and Orange-tip Butterfly Family)

Colias caesonia Stoll Southern Dogface Butterfly
[Worthington (UTEP)].

Nathalia isole Boisduval
[Worthington (UTEP)].

Phoebis sennae Linnaeus Cloudless Sulphur Butterfly
[Worthington (UTEP)].

Pontia protodice Boisduval and Leconte Checkered White Butterfly

Records: Prospect Pits Arroyo, 13 November 2016, Garza (UTEP).

SATURNIDAE (Silkworm and Royal Moth Family)

Agapema dyari (Cockerell) Chihuahuan Agapema Moth

Records: IMRS HQ, V. Mata-Silva (UTEP).

Note: Thanks to Ryan St. Laurent for ID.

Anisota oslari Rothschild Osler's Oakworm Moth
[Garza et al., 2018]

Records: Montane Oak Wash, Oak Arroyo, fall 2017, Garza (UTEP).

Hemilueuca chinatiensis (Tinkham) Chinati Sheepmoth

Records: Prospect Pits, 13 October 2012, V. Mata-Silva (UTEP).

SPHINGIDAE (Hawk Moth Family)

Hyles lineata (Fabricius) White-lined Sphinx Moth
[Worthington (UTEP)].

Manduca quinquemaculata (Haworth) Five-spotted Hawk Moth
[Lenhart (UTEP)].

Manduca rustica (Fabricius) Rustic Sphinx Moth
[Lenhart (UTEP)].

Sphinx asellus (Rothchild and Jordan) Asellus Sphynx Moth
[Lenhart (UTEP)].

YPONOMEUTIDAE (Erimine Moth Family)

Atteva punctella (Cramer) Webworm Moth
[Lenhart (UTEP)].

ORDER: MICROCORYPHIA (Bristletails)

MACHILIDAE (Jumping Bristletail Family)

Our material is presently at New Mexico State University awaiting determination. A single species is represented in pit-fall traps. It may be a very significant find.

ORDER: NEUROPTERA (Antlions, Lacewings, and Allies)

BEROTHIDAE (Beaded Lacewing Family)

Lomamyia sp.
[John Oswald, TAMU Entoblitz 2000].

CHRYSOPIDAE (Green Lacewing Family)

Thanks to John Oswald, TMAU Enoblitz for IDs.

Chrysoperla plorabunda (Fitch) Weeping Green Lacewing

Chrysoperla rufilabris (Burmeister) Red-lipped Green Lacewing

Eremochrysa punctinervis (MacLachlen) Green Lacewing

CONIOPTERYGIDAE (Dusty Lacewing Family)

Note: Thanks to John Oswald, TAMU Entoblitz 2002 for IDs.

Aleuropteryx spp.

Coniopteryx spp. (2X spp.)

Neoconis sp.

Note: Probably *N. marginata*. *Semidalis* sp.

HEMEROBIIDAE (Brown Lacewing Family)

Note: Thanks to John Oswald, TAMU Entoblitz 2002 for IDs.

Hemerobius discretus Navás

Megalomus moestus Banks

Micromus variolosus Hagen

Symphorobius killingtoni Carpenter

Symphorobius perparvus (McLachlan)

Discrete Brown Lacewing
Mourning Brown Lacewing
Mottled Brown Lacewing
Killington's Brown Lacewing
Trivial Brown Lacewing

MANTISPIDAE (Mantidfly Family)

Climaciella brunnea Say

[Lenhart (UTEP)].

Note: This mantidfly closely mimics the paperwasp, *Polistes comanchus* on IMRS. Larvae are predators on spider egg sacs.

Brown Wasp Mantidfly

MYRMELEONTIDAE (Antlion Family)

Note: Thanks to John Oswald, TAMU Entoblitz 2002, for IDs. Vouchers are at Texas A&M University.

Brachynemurus sackeni Hagen

Clathroneuria coquilletti (Currie)

Euptilon ornatum (Dury)

Gnopholeon delicatulus (Currie)

Myrmeleon arizonicus Banks

Paranthaclisis hageni (Banks)

Scotolion longipalpis (Hagen)

Scotolion nigrescens (Strange)

Sacken's Antlion
Long-tailed Antlion
Ornate Antlion
Delicate Antlion
Arizona Antlion
Hagen's Antlion
Long-palped Antlion
Black Antlion

ORDER: ODONATA (Dragonflies and Damselflies)

AESHNIDAE (Darner Dragonfly Family)

Anax sp.

[Lenhart (UTEP); V. Mata-Silva (UTEP)].

Rhionaeschna multicolor (Hagen)

[J.C. Abbott, TAMU Entoblitz 2002; Chee (UTEP)].

Records: Double Tank Corral area.

Blue-eyed Darner Dragonfly

CALOPTERYGIDAE (Broad-Winged Damselfly Family)

Hetaerina sp.

[Lenhart (UTEP)].

COENAGRIONIDAE (Narrow-Winged Damselfly Family)

Argia hinei Kenedy

[J.C. Abbott, TAMU Entoblitz 2002; Worthington (UTEP)].

Records: Squaw Spring.

Lavendar Dancer Damselfly

Argia leonora Garrison

[Worthington (UTEP)].

Records: Squaw Spring.

Leonora's Dancer Damselfly

Enallagma civile (Hagen)

[Worthington (UTEP)].

Records: Double Tank Corral area.

Familiar Bluet Damselfly

Ischnura denticollis (Burmeister)

[Worthington (UTEP)].

Records: Double Tank Corral area.

Black-fronted Forktail Damselfly

LESTIDAE (Spreadwing Damselfly Family)

- Archilestes grandis* (Rambur) Great Spreadwing Damselfly
[J.C. Abbott, TAMU Entoblitz 2002; Davis, 2003].
- Lestes disjunctus* Selys Northern Spreadwing Damselfly
[Worthington (UTEP)].
Records: Double Tank Corral area.

LIBELLULIDAE (Common Skimmer Dragonfly Family)

- Libellula pulchella* Drury Twelve-spotted Skimmer Dragonfly
[Perez (UTEP)].
Records: Double Tank Corral area.
- Libellula saturate* Uhler Flame Skimmer Dragonfly
[J. C. Abbott, TAMU Entoblitz 2002].
- Paltothemis lineatipes* Karsch Red Rock Skimmer Dragonfly
[Herrera (UTEP)]
- Sympetrum corruptum* (Hagen) Variegated Meadowhawk Skimmer Dragonfly
[Worthington (UTEP)].
Records: Double Tank Corral area.
- Tramea onusta* (Hagen) Red Saddlebags Skimmer Dragonfly
[Worthington (UTEP)].
Records: Double Tank Corral area.

ORDER: ORTHOPTERA (Grasshoppers, Crickets, and Katydid)

Baqla, 2017, did a MS Thesis study on IMRS orthopterans.

ACRIDIDAE (Short-horned Grasshopper Family)

SUBFAMILY: COPIOCERINAE (Creosote Grasshoppers)

- Clematodes larreae* Cockerell Grey Creosotebush Grasshopper
[Lenhart (UTEP)].

SUBFAMILY: CYRTACANTHACRIDINAE (Bird Grasshoppers)

- Schistocerca nitens* (Thunberg) Gray Bird Grasshopper
[Worthington (UTEP)].

SUBFAMILY: MELANOPLINAE (Spur-throated Grasshoppers)

- Melanoplus bivittatus* (Say) Two-striped Grasshopper
[Worthington (UTEP)].
- Melanoplus herbaceous* Brunner Arrowweed Grasshopper
[Lenhart (UTEP)].
- Melanoplus differentialis* (Thomas) Differential Grasshopper
[Perez (UTEP)].

SUBFAMILY GOMPHOCERINAE (Slant-faced Grasshoppers)

- Acantherus piperatus* (Scudder) Slender Range Grasshopper
[Lenhart (UTEP)].
- Acrolophitus maculipennis* (Scudder) Texas Point Headed Grasshopper
[Worthington (UTEP)].
- Boottettix argentatus* Brunner Creosote Bush Grasshopper
[Worthington (UTEP)].
- Cibolacris parviceps* (Walker) Cream Grasshopper
[Worthington (UTEP)].
- Mermiria bivittata* (Serville) Mermiria Grasshopper
[Worthington (UTEP)].
- Mermiria texana* Brunner Texas Mermiria Grasshopper
[Worthington (UTEP)].
- Opeia obscura* (Thomas) Obscure Grasshopper
[Herrera (UTEP)].

<i>Psoloessa texana</i> Scudder [Lenhart (UTEP)].	Texas Spotted Range Grasshopper
<i>Syrbula admirabilis</i> (Uhler) [Worthington (UTEP)].	Handsome Grasshopper
SUBFAMILY: OEDIPODINAE (Band-winged Grasshoppers)	
<i>Arphia conspersa</i> (Scudder) [Lenhart (UTEP)].	Speckled Rangeland Grasshopper
<i>Arphia pseudonietana</i> (Thomas) [Worthington (UTEP)].	Red-winged Grasshopper
<i>Derotmema laticinctum</i> Scudder [Worthington (UTEP)].	NCN
<i>Encoptolophus subgracilis</i> Caudell [Lenhart (UTEP)].	Southwestern Dusky Grasshopper
<i>Hippopedon capito</i> (Ståhl) [Lenhart (UTEP); Worthington (UTEP)].	Apache Grasshopper
<i>Mestobregma plattei</i> (Thomas) [Worthington (UTEP)].	Platte Range Grasshopper
<i>Trimerotropis californica</i> Brunner [Worthington (UTEP)].	Strenuous Grasshopper
<i>Trimerotropis pallidipennis</i> (Burmeister) [Worthington (UTEP)].	Pallid-winged Grasshopper
<i>Trimerotropis pistrinaria</i> Saussure [Lenhart (UTEP)].	Barren Land Grasshopper
GRYLLIDAE (True Cricket Family)	
<i>Gryllus</i> sp. [Lenhart (UTEP)].	Field Cricket
<i>Oecanthus</i> sp. [Lenhart (UTEP)].	Tree Cricket
RHAPHIDOPHORIDAE (Camel Cricket Family)	
<i>Ceuthophilus variegatus</i> (Scudder) [L.M. Horne (UTEP); Lenhart (UTEP)].	
ROMALEIDAE (Lubber Grasshopper Family)	
<i>Phrynotettix robustus</i> (Bruner) [Worthington (UTEP)].	Robust Toad Lubber Grasshopper
<i>Taeniopoda equus</i> (Burmeister) [McClure (UTEP)].	Horse Lubber Grasshopper
TETTIGONIIDAE (Katydid Family)	
<i>Capnobotes fuliginosus</i> (Thomas) [Lenhart (UTEP)].	Sooty Longwing Katydid
<i>Insara elegans</i> Scudder [Worthington (UTEP)].	Elegant Bush Katydid
<i>Pediodyctes tinkhami</i> Hebard [Lenhart (UTEP)].	Tinkham's Shieldback Katydid
<i>Scudderia</i> sp. [Lenhart (UTEP)].	Bush Katydid
TETRIGIDAE (Pygmy Grasshopper Family)	
<i>Paratettix aztecus</i> (Saussure) [Lenhart (UTEP)].	Aztec Pigmy Grasshopper
<i>Paratettix brevipennis</i> (Hancock) [Lenhart (UTEP)].	Short-winged Pygmy Grasshopper
<i>Peratettix mexicanus</i> (Saussure) [Lenhart (UTEP)].	Mexican Pygmy Grasshopper
<i>Paratettix toltecus</i> (Saussure) [Lenhart (UTEP)].	Toltec Pygmy Grasshopper

ORDER: PHASMATODEA (Walkingsticks)

DIAPHEROMERIDAE (Northern Walkingstick Family)

Diapheromera covilleae Rehn and Hebard

Creosote Bush Walkingstick

[Herrera (UTEP); Worthington (UTEP)].

HETERONEMIIDAE (Common Walkingstick Family)

Parabacillus coloradus (Scudder)

Colorado Shorthorned Walkingstick

[Worthington (UTEP)].

Pseudosermyle straminea (Scudder)

Straw-colored Walkingstick

[Lenhart (UTEP)].

ORDER: SIPHONAPTERA (Fleas)

Our collections not yet determined. Fleas found on Cactus Mouse, *Peromyscus eremicus*.

ORDER: TRICHOPTERA (Caddisflies)

HYDROPSYCHIDAE (Common Net-spinning Caddisfly Family)

Cheumatopsyche sp.

[Worthington (UTEP)].

Records: Squaw Spring.

ODONTOCERIDAE (Mortarjoint Casemaker Caddisfly Family)

Marilia flexuosa Ulmer

Winding Mortarjoint Caddisfly

[Worthington (UTEP)].

Records: Squaw Spring.

Note: Thanks to Steve Moulton for the above ID. Davis, 2003, identified all caddisflies she found as belonging to Limnephilidae (*Limnephilus* sp.).

PHYLUM: CHORDATA (Chordates)

Subphylum: VERTEBRATA (Vertebrates)

Carranza, 1997, looked at parasites of Whiptail lizards. Dominguez, 2000, completed a morphometric and molecular analysis of *Crotalus lepidus*. Lannutti, 2000, studied morphological variation in Long-nosed Snakes (genus *Salvadora*). Sweetay, 2001, did a survey of small terrestrial mammals occurring on IMRS. Hotchkin, 2002, completed a behavioral comparison between *Aspidoscelis marmorata* and *A. tessellata*. Brewer, 2004, reported on the habitat diversity and seasonal changes in small mammal populations on IMRS, as well as a field guide to the mammals (Brewer, 2007). Mata-Silva (2005, 2011) completed a diet comparison between *A. marmorata* and *A. tessellata* and a spatial ecology study of *C. lepidus*, respectively. Couvillon, 2011a, completed a study on the ecogeographical analysis of the herpetofauna of IMRS and produced a handbook on the herpetofauna (Couvillon, 2011b). Arturo Rocha, 2012, produced a study on the spatial ecology of the Trans-Pecos Ratsnake (*Bogertophis subocularis*). Lukefahr, 2013, completed a study of chigger mites on whiptail lizards. Wiseman, 2014, produced an ecogeographic study of birds. Alva, 2014, studied thermal ecology of *Urosaurus ornatus*. Franco, 2015, studied population ecology of the Greater Earless Lizard (*Cophosaurus texanus*). Dominic DeSantis, 2019, studied spacial movevement and ecology of *Crotalus atrox*, and James Emerson, 2020, examined the ecology and movement of *C. ornatus*. Julie Schlichte is comparing lizard ecology between species at Jornada LTR site and IMRS. Kayla Garza, 2018, investigated birds in isolated juniper and oak communities on IMRS. Guillermo Alvarez is working on community structure of reptiles between disturbed and undisturbed areas on IMRS. Océane Da Cunha is investigating predator-prey relationships within *C. atrox* on IMRS, and Josshua Mead is comparing spatial ecology between syntopic *C. atrox*, *C. ornatus*, and *C. lepidus*. Allyson Benson-Pedraza is

investigating trophic transfer of heavy metals to whiptail lizards in urban and remote Chihuahuab Desert food chains. Logan “Miles” Horne is examining spatial ecology of *Phrynosoms modestum*, and has been helping update this handbook since early 2021. McGinnis and Stebbins, 2018, produced a revised edition of a field guide to western reptiles and amphibians of USA.

CLASS: ACTINOPTERYGII (Ray-finned Fish)

ORDER: CYPRINODONTIFORMES (Toothcarps)

CYPRINIDAE (Common Carp and Minnow Family)

**Cyprinus carpio* Linnaeus

Common Carp

Records: Box Canyon on Rio Grande, V. Mata-Silva (UTEP).

Note: Some include Cyprinids in the Family Peociliidae.

PEOCILIIDAE (Live Bearer Family)

Gambusia affinis Baird and Girard

Western Mosquitofish

Records: Box Canyon on Rio Grande, L.M. Horne (UTEP).

ORDER: LEPISOSTEIFORMES (Gar)

LEPISOSTEIDAE (Gar Family)

Lepisosteus osseus Linnaeus

Longnose Gar

Records: Box Canyon on Rio Grande, V. Mata-Silva (UTEP); Rocha (UTEP).

ORDER: SILURIFORMES (Catfish)

ICTALURIDAE (North American Catfish)

Ictalurus punctatus Rafinesque

Channel Catfish

Records: Box Canyon on Rio Grand, Rocha (UTEP).

CLASS: AMPHIBIA (Amphibians)

Compiled by J.D. Johnson and C.S. Lieb. Dixon, 2013, covers IMRS species.

ORDER: ANURA (Frogs and Toads)

The following classification and common names generally follow that recommended by The Center for North American Herpetology (www.cnah.org).

BUFONIDAE (North American Toad Family)

The genus for all species of North American toads occurring on IMRS was changed from *Bufo* to *Anaxyrus* by Frost et al., 2006.

Anaxyrus cognatus Say

Great PlainsToad

[Couvillon, 2011a, b; J.D. Johnson (UTEP)].

Records: One individual found at IMRS HQ. Several at Peccary Tank, summer 2014.

Anaxyrus debilis Girard

Chihuahuan Green Toad

[Couvillon, 2011a, b; J.D. Johnson (UTEP)].

Records: Pirtle Tank; on road to Squaw Spring north of IMRS HQ, August 2010, V. Mata-Silva (UTEP); Rattlesnake Tank, July 2010, Rocha (UTEP); on road to Squaw Spring, July 2013, D. DeSantis (UTEP).

Anaxyrus punctatus Baird and Girard **Red-spotted Toad**
[Couvillon, 2011a, b; Mata-Silva et al., 2012].

Records: Most abundant amphibian on IMRS. It breeds in Squaw Spring and in canyon pools during rainy periods. Common around IMRS HQ.

Anaxyrus speciosus Girard **Texas Toad**
[Couvillon, 2011a, b; J.D. Johnson (UTEP)].

Records: Pirtle Tank, July 2006, J.D. Johnson.

MICROHYLIDAE (Narrow-mouthed Frog Family)

Gastrophryne olivacea (Hallowell) **Western Narrow-mouthed Frog**
[Couvillon, 2011a, b; V. Mata-Silva (UTEP)].

Records: Peccary Tank, 26 July 2008. Large choruses observed 21 August 2009 at Echo Canyon TwinTanks, Peccary Tank, and Rattlesnake Tank after heavy afternoon rainstorms; again in July 2010, 2011, May 2012, June – August 2013 – 2017.

RANIDAE (True Frog Family)

Lithobates catesbeianus Shaw **American Bullfrog**
[V. Mata-Silva (UTEP)].

Records: Box Canyon on the Rio Grande.

SCAPHIOPODIDAE (North American Spadefoot Family)

Scaphiopus couchii Baird **Couch's Spadefoot**
[Couvillon, 2011a, b; J.D. Johnson (UTEP)].

Records: IMRS HQ, Road Tank, PirtleTank, Red Tank, and Peccary Tank.

ORDER CAUDATA (Salamanders)

The Barred Tiger Salamander (*Ambystoma mavortium*) is expected to occur on IMRS, but has not yet been verified.

CLASS REPTILIA (Turtles, Snakes, and Lizards)

Compiled by J.D. Johnson and C.S. Lieb.

The following classification and common names of turtles, lizards, and snakes, mostly follow that recommended by Reptile Database, although it is a paraphyletic classification.

ORDER: TESTUDINES (Turtles)

EMYDIDAE (Box and Water Turtle Family)

Trachemys gaigeae (Hartweg) **Big Bend Slider**
[G.W. Johnson (UTEP); V. Mata-Silva (UTEP)]

Records: Box Canyon on Rio Grande.

Terrapene ornata Agassiz **Ornate Box Turtle**
[Couvillon, 2011a, b].

Records: Collected once near Double Tank Corral.

KINOSTERNIDAE (Mud and Musk Turtle Family)

Kinosternon flavescens Agassiz **Yellow Mud Turtle**
[Couvillon, 2011a, b].

Records: Known from a shell fragment found at Red Tank. It has been observed in a tank along Green River Road a few miles northeast of IMRS.

TRIONYCHIDAE (Softshells Turtle Family)

Apalone spinifera LeSueur **Spiny Softshell Turtle**
[V. Mata-Silva (UTEP)].

Records: Most common turtle in The Box Canyon of Rio Grande.

ORDER: SQUAMATA (Lizards and Snakes)

Lizards

Frost and Etheridge, 1989, determined Iguanian Lizard families. Dixon, 2013, covers IMRS species.

CROTAPHYTIDAE (Collard and Leopard Lizard Family)

Crotaphytus collaris Say **Eastern Collared Lizard**

[Couvillon, 2011a, b; J.D. Johnson (UTEP)].

Records: IMRS HQ area, Echo Canyon, and on Main Road to Squaw Spring.

EUBLEPHARIDAE (Eyelid Gecko Family)

Eyelid Geckos were removed from family Gekkonidae by Kluge, 1987.

Coleonyx brevis Stejneger **Texas Banded Gecko**

[Couvillon, 2011a, b; Johnson et al., 2004].

Records: Several locations, including IMRS HQ.

PHRYNOSOMATIDAE (Earless, Horned, Side-blotched, Spiny, and Tree Lizard Family)

Cophosaurus texanus Troschel **Greater Earless Lizard**

[Axtell, 1991; Couvillon, 2011a, b; Franco, 2015; Mata-Silva et al., 2006; Mata-Silva et al., 2010; Mata-Silva, 2011].

Records: Squaw Spring, IMRS HQ area.

Note: The most abundant lizard on IMRS. Known for death feigning.

Phrynosoma cornutum (Harlan) **Texas Horned Lizard**

[Axtell, 1996; Couvillon 2011a, b].

Records: Known from a single specimen (SRSU; Axtell, 1996). Origin on IMRS is unknown, but most likely from near Double Tank Corral area.

Phrynosoma modestum Girard **Round-tailed Horned Lizard**

[Couvillon, 2011a, b; Mata-Silva and Johnson, 2011a].

Records: Throughout IMRS, IMRS HQ area, Lonely Tank.

Sceloporus cowlesi **Southwestern Fence Lizard**

[Couvillon, 2011a, b].

Records: IMRS HQ area, Squaw Creek Canyon, Double Tank Corral area, Oak Arroyo.

Note: Elevated from a subspecies of *S. undulatus* by Leache and Reeder (2002).

Sceloporus poinsetti Baird and Girard **Crevice Spiny Lizard**

[Couvillon, 2011a, b; Lukefahr et al. 2011].

Records: Throughout IMRS, especially near Squaw Spring, Bailly Evens Canyon, on road to Squaw Spring, Echo Canyon, Red Tank.

Note: Usually found on rocky cliff faces and on large rocks with crevices.

Urosaurus ornatus (Baird and Girard) **Ornate Tree Lizard**

[Alva, 2014; Axtell, 1997; Couvillon, 2011a, b; Garza et al. 2017; Mata-Silva et al., 2014].

Records: Squaw Spring, IMRS HQ area, Agate Hill.

Uta stansburiana (Baird and Girard) **Side-blotched Lizard**

[Couvillon, 2011a, b].

Records: IMRS HQ, Squaw Creek Canyon.

SCINCIDAE (Skink Family)

The genus of skinks in the New World, formerly *Eumeces*, was changed to *Plestiodon* independently by Smith, 2005, and Brandley et al., 2005.

Plestiodon obsoletus Baird and Girard **Great Plains Skink**

[Axtell, 2000; Couvillon, 2011a, b].

Records: IMRS HQ area and Squaw Spring.

Plestiodon tetragrammus Baird **Four-lined Skink**

[Axtell, 2001; Couvillon, 2011a, b; Johnson and Johnson, 1999].

Records: Known only from Squaw Spring area.

TEIIDAE (Ameivas, Racerunners, and Whiptails Family)

The genus of whiptail lizards in most of North America, formerly *Cnemidophorus*, was changed to *Aspidoscelis* by Reeder et al., 2002).

Aspidoscelis exsanguis (Lowe) **Chihuahuann Spotted Whiptail**

[Axtell, 2003; Carranza, 1997; Couvillon, 2011a, b; Lukefahr, 2013].

Records: Mostly found on eastern side of IMRS in canyons draining directly into Green River; Squaw Spring, Oak Arroyo, Prospect Pits (16 July 2011).

Note: Unisexual parthenogenetic species (3n).

Aspidoscelis inornatus (Baird) **Little Striped Whiptail**

[Axtell, 1994; Carranza, 1997; Couvillon, 2011a, b; Gordon, 1997; Lukefahr, 2013].

Records: IMRS HQ area; Double Tank Corral area.

Note: Bisexual.

Aspidoscelis marmorata (Baird and Girard) **Marbled Whiptail**

[Couvillon, 2011a, b; Hotchkin and Riveroll, 2005; Lukefahr, 2013;

Mata-Silva, 2005; Mata-Silva et al., 2008, 2010, 2013].

Records: Known from throughout IMRS.

Note: Bisexual species. Recognized as *A. tigris marmorata* by some. Most abundant whiptail on IMRS in some areas.

Aspidoscelis tessellatus (Baird) **Common Checkered Whiptail**

[Carranza, 1997; Couvillon, 2011a, b; Hotchkin and Riveroll, 2005; Lukefahr, 2013;

Mata-Silva, 2005; Mata-Silva et al., 2008, 2010, 2013].

Records: Known from throughout IMRS.

Note: Unisexual parthenogenetic species (2n).

Snakes

See CNAH website (www.cnah.org) for history behind snake family realignment. Dixon, 2013, Dixon and Werler, 2005, Werler and Dixon, 2000, and Dixon et al., 2020, cover IMRS species.

COLUBRIDAE (Harmless Egg-Laying Snakes Family)

Arizona elegans Kennicott **Glossy Snake**

[Couvillon, 2011a, b].

Records: One from west of IMRS HQ, J.D. Johnson (UTEP).

Bogertophis subocularis (Brown) **Trans-Pecos Rat Snake**

[Couvillon, 2011a, b; Rocha, 2012; Rocha et al., 2013, 2014].

Records: IMRS HQ, Peccary Tank, Echo Canyon, Flat Top Mountain, and Black Diamond Mine.

Gyalopion canum Cope **Western Hook-nosed Snake**

[Couvillon, 2011a, b].

Records: Near Purple Sage Mine, Peccary Tank (2 June 2015).

Lampropeltis alterna (Brown) **Gray-banded Kingsnake**

[Couvillon, 2011a, b].

Records: Near Red Tank, Prospect Pits area, Peccary Tank, between Rattlesnak Tank and Red Tank, July 2017, Emerson (UTEP).

Masticophis flagellum Shaw **Coachwhip Snake**

[Couvillon, 2011a, b; Mata-Silva et al., 2015].

Records: River Road south of Campo Bonito, HQ area, Peccary Tank; Carpenter Mine area.

Masticophis taeniatus Hallowell **Striped Whipsnake**

[Couvillon, 2011a, b].

Records: IMRS HQ area; Rattlesnake Tank, August 2011, V. Mata-Silva (UTEP).

Pituophis catenifer Blainville **Gopher Snake**

[Couvillon, 2011a, b].

Records: East side of IMRS, Peccary Tank.

- Rhinocheilus lecontei* Baird and Girard **Long-nosed Snake**
 [Couvillon, 2011a, b].
Records: Hills east of Main Road, Purple Sage Mine Road, IMRS HQ area, Prospect Pits, Peccary Tank, near Red Tank, near Rattlesnake Tank.
- Salvadora deserticola* Schmidt **Big Bend Patch-nosed Snake**
 [Couvillon, 2011a, b].
Records: River Road, Double Tank Corral area, Rattlesnake Tank, IMRS HQ area.
- Salvadora grahamiae* Baird and Girard **Mountain Patch-nosed Snake**
 [Couvillon, 2011a, b; DeSantis et al., 2016].
Records: Several from west slope of Indio Mountains, Echo Canyon.
- Sonora semiannulata* Baird and Girard **Western Groundsnake**
 [Couvillon, 2011a, b; Johnson, Johnson, and Riveroll, Jr., 2007; Mata-Silva et al., 2012].
Records: Near IMRS HQ area in pit-fall traps.
Note: A dead Western Ground Snake was fed to three nestling Greater Road Runners near IMRS HQ on 11 September 2010.
- Tantilla hobartsmithi* Taylor **Smith's Black-headed Snake**
 [Couvillon, 2011a, b].
Records: Several from IMRS HQ area.
Note: Often found under fallen yucca logs and in pit-fall traps.
- Tantilla nigriceps* Kennicott **Plains Black-headed Snake**
 [Couvillon, 2011a, b].
Note: The occurrence of this species on IMRS needs confirmation.
- Trimorphodon wilkinsonii* Cope **Chihuahuan Lyresnake**
 [Couvillon, 2011a, b; J.D. Johnson (UTEP); LaDuc and Johnson, 2003].
Records: Double Tank Corral area, near Prospect Pits and Echo Canyon, near Red Tank, and on mountain east of IMRS HQ.
Note: There is a photograph of the Double Tank Corral area record on Centennial Museum, Chihuahuan Desert Website. LaDuc and Johnson, 2003, changed the specific epithet from *T. biscutatus*.
- DIPSADIDAE (Slender Rear-Fanged Snakes Family)**
- Diadophis punctatus* Linnaeus **Ring-necked Snake**
 [Couvillon, 2011a, b].
Records: IMRS HQ area, Peccary Tank.
Note: Found mostly under fallen yucca logs and in pit-fall traps.
- Hypsiglena jani* (Dugès) **Chihuahuan Nightsnake**
 [Couvillon, 2011a, b; Mata-Silva et al., 2010, 2014].
Records: Several near IMRS HQ.
Note: Often found under fallen yucca logs and in pit-fall traps. The species name was changed from *H. torquata* by Mulcahy, 2008.
- LEPTOTYPHLOPIDAE (Thread Snake Family)**
- Rena segregata* Klauber 1939 **Trans-Pecos Thread Snake**
 [Couvillon, 2011a, b; Mata-Silva and Johnson, 2011b].
Records: IMRS HQ area, Woodpecker Well.
Note: Frequently taken in pit-fall traps. The genus name was changed from *Leptotyphlops* by Adalsteinsson et al., 2009. Wallach et al., 2014, elevated it from a subspecies of *R. humilis*.
- NATRICIDAE (Harmless Live-Bearing Snake Family)**
- Thamnophis cyrtopsis* (Kennicott) **Blackneck Garter Snake**
 [Couvillon, 2011a, b].
Records: Squaw Spring, East Well Draw, IMRS HQ area, Peccary Tank, Red Tank.
Note: It is not restricted to wetlands on IMRS.

VIPERIDAE (Viper Family)

At least one other species of rattlesnake likely occurs on IMRS (*Crotalus scutulatus*), because they are frequently observed along Green River Road east and northeast of IMRS. Considered to be in Family Crotalidae by some.

- Crotalus atrox* Baird and Girard **Western Diamond-backed Rattlesnake**
[Couvillon, 2011a, b; Mata-Silva et al., 2011; Mata-Silva and Johnson, 2014].
Records: Ubiquitous and frequently encountered at Peccary Tank, Red Tank, IMRS HQ, Squaw Spring, and Double Tank Corral area.
- Crotalus lepidus* Kennicott **Rock Rattlesnake**
[Campbell and Lamar, 2004 (photograph); Couvillon, 2011a, b; DeSantis et al. 2015; Dominguez, 2000; Mata-Silva et al., 2010; Mata-Silva et al., 2011; Mata-Silva et al. 2015 (2014); Mata-Silva et al, 2018; Price, 2009 (photographs); Rael et al., 1992].
Records: Nearly ubiquitous in rocky areas on IMRS (UTEP).
- Crotalus ornatus* Baird and Girard **Eastern Black-tailed Rattlesnake**
[Anderson and Greenbaum, 2012; Couvillon, 2011a, b; Miranda et al., 2008;].
Records: Ubiquitous on IMRS in rocky areas.
Note: Elevated from *C. molossus* by Anderson and Greenbaum, 2012.

CLASS: AVES (Birds)

Compiled by G.H. Wiseman, K. Garza, J.D. Johnson, S. Cutler, and C.S. Lieb.

Many of the following observations on the avifauna were taken from the field notes of Scott Cutler (UTEP) who visited the ranch 19-21 May 1995 and 15-16 July 2000. Merged in are observations listed on the web site for past Field Biology classes, and observations by Terry Hibbits and J.D. Johnson (UTEP). Wiseman, 2014, completed a three-year bird survey, especially near five water sources on IMRS. Kayla Garza (UTEP) did an ecogeographic study of IMRS birds in oak/juniper canyon and arroyo habitats. The order of the families and nomenclature follows the Texas Parks and Wildlife “A Checklist of Texas Birds” 6th Ed. 2003. The avifauna of the area between Indian Hot Springs and Presidio was reported to consist of 160 species; 30 residents (West, 1976); others were seasonally or migratory. Wiseman, 2014, recorded 141 species on IMRS.

ACCIPITRIDAE (Hawk, Kite, and Eagle Family)

- Aquila chrysaetos* (Linnaeus) **Golden Eagle**
Records: A pair observed near Box Canyon on Rio Grande, May 2009, G.W. Johnson (UTEP); Echo Canyon, June 2015, J.D. Johnson (UTEP).
- Buteo jamaicensis* (Gmelin) **Red-tailed Hawk**
Records: Southeast of IMRS HQ, July 2000, Cutler (UTEP); Squaw Spring, July 2000, Cutler (UTEP); IMRS, 2-3 May 1992, Hibbits; IMRS, March 1995, Field Biology Class; Squaw Spring, 12 June 2001, J.D. Johnson (UTEP).
- Buteo regalis* (Gray) **Ferruginous Hawk**
Records: IMRS HQ, 3 May 2008, Dash (UTEP).
- Buteo swainsoni* Bonaparte **Swainson’s Hawk**
Note: needs verification on IMRS.
- Circus cyaneus* (Linnaeus) **Northern Harrier**
Records: IMRS, March-April 1991, Field Biology Class; IMRS HQ, 21 October 2016, J.D. Johnson (UTEP).
- Elanus leucurus* (Vieillot) **White-tailed Kite**
Records: IMRS HQ, May 2008, J.D. Johnson (UTEP); verified from photograph by Cutler (UTEP).
- Pandion haliaetus* (Linnaeus) **Osprey**
Records: IMRS HQ area, April 2006 and May 2008, J.D. Johnson (UTEP).

ALAUDIDAE (Horned Lark Family)

- Eremophila alpestris* (Linnaeus) **Horned Lark**
Note: Needs verification on IMRS.

ANATIDAE (Duck and Geese Family)

- Bucephala albeola* (Linnaeus) **Bufflehead**
Records: Road Tank, 14 January 2012, Wiseman (UTEP).
- Anas crecca* Linnaeus **Green-winged Teal**
Records: IMRS, 16 March 1991, Field Biology Class; Road Tank, 14 January 2012, Wiseman (UTEP).
- Anas discors* Linnaeus **Blue-winged Teal**
Records: Pirtle Tank, 8 September 2012, Wiseman (UTEP).
- Anas platyrhynchos* Linnaeus **Mallard**
Records: Road Tank, 14 January 2012, Wiseman (UTEP).
- Anas strepera* Linnaeus **Gadwall**
Records: IMRS, 5 April 1991, Field Biology Class.

APODIDAE (Swift Family)

- Aeronautes saxatalis* (Woodhouse) **White-throated Swift**
Records: IMRS, 2-3 May 1992, Hibbits; IMRS HQ, 12 August 2016, J.D. Johnson (UTEP).

ARDEIDAE (Bittern, Heron and Egret Family)

- Ardea Herodias* Linnaeus **Great Blue Heron**
[Wiseman (UTEP)].
- Egretta thula* (Molina) **Snowy Egret**
Records: IMRS Headquarters, 25 September 2016, V. Mata-Silva (UTEP).
- Nycticorax nycticorax* (Linnaeus) **Black-crowned Night Heron**
[Wiseman (UTEP)].

BOMBYCILLIDAE (Waxwing Family)

- Bombycilla cedrorum* Vieillot **Cedar Waxwing**
Records: IMRS, May 1995, Herpetology Field Trip.

CAPRIMULGIDAE (Nighthawk, Poor-will Family)

- Chordeiles acutipennis* (Hermann) **Lesser Nighthawk**
Records: IMRS HQ, summer 2016, Garza (UTEP), J.D. Johnson (UTEP).
- Chordeiles minor* (Foster) **Common Nighthawk**
Records: IMRS HQ, May 1995, Cutler (UTEP).
- Phalaenoptilus nuttallii* (Audubon) **Common Poorwill**
Records: IMRS, 2-3 May 1992, Hibbits; IMRS HQ, 18 March 2011, J.D. Johnson (UTEP); 7 March 2014, Wiseman (UTEP).

CARDINALIDAE (Grosbeak, Cardinal, and Bunting Family)

- Cardinalis sinuatus* Bonaparte **Pyrrhuloxia**
Records: IMRS HQ; May 1995, Squaw Spring; 1.5 mi. southeast of IMRS HQ, July 2000, Cutler (UTEP); IMRS, April 1990, Field Biology Class. IMRS HQ and Squaw Spring, summer 2010, J.D. Johnson (UTEP); IMRS HQ, 7 April 2011, August 2014, J.D. Johnson.
- Passerina ameona* (Say) **Lazuli Bunting**
Records: Juniper Grove, 27 August 2016, Garza (UTEP).
- Passerina caerulea* (Linnaeus) **Blue Grosbeak**
Records: IMRS, May 1995, Herp Field Trip; IMRS HQ, 2 May 2010, J.D. Johnson (UTEP); Squaw Spring, 12 June 2010, J.D. Johnson; Mesquite Tank, 4 August 2011, Wiseman (UTEP); Juniper Grove June 2017, Garza (UTEP).
- Passerina ciris* (Linnaeus) **Painted Bunting**
Records: Peccary Tank, 16 July 2011, Wiseman (UTEP) (mating pair).
- Passerina versicolor* (Bonaparte) **Varied Bunting**
Records: Squaw Spring, May 1995, Cutler (UTEP).
- Pheucticus melanocephalus* (Swainson) **Black-headed Grosbeak**
Records: Road to Squaw Spring, July 2000, Cutler (UTEP), 10 May 2013, Wiseman (UTEP).

- Spiza Americana* (Gmelin) **Dickcissel**
Records: Rattlesnake Tank, 27 August 2011, 10 September 2010, Wiseman (UTEP).
- CATHARTIDAE (Vulture Family)**
- Cathartes aura* (Linnaeus) **Turkey Vulture**
Records: Squaw Spring, May 1995, J.D. Johnson (UTEP). Common throughout IMRS.
Note: Turkey Vultures usually arrive early in April and leave in October.
- CHARADRIIDAE (Plover and Killdeer Family)**
- Charadrius vociferous* Linnaeus **Killdeer**
Records: IMRS, 2-3 May 1992, Hibbits, 9 August 2013, Wiseman (UTEP).
- COLUMBIDAE (Dove and Pigeon Family)**
- Columbina inca* (Lesson) **Inca Dove**
Note: This species needs documentation on IMRS.
- **Streptopelia decaocto* (Frisvaldwszky) **Eurasian Collared Dove**
Records: A pair at IMRS HQ, 27 August 2011, Wisemen (UTEP), J.D. Johnson (UTEP).
Note: Records were possibly for the Ringed Turtle Dove, *S. risoria*.
- **Streptopelia orientalis* (Latham) **Oriental Turtle Dove**
Records: IMRS HQ, May 2005, J.D. Johnson (UTEP), with flock of White-winged Doves.
- Zenaida asiatica* (Linnaeus) **White-winged Dove**
Records: IMRS HQ area, May 1995, Cutler (UTEP); Squaw Spring, July 2000, Cutler; IMRS, 2-3 May 1992, Hibbits.
- Zenaida macroura* (Linnaeus) **Mourning Dove**
Records: Squaw Spring, May 1995, July 2000, Cutler; IMRS, 2-3 May 1992, Hibbits.
Note: Common around IMRS HQ and Squaw Spring.
- CORVIDAE (Jay, Crow, Raven Family)**
- Aphelocoma woodhouseii* (Baird) **Woodhouse's Scrub-Jay**
Records: IMRS HQ, 11, 18 April 2010, J.D. Johnson (UTEP).
- Corvus cryptoleucus* Couch **Chihuahuan Raven**
Records: IMRS, 2-3 May 1992, Hibbits. IMRS HQ, 18 April 2010; 25 November 2012, Wiseman (UTEP), 2 May 2014, January 2015, J.D. Johnson (UTEP).
- Cyanocitta stelleri* (Gmelin) **Steller's Jay**
Records: Squaw Spring, 19 April 2018, D. DeSantis (UTEP).
- CUCULIDAE (Cuckoo Family)**
- Geococcyx californianus* (Lesson) **Greater Roadrunner**
[Mata-Silva et al., 2012]
Records: Southeast of IMRS HQ, July 2000, Cutler (UTEP); IMRS, 2-3 May 1992, Hibbits; IMRS HQ, May 2009, 12 June 2010, July 2016, J.D. Johnson (UTEP).
Note: A nesting pair with nest high in a Catclaw near IMRS HQ, 14 August 2010, laid four eggs, three of which hatched. On 11 September 2010 male brought nestlings a dead *Sonora semiannulata*.
- EMBERIZIDAE (Sparrow and Towhee Family)**
- Aimophila ruficeps* (Cassin) **Rufous-crowned Sparrow**
Records: IMRS HQ, March 1992, Gardea and Mena, 1992; IMRS, April 1990, Field Biology Class; IMRS, 2-3 May 1992, Hibbits.
- Amphispiza bilineata* (Cassin) **Black-throated Sparrow**
Records: IMRS HQ area, May 1995, Cutler (UTEP); Squaw Spring, July 2000, Cutler; IMRS HQ area, March 1992, Gardea and Mena, 1992; IMRS, April 1990; common near IMRS HQ, J.D. Johnson (UTEP).

<i>Calamospiza melanocorys</i> Stegner	Lark Bunting
Records: IMRS, April 1990, Field Biology Class; IMRS HQ, 11 April 2010, 7 August 2010, J.D. Johnson (UTEP), 4 August 2011, 3 May 2014, Wiseman (UTEP).	
<i>Chondrestes grammacus</i> (Say)	Lark Sparrow
Records: IMRS HQ, 26 Aug 2011, J.D. Johnson (UTEP); Mesquite Tank, 20 August 2011, Wiseman (UTEP).	
<i>Junco hyemalis</i> (Linnaeus)	Dark-eyed Junco
Records: IMRS HQ, 4 November 2012, 5 May 2018, J.D. Johnson (UTEP), Wiseman (UTEP).	
<i>Melospiza melodia</i> (Wilson)	Song Sparrow
Records: Rattlesnake Tank, 7 September 2013, Wiseman (UTEP).	
<i>Melospiza lincolni</i> (Audubon)	Lincoln Sparrow
Records: Squaw Spring, 2 March 2013. Wiseman (UTEP).	
<i>Passerculus sandwichensis</i> (Gmelin)	Savannah Sparrow
Records: Rattlesnake Tank, 10 September 2011, Wiseman (UTEP).	
<i>Pipilo chlorurus</i> (Audubon)	Green-tailed Towhee
Records: IMRS, 2-3 May 1992, Hibbits; IMRS HQ, 8 May 2010, J.D. Johnson (UTEP).	
<i>Pipilo erythrophthalmus</i> (Linnaeus)	Eastern Towhee
Records: IMRS, April 1990, Field Biology Class.	
<i>Pipilo fuscus</i> Swainson	Canyon Towhee
Records: Road to Squaw Spring, May 1995, Cutler (UTEP); IMRS, March 1995, Field Biology Class; IMRS HQ, 7 April 2011, J.D. Johnson (UTEP).	
<i>Pipilio maculatus</i> Swainson	Spotted Towhee
Records: Pirtle Tank, 15 October 2011, Wiseman (UTEP).	
<i>Pooecetes gramineus</i> (Gmelin)	Vesper Sparrow
Records: Pirtle Tank, 15 October 2011, Wiseman (UTEP). Note: Recorded at all ephemeral tanks, but not Squaw Spring, Wiseman (UTEP).	
<i>Spizella atrogularis</i> (Cabanis)	Black-chinned Sparrow
Records: IMRS HQ, March 1992, Gardea and Mena, 1992.	
<i>Spizella breweri</i> Cassin	Brewer's Sparrow
Records: IMRS HQ, March, Gardea and Mena, 1992; IMRS, April 1991, March 1995, Field Biology Class.	
<i>Spizella pallida</i> (Swainson)	Clay-colored Sparrow
Records: Rattlesnake Tank, 10 September 2011, Wiseman (UTEP). Note: Common during summer, Wiseman (UTEP).	
<i>Spizella passerina</i> (Bechstein)	Chipping Sparrow
Records: IMRS HQ, March 1992, Gardea and Mena; IMRS, 2-3 May 1992, Hibbits; Mesquite Tank, August 2011, Wiseman (UTEP).	
<i>Spizella pusilla</i> (Wilson)	Field Sparrow
Records: Squaw Spring, 30 September 2012, Wiseman (UTEP).	
<i>Zonotrichia leucophrys</i> (Forster)	White-crowned Sparrow
Records: Squaw Spring, May 1995, Cutler (UTEP); IMRS HQ, March 1992, Gardea and Mena, 1992; IMRS HQ, 7 April 2011, March 2013, J.D. Johnson (UTEP).	
FALCONIDAE (Falcon and Kestrel Family)	
<i>Falco sparverius</i> Linnaeus	American Kestrel
Records: IMRS, 2 May 1992, Hibbits; IMRS HQ, July and August 2016, J.D. Johnson (UTEP),	
<i>Falco mexicanus</i> Schlegel	Prairie Falcon
Records: IMRS HQ, 12 June 2015, J.D. Johnson (UTEP).	

FRINGILLIDAE (Finch, Crossbill, Goldfinches Family)

- Haemorhous mexicanus* Müller **House Finch**
Records: Squaw Spring, May 1995, July 1995, Cutler (UTEP); IMRS HQ, March 1992, Gardea and Mena 1992; IMRS, 2-3 May 1992, Hibbits; IMRS HQ, April, July 9, 2016, Squaw Spring, 12 June 201 4 August 2011, Wiseman (UTEP).
- Spinus pinus* (Wilson) **Pine Siskin**
Records: Mesquite Tank, 24 November 2012; Rattlesnake Tank, 12 April 2014, Wiseman (UTEP).
- Spinus psaltria* (Say) **Lesser Goldfinch**
Records: Squaw Spring, 8 July 2011, Pirtle Tank, 28 January 2012, Wiseman (UTEP).
- Spinus tristis* (Linnaeus) **American Goldfinch**
Records: Pirtle Tank, 31 March 2013, Wiseman (UTEP).

HIRUNDINIDAE (Martin and Swallow Family)

- Hirundo rustica* Linnaeus **Barn Swallow**
Records: IMRS, May 1995, field trip group.
- Petrochelidon pyrrhonota* Vieillot **Cliff Swallow**
Records: Needs verification on IMRS.

ICTERIDAE (New World Black Birds Family)

- Agelaius phoeniceus* (Linnaeus) **Red-winged Blackbird**
Records: Rattlesnake Tank, 10 September 2011, Wiseman (UTEP).
- Euphagus cyanocephalus* (Wagler) **Brewer's Blackbird**
Records: IMRS HQ, May 1995, Cutler (UTEP), 15 April 2013, Wiseman (UTEP); IMRS, 2-3 May 1992, Hibbits, March 1995, Field Biology Class.
- Icterus bullockii* (Swainson) **Bullock's Oriole**
Records: Mesquite Tank, 10 September 2011, Wiseman (UTEP).
- Icterus cucullatus* Swainson **Hooded Oriole**
Records: IMRS HQ, 7 June 2008, Dash (UTEP).
- Icterus parisorum* Bonaparte **Scott's Oriole**
Records: Squaw Spring, May 1995, July 2000, Cutler (UTEP); IMRS HQ, March-April 1991, March 1995, Field Biology Classes; IMRS, 2-3 May 1992, Hibbits.
Note: Common around IMRS HQ, J.D. Johnson (UTEP).
- Icterus spurius* (Linnaeus) **Orchard Oriole**
Records: PirtleTank, 28 July 2014. Wiseman (UTEP).
- Molothrus ater* (Boddaert) **Brown-headed Cowbird**
Records: IMRS HQ, July 2000, Cutler (UTEP); IMRS, 2-3 May 1992, Hibbits.
Note: Common around IMRS HQ during summer, J.D. Johnson (UTEP).
- Molothrus aeneus* (Wagler) **Bronzed Cowbird**
Records: IMRS HQ, 6 June 2009, G.W. Johnson, J.D. Johnson (UTEP); MRS HQ, summer 2010, 4 August 2011, J.D. Johnson (UTEP).
Note: Common around HQ during summer, J.D. Johnson.
- Quiscalus mexicanus* (Gmelin) **Great-tailed Grackle**
Records: IMRS HQ, 18 April 2010, 7 April 2011, 16 March 2013, J.D. Johnson (UTEP)
- Sturnella neglecta* Audubon **Western Meadowlark**
Records: IMRS HQ, October 2010, 7 April 2011, J.D. Johnson (UTEP).
- Xanthocephalus xanthocephalus* (Bonaparte) **Yellow-headed Blackbird**
Records: IMRS HQ, summers 2004, 2006, 2008, 2010, 2011, 2013, 2015–2021, J.D. Johnson (UTEP).

LANIIDAE (Shrike Family)

- Lanius ludovicianus* Linnaeus **Loggerhead Shrike**
[Gardea and Mena, 1992].
Records: IMRS HQ, April 1990, March 1992, Field Biology classes.
Note: Commonly observed around IMRS HQ, J.D. Johnson (UTEP).

MIMIDAE (Thrashers and Mockingbird Family)

- Mimus polyglottos* (Linnaeus) **Northern Mockingbird**
Records: Double Tank Corral, May 1995, Squaw Spring, May 1995;
IMRS HQ, May 1995, Cutler (UTEP).
Note: Common around IMRS HQ during breeding season, J.D. Johnson (UTEP).
- Oreoscoptes montanus* (Townsend) **Sage Thrasher**
Records: Pirtle Tank, 23 September 2011, Wiseman (UTEP).
- Toxostoma crissale* (Henry) **Crissal Thrasher**
Records: Squaw Spring, May 1995, Double Tank Corral, May 1995, Cutler (UTEP);
IMRS HQ, March 1992, Gardea and Mena, 1992.
- Toxostoma curvirostre* (Swainson) **Curve-billed Thrasher**
Records: IMRS HQ, 12 March 2010, J.D. Johnson (UTEP).

MOTACILLIDAE (Pipit Family)

- Anthus rubescens* (Tunstall) **Buff-bellied Pipit**
Records: IMRS, 4 April 1991, Field Biology Class; Road Tank,
21 June 2012, Wiseman (UTEP).

ODONTOPHORIDAE (Quail Family)

- Callipepla gambelii* (Gambel) **Gambel's Quail**
Records: Confirmed on IMRS for areas near Prospect Pits, between IMRS HQ
and Squaw Spring, summer 2015, J.D. Johnson (UTEP), and near
The Box Canyon of Rio Grande, V. Mata-Silva (UTEP).
- Callipepla squamata* (Vigors) **Scaled Quail**
Records: IMRS HQ area, July 2000, Cutler (UTEP); IMRS, 2-3 May 1992,
Hibbits; IMRS, April 1995, Field Biology Class.

PARULIDAE (Warbler Family)

- Cardellina pusilla* (Wilson) **Wilson's Warbler**
Records: IMRS HQ, 2-3 May 1992, Hibbits; August, September 2011,
Wiseman (UTEP), Peccary Tank, Pirtle Tank, Rattlesnake Tank,
Red Tank 10 September 2011, Wiseman.
- Geothlypis tolmiei* (Townsend) **MacGillivray's Warbler**
Records: Squaw Spring, May 1995, Cutler (UTEP).
- Geothlypis trichas* (Linnaeus) **Common Yellowthroat**
Records: Needs confirmation on IMRS.
- Leiothlypis ruficapilla* (Wilson) **Nashville Warbler**
Records: Rattlesnake Tank, 12 April 2014, Wiseman (UTEP).
- Leiothlypis virginiae* (Baird) **Virginia's Warbler**
Records: IMRS, May 1995, Herpetology field trip; Red Tank,
7 June 2008 (dead on ground), J.D. Johnson (UTEP).
- Seiurus noveboracensis* (Gmelin) **Northern Waterthrush**
Records: Road Tank, 13 August 2011, Wiseman (UTEP).
- Setophaga americana* (Linnaeus) **Northern Parula**
Records: Pirtle Tank, 15 October 2011, Wiseman (UTEP).
- Setophaga coronata* (Linnaeus) **Yellow-rumped Warbler**
Records: Squaw Spring, May 1995, Cutler (UTEP); IMRS HQ,
7 April, 14 May 2011, J.D. Johnson (UTEP).
- Setophaga petechia* (Linnaeus) **Yellow Warbler**
Records: Rattlesnake Tank, 27 August 2011, Wiseman (UTEP).
- Setophaga townsendi* (Townsend) **Townsend's Warbler**
[Wiseman (UTEP)]
Records: Mesquite Tank, 8 October 2012.
Note: Observed at all ephemeral tanks and Squaw Spring.

PICIDAE (Woodpecker Family)

- Colaptes auratus* (Linnaeus) **Northern Flicker**
Records: Common near IMRS HQ, J.D. Johnson (UTEP).

- Picoides scalaris* (Wagler) **Ladder-backed Woodpecker**
Records: Road from IMRS HQ to Squaw Spring, July 2000,
- PTILOGONATIDAE (Phainopepla Family)**
- Phainopepla nitens* (Swainson) **Phainopepla**
Records: Squaw Spring, May 1995, Cutler (UTEP); IMRS HQ, June 2006, 2014,
 J.D. Johnson (UTEP); Mesquite Tank, March 2013, Wiseman (UTEP).
- RALLIDAE (Coot and Rail Family)**
- Fulica americana* Gmelin **American Coot**
Records: Needs confirmation on IMRS
- Porzana carolina* (Linnaeus) **Sora Rail**
Records: Rattlesnake Tank, 17 July 2016 (Eaten by *C. atrox*);
 Pecary Tank, 6 August 2016, D. DeSantis (UTEP).
- Rallus limicola* Vieillot **Virginia Rail**
Records: Pirtle Tank, 27 April 2013, Wiseman (UTEP).
- RECURVIROSTRIDAE (Stilts and Avocets Family)**
- Recurvirostris americana* Gmelin **American Avocet**
Records: Road Tank, 13 April 2013, Wiseman (UTEP);
 IMRS HQ, June 2014, J.D. Johnson (UTEP).
- REGULIDAE (Kinglet Family)**
- Regulus calendula* (Linnaeus) **Ruby-crowned Kinglet**
Records: Squaw Spring, 20 January 2012, Wiseman (UTEP).
- REMIZIDAE (Verdin Family)**
- Auriparus flaviceps* Sundevall **Verdin**
Records: IMRS, April 1990, March-April, 1995, Field Biology Classes;
 IMRS HQ, June 2009, J.D. Johnson (UTEP), August 2011,
 Wiseman (UTEP).
- SCOLOPACIDAE (Sandpipers, Snipes, and Phalaropes Family)**
- Gallinago gallinago* (Linnaeus) **Common Snipe**
Records: IMRS, 2-3 May 1992, Hibbits.
- Phalaropus tricolor* (Vieillot) **Wilson's Phalarope**
Records: Road Tank, 15 Oct. 2011, Wiseman (UTEP).
- Tringa solitaria* (Wilson) **Solitary Sandpiper**
Records: IMRS, 5 April 1991, Field Biology Class, July 2013, Wiseman (UTEP).
- STRIGIDAE (Owl Family)**
- Athene cunicularia* (Molina) **Burrowing Owl**
Records: This species needs documentation on IMRS.
- Bubo virginianus* (Gmelin) **Great Horned Owl**
Records: Commonly heard and observed around IMRS HQ, J.D.
 Johnson (UTEP).
- Micranthene whitneyi* (Cooper) **Elf Owl**
Records: IMRS HQ, 25 May 2010, 13, 27 April 2012, J.D. Johnson (UTEP),
 Wiseman (UTEP); Juniper Grove, 2 October 2016, Garza (UTEP).
Note: Nesting pair in woodpecker hole in wooden IMRS HQ kitchen water
 tower legs. Fledged week 27 June 2012. Returns in April and gone by
 October every year since 2010, J.D. Johnson (UTEP).
- Megascops kennicottii* (Elliot) **Western Screech-Owl**
Records: Near IMRS HQ, 19 June 2015, Emerson (UTEP).
- Tyto alba* (Scopoli) **Barn Owl**
Records: Observed around IMRS HQ, August 2016, Garza (UTEP).
- SYLVIIDAE (Gnatcatcher Family)**
- Poliophtila melanura* Lawrence **Black-tailed Gnatcatcher**
Records: Squaw Spring, May 1995, Cutler (UTEP), IMRS HQ area,
 May 1995, Cutler; March 1992, Gardea and Mena, 1992;
 July 2009, J.D. Johnson (UTEP).

- Poliophtila caerulea* (Linnaeus) **Blue-gray Cnatcatcher**
Records: Mesquite Tank, 10 September 2011, Wiseman (UTEP).
- THRAUPIDAE (Tanager Family)**
- Prianga ludoviciana* (Wilson) **Western Tanager**
Records: Squaw Spring, May 1995, Cutler (UTEP); the Box on Rio Grande,
 17 July 2010, J.D. Johnson (UTEP).
- Prianga rubra* (Linnaeus) **Summer Tanager**
Records: Squaw Spring, May 1995, Cutler (UTEP).
- TROCHILIDAE (Hummingbird Family)**
- Archilochus alexandri* (Bourcier and Mulant) **Black-chinned Hummingbird**
Records: Squaw Spring, May 1995, Cutler (UTEP); IMRS, April 1990,
 Field Biology class, 2-3 May 1992, Hibbits; IMRS HQ, 7 June 2008,
 16 June 2009, 27 August 2011, May 2013 – 2016, J.D. Johnson (UTEP).
- Salasphorus calliope* (Gould) **Calliope Hummingbird**
Records: Oak Arroyo, August 2016, Garza (UTEP).
- Selasphorus rufus* (Gmelin) **Rufous Hummingbird**
Records: IMRS HQ, 4 August 2011, Wiseman (UTEP), 27 August 2011,
 J.D. Johnson (UTEP); Road Tank, 4 August 2011, V. Mata-Silva (UTEP);
 Mesquite Tank, 8 October 2011, Wiseman (UTEP).
- Salasphorus platycercus* (Swainson) **Broad-tailed Hummingbird**
Records: Juniper Grove, 27 August 2016, Garza (UTEP), April 1990, Cutler (UTEP);
 IMRS HQ, 7 June 2008, J.D. Johnson (UTEP).
- TROGLODYTIDAE (Wren Family)**
- Campylorhynchus brunneicapillus* (Lafresnaye) **Cactus Wren**
Records: Calling at Squaw Spring, May 1995, J.D. Johnson (UTEP); along
 road to Squaw Spring, July 2000, April 1990, Cutler (UTEP); IMRS,
 2-3 May 1992, Hibbits, March 1990, Field Biology Class; IMRS HQ,
 June 2007, J.D. Johnson (UTEP).
- Catherpes mexicanus* (Swainson) **Canyon Wren**
Records: Squaw Spring, 16 July 2011, Wiseman (UTEP); IMRS HQ, 2013,
 J.D. Johnson (UTEP).
- Salpinctus obsoletus* (Say) **Rock Wren**
Records: IMRS HQ, March 1992, Gardea and Mena, 1992; IMRS, 2-3 May
 1992, Hibbits; Squaw Spring, 18 February 2012, Wiseman (UTEP).
- Thryomanes bewickii* (Audubon) **Bewick's Wren**
Records: Squaw Spring, July 2000, Cutler (UTEP); IMRS HQ, March 1992,
 Gardea and Mena, 1992; IMRS, April 1992, Field Biology Class;
 Mesquite Tank, 24 September 2011, Wiseman (UTEP).
- Troglodytes aedon* (Vieillot) **House Wren**
Records: Oak Wash, 27 August 2016, Garza (UTEP).
- TURDIDAE (Thrush, Robin, Solitaire, and Bluebird Family)**
- Catharus guttatus* (Pallas) **Hermit Thrush**
Records: IMRS, May 1995, Herpetology class Field Trip.
- Myadestes townsendi* (Audubon) **Townsend's Solitaire**
Records: Squaw Spring, 28 September 2013, Pirtle Tank, 19 October 2013,
 Wiseman (UTEP).
- Sialia currucoides* (Bechstein) **Mountain Bluebird**
Records: Red Tank, 5 November 2011, Wiseman (UTEP).
- Sialia mexicana* Swainson **Western Bluebird**
Records: IMRS HQ, 23 May 2010, G.W. Johnson (UTEP).
- Turdus migratorius* Linnaeus **American Robin**
Records: IMRS HQ, 12 March 2010, J.D. Johnson (UTEP).

TYRANNIDAE (Flycatcher, Kingbird and Phoebe Family)

- Contopus cooperi* (Swainson) **Olive-sided Flycatcher**
Records: Squaw Spring, May 1995, Cutler (UTEP).
Note: *C. borealis* in some books
- Contopus sordidulus* (Sclater) **Western Wood Pewee**
Records: Rattlesnake Tank, 20 August 2011, Wiseman (UTEP).
- Empidonax minimus* (Baird) **Least Flycatcher**
Records: Rattlesnake Tank, 10 September 2011, Wiseman (UTEP).
- Empidonax oberholseri* Phillips **American Dusky Flycatcher**
Records: Mesquite and Rattlesnake Tanks, 14 May 2012, Wiseman (UTEP).
- Empidonax occidentalis* Nelson **Cordilleran Flycatcher**
Records: Pirtle Tank, 17 May 2013, Wiseman (UTEP).
- Myiarchus cinerascens* (Lawrence) **Ash-throated Flycatcher**
Records: Double Tank Corral, May 1995, Squaw Spring, May 1995, IMRS HQ, May 1992, 1995, Cutler (UTEP), April 2012, Hibbits.
Note: Common around IMRS HQ, J.D. Johnson (UTEP).
- Pyrocephalus rubinus* (Boddaert) **Scarlet Flycatcher**
Records: IMRS HQ, 18 April 2010, J.D. Johnson (UTEP).
- Sayornis nigricans* (Swainson) **Black Phoebe**
Records: Pirtle Tank, 24 September 2011, Wiseman (UTEP).
- Sayornis saya* (Bonaparte) **Say's Phoebe**
Records: Nests annually around IMRS HQ, J.D. Johnson (UTEP).
- Tyrannus verticalis* Say **Western Kingbird**
[Gardea and Mena, 1992].
Records: IMRS HQ, March 1992, May 1992, Hibbits.

VIREONIDAE (Vireo Family)

- Vireo gilvus* (Vieillot) **Warbling Vireo**
Records: Squaw Spring, 25 August 2012, Rattlesnake Tank, 2012, PirtleTank, 2013, Wiseman (UTEP).
- Vireo griseus* (Vieillot) **White-eyed Vireo**
Records: PirtleTank, 22 May 2013, Wiseman (UTEP).
- Vireo solitaries* (Wilson) **Blue-headed Vireo**
Note: This species needs documentation on IMRS.
- Vireo vicinior* Coues **Gray Vireo**
Records: IMRS, March 1995, Field Biology Class.

CLASS: MAMMALIA (Mammals)

Compiled by H. Brewer, J.D. Johnson, and C.S. Lieb. Schmidly, 1977, 1991 (bats), 2004, cover IMRS species.

ORDER: DIDELPHIMORPHIA (Opossums)

DIDELPHIDAE (Opossum Family)

- Didelphis virginiana* Kerr **Virginia Opossum**
[Brewer, 2004, 2007].
Records: Photo in Brewer, 2004, shows tail only.

ORDER: INSECTIVORA (Shrews and Moles)

SORICIDAE (Shrew Family)

- Notiosorex crawfordi* (Coues) **Desert Shrew**
Records: 1996, one from a pit-fall trap near IMRS HQ, J.D. Johnson (UTEP).

ORDER: CHIROPTERA (Bats)

MOLOSSIDAE (Free-tailed Bat Family)

Tadarida brasiliensis (Geoffroy) **Brazilian Free-tailed Bat**

Record: Observed and photographed May 2009 at Road Tank by R. Todorovich (UTEP).

VESPERTILIONIDAE (Vespertilionid Bat Family)

Antrozous pallidus (Le Conte) **Pallid Bat**

[Brewer, 2007; Lenhart et al., 2010; Mata-Silva et al., 2011a, b].

Records: Squaw Spring, IMRS HQ, Brewer, 2007; Squaw Spring, 2001, J. Mueller.

Note: Night roost in entrance to IMRS HQ bathrooms normally have up to 40 at one time. Low numbers in summer of 2011 (only 8 or 9 per night). They arrive mid-April, J.D. Johnson (UTEP).

Corynorhinus townsendii (Cooper) **Townsend's Big-eared Bat**

Records: IMRS HQ, 2004, 2007, 7 April 2011. J.D. Johnson (UTEP); Prospect Pits, 17 May 2005, V. Mata-Silva (UTEP), photo.

Myotis californicus (Audubon and Bachman) **California Myotis**

Records: Squaw Spring, 2001, J. Mueller.

Myotis thysanodes Miller **Fringed Myotis**

Records: Squaw Spring, 2001, J. Mueller.

Parastrellus hesperus (Allen) **Western Pipistrelle**

Records: Prospect Pits area, J.D. Johnson (UTEP); Squaw Spring, 2001, J. Mueller; V. Mata-Silva, 1 May 2015, photos.

Note: Removed from *Pipistrellus* and placed into the monotypic genus *Parastrellus* by Hooper et al., 2006.

ORDER: LAGOMORPHA (Rabbits and Hares)

LEPORIDAE (Rabbit and Hare Family)

Lepus californicus Gray **Black-tailed Jackrabbit**

[Brewer, 2004, 2007, photo].

Records: IMRS HQ, 2008–2021, J.D. Johnson (UTEP).

Sylvilagus audubonii (Baird) **Desert Cottontail**

Records: IMRS HQ, 2008–2021, J.D. Johnson (UTEP).

ORDER: RODENTIA (Rodents)

CASTORIDAE (Beaver Family)

Castor canadensis Kuhl **American Beaver**

[V. Mata-Silva (UTEP); A. Rocha (UTEP), video]

Records: The Box Canyon of Rio Grande, 11 February 2022, 20:51 h.

Note: Uncommon.

CRICETIDAE (Mouse and Rat Family)

The resurrection of family name Cricetidae from Muridae follows Wilson and Reeder (2005).

Neotoma leucodon Merriam **Eastern White-throated Woodrat**

[Brewer, 2004, 2007].

Records: IMRS HQ area, J.D. Johnson (UTEP).

Note: Commonly nests in Prickly-pear clumps and rock crevices.

Peromyscus eremicus (Baird) **Cactus Mouse**

[Brewer, 2004, 2007].

Records: IMRS HQ, Campo Bonito, Squaw Spring, Red Tank, J.D. Johnson (UTEP).

- Peromyscus leucopus* (Rafinesque) **White-footed Mouse**
Records: Peccary Tank, Brewer (UTEP).
Note: Questionable record needs verification.
- Peromyscus maniculatus* (Wagner) **Deer Mouse**
Records: Red Tank, Brewer (UTEP); IMRS HQ area, J.D. Johnson (UTEP).
- Reithrodontomys megalotus* (Baird) **Western Harvest Mouse**
Records: Red Tank, Brewer (UTEP).
- Sigmodon hispidus* Say and Ord **Hispid Cotton Rat**
Records: Red Tank, Brewer (UTEP).

ERETHIZONTIDAE (New World Porcupine Family)

- Erethizon dorsatum* Linnaeus
Records: The Box Canyon of Rio Grande, 5 October 2020, V. Mata-Silva (UTEP) and A. Rocha (UTEP), videos.

GEOMYIDAE (Pocket Gopher Family)

- Thomomys bottae* (Eydoux and Gervais) **Botta's Pocket Gopher**
Records: Red Tank, Brewer (UTEP); IMRS HQ, 8 May 2010, 7 April 2011, 14 April 2012, J.D. Johnson (UTEP).
Note: Pocket gopher mounds observed throughout IMRS.

HETEROMYIDAE (Pocket Mouse and Kangaroo Rat Family)

- Chaetodipus intermedius* Merriam **Rock Pocket Mouse**
[Brewer, 2004, 2007].
Records: Red Tank, IMRS HQ, Squaw Spring.
Note: Most common mouse on IMRS, J.D. Johnson (UTEP).
- Dipodomys merriami* Mearns **Merriam's Kangaroo Rat**
[Brewer, 2004, 2007].
Records: Squaw Spring; Red Tank, IMRS HQ, J.D. Johnson (UTEP)..

SCIURIDAE (Squirrel, Chipmunk, and Prairie Dog Family)

- Ammospermophilus interpres* (Merriam) **Texas Antelope Squirrel**
[Brewer, 2004, 2007].
Records: Campo Bonito, Brewer (UTEP); IMRS HQ, April 2011 – 2021, J.D. Johnson (UTEP).
Note: Commonly seen throughout IMRS in rocky areas, J.D. Johnson (UTEP).
- Otospermophilus variegatus* (Erxleben) **Rock Squirrel**
[Brewer, 2004, 2007].
Records: IMRS HQ, 17 September 2011, J.D. Johnson (UTEP).
Note: Genus changed from *Spermophilus* by Helgen et al., 2009. Common in rocky canyons throughout IMRS, J.D. Johnson (UTEP).
- Xerospermophilus spilosoma* **Spotted Ground Squirrel**
Records: IMRS HQ, 4 June 2011, Johnson (UTEP); 11 July 2020 in pit-fall trap near Mesquite Tank, G. Alvarez, videos. 11 November 2010, Rattlesnake Tank, V. Mata-Silva (UTEP), photo; 11 July 2020 in pitfall traps near Mesquite Tank, G. Alvarez (UTEP), videos.
Note: Genus name changed from *Spermophilus* by Helgen et al., 2009.

ORDER: CARNIVORA (Carnivores)

CANIDAE (Dog Family)

- Canis latrans* Say **Coyote**
Records: Echo Canyon Overlook, J.D. Johnson (UTEP); 28 October 2008, Red Tank, V. Mata-Silva, videos; 11 November 2010 at Rattlesnake Tank, V. Mata-Silva (UTEP), photos; 6 October 2020 at The Box Canyon of Rio Grande, V. Mata-Silva and A. Rocha, videos.
Note: Often heard vocalizing at IMRS HQ, but rarely seen, J.D. Johnson (UTEP).

Urocyon cinereoargenteus (Schreber) **Common Gray Fox**
Records: The Narrows, Echo Canyon, IMRS HQ, J.D. Johnson (UTEP); 15 August 2020 at Squaw Spring, V. Mata-Silva and A. Rocha, photos; 6 October 2020 at The Box Canyon of Rio Grande, V. Mata-Silva and A. Rocha, videos.
Note: Two pups born near IMRS HQ, June 2012, J.D. Johnson (UTEP). Most common canid on IMRS, J.D. Johnson (UTEP)

Vulpes macrotis (Say) **Kit Fox**
Records: Prospect Pits, Brewer, 2007; East Well, April 2018, J.D. Johnson (UTEP); IMRS HQ, 16 July 2016, 18 February, 2017, April 2018, J.D. Johnson (UTEP).
Note: Mercure et al., 1993, using mtDNA concluded the Kit Fox was a full species independent from *V. velox*.

MEPHITIDAE (Skunk Family)

Dragoo and Honeycutt, 1999, removed Skunks from Mustelidae.

Mephitis mephitis (Schreber) **Striped Skunk**
Records: 3 October 2020, at The Box Canyon on Rio Grande, V. Mata-Silva and A. Rocha, videos.

Spilogale gracilis Merriam **Western Spotted Skunk**
Records: Prospect Pits, Brewer, 2004, 2007; 22 August 2021, at The Box Canyon on Rio Grande, V. Mata-Silva and A. Rocha, videos.

Conepatus leuconotus **Hog-nosed Skunk**
Records: Rattlesnake Tank, April 2012, J. Alva (UTEP); Prospect Pits area July 2016, V. Mata-Silva (UTEP); 14 November 2020, The Box Canyon on the Rio Grande, V. Mata-Silva and R. Rocha, video.

MUSTELIDAE (Weasel, Ferret, Mink, Badger, and Otter Family)

Taxidea taxus (Schreber) **Badger**
Records: Prospect Pits, Brewer, 2004, 2007, photo; IMRS HQ, May 2008, L. Miranda (UTEP), June 2016, D.L. DeSantis (UTEP), 11 November 2020, V. Mata-Silva, video; 18 December 2020. The Box Canyon of Rio Grande, V. Mata-Silva and A. Rocha, videos.

FELIDAE (Cat Family)

Puma concolor (Linnaeus) **Mountain Lion, Cougar**
Records: Known from tracks near IMRS HQ and in Clay Bluffs Draw, J.D. Johnson (UTEP); Cougar Cave, July 2001, G.W. Johnson and, H. Riveroll (UTEP); A.S. Davis (UTEP); Squaw Spring; March 2012, J. Alva (UTEP), photo; West of Double Tank Corral, 2021, L.M. Horne (UTEP), 6 January 2022, V. Mata-Silva and A. Rocha, videos; 4 October 2020, at The Box Canyon of Rio Grande, V. Mata-Silva and A. Rocha, videos.

Note: Using *Puma* instead of *Felis* follows Wilson and Reeder, 2005.
Lynx rufus (Schreber) **Bobcat**
[Brewer, 2007].
Records: IMRS HQ, Palmas Well, J.D. Johnson (UTEP), 10 November 2020, V. Mata-Silva, video; 22 December 2020, at The Box Canyon of Rio Grande, V. Mata-Silva and A. Rocha, video.

PROCYONIDAE (Raccoon and Ringtail Family).

Bassariscus astutus Lichtenstein **Ringtail**
Records: Eagle Canyon, near IMRS HQ, Prospect Pits, Oak Wash July 2017, Brewer, 2007, photo; IMRS HQ, 9 February 2008, V. Mata-Silva, photo; 8 December 2020, at The Box Canyon of Rio Grande, V. Mata-Silva and A. Rocha, videos.
Note: Occasionally observed living in and under IMRS HQ old Ranch House building, J.D. Johnson (UTEP).

Procyon lotor Linnaeus

Raccoon

Records: 23 September 2020, at The Box Canyon of Rio Grande, V. Mata-Silva and A. Rocha, videos.

URSIDAE (Bear Family)

Ursus americanus Pallis

American Black Bear

Records: A young individual observed in Echo Canyon by D. Shoemake, November 2011.

Note: First record since UTEP took control of IMRS in the 1980s. The individual probably came from populations in the Big Bend area or from Mexico.

ORDER: ARTIODACTYLA (Even-toed Ungulates)

BOVIDAE (Bovid Family)

**Ammotragus lervia* (Pallas)

Barbary Sheep

Records: Squaw Spring, Echo Canyon, Road Tank, South Gate, J.D. Johnson (UTEP).

Note: This exotic species is well established on IMRS, J.D. Johnson (UTEP).

Ovis canadensis Shaw

Bighorn Sheep

Records: B. Nix observed near Purple Sage Mine, pers. comm. to J.D. Johnson (UTEP); Flattop Mountain, 2014 Geology class; Near Red Tank, December 2015, D. Shoemake; A piece of horn was found by V. Mata-Silva On 20 October 2006 on road to windmill, photo; an adult male was observed near Echo Canyon on 6 September 2013 by V. Mata-Silva, photo; an adult male male at Squaw Spring on 18 August 2020 by V. Mata-Silva, videos; seven females at Squaw Spring on 21 July 2021, by V. Mata-Silva and A. Rocha, videos.

CERVIDAE (Deer Family)

Cervus elaphus Erxleben

Elk, Wapiti

Records: Echo Canyon, November 2006, B. Nix, pers. comm. to J.D. Johnson (UTEP).

Note: Occasionally wanders onto IMRS from Eagle Mountains.

Odocoileus hemionus (Rafinesque)

Mule Deer

Records: Echo Canyon Overlook, Red Tank, Brewer, 2007, photo; IMRS HQ, Squaw Spring, J.D. Johnson (UTEP).

Note: Commonly observed throughout IMRS.

Odocoileus virginianus (Boddaert)

White-tailed Deer

Records: Known to have occasionally been on IMRS from an antler, although occurrence is questionable, J.D. Johnson (UTEP).

SUIDAE (Pig Family)

**Sus scrofa* Linnaeus

Feral Pig

Records: Near The Box Canyon of the Rio Grande, 6 November 2020, V. Mata-Silva and A. Rocha, videos.

TAYASSUIDAE (Peccary Family)

Pecari tajacu (Linnaeus)

Collared Peccary

[Brewer, 2007].

Records: Red Tank; Squaw Spring, Cougar Cave, IMRS HQ, April, May 2016, June, July 2017, J.D. Johnson (UTEP).

Note: Resident herds commonly observed throughout IMRS.

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IMRS GAZETTEER

Compiled by C.S. Lieb (UTEP) and J.D. Johnson (UTEP)

Modified from the 1996 version; most elevations and coordinates are extrapolated from USGS 7.5' topographic maps or GPS devices. Origins of place names are reference by numbers in brackets and most refer by number to the following:

1. USGS 7.5' topographic maps (Bramlett Ranch, Mesquite Spring, Eagle Mts. SE, and Lobo NE).
2. Wynn Anderson (informal designations).
3. Carl Lieb (informal designations).
4. USGS 15' geological map of the area.
5. Jack Bristol (informal designations).
6. USGS geological map loaned from Betsy Julian.
7. UTEP Field Biology Class (informal designations).
8. Jerry D. Johnson (informal designation).
9. J. D. Johnson's Graduate Students (informal designations).
10. V. Mata-Silva and Graduate Students (informal designations).

Access Road. (= IMRS Access Road): see Main Road).

Agate Hill: Small hill composed of igneous rock along River Road, west of Flat Top Mountain (30.74028°N, 105.00278°W), 1,235 m elev. [2].

Bailey Evens Arroyo: The arroyo eaving Bailey Evens Canyon that leads to the Rio Grande [8].

Bailey Evens Canyon: The canyon and arroyo directly north of dormitory and bathroom building at IMRS HQ [8]. Arroyo eventually terminates at the Rio Grande near The Box.

Bailey Evans Peak: Highest mountain peak located east-northeast of Indio Ranch House (30.781661°N, 105.004167°W), 1,461.6 m elev. [2]. Also called Mount Everest [8].

Black Diamond Mine: Abandoned mine, ca. 1.75 airline km southeast of IMRS HQ. Developed by Walter Rossman in the late 1940s consisting of a 30.5 m deep vertical shaft (30.76806°N, 105.001°W), 1,281 m elev. [1].

Bramlett Ranch: Principal land holdings to the southwest, west, and northwest of IMRS boundary.

Campo Bonito: Abandoned partially dismantled windmill on the River Road, ca. 3.22 road km north of South Gate at junction with Eagle Canyon Road (30.70778°N, 104.969°W), 1,140 m elev. [6].

Carpenter Mine: Abandoned mine and mining company headquarters (ruins only) on Purple Sage Mine Road, ca. 2 airline km south-southwest of IMRS HQ; ruins and mine (30.76056°N, 105.023°W), 1,220 m elev. It yielded a small amount of ore containing 2.5% copper [1].

Clay Bluffs Draw: Large arroyo system with high vertical banks just east of River Road and draining into Green River. Principal access (by foot) is about .5 km east of Campo Bonito [3].

Corral Tank: Northernmost of two seasonally dry impoundments near Double Tank Corral, at head of jeep trail leading to upper Squaw Spring Canyon. It often has water early and/or late in the year (30.78729°N, 104.986°W), 1,339 m elev. Also called Road Tank [8]. There is a pit-fall trap array north of tank dam.

Cottonwood Canyon Tank: Cattle tank just off northwest corner of IMRS boundary, ca. 1,287.1 m elev. [2].

Cougar Cave: Found in arroyo that crosses road to Squaw Springs (before road splits) about .80 km north of IMRS HQ [8].

Double Tank: see Pirtle Tank and Road Tank.

Double Tank Corral: Abandoned cattle corral along Main Road, just west of East Gate and near Pirtle and Road Tanks (30.78585°N, 104.985°W), 1,287 m elev. [3].

Eagle Canyon: Rugged canyon system on east side of IMRS South of Double Tank Corral, draining southward into the Rio Grande west of The Box; contains Palmas Well and The Narrows [1]. Replaces Snake Canyon of [4].

Eagle Canyon Road: Bulldozed track/gravel road running northeast to southwest of Double Tank Corral over Eagle Pass and down through upper Eagle Canyon to junction with River Road [3]. Presently it is impassable.

Eagle Pass: Top of Eagle Canyon, ca. 1.75 airline km south-southwest of East Gate (30.769444°N, 104.979167°W), ca. 1,418.3 m elev. [3].

East Gate: Principal access gate to IMRS on Main Road, 5.15 road km west of junction with Green River Road, and east of Double Tanks Corral (30.78545°N, 104.979°W), 1,342 m elev. [2].

East Well: Defunct well and metal tank on east slope of Indio Mountains, ca. 3.3 arline km southeast of East Gate (30.7681°N, 104.953°W), 1,242.9 m elev. [2 and 3].

East Well Arroyo: East-draining arroyo immediately north of East Well, washes out East Well Road ca. 2.41 km south of junction with Main Road [2 and 3].

East Well Road: Primitive road extending from Main Road (junction is 4.4 km west of Green River Road) south Through Grassy Tank, past Lost Well, to East Well. Road is impassable at East Well Draw ca. 2.41 km south of Main Road [2 and 3].

Echo Canyon: Southwest draining canyon along Main Road on east slope of Indio Mountains below Indio Pass [1].

Echo Canyon Overlook: Westward-looking observation point along Main Road just west of the top of Indio Pass, ca. 1.21 road km west of Double Tank Corral (30.78333°N, 104.99444°W), 1,596 m elev. [3].

Echo Canyon TwinTanks: Two adjacent seasonally dry impoundments along main road in Echo Canyon, northeast of junction with road to Black Diamond Mine (30.77384°N, 105.001°W), ca. 1,189.5 m elev. [8]. Also called North Twin Tanks [8].

Echo Canyon Tank: Tank on Jeep road to Squaw Spring below Echo Canyon Overlook [8].

Flat Top Mountain: Mesa and ridge system north-northeast of Red Tank; maximum elevation is 1,359 m at south end of mountain (30.74805°N, 104.997°W) [4].

Glenn Creek: see Green River.

Green Peak: Summit of ridge SSE of Indio Pass, ca. 2 airline km S of Double Tank Corral and 0.5 km W of Eagle Pass (30.76944°N, 104.8175°W), 5,130 m elev. [4]

Green River: Large normally dry wash forming east boundary of Indio Mountains [1]. Preferred over Glenn Creek listed on the USGS 1:250,000 topo map.

Green River Road: Gravel road forming main access to IMRS from the east. It passes through Wolf Creek Ranch south of Scott's Crossing and extends into O'Connor Ranch (through locked gate). It follows bed of Green River to vicinity of The Box.

Grassy Tank: Dry impoundment 4.34 km by Main Road west of junction with Green River Road. East Well Road Passes through its bed ca. 0.16 km south of its junction with Main Road (30.78587°N, 104.971°W), 1,305.4 m elev. [2 and 3].

Horizon Tank: Located on SW boundary of IMRS, ca. 5 km east of the The Box on the Rio Grande (30.77194°N, 105.04805°W), 1,174 m elev. [10].

Indio Fault: A long northwest to southeast fault that divides the Indio Mountains into a higher eastern block and a lower western block. The fault is crossed 50 m northeast of the junction of Main Road with River Road located east of IMRS HQ.

Indio Mountains: Southern spur of Eagle Mountains, Hudspeth County, Texas; bounded by Oxford Canyon (on north), Rio Grande (on south), Red Light Draw (on west), and Green River (on east) [4].

Indio Pass: Pass over Indio Mountains traversed by Main Road; summit is just east of Echo Canyon Overlook [6].

Indio Ranch House [IMRS HQ complex]: Old Bailey Evans Ranch House and central facilities of IMRS HQ, 5.79 km west and northwest of East Gate (30.77667°N, 105.01583°W), ca. 1,230 m elev. [1]. Facilities at HQ include two dorms and bathrooms building; an old Ranch House Lab; a Computer Lab, a new clean Surgery Building, a small Directors Bedroom Building, the Multipurpose Jerry Johnson Assembly Hall containing kitchen and classroom, and a storage shed holding ATVs. Most facilities are NSF funded. All buildings and the water sources are powered by solar generated electricity [8]. The area contains pit-fall trap arrays.

IMRS: Abbreviation for UTEP's Indio Mountains Research Station.

Juniper Grove: North of Double Tank Corral on road to Squaw Spring (30.79537°N, 104.994°W [9]).

Lonely Tank: Tank on Jeep road heading east off River Road above where it crosses Eagle Canyon Arroyo on way to South Gate (30.72787°N, 104.972°W), 1,190 m elev. It has a pit-fall trap array.

Lost Tank: Abandoned tank and adobe retaining wall, along East Well Road, ca. 0.40 km south of junction with Main Road [2 and 3].

Main Road: Gravel road from Green River Road, through East Gate, Echo Canyon, to IMRS HQ, and then north-northwest toward North Gate, Oxford Canyon, and Squaw Spring.

Mesquite Tank: Tank near Bailey Evens Arroyo located ca. 2.78 km west-southwest of IMRS HQ (30.76153°N, 105.031°W), 1,167 m elev.

Monroe's Nose: Angular prominence .75 km south and ca. 1.5 airline km northwest of Squaw Spring. It is visible from Echo Canyon Overlook (30.33333°N, 105.00833°W), 1,415.2 m elev. [2].

Oak Wash: On Main Road about .40 km west of Double Tank Corral (30.78511°N, 104.98961°W [9]).

North Gate: Gate across Main Road north of Woodpecker Well on the way to Oxford Canyon at fence separating IMRS from Bramlet Ranch to the north.

Oak Arroyo: First arroyo inside East Gate (30.78601°N, 104.981°W), 1,327 m. elev. [9]. It has pit-fall traps.

O'Connor Ranch: Previous Lado Ranch holdings off southeastern and southern boundary of IMRS property including terminus of the River Road and the mouth of Green River. Access by locked gate across Green River Road just south of junction with Main Road, or by IMRS South Gate. Lado Ranch was sold to Louise O'Connor of Victoria, Texas in 2005 [8]. Also referred to as Ballinamona II, limited partnership.

Oxford Canyon: Draw at north end of the Indio Mountains It separates the Indio Mountains from the Eagle Mountains; most is on the Bramlet Ranch.

Oxford Spring: Permanent spring in Oxford Canyon north of Woodpecker Well (30.84023°N, 105.041°W) [Horne 9]. It is just outside IMRS property.

Painted Cliffs: Eroded ash formation on north-facing arroyo slope ca. 1.75 airline km south-southwest of junction of Green River and Main Roads; not on IMRS property (30.78056°N, 104.94583°W) [5].

Palmas Well: A once solar-powered water well and wreckage of older abandoned well and holding tank on west-facing slope of Eagle Canyon (30.74555°N, 104.972°W), 1,266 m elev. [1].

Peccary Tank: Seasonally dry impoundment along River Road, ca. 2.90 km southeast of IMRS HQ (30.75592°N, 105.004°W), 1,213 m elev. [3].

Pirtle Tank: Southeastern-most of the two seasonally dry impoundments in the Double Tank Corral area adjacent to the Main Road near junction with Eagle Canyon Road (30.7852°N, 104.984°W), 1336 m elev. [6]. Also called Bull Tank [8].

Prospect Pits Arroyo: Large arroyo draining Echo Canyon and Ranch House Draw at the bottom of hill past the Y on the main road to IMRS HQ [8].

Prospect Pits: A complex of prospect digs and partially finished mineshafts northwest of Echo Canyon, ca. 1 airline km southwest of IMRS HQ (30.76792°N, 105.01018°W), 1,281 m elev. [3]. It has pit-fall trap arrays.

Purple Sage Mine: Abandoned mine ca. 3 airline km south of IMRS HQ. It has a 53.4 m deep vertical mineshaft dug in the 1950s (30.7495°N, 105.026°W), 1,688 m elev. [1].

Purple Sage Mine Road: Gravel road extending south-southwest from Main Road south of IMRS HQ to Carpenter and Purple Sage Mines [3].

Ranch House Draw: The depression positioned south to north alongside the Main Road leading to IMRS HQ from intersection of the “Y” on the Main Road and River Road. It is drained by arroyo leaving Echo Canyon and the arroyo leaving Baily Evens Canyon (8).

Rattlesnake Tank: Seasonally dry impoundment at head of small east draining canyon ca. 1 airline km east-northeast of summit of Red Mountain, and 0.25 km west of River Road (30.74678°N, 105.008°W), 1,198 m elev. Also called Trap Tank [6] and Oh Shit Tank [9].

Redetzke’s Knob: South-facing ridge at summit of Flat Top Mountain [3].

Red Mountain: Isolated ridge and peak ca. 3.5 airline km south of IMRS HQ, and 1 km west of Agate Hill (30.73°N, 104.988°W), 1,335.3 m elev. [4].

Red Tank: Large seasonally dry impoundment along River Road just west of Eagle Canyon (30.73067°N, 104.988°W), 1,195.6 m elev. [1]. It has pit-fall trap array.

River Road: Gravel road running from Green River near The Box north via South Gate, Campo Bonito, The Narrows, Agate Hill, and finally junctions with Main Road at the Y located ca. 1.45 airline km southeast of IMRS HQ [3].

Road Tank: See Corral Tank.

Scott’s Crossing: Where Green River Road crosses the Southern Pacific Railroad tracks 12.07 road km south-southeast of junction of Laurel Street and I-10 in Van Horn [1].

South Gate: Gate across River Road south of Campo Bonito and north of The Box at a fence separating IMRS from O’Connor Ranch (30.69022°N, 104.967°W), ca. 1,228.5 m elev.

South Well: See Campo Bonito.

Snake Canyon: See Eagle Canyon.

Squaw Creek: See Squaw Creek Canyon.

Squaw Creek Canyon: Major arroyo draining southwest to the Rio Grande. The head is ca. 3 airline km north-northwest of Double Tank Corral area. It contains Squaw Spring [1, modified by 3]. This usage is preferred over Squaw Creek or Squaw Spring Canyon.

Squaw Pass: Pass through Squaw Ridge located 0.75 airline km west-northwest of Squaw Peak (30.825°N, 105.006667°W), 1,418.3 m elev. [1].

Squaw Peak: Highest and somewhat isolated peak in the Indio Mountains (ca. 1600 m elev.) located several km north of Squaw Spring near the northcentral boundary of IMRS (30.81852°N, 105.015°W), ca. 1,600 m elev. It can be seen from Van Horn.

Squaw Ridge: Ridgeline extending east-southeast and west-northwest from Squaw Peak [4].

Squaw Spring: Permanent spring in Squaw Creek Canyon ca. 2.5 airline km north of IMRS HQ (30.7972°N, 105.011°W), 1,263 m elev. [1]. It has pit-fall trap array.

Squaw Spring Canyon: See Squaw Creek Canyon.

Sunflower Tank: 1.7 km east of Horizon Tank (30.76667°N, 105.06528°W) 1,072 m elev. [10].

The Box: Eastern opening of canyon of the Rio Grande near South end of IMRS (section 6) (30.66716°N, 104.993°W), 960.8 m elev. [1, 8, 9].

The Narrows: Narrow declivity of Eagle Canyon through which River Road passes, just east of Red Tank and west of junction with Eagle Canyon Road (30.73359°N, 104.984°W), 1,415.2 m elev. [3].

The Narrows Twin Tanks: Two seasonally dry impoundments ca. 0.25 airline km north of River Road just past the east end of The Narrows in Eagle Canyon Arroyo (30.73611°N, 104.98433°W), 1,204.8 m elev. [3]. Also called South Twin Tanks [8].

Trap Tank: See Rattlesnake Tank.

Tres Amigos: A group of three hills at west entrance to Oxford Canyon on the Bramlet Ranch. Southern peak (30.82222°N, 104.06861°W), 1,359 m elev.; northeastern peak (30.83194°N, 104.06806°W), 1,349 m elev.; northwestern peak (30.73611°N, 104.98333°W), 1,348.1 m elev. [3].

Twin Tanks: See Echo Canyon Twin Tanks and The Narrows Twin Tanks.

Viejo Seep: Natural spring on the Wolf Creek Ranch ca. 1.75 airline km west-northwest of junction of Green River and Main Road (30.79306°N, 104.95°W), 1,226.1 m elev. [2].

Willoughby Creek: Dry arroyo north-northwest of Squaw Ridge that drains into the Green River; creek head is ca. 1 airline km north of Squaw Peak [4].

Woodpecker Well: Dysfunctional water well on Main Road that is southwest of Yucca Ridge and 5.75 airline km northwest of IMRS HQ (30.81784°N, 105.054°W), 1,246.2 m elev. [2]. It has pit-fall trap array.

Wolf Creek Ranch: Ranch holdings north and northeast of IMRS; principal access to IMRS is through these lands via the Green River Road and Main Road.

Wrong Red Tank: See Echo Canyon Twin Tanks.

Wynn Anderson Leaning Center: Room attached to original Indio Ranch House, enlarged and screened in 2003 [3, 5, 7]. Named after Wynn Anderson, former Assistant to UTEP Presidents and former Director of the Chihuahuan Desert Gardens at the Centennial Museum.

Yucca Ridge: Ridge running northwest to southeast between Oxford Canyon and Squaw Creek Canyon, ca. 1.5 km south and Parallel to Squaw Ridge [2].