Arthropods of Elm Fork Preserve

Arthropods are characterized by having jointed limbs and exoskeletons. They include a diverse assortment of creatures: Insects, spiders, crustaceans (crayfish, crabs, pill bugs), centipedes and millipedes among others.

Column Headings

Scientific Name: The phenomenal diversity of arthropods, creates numerous difficulties in the determination of species. Positive identification is often achieved only by specialists using obscure monographs to 'key out' a species by examining microscopic differences in anatomy. For our purposes in this survey of the fauna, classification at a lower level of resolution still yields valuable information. For instance, knowing that ant lions belong to the Family, Myrmeleontidae, allows us to quickly look them up on the Internet and be confident we are not being fooled by a common name that may also apply to some other, unrelated something. With the Family name firmly in hand, we may explore the natural history of ant lions without needing to know exactly which species we are viewing. In some instances identification is only readily available at an even higher ranking such as Class. Millipedes are in the Class Diplopoda. There are many Orders (O) of millipedes and they are not easily differentiated so this entry is best left at the rank of Class.

A great deal of taxonomic reorganization has been occurring lately with advances in DNA analysis pointing out underlying connections and differences that were previously unrealized. For this reason, all other rankings aside from Family, Genus and Species have been omitted from the interior of the tables since many of these ranks are in a state of flux. By limiting the ranks in this manner, taxonomic clutter is avoided, and skimming through the tables becomes easier. This also eases the process of keeping the scientific names current for these three ranks. With the scientific designation for any of these ranks firmly in hand, one may Google a query and be quickly further-enlightened.

Common Names: Arthropods are so diverse in form and character and have attracted such a multitude of common names, that any attempt to sort them by common name is sure to prove unwieldy. For clarity and ease of reference, the common names of arthropods in the tables below are listed by the type of creature first, followed by a comma and then the more specific descriptor. For example, "ambush bug" would be written as "bug, ambush" in order to group butterflies, bugs and beetles separately in the common name short list (found at the bottom of this document). For those bugs that aren't truly bugs, like ladybugs, and flies that aren't flies, such as fireflies, the common name is written in an artificial manner according to the scientific Order in which they belong - as "Beetle, ladybug" or "Beetle, Firefly".

Comments: The comments column lists remarks in the following order:

- ¹ Interesting facts and natural history associated with the arthropod. Its place of origin is also listed if it is an alien.
- ² Edible, medicinal or other useful qualities of the arthropod for humans. The potential for poisoning or otherwise injuring humans is also listed here.
- ³ Food preferences and potential predators. Ecological impact.
- ⁴ Identifying features, especially differences between similar species.
- ⁵ Dates, times, locations and observed behaviors of arthropods.
- ⁶ Synonyms. Outdated or recently changed scientific names are inserted here.
- ⁷ Control measures. The date, method and reason for any selective elimination.
- 8 Intentional Introductions. The date, source and reason for any arthropod introductions.
- ⁹ Identification references. Species identifications were made by the author unless otherwise noted. Identifications were verified using the reference material cited.
- ¹⁰ Accession made. Photos were taken and filed by date or else hard evidence was collected.
- X: Variable use column for sorting. A = Alien (introduced) species, E = Endemic native species existing only in a limited geographical area, <math>P = Poisonous This animal has the capability to cause harm to humans, <math>Z = unusual or rare species worthy of further scrutiny.



The following tables are grouped alphabetically by **Class**. Within the Class groupings are tables sorted alphabetically by **(O) Order**. Identifications within each table are sorted alphabetically by **(F) Family,** then *Genus and species*. A short list of identified species sorted by common name may be found at the end of this document.

Arachnida

(Spiders, Scorpions, Harvestmen, Mites, Ticks and kin)

Kingdom: Animalia > Phylum: Arthropoda > Subphylum: Chelicerata > Class: Arachnida > Order: Araneae

Scientific Name	Common Name	Comments	X
(F) Agelenidae Agelenopsis sp.	Spider, Funnel Weaver	¹ Funnel weaver spiders construct a distinctive web, layer by layer over time, with a noticeable funnel shape. When an insect moves across the web the funnel weaver dashes out and bites it, then drags it back into the funnel area without bothering to wrap it in silk (Levi, 1968, p72). ⁴ There are a number of common species in this genus. They are distinguished from one another primarily through differences in genitalia (Jackman, 1997, p. 92). ⁵ 21 Sept 04 - Common throughout the preserve. The several spiders that were scrutinized all had the same markings and appeared to belong to the same species (possibly <i>A. naevia</i>). The author was unable to obtain permission from any of them to check their genitalia. ¹⁰ 2006 - Three photos of <i>Agelenopsis</i> in their webs. The photos were submitted by Tzila Duenzl, (see Principle Contributors page), hereafter referred to as "Z".	
(F) Araneidae	Spider, Araneus	¹ Araneus is the largest genus of spiders with over 1500 species	
Araneus spp		worldwide. These are medium sized, hairy spiders that spin orb webs. They have poor vision, but compensate by being acutely aware of vibrations in their webs. They are often found at the periphery of the web, waiting patiently in a rolled up leaf. A signal line, connected to the hub, is monitored from the retreat. The webs are eaten when they become damaged or lose some of their stickiness. 4The web is similar in size and shape to that of <i>Argiope</i> spp. but lacks the zigzag pattern through the center. 5Frequently encountered. Individual species have not been identified. 9(Levi & Levi, 1968, p.53) 104 Sept 04 - Three photos of a large, red-brown Araneidae, paralyzed or recently dead, being dragged by a paper wasp.	
(F) Araneidae Ar <i>giope aurantia</i>	Spider, Yellow Garden	³ Many arthropods parasitize <i>A. aurantia</i> egg cases. An especially common intruder is an ichneumon wasp, Tromatobia (q.v.) ⁶ Formerly known as the Yellow and Black Garden Spider. ⁹ (Jackman, 1999, p.75, photo #21h) ¹⁰ 28 Oct 04 - Two photos of a large female in her web in a <i>Lantana</i> beside the lily pond. 18 July 05 - Seven excellent photos by "Z", taken by the lily pond, of an adult female, and of <i>Argiope aurantia</i> egg cases.	
(F) Araneidae Gasteracantha	Spider, Spinybacked Orbweaver	⁴ Unmistakable species with a glossy, hard looking abdomen sporting six pointed spurs. This species comes in several color	
cancriformis		combinations. In north central Texas, the author has seen them mainly black and white, although in one instance, near Flower Mound, an exquisite orange and yellow one was observed. 526 Oct 04 - The orb web was spanning the trail, about 6' above the ground. The Montessori school group that was accompanying the author were able to examine it closely and were excited by the spider's bizarre appearance. 9(Jackman, 1999, p.78)	

(F) Araneidae	Spider,	¹⁰ 13 May 05 - Two sharp photos of this beautiful web building
Larinia directa		spider on a rock pile with no web in sight. The photos are available for view at http://bugguide.net/node/view/107586 The rock pile is north of the 'north pole' and north of the slough at 32.95644°N, -96.93365°W (visible as a white rectangle on the satellite map)
(F) Araneidae Mecynogea lemniscata	Spider, Basilica	⁶ Formerly listed as <i>Allepeira conferta</i> . ⁹ (Jackman, 1999, p.80) (Kaston, 1978, p.147 with drawings) ¹⁰ 13 Dec O4 - Photo of distinctive egg sacs. The string-of-pearls form of the egg sacs is apparently diagnostic for this species. 15 June O6 - Fifteen photos of this beautiful spider in its ornate and highly complicated web. 7 Dec O6 - Photo by "Z" of the six rounded egg sacs, webbed together into a shape that could be described as a dangling, off-color <i>Sophora affinis</i> (eve's necklace) fruit.
(F) Ctenizidae	Spider, Trapdoor	¹⁰ 2006 - "Z" submitted four great shots of this large spider with glossy black legs and silver trim - looking more like some South
Ummidia sp.		American bird spider than a trapdoor spider.
(F) Dictynidae	Spider, Unidentified	°Jimmy Walker (see the Principal Contributors page) mentioned that the type of web (tangled mesh) and the location (branch tip), coupled with the fact that the spider is ~3mm in length - all point to it being in the Family Dictynidae. There are ~ 11 genera and around 107 species in this family in Texas. 102 Nov 06 - Seven photos of this tiny (3 mm), white and blackpatterned spider in its web. Found at the northeast end of the big pond on the tip of a <i>Tamarix</i> (salt cedar) branch. Photos are on BugGuide at this link: http://bugguide.net/node/view/108305
(F) Linyphiidae Frontinella communis	Spider, Bowl & Doily weaver	¹ These members of the sheetweb weaver family are best identified by their web which usually resembles a filmy bowl about 6" across with additional webbing forming a platform beneath. The spider can be seen somewhere near the center and is small - 4-5mm from head to abdomen tip. ⁵ A frequently encountered spider at the preserve in bushes and tall grass. ⁶ F. pyramitela as listed in (Levi & Levi, 1968, p. 47) is now known as F. communis (Jackman, 1999, p.63). ⁹ (Levi & Levi, 1968, p.47) ¹⁰ 2006 - Two sharp photos by "Z" of the characteristic bowl and doily web.
(F) Linyphiidae <i>Neriene radiata</i>	Spider, Filmy Dome	⁴ This close cousin to the bowl & doily spider has a similar appearance but a different web – a dome instead of a bowl. ⁵ A frequently encountered spider at the preserve in underbrush, bushes and tall grass. ⁶ Listed in Kaston, 1978, p. 122 as <i>Prolinyphia marginata</i> .
(F) Lycosidae <i>Rabidosa</i> spp. & other genera	Spider, Wolf	¹Wolf spiders are found on the ground virtually everywhere outside, once one begins to look for them. There are approximately 100 species north of Mexico. Wolf spiders may be found hunting day or night. They have good vision and a well-refined tactile sense. ⁵Frequently encountered in leaf litter under trees. ⁵(Jackman, 1999, p. 84), see also (Levi & Levi, 1968, p.82)
(F) Pisauridae <i>Dolomedes sp.</i>	Spider, Fishing	⁴ Giant-sized spiders usually found close to water. ¹⁰ 14 Oct 06 -Fifteen photos of two large fishing spiders, one was carrying an egg sac. 2006 - "Z" submitted five fascinating shots of a mass of spiderlings dispersing. They may not be Dolomedes, but it seems likely, given the size of the mass, the location above the water (at the lily pond) and the nursery web into which they are dispersing. Interestingly enough, the outer covering of the mass is nowhere in evidence - it is as if the mother, sensing the
(F) Pisauridae Dolomedes triton	Spider, Six-spotted Fishing	spiderlings are ready, cuts open the sac and takes it away. 1"Z" informs us that fishing spiders are known to be able to stay submerged for over an hour. "Z" witnessed, "One spider went a

		short distance down [beneath the water] holding onto a cattail stalk; the other went all the way out of sight doing the same." 92006 - "Z" identified and submitted thirteen stunning photos of this spider with prey, carrying an egg sac and walking on water. Two of the photos show the spider underwater, sharply-dressed in a silver suit of air.
(F) Pisauridae Pisaurina mira	Spider, Nursery Web	⁷ 28 Oct 04 - The retreat was about 3' above the ground in a bush. Located on the main trail on the south side of the preserve, east of tree marker #13, before reaching the Cross Trail - GPS: 32° 57.254N, 96° 56.103W ⁹ (Jackman, 1999, p. 91) ¹⁰ 28 Oct 04 - Four photos of <i>Pisaurina mira</i> in and around her silken retreat, eating a <i>Panorpa</i> (scorpionfly).
(F) Salticidae Peckhamia picata	Spider, Ant-mimic Jumping	⁹ (Kaston, 1978, p. 245) ¹⁰ 7 May 07- Nine photos of this ant-mimic jumping spider on a picnic table at the interpretive center, looking remarkably similar to the acrobat ants (<i>Cremastogaster lineolata</i>) that were foraging on the same table.
(F) Salticidae Phidippus audax	Spider, Jumping	 10 14 Oct 06 - Seven sharp photos of a bold, black jumper with one large white spot and two smaller white spots on his abdomen. 2006 - A 'poster child' kind of photo by "Z" that would melt the heart of anyone afraid of spiders. It shows a seemingly pensive male at rest in a leaf. It should serve as an invitation for interaction with these confident and curious creatures.
(F) Salticidae Thiodina sylvana	Spider, Jumping	9See two photos from Elm Fork Preserve on the Internet at: http://bugguide.net/node/view/108656#135235 (Jackman, 1999, p. 137) 1026 Oct 04 - Two photos of a beautiful jumping spider with a red cephalothorax and a bright white circular spot on the dorsal surface of the cephalothorax. 14 Oct 06 - Nine photos of this colorful jumper.
(F) Salticidae unidentified A	Spider, Jumping	2006 - Photo by "Z". 1014 Oct 06 - Three sharp photos of this brown and gray jumper.
(F) Thomisidae Misumena spp. and other genera	Spider, Crab	¹Crab spiders position their legs like crabs as they move forward, backward or sideways. They do not spin a web, preferring to ambush insects that come to visit flowers. Crab spiders have a keen perception of movement and strong venom that quickly disables insects such as bees and flies that are much larger than the spider. Species in the genera <i>Misumena</i> and <i>Misumenops</i> are known as flower spiders and have the ability to slowly change color over the course of ∼10 days to match the flowers in which they are hiding. While they are in the process of changing color, a red stripe is apparent on each side of the abdomen (Levi & Levi, 1968, p. 94). ⁵Frequently encountered while examining flowers. Individual species are yet to be identified. ¹⁰2 Nov 06 - Two photos of a white crab spider on a <i>Pluchea odorata</i> inflorescence at the big pond. 2006 - Three photos by "Z" of three different species of crab spider.
(F) Uloboridae	Spider, Featherlegged	⁵ 26 Oct 04 - Observed in its web beside a big fallen log near the
Uloborus glomosus	Orbweaver	lightning-struck cottonwood tree - GPS 32° 57.322N, 96° 56.176W 9(Jackman, 1999, p. 48)
(F) unidentified	Spider,	107 May 07 - Several slightly blurry photos of a quick moving spider. Members of Bugguide (http://bugguide.net) suggested that it was probably in the family Thomasidae, possibly a male <i>Philodromus</i> sp. The photos were taken beside the giant cottonwood tree (labeled 'Popdel2' on the map)

Kingdom: Animalia > Phylum: Arthropoda > Subphylum: Chelicerata > Class: Arachnida > Order: **Opiliones**

Scientific Name	Common Name	Comments	X
(F) Phalangiidae Phalangium spp. and other genera	Harvestman, Daddy Longlegs	¹Daddy longlegs are commonly referred to as spiders although in actuality they belong to a completely different order known as Opiliones. They are distinguished from spiders in several respects: They have chewing mouthparts instead of fangs, no poison glands and two eyes instead of six or eight. There are 18 species listed for Texas (Jackman, 1999, p. 139). Some species have long legs and some have short. The second pair of legs are longest and are waved around as antennae. This movement of the second pair of legs was thought to resemble the reaping actions of farmers leading to name of harvestman. There is an old English belief that killing one is bad luck because they were thought to be aiding the farmers in bringing in the crops. (Nardi, 1988, p.149). ²Along the anterior lateral margins of the carapace, a pair of scent glands can be found. These produce isoquinone secretions when the harvestman is disturbed. This milky fluid is non-poisonous and has an agreeable, mint-like flavor. This may seem like trivial information, but you never know when you might be lost in the wilderness without a breath mint.	
		On numerous occasions, the author has been incorrectly informed that, "Daddy longlegs are the most poisonous spiders in the world, but their fangs are too small to penetrate human skin". Unraveling this urban myth has been a slow process, but the confusion appears to be finally resolved. The common name, 'daddy longlegs' also applies to a spider with long thin legs frequently found in cellars. Its scientific name is <i>Pholcus phalangioides</i> . It feeds on other spiders, which are quickly incapacitated by its supremely deadly venom. This venom is listed as being the deadliest venom to spiders. The venom is harmless to humans. 3Harvestmen feed mainly on small insects, but, unlike spiders, also eat dead animals and plant juices. 5Everpresent on summer walks at the preserve. Both short and long legged species have been observed. 7(Levi, 1968, p.128), (Milne, 1980, p.920), (Nardi, 1988, p.149)	

Chilopoda

(Centipedes)

Kingdom: Animalia > Phylum: Arthropoda > Superclass Myriapoda > Class Chilopoda

Scientific Name	Common Name	Comments	X
(O) Geophilomorpha (O) Lithobiomorpha	Soil Centipedes Stone Centipedes	¹Centipedes are predators. Insects form the bulk of their diet. They have two legs per segment. There are approximately 3,000 species of centipede (Levi, 1968, p.142). "When disturbed, stone centipedes move their last pairs of legs rapidly, throwing droplets of sticky material at the potential predator and slowing it in the tangling mass" (Levi, 1968, p144). ²All centipedes, even small ones, produce a poison that is quite painful to humans. However, many are not large enough to be able to pierce our skin. ¹Geophilomorpha are very long, thin, eyeless centipedes that range from 1-6" in length. They have 31-177 pairs of legs. Lithobiomorpha are shorter and stockier, all of them less than 1.7" in length. Adults have 15 pairs of legs (Levi, 1968, p.144).	

 5 14 Jan 03 – Stone centipede (\sim 4cm in length) was noted under a log in a survey of the fauna.

13 Dec 04 - Noted a soil centipede under leaf litter under bark on the ground.

¹⁰13 Dec 04 - photos of a stone centipede under a log.

Diplopoda

(Millipedes)

Kingdom Animalia > Phylum: Arthropoda > Superclass Myriapoda > Class Diplopoda

Scientific Name	Common Name	Comments	X
(O) Polydesmida and many other Orders.	Millipedes	¹ Millipedes have four legs per segment. There are more than 7,000 species worldwide (Levi, 1968, p.146). There are about 600 species of millipede north of Mexico. ² Texas millipedes are not poisonous, although most species have pores which can emit strong smelling secretions. This fluid can irritate eyes so wash hands after handling them. ³ Millipedes are slow moving detritivores, eating decaying (or rarely young living) plants and occasional dead animals. They are eaten by birds and toads and other animals. ⁴ There are numerous Orders of millipedes and they are very similar to each other. For this reason identification is best left at the level of Subclass (Levi & Levi, 1968, pp.146-151). Millipedes are easily distinguished from centipedes. Millipedes are slow moving, harmless creatures with high domed bodies. Centipedes move quickly to disappear from view, have flattened body segments, and possess poison bearing claws (chelicerae) that are easily visible mounted along the sides of their heads. Millipede means "thousand feet" as opposed to centipede meaning "hundred feet". Millipedes have four legs per segment and centipedes have two. The names hundred or thousand feet have nothing to do with the actual number of legs. ⁵ 14 Jan 03 – Dead specimen noted under a log near the interpretation center.	

Insecta

(Insects)

Kingdom: Animalia > Phylum Arthropoda > Superclass: Hexapoda > Class Insecta > Subclass Pterygota > Infraclass Neoptera > Superorder Dictyoptera > Order **Blattodea**

(Cockroaches)

Scientific Name	Common Name	Comments	X
(F) Blattidae	Cockroach	¹ There are roughly 3,490 species in six families - distributed nearly worldwide. ⁵ 13 Dec 04 - Noted an unidentified species underneath a log.	

Kingdom Animalia > Phylum Arthropoda > Superclass: Hexapoda > Class Insecta > Subclass Pterygota > Order **Coleoptera**

(Beetles)

Scientific Name Co	Common Name	Comments	X
(F) Cerambycidae Be Oncideres cingulata	eetle, Twig Girdler	¹ Adult females lay eggs sometime in late September or October. In preparation the females girdle a small (~ 3/8") twig using	

(F) Chrysomelidae Diabrotica sp.	Beetle, Black-spotted Cucumber Beetle	their mandibles to dig into the bark. In North Central Texas they commonly attack honey locust, American elm and cedar elm. When the twig is nearly severed and the sap flow is definitely stopped, the female then chews a small hole in the wood of the dying portion of the branch and lays one egg in it. The egg hatches soon after and the larvae burrows through the twig, eating and growing through late summer and fall. In winter, larval growth slows dramatically, then resumes in spring as the temperature rises. The larva is creamy white and cylindrical, reaching a length of up to 2 inches. Larvae pupate in the twig and emerge as adults to mate in late summer (Day, 1993). 9(Drees & Jackman, 1998, p.118, photo #176) 1013 Dec O4 - Photo of the distinctive and unmistakable damage to an elm branch. 25 Oct O5 - Two photos of pruned twigs - one with a clear picture of an egg. 3The larvae bore into the roots of plants, sometimes causing extensive damage to a number of crops - they are also known as
Zanziewep.		the southern corn rootworm (Beck & Garrett, 1999, pp. 43). 10 Oct 05 - photo of adult on goldenrod along the northwest periphery of the preserve. 18 Oct 06 - Five photos on goldenrod with a mite on its antenna. 2 Nov 06 - Two photos of <i>Diabrotica</i> on goldenrod at the big pond.
(F) Coccinellidae Chilocorus stigma	Beetle, Twicestabbed Ladybird (Ladybug)	⁴ Beautiful, unmistakable ladybug that is glossy black with two blood-red spots on its elytra (wing covers). ⁹ (Beck and Garrett, 1999, p. 83) ¹⁰ 15 June 06 - One photo - taken beside the big pond.
(F) Coccinellidae Hippodamia convergens	Beetle, Multi-spotted Ladybird (Ladybug)	³ Numerous species belong in this group. The larvae and adults of most species feed on pest insects in the garden, especially aphids, scale insects and mites (Borrer & White, 1970, p.180). The species of ladybird beetle most often sold to control aphids is <i>Hippodamia convergens</i> . Adults are red with (sometimes) 12 black spots. The larvae are voracious, eating as many as 40 aphids in an hour (Yepsen, 1984, pp. 49-50, 198-199). ⁴ <i>H. convergens</i> is easily mistaken for the multicolored Asian lady beetle (<i>Harmonia axyridis</i>). Both species have a variable number of spots on the wing covers (elytra). The distinguishing marks to look for occur on the plate just behind the head (pronotum). <i>Harmonia axyridis</i> has two prominent white areas on each side, while <i>H. convergens</i> has a thin outline of white on the margin of a mostly black pronotum (Drees & Jackman, 1998, p.112, photos #158, 161). ⁵ 14 Jan 03 – Multi-spotted observed taking refuge in an abandoned paper wasp nest. ⁹ (Borrer, Delong & Triplehorn, 1976, p. 404)
(F) Elateridae	Beetle, Click	4These beetles become very common in north central Texas in
Melanotus sp (apparently)		the fall. They are easily confused with several other genera of click beetle. 1027 April 06 - "Z" submitted this photo of a thin, brown, click beetle.
(F) Elateridae Alaus oculatus	Beetle, Eyed Click	⁵ 7Oct 05 - Found the distinctive thorax trailside, near the lightning struck cottonwood. The author has observed the beetles on several occasions at the preserve. ¹⁰ 15 June 06 - Four good photos of this large, distinctive beetle.
(F) Passalidae	Beetle, Bess	2006 - Two great photos by "Z". 102006 - Great photo submitted by "Z" of a shiny black beetle
(F) unidentified	Beetle,	with deep grooves in the elytra. ⁴ Possibly in the Family Mycetophagidae (Hairy Fungus Beetles). ¹⁰ 2006 - Photo submitted by "Z" of two brown and black beetles feeding on a mushroom.
(F) unidentified	Beetle	107Oct 05 - Two photos of an unidentified aquatic water beetle from the lily pond.
(F) unidentified	Beetle	¹⁰ 2 Nov 06 - Five photos of a small beetle with pink and black

		markings found at the north end of the big pond.
(F) unidentified	Beetle	¹⁰ 7Oct 05 - Two photos of an unidentified, elongated, black beetle on goldenrod flowers at the northwest corner of the preserve.

Kingdom Animalia > Phylum Arthropoda > Superclass: Hexapoda > Class Insecta > Subclass Pterygota > Order **Dermaptera**

(Earwigs)

Scientific Name	Common Name	Comments	X
(O) Dermaptera	Earwig	¹ Dark brown, shiny, dangerous-looking insects with a large pincer-like cerci at the end of the abdomen. Earwigs are not picky eaters - they feed on plants, organic wastes, and smaller insects. When disturbed they emit a liquid that smells like creosote. The common name arises from an old belief that they crawl into people's ears at night and bite them. In reality they are harmless. Female earwigs are notably maternal - they protect their eggs, retrieve the young that wander off, and continue to feed their nymphs until they are strong enough to fend for themselves. The 'pincers' found on their abdomens are useful in determining the sex - males have curved pincers while the female's pincer is nearly straight (Nardi, 1988, pp. 18-19) ⁵ 2 Nov O2 – Observed one under a log.	

Kingdom Animalia > Phylum Arthropoda > Superclass: Hexapoda > Class Insecta > Subclass Pterygota > Order **Diptera**

(Flies)

Scientific Name	Common Name	Comments	X
(F) Asilidae many species.	Fly, Robber	⁴ There are numerous species of robber flies. ⁵ 26 April 04 – Discovered a robber fly beside the main trail while on a walk with a group of Girl Scouts. The author attempted to have the fly catch a small pebble tossed in an arc beside it, but the fly showed no interest (it has worked well in past attempts). ⁹ (Drees & Jackman, 1998, p.212, photos on pages 158,159).	
(F) Cecidomyiidae Resseliella clavula	Midge, Dogwood Clubgall	1028 April 05 - two close-up photos of a robber fly. 1015 June 06 - Two photos of the distinctive gall on <i>Cornus drummondii</i> (rough leaf dogwood).	
(F) Chironomidae	Midge, unknown	⁹ 2006 - Photographed and Identified by "Z" with the help of Bugguide. See http://bugguide.net/node/view/92308 for her posting.	
(F) Culicidae	Mosquito, Unknown	¹⁰ 7 May 07 - photo of one biting the author's knee. Not an Asian Tiger mosquito.	
(F) Culicidae Aedes albopictus	Mosquito, Asian Tiger	¹ First appeared in the United States in 1985 in Houston in a load of tires imported from Japan. By 1997, news agencies were reporting it in the Dallas area. The rapid spread of the Asian tiger mosquito is of concern because it is known as a disease-carrying mosquito in its native range. It has the potential to be an effective vector for dengue fever & eastern equine encephalitis as well as 15 other diseases (OTA, 1993). It breeds readily in just about any water-filled container. Another aggravating aspect of its presence is the fact that it bites during the heat of the day. Other mosquitoes in our area are most active in the morning or evening. As if fire ants weren't enough, now we have all-day mosquito coverage. ⁵ 31 Oct 98 – Noted that a large percentage of the mosquitoes	A

biting (around noon) were Asian Tiger.

		Diffig (around noon) were Asian riger.
(F) Dolichopodidae Condylostylus sp. (possibly)	Longlegged Flies	³ Adults prey on small insects ⁹ (Drees & Jackman, 1998, p.213, photo p.159). ¹⁰ 22 Sept 06– Photo of one resting near a paper wasp on a lily pad in the lily pond. 2006 - Photo by "Z" of one of these metallic-green flies.
(F) Otitidae Delphinia picta	Fly, Picture-winged	⁹ (Borrer & White, 1970, p.289) ¹⁰ 7 May 06 - several photos of one near the trail head.
(F) Micropezidae Unidentified	Fly, Stilt-legged	9Posted two photos of this fly on Bugguide (http://bugguide.net/node/view/102445) For an unbelievably sharp photo of the same or similar species see: http://myrmecos.net/insects/Micropezid1.html. 107 May 06 - two photos taken in deep woods near the slough.
(F) Micropezidae Unidentified	Fly, Stilt-legged	⁹ Posted on Bugguide at (http://bugguide.net/node/view/109136) 109 June 05 - Two photos from "Z" of a gang of four, 'hoodlumlooking' stilt-legged flies huddled around the edge of a hole-insome-bark-chips on the trail. They appear to be manipulating a spider's egg sac. The deceased spider or parts of some body can barely be seen at the bottom of the hole.
(F) Mydidae	Fly, Mydas	¹⁰ 2006 - "Z" submitted this sharp image of a black fly that closely resembles some type of robber fly.
(F) Rhagionidae Possibly <i>Chrysopilus sp.</i>	Fly, Unidentified	⁹ Posted two photos of this fly on Bugguide (http://bugguide.net/node/view/116). It has a very peculiar posture at rest - with its abdomen curled under the thorax and appearing to 'sit' upright on the tips of its wings. It was tentatively identified as probably in the family Rhagionidae and possibly a member of the genus <i>Chrysopilus</i> . ¹⁰ 15 June 06 - two photos taken in deep woods near the slough.
(F) Tephritidae Eurosta solidaginis	Fly, Goldenrod Ball Gall	³ The larvae of a this fly only inhabit <i>S. gigantea</i> or <i>S. canadensis</i> var. <i>scabra</i> . ⁴ The shape of a gall is characteristic of the species of gall insect that forms it. On goldenrod plants, aside from the roughly spherical "ball gall", there is also an elliptically-shaped "elliptical gall" made by a gall moth (<i>Gnorimoschema gallaesolidaginis</i>), and also a "bunch gall" formed by a gall midge (<i>Rhopalomyia solidaginis</i>), that causes the top portion of the plant to swell and produce many small stems in a bunch. ⁶ Older references place <i>E. solidaginis</i> as an inhabitant of <i>Solidago altissima</i> . <i>S. altissima</i> is now known as <i>S. canadensis</i> var. <i>scabra</i> . ⁹ For further information from the Internet, see: http://www.facstaff.bucknell.edu/abrahmsn/solidago/main.html ¹⁰ 2 Nov 06 - One photo of the ball-shaped swelling on the stem of a goldenrod. The goldenrod stand where it was photographed is located at the north end of the big pond.
(F) Tipulidae Tipula spp.	Fly, Crane	¹The adults resemble huge, "Texas size" mosquitoes but are harmless. The larvae live in shallow water or very moist soil and are called leatherjackets owing to their tough skin. 522 march 04 - Watched one flying clumsily off into the distance. Very common on this date. 9(Borrer & White,1970,p.262), (Drees & Jackman, 1998, p.203), (Beck & Garrett, 1999, pp. 41), (Milne & Milne,1980, p.635)

Kingdom Animalia > Phylum Arthropoda > Superclass Hexapoda > Class Insecta > Subclass Pterygota > Order **Ephemeroptera**

(Mayflies)

Scientific Name	Common Name	Comments	X
(F) Ephemerellidae	Mayfly	⁵ 22 July 98 – Noted and identified several nymphs while seining the big pond.	

<i>Ephemerella sp.</i> 9(Reid, 1967, p. 97)

Kingdom Animalia > Phylum Arthropoda > Superclass: Hexapoda > Class Insecta > Subclass Pterygota > Infraclass Neoptera > Order **Hemiptera** (including the newly minted Suborders: Archaeorrhyncha, Clypeorrhyncha, Sternorrhyncha, Prosorrhyncha, ="Coleorrhyncha" + "Heteroptera"

(True Bugs, Cicadas, Aphids, etc.)

Scientific Name	Common Name	Comments	X
(F) Alydidae	Bug, Broad-headed	¹⁰ 2 Nov 06 ~ Two photos of nymphs of different ages on the broad, flat surface of a leaf. Another photo, taken at the north end of the big pond, shows a nymph on poison ivy fruit.	
(F) Alydidae	Bug, Bowlegged,	¹⁰ 28 Nov 06 - Sharp photo of an adult - taken at the big pond.	
Hyalymenus sp.	Broad-headed	14 Oct 06 - Photo of adult submitted by "Z".	
(F) Cercopidae	Spittlebug;	¹ The view from inside a spittlebug's frothy abode must be a	
Philaenus spp. (likely P. spumarius)	Froghopper	strange, prismatic hallucination when the sunlight strikes it. The spit-like retreat of the spittlebug nymphs are easy to spot in spring. The froth is created by mixing plant sap with a protein thickener. Professor Malcolm Burrows, head of zoology at Cambridge University in the U.K., reported (2003) his investigation of insect jumping in the journal Nature. The spittlebug (<i>P. spumarius</i>) was found to far exceed the flea as the high-jump champion of the world. Spittlebug adults are 6 mm long and can jump 70 cm (~2 feet) into the air. http://news.nationalgeographic.com/news/2003/07/0730_03_0730_froghopper.html The frothy masses of the spittlebug nymphs were abundant and conspicuous during the Elm Fork Preserve Naturefest.	
		⁹ (Borror and White, 1970, p.130), (Nardi, 1988, p.69)	
(F) Cicadidae Tibicen spp.	Cicada, Dog-day	⁵ 10 July 00 – Hordes of <i>Tibicen</i> sp. cicada have emerged from the ground and are calling constantly during the day. ⁹ (Borrer & White, 1970, p. 129) 2006 - Two sharp photos of a Tibicen - dorsal and ventral views,	
(F) Coreidae	Bug, Leaffooted	submitted by "Z". 3Some leaffooted bugs are predaceous, while others, like <i>Narnia</i>	P
Acanthocephala sp.	bug, icanooicu	spp. are plant feeders (Borrer & White, 1970, p.122). With leaflike hind tibiae. Three clear photos of an individual walking on wood. 2006 - "Z" submitted three photos, one displaying mating activity.	1
(F) Coreidae	Bug, Leaffooted	³ These insects suck the juice from fruit, plant stems and tender	P
Leptoglossus phyllopus		leaves. 9 (Drees & Jackman, 1998, p.57). 102 Nov 06 - Six great photos of <i>Leptoglossus</i> on a <i>Polygonum</i> inflorescence beside the big pond.	-
(F) Coreidae Narnia sp.	Bug, Leaffooted	³ Plant juice sucking insects, commonly found on prickly pear. ⁴ The juveniles appear similar to assassin bugs (Drees & Jackman, 1998, p.57). ¹⁰ 10 Oct 05- Two photos of <i>Narnia</i> sp.	P
(F) Coreidae	Bug	⁴ The individual in the photo is similar to <i>Narnia</i> sp., but lacks	P
unidentified sp.	**************************************	the leaf-like hind tibiae. Another difference to note are the many prominent veins in the forewings that are lacking in <i>Narnia</i> sp. 1028 Oct 04 ~ Photo of unidentified Coreidae, very similar in appearance to <i>Acanthocephala declivis</i> (Drees & Jackman, 1998, photo #67) but lacking leaf-like hind tibiae.	
(F) Flatidae Metcalfa pruinosa?	Flatid Planthoppers, citrus	⁹ 2006 - Tentative identification and photo of an adult flatid planthopper submitted by "Z"	P
(F) Flatidae	Flatid Planthoppers	¹⁰ 28 Oct 04 - Photo of a white adult in this family.	P
· ,			-

(F) Gerridae	Strider, Water	¹ Water striders can be observed almost throughout the year.
Gerris sppand other genera		After a few warm days have passed in spring, adult striders can be observed skimming across the surface of quiet streams and ponds. These adults have made it through the winter in a dormant state hidden beneath large rocks and logs near the water. Adults mate in spring and lay eggs that hatch in a couple of weeks. There may be as many as three broods per year. 3Adults prey on small insects that fall onto the water surface. 5Often seen skating along the waters edge at the slough. 9(Borrer & White, 1970, p.117), (Drees & Jackman, 1998, p.46)
(F) Lygaeidae Oncopeltus fasciatus	Bug, Large Milkweed	⁹ (Drees & Jackman, 1998, p.55), (Milne & Milne, 1980, p. 479) ¹⁰ 28 Oct 04 - Photo of two mating pairs plus four other individuals just walking around on a milkweed vine.
(F) Membracidae Stictocephala sp.	Treehopper	102 Nov 06 - Three photos of a <i>Stictocephala</i> on a <i>Polygonum</i> -like, wetland plant beside the big pond. 2006 - Photo by "Z" of a <i>Stictocephala</i> sp.
(F) Nepidae Ranatra fusca	Waterscorpion	¹ Adults of these aquatic insects have a 2cm long, stick-like 'tail' which is actually a paired set of breathing tubes. They usually inhabit the bottoms of shallow fresh water, hiding among debris. ² Ranatra fusca can bite if molested. It injects digestive saliva that is irritating to humans. ³ Waterscorpions feed on the body juices of small fish, tadpoles, insects and salamanders. ⁵ 22 July 98 – Encountered a waterscorpion while seining the southern end of the big pond. ⁹ (Milne & Milne, 1980, p. 466)
(F) Pentatomidae Acrosternum hilare	Bug, Green Stink	³ Hypodermic-Needle-like piercing mouth parts drink juices from a wide variety of plants. Nymphs and adults feed on foliage, flowers and fruit. ⁴ Almost identical to the southern green stink bug (<i>Nezara viridula</i>). The easiest way to differentiate between the two species is to note the color of the bands on the antennae: <i>N. viridula</i> has red bands, while <i>A. hilare</i> has black bands. ⁹ See also: <i>N. viridula</i> (Drees & Jackman, 1998, p.59), (Borror & White, 1970, p.126, plate #3). <i>A. hilare</i> (Milne & Milne, 1980, p.484, photo #111) ¹⁰ 26 Oct 04 - Photo of <i>A. hilare</i> on a Passiflora leaf. ² Nov 06 - Photo of <i>A. hilare</i> adult on goldenrod plant and 13 photos of the very colorful nymph.
(F) Pentatomidae <i>Brochymena sp.</i>	Bug, Tree Stink	⁹ Identified by Jimmy Walker using (Drees & Jackman, 1998, p.60), as a reference as well as www.Bugguide.net . ¹⁰ 15 June 06 - Photo
(F) Pentatomidae Euschistus sp.	Bug, brown stink	⁹ Identification was made by Jimmy Walker. ¹⁰ 28 Nov 06 - Sharp photo of <i>Euschistus</i> on my finger.
(F) Pentatomidae unidentified	Bug, stink	¹⁰ 28 Nov 06 - Four photos of a very colorful stink bug nymph.
(F) Phymatidae <i>Phymata</i> sp.	Bug, goldenrod ambush	¹⁰ 2 Nov 06 - 10 photos of this distinctive arthropod were taken in a patch of goldenrod (<i>Solidago</i> sp.) blooming at the north end of the big pond. Two of the photos are posted on BugGuide at this link: http://bugguide.net/node/view/108109.
(F) Psyllidae Pachypsylla sp.	Psyllid, Hackberry	⁵ Everpresent – On the leaves of virtually every hackberry tree. ⁹ For a list of galls found at Elm Fork Preserve and the arthropods that cause them, see the document titled, 'Fungi, Galls, Lichens, Prokaryotes and Protists of Elm Fork Preserve'. ¹⁰ 2006 - Sharp photo of this ubiquitous gall (there are usually several on each leaf) taken by "Z".
(F) Psyllidae	Psyllid, Hackberry	⁵ Everpresent – a swelling of the leaf petioles of hackberry trees.

Pachypsylla venusta	Petiole Leaf gall	⁹ (Felt, 1965, p. 232)	
(F) Reduviidae	Bug, Assassin	¹ Assassin bugs are amazing to sit and watch. Common prey are insects, especially bees. When one attacks an insect, it holds it with powerful forelegs and stabs its hypodermic-needle-like beak into the victim's back, then injects an immobilizing digestive fluid into it. After the deadly chemicals have turned the interior of the insect into a liquid protein drink, the assassin sucks it dry like a Slurpee. Yeeha! ² Warning: Do not thump them in the head or slap them, they can inflict a painful bite. ⁵ Seen throughout the preserve from spring through fall. ⁹ (Borrer & White, 1970, p.119), (Drees & Jackman, 1998, p.57),	P
(m) = 1 · · · · ·		(Beck & Garrett, 1999, pp. 16, 129), (Milne & Milne, 1980, p. 482)	
(F) Reduviidae	Bug, Thread-legged	⁴ Walkingsticks (Order Phasmida) look similar to thread-legged bugs but cannot fly. Thread-legged bugs also have front legs that are modified to catch prey, but walkingsticks do not (Drees & Jackman, 1998, p.17). ⁵ 26 Oct 04 - Discovered on a bush while walking with a group. It resembled a walkingstick, but flew weakly away when a child attempted to touch it. ⁶ These insects are sometimes placed in the family Ploiariidae. ⁹ (Borrer & White, 1970, p.120)	P
(F) Rhopalidae	Bug, Red-shouldered	92006 - "Z" photographed and identified these bugs.	P
Jadera haematoloma			

Kingdom: Animalia > Phylum Arthropoda > Superclass: Hexapoda > Class Insecta > Subclass Pterygota > Order: **Hymenoptera**

(Ants, Bees, Wasps and Sawflies)

Scientific Name	Common Name	Comments	X
(F) Apidae	Honeybee	⁵ 17 Feb O4 - Encountered just one, visiting small white flowers	
Apis mellifera		beside the parking lot.	
P		⁹ (Beck & Garrett, 1999, p. 69)	
		1013 Dec 04 - Photo of honeycomb in a hollow log on the	
		ground. Something had eaten most of the comb. 10 Oct 05 - Photo of an unidentified beetle with a honeybee on a	
		goldenrod inflorescence.	
		15 June 06 - Photo while pollinating a buttonbush.	
(F) Cynipidae	Wasp, Cynipid	² The author loves to eat oak apple galls when they are abundant, green and juicy in spring. The taste of the thin rind is like that	
		of fresh grape leaves.	
		⁴ Large -3" diameter, Globose, thin shelled with a system of fibers	
		radiating from the central kernel, green turning tan with age, on	
		red oak, spring.	
		⁹ (Felt, 1965, p. 173)	
		102006 - Photo by "Z" of a dried (brown) spongy oak apple gall	
(T) T	A(with exit hole visible, resting in the palm of a hand.	
(F) Formicidae	Ant, Carpenter	1014 Oct 06 ~ 10 photos of a large, predominately red	
Camponotus sp.		Camponotus, with a black head and abdomen.	
possibly <i>americanus</i> (F) Formicidae	Ant, Black Carpenter	¹ There are 14 species of Camponotus listed as occurring in Texas	
Camponotus	inii, biwen eurpeiner	and the largest of these is the black carpenter ant (Drees &	
pennsylvanicus		Jackman, 1998, p.287).	
		² Carpenter ants are unable to sting, but can bite.	
		³ Food choices include: Honeydew (a sweet secretion exuded by	
		aphids), decaying fruit and small insects.	
		528 April 99 - Encountered a solitary, giant-sized (~1.5 cm,),	
		black carpenter ant on the main trail at the lightning-struck cottonwood tree (see "cottonwood sign" on the satellite map).	
		1015 June 06 - Photo of an individual from underneath.	
		-	

		22 Sept 06 - semi-fuzzy photo. 2006 - Three good photos submitted by "Z".	
(F) Formicidae Cremastogaster lineolata	Ant, Texas Shed- builder; Acrobat Ant	¹Small colonies of this common Texas ant may be found nesting under stones or in dead tree branches. The name 'shed builder' arises from the curious habit these ants have of building protective shields over aphids, allowing a little opening at the end to stroke the aphids abdomen and receive a drop of honeydew in the process (Milne & Milne, 1980, p.825, photo #315). ³Main articles of diet are honeydew, dead and live insects. ⁵26 Oct 04 - Common on trees in the preserve. Identified one that was crawling on my shirt. ¹⁰7 May 06 - Two photos of acrobat ants foraging on the yellow picnic tables on the deck of the interpretive center. Compare these photos with those of the ant mimic jumping spider	
(F) Formicidae Dorymyrmex insana	Ant, Pyramid Builder	(Peckhamia picata) that was hunting nearby. 59 March 04 - Inspected ~ 15 of the distinctively shaped mounds that appeared on the paved walk in front of the parking lot. 9(Drees & Jackman, 1998, p.288) 1011 April 07 - Photos at this location - 32.95449°N, - 96.93138°W	
(F) Formicidae Monomorium minimum	Ant, Little Black	¹ A very common, native American ant. ³ The author has witnessed this species (apparently) pollinating <i>Rhus glabra</i> (smooth sumac) as they feed on the nectar. ¹⁰ 22 Sept 06 - Couple of photos of the mound with ants. Located on the Cross Trail at 32.95530°N, -96.93437°W.	
(F) Formicidae Solenopsis invicta	Ant, Red Fire	'This unnerving insect has arrived to conquer the warmer parts of North America. A small number of mated queens were transported accidentally in a ship from South America that docked in Mobile Alabama in the 1930's. They spread rapidly due to weak competition from the native ants and a lack of predators. Fire ants crossed the border into Texas in 1956 and were immediately stomped out of existence by a human campaign of complete annihilation. In 1957, they marched in again, in force and utterly unstoppable. Every species that encounters them must adapt to their presence. 2So what do fire ants taste like anyway? The author has tried them two ways - sautéed in oil and slow roasted in the oven. Sautéed is the preferred method. The initial flavor in both cases is good - a nutty, almost popcorn-like flavor. When sautéed, the aftertaste is slight; while roasted fire ants have a distinctive aftertaste that is unlike any other. It is a bizarre cross between citrus and black pepper. Be sure to collect them where they are unlikely to have been poisoned. 3Fire ants are omnivorous, but concentrate mainly on insects as prey. They are known to feed on fatty deposits surrounding seeds or on certain oily plant parts. They can also overpower and kill the young of ground nesting birds, baby mammals and other large prey. Heavy infestations can lead to drastic declines in numerous other species, both by the reduction of food sources and by direct attacks on other species. There may be a fire ant parasite living in Texas – see Milam, March/April 1997, p.2. 5 10-28-97 – On the author's first visit to Elm Fork Preserve, several fire ant mounds were noted. 9(Vinson & Sorensen, 1986, p.10) Milam, Royce. "Adding Arthropods to Your Diet". Wild Vision Newsletter. November 1996, Volume 2, issue 11 Milam, Royce. "Red Fire Ant Update". Nature Center News, (Publication of the Dallas Nature Center). March/April 1995, pp. 5-6, 9. Milam, Royce. "Red Fire Ant Update – Genetic Discoveries".	A

(F) Halictidae	Bee, Halictid; Sweat Bees	Ibid., "Non-chemical Methods of Fire Ant Control", p.4 4This genus of Halictid bee is bright metallic green. 9(Borrer & White, 1970, p. 338 or p.356) (Drees & Jackman, 1998, p.278). 1010 Oct 05 - Two photos of Iridescent green bee on goldenrod flowers. The wings are just blurry enough to prevent further identification. Possibly <i>Augochloropsis metallica</i> . 14 Oct 06 - Six photos of a halictid bee on goldenrod. 28 Nov 06 - Photo of metallic green halictid in flight above Aster sp. 2006 - Photo of sweat bee submitted by "Z".	
(F) Ichneumonidae Tromatobia sp.	Ichneumon, spider parasite	³ A study of parasites of <i>Argiope aurantia</i> egg cases found that 19 species of insects and 11 species of spiders emerged from them (other than <i>A. aurantia</i> spiderlings). Of these various interlopers, the vast majority seen to emerge were of two species of ichneumonid wasps; <i>Tromatobia rufopectus</i> and <i>Pediobius brachycerus</i> . Another common parasite was a chloropid fly, <i>Pseudogaurax signatus</i> (Lockley and Young, 1993). The author performed an inadvertent investigation of this parasitism by placing a seemingly empty <i>A. aurantia</i> egg case into a closed container and forgetting about it. When the container was later opened, three ichneumenid wasps of the same species were discovered. An Internet search indicated that these were very likely in the genus <i>Tromatobia</i> . 18 July 05 - Three by "Z", taken by the lily pond, of <i>A. aurantia</i> egg cases. 2 Nov 06 - Photo of parasitized egg case (note the perfectly round exit hole). Found at the north end of the big pond.	
(F) Ichneumonidae	Ichneumon, unidentified	⁴ Largest family of insects, with over 3000 species in North America. Common insects that come in a variety of colors and that usually sport long antennae and long ovipositors. ¹⁰ 15 June 06 - two, poor-quality photos of an unidentified Hymenopteran that had a blue-black body and a bright red abdomen. The antennae and the ovipositor were both quite a bit longer than the length of the body.	
(F) Siricidae Tremex columba	Pigeon Tremex	(Drees & Jackman, 1998, p.274) 1010 Oct 05 - Temporary accession of dead specimen.	P
(F) Vespidae Euodynerus sp. (probably this genus)	Wasp, Potter or Mason	⁴ Definitely in the Subfamily Eumeninae (Potter and Mason Wasps). ⁹ See photos at this site: <u>www.cirrusimage.com/bees_wasps_potter.htm</u> ¹⁰ 2006- "Z" submitted a very sharp image of an attractive black and white wasp.	P
(F) Vespidae Polistes carolina	Wasp, Red	¹⁰ 2006- Two great photos submitted by "Z" of <i>P. carolina</i> which establishes its presence at the preserve.	P
(F) Vespidae Polistes exclamans (probably)	Wasp, Paper	 104 Sept 04 - Three photos of a yellow and black <i>Polistes</i> that is possibly <i>P. exclamans</i>, or a similar <i>Polistes sp</i>. The photos show a single wasp dragging around a paralyzed or freshly dead Araneus spider. 22 Sept 06 - Photo of <i>P. exclamans</i> on lily in pond. 10 2 Nov 06 - Two photos of a small group of <i>P. exclamans</i> huddled under a bird box on the north end of the big pond. There was no nest and they appeared dispirited. 2006- Sharp photo by "Z" of a group of P. exclamans also huddled together without a nest. 	P
(F) Vespidae Polistes metricus (probably)	Wasp, Paper	1028 Oct 04 - Photo of a red and black <i>Polistes</i> that while similar to <i>P. metricus</i> (Drees & Jackman, 1998, p.179), is not an exact match. 4 Aug 06 - Photo of <i>Polistes</i> on their nest - note the yellow knees and tarsi; red head and thorax with black lines on thorax and the dark brown gaster. These features are apparently diagnostic for <i>P. metricus</i> .	P

Kingdom: Animalia > Phylum Arthropoda > Superclass: Hexapoda > Class Insecta > Subclass Pterygota > Order: Isoptera

(Termites)

Scientific Name	Common Name	Comments	X
(F) Rhinotermitidae	Subterranean termites	⁹ 9 Oct 06 - 7 Photos by "Z" of a crowd of winged alates emerging (probably after a rain) to mate and disperse. Location was near the lily pond.	

Kingdom: Animalia > Phylum Arthropoda > Superclass: Hexapoda > Class Insecta > Subclass Pterygota > Order: **Lepidoptera**

(Butterflies and Moths)

Scientific Name	Common Name	Comments	X
(F) Apaturidae Asterocampa celtis	Butterfly, Hackberry	¹ Possibly the most common butterfly in our area. Always found in close association with its food source, hackberry trees. ³ This is a 'specialist' species, the caterpillars must feed on hackberry leaves - there can be no substitute. Adults are not dainty nectar sippers. Instead, they feed mostly on tree sap, rotting fruit, honeydew, carrion, and muddy water. ⁵ 6 Sept 01 – Observed one on a trail walk. ⁹ (Mitchell & Zim, 1977, p. 59) ¹⁰ 2006 - Two Photos by "Z".	
(F) Danaidae	Butterfly, Monarch	5Oct 01- Jim Varnum reported seeing monarchs on several	
Danaus plexippus		walks during the month of October. 9(Mitchell & Zim, 1977, p. 59)	
(F) Hesperiidae	Butterfly, Skipper	⁴ There are approximately 250 species of skippers in North America in many genera. Much of them closely resemble each other, making identification at the species level uncertain. ⁹ (Mitchell & Zim, 1977,pp. 74-80),(Milne & Milne,1980, p.715) ¹⁰ 28 Oct 04 - Took three photos of multiple individuals, representing at least two different species. They were sipping nectar from the lantana blooming beside the lily pond.	
(F) Limacodidae Phobetron pithecieum	Moth, Hag	⁹ 2Warning: Do not touch! Caterpillar with stinging hairs. 92006 - "Z" identified and submitted two photos of this very bizarre, orangy-brown caterpillar with upwardly pointing furry semi-appendages (that might fall off if you touch them).	P
(F) Lycaenidae	Butterfly, Copper	⁹ 7 Oct 01 - Jim Varnum notes seeing two different species of coppers on this day.	
(F) Lycaenidae	Butterfly, Hairstreak	102006 - Nice photo of one by "Z".	
(F) Megalopygidae Magalopyge opercularis	Caterpillar, Puss; "Asp"; Flannel Moth	² Warning: Do not be fooled by these furry, pear-shaped caterpillars with their cuddly appearance. Beneath the soft, stroke-inviting hairs are short spines that pack a terrific poisonous punch. ⁹ (Drees & Jackman, 1998, p.236) Lyon, William F. "Stinging Hair Caterpillars" - Hyg-2130-95. http://www.ag.ohio-state.edu/~ohioline/hyg-fact/2000/2130.html (US Dept. of Agriculture / University of Ohio Extension, 1995) ¹⁰ 28 Oct 04 - Photo of caterpillar on wooden sign at trail entrance, directly under a hackberry tree.	P
(F) Noctuidae	Moth, Grapevine	912 March 07 - This moth was photographed and identified by	
Psychomorpha epimenis	Epimenis	Tzila "Z" Duenzl. For an Internet photo of this moth, see: http://www.dallasbutterflies.com/Moths/html/pyschomorpha%20e pimenis.htm or at Bugguide: http://bugguide.net/node/view/97585	
(F) Nymphalidae	Butterfly, Gulf Fritillary	⁹ (see Ajilvsgi, 1990, p.133), (Milne & Milne, 1980, p. 739, photos #3-caterpillar, 614)	

Agraulis vanillae		 1019 Sept. 02 – Photo taken of an individual sipping nectar from the pickerel-weed blooming at the lily pond beside parking lot. 1026 Oct 04 - Photos of upper and lower surfaces of wings. 2006 - Photo by "Z".
(F) Nymphalidae Chlosyne lacinia	Butterfly, Bordered Patch	⁹ 2006 - Identified photo submitted by "Z".
(F) Nymphalidae Euptoieta claudia	Butterfly, Variegated Fritillary	⁹ (see Ajilvsgi, 1990, p.134), ¹⁰ 13 May 05 - one photo
(F) Nymphalidae Libytheana carinenta	Butterfly, American Snout	⁹ 24 Nov 06 - Photo by "Z" of this butterfly resting on a plant stem. See the photo and identification at: http://bugguide.net/node/view/88725
(F) Nymphalidae <i>Phyciodes tharos</i>	Butterfly, Pearl Crescent	 ¹⁰7 May 06- Fair quality photo of this frequently encountered butterfly. 2006 - Better quality photo submitted by "Z".
(F) Nymphalidae Phyciodes texana	Butterfly, Texan Crescent	⁹ 2006 - Identified and photographed by "Z".
(F) Nymphalidae Vanessa atalanta	Butterfly, Red Admiral	⁹ 21 October 01 - Jim Varnum spotted more than 10 of them during the course of an excursion.
(F) Papilionidae Battus philenor	Swallowtail, Pipevine	³ The caterpillars are said to feed exclusively on Aristolochia spp. That means (unless a bird accidently dropped it) that there is pipevine on the preserve near the lily pond. ⁹ 2006 - Photo of caterpillar - identified and submitted by "Z". She said the caterpillar was found near the lily pond.
(F) Papilionidae Heraclides cresphontes	Swallowtail, Giant	¹ The caterpillars closely resemble bird droppings. If one is touched it will suddenly extrude two bright orange, foul smelling osmeteria, like long horns sweeping back from its head. ³ Caterpillars feed on Tickletongue tree leaves and other members of the citrus family (Rutaceae). ⁶ Formerly <i>Papilio heraclides</i> . ⁷ Young <i>Zanthoxylum clava-herculis</i> (host tree for the caterpillar) on the main trail - southwest side of the preserve - east of tree marker #13, before reaching the Cross Trail GPS 32° 57.254N, 96° 56.103W ⁹ (Drees & Jackman, 1998, p.245), (Milne & Milne, 1980, p.719) ¹⁰ 28 Oct 04 - Three great photos of caterpillar with osmeteria extended.
(F) Papilionidae Papilio glaucus	Swallowtail, Tiger	⁶ Formerly <i>Papilio glaucus</i> . Now being called <i>Pterourus glaucus</i> by some authors. ⁹ (Drees & Jackman, 1998, p.245), (Milne & Milne, 1980, p.719) ⁹ 22 July 01 - Jim Varnum reported sighting "many". Location was not specified. ¹⁰ 22 Sept 06 - Three photos of a male (lacks the blue of the female) on Lantana in bloom. 2006 - "Z" photo of a female (with blue on the hindwings)
(F) Pieridae Phoebis sennae	Butterfly, Cloudless Sulphur	⁹ The two spots on the hindwing are characteristic for this species. See http://bugguide.net/node/view/30428 for example. See also Z's posting of it at http://bugguide.net/node/view/88723 ¹⁰ 24 Nov 06 - Photo by "Z" of this hard to photograph butterfly sipping nectar in front of the lily pond.
(F) Psychidae	Moth, Bagworm	¹⁰ 2006 - Photo by "Z" of the distinctive silken bag with an empty chrysalis protruding from the bottom.
(F) Saturniidae Automeris io	Moth, Io	² The spines are said to cause painful stings if they penetrate the skin (Drees & Jackman, 1998, p.258). ⁴ This caterpillar reaches 3" in length, is bright green with pink and white stripes running along the sides of its body. It also has clusters of branched spines all over. ⁵ 28 Oct 04 - Observed one large caterpillar on a leaf near tree

		marker #31 (near the interpretive center). The author handled it on his palms (not realizing it was a stinging caterpillar) without being stung. 9(Milne & Milne, 1980, p.771)
(F) Sphingidae (Sphinx Moths) Hemaris sp. (F) Thyrididae	Moth, Hummingbird Clearwing Moth, Mournful Thyris	514 Oct 06 - "Z" escorted me to the big pond to examine a coralberry patch sporting the large, colorful caterpillars she had monitoring. Located at the south end of the rail beside the big pond (at "bench n rail" on the satellite map - 32.95449°N, - 96.93138°W). Z also showed me some cocoons that she suspected were Hemaris, anchored to coralberry stems at the south end of the lily pond. 9The caterpillars of this moth were identified by "Z". 1022 Sept 06 - Two photos of an adult visiting lantana flowers beside the lily pond. 14 Oct 06 - Twelve photos of several caterpillars on Symphoricarpos orbiculatus (coralberry) in assorted colors: Normal green, dark phase, and strange pink. Oct 06 - "Z" contributed 18 excellent photos of these caterpillars, taken at different times of the month. 2006 - "Z"'s awesome photo of a clearwing sipping nectar from Pontederia blooms.
,	Moth, Mournful Thyris	and white spotted moth.
Thyris sepulchralis		1
Unidentified	Unidentified moths and butterflies	 1028 Nov 06 - Three photos of an unidentified moth. 2006 - Eight photos of six different species of caterpillars submitted by "Z" and requiring further investigation. 2006 - Four photos submitted by "Z" of unidentified adult moths and butterflies.

Kingdom: Animalia > Phylum Arthropoda > Superclass: Hexapoda > Class Insecta > Subclass Pterygota > Order: **Mantodea**

(Mantids)

Scientific Name	Common Name	Comments	X
(F) Mantidae Stagmomantis carolina	Mantid, Carolina	³ Mantids prey on butterflies, moths, flies, wasps, bees, bugs and caterpillars. (see Milne, 1980, p. 397) ⁴ Adults are light green to brownish gray in color.	
		⁵ 26 Dec 02 – Encountered an occupied egg mass attached to a thin branch low to the ground on the trail near the interpretive center. ¹⁰ 2006 - Photo by "Z" of the distinctive egg mass.	

Kingdom: Animalia > Phylum Arthropoda > Superclass: Hexapoda > Class Insecta > Subclass Pterygota > Order: **Mecoptera**

(Scorpionflies, Hangingflies and Allies)

Scientific Name	Common Name	Comments	X
(F) Panorpidae	Scorpionfly	⁴ Only the males possess the scorpion-like abdomen.	
<i>Panorpa</i> spp.		⁵ 2 Nov O2 – Noted a male on the trunk of the lightning struck cottonwood tree.	
		9 Nov 03 – Saw two males and two females while walking with a group of Boy Scouts.	
		⁹ (Drees & Jackman, 1998, p. 198)	
		1028 Oct 04 - Five photos of a male and female Panorpa engaged	
		in what appeared to be courtship behavior around the leg-less	
		body of a spider. The male would stretch his wings out to the	
		side and flutter them as he neared the spider morsel. The female	
		watched nearby.	

2006 - "Z" took this group photo showing five <i>Panorpa</i> in what	
appears to be 'display' activity around a large, dead grasshopper.	
"Z" also took several glamour shots of a female on a <i>Pontederia</i>	
leaf (must have been at the lily pond).	

 $Kingdom: Animalia > Phylum \ Arthropoda > Superclass: Hexapoda > Class \ Insecta > Subclass$

Apterygota > Order: Microcoryphia

(Bristletails)

Scientific Name	Common Name	Comments	X
(O) Microcoryphia	Bristletails	¹⁰ 7 May 07 - 2 photos of a colorful bristletail living between cracks in the bark of a giant cottonwood tree at GPS 32° 57.356N, 96° 56.145W.	

Kingdom: Animalia > Phylum Arthropoda > Superclass: Hexapoda > Class Insecta > Subclass Pterygota > Order: **Neuroptera**

(Antlions, Lacewings and Allies)

Scientific Name	Common Name	Comments	X
(F) Myrmeleontidae <i>Myrmeleon</i> spp.	Antlion, Doodlebug	¹Antlions are curious creatures that are most entertaining to watch in the larva stage. In spring the larvae create conical pits in fine soil. Any hapless ants traveling too close to the pit find themselves sliding down the side into the waiting jaws of the antlion. If an ant is not grabbed immediately it will struggle to climb the steeply sloped sides of the pit. The soil is fine and dry and the ant slips repeatedly in its attempts to escape. The antlion often tosses sand at the ant if it nears the top. Soon the ant finds viselike jaws clamped around its thin pedicel and struggles vainly before being dragged beneath the sand to its death. Larvae take one to three years to reach adulthood. When winter comes, they dig deeper into the soil and remain inactive until spring. Mature larvae make cocoons at the base of their pits and pupate for approximately one month, emerging in summer as winged adults. The adults resemble wimpy dragonflies and are poor fliers.	
		⁵ Observed several of the distinctive pits in the soil beneath the interpretive center. ⁹ (Drees & Jackman, 1998, p. 93, p. 142-photo of adult and larva), (Nardi, 1988, p.159), (Stokes, 1983, p. 26) ¹⁰ 25 Oct 05 - Photo of conical pit. 4 Aug 06 - 4 photos of a winged adult.	

Kingdom: Animalia > Phylum Arthropoda > Superclass: Hexapoda > Class Insecta > Subclass Pterygota > Order: **Odonata**

(Dragonflies and Damselflies)

Scientific Name	Common Name	Comments	X
(F) Aeshnidae	Dragonfly, Green	92006 ~ "Z" identified this species and submitted two sharp	
Anax junius	Darner	photos of one.	
(F) Coenagrionidae	Damselfly, Bluet	⁵ 28 Oct 04 ~ Noticed a bluet on the Cross Trail. Species	
Enallagma sp. (?)		unidentified.	
		⁹ (See Damselflies of Texas – http://www.csdl.tamu.edu/ento/)	
(F) Libellulidae	Dragonfly, Neon	¹⁰ 2006 ~ Two photos by "Z" of this bright red dragonfly.	
Libellula croceipennis	Skimmer		

(F) Libellulidae Sympetrum ambiguum	Dragonfly, Blue-Faced Meadowhawk	⁹ http://www.martinreid.com/odindex.html - some excellent photos of precisely identified Texas dragonflies and damselflies. This species was identified using (Abbott, 2005, p. 296) ¹⁰ 26 Oct 04 - Three photos of a bright red dragonfly, taken near the south juncture of the Cross Trail.
(F) Libellulidae Sympetrum corruptum	Dragonfly, Variegated Meadowhawk	⁹ This species was identified using (Abbott, 2005, p. 298) ¹⁰ 10 Oct 05 - Four photos of one individual.
(sO) Zygoptera Argia sp., Ischnura sp., or Protoneura sp. (?)	Damselfly	⁴ Females of many species of damselflies are dull yellow-brown in color with similar markings. ¹⁰ 7 May 06- several photos of a yellow-brown female damselfly.

Kingdom: Animalia > Phylum Arthropoda > Superclass: Hexapoda > Class Insecta > Subclass Pterygota > Order: Orthoptera

(Grasshoppers, Katydids and Crickets)

Scientific Name	Common Name	Comments	X
(F) Acrididae	Grasshopper, Cattail	¹⁰ 2 Nov 06 ~ 4 photos of this strange looking grasshopper	
Leptysma marginicollis	Toothpick;	resting on an Iva annua stem at the big pond.	
(F) Acrididae	Grasshopper,	1014 Oct 06 - Two sharp photos of this grasshopper on a cattail	
Melanoplus	Differential	at the lily pond.	
differentialis		2006 ~ "Z" submitted two sharp photos.	
(F) Acrididae	Grasshopper, Bird	⁴ Appears to be <i>S. obscura</i> (obscure bird grasshopper). See	
Schistocerca sp.		Bugguide link: http://bugguide.net/node/view/5009	
		92006 "Z" identified and submitted these two photos.	
(F) Gryllidae	Cricket, Field	⁵ 2 Nov 02 – Observed one under a log.	
Gryllus sp.		⁹ (Milne & Milne, 1980, p. 439, photo #252)	
(F) Oecanthidae	Tree Cricket, Snowy	92006 ~"Z" submitted a photo that was tentatively identified as	
Oecanthus sp.		O. fultoni.	
(F) Tettigoniidae	Katydids, False Katydids and Long-horned Grasshoppers	⁹ (Drees & Jackman, 1998, p. 21) (Milne & Milne, 1980, p. 429) ¹⁰ 28 Oct 2004 - Two photos of one individual taken beside the lily pond.	
	· · · · · · · · · · · · · · · · · · ·	13 Dec 04 - Two photos taken of one individual of a different species taken on a Baccharis shrub on the southwest edge of the preserve.	
(F) unidentified	grasshoppers/katydids	102 Nov 06 - Sharp photo of unidentified grasshopper at the big pond. 2006 - "Z" submitted photos of three different grasshoppers/katydids.	

Kingdom: Animalia > Phylum Arthropoda > Superclass: Hexapoda > Class Insecta > Subclass Pterygota > Order: **Phasmida**

(Walkingsticks)

Scientific Name	Common Name	Comments	X
(F) Heteronemiidae	walkingsticks, common	¹⁰ 2006 - Photo by "Z" of a walkingstick at the lily pond	

Malacostraca

(Crustacea is the Subphylum, which is more generally known than the Class, Malacostraca of which the following are members: Crayfish, Clam Shrimp, Fairy Shrimps, Pill Bugs, Sow Bugs, Ostracods, Copepods, Scud & kin)

Kingdom: Animalia > Phylum: Arthropoda > Class: Malacostraca > Superorder: Peracarida > Order: **Isopoda** > Suborder: **Oniscidea**

Scientific Name	Common Name	Comments	X
(F) Armadillidiidae <i>Armadillidium</i> <i>vulgare</i>	PillBug	⁴ The easiest way to distinguish <i>Armadillidium</i> spp. is that they can roll into a ball whereas <i>Porcellio</i> spp. cannot. The name <i>Armadillidium</i> comes from the Spanish <i>Armadillo</i> , little armored one and <i>-idus</i> , meaning similar to. ² Pill Bugs are edible and tasty if prepared properly – see Milam, Jan/Feb 1997, p.1 for details. ⁵ 14 Jan 03– Observed several beneath a rotted log near the interpretive center. ⁹ (Levi & Levi, 1968, p.152)	
(F) Oniscidae, and (F) Porcellionidae	Sowbug	¹Sow bugs are found in the same habitats as pill bugs, favoring the undersides of rotting logs, flat stones and leaf litter. Some sow bugs are native, others have been introduced from Europe. ⁴Sow bugs are easily distinguished from pill bugs at a glance by noticing the 2 or 3 pronged projection that looks like a tail. They are also incapable of rolling into a ball when picked up. The two families of sow bug are distinguished from each other by noting the number of segments at the distal end of the antennae. Oniscidae have three segments at the end, whereas Porcellionidae have only two. ⁵6 Sept 01 − noted several beneath a rotted log near the interpretive center while doing a survey of the fauna. The antennae of the specimen was not examined.	



147 species identified/noted as of 31 December 2006

Short List of Observed Arthropods Sorted by Class, Order and Common Name

Arachnida

(Spiders, Scorpions, Harvestmen, Mites, Ticks and kin)

Spiders (O) Araneae

Common Name	Scientific Name
Ant-mimic Jumping	(F) Salticidae
	Peckhamia picata
Araneus	(F) Araneidae
	Ar <i>aneus spp</i>
Basilica	(F) Araneidae
	Mecynogea lemniscata
Bowl & Doily Weaver	(F) Linyphiidae
	Frontinella communis
Crab	(F) Thomisidae
	Misumena spp. and other genera
Featherlegged	(F) Uloboridae
Orbweaver	Uloborus glomosus
Filmy Dome	(F) Linyphiidae
	Neriene radiata
Fishing	(F) Pisauridae
	Dolomedes sp.
Funnel Weaver	(F) Agelenidae
	<i>Agelenopsis</i> sp.
Jumping	(F) Salticidae
	Phidippus audax
Jumping	(F) Salticidae
	Thiodina sylvana
Jumping	(F) Salticidae unidentified A

Nursery Web	(F) Pisauridae
	Pisaurina mira
Six-spotted Fishing	(F) Pisauridae
	Dolomedes triton
Spinybacked	(F) Araneidae
Orbweaver	Gasteracantha
	cancriformis
Trapdoor	(F) Ctenizidae
	<i>Ummidia</i> sp.
unidentified	(F) unidentified
Unidentified	(F) Dictynidae
Wolf	(F) Lycosidae
	Rabidosa spp.
	& other genera
Yellow Garden	(F) Araneidae
	Ar <i>giope aurantia</i>

Harvestmen (O) Opiliones

Common Name	Scientific Name
Harvestman, Daddy Longlegs	(F) Phalangiidae <i>Phalangium</i> spp. and
(short and long legged species noted)	other genera

Chilopoda

(Centipedes)

Common Name	Scientific Name
Soil Centipedes	(O) Geophilomorpha
Stone Centipedes	(O) Lithobiomorpha

Diplopoda

(Millipedes)

Common Name	Scientific Name
Millipedes	(O) Polydesmida and many other Orders.

Insecta

(insects)

Cockroaches (O) Blattodea

Common Name	Scientific Name
Cockroach	(F) Blattidae

Beetles (O) Coleoptera

Common Name	Scientific Name
Bess	(F) Passalidae
Black-spotted	(F) Chrysomelidae
Cucumber	Diabrotica sp.
Click	(F) Elateridae
	<i>Melanotus sp</i> (apparently)
Eyed Click	(F) Elateridae
	Alaus oculatus
Multi-spotted Ladybird	(F) Coccinellidae
(Ladybug)	Hippodamia
	convergens
Twicestabbed Ladybird	(F) Coccinellidae
(Ladybug)	Chilocorus stigma
Twig Girdler	(F) Cerambycidae
	Oncideres cingulata
unidentified	(F) unidentified

Earwigs (O) Dermaptera

Common Name	Scientific Name
Earwig	(O) Dermaptera

Flies (O) Diptera

Common Name	Scientific Name
Crane	(F) Tipulidae
	Tipula spp.
Goldenrod Ball Gall	(F) Tephritidae
	Eurosta solidaginis
Midge, Dogwood	(F) Cecidomyiidae
Clubgall	Resseliella clavula

Midge, unidentified	(F) Chironomidae
Mosquito, Asian Tiger	(F) Culicidae
	Aedes albopictus
Mosquito, Unidentified	(F) Culicidae
Mydas	(F) Mydidae
Picture-winged	(F) Otitidae
	Delphinia picta
Robber	(F) Asilidae
	many species.
Stilt-legged	(F) Micropezidae
	Unidentified
Stilt-legged	(F) Micropezidae
	Unidentified
Unidentified	(F) Rhagionidae
	Chrysopilus sp. (possibly)

Mayflies (O) Ephemeroptera

Common Name	Scientific Name
Mayfly	(F) Ephemerellidae
	Ephemerella sp.

Bugs (O) Hemiptera (including all former members of the Order Homoptera - cicadas, plant hoppers, etc.)

Common Name	Scientific Name
Bug, Assassin	(F) Reduviidae
Bug, Bowlegged,	(F) Alydidae
Broad~headed	Hyalymenus sp.
Bug, Broad-headed	(F) Alydidae
Bug, brown stink	(F) Pentatomidae
	Euschistus sp.
Bug, Coreid	(F) Coreidae
	unidentified sp.
Bug, goldenrod	(F) Phymatidae
ambush	<i>Phymata</i> sp.
Bug, Green Stink	(F) Pentatomidae
	Acrosternum hilare
Bug, Large Milkweed	(F) Lygaeidae
	Oncopeltus fasciatus

Bug, Leaffooted	(F) Coreidae
bug, Leamooled	
	Acanthocephala sp.
Bug, Leaffooted	(F) Coreidae
	Leptoglossus
	phyllopus
Bug, Leaffooted	(F) Coreidae
	Narnia sp.
Bug, Red-shouldered	(F) Rhopalidae
	Jadera haematoloma
Bug, Stink	(F) Pentatomidae
	unidentified
Bug, Thread-legged	(F) Reduviidae
Bug, Tree Stink	(F) Pentatomidae
	Brochymena sp.
Cicada, Dog-day	(F) Cicadidae
	Tibicen spp.
Flatid Planthoppers	(F) Flatidae
	unidentified sp.
Flatid Planthoppers,	(F) Flatidae
Citrus	Metcalfa pruinosa?
Psyllid, Hackberry	(F) Psyllidae
	Pachypsylla sp.
Psyllid, Hackberry	(F) Psyllidae
Petiole Leaf gall	Pachypsylla venusta
Spittlebug;	(F) Cercopidae
Froghopper	Philaenus spp.
	(likely <i>P. spumarius</i>)
Strider, Water	(F) Gerridae
	Gerris spp. and other genera
Treehopper	(F) Membracidae
	Stictocephala sp.
Waterscorpion	(F) Nepidae
	Ranatra fusca

Ants, Bees, Wasps (O) Hymenoptera

Common Name	Scientific Name
Ant, Black Carpenter	(F) Formicidae
	Camponotus pennsylvanicus
Ant, Carpenter	(F) Formicidae Camponotus sp. possibly americanus

And Tittle Disele	(D) F
Ant, Little Black	(F) Formicidae
	Monomorium
	minimum
Ant, Pyramid Builder	(F) Formicidae
	Dorymyrmex insana
Ant, Red Fire	(F) Formicidae
	Solenopsis invicta
Ant, Texas Shed~	(F) Formicidae
builder; Acrobat Ant	Cremastogaster
ACIODAL AIII	lineolata
Bee, Halictid;	(F) Halictidae
Sweat Bees	
Honeybee	(F) Apidae
	Apis mellifera
Ichneumon, spider	(F) Ichneumonidae
parasite	Tromatobia sp.
Ichneumon, unidentified	(F) Ichneumonidae
Pigeon Tremex	(F) Siricidae
	Tremex columba
Wasp, Cynipid	(F) Cynipidae
Wasp, Paper	(F) Vespidae
	Polistes exclamans
	(probably)
Wasp, Paper	(F) Vespidae
	Polistes metricus (probably)
Wasp, Potter or Mason	(F) Vespidae
	Euodynerus sp.
	(probably this genus)
Wasp, Red	(F) Vespidae
	Polistes carolina

Termites (O) Isoptera

Common Name	Scientific Name
Subterranean termites	(F) Rhinotermitidae

Butterflies and Moths (O) Lepidoptera

Scientific Name
(F) Nymphalidae
Libytheana carinenta
(F) Nymphalidae
Chlosyne lacinia
(F) Lycaenidae

Butterfly, Gulf Fritillary	(F) Nymphalidae
	Agraulis vanillae
Butterfly, Hackberry	(F) Apaturidae
	Asterocampa celtis
Butterfly, Hairstreak	(F) Lycaenidae
Butterfly, Monarch	(F) Danaidae
	Danaus plexippus
Butterfly, Pearl	(F) Nymphalidae
Crescent	Phyciodes tharos
Butterfly, Red Admiral	(F) Nymphalidae
	Vanessa atalanta
Butterfly, Skipper	(F) Hesperiidae
Butterfly, Texan	(F) Nymphalidae
Crescent	Phyciodes texana
Butterfly, Variegated	(F) Nymphalidae
Fritillary	Euptoieta claudia
Caterpillar, Puss;	(F) Megalopygidae
"Asp"; Flannel Moth	Magalopyge
Transici Wom	opercularis
Moth, Bagworm	(F) Psychidae
Moth, Grapevine	(F) Noctuidae
Epimenis	Psychomorpha
	epimenis
Moth, Hag	(F) Limacodidae
	Phobetron pithecieum
Moth Hymnin daind	1
Moth, Hummingbird Clearwing	(F) Sphingidae (Sphinx Moths)
O	Hemaris sp.
Moth, Io	(F) Saturniidae
,	Automeris io
Moth, Mournful Thyris	(F) Thyrididae
, ,	Thyris sepulchralis
Swallowtail, Giant	(F) Papilionidae
······································	<i>Heraclides</i>
	cresphontes
Swallowtail, Pipevine	(F) Papilionidae
	Battus philenor
Swallowtail, Tiger	(F) Papilionidae
	Papilio glaucus
unidentified moths and butterflies	Unknown

Mantids (O) Mantodea

Common Name	Scientific Name
Mantid, Carolina	(F) Mantidae
	Stagmomantis carolina

Scorpionflies, Hangingflies and allies (O) Mecoptera

Common Name	Scientific Name
Scorpionfly	(F) Panorpidae
	Panorpa spp.

Bristletails (O) Microcoryphia

Common Name	Scientific Name
Bristletails	(O) Microcoryphia

Antlions, Lacewings and allies (O) Microcoryphia

Common Name	Scientific Name
(F) Myrmeleontidae	Antlion,
Myrmeleon spp.	Doodlebug

Dragonflies and Damselflies (O) Odonata

Common Name	Scientific Name
Damselfly, Bluet	(F) Coenagrionidae
	Enallagma sp. (?)
Damselfly, unidentified	(sO) Zygoptera
	Argia sp., Ischnura sp., or Protoneura sp. (?)
Dragonfly, Blue-Faced	(F) Libellulidae
Meadowhawk	Sympetrum
	ambiguum
Dragonfly, Green	(F) Aeshnidae
Darner	Anax junius
Dragonfly, Neon	(F) Libellulidae
Skimmer	Libellula
	croceipennis

Dragonfly, Variegated	(F) Libellulidae
Meadowhawk	Sympetrum corruptum

Grasshoppers, Katydids and Crickets (O) Orthoptera

Common Name	Scientific Name
Cricket, Field	(F) Gryllidae
	Gryllus sp.
Grasshopper, Bird	(F) Acrididae
	Schistocerca sp.
Grasshopper, Cattail	(F) Acrididae
Toothpick;	Leptysma
	marginicollis
Grasshopper,	(F) Acrididae
Differential	Melanoplus
	differentialis

Katydids, False Katydids and Long-horned Grasshoppers	(F) Tettigoniidae
Tree Cricket, Snowy	(F) Oecanthidae
	Oecanthus sp.
unidentified grasshoppers/katydids	(F) unidentified

Walkingsticks (O) Phasmida

Common Name	Scientific Name
Walkingsticks, Common	(F) Heteronemiidae

Malacostraca

(Crayfish, Clam Shrimp, Fairy Shrimps, Pill Bugs, Sow Bugs, Ostracods, Copepods, Scud & kin)

Pillbugs, Sowbugs, Scud & Allies (O) Isopoda

Common Name	Scientific Name
PillBug	(F) Armadillidiidae Armadillidium vulgare
Sowbug	(F) Oniscidae, and (F) Porcellionidae



For a list of galls found at Elm Fork Preserve and the arthropods that cause them, see the document titled, 'Fungi, Galls, Lichens, Prokaryotes and Protists of Elm Fork Preserve.

- The Wild Vision Newsletter, filled with information on the flora and fauna of north central Texas, is on file in the Elm Fork Preserve Interpretive Center.
- To learn what insects do in winter, see Wild Vision Newsletter January 1996, Vol. 2, Issue 1, p.1.
- To add arthropods to your diet, see Wild Vision Newsletter November 1996, Vol. 2, Issue 11, pp.2-3.

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*Additions to this list are welcomed. Please be sure to include the following information on any submissions: The person's name that is making the identification, as well as the date, time, location, evidence used for identification (bones, tracks, scat, photos, etc) and any reference used to make the identification. Please include contact information for verification purposes. Submissions should be e-mailed to Royce Milam at wyldvision@aol.com

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