



New Mexico's "Species of Greatest Conservation Need"

Published on February 14, 2006, the **Comprehensive Wildlife Conservation Strategy (CWCS) for New Mexico** is a seminal work that will be an invaluable tool for environmental planners. An early awareness of species that currently require specific conservation measures could lead to environmental practices that preclude said species from reaching a state of risk that requires legal listing status as Candidate, Threatened, or Endangered.

The 681-page document is available from the New Mexico Department of Game and Fish at: <http://fws-nmcfwru.nmsu.edu/cwcs/default.htm> as a .pdf download.

Comprehensive Wildlife Conservation Strategy (CWCS) for New Mexico Conserving New Mexico's Biodiversity



SPECIEZnm is pleased to provide an edited version of the Executive Summary from that document, along with the complete list of New Mexico wildlife determined to be "Species of Greatest Conservation Need."

EXECUTIVE SUMMARY

In 2001, through the efforts of the 3000 member groups of the Teaming With Wildlife Coalition (<http://www.teaming.com>), the US Congress passed legislation now known as the State and Tribal Wildlife Grants Program (SWG) and created the nation's core initiative for conserving our country's biodiversity and thereby precluding the necessity of listing more species as threatened and endangered. Planning and actions to recover species that have become endangered are controversial and expensive. Annual spending on listed species in the United States has increased more than six fold over the past 10 years, to a level of over \$600 million a year. The SWG program promotes proactive and collaborative conservation action *before* wildlife reaches that serious and controversial status. Since 2001, Congress has allocated more than \$400 million to the states for this purpose, apportioned on the basis of their respective land areas and human populations. New Mexico's share of the national appropriation has averaged about \$1 million per year. In order to maintain eligibility for this funding, each state must develop and submit a Comprehensive Wildlife Conservation Strategy (CWCS) no later than October 1, 2005.

The Comprehensive Wildlife Conservation Strategy for New Mexico focuses upon Species of Greatest Conservation Need (SGCN), key wildlife habitats, and overcoming the challenges affecting the conservation of both. The overriding desired outcome is that New Mexico's key habitats persist in the condition, connectivity, and quantity necessary to sustain viable and resilient populations of resident SGCN and host a variety of land uses with reduced resource use conflicts. We believe this document will greatly facilitate meeting our statutory mandates to provide an adequate supply of game, fish, and furbearers and to carry out the provisions of the Wildlife Conservation Act pertaining to conserving indigenous threatened or endangered wildlife. Associated funding will allow the New Mexico Department of Game and Fish (NMDGF) and its partners to broaden their attention beyond single species to include the species and



habitats necessary to conserve all of New Mexico's biodiversity. Some significant revelations emerging from development of the CWCS are:

- ◆ New Mexico has 452 vertebrate, mollusc, and arthropod SGCN. Significantly larger proportions of amphibians (58%) and crustaceans (91%) are recognized as SGCN than other taxonomic groups.
- ◆ The greatest diversities of terrestrial SGCN are predicted to occur in the Apache Highlands, Arizona-New Mexico Mountains, and Chihuahuan Desert Ecoregions.
- ◆ The greatest diversities of aquatic SGCN are predicted to occur in the Pecos, Rio Grande, and Gila Watersheds.
- ◆ The most significant factors affecting the persistence of SGCN statewide are those that cause habitat conversion, loss, and degradation.
- ◆ Conversion to other uses, extraction of minerals or water, removal of biological resources, and pollution present the highest probability of altering New Mexico's key habitats.
- ◆ Ephemeral natural catchments, perennial marsh/cienega/spring/seeps, and riparian habitats may be at a higher risk of alteration by multiple factors than other habitat types in New Mexico.
- ◆ The effects of oil and gas development on SGCN and their key habitats are of most concern in the Southern Shortgrass Prairie, Colorado Plateau, and Chihuahuan Desert Ecoregions. Mining poses potential adverse effects in the Arizona-New Mexico Mountains Ecoregion.
- ◆ The Chihuahuan Desert, Arizona-New Mexico Mountains, and Southern Shortgrass Prairie Ecoregions have been subjected to significant habitat alterations as the result of off-road vehicle and other recreational uses and military activities.
- ◆ Non-native aquatic species have considerable adverse effects upon native fish, molluscs, and crustaceans in New Mexico's aquatic habitats. However, many nonnative species have been introduced to enhance sport fishing opportunity, and the challenge remains in balancing these interests with maintaining viable and resilient populations of native species.
- ◆ Findings to date suggest that key areas upon which to focus conservation efforts in New Mexico may include riparian and aquatic habitats throughout the state, areas in the "boot heel" region of southwestern New Mexico extending northward into the Madrean habitats, and areas of the shortgrass prairie and western mountain ranges where they converge with Chihuahuan Desert and Pecos River habitats. These areas contain key habitats, have a high diversity of SGCN, are subjected to a moderate to high magnitude of multiple habitat altering factors, and lack legal constraints or long-term management plans protecting them from habitat conversion.
- ◆ There is a strong need to fill the information gaps impeding assessment and conservation of New Mexico's biodiversity through the collaborative and coordinated implementation of research, survey, and monitoring projects.
- ◆ The highest priority conservation action for both terrestrial and aquatic key habitats statewide is to work with federal, state, and private organizations, research institutions and universities to design and implement research, survey, and monitoring projects to enhance our understanding of SGCN and their key habitats. Knowledge of SGCN abundance and distribution and the connectivity and condition of key habitats is of particular interest as are studies that monitor the status of SGCN and identify and quantify factors limiting their populations.
- ◆ We will need to create partnerships among local, state, federal, and tribal governments, non-government organizations, universities, and individuals to effectively forward our common wildlife conservation interests.
- ◆ We will need to implement conservation strategies that are effective on a landscape scale.
- ◆ Our perceptions and effectiveness can be greatly enhanced by involving private landowners and the agricultural industry in the CWCS implementation, review, and revision phases and otherwise providing them continual opportunities to inform and influence project development. New Mexico is 51% rangeland, 2.4% cropland, and 0.3% pasture. Even primarily urban Bernalillo County, which includes less than 1% of the state's total land area and 30% of its population, produces \$40 million in agricultural products and has numerous agriculture-related industries.



Though NMDGF has led the development process to date, the CWCS is a strategic plan intended as a blueprint to guide collaborative and coordinated wildlife conservation initiatives involving NMDGF, local, state, federal, and tribal governments, non-governmental organizations (NGOs) and interested individuals. It identifies many more conservation actions and research, survey, and monitoring needs than can be addressed in the near term by any one entity. To facilitate effective implementation, this broad array of strategic intentions will need to be further narrowed through an executive staff process to comprise a wildlife action plan focused upon near-term conservation priorities. NMDGF will next employ an operational planning process by which to propose, select, schedule, design, staff, and budget the site or area-specific projects through which these strategic conservation priorities will be implemented. The operational planning process will include appropriate coordination with local, state, and federal government agencies and tribes and afford these entities, NGOs and interested publics opportunities to influence and participate in project design and implementation. NMDGF will encourage partnering and cost sharing with and among these interests.

We will promote awareness of implementation progress through periodic announcements and events, including an annual CWCS for New Mexico Progress Report, and provide regularly scheduled and interim review and revision opportunities.

The scope, focus, and content of this document were influenced by the direct involvement of over 170 individuals external to NMDGF who provided valuable technical and socio-economic insights and constructive criticism from diverse and sometimes conflicting perspectives. We sincerely hope they will continue to engage with us in further CWCS development and implementation.

IDENTIFICATION OF SPECIES OF GREATEST CONSERVATION NEED

Species in New Mexico

The Bison-M database has biological information on greater than 1,400 species. Our first filter was to exclude all species in the BISON-M database that do not occur in New Mexico, retaining 1,166 species for further consideration.

[*Editor's Note:* The BISON-M site has undergone major revisions and the new site was launched on June 21, 2006. Please correct your browser bookmark for the new web address: <http://www.bison-m.org/>]

New Mexico's SGCN are species that are indicative of the diversity and health of the state's wildlife that are associated with key habitats, including low and declining populations, and species of high recreational, economic, or charismatic value.

SPECIES OF GREATEST CONSERVATION NEED

Through the process described in the Approach chapter, 452 Species of Greatest Conservation Need (SGCN) have been identified in New Mexico (Table 4-1). Of these 298 species are fish, birds, mammals, amphibians, reptiles, molluscs, and crustaceans. The remaining 154 species are arthropod species in the classes of Insecta, Arachnida, Chilopoda, Diplopoda, and Entognatha. Although the percent of New Mexico's biodiversity represented as SGCN is unknown (the amount of arthropods other than crustaceans in New Mexico is unknown), approximately 26% of New Mexico's vertebrate, mollusc, and crustacean fauna are considered SGCN (Table 4-2). Most of the crustacean fauna (91%; 32 species) in the state are considered SGCN. Conversely, only 15% (74 species) of the birds in the state are considered SGCN. Although little is known about most arthropods in New Mexico, the arthropod working group considers those species designated as SGCN to be appropriate for conservation planning at this time. However, additional taxa may be identified in the future as new information becomes available. Arthropod SGCN (classes Insecta, Arachnida, Chilopoda, Diplopoda, and Entognatha) identified to date represent potentially declining species, and taxa that are considered indicative of the health and diversity of New Mexico's varied landscapes, habitats, and natural heritage. Additional information is needed to fully understand the status of these species in New Mexico.



APPROXIMATE NUMBER AND PERCENT OF SPECIES OF GREATEST CONSERVATION NEED (SGCN) TAXA IN NEW MEXICO.

Taxa Group	Approximate Number of Taxa in each Taxa Group in New Mexico	Number (%) of SGCN Taxa In each Taxa Group
Amphibians	26	15 (58)
Birds	504	74 (15)
Crustaceans	35	32 (91)
Fish	130	37 (28)
Mammals	184	42 (23)
Molluscs	182	66 (36)
Reptiles	105	32 (31)
Subtotal	1166	298 (26)
Other Arthropods ¹	Unknown	154
Total	—	452

¹ Classes Arachnida, Chilopoda, Diplopoda, Entognatha, and Insecta

[*Editor's note:* The above data are presented in Table 4-2 in the CWCS; page 58.]

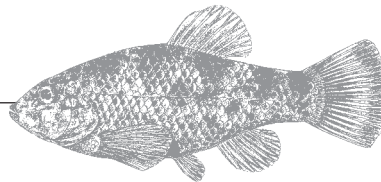
SPECIES OF GREATEST CONSERVATION NEED

As stated, in New Mexico 452 Species of Greatest Conservation Need have been identified, representing fish, birds, mammals, amphibians, reptiles, molluscs, crustaceans, and other arthropods. Approximately 26% of New Mexico's vertebrate, mollusc, and crustacean fauna are considered SGCN.

Scientific names are provided where common names for the species does not exist.

[*Editor's note:* The data below are presented in Table 4-1 in the CWCS; page 54.]

FISH



Bigscale Logperch (Native population)

Blue Catfish

Blue Sucker

Canadian Speckled Chub

Central Stoneroller

Chihuahua Chub

Colorado Pikeminnow

Desert Sucker

Gila Chub

Gila Topminnow

Gila Trout

Gray Redhorse

Greenthroat Darter

Headwater Catfish

Headwater Chub

Loach Minnow

Mexican Tetra

Mottled Sculpin

Pecos Bluntnose Shiner

Pecos Gambusia

Pecos Pupfish

Rainwater Killifish

Razorback Sucker

Rio Grande Chub

Rio Grande Cutthroat Trout

Rio Grande Shiner

Rio Grande Silvery Minnow

Rio Grande Sucker

Roundtail Chub

Smallmouth Buffalo

Sonora Sucker

Southern Redbelly Dace

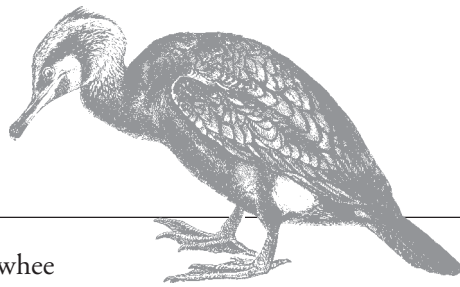
Speckled Chub

Spikedace

Suckermouth Minnow

White Sands Pupfish

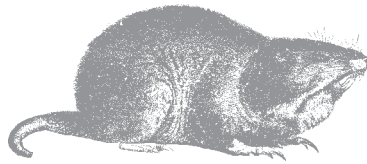
Zuni Bluehead Sucker



BIRDS

Abert's Towhee
American Bittern
Aplomado Falcon
Baird's Sparrow
Bald Eagle
Band-Tailed Pigeon
Bank Swallow
Bell's Vireo
Bendire's Thrasher
Black Swift
Black-Throated Gray Warbler
Blue Grouse
Boreal Owl
Botteri's Sparrow
Broad-Billed Hummingbird
Burrowing Owl
Common Black-Hawk
Common Ground-Dove
Costa's Hummingbird
Eared Grebe
Elegant Trogon
Elf Owl
Ferruginous Hawk
Gila Woodpecker
Golden Eagle
Gould's Wild Turkey
Grace's Warbler
Grasshopper Sparrow
Gray Vireo
Greater Pewee
Hooded Oriole
Interior Least Tern
Juniper Titmouse
Lesser Prairie-Chicken
Lewis's Woodpecker
Loggerhead Shrike
Long-Billed Curlew

Lucifer Hummingbird
Lucy's Warbler
Mexican Spotted Owl
Montezuma Quail
Mountain Plover
Mourning Dove
Neotropic Cormorant
Northern Beardless-Tyrannulet
Northern Goshawk
Northern Harrier
Northern Pintail
Olive-Sided Flycatcher
Osprey
Painted Bunting
Painted Redstart
Peregrine Falcon
Pinyon Jay
Red-Faced Warbler
Red-Headed Woodpecker
Sage Sparrow
Sage Thrasher
Sandhill Crane
Scaled Quail
Snowy Plover
Southwestern Willow Flycatcher
Sprague's Pipit
Thick-Billed Kingbird
Varied Bunting
Violet-Crowned Hummingbird
Whiskered Screech-Owl
White-Faced Ibis
White-Tailed Ptarmigan
Williamson's Sapsucker
Wilson's Phalarope
Yellow Warbler
Yellow-Billed Cuckoo
Yellow-Eyed Junco

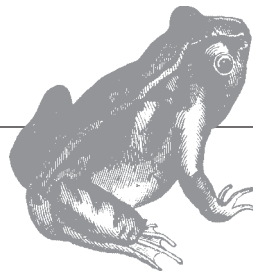


MAMMALS

Abert's Squirrel
 Allen's Big-Eared Bat
 American Beaver
 American Marten
 Arizona Gray Squirrel
 Arizona Montane Vole
 Arizona Myotis Bat
 Arizona Shrew
 Black Bear
 Black-Tailed Prairie Dog
 Coues' White-Tailed Deer
 Desert Bighorn Sheep
 Goat Peak Pika
 Gunnison's Prairie Dog
 Jaguar
 Least Shrew
 Lesser Long-Nosed Bat
 Mexican Gray Wolf
 Mexican Long-Nosed Bat
 Mexican Long-Tongued Bat
 Mule Deer

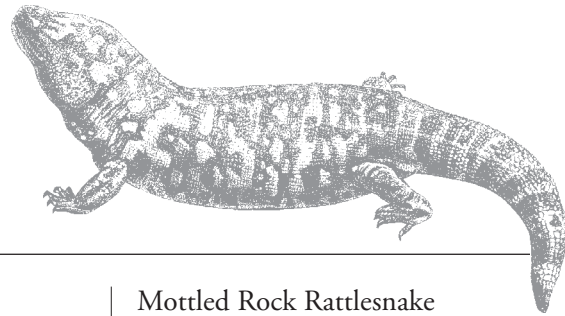
New Mexico Shrew
 NM Meadow Jumping Mouse
 Northern Pygmy Mouse
 Organ Mts. Colorado Chipmunk
 Oscura Mts. Colorado Chipmunk
 Penasco Least Chipmunk
 Pocketed Free-Tailed Bat
 Prairie Vole
 Preble's Shrew
 River Otter
 Rocky Mountain Bighorn Sheep
 Snowshoe Hare
 Southern Pocket Gopher
 Spotted Bat
 Swift Fox
 Western Red Bat
 Western Yellow Bat
 White-Nosed Coati
 White-Sided Jack Rabbit
 White-Tailed Jack Rabbit
 Yellow-Nosed Cotton Rat

AMPHIBIANS



Arizona Toad
 Chiricahua Leopard Frog
 Colorado River Toad
 Eastern Barking Frog
 Great Plains Narrowmouth Toad
 Jemez Mountain Salamander
 Lowland Leopard Frog
 Mountain Tree Frog

Northern Leopard Frog
 Plains Leopard Frog
 Rio Grande Leopard Frog
 Sacramento Mountain Salamander
 Tiger Salamander
 Western Boreal Toad
 Western Chorus Frog



REPTILES

Arid Land Ribbon Snake
Banded Rock Rattlesnake
Big Bend Slider
Blotched Water Snake
Bunch Grass Lizard
California Kingsnake
Collared Lizard
Desert Massasauga
Giant Spotted Whiptail
Gray-Banded Kingsnake
Gray-Checkered Whiptail
Green Rat Snake
Madrean Alligator Lizard
Mexican Garter Snake
Midland Smooth Softshell Turtle
Milk Snake

Mottled Rock Rattlesnake
Mountain Skink
Narrowhead Garter Snake
New Mexico Garter Snake
New Mexico Ridgenose Rattlesnake
Ornate Box Turtle
Regal Horned Lizard
Reticulate Gila Monster
Sand Dune Lizard
Sonoran Mountain Kingsnake
Sonoran Mud Turtle
Texas Banded Gecko
Western Diamondback Rattlesnake
Western Painted Turtle
Western River Cooter
Yaqui Blackhead Snake

CRUSTACEANS

Akali Fairy Shrimp
Beavertail Fairy Shrimp
BLNWR cryptic species Amphipod
Brine Shrimp
Colorado Fairy Shrimp
Conchas Crayfish
Cryptic Species Amphipod
Cyzicus sp. (mexicanus?)
Eocycticus concavus
Eocycticus digueti
Eulimnadia antlei
Eulimnadia cylindrova
Eulimnadia diversa
Eulimnadia follismilis
Eulimnadia texana
Great Plains Fairy Shrimp

Knobblip Fairy Shrimp
Lepidurus lemmoni
Lynceus brevifrons
Mexican Beavertail Fairy Shrimp
Moore's Fairy Shrimp
Noel's Amphipod
Northern (Canadian River) Crayfish
Packard's Fairy Shrimp
Procambarus simulans simulans
Sideswimmers / Scuds
Socorro Isopod
Streptocephalus n. sp. 1
Streptocephalus n. sp. 2
Sublette's Fairy Shrimp
Tadpole Shrimp
Versatile Fairy Shrimp



MOLLUSCS

Alamosa Springsnail
Amber Glass Snail
Animas Mountains Holospira Snail
Animas Peak Woodlandsnail
Animas Talussnail
Bearded Mountainsnail
Big Hatchet Mountain Talussnail
Big Hatchet Woodlandsnail
Black Range Mountainsnail
Black Range Mountainsnail
Blade Vertigo Snail
Blunt Ambersnail
Chupadera Pyrg Snail
Cockerell Holospira Snail
Cook's Peak Woodlandsnail
Creeping Ancyloid Snail
Crestless Column Snail
Cross Holospira Snail
Distorted Metastoma Snail
Dona Ana Talussnail
Florida Mountain Talussnail
Franklin Mountain Talussnail
Fringed Mountainsnail
Gila Pyrg Snail
Hacheta Grande Woodlandsnail
Hacheta Mountainsnail
Iron Creek Woodlandsnail
Jemez Woodlandsnail
Koster's Tryonia Snail
Lake Fingernailclam
Lilljeborg's Peaclam
Long Fingernailclam
Marsh Slug Snail
Metcalf Holospira Snail
Mineral Creek Mountainsnail
New Mexico Hotspring Pyrg Snail
New Mexico Ramshorn Snail
Northern Treeband Snail
Obese Thorn Snail
Organ Mountain Talussnail
Ovate Vertigo Snail
Paper Pondshell Mussel
Pecos Assiminea Snail
Pecos Pyrg Snail
Peloncillo Mountain Talussnail
Rocky Mountainsnail
Roswell Pyrg Snail

San Luis Mountains Talussnail
Sangre de Cristo Peaclam
Sangre de Cristo Woodlandsnail
Shortneck Snaggletooth Snail
Socorro Mountainsnail
Socorro Pyrg Snail
Sonoran Snaggletooth Snail
Spruce Snail
Star Gyro Snail
Swamp Fingernailclam
Texas Hornshell
Texas Liptoath Snail
Three-Toothed Column Snail
Tularosa Springsnail
Vallonia Snail
Western Glass Snail
Whitewashed Radabotus Snail
Woodlandsnail
Wrinkled Marshsnail

Other Arthropods

ARACHNIDS (ARACHNIDA)

Aphrastochthonius pachysetus
Cave Obligate Mite
Chitrella welbourni
Jemez Spider
Neoallochernes incertus
Peloncillo Scorpion
Texella longistyla
Texella welbourni

CENTIPEDES (CHILOPODA)

Cave Obligate Centipede
Pseudosinella vita
Tomocerus grahami

SPRINGTAILS (ENTOGNATHA)

Oncopodura prietoi

MILLIPEDES (DIPLOPODA)

Cave Obligate Millipede
Chihuahuan Millipede



(OTHER ARTHROPODS, continued)

INSECTS (INSECTA)

Aeoloplides rotundipennis
Albarufan Dagger Moth
Andrena mimbresensis
Andrena neffi
Andrena vogleri
Animas Minute Moss Beetle
Anthony Blister Beetle
Apache Skipper
Aphaenogaster punctaticeps
Arizona Agave Borer Skipper
Arizona Metalmark
Arizona Snaketail
Arizona Viceroy
Arroyo Darner
Band-Winged Grasshopper
Bleached Skimmer Dragonfly
Bonita Diving Beetle
Borer Moth
Buchholz's Boisduval's Blue
Caenotus inornatus
Caenotus minutus
Capitan Mountains Fritillary
Capnia caryi
Capulin Mountain Arctic
Carales arizonensis
Carlsbad Agave Borer Skipper
Carlsbad Cave Cricket
Cassus Roadside-Skipper
Centris Bee
Chalcedon Checkerspot
Chiricahua White
Chrysotus parvulus
Cibolacris samalayuae
Dashed Ringtail
Dasymutilla homole
Desert Elfin
Deva Skipper
Dusty-Wing
Efferia cuervana
Ellis Dotted-Blue
Euhyparpax rosea
Four-Spotted Skipperling
Freija Fritillary
Furcilla delicatula
Geometrid Moth
Glittering Tiger Beetle
Glorious Jewel Beetle
Grasshopper
Guadalupe Mtns. Tiger Beetle
Gypsum Sand-Treader Camel Cricket
Hebard's Blue-Winged Desert
Hemileuca (nevadensis) artemis
Hemileuca comwayae



Hemileuca hera magnifica
Hexagenia bilineata
Homoeonuria alleni
Ilavia Hairstreak
Isoperla jewetti
Lachlania dencyannae
Large Roadside-Skipper
Leconte's Jewel Beetle
Leptothorax bestelmeyeri
Leptothorax colleenae
Leucocuta petersi
Lichen Grasshopper
Los Olmos Tiger Beetle
Maricopa Tiger Beetle
Mary's Giant Skipper
Mason Bee
Megaphorus lasrucensis
Melittid Bee
Mescalero Camel Cricket
Mescalero Sands Jerusalem Cricket
Mescalero Sands Katydid
Mirid Plant Bug
Mogollon Rim Greenish Blue
Moon-marked Skipper
Mountain Checkered-Skipper
Mydas Fly
Neurigona perbrevis
Nevada Point-Headed Grasshopper
Nevada Tiger Beetle
Nitocris Fritillary
Noctuid Moth
Nokomis Fritillary
Odontophotopsis augusta
Odontophotopsis grata
Oligocentria delicate
Organ Mountains Camel Cricket
Oslar's Soapberry Hairstreak
Osmia phenax
Osmia prunorum
Perdita austini
Perdita biparticeps
Perdita claripennis
Perdita geminata
Perdita grandiceps
Perdita maculipes
Perdita mesillensis
Perdita senecionis
Perdita sidae
Perdita tarda
Perdita viridinotata
Pityophthorus franseriae
Pityophthorus torridus
Poling's Hairstreak
Poling's Giant Skipper



(OTHER ARTHROPODS; INSECTS continued)

Pyralid Moth
Raton Mesa Fritillary
Rodent Burrow Camel Cricket
Sacramento Mountain Checkerspot
Sandia Hairstreak
Scudder's Duskywing
Shotwell's Range Grasshopper
Silkmoth
Silver-Bordered Fritillary
Slaty Roadside-Skipper
Soldier Fly
Southwestern Hercules Beetle
Spalding's Dotted-Blue
Spur-Throat Grasshopper
Spur-Throat Grasshopper
Sunrise Skipper
Taenionema jacobii
Tarantula Hawk Wasp
Tawny Crescent
Texas Roadside-Skipper
Thinophilus magnipalpus
Tiger Beetle
Tiger Moth
Ursine Giant Skipper
Vega Sphinx
Viola's Yucca Borer Skipper
Western Crossline Skipper
Western Hobomok Skipper
West's Primrose Sphinx
Wood's Jewel Beetle
WS Sand-Treader Camel Cricket
Xami Hairstreak
Yuma Skipper
Zephyr Eyed Silkmoth