INVERTEBRATE SPECIES AT SCOTTSDALE COMMUNITY COLLEGE

INDEX OF 26 SPECIES (24 have descriptions)

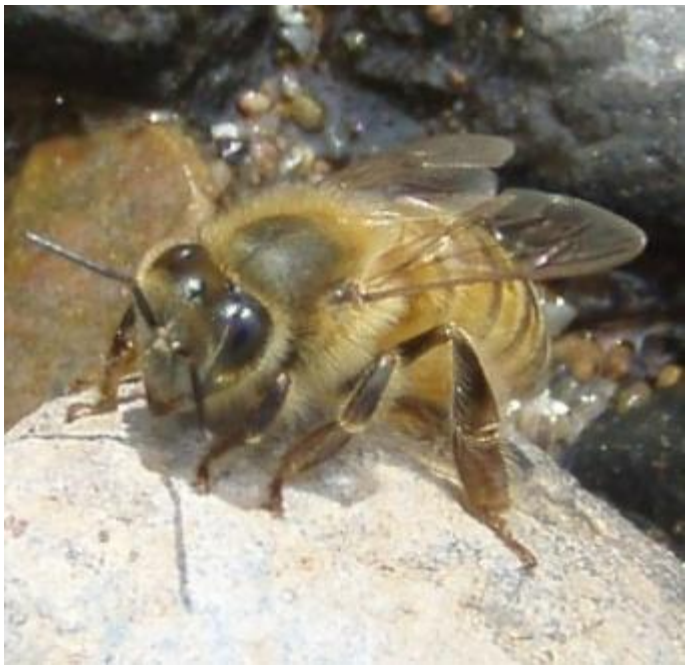
Text written by staff. Photos by Roy Barnes, Emma Olsen and Dr. John Weser.

CARPENTER BEE (XYLOCOPA SPP.)

Scientific Name: *Xylocopa spp.*
Order: Hymenoptera
Family: Apidae
Diet: Feeds on pollen, nectar, and oils from flowering plants.
Vegetation Association: Pollinates Desert Senna, Devil's Claw and other flowering plants. Can be found near blooming ocotillos. They make their nests by chewing holes in wood. Their burrows are lined with waxy secretions produced from glands in the abdomen. The female forms the rounded cells and lays an egg in each one.
Predators: Many species of mammals, insects, birds, lizards, spiders and other arachnids.
Life Stages: Egg, larva, pupa, adult.
Notes: A bee stinger has developed from the egg laying tube, therefore only females sting. Bees serve a vital role in pollination: 30% of our agricultural crops require bees for pollination. They are generally not social. The Carpenter Bee gets its name from its ability to eat through wood with strong mouth parts. They will chase birds and people who get too close.
Photo: to be added.

Back To Index

HONEY BEE (APIS MELLIFERA)



Scientific Name: *Apis mellifera*
Order: Hymenoptera
Family: Apidae
Diet: Feeds on pollen, nectar, and oils from flowering plants.
Vegetation Association: Pollinates saguaro.
Predators: Many species of mammals, insects, birds, lizards, spiders and other arachnids.
Life Stages: Complete metamorphosis: egg, larvae, pupae, adult.
Notes: This is an introduced species in Arizona. Has a barbed stinger that cannot be withdrawn, but detaches itself from the bees' body; the bee later dies.
Photo: Main photo above was taken at Jewel of the Creek at Cave Creek on September 29, 2007. More photos from CNUW's biodiversity sites are available below.

Coon Bluff:

Back To Index

LEAF-CUTTER BEE SPECIES

Order: Hymenoptera
Family: Megachilidae
Diet:
Vegetation Association: Roses, bougainvillea, ash or any other plant with smooth thin leaves is selected for cutting. The female makes her nest in hollow plant stems or tunnels in bored wood, she places petals or leaves which she has cut in the nest, she uses a mixture with pollen and nectar on top of the leaves, then she lays her egg. When the egg hatches it eats the food provided.
Predators:
Life Stages: Complete metamorphosis: egg, larvae, pupa, adult.
Notes: This is a solitary bee. This bee gets its name from cutting ovals and circles into plant petals and leaves.

Back To Index

PALO VERDE ROOT BORER (DEROBRACHUS GEMINATUS)

Scientific Name: *Derobrachus geminatus*
Order: Coleoptera
Family: Cerambycidae
Diet: Palo Verde trees serve as host plants for larva which feed on the roots.
Vegetation Association: Palo Verde trees.
Predators: Lizards, wood rats, and skunks.
Life Stages: They hatch from eggs into larva and will spend as long as 3 years underground feeding on the roots of the Palo Verde tree. They will eventually leave the ground through holes around the roots of the tree. Adults look like cockroaches and lay eggs in the soil. Adults will come out during the summer time and the early evening when there is lightning.
Notes: This is one on the largest beetles in North America.
Photo: To be added.

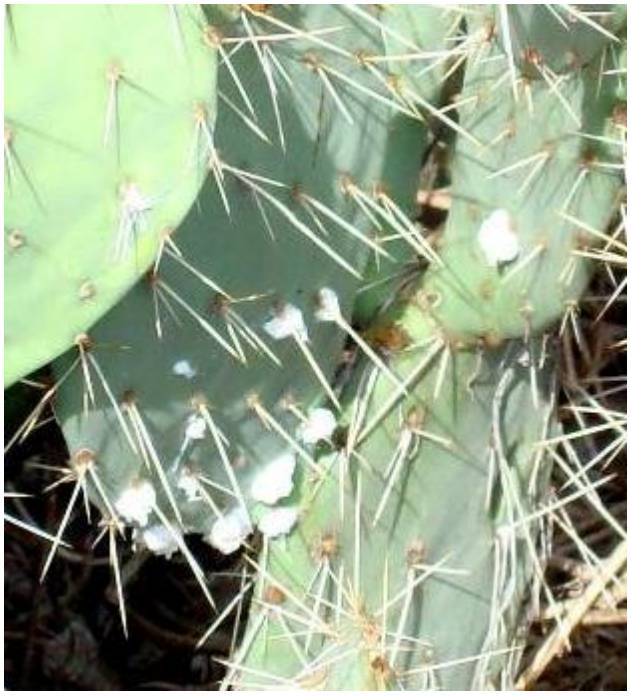
Back To Index

APHID SPP.

Order: Hemiptera
Family: Aphididae
Diet: Plant sap.
Vegetation Association: Very plant specific. Each individual species can usually only live off of certain host plants; i.e. oleander, milkweed, etc. Each colony on a plant is started by a single female; when the colony gets crowded young develop into winged adults that go through a flying period before finding a new plant. The colonies extract liquids from plants, which may cause the curling of leaves or even death.
Predators: Lady beetles, lady bugs, lady birds, hoverfly larvae, lacewings, and parasites.
Life Stages: Parthenogenesis, a process by which the eggs develop without fertilization by a male and hatch into genetic replicas of the mother.
Notes: Also known as plant lice. They can transmit plant viruses to their food plants which may kill the plants. They are small enough to be transported by wind. They produce anal secretions or “Honeydew” that attract many species of ants.

Back To Index

COCHINEAL BUG



Order:
Family: Dactylopiidae
Diet: Cacti.
Vegetation Association: Can be seen on cacti underneath the white fluffy material. This white material they secrete from abdominal glands.
Predators: Ladybird beetle, small moths in the caterpillar stage.
Life Stages: Incomplete metamorphosis; egg, nymph, adult.
Notes: Have been ground up and used by native peoples to dye textiles red or purple. This is an aphid.
Photo: Taken at Jewel of the Creek at Cave Creek on September 29, 2007. The bugs are the white blotches on the prickly-pear cactus. More photos from CNUW's biodiversity sites are available below.

Jewel of the Creek at Cave Creek:

Back To Index

GIANT MESQUITE BUG (THASUS ACUTANGULUS)

Scientific Name: *Thasus acutangulus*
Order: Hemiptera
Family: Coreidae
Diet: Eats stems and pods of Mesquite during the summer months.
Vegetation Association: Mesquite tree. Nymphs are a red color and can be found feeding together on mesquite pods.
Predators: The coloring of giant mesquite bugs warns predators that they are distasteful.
Life Stages: Incomplete metamorphosis; egg nymph, adult. The eggs look like small brown pillows in rows on the stems of the mesquite. Eggs hatch in the spring, mate, and live through the end of the summer. They leave their eggs to over-winter until the following spring.
Notes: When handled they produce a potent sticky secretion.
Photos: to be added.

Back To Index

MILKWEED BUG (LYGAEUS KALMII)

Scientific Name: *Lygaeus kalmii*
Order: Hemiptera
Family: Lygaeidae
Diet: Seeds and foliage of milkweed plant.
Vegetation Association: Milkweed plants.
Predators: Few predators. Milkweed bugs do not taste good. They warn their would-be predators of this foul taste with their bright coloring.
Life Stages: Incomplete metamorphosis; egg, nymph, adult.
Notes: They are orange-red and black in color. They inject enzymes into their food to aid in digestion. They help to control populations of milkweed plants. This is the small species of milkweed bug.
Photo: To be added.

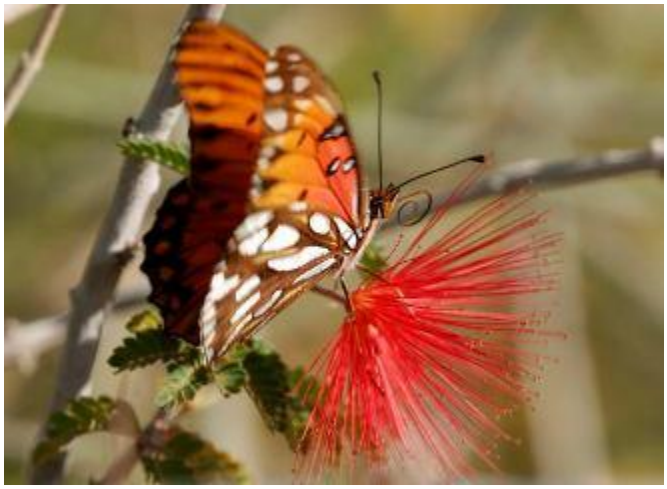
Back To Index

GIANT SWALLOWTAIL (PAPILIO CRESPHONTES)

Scientific Name: *Papilio cresphontes*
Order: Lepidoptera
Family: Papilionidae
Diet: Caterpillars feed on citrus plants, prickly ash and hop trees. Adults feed on nectar from lantana, azalea, bougainvillea, bouncing bet and swamp milkweed.
Vegetation Association: Trees and herbs in the citrus family, prickly ash, and hop tree. They are found in rocky or sandy hillsides near streams or gullies, in pine flats, towns, and citrus groves.
Predators: Birds.
Life Stages: Complete metamorphosis; egg, larva, pupa, adult.
Notes: Young caterpillars feed and shed their skin, or molt. The final molt produces the pupa, and then the butterfly rests. Once free of the chrysalis, fluid from its body is pumped into its wings, the wings then are allowed to dry before it flies away to look for food and a mate. They are known as Orange Dogs to citrus farmers because of their destructive habits. To defend themselves against birds they extend a reddish osmeterium (a fleshy organ) that releases foul smelling pheromones. The larvae are also camouflaged to resemble bird droppings. Males patrol for receptive females.
Photo: To be added.

Back To Index

GULF FRITTILARY (AGRAULIS VANILLAE INCARNATE)



Scientific Name: *Agraulis vanillae incarnate*
Order: Lepidoptera
Family: Nymphalidae
Diet: As caterpillars they feed only on passion vines.
Vegetation Association: Ornamental native passion vines are host plants. Females oviposit on related plants.
Predators: Both caterpillars and butterflies are poisonous and are avoided by most birds.
Life Stages: Complete metamorphosis; egg, larva, pupa, adult.
Notes: Young caterpillars feed and shed their skin, or molt. The final molt produces the pupa, and then the butterfly rests. Once free of the chrysalis, fluid from its body is pumped into its wings, the wings then are allowed to dry before it flies away to look for food and a mate.
Photo: Taken at Scottsdale Community College on November 19, 2006.

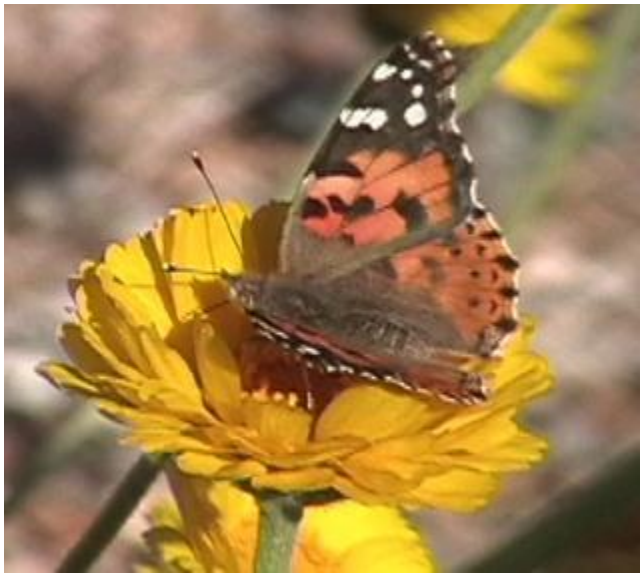
Back To Index

MONARCH BUTTERFLY (DANAUS PLEXIPPU)

Scientific Name: *Danaus plexippu*
Order: Lepidoptera
Family: Nymphalidae
Diet: Larvae feed only on plants from the milk-weed family.
Vegetation Association: Plants from the milk-weed family are very important for this species; they are used for breeding and feeding. Milk-weed plants are poisonous and by digesting them the Monarch avoids predation by birds.
Predators: Black-headed Grosbeak.
Life Stages: Complete metamorphosis; egg, larva, pupa, adult.
Notes: Can be found with or after the rains. Migrates large distances every year and can be seen in late summer and early fall during its migration. Young caterpillars feed and shed their skin, or molt. The final molt produces the pupa, and then the butterfly rests. Once free of the chrysalis, fluid from its body is pumped into its wings, the wings then are allowed to dry before it flies away to look for food and a mate. Flies with its wings in a “V” shape.

Back To Index

PAINTED LADY (VANESSA CARDUI)



Scientific Name: *Vanessa cardui*
Order: Lepidoptera
Family: Nymphalidae
Diet: Larvae eat thistles.
Vegetation Association: Host plants are in the sunflower family. Found in open fields with thistles.
Predators:
Life Stages: Complete metamorphosis; egg, larva, pupa, adult.
Notes: Migratory, normal habitats include desert. Young caterpillars feed and shed their skin, or molt. The final molt produces the pupa, and then the butterfly rests. Once free of the chrysalis, fluid from its body is pumped into its wings, the wings then are allowed to dry before it flies away to look for food and a mate. This is a brush-footed butterfly.
Photo: Taken at Brown's Ranch on April 18, 2003. More photos from CNUW's biodiversity sites are available below. Click on an image to see a larger version.

Brown's Ranch:

Riparian Institute at Gilbert Water Ranch:

Back To Index

QUEEN BUTTERFLY (DANAUS GILIPPUS)

Scientific Name: *Danaus gilippus*
Order: Lepidoptera
Family: Nymphalidae
Diet: Larvae feed only on plants from the milk-weed family.
Vegetation Association: Can be found in riparian habitat. Host plant is milkweed. Both caterpillars and butterflies are poisonous and avoid predation by birds.
Predators: Green lynx spider is a known predator.
Life Stages: Complete metamorphosis; egg, larva, pupa, adult.
Notes: Young caterpillars feed and shed their skin, or molt. The final molt produces the pupa, and then the butterfly rests. Once free of the chrysalis, fluid from its body is pumped into its wings, the wings then are allowed to dry before it flies away to look for food and a mate. They can often be seen with the arrival of rain.
Photos: To be added.

Back To Index

VICEROY BUTTERFLY (LIMENITIS ARCHIPPUS)

Scientific Name: *Limenitis archippus*
Order: Lepidoptera
Family: Nymphalidae
Diet: Host plants are willow and aspen.
Vegetation Association: Can be found around their main larval foods.
Predators: Birds prey on them to some degree despite their bitter taste. In the chrysalis stage they resemble bird droppings which helps deter predation.
Life Stages: Complete metamorphosis; egg, larva, pupa, adult.
Notes: Young caterpillars feed and shed their skin, or molt. The final molt produces the pupa, and then the butterfly rests. Once free of the chrysalis, fluid from its body is pumped into its wings, the wings then are allowed to dry before it flies away to look for food and a mate. This butterfly mimics the Queen or Monarch which helps to deter predators.
Photos: to be added.

Back To Index

DRAGONFLIES AND DAMSELFLIES

Order: Odonata
Family: various
Diet: They are insect feeders as adults and nymphs and eat small crustaceans as adults.
Vegetation Association: They are found in riparian habitats such as stream pools. Eggs can be found beneath stones under the water line.

Predators: Birds.
Life Stages: Incomplete metamorphosis; egg, nymph, adult.
Notes: Dragonflies extend their wings outward and damselflies wings are held over their backs. Some species of damselflies have hooks for pulling out sperm deposited by another male. Dragonfly nymphs have posteriors that suck oxygenated water into their bodies. Many of these nymphs can dart through the water by forcing water out of their systems. As nymphs they have retractable mouth parts that can extend up to 2-3 head lengths. They will defend their feeding and reproductive territories against other dragonflies. Dragonflies can travel at up to 35 mph.
Photo: Taken on August 1, 2006. More photos from CNUW's biodiversity sites are available below.

Riparian Institute at Gilbert Water Ranch:



Back To Index

PRAYING MANTIS SPECIES

Order: Mantodea
Family: Mantidae
Diet: Insects. Have been known to catch and eat hummingbirds.
Vegetation Association: Can be found in dense vegetation, lays eggs in a foamy mass that are usually attached to branches or man-made structures.
Predators: Frogs, spiders, bats, and snakes. Or each other during the nymph stage and during mating.
Life Stages: Incomplete Metamorphosis; eggs, nymph, adult
Notes: Their body coloring mimics that of green plant stems and leaves or desert soil. They have rapid reflexes and good vision. Mating can be hazardous for the male because the female may start eating him.
Photos: To be added.

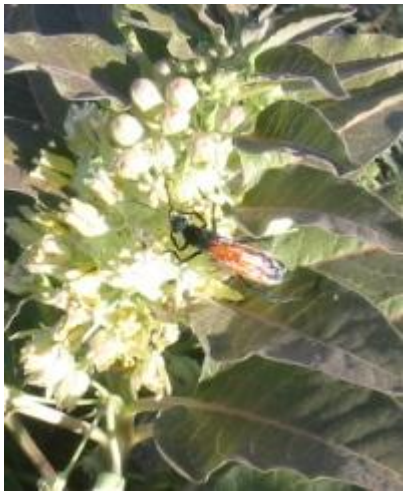
Back To Index

STEEL-BLUE CRICKET HUNTER (SPHEX PENNSYLVANICUS)

Scientific Name: *Sphex pennsylvanicus*
Order: Hymenoptera
Family: Sphecidae
Diet: Adults feed on nectar and larva feed on crickets and grasshoppers.
Vegetation Association: Attracted to the bruised stem of desert broom brush
Predators:
Life Stages: Complete metamorphosis; egg, larva, pupa, and adult. Females will paralyze an insect, mainly crickets and grasshoppers, and lay the eggs on them for the larvae to feed upon.
Notes: They sting and paralyze insects before eating them. They have a life span of only a few weeks.
Photo: To be added.

Back To Index

TARANTULA HAWK WASP (PEPSIS SPP.)



Scientific Name: *Pepsis spp.*
Order: Hymenoptera
Family: Pompilidae
Diet: Tarantula spiders in the larval stage and nectar from brittlebush and other desert flowers as adults.
Vegetation Association: Can be found in dry desert hills and valleys wherever there are tarantula spiders.
Predators: Roadrunners.
Life Stages: Complete metamorphosis; egg, larvae, pupa, adult.
Notes: The female will search for tarantulas and bite onto its leg and inject paralyzing venom. The host is then dragged to its burrow where the wasp lays an egg on or near it. This is a solitary wasp whose sting is excruciating.
Photo: Taken at Brown's Ranch on March 4, 2004.

Back To Index

UMBRELLA WASP SPECIES

Order: Hymenoptera
Family: Vespidae
Diet: Insects, larvae are feed chewed up insects.
Vegetation Association: Will nest in dead palm tree leaves or under a man-made structure. The queen winters behind tar paper, inside enclosures, or in deep rock cracks. She will build a nest in the spring. She lays an egg in each of the cells that she constructs.
Predators:
Life Stages: Complete Metamorphosis; egg, larvae, pupa, adult.
Notes: Also known as paper wasps. They gather fibers from dried plant stems which they mix with saliva to construct nests that are water-resistant. The nests look like they are made of paper.

Back To Index

BLACK WIDOW SPIDER (LATRODECTUS HESPERUS)

Scientific Name: *Latrodectus hesperus*
Order: Araneae
Family: Theridiidae
Diet: Eats insects that it traps in its web.
Vegetation Association: They are common around man-made structures such as garages, woodpiles, or lawn furniture.
Predators: Egg sacs are preyed upon by the flightless scelionid wasp and members of the chloropid fly genus. Adults are preyed upon by a few wasps including the blue mad dauber and the spider wasp.
Life Stages: The female mates only once in her lifetime, and lays about 300 eggs. The male is sometimes eaten by the female after mating.
Notes: Female has a distinctive red-orange hourglass marking on her underside. The male is less than half the size of the female. They are shy, sedentary, and mostly nocturnal. They can be potentially dangerous to humans.

Back To Index

CELLAR SPIDER

Order: Araneae
Family: Pholcidae
Diet: Some may invade the webs of other spiders and eat the host the eggs and the prey. The spider may vibrate the web in order to attract the host spider.
Vegetation Association: They construct webs in dark and damp caves, rocks, loose bark, abandoned animal burrows, or inactive buildings. They hang inverted in messy, irregular webs.
Predators: Spider wasps in the family Pompilidae.
Life Stages:
Notes: They get the name “cellar spider because they can be found in abandoned buildings.

Back To Index

FLOWER (CRAB) SPIDERS

Order: Araneae
Family: Thomisidae
Diet: Insects and arthropods.
Vegetation Association: They are most often found on flowers waiting for prey. They do not build webs to trap prey.
Predators: Spider wasps in the family Pompilidae.
Life Stages: Incomplete metamorphosis; egg, nymph, adult.
Notes: They are called “crab spiders” because their first two pairs of legs are held out to the side and they can easily move sideways and backwards.
Photo: To be added.

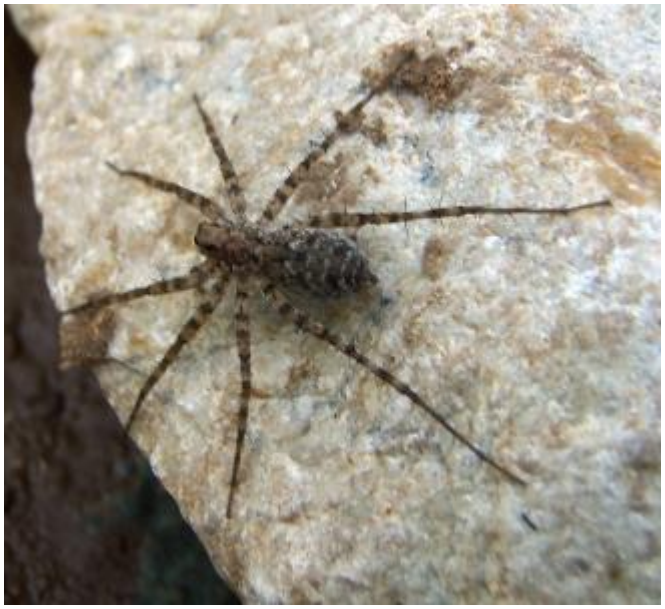
Back To Index

JUMPING SPIDERS

Order: Araneae
Family: Salticoidea
Diet: Feeds by jumping on insects and capturing them. They may include nectar in their diet.
Vegetation Association:
Predators: Spider wasps in the family Pompilidae.
Life Stages: Incomplete metamorphosis; egg, nymph, adult
Notes: Its eyesight is better than other spiders and most insects.
Photos: To be added.

Back To Index

WOLF SPIDER (HOGNA CAROLINENSIS)



Scientific Name: *Hogna carolinensis*
Order: Araneae
Family: Lycosidae
Diet: Insects and arthropods.
Vegetation Association: They are most often found in the Arizona upland. They live in burrows that have turrets of silk and twigs which vertically extend from the hole. When mating the male must give the female the appropriate signals so she is aware that he is not a threat. He will tap his legs and drum with his palms. The egg case stays with the female wherever she goes. She may sun the egg case. Young disperse by ballooning.
Predators: Spider wasps in the family Pompilidae.
Life Stages: The female carries the eggs with her attached to her spinnerets. After they hatch she carries them on her abdomen for about a month.
Notes: Primarily nocturnal predators. They chase down their prey, and rely on good eyesight. They may live up to two years.
Photo: A funnel-weaving wolf spider; photo taken at Jewel of the Creek at Cave Creek on September 29, 2007. More photos from CNUW's biodiversity sites are available below.

Jewel of the Creek at Cave Creek:

Back To Index