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The Scoop on Scorpions

As the temperature rises, so does the scorpion activity around our homes, schools, and offices. The scoop on scorpions is this: myths and misconceptions abound. Read on for the facts...



Scorpions are one of the oldest known terrestrial arthropods. Approximately 1,500 species have been described world-wide, occupying a range of habitats from prairies to rainforests, and lowlands to snow-covered mountains. Nowhere are scorpions more common in the United States than the desert southwest, and Arizona sports the greatest diversity and abundance. At least 40 species have been described (so far) here.

Description...

Scorpions are venomous arthropods in the class Arachnida, a group of arthropods which includes spiders, mites, and even king crabs! There are several species of arachnids found in Arizona that appear scorpion-like as they look similar (sun spider, tailless whipscorpion, vinegaroon, etc.). Scorpion-like arachnids are not commonly encountered and pose little to no threat to humans. For more details, please visit:

<http://extension.arizona.edu/sites/extension.arizona.edu/files/pubs/az1223.pdf>

Scorpion Senses...

Scorpion eye sight isn't so great, a human may as well be a piece of furniture as the scorpion sees us!) Other senses prevail with the aid of air-vibration-sensing hairs on the pedipalps, ground-vibration sensors on the leg-tips, and specialized chemoreceptor organs under the body called "pectines" (attached to their underside).

Behavior...

Many scorpion species can survive without food or water for several months (especially during the cooler months). Most scorpions are nocturnal (night active). They are excellent "ambush" predators and can detect prey when it comes within reach. Our largest species, the desert hairy scorpion readily consumes the smaller scorpion species! Scorpions can be found during the daytime in harborage areas where it is cool and moist: under rocks, inside walls, wood, tree bark, vegetation, or in burrows.

Scorpions may be abundant in rocky terrain, natural or artificial wash areas, in and on hollow-block walls or around artificial landscaping with plenty of boulders and rocks. Populations are higher where potential for water and prey is abundant: in the desert, this means historic washes, present-day rerouted washes, and irrigated landscapes.



Female bark scorpion with young on her back



Female striped-tail scorpion with young

Females may be *gravid* (carrying developing young) anywhere from 5-18 months, and give birth to live young (15-30). Newborn scorpions promptly climb on the mother's back and remain there until their first molt (1-3 weeks). They may take 1-2 years and several more molts to reach adult size, but are already venomous as immature scorpions. The average scorpion lifespan is 3-5 years; however, some larger species may live upwards of 12 years!

All scorpions possess venom and can sting, but their natural tendency is to escape and hide.

Common Scorpions in Arizona...

Arizona Bark Scorpion (*Centruroides exilicauda*)

This is Arizona's most commonly encountered scorpion in urban landscapes/structures, and also the most venomous scorpion in the United States.

Bark scorpions are light tan or yellow-brown, and may reach up to 3" in length (including tail). They are found throughout Arizona, southeast California, parts of Nevada, southern Utah, southwest New Mexico, and Mexico. They are the only scorpion in Arizona with the ability and strong tendency to climb – a characteristic which can aid in a quick identification. They often assume a vertical position on walls or an upside-down position ("negative geotaxis") on all but the most slippery surfaces (e.g. glass). They do not burrow, but do use burrows of other animals as harborage sites.



Photo by Brian Basgen



Unlike other scorpions, bark scorpions may cluster together in groups

Bark scorpions are the only *social* scorpion found in urban areas. They may be found in large numbers – notably in hollow-block walls commonly used to border homes, childcare facilities, and schools. They easily access the interior of the hollow blocks through narrow cracks and crevices. The blocks provide protection from extreme temperatures and may hold water after a rain event.

As a general retreat response, bark scorpions seek out dark places they can squeeze into. This includes a great variety of natural and man-made places: under tree bark, rocks, potted plants, patio debris, door mats, narrow cracks in wood or cement, especially where prey is abundant. If you leave wet towels around the pool overnight, scorpions will be attracted to the moisture in the towels and crawl inside.

Young children (under 70lb in weight), the elderly, and hypertensive people are the most adversely affected by the venom, and may require antivenin. **If you suspect a bark scorpion sting call 911 if a child is involved, or Poison Control (state-wide): 1-800-222-1222.**

Striped-tail Scorpion (*Vaejovis spp.*)

Striped-tail scorpions are approximately the same size and color as a bark scorpion, but have “bulkier” pincers and tail. A key feature is the dark, thin stripes along the underside of the tail (which faces upward when the tail is curled over their back).



Several species belong to the genus *Vaejovis*, and may occur in urban areas. They are also known as “ground scorpions” as they typically dig a small burrow or “scrape” underneath objects (though they are capable of digging as deep as one meter!). Their venom is mild and not typically a health concern unless an allergic reaction occurs.

Giant Desert Hairy Scorpion (*Hadrurus arizonensis*)

These are the largest scorpions in North America; up to 6” long (more than double the size of bark and striped tail scorpions!). They are less common and rarely found in structures.



“Desert hairies” may be found in/near washes where they burrow. They readily feed on other scorpions, a variety of insects, and even small lizards. They often use their pincers to subdue prey more so than relying on their venom.



Despite their size, appearance, and scary name, their venom is mild and their sting is comparable to a bee sting.

IPM Methods for Scorpions

Generally, scorpions are fascinating desert creatures and beneficial for the control of insect pests, including cockroaches and crickets. But bark scorpions themselves can become a serious pest around schools, homes, and childcare buildings if they are entering the buildings. Scorpions are impossible to manage with insecticides alone. **Chemical pesticide spraying is not generally effective.** Effective management strategies include pest-proofing buildings and habitat modification surrounding a house or structure.

To manage scorpions, try the following:

- ✓ Pest-proof structures: install tight-fitting window screens, weather stripping and door sweeps on exterior doors; plug holes with steel wool; seal around pipes and conduits.
- ✓ Stucco and cap hollow-block walls to minimize harborage.
- ✓ Remove or reduce other harborage such as: trash, logs, boards, stones, bricks and other objects around the building.
- * Hunt for scorpions after sun-down, then collect and remove them. Scorpions fluoresce under a UV black light. After dark, grab a buddy, a UV black light, some long-forceps, and a bucket with smooth sides. **Conduct multiple collections (3-4 times during the summer) can greatly decrease localized scorpion populations *well into the following season*. This is often a more effective method to manage scorpions than spraying pesticides.**
- ✓ Minimize low ground and creeping vegetation.
- ✓ Keep vegetation pruned away from buildings (including trees!). Tree branches can provide a path to the roof for scorpions.
- ✓ Reduce food sources with good sanitation and by limiting water and harborages (boxes, logs, boards, stones, bricks, clutter, etc. around structures).
- ✓ Store garbage containers in a frame that allows them to rest above ground level, or keep them on concrete.
- ✓ Encourage natural predators wherever possible: roadrunners, owls, and other predator birds, and bats.



A giant desert hairy scorpion lit by a black light (ultraviolet light)

Most importantly, do not over-react. These creatures use your yard when you don't. Pest-proofing homes helps to keep out all manner of pests so it's time, money and effort well spent.

Upcoming Webinars and Events

Attend Free Sessions of the [Green Strides Webinar Series](#). View archived webinars [here](#).

The [Green Strides Webinar Series](#) provides school communities the tools to reduce their schools' environmental impact and costs; improve health and wellness; and teach effective environmental literacy, including STEM, green careers, and civic engagement.

August 1, 2014, 2:00-3:00 p.m. Eastern / 11:00-12:00 p.m. Arizona: [All Bugs Good and Bad Webinar Series: Minimize Mosquito Problems \(eXtension\)](#)

For more information about the EPA Schools program, visit:
<http://www.epa.gov/schools/>



For more information about the Community IPM, visit:
<http://www.extension.org/pages/23359/urban-integrated-pest-management-community-page>



For more information about School IPM in Arizona, visit:
<http://cals.arizona.edu/apmc/westernschoolIPM.html>

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