



## Spiders

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### DO YOU KNOW

- Spiders are beneficial predators that feed on pest and non-pest insects.
- The major spider of medical concern in Utah is the black widow.
- Brown recluse spiders do **not** occur in Utah.
- There is no strong scientific evidence that hobo spider bites cause necrotic (flesh eating) lesions.
- Indoor management of spiders is best done by vacuuming, cleaning, sealing cracks and crevices around the home, and tolerance.
- Pesticides are only recommended in outbreak situations or when medically important spiders (black widows) are present.

### INTRODUCTION

Spiders are arachnids, a group that includes other 8-legged arthropods like ticks, mites, sun spiders, scorpions, and harvestmen (daddy longlegs). There are approximately 621 species of spiders known to occur in Utah (Allred and Kaston, 1983). Spiders are beneficial predators and the majority of them are harmless to humans. Much fear of spiders results from the few species that can be dangerous to humans, such as the black widow and brown recluse spiders, and from the many false facts and myths about spiders.

The majority of spiders have weak venom and are only capable of harming small prey that they subdue and consume. If bitten by one of these spiders there may be some slight irritation and swelling similar to a mosquito bite or bee sting. The major spider of medical concern in Utah is the black widow.

### BIOLOGY

All spiders are predatory and use different strategies for capturing prey. Some spider species ambush



Fig. 1. Banded orb-weaver spider (*Argiope trifasciata*).

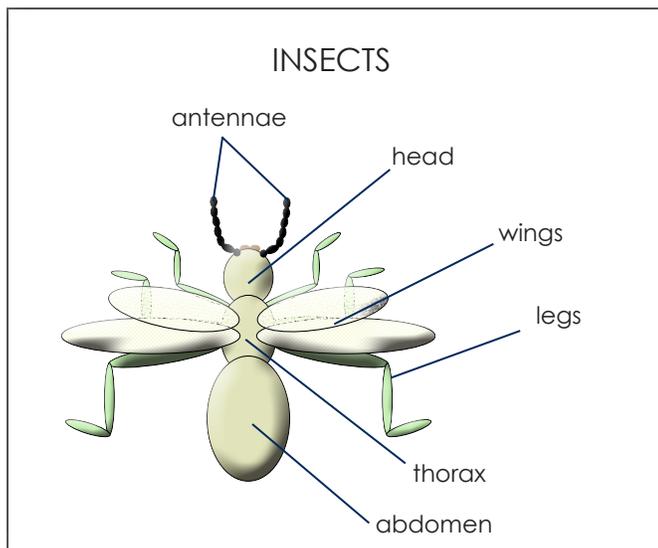
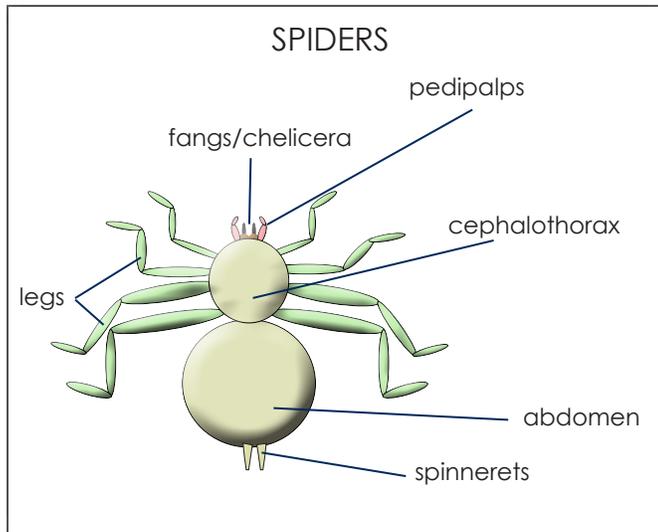
or actively hunt their prey, while others trap their prey using silk webs. Spiders can produce up to eight different types of silk that are used for different purposes including making draglines, web frame threads, egg sacs, and sticky silk used to capture prey.

Spiders inject venom into prey via the fangs, and use fangs and grinding mouthparts (chelicera) to grind prey into an unrecognizable mass. They regurgitate digestive enzymes into or onto the prey and suck the liquid back through the mouth. This regurgitation and sucking can also be done through fang bite holes as in crab spiders. Note that spiders do not suck food through their fangs; fangs are connected to the venom glands, not the stomach.

## IDENTIFICATION

Spiders are not insects and are recognized by having four pairs of legs and 2 body regions (cephalothorax and abdomen) (Figs. 2-3). They have between 0 and 4 pairs of eyes depending on the species. The most common number of eyes is 6 or 8. Spiders possess a pair of pedipalps or modified mouthparts, often mistaken for antennae which spiders do not have, used for sensing, mating, and feeding. The "boxing gloves" at the end of pedipalps or enlarged palps are present on all male spiders. For the most part, males spiders are smaller than females. Newly hatched spiders are called spiderlings and look like adults, but smaller. They will molt many times, continuing to get larger as they develop to adulthood.

Spiders are the most frequently submitted arachnid

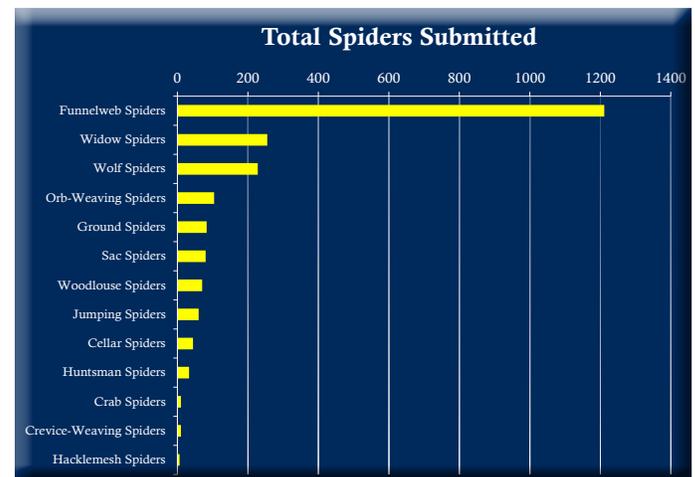
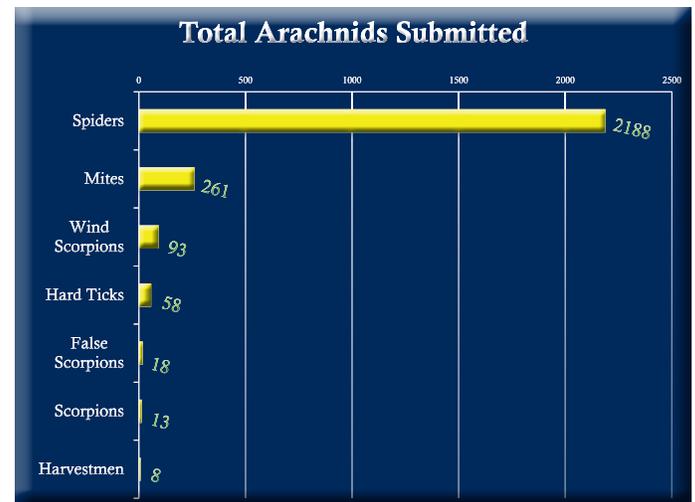


Figs. 2-3. (Top) Basic spider anatomy. (Bottom) Basic insect anatomy.

## UTAH'S SPIDERS

to the Utah Plant Pest Diagnostic Lab (UPDDL), however, others commonly encountered include mites (mostly plant-feeding spider mites) wind scorpions/camel spiders, ticks, pseudoscorpions, true scorpions, and harvestmen (Fig. 4.).

There are over 600 spider species in Utah, however people normally encounter only a few of these. Identifying spiders to species is difficult, but spider families, or groups of spiders that look similar and have similar habits, can be recognized with some practice. In Utah, there are 13 spider families that are regularly encountered in and around homes. See the graph below (Fig. 5) for a list of the common spiders submitted to the UPDDL and their frequency. The most frequently encountered group is the funnel-web spiders, which includes the hobo spider. Hobos are the most commonly submitted spider because of their habit of migrating indoors from August to October to find mates.



Figs. 4-5. (Top) Total arachnid orders, and (bottom) most frequently submitted spiders submitted to the Utah Plant Pest Diagnostic Lab between (UPDDL) 1978 and 2010.



Fig. 6



Fig. 7

### Funnel-Web Spiders: *Agelenidae*

The most common funnelweb spiders include the hobo (Fig. 6) and grass spiders (Fig. 7). Hobo spiders are very common in homes between August and October in Utah. More information on the hobo spider can be found on the [hobo spider website](#). Grass spiders are very common outdoors in small shrubs, grass, and in rock walls and wood piles. Webs are flat sheets with a funnel and a small hole in the middle. Grass spiders are not of medical concern.



Fig. 8



Fig. 9

Fig. 10

### Comb-Footed Spiders: *Theridiidae*

This family is named after comb-like leg hairs that allow the spiders to walk on their disorganized cobwebs. They typically hang upside down, and move relatively slow when walking outside of their webs. Worldwide, comb-footed spiders in the genus *Latrodectus* (widow spiders: Fig. 8) are some of the most venomous spiders. Other combfooted spiders (Figs. 9-10) can resemble widow spiders, but do not have the same harmful venom.



Fig. 12



Fig. 11

Fig. 13

### Wolf Spiders: *Lycosidae*

Wolf spiders are ground-hunting spiders. They are easily recognized by their eye pattern (Fig. 11). After mating, female wolf spiders attach the egg sac to the spinnerets until egg hatch (Fig. 13). Upon egg hatch, tiny spiderlings cover the mother's back for protection and remain there about 1 week (Fig. 12). Wolf spiders are very common in gardens and turf and should be considered beneficial.



Fig. 14



Fig. 15

### Orb-Weaving Spiders: *Araneidae*

Orb weavers build the classic circular/spiral web. In Utah, the cat-face spider (Figs. 14-15) and banded garden spider (Fig. 1) are the most common. The catface spider is usually found making webs near lights where it captures insects. The banded garden spider (Fig. 1) may encounter human activity in the fall when the female searches for a place to lay its egg sac. These spiders can help reduce the number of flying insects around the home and should be left alone.



Fig. 16



Fig. 17

### Ground Spiders: *Gnaphosidae*

Ground spiders (Figs. 16-17) are mostly nocturnal, ground-dwelling, wandering hunters found in leaf litter, beneath rocks, and within and under decomposing wood. Silk is used primarily for making shelters and for enclosing egg sacs--not hunting. These spiders can occasionally be found indoors on the ground, or climbing on walls or ceilings.



Fig. 18



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Fig. 19

### Sac Spiders: *Clubionidae*

The [yellow sac spider](#) (Figs. 18-19) is a common household spider that can be seen walking on walls and ceilings. During the day, it makes a white silken retreat where the ceiling and walls meet, or in corners. The venom is not harmful to humans; however, bites can be painful and leave a red bump. They are more aggressive than most spiders and can bite multiple times if mishandled or if caught in clothes or bedding. Similar sac spiders can be found outside in rolled plant leaves.

### Woodlouse Spiders: *Dysderidae*

Woodlouse spiders (Figs. 20-21) look viscous because their mountparts and fangs project outward from the body. Their presence and abundance can be associated with that of "potato bugs" (isopods: Fig. 20), their primary prey. They are commonly found outdoors in gardens and landscapes, but occasionally come indoors. Woodlouse



### Jumping Spiders: *Salticidae*

Jumping spiders (Figs. 22-23) are very common both inside and outside the house. These small, "furry" spiders have good vision (Fig. 22) and hunt prey in a catlike fashion. They are active during the daytime and can frequently be seen around windows and bright areas where the light helps them locate prey. During rainy or cloudy days, they can be found hiding in a small web retreat. Retreats are also used for protection during molting, egg laying, and hibernation.



### Cellar Spiders: *Pholcidae*

Cellar spiders (Figs. 24-25) generally have long, slender legs and only 6 eyes (Fig. 24). They are often found indoors in dark, secluded places where they can fill unused areas with the classic "creepy" cobwebs. Certain species of *Pholcidae* can be easily mistaken for brown recluse spiders (*Loxosceles*); however, they are not harmful to people.



### Huntsman Spiders: *Sparassidae*

Occasionally, large, golden spiders with black "socks" on the legs (Fig. 26) are submitted to the UPPDL in the fall for identification. The golden Huntsman spider is the most common Huntsman, or giant crab spider, in Utah, and can grow up to 2-3 inches across! Their flat shape allows them to hide easily in cracks, behind curtains, and in the crevices of tree bark (Fig. 27).



### Crab Spiders: *Thomisidae*

Crab spiders get their name from their ability to walk sideways. As ambush hunters, they wait motionless for prey to come into range. Many are colored to match flowers (Fig. 28), plants, and rocks (Fig. 29) which helps them capture prey. After envenomating prey, crab spiders suck the prey's liquefied insides out of the small bite holes. When feeding is finished, the prey appears intact.



### Crevice-weaving Spiders: *Filistatidae*

Most commonly occurring in Utah's southern counties, the crevice-weaving spider (Figs. 30-31) can make its webs around the outsides of homes where crevices or gaps provide prime habitat. This is another spider that is often mistaken for the brown recluse spider (*Loxosceles reclusa*), but is not harmful to humans.



## CONTROL

Of Utah's spiders, the black widow is the major spider of concern and should be controlled. All other spiders should be tolerated outdoors, and minimal management practices can reduce their presence indoors. Ideally, they should be captured and released when found inside. If additional control techniques are desired please use one or a combination of the techniques below.

### **Mechanical/Physical:**

#### Exclusion

- Seal all cracks and crevices leading into the home with silicone caulk, expandable foam, or screen.
- Install weather stripping around doors and windows, especially all doors leading to the outside, including the garage door.

#### Cleaning and Habitat Modification

- Vacuum regularly. Spiders, webs, and egg sacs can be sucked up, directly eliminating the problem.
- Minimize clutter. Spiders love secluded places to hide and lay egg sacs. Simplify the environment inside by cleaning regularly and storing clutter in sealable storage bins. Outside, move or eliminate rock and wood piles, or anything that creates spider habitat.
- Replace exterior lighting with sodium vapor lights (yellow bulbs) which are less attractive to insects. Insects are attracted to "normal" exterior lights at night. The increase in insects (spider food) will also attract an increased number of spiders looking for food.

#### Monitoring

Spider sticky traps that are sold in lawn and garden centers can be placed along baseboards to provide an indication of what type of spiders are present, where they are coming from, and can provide some control. Traps containing hobo spider attractants are not recommended for indoor use between August and October, as this may lead to an increase in hobo spiders in the home.

### **Chemical:**

Insecticides should only be used for spiders if there is a serious infestation. Avoid calendar-based sprays for spiders that put "barriers" around structures. If chemicals are necessary for spiders, they should be targeted and timed with spider activity and life cycles, and at making direct contact with the spider. Insecticidal dusts can provide some

control of spiders in voids and secluded places, and can even be puffed directly onto spider webs. Aerosol formulations can be effective when directly sprayed at a spider, but have minimal residual effect against spiders. There are over 900 insecticides registered for control of spiders in Utah. The most common active ingredients are: deltamethrin, lambda-cyhalothrin, permethrin, pyrethrin, and tetramethrin. When using sprays, microencapsulated formulations of insecticides are most effective against spiders outdoors.

Following are tips on chemical control of spiders.

- In secluded areas, crawl spaces, cracks and crevices, or wall voids (areas where people won't be coming in contact with chemicals), use a dust formulation of an insecticide like TriDie purchased at the local home and garden store. Do not use this product as a broadcast treatment, where people may come in contact with it.
- Liquid or dust insecticides may be applied directly to webs (this works especially well for black widow spiders).
- Aerosol sprays can be used to directly spray spiders; spiders not directly contacted with this treatment will not die.
- If an outside treatment is desired, insecticide sprays are best timed when hobo egg sacs are hatching. This will depend largely on temperature, but you can expect eggs to hatch from mid May to mid June in northern Utah.

### **Bite Prevention Tips**

- To keep wandering spiders out of your bed, remove the bed skirt and pull the bed out from the wall about 8 inches from August to October.
- Take caution when picking clothes up off the floor or in laundry baskets. Spiders hiding in these clothes can be mistakenly grabbed, resulting in a bite.
- Shake out clothing before putting it on, especially if the clothing was on the floor.
- Store children's toys off of the floor so spiders can't hide under them.
- Wear a long sleeve shirt with sleeves tucked into gloves when working outdoors, especially around rock or wood piles.

## Spider Bites

- If you see a spider bite, you should catch the spider for identification. Finding a random spider in the house after a mystery skin irritation occurs does not implicate the spider.
- Clean and disinfect the bite using a topical aniseptic, and cover with a sterile bandage.
- Monitor the bite and visit your doctor if symptoms progress.
- Secondary bacterial infections are possible after any spider or insect bite, and can become serious if left untreated.

## OTHER ARACHNIDS



Figs. 32-37. Other common arachnids in Utah. The pictures are not to scale. In general, ticks, mites, and pseudoscorpions are small, while harvestmen, sun spiders, and scorpions are larger. (Top left to right) harvestman (daddy longlegs); camel spider or sun spider; Rocky Mt. wood tick female and male. (Bottom left to right) pseudoscorpion; two-spotted spider mites; scorpion.

## ADDITIONAL RESOURCES

1. [Utah's Top 20 Arachnids](#)
2. [Colorado State University Fact Sheet](#)
3. [University of California Davis Fact Sheet](#)
4. [Spider Myths: University of Washington Burke Museum](#)
5. [Spiders of North America \(Book\)](#)
6. [The Biology of Spiders \(Book\)](#)

## IMAGES & REFERENCES

**Figures: 1,4-6,12-13,26** Ryan S. Davis, Utah State University Extension.

**Figures: 2-3** Erin Hodgson, Iowa State University.

**Figures: 7,9,16-25,29** Joseph Burger, Bugwood.org.

**Figures: 8,14-15,32** Whitney Cranshaw, Colorado State University, Bugwood.org.

**Figures: 10** University of Wisconsin, Department of Entomology, Bugwood.org.

**Figures: 11** Joel Smith, Utah State University.

**Figures: 27** Marie Knight, University of Florida, Bugwood.org.

**Figures: 28** Jon Yuschok, Bugwood.org.

**Figures: 30,37** Sturgis Mckeever, Georgia Southern University, Bugwood.org.

**Figures: 31** Edward L. Manigault, Clemson University Donated Collection, Bugwood.org.

**Figures: 33** Richard L. Coviello, UC Davis IPM Program.

**Figures: 34** Gary Alpert, Harvard University, Bugwood.org.

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