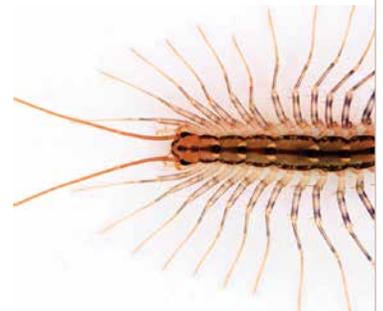


Penn State **Extension**



Common Urban Pests

*Identification,
Prevention, and
Control*



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Cooperative Extension
College of Agricultural Sciences

Integrated pest management (IPM) is a safe, economical, and effective way to control pest problems while protecting both human and environmental health. IPM combines multiple tactics that are the most effective and least toxic while emphasizing preventative measures and alternatives to pesticides. If a pesticide is used, it should be the least hazardous and target only the pest causing the problem. Taking an IPM approach is more likely to be cost effective and result in long-term pest control compared to conventional pest management practices. It is also less hazardous to human health.

Pests enter homes and buildings looking for food, water, and shelter, and there is no “one-size-fits-all” solution that will solve all pest problems. Here are some basic preventative steps that can help stop a pest problem before it starts:

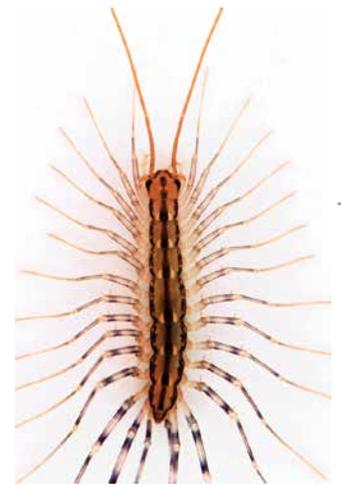
1. **Eliminate food.** Store food in hard, reusable containers with airtight, fitted lids; keep trash in a can with a tight-fitting lid and take it out on a regular basis; clean or vacuum up crumbs and spills when they occur; keep food in the refrigerator when possible.
2. **Eliminate water.** Fix leaky and dripping pipes, faucets, and roofs; reduce humidity in basements and other moist areas of the home, such as bathrooms and kitchens; place metal screens in drains where feasible.
3. **Eliminate shelter.** Get rid of clutter; seal cracks and crevices with silicone caulking and copper mesh where appropriate; fix or replace broken screens; maintain yard and outside areas; remove trash; prune trees, shrubs, and groundcover so they are not touching the building.
4. **Talk with neighbors about pest management.** Pests don't stay in one location, so work together to minimize pest issues in the community.

Before you can choose and use effective IPM tactics, you must first know what pest you are dealing with. Proper identification and management may require the assistance of a licensed pest management professional. Remember, sometimes different species require different tactics (e.g., the Norway rat versus the roof rat). After the pest is identified, other sources of information can be used to determine what tactics are best to use to manage it.

An IPM toolkit is helpful to have available even if there isn't currently a pest problem. The toolkit contains basic items used when taking an IPM approach to managing pests, such as a flashlight, silicone caulk and caulk gun, copper mesh, flyswatter, cockroach bait stations, mouse snap trap, sticky traps for crawling insects, and fly paper. These items can assist with identifying the proper pest, finding out where and how the pest is getting in, and starting pest management.

Following are brief descriptions of common urban pests. For each pest listed there is a picture, a guide to its actual size, a general description of the pest, whether it's a nuisance pest or a health concern, and some basic control measures. This fact sheet is not all inclusive. Contact the Pennsylvania IPM Program (www.paipm.org), the Penn State Department of Entomology (814-865-1895), or your local Penn State Extension office (extension.psu.edu/counties) for more information.

Approximate actual length is indicated by  to the right of the photos.



Ant, Carpenter

Size: Colony has varying sizes of workers, ¼–½ inch (6–13 millimeters, mm) in length.

About the pest: The carpenter ant is a large, dark-colored, wingless worker ant commonly found in structural wood. It enters homes looking for food and may chew extensive tunnels in moist or rotting wood. At certain times, winged forms may be seen in great numbers.

Health concern or nuisance: Nuisance—they sometimes cause structural damage.

Control measures: Prune back nearby trees, bushes, and foliage that may be touching the home; store firewood well away from the home; eliminate excess moisture and wet wood in the house; seal cracks, crevices, and openings around pipes with silicone caulk; if ants are foraging in the house, try various ant baits. For persistent or difficult infestations, contact a licensed, reputable pest control company.

Ant, Pavement

Size: Worker ants are all similar in size, ⅜–⅛ inch (2.5–3.0 mm) in length.

About the pest: Pavement ants are small and vary in color from dark brown to black. The worker ants are wingless and enter homes through cracks in search of food. They will eat many types of foodstuffs, but sweet foods are especially attractive. Ants lay down a chemical trail that other ants can use to find the food source. The colonies live outside and can be recognized by the sand piles visible in cracks of concrete, sidewalks, and at the top of foundation walls.

Health concern or nuisance: Nuisance.

Control measures: Store food in sealed containers; keep things clean and dry; caulk cracks, repair screens, and use door sweeps; don't leave pet food out or nest the bowl in a larger dish of soapy water, creating a moat; squish visible worker ants; use soapy water to wipe up the chemical trail; use ant baits and remove them when the ants are gone.

Bed Bug

Size: Adult is ⅜ inch (5 mm) long.

About the pest: Bed bugs are chestnut brown in color and have flattened, oval bodies, which swell and turn dark red after a blood meal. They hide during the day in tiny spaces around their feeding site, such as on mattresses, furniture, and in cracks and crevices, and then feed on humans at night. Itchy welts may result from the bed bug bite. Bed bugs do not cause or spread disease, but they are difficult to control once they have entered a building or home. They can be transported from one area to another through cracks and conduits for wiring and piping. They do not fly or jump, nor do they live on people.

Health concern or nuisance: Nuisance, but they do cause mental anguish and stress.

Control measures: Prevention is the best control measure—avoid bringing in used furniture and mattresses; inspect baggage and clothing after traveling; toss suspect items in the dryer and dry on high for 30 minutes; seal cracks and crevices; reduce clutter. An established bed bug problem will require the assistance of a licensed, reputable pest control professional. Do not try to treat the home yourself with aerosols and “bug bombs.” These products do not contact the hidden insects and may drive the bugs farther into hiding.

Centipede, House

Size: Adult is 3–4 inches (8–10 centimeters, cm) including antennae and legs.

About the pest: House centipedes are long, flat, and have 15 pairs of long legs as an adult (one pair per body segment). Their bodies are a brownish-yellow color and have three dark longitudinal stripes, while their legs are banded light and dark. They prefer dark, damp, cool locations and hide during the day. House centipedes can come into the house via drains and sump pumps. They can run extremely fast. They are predaceous and come out at night to feed on silverfish, cockroaches, spiders, and other small arthropods.

Health concern or nuisance: Nuisance.

Control measures: Cover drains and sump pumps with screening; remove shelter for centipedes, such as cardboard boxes; caulk and fill cracks and crevices; use a dehumidifier to remove humidity; keep things clean and dry. A high population of house centipedes may indicate a large population of prey species—monitor accordingly.



Cockroach, American

(Often called “water bugs”)

Size: Adult is 1½–2 inches (38–50 mm) in length.

About the pest: The reddish-brown American cockroach is commonly found in the pantry, kitchen, bathroom, and basement. They are oval shaped with long antennae, feed on many different things, and prefer a moist, warm, dark area. During the day they tend to hide in cracks and crevices near food sources. These roaches glue their egg cases to vertical surfaces. American cockroaches tend to enter homes by crawling in from outside or up sewers and drains. These roaches can fly as well as run.

Health concern or nuisance:

Health concern—they can carry disease-causing bacteria and can also trigger allergic and asthmatic reactions in some individuals.

Control measures: Cover floor drains with screen and make sure there is water in all water traps; store food in sealed containers; keep things clean and dry; caulk cracks, repair screens, and use door sweeps; reduce clutter; inspect materials brought into the home; use cockroach baits; use sticky traps to monitor for new infestations; vacuum up larger infestations of roaches. Boric acid or diatomaceous earth dust can be puffed into wall voids for long-term control.

Cockroach, German

Size: Adult is ½–5/8 inch (13–16 mm) in length.

About the pest: The German cockroach is commonly found in the kitchen, bathroom, and pantry. They hide in cracks and crevices during the day. This is the most common cockroach found in homes and apartments. They are light brown or tan in color and have two dark strips running from the head to the wings. They prefer the environment to be warm and moist and will eat a large variety of foods. These cockroaches carry their egg cases around with them, protruding from their abdomens until right before the eggs hatch. Cockroaches can hitchhike from another location to your home in items such as bags and boxes.

Health concern or nuisance:

Health concern—they can carry disease-causing bacteria and can also trigger allergic and asthmatic reactions in some individuals.

Control measures: Store food in sealed containers; keep things clean and dry; caulk cracks; reduce clutter; inspect materials brought into the home; use cockroach baits and gels; use sticky traps to monitor for new infestations; vacuum up larger infestations of roaches. Boric acid or diatomaceous earth dust can be puffed into wall voids for long-term control.

Cockroach, Oriental

(Sometimes called “water bugs”)

Size: Adult is 1¼ inch (32 mm) in length.

About the pest: Oriental cockroaches are very dark brown or almost black in color with a greasy-looking sheen to their bodies. These cockroaches prefer cool, dark, damp places at or below ground level, such as sewers, drains, crawl spaces, garbage cans, dumps, and trash chutes. They are not generally found crawling up walls, nor are they usually found in cupboards or on higher floors of buildings. They eat decaying organic matter both inside and outside the home.

Health concern or nuisance:

Health concern—they can carry disease-causing bacteria and can also trigger allergic and asthmatic reactions in some individuals.

Control measures: Check basements for sewage and drain problems; keep drains covered and basement windows and doors tight; keep areas clean and dry; caulk cracks, repair screens, and reduce clutter; store food in sealed containers. If necessary, use cockroach baits. Use sticky traps to monitor for new infestations. Boric acid or diatomaceous earth dust can be puffed into wall voids for long-term control.

Flea

Size: 3/16–1/8 inch (1.5–3.0 mm).

About the pest: Adult fleas are small, flattened, dark-colored insects with legs adapted for jumping. They do not fly. Adults spend most of their time on an animal’s body. Fleas lay eggs that fall off the host animal and develop into larvae. Flea larvae, which are tiny, white, and wormlike in appearance, can live in rugs, cracks, and crevices in the floor and anywhere a pet may sleep, including outdoors during warmer weather.

Health concern or nuisance: Health concern—bites cause irritation and fleas may cause serious allergy symptoms in some animals and humans.

Control measures: Indoors, cover pets’ sleeping areas/beds with something you can wash regularly; comb pets with flea comb; bathe pets regularly; vacuum floors, carpets, and furniture often; use borate-based carpet treatments that contain an insect growth regulator. If there are high flea populations outside, use beneficial nematodes. Discuss flea-prevention options for pets with your vet.



Fly, Fruit

Size: Adult is 1/8 inch (3 mm) in length.

About the pest: Fruit flies are yellowish brown to dark brown in color and usually have red eyes. They are especially attracted to ripened fruits and vegetables but can also be found in drains, garbage disposals, trash containers, and anywhere else that is moist and has fermenting material. They lay their eggs in these materials and develop very quickly from larvae to adult.

Health concern or nuisance: Nuisance, although they can potentially contaminate food with bacteria.

Control measures: Eliminate sources of attraction; eat, refrigerate, or discard ripened produce; keep things clean and dry; have tight-fitting screens in windows and doors; catch flies in a trap by placing a paper funnel in a jar that has a few ounces of cider vinegar in the bottom. Clean traps weekly and replace with fresh vinegar.



Fly, House

Size: Adult is 1/8–1/4 inch (3–6 mm) in length.

About the pest: House flies have four dark stripes on the top of their middle body region. When a house fly lands on solid food, it regurgitates saliva on the food to liquefy it before ingesting it with its sponging mouthparts. They will feed on whatever food sources they find themselves on, including fecal matter and other moist, decaying matter.

Health concern or nuisance: Nuisance, although there's a high probability they transmit numerous diseases to humans.

Control measures: Seal or plug cracks and gaps around windows, doors, and any pipes entering the building; repair holes in screens and make sure they fit the window tightly; keep things clean and dry; remove trash and garbage; keep garbage outside in a tightly sealed container; use a flyswatter; use sticky fly traps or tape.



Head Lice

Size: Adult is size of a sesame seed; egg is size of a pinhead.

About the pest: Head lice are tiny insects that spend their entire life on the human scalp. They feed on blood. Eggs (sometimes called nits) are found glued at the base of the hair shaft. Once hatched, lice nymphs and adults can walk and move around the scalp and hair as well as from one head to another if the two heads come in contact. Head lice cannot jump or fly but are transferred between people by brushes, comb, hats, or other headwear.

Health concern or nuisance: Nuisance—they do not pose a health risk but are irritating to the scalp.

Control measures: Use a metal lice comb specifically designed to remove the lice and eggs; place the comb containing lice and eggs in soapy water and flush this water down the toilet when finished with combing; boil a metal comb in water for 15 minutes before using on another person. Recheck heads every 3 days for newly hatched lice. Launder all bedding and clothing frequently in hot, soapy water and dry on hottest setting while treatment for lice is occurring in the home; place nonwashable items in tightly sealed plastic bag for two weeks or have them dry cleaned; vacuum carpets, car seats, and furniture.



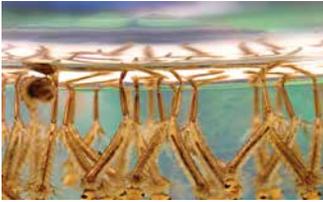
Millipede

Size: Adult: 1–1 1/2 inch (25–38 mm).

About the pest: Millipedes, sometimes called “thousand-leggers,” have two pairs of legs per body segment and are often dark brown in color. They have a hard outer skin and prefer to live in cool, damp places outside, such as compost or grass clipping piles, under stones and bricks, and in mulch. They are slow-moving creatures that eat decaying plant material and cannot bite people or cause damage to homes. They may accidentally enter basements, homes, and garages when plant material accumulates by doors and windows or during heavy rain or drought conditions. They only live a few days indoors.

Health concern or nuisance: Nuisance.

Control measures: Keep door sweeps and window seals in good repair; remove leaves and other debris from around doors, stairwells, and windows; sweep or vacuum up millipedes found in the home.



Adult (top); larvae in water (bottom)

Mosquito

Size: Varies up to ½ inch (13 mm).

About the pest: Mosquitoes are small biting flies with long legs. Females require a blood meal and lay their eggs in standing water. Eggs hatch into larvae, sometimes called "wigglers," that can be found and easily seen in water. Adult female mosquito bites cause itchy, raised, red bumps.

Health concern or nuisance:

Both— they can transmit disease from one organism to another when biting; some mosquitoes are sources of diseases such as West Nile Virus (WNV).

Control measures: Eliminate standing water outside. Pay particular attention to temporary pools of water near the home such as in gutters, birdbaths, rain barrels, tires, plant pots, buckets, and lawn furniture. The mosquito species that transmits WNV uses these places to lay their eggs. For small ponds that cannot be emptied at least once a week, consider using products that contain the biological control called "Bti" to kill mosquito larvae. In addition, limit outdoor activities at dusk and dawn, when mosquitoes are most active or wear long pants and long-sleeve shirts to minimize exposed skin; close doors and windows; repair holes in screens and gaps around doors. If repellents are to be used on children, they should most safely be applied to clothes not skin, especially faces and hands. Avoid products with more than 10 percent DEET.



Moth, Indian Meal

Size: Moth is ½ inch (13 mm) in length; fully grown larva is ½–5/8 inch (13–16 mm) in length.

About the pest: The Indian meal moth is most commonly seen flying around in kitchens at night. It has reddish-brown markings with a copper luster on the lower two-thirds of its wings. Larvae are yellowish, greenish, or pinkish with a brown head capsule and three pairs of legs near the head. The larvae are found in common pantry items like cereal, flour, grains and grain products, and dried fruit and nuts. Larvae leave behind visible webbing as they crawl around and pupate in these products.

Health concern or nuisance: Nuisance.

Control measures: Inspect newly purchased grains before putting them in the pantry; store food in tightly sealed containers; if moths are sighted, search all dried food (e.g., cereal, pet food, oats, and other grains) and dispose of any infested food products; vacuum and thoroughly clean shelves to remove both insects and spilled food; use a flyswatter to kill adult moths. Pheromone traps containing a lure to attract male moths can be useful in detecting a problem early but will not provide control.



Moth, Webbing Clothes

Size: Moth is ¼ inch (6 mm) in length; mature larva is ½ inch (13 mm) in length.

About the pest: The webbing clothes moths have tufts of red hairs on their head and golden-colored wings. The larvae have white or cream-colored bodies and a brown head. These moths feed on animal by-products like furs, hair, feathers, and wool carpets and clothes. They prefer dark environments and the adult moths will tend to run instead of fly when disturbed.

Health concern or nuisance: Nuisance.

Control measures: Launder or dry clean infested materials; hang infested rugs outside and beat or brush them; keep areas clean and well vacuumed; vacuum up the clothes moths.



Mouse, House

Size: 5–8 inches (13–20 cm) in length (including tail).

About the pest: House mice are small rodents with a pointed nose, large ears, and a long, hairless tail about the same length as the body and head. They are active at night. A sign that mice are in the house are dark droppings that are pointed and about the size of a grain of rice. Mice can enter the home through very small holes about the size of a pencil. Mice look for food and nesting material in pantries and storage boxes, and they'll even chew on electrical wiring. This behavior can result in structural damage and possible fires.

Health concern or nuisance: Health concern—they can spread disease and trigger asthma attacks in some individuals.

Control measures: Seal or plug gaps around windows, doors, the foundation, and pipes to keep mice from entering the building; use door sweeps under doors leading to the outside; keep things clean and dry; reduce clutter; store food in sealed containers; remove trash and garbage; keep garbage outside in a tightly sealed container; set mouse snap traps and check daily (be sure to put the "snap" side of the trap up against the walls where mice tend to run; avoid using mouse poison pellets or chunks as they are dangerous for children and pets; plus, mice die behind walls and stink).



Rat, Norway

Size: 13–18 inches (33–46 cm) in length (including tail).

About the pest: Norway rats are larger than mice with a blunt nose and tail shorter than the length of its body. Their droppings are dark, blunt, and the size of a raisin. Rats climb, jump, and gnaw and can enter the home through holes the size of a quarter. They can also swim through sewers and enter a building through toilets or broken drains. Rats tend to live outside in underground burrows but may enter the home in search of food and nesting material. They will eat a wide variety of food products and can cause structural damage. They can chew through almost anything. Rats are most active at night.

Health concern or nuisance: Health concern—they can spread disease and may bite.

Control measures: Seal gaps around the building foundation and any pipes or wiring to keep rats from entering the building; types of materials to use will depend on the situation but include sheet metal flashing, cement, and/or heavy-gauge wire mesh; use metal flashing on tight-fitting doors leading to the outside; keep things clean and dry; reduce clutter in and around building; store food in sealed containers; remove trash and garbage; keep garbage outside in a tightly sealed container. Indoors, set snap traps designed for rats and check daily; use and place these traps with caution as the snap can hurt children or pets. Do not use rat poisons indoors. If using such products outside, be sure to use “chunk” style baits in tamper-resistant boxes with bait holders. Follow all directions on the baits.



Silverfish

Size: Adult is ¼–½ inch (6–13 mm) in length.

About the pest: Silverfish have silver, carrot-shaped bodies that are thicker at the head and tapered at the abdomen. They have long antennae and three long filaments coming from their abdomen. Silverfish prefer cool, moist, dark places like basements, closets, bookcases, and storage areas. They move very quickly when disturbed. Silverfish eat any substances containing starch, such as flour, cereal, books, wallpaper, and glue, but they will also feed on items high in protein.

Health concern or nuisance: Nuisance.

Control measures: Remove food sources or keep in tightly sealed container; keep things clean and dry; reduce clutter; use dehumidifier to remove humidity; seal cracks and crevices; repair leaky pipes and roof; use sticky traps.



Stink Bug, Brown Marmorated

Size: Adult is ½ inch (13 mm) in length.

About the pest: The brown marmorated stink bug has a brown, shield-shaped body, is almost as wide as it is long, and has light-brown bands on the antennae. They release an odor as a defense. These are agricultural pests; they do not harm humans, nor do they reproduce or cause damage to the home or anything inside it.

Health concern or nuisance: Nuisance—they can be smelly when squashed or vacuumed up; sometimes large numbers will enter a house in early fall looking for a place to spend the winter.

Control measures: Seal cracks, crevices, and openings around windows, doors, pipes and chimneys; install a chimney flue cap with ½-inch or less hardware cloth; repair damaged screens on doors and windows; remove insects from inside with a vacuum cleaner.



Termite

Size: Adult is ¼ inch (6 mm).

About the pest: Termites are social insects that feed on old roots, tree stumps, structural wood, wood fixtures, and paper. They are found in basement or cellar areas and in structural wood above basement walls. Wooden items buried or in contact with the ground are particularly susceptible to termite infestation. The black, winged reproductive termites are most commonly seen in infested buildings, especially between February and June when they swarm. If a piece of infested wood is opened, creamy-white worker termites may be seen. Termite damage looks like runways or passages cut into the wood. Termite tubes connecting aboveground nests with the soil may also be present.

Health concern or nuisance: Nuisance—they can cause structural damage.

Control measures: Remove wooden debris from outside and around the home; replace infested wooden material; have adequate drainage in basements; do not bury scrap wood in the yard; keep fire wood piles away from the house; seal cracks and crevices in foundation; direct all surface water away from foundation. Once a home is infested, control requires the use of a licensed, reputable pest control professional.

Prepared by Amber Brunskill, education specialist; Kristie Auman-Bauer, public relations coordinator; Lyn Garling, manager of programs; Steve Jacobs, senior extension associate and urban entomologist; Dion Lerman, environmental health program specialist; Michelle Niedermeier, community IPM and PSCIP coordinator; and Ed Rajotte, Penn State IPM coordinator

Photo credits

Centers for Disease Control: Head louse (p. 5)

iStock: Carpenter ant, bed bug, and centipede (p. 3), millipede (p. 5), Indian meal moth (p. 6), Norway rat, silverfish, and termite (p. 7)

Wikipedia: House mouse (p. 6)

Remaining photos provided by authors

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