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Rodents: Get Them Out of Your School, House and Yard

The house mouse is one of the most troublesome and economically important rodents in the United States. They feed on and damage food, as well as contaminate food with droppings and urine. They cause structural damage to buildings by building nests and gnawing. They may chew on furniture, clothing and electrical wires. In addition, house mice can spread disease transferring pathogens or parasites to humans and pets, including *Salmonella* (salmonellosis food poisoning), ringworm, mites, tapeworm and ticks. They generate allergens, which are asthma triggers and should not be tolerated inside schools or homes. Effective, low hazard options are available to eliminate these pest rodents.



The adult house mouse.maine.gov

How do they get inside?

Mice may infest schools and homes year round. However, since the house mouse cannot hibernate, they are more likely to invade structures during cold weather months. While searching for food and shelter during times of cold temperatures, mice are drawn to buildings - which initially offer them cover. From there it only takes a hint of warmth or the scent of food from an access point to invite a permanent mouse resident.

Modes of entry include open windows and doors, cracks and any small openings around piping, air ducts, roofing, and doors. **Any hole as small as 1/4-inch can accommodate a young mouse, a gap the size of a dime will allow access to an adult mouse.** That means if you can stick a pencil into a hole, a young mouse can get through!



Like many types of pests, mice are hitchhikers and can be inadvertently brought indoors in storage boxes (especially corrugated cardboard boxes) and wooden palettes. Arts and crafts supplies, holiday decorations, blankets and clothes, are all commonly stored materials that might harbor mice. They can also access building roofs via overhanging shrubs and trees, and will climb vertical surfaces and wires if need be.

Mice owe their success to being highly adaptable; they base their foraging activity on when humans are least present (allowing them to escape our awareness), they can survive on just about any kind of food so their dietary needs adapt readily, and they can go without water for considerable periods if necessary. This adaptability and secretive nature often makes infestations difficult to perceive until numbers are considerable.

Once inside, mice often establish themselves near food-storage and food preparation areas, closets, pantries, cabinet bases, or cluttered rooms. They will also climb wall utility lines for electrical or plumbing and nest within suspended ceiling spaces.

Look for signs that you may have mice

Droppings: Mouse droppings are about the size of rice grains. Small, tapered fecal pellets are left in areas where the mouse feeds or is harbored. Mouse urine fluoresces, so the hundreds of micro droplets they lay down each day can be viewed using a black light in an otherwise dark room.

Tracks: Scatter a small patch of flour or talcum powder on the floor along the wall or in likely places. Put a cracker or a piece of bread in the middle of your “tracking patch”. Check for tracks the next day. Grease trails and smudge marks may be apparent along the patrol path of their territory – around wall skirting, entrance holes, etc.

Burrows: Check in weedy places, under boards, under dog houses and near garbage cans or dumpsters. House mice may burrow outside structures when they cannot gain access or find other shelter.



The adult house mouse.
Bioweb.uwlax.edu

Teeth marks and chewing: Any little hole with chewed edges is a sure sign. Check your pantry for chewed packages. Look for shredded paper. Look for teeth marks and hair.

Sound: Listen for gnawing or scratching in walls or attics, especially at night.

Nests: They consist of fine, shredded fibrous materials. Chewed paper or cloth (including gloves, carpet, clothes) is often found in boxes, drawers, undisturbed bags or containers, and even inside large equipment that is not regularly used. Nests are frequently found when cleaning garages, closets, attics, basements, and outbuildings where mice are present.

Smudge marks (rub marks): Occur on beams, rafters, pipes, and walls. They form as a result of oil and dirt rubbing off the mouse as they travel the route. The smudge marks are full of chemical cues mice use to communicate, so it is important to clean up the greasy marks.

Odor: A musty odor may indicate mice are present.

Exclude mice from buildings

To reduce the threat of rodent-borne diseases, allergens, and other health threats, prevent mice from becoming established inside buildings by finding and sealing up potential access points.

1. Seal gaps of ¼-inch or more with silicone or polyurethane sealant products that stretch, because gaps and cracks in buildings expand and contract due to temperature changes and other factors. Steel wool, or foam fillers alone are not recommended for larger holes and cracks beyond serving as a temporary fix. They should be filled with good quality concrete, or stuffed with Xcluder cloth or Stuf-fit copper mesh, then sealed.

2. Seal around water, gas, electric, and other pipes and conduits going through walls.
3. Make all external doors mouse-proof using the high-quality, brush-type (e.g. Sealeze) or baffle (e.g. Xcluder) style door sweeps that seal the gap between the threshold and the door base.
4. Maintain and repair all ventilation screens, louvers used in attic spaces, and furnace closets. All gaps around the frames of screens and louvers should also be kept tightly sealed.
5. Mouse-proof the crawl space skirt around portable classrooms. To prevent moisture damage, mold, mildew, and dry rot, the crawl space skirt should not touch the ground. Dig a 6-inch trench below the skirt, attach 1/4-inch hardware cloth to the bottom of the skirt so that it goes to the bottom of the trench, then fill in the trench with dirt or crushed rock. This will also help deny entry to other mammal pests, such as rats, raccoons, feral cats, and skunks.
6. Ensure that the above pest-proofing practices are an integral part of the planning and contracting process for building construction or renovation.

Do not attract mice

1. Do not allow trash to accumulate along exterior walls, as this will attract mice. Remove old boards and junk cars. Discourage contractors or workers from throwing food or food containers into crawl spaces and wall voids during construction or renovation of buildings.
2. Do not place trash receptacles close to exterior doorways.
3. Keep dumpsters clean, with lids closed (especially at night). Keep garbage in tightly covered cans. Drainage holes can be screened.
4. Clean up food scraps and store foods appropriately to prevent easy access to food. All pet foods, bird seed and human food should be stored off the floor and in airtight containers. Adult mice can chew through zip-lock bags.
5. Clear tall weeds close to buildings since weeds and seeds serve as food and shelter for mice during warm weather. Mice like to hide in such places.
6. Do not pile wood against buildings. Store wood and other materials at least one foot off the ground and away from buildings.

Do not harbor mice

Reduce cluttered storage areas and classrooms. It is best to use transparent plastic totes for storage. If cardboard boxes have not been opened in 2 years, the box and contents may be contaminated with mouse urine and feces and should be recycled or discarded.

Eliminate mice with snap traps

Use traps, not poison baits, inside schools or homes. If young children or pets are around consider placing traps inside locked box stations to avoid accidents. Snap trapping results in the fast elimination of mice, but trapping is useless in a cluttered environment. You have to de-clutter if you want to de-mouse. Mice typically do not venture more than 30 feet from their nest (unless food is sparse).

Traps are very effective control devices for mice. They take advantage of their curiosity. Mice will be trapped easily the first night, but they can become trap-shy. On the first night, set six traps in areas of mouse activity (droppings found), positioning each trap 3 feet apart or closer. Remove the traps in the morning before students arrive at school or kids emerge from bedrooms at home. Set the traps again a week later in slightly different locations. This technique will help overcome trap-shyness. Handle dead mice and their fecal pellets with caution (see guidance in later sections).

Plastic snap traps (e.g., the Kness Snap-E, J.T. Eaton JAWZ, Bell Trapper Mini Rex, Woodstream Quick Kill, etc.) are more durable and can be cleaned with disinfectants more easily than the disposable traps. The disposable wooden-based traps are an option when all the traps will be collected and disposed of completely.

Traps can be baited with small smudges of chocolate syrup or a few drops of vanilla, orange, or any other extract oils. Despite common myths, there is no one “favorite” bait for mice. Mice are opportunists and will sample most foods they bump into. They forage for nesting materials as well as food, so cotton balls, dental floss, and string may also be used as bait. We don’t recommend peanut butter or anything with nuts in due to possibility of children with tree nut allergies being present. Mice mainly travel along walls to floor junctures, so place traps up against walls with the snap end facing the wall.

Use poison-free bait (e.g. Detex Blox) to monitor building exteriors and storage sheds

Detex Blox contains no poison and is often used by professionals to monitor for mouse activity. Detex Blox is safe and made from 16 human food-grade ingredients, making it ideal for monitoring rat and mouse activity without concern of harming children, pets, or other non-target animals.

The use of poison baits (rodenticides) in schools is a complicated issue, and is best left in the hands of the professionals. As humans are mammals there may be more significant risks and/or liability involved.



Set out several traps about 3 feet apart or closer, then remove them and set them up a week later in a new location.



Traps can be baited with a variety of foods. There is no one “favorite” bait for mice. Place traps against walls with the snap end facing the wall.

Precautions when handling dead rodents

1. Do not assume a trapped mouse is dead! Approach with caution, they will bite.
2. Wear rubber or disposable plastic gloves such as those purchased in boxes of 100 by pest management professionals and building custodians, if you are certain you will not sustain a bit. Wear heavy-duty protective gloves if you have to deal with a live trapped mouse.
3. Before handling trap with a rodent in, spray the dead mouse and trap with disinfectant (e.g. 10% bleach solution) until wet. It's best not to reuse a wooden mousetrap that has caught a mouse.
4. Dispose of a dead mouse by turning a re-sealable plastic bag inside out. Then, with a hand inside the bag, pick up the rodent and the trap. Invert the bag over your hand and seal the bag, with the rodent and trap inside it. Wrap the bag in newspaper and dispose in a dumpster or garbage can.
5. Spray the area where the trap or the dead mouse was lying with a light spray of disinfectant or 10% bleach solution and let the area dry.
6. Dispose of the gloves in the trash, or for reusable gloves, spray the outside of the gloves with disinfectant, then remove the gloves and wash hands with soap and water.
7. A 10% bleach solution is sufficient to destroy pathogens likely to be present. Using stronger bleach solutions will not be any more helpful and may damage surfaces.

Precautions when cleaning up small amounts of rodent droppings

1. Do not sweep up or vacuum feces because this can cause the excrement residues to become airborne and be inhaled.
2. Wear rubber or disposable plastic gloves such as those worn by pest management professionals and building custodians.
3. Spray the droppings and affected area with disinfectant or 10% bleach until wet.
4. Use a wet paper towel to pick up the disinfected droppings.
5. Place the droppings and paper towel into a re-sealable plastic bag and seal the bag.
6. Place bag in a dumpster or garbage can.
7. Dispose of the gloves in the trash, or for reusable gloves spray the outside of the gloves with disinfectant, then remove the gloves and wash hands with soap and water.



Wear rubber gloves and use a disinfectant when cleaning up mouse feces.

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See the videos in this three-part series “IPM for Mice – Exclusion, Sanitation, Trapping”:

<http://www.sustainableplaces.org/general-ipm/mouse-control-exclusion>

<http://www.sustainableplaces.org/general-ipm/ipm-for-mice-sanitation>

<http://www.sustainableplaces.org/general-ipm/ipm-for-mice-trapping>

House mouse: http://cals.arizona.edu/urbanipm/pest_press/2004/dec.pdf

Mice: http://cals.arizona.edu/urbanipm/pest_press/2004/feb.pdf

Rats and Mice: Get them out of your house and yard:

<http://warnell.forestry.uga.edu/service/library/index.php3?docID=420>

Bed Bug Battle – We Want to Hear From You

Anyone can get bed bugs! Bed bugs can cause anxiety, bite reactions, and financial hardship. The University of Arizona Community IPM Program and several partnering research institutions are working to battle the bed bug resurgence in the United States. The researchers hope to determine the real impact and social cost of bed bugs, the risks to individuals and society, as well as the significant causes of infestations.

We need your help. We hope you will complete an online bed bug survey. This survey asks brief questions on how bed bugs affect your life, how bed bugs cause people stress, and what people do when trying to get rid of them. This voluntary survey should take about 10 minutes of your time. The survey is available in English and Spanish. There is no compensation available for your participation. Your answers are anonymous and you will be contributing to information that will help us battle the pesky parasites.

Who should take this survey? We would like to hear from people who currently live with bed bugs, people who have dealt with them in the past, and people lucky enough not to have experienced living with bed bugs at all. Your answer to the first question will direct you to questions specifically designed for you. We are dedicated to helping community members who need it most, and sharing your experience will be extremely helpful to develop strategies to reduce the bed bug problems.

English version of Bed Bug survey: <http://www.surveymonkey.com/s/DGLQS52>

Spanish version of Bed Bug survey: <https://es.surveymonkey.com/s/F5NZXJK>

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.

November 11, 2014, 7:00-8:30 p.m. Eastern / 5:00-6:30 p.m. Arizona: [Eco-Schools USA Dashboard: Goals, Metrics, Success! \(NWF\)](#)

November 12, 2014, 7:30 – 12:30 p.m. Arizona: [Glyphosate-Resistant Weeds Workshop: Monitoring, Preventing, and Managing Weeds in Glyphosate-Resistant Crops, Landscapes, Orchards and Vineyards.](#) The University of Arizona Maricopa County Cooperative Extension, 4341 E. Broadway Road, Phoenix, AZ 85040.

The Glyphosate-Resistant Weeds Workshop on Wednesday morning, November 12 at the Maricopa Cooperative Extension office will feature University of Arizona and University of California weed scientists and an economist to describe how to monitor, prevent, and manage resistant weeds in crops, landscapes, and orchards. 5 CEU's will be available for ADA and OPM licenses. Registration deadline is Nov 10.

January 5-9, 2015, Arizona: A one-week course [Desert Turf School.](#) The University of Arizona Maricopa County Cooperative Extension, 4341 E. Broadway Road, Phoenix, AZ 85040.

Provide a unique learning experience about desert turfgrass management for professional turfgrass managers. The distinctive arid climatic conditions of southern Arizona afford an opportunity for instruction on warm- and cool-season turfgrass management, saline and desert soils, and specialized irrigation practices. Participants will receive a certificate of completion for the desert turf school and may apply for GCSAA and other professional continuing education credits.

Easy registration online is open now. Registration forms and more information about both events are at: <http://turf.arizona.edu>.

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>

Shujuan (Lucy) Li, Newsletter Editor and Assistant in Extension. Email: lisj@cals.arizona.edu

Dawn H. Gouge, Public Health IPM Expert. Email: dhgouge@cals.arizona.edu

Shaku Nair, Assistant in Extension. Email: nairs@email.arizona.edu

Al Fournier, IPM Assessment. Email: fournier@cals.arizona.edu

Ursula Schuch, Landscape Horticulture. Email: ukschuch@ag.arizona.edu

Kai Umeda, Extension Agent, Turf. Email: kumeda@cals.arizona.edu

Dave Kopec, Turf Specialist. Email: dkopec@ag.arizona.edu

Paul Baker, Urban Entomologist. Email: pbaker@ag.arizona.edu

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