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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, contaminate food with droppings and urine. They cause structural damage to buildings by building nests and gnawing, including chewing on furniture and electrical wires. In addition, house mice can spread disease causing pathogens or parasites to humans and pets, including salmonellosis (food poisoning), ringworm, mites, tapeworm and ticks. They generate allergens, which are asthma triggers and should not be tolerated inside schools. 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 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 mouse.** That means if you can stick a pencil into a hole, a mouse can also get through it!



Like many types of pests, mice are hitchhikers and can be inadvertently brought indoors in stored boxes (especially corrugated cardboard boxes) and pallets. Arts & crafts supplies, holiday decorations, blankets and clothes, are all commonly stored materials with 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 spread with peanut butter in the middle of your “tracking patch”. Check for tracks the next day. Grease trails and smudge marks 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](http://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, basements or attics. Nests are frequently found when cleaning garages, closets, attics, basements, and outbuildings where mice are present.

**Smudge marks (rub marks):** Occurs on beams, rafters, pipes, and walls. They form as a result of oil and dirt rubbing off the mouse as they travel the route.

**Odor:** A musty odor usually indicates 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, foam and other temporary materials are not recommended for larger holes and cracks. 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. Assure the above pest-proofing practices are an integral part of the planning and contracting process for building construction or renovation.

### **Don't attract mice**

1. Don't allow trash to accumulate along exterior walls, as this will attract mice. Remove old boards and junk cars. Don't allow contractors to throw 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 freezer "zip lock" (sealing) bags or airtight containers.
5. Clear tall weeds since weeds and seeds serve as food and shelter for mice during warm weather. Mice like to hide in such places.
6. Don't pile wood against buildings. Store wood and other materials at least one foot off the ground and away from buildings.

### **Don't harbor mice**

De-clutter 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. 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. 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 as described in the later sections.



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

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. The disposable wooden-based traps are an option when a disposable trap is required.

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. Mice forage for nesting materials as well as food, so cotton balls, dental floss, and string may also be used as bait. Mice mainly travel along walls to floor junctures, so place traps up against walls with the snap end facing the wall.



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.

### **Use poison-free bait (e.g. Detex Blox) to monitor exterior 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 often allowed, but is a complicated issue and will be addressed in a separate newsletter.

### **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.
3. Do not reuse a wooden mousetrap that has caught a mouse. Before handling, spray the dead mouse and any trap with disinfectant (e.g. 10% bleach solution) until wet.
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 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.

### 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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Read more information about IPM of the house mouse in schools:

<http://ir.library.oregonstate.edu/xmlui/bitstream/handle/1957/38106/em9062.pdf>

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](http://cals.arizona.edu/urbanipm/pest_press/2004/dec.pdf)

Mice: [http://cals.arizona.edu/urbanipm/pest\\_press/2004/feb.pdf](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>

## Sensible Steps to Healthier School Environments Webinar Series

Join EPA for their new webinar series based on the [Sensible Steps Brochure](#) (PDF) (26pp, 1.75MB) and the [State School Environmental Health Guidelines](#). The webinars share low- and no-cost actions that schools can take to create healthier environments for students and staff. Each webinar features school district staff from across the country presenting real-life examples of successes. The target audience includes facility maintenance staff, school nurses, administrators, teachers, and other school personnel and stakeholders. Upcoming webinars:

**November 19**, 3-4 p.m. Eastern / 1-2 p.m. Arizona: [Sensible Steps for Mold and Moisture Control In Schools](#)

**December 17**, 3-4 p.m. Eastern/ 1-2 p.m. Arizona: [Renovate Right: EPA's Renovation, Repair and Painting \(RRP\) Program at Schools](#)

Read more about Sensible Steps to Healthier School Environments Webinar Series, visit: <http://www.epa.gov/schools/webinars.html>

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## Upcoming Webinars and Events

### Attend Free Sessions of the Green Strides Webinar Series

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. Find more sessions for educators, facilities managers, and advocates weekly, click [here](#).

November 6, 2013, 2-3 p.m. Eastern / 12-1 p.m. Arizona: [Don't Mess with Mercury \(CDC/ATSDR\)](#)

November 6, 2013, 4-5 p.m. Eastern / 2-3 p.m. Arizona: [Designing Nature Play and Learning Schoolyards \(NWF\)](#)

November 13, 2013, 3-4 p.m. Eastern / 1-2 p.m. Arizona: [Partnership: Bring Children and Nature Together in Nature Explore Classroom \(Arbor Day Foundation and KAB\)](#)

November 20, 2013, 7:30-9 p.m. Eastern / 5:30-7 p.m. Arizona: [ClimateChangeLIVE Education Resources Highlights – Part 1 \(USFS\)](#)

December 4, 2013, 3-4 p.m. Eastern / 1-2 p.m. Arizona: [Waste in Place Update \(KAB\)](#)

**The 2013 Don't Bug Me Webinar Series:** brought to you by eXtension and its participating Cooperative Extension Institutions. The series is coordinated by the Imported Fire Ant eXtension Community of Practice. See <http://www.extension.org/pages/66408/dont-bug-me-webinar-series-2013>

November 6, 2 p.m. Eastern / 12 p.m. Arizona: [Keep Ants Off the Thanksgiving Table](#)

**November 13, 2013, Wednesday, 7:30 a.m.-12 p.m.:** [Integrated Pest Management in a Child's World](#). Flagstaff Unified School District – Administrative Center, 3285 E. Sparrow Ave, Flagstaff, AZ 96004.

**Free Registration.** This workshop for school personnel will provide information on: Integrated Pest Management (IPM) philosophy and the best way to manage pests, including bees and wasps, weed

control in landscapes and turf, rodents and bats. Participants will be awarded **four** Continuing Education Units (CEUs) for Office of Pest Management (general category). To register for the class or for other inquiries contact Shaku Nair, Assistant in Extension for Community IPM, University of Arizona. Call 520-840-9429 or email at: [nairs@email.arizona.edu](mailto:nairs@email.arizona.edu).

**January 6-10, 2014. A one-week course [Desert Turf School](#). The University of Arizona Maricopa County Cooperative Extension office, 4341 E. Broadway Rd. Phoenix, AZ 85040.**

The 2014 Desert Turf School registration is now available online. Golf course superintendents getting introduced to the desert, assistants and golf course staff wanting more in-depth knowledge of turf management, sports turf managers, schools and municipal facilities managers, commercial landscapers responsible for turf maintenance are all encouraged to sign up now.

The Desert Turf School is a week-long offering about desert turf species and their unique management practices, desert soils, fertility, and nutrition, salinity principles, irrigation audits and analyses, "smart" controllers, heat and drought stress, disease, insect, nematode, and weed management.

Register before December 1 to attend the 2014 Desert Turf School at the UA Cooperative Extension in Phoenix during January 6-10, 2014. Online registration is available but a discounted mail-in fee is also an option. For details, go to: <http://turf.arizona.edu/index.htm>

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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