

## Birds, Bugs and Rodents: Pests to Your Home

Carl Brahe, CHI, CCI

In Colorado we have few pests compared to most places. Our dry climate make it harder for moist environments to exist that most pests require to survive. For pest to live in our homes they must have a way to enter, sufficient moisture and food to live. The food is usually other pests.

Summer is the most common time for insects and arachnids to move into your house. Birds like woodpeckers may move in during spring to nest. Fall is the most common time for rodents to move indoors.

To get into your house pest must have a way to enter. Insects and arachnids can enter through very small spaces, hitch a ride on people, pets, plants and produce, or hatch inside the house.

Mice need a hole only the size of a dime to enter and can squeeze under a door with a gap of  $\frac{1}{4}$  inch. Rodents will use existing holes for entry but can also make their own. Rats are such tremendous chewers that they sometime chew through plumbing to get water.

This roof belonged to a man who enjoyed squirrels so much he nailed a board between a tree and the house for easy access for the squirrels. They chewed a hole through the roof and made a nest in the attic.



Birds can use existing protected areas, or in the case of woodpeckers, bore their own holes.

Last summer we discovered Carpenter Ants in an exterior wall. We discovered them before they did serious damage. It was easy to get rid of them. We just placed ant baits at the place we saw the ants enter the wall. They were gone in a few days.

Our neighbor was not so lucky. He had to tear out and replace an entire kitchen wall.



This summer we saw a few Carpenter Ants in the house. We didn't know at the time that these were scouts out looking for a new home. In the following days there were a few more, and then a few more. Suddenly there were masses of ants marching into the back of our freezer.

They seem to have found paradise. There was a large, easy supply of food. Dry cat food had been spilled behind the freezer. The ants were hauling in eggs and nesting material, sage and wood chewed from the structure of our house. They worked frantically to build a nest on top of the constantly warm freezer motor.

They broke through the concrete foundation at a seam where they had built up a mound of dirt that went from the ground to the bottom of the wooden siding. The dirt presumably protected the eggs during transit. Termites build mud highways, or tubes, to protect themselves as they move from underground into a building.

Ants were invading our home by the thousands at an amazing pace. I am not a fan of insecticides, but lacking an anteater, or flock of chickens, to deal the problem I sprayed them with a commercial ant killer. I removed their access mound outside and sprayed the entry hole. The next step is to seal the hole and all other points of possible entry for pests.

Timely maintenance is the key to keeping your home pest free. Most pests require a constant source of food and water. Chronic moisture in your home will attract pests which attract predators to eat them. These types of pest require the same conditions that allow mold and wood rot to grow. Keep your entire home dry and very few pest will find a friendly environment to live. An added benefit is that a dry, well sealed house is healthier and more energy efficient.

## **Pest Entry Check list**

### **Prevent Access to Your House**

1. Seal all holes and cracks
  - a. Foundation
    - i. Siding
    - ii. Window frames
    - iii. Doors frames
    - iv. Soffits
    - v. Roof flashings
    - vi. Chimney
  - b. Screen and clean vents
    - i. Clean dryer vent
    - ii. Screen crawlspace vents
      1. Never screen vents for gas or wood burning appliances or plumbing.
      2. Repair or replace window and door screens
      3. Clean insect and bird nests from roof eaves and soffits
  - c. Clean debris from roof and gutters
    - i. Make sure gutters drain properly and are in good repair
      1. Make sure downspouts are in good repair and directed away from foundation
  - d. Clean, maintain and repair chimney
    - i. Install spark arrestor and/or damper if needed
    - ii. Make sure chimney is water tight
  - e. Remove access to siding and roof from trees and other plants too close or touching building

- f. Make sure the earth is no closer than 6" to your siding
  - i. Watch for mounds of dirt or mud tubes that provide safe passage for ants and termite

### **Remove Conditions Friendly to Pests**

1. Remove decaying plant material from around building
2. Make sure all runoff, including from dripping hose faucets, is directed away from foundation
3. Make sure runoff drains from your property to an appropriate place
4. Check attic for water penetration
5. Check for condensation in attic
  - a. Vents end in attic
  - b. Uninsulated heat or AC ducts
  - c. No insulation in ceiling or vapor barrier reversed.
6. Check for ventilation kitchen, baths and laundry
7. Check caulking and grout in baths, and kitchen
8. Check for plumbing leaks under sinks
9. Does condensation form on windows after watering plants?
10. Is your crawlspace or basement dry?
  - a. Repair or install moisture barrier in crawlspace
  - b. Install crawlspace ventilation if needed
  - c. Install sump pump and underground drainage system if needed
  - d. Install or repair insulation where appropriate

To prevent entry of pests of all kinds seal all entry points. Use appropriate sealing agents. Caulking comes in a variety of formulas for various uses. Ask at your local hardware store if you have any doubt about which is best. New products are constantly being released. Your hardware store worker should know the best and latest product for any specific use.

Seal all cracks and holes in the foundation, siding and around window and door frames. Caulking of different kinds can be used for most cracks and holes. Hydraulic cement might be appropriate where there is water entry. Steel wool might be best for plugging holes where rodents have entered. Foam insulation may be used to fill larger cavities like woodpecker holes. Some foam insulation expands tremendously and can cause damage from over expansion. Other foam insulation expands little. Be sure to use the correct formula.

Window and door screens should be checked for damaged and repaired. Attic and crawlspace vents should be covered with tight weave screen. Dryer vents should have an air operated flap inside. These need to be cleaned regularly to prevent lint build up from wedging the flap open. Dryer vents and vents from gas burning appliances must never be screened.



**Dryer vent stuck open – Clean and seal with steel wool.**

Once all entry points are sealed in the foundation and exterior walls check the roof. Birds, bats, wasp and hornets like to nest in sheltered areas like in and under soffits. These nests are mainly hard to prevent and removal must be added to routine maintenance tasks.



Some birds and rodents can be frightened by devices like wind blown plastic owls or sound activated attack spiders. Owls are available at local gardening stores. Attack spiders are also sold as inexpensive Halloween decorations.

Remove debris like tree leaves and branches that have accumulated on the roof. Debris provides ideal conditions for insect growth and for the predators who eat them. Clean all debris from gutters. There is an inexpensive a robot available for this called a "[Looj](#)" that makes gutter cleaner safer and easier. Cleaning gutters is a dangerous job that injures many people annually.



Look for places where water enters the house or penetrates the roofing. Open chimneys can be attractive to birds, bats, squirrels and rats. Water and debris combine for a friendly environment to fungi like wood rot and mold as well as insects and spiders.

Functional fire burning chimneys need spark arrestors. These are basically steel screens in a housing on top of the chimney to prevent embers from floating out and starting fires. They also serve the function of preventing rain and snow from entering the chimney.

Water in the chimney dissolves creosote from the inner walls creating an acid strong enough to dissolve mortar. Smoke and combustion gases can leak through brickwork as mortar dissolves.

Chimneys need a functional rain cap. This is a thin layer of cement poured on the top of the chimney to form a dome that sheds water. If the rain cap is cracked the freeze/thaw process of water will soon create an entry point. The rain cap must be regularly maintained.



Sewer vent pipes need not be covered. Sewer gas is deadly and not conducive to life. Furnace and water heater vents should be covered with a metal hood that deflects water and directs wind to prevent toxic gases from being blown back into the house. Check these hoods for rusting through and integrity of mount.

Look at all the flashings. These are made of metal, shingles, rubber, plastic or other materials. Flashings are installed at places where different roof planes meet or where the roof meets walls or penetrations. Some flashings may not be readily visible. Concentrate on those you can easily see.

If flashings are allowing any water to pass to building materials they have failed. Failed flashing, or defective design/installation, are the most common sources of roof leaks and deterioration. Look for cracks or wetness or softness in the materials around or underneath the flashings. Pin type moisture meters are available from many tool stores for less than \$20 that can be used to detect excess water content in building materials. Be careful to avoid puncture holes from testing that might allow water to penetrate.

Now that your house is sealed, dry and free of debris look for access paths for pests. Tree limbs overhanging the roof provide a wide path to your roof, attic and home interior. Trees, bushes, flowers and other plants that are too near the house provide a pathway for pest entry. Dead vegetation nourishes insect growth and should be picked up and disposed of.

As a general rule, tree should be planted no closer than 10 feet from the foundation and should not overhang or touch the building. Shrubs should be at least 6 feet from the foundation and kept trimmed so they do not touch the building. Flowers and other plants should be at least 3 feet away. Fallen fruit and plant parts should be removed to a place away from the house.

Drainage of roof runoff and water moving through the property are very important in many ways. Water allowed to drain toward the foundation can penetrate to basement or crawlspace creating unhealthy conditions for people and healthy conditions for pests and microorganisms. In places with expansive soils a small amount of water can cause tremendous swelling that can break apart foundations. A dripping hose faucet can be enough to cause a lot of damage.

Make sure that soil slopes away from the foundation. If there are nearby hills shape the earth to move runoff to an appropriate place, not your neighbor's yard.

Poor gutter and downspout system design and lack of maintenance can cause great damage. Look at your gutter to see if there are water stains that indicate overflow. This can indicate an undersized gutter, an upper roof gutter emptying onto a lower roof, shingles that were not properly trimmed and create a ski jump effect for runoff, or other cause that may not be easily diagnosed. Put a level in the gutters to be certain that they slope downhill. Check behind the gutters for water stains that indicate water is penetrating behind. Make sure all downspouts are secure and routed at least 6 feet from the foundation. Check downspouts for water stains at seams that indicate rust or reversed joints.

Gutters and downspouts seem like a very simple system that should be simple to design and install. My experience is that gutters and downspouts are the most likely building component to be improperly designed and installed. This seems to be more common in high end homes than average homes. The more complex the roof the more likely the gutter system will have problems. If you find problems that are not easily explained by damage, wear or lack of maintenance consider having a gutter expert check your system. Choose carefully.

Now that the exterior of your house is sealed, protected from water penetration and regular maintenance done, it's time to move inside. The main thing to concentrate on is moisture. Assuming the exterior is sealed and all runoff is directed away there are only a few sources of water inside.

Indoor moisture problems come from uncontrolled water from the plumbing or from condensation.

If you have access to your attic take a look inside. Many attics will have conditions that make it difficult to actually enter. If there is sufficient insulation safe places to walk are hidden. Attics may be too small to enter. You can sometimes learn a lot by opening the access hatch and sticking your head inside.

A respirator should always be worn in attics and crawlspaces. Some attics still contain asbestos insulation and other harmful airborne particles are common.

If you find insulation that looks like small pebbles of silverish to amber color close the hatch. Keep your respirator on. Vacuum walls, ceiling and floors in the area with a HEPA vacuum if available. Run a HEPA filter if available. Immediately wash your clothes and shower. Call your local health department for advice.

Shine a bright flashlight on the roof sheathing. Look for water stains. Turn off your light and look for daylight that might indicate places where water can enter. You will probably see daylight through vents.

These vents are necessary to keep the temperature in the attic as close to the outside temperature. They also exhaust moisture that might otherwise condense and soak insulation and building materials. The attic needs an adequate insulation barrier for energy efficiency and healthy, comfortable living conditions in the house.

The most common insulation installation is laying batts between and on the ceiling rafters. This creates a separation between living area and attic. The attic stays cold in the winter to prevent quick snow melt that can result in ice damming. It stays relatively cool in the summer decreasing damage to building materials from heat. If batt insulation is installed with the vapor barrier to the cold side condensation can result inside insulation.

Newer buildings use insulation sprayed on the underside of the roof deck creating a space totally isolated from the outside. The attic stays the same temperature as the living space. This is more energy efficient.

Check all vent pipes that you can see passing from ceiling to roof. Do they exit the attic or do they exhaust inside? Vents from gas and wood burning devices and plumbing can release dangerous and noxious gases that can penetrate living areas. Dryer vents and bathroom exhaust fans that exit in the attic add moisture that can contribute to mold, rot, insects and rodents. No pipes should end in the attic.

This is a picture of an attic where the dryer vent emptied into the attic. The white stuff is a pile of dryer lint, several feet high, that has accumulated over the years. Dryer lint is so highly flammable that boy scouts light fires with it using a spark from a flint to ignite it.

Uninsulated heat or AC ducts that pass through attic or



crawlspace are susceptible to condensation. Water condensed on these ducts can drip into insulation leaving it soaked.

Bathrooms, laundries and kitchens are the next places to investigate. Are these places well ventilated?

Check the window frames and sills for water stains. Stains here, or on walls or ceilings, indicate a condensation problem. There may be dark spots, patches or stains from fungal growth. Do these rooms have exhaust fans and/or windows that open? If these conditions exist in rooms where ventilation exists and is being used, check vent fans for blockage. A larger volume vent fan may be required.

Look for wet spots under sinks and around tubs, showers and toilets. Determine if the water comes from leaking water supply or drains, or if it comes from water escaping tub or shower. Take appropriate action to remedy.

Check caulking and grout at tubs, showers, sinks and toilets. Repair where needed.

Take inventory of your house plants. If you have so many large, well watered tropical plants that your windows fog and the humidity is noticeably higher than your neighbors, it may be time to reevaluate your watering practices.

Poisoning crickets, ants, spiders, roaches and other common bugs found in bathrooms, laundries and kitchens is a short term solution. If the moisture they rely on is dried up they can't live.

If you have a crawlspace consider adding a moisture barrier if it doesn't already have one in good repair. The most common moisture barrier is to place the barrier on the floor and insulate between the floor joist. This requires vents, usually on two opposing walls. Sometimes exhaust fans, similar to radon pumps, are installed that pump air out when it becomes too humid in the crawlspace.

A more energy efficient technique is becoming popular. The moisture barrier is extended to the top of the foundation walls. No insulation is used. The crawlspace becomes part of the heated envelope keeping it warm and dry. No vents are needed.

In some cases, low ground water levels, or other conditions require an underground drainage system and maybe a sump pump to be installed to collect and remove water that might otherwise flood a basement or crawlspace.

A home that is dry inside and out is relatively healthy, pest free home. Conditions friendly to you and me are mainly unfriendly to the things we find dangerous and pesty. A pest free home also tends to be more energy efficient and more comfortable to live in.