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House Mouse

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House mouse. G. Shulkin, wikimedia.org

House Mouse Identification and Detection

The house mouse has a light-colored belly, and the rest of its fur color is variable: individuals may be light brown, gray, or even black. It has a body length of 2 ½ to 3 ½ inches, and an additional length of tail from 2 ½ to 4 inches long.

Identification of the house mouse itself is often unnecessary because it is active at night and rarely seen during the day. The presence of a mouse is usually detected by chewed materials, or more often by its fecal droppings. House mouse droppings are black and tapered on at least one end and are slightly larger than a grain of rice. Mouse droppings are often seen in windowsills, in cupboards under sinks, and where food is commonly eaten, stored, or prepared.

The house mouse (*Mus musculus*) is the most successful rodent pest in school environments. This mouse causes damage to structures and supplies with its chewing, and contaminates food stores and classroom supplies. Mouse droppings and urine—which are continually excreted as they move about—are able to transmit several types of viruses, bacteria, and parasites to humans (even long after the mouse itself is gone), and can trigger asthma in indoor environments.

The house mouse is generally regarded as a zero-tolerance pest in schools for the following reasons:

- They reproduce rapidly. Each female mouse averages five offspring per litter, and may have as many as ten litters per year. As little as eight weeks are needed for a house mouse to develop to a reproductive adult. Even with conservative calculations, that's a lot of mice!
- They are very mobile and can enter structures or move among rooms through spaces as small as a dime. They may use trees and wires to gain access to a structure's upper levels, and once inside, they often use wall voids and pipe pathways as a safe means of travel.
- They are not picky eaters. Coupled with its strong sense of smell, a house mouse can sniff out dried foods used for classroom art projects or long-forgotten crumbs in corners. The house mouse often chews through boxes and plastic bags to eat the snacks inside a teacher's desk or classroom cupboard, and may even eat items we do not consider food, such as glue and soap.
- They can vector bacteria and viruses in their droppings. Humans may become infected when contact with an open wound occurs, or breathe in pathogens when droppings are disturbed.

Rural school districts often have encounters with deer mice. While deer mice may occasionally be found indoors and are of a similar size to the house mouse, deer mice do not usually establish themselves inside school structures like the house mouse.

CLEANING UP MOUSE DROPPINGS: SAFETY TIPS

Mouse droppings—whether fresh or old—may transmit viruses and bacteria. If cleaning mouse droppings is among your job duties, there are some important safety measures to keep in mind.

1. Mouse droppings should not be swept or vacuumed. Doing so can allow viruses and bacteria in the droppings to become airborne and inhaled.
2. Wear rubber or plastic gloves.
3. Wet the area with mouse droppings using a disinfectant (for example, a 10% bleach water solution). Disinfectants are effective against both bacteria and viruses if allowed to stand for 10 minutes.
4. Using a wet cloth or paper towel, wipe up the droppings and dispose of the droppings and paper towels in a trash bag. Throw the trash bag out immediately.
5. If using a washable cloth and reusable gloves, they can be cleaned in hot soapy water.
6. For an area with a large amount of rodent droppings (such as an outbuilding), wear a face mask with a HEPA filter.

WHAT CAN YOU DO?

Teaching, administrative, and kitchen staff have an important role in helping to prevent house mouse infestations, and in helping facilities and maintenance staff address an existing infestation. Mice, along with other pests, are drawn by the availability of food, water, or shelter. Deny them these things to help prevent or manage infestations.

TO HELP PREVENT AN INFESTATION, OR TO MANAGE AN EXISTING INFESTATION:

1. Report mouse droppings so that they can be cleaned up immediately and the area can be properly monitored for further house mouse activity.
2. Limit classroom and office food to a specific area that is cleaned daily.
3. Store food in hard plastic or glass containers with a tight-fitting lid. This includes desk and cupboard snacks, and kitchen food items that are not canned. For kitchens, these items may alternatively be stored in a refrigerator or walk-in cooler.
4. Clean up after meal times. Pay attention to wall bases, corners, and other undisturbed areas where food accumulates. In kitchens and pantries, sweep and mop underneath equipment daily.
5. De-clutter classrooms and offices. Consider recycling or discarding items you haven't used in three or more years. Install wire shelving to keep stored items off the floor so they cannot provide shelter or a source of food to mice.
6. Replace corrugated cardboard with clear plastic bins. Mice will nest in cardboard boxes or may chew the material to create a nest elsewhere.
7. Remove stuffed furniture such as sofas and overstuffed chairs; mice often nest in the furniture materials, or forage for food underneath cushions.
8. Report problems such as gaps below exterior doors, around pipes or windows, and leaking pipes.

RESOURCES

- *New York State Integrated Pest Management, Cornell University: Evict and Exile Mice from Your Home. http://www.nysipm.cornell.edu/publications/evictmice/*
- *The National Pesticide Information Center (NPIC) provides objective, science-based information about pesticides and related topics to enable people to make informed decisions. To contact NPIC, call 1-800-858-7378 or visit http://npic.orst.edu.*

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The ABCs of Bees

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Sweat bee, Agapostemon sp. (Halictidae).

Sweat bees, a type of solitary bee, are said to get their name from a tendency to drink salty perspiration. Some species have metallic green or bluish coloring, as pictured here. These solitary bees are common in residential flower gardens.

When a new honey bee queen matures and leaves an existing nest, a large portion of the hive follows her. When the new queen stops to rest, worker bees will gather around her, forming a swarm cluster that is sometimes seen hanging from a tree or ledge. Swarm clusters are temporary, lasting a few hours to a few days. Beekeepers are often able to remove them.

(Above left) Honey bee swarm cluster, Apis mellifera.
(Above right) Bumble bee, Bombus sp. (Apidae).

Bumble bees are native, social bees. Their hives are often found in abandoned bird boxes, or among thick vegetation at ground level. These large, recognizable bees are reluctant to sting, but may do so in defense.

Bees are important pollinators of food crops that comprise about 30% of our diet. These agricultural products bring billions of dollars into our national economy each year. Bees are also pollinators in flowerbeds and backyard gardens. Unfortunately, bees in school environments can be a pest problem. With education and awareness, bee problems in schools can be reduced.

BEE BASICS

Bees have three body segments: a head with strong mouthparts (mandibles), a thorax with six pairs of legs and two sets of wings, and an abdomen. Bees are vegetarians—they frequent flowering plants (including shrubs and trees) to gather nectar, and use their branched body hairs to gather pollen. Bees are often mistaken for wasps, and vice versa, but there are many physical and behavioral differences between bees and wasps (also see PNW Pest Press on wasps).

In North America, the European honey bee has become so recognized that native bees are often overlooked. However, there are actually over 4,000 native (or "wild") bee species in the United States. These native bees are vital to the production of cranberries, blueberries, grapes, and cherries, among many other crops.

Many of our wild bee species are easy to miss because they are non-aggressive and solitary. Solitary bees are often reluctant to sting, or they may be incapable of stinging. They are often mistaken for flies or small wasps. Common solitary bees include sweat bees, mason bees, digger bees, and leafcutter bees. Solitary bees nest in a hole, such as a cavity in wood, stone, or sandy soil. Each female is a queen who lays a single egg in a chamber of her nest hole, provides a ball of pollen and nectar (called bee bread) for the young to eat after hatching, and seals the chamber. The queen continues in this manner until her entire nest hole is filled with segregated chambers of future bees. She is not particularly prone to defending her nest, and she does not linger to learn of its fate.

Honey bees and a small proportion of native bees, such as bumble bees, are social. Social bees live cooperatively in colonies (hives), which include a queen and a worker caste to defend the nest and provision for the

FACTS ABOUT BEES

- Specific roles for worker bees in a colony include nurses, guards, janitors, nannies, and construction workers, among others.
- Male bees are called drones. Drones are produced for only a brief period for the purpose of mating. At any given time, the majority of individual bees are female.
- Honey bee hives may suffer from colony collapse disorder (CCD). The cause of CCD is still being researched, but appears to be due to a combination of issues: mites, pesticides, disease, and stress from hive relocation.
- The extent to which native bees pollinate Washington and Oregon crops, and even how many types of bee species are involved, is still being explored.
- You can make a nest for native bees out of hollow plant materials (e.g., small bamboo or reeds) tied in a bundle and hung in a sheltered area. For more ideas on native bee houses, see the Xerces Society's website.
- There are no Africanized honey bees in Oregon or Washington.

queen and young. Social bees are more likely to sting in defense of their hive or themselves. While social bees comprise a very small minority of the bee species that we encounter, they are the most recognizable due to their tendency to sting.

WHAT CAN YOU DO?

Physical reactions to bee stings vary based on circumstances, including the individual's response to the venom. Help reduce bee stings while maintaining pollinators on your campus with the following:

1. Avoid wearing bright colors (especially bright blue and yellow) and using perfumed lotions or soaps when bees are present.
2. Do not swat a bee; this may be perceived as a threat, and could incite the bee to sting. Instead, remain calm and back away slowly.
3. To remove a bee that has landed on your skin, gently brush it off, or slide a piece of paper underneath it.
4. Keep bees outside by keeping windows and doors shut—especially on warm, sunny days when bees are more active.
5. Be vigilant when in grassy areas. Avoid blooming clover, dandelion, or other turf weeds in bloom to which bees may be attracted.
6. Report heavy bee activity to your school district's pest manager. In the case of a honeybee hive, suggest they contact a local beekeeper or association to relocate and preserve the colony.
7. Plant a variety of blooming shrubs and garden flowers to attract native pollinators, but keep them away from areas of high foot traffic.

FOR MORE INFORMATION

- *The Xerces Society for Invertebrate Conservation. http://www.xerces.org/*
- *Moisset, Beatriz and Stephen Buchmann. 2011. Bee Basics: An Introduction to Our Native Bees. USDA Forest Service. Found at https://pollinator.org/books.htm.*
- *Centers for Disease Control and Prevention. Workplace Safety and Health Topics: http://www.cdc.gov/niosh/topics/insects/.*
- *The National Pesticide Information Center (NPIC) provides objective, science-based information about pesticides and related topics to enable people to make informed decisions. To contact NPIC, call 1-800-858-7378 or visit http://npic.orst.edu.*

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Common Wasps

ISSUE 7 IPM IN SCHOOLS FALL

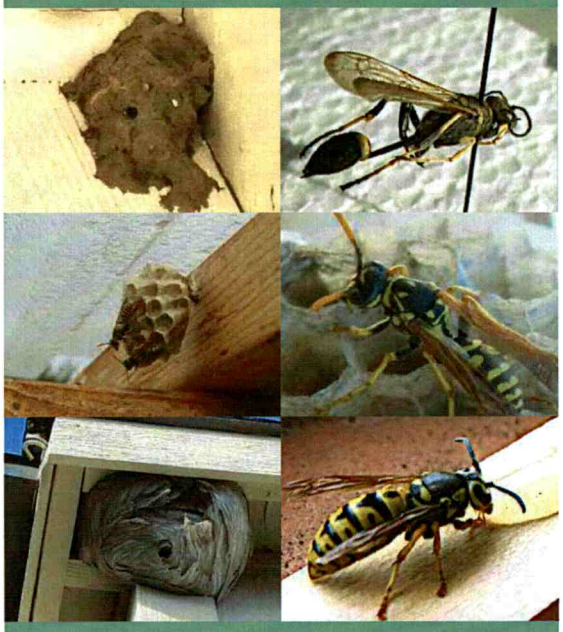

Photo credit: Jennifer L. Snyder

Top row: *Mud dauber nest and mud dauber (Sceliphron sp).*

Middle row: *Paper wasp nest and paper wasp (Polistes dominula).*

Bottom row: *Aerial yellowjacket (Dolichovespula arenaria) nest under an eve, and a western yellowjacket (Vespula pensylavanica) queen whose nest is below ground.*

IPM: Identification First!

To safely, efficiently, and effectively manage wasps in school environments, identification of the wasp must first be made. The most common wasps have very different nests and appearances as seen here. Getting a look at the nest or at the wasp will allow you to decide whether management action should be taken and what that action should be.

Wasps are among the most feared and controversial insects in school environments. The three most common types of wasp around schools are mud daubers, paper wasps, and yellowjackets. Each of these wasp types has different nesting and feeding habits, and varies widely in their level of aggressiveness toward humans. Dealing with these wasps as though they are the same or similar can result in stinging incidents, unnecessary use of pesticides, lost time, and alarmed students and staff.

Each of these three wasp types includes species that are mostly yellow and black in coloration. Their activity begins in spring with a queen who produces anywhere from a few to hundreds of female offspring throughout the spring and summer months, along with a small number of males in mid-to-late summer. They are efficient predators and/or scavengers of spiders, caterpillars, and many other insects. This is where most of the similarities end.

Mud daubers are mostly dark with some yellow in their mid-section and legs. They have a very long, slender body, an obvious threadlike waist, and long legs that hang in flight. Mud daubers are solitary wasps (one queen, no workers). They build a single mud nest that is a combination of dirt, water, and saliva. The nest is often tucked into the upper or lower corners of entryways, usually close to a water source (a leaky faucet, over-irrigated beds, etc.). These wasps are voracious predators of spiders, and are often considered beneficial. Pacific Northwest mud daubers are extremely unlikely to sting, in spite of their aggressive appearance. Mud dauber populations decline in August and September.

Paper wasps usually have yellow antennae, and their body has yellow and black stripes and patterning. Their long, relatively narrow body and long legs that hang in flight make them appear similar to a mud dauber. But paper wasp nests are quite different from a mud dauber's. Nests are begun by the queen in March or April and consist of a single layer of open-faced papery comb that is not enclosed. The nest faces outward or downward, and is often built on the underside of wood materials (playground structures, wood beams, underside of eaves, etc.) or attached to metal (vents, electrical panels, uncapped pipes and handrails, bike stands, etc.). By summer, the paper wasp nest may be oblong or round in shape, up to six inches wide, and may contain up to about 75 workers, in addition to the queen. These workers often prey on tree and turfgrass pests, and are considered beneficial. Paper wasp queens may sometimes overwinter in attics and structural eaves, so it is common to find them indoors the following spring as they try to escape outside. Once a nest is established, paper wasps may sting to defend it.

TIPS FOR DETECTING AND MANAGING COMMON WASPS IN YOUR SCHOOL

School staff and students can help to discourage wasps in school environments and reduce stinging incidents.

1. Report large numbers of wasps seen in a specific area, which suggests a nest or a food source needs to be removed. If a nest is seen, include its description in your report.
2. Notify facilities & maintenance of outdoor water leaks (faucets, hoses, standing water, etc).
3. Pick up rotting fruit from trees to discourage foraging paper wasps and yellowjackets.
4. Use containers with lids and straws for outdoor drinks in late summer and early fall. Keep cheese and meat snacks in a container when outside. Yellowjackets love these snacks as much as kids do.
5. Avoid wearing brightly colored clothing, especially yellow, orange, or red, and using scented lotions and sprays, which may attract paper wasps and yellowjackets.
6. Exercise good judgment. Wasp numbers are highest during late summer and early fall. Be aware of nests and give individual wasps their space. Do not swat at wasps, but do move away from them. The three wasp types discussed here abandon their nest each winter and die or become inactive when cold weather arrives.

A queen rarely stings before her nest is built, and workers do not readily sting when they are far from their nest or without some provocation when near the nest. Paper wasp populations typically decline in August and September.

Yellowjackets have black antennae, and a body that is marked by yellow and black stripes and patterning, similar to the paper wasp. Unlike the mud dauber and paper wasp, yellowjackets have a robust, compact body and fly rapidly with their legs tucked underneath, making them appear more bee-like. One species, the baldfaced hornet, is actually a yellowjacket that is mostly black with a small amount of white patterning. Yellowjacket nests are multiple layers of comb encased in a paper envelope that is round or heart-shaped. Nests grow in both physical size and number of wasps throughout the summer. Yellowjackets build their nest underground, often in old rodent burrows, as well as in rotted logs, railroad ties, and other protected areas at or below ground level. They may also nest above ground in shrubs, trees, or attached to the underside of structural eaves. Less often, they nest in wall voids, attics, garages, or abandoned cars. Nests may be up to a foot or more across by September and contain over a thousand wasps. Yellowjackets begin foraging heavily for carbohydrates (sugar) in late summer and early fall, often feeding on decaying tree fruit. In school environments, yellowjackets get their sweet fix and protein needs from school lunches and beverages, trashcans, etc. Yellowjackets are social and the workers may defend the nest, and may sting bystanders several feet away from the nest without provocation. Yellowjacket populations may persist into late November.

FOR MORE INFORMATION ON WASP MANAGEMENT:

- *Bechinksi E, F. Merickel, L. Stoltman, and H. Homan. Homeowner Guide to Yellowjackets, Bald-Faced Hornets, and Paper Wasps. University of Idaho Extension. Found at:* **www.cals.uidaho.edu/edcomm/pdf/BUL/BUL0852.pdf**
- *Antonelli, A. and P. Landolt. Yellowjackets and Paper Wasps, Washington State University Extension Bulletin EB0643. Found at:* **https://pubs.wsu.edu/ItemDetail.aspx?ProductID=13332&SeriesCode=&CategoryID=&Keyword=eb0643**
- *The National Pesticide Information Center (NPIC) provides objective, science-based information about pesticides and related topics to enable people to make informed decisions. To contact NPIC, call 1-800-858-7378 or visit* **http://npic.orst.edu**.

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"Sugar" Ants

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Pavement ants (Tetramorium caespitum). Photo by Joseph Berger, www.insectimages.org.

IPM: MONITORING

Monitoring for pests is an essential part of an IPM program. Regular checks of pest-prone areas help you detect (and solve) minor problems before they become major ones. Look for damage, feces or other indicators that a pest is present. Common ant "hot spots" are anywhere food or food waste accumulates. Monitoring in the classroom is a simple process – learn where the problem areas are, and check them regularly.

Outdoors, ants are important scavengers and predators, helping to keep our gardens and landscapes clean and tidy. Indoors, however, ants are no picnic. They can become a serious nuisance and may cause sanitation problems. They may bite or sting and have a nasty habit of walking all over your food without wiping their feet. In the Pacific Northwest, the most common kitchen and classroom invaders are pavement ants and odorous house ants. These small pests are sometimes called "sugar ants" due to their attraction to sweet foods. (Carpenter ants and moisture ants, which are considered structural pests, are not discussed in this newsletter.)

Ants are social insects that live in colonies made up of one or more queens (reproductive females) and their offspring. All the ant life stages (eggs, immatures (larvae), pupae, and adult worker ants) will be present in the colony. Ants sometimes establish colonies indoors, but more commonly nest outside the building and enter in search of food. The ants you are most likely to see indoors are workers foraging for food. Pavement ant and odorous house ant workers are typically light brown to black in color and about 1/16" to 1/8" long (around 2–3 mm). You may see a single, wandering "scout" searching for food, or a trail of ants between the nest and a food source. Depending on the season and species, ants may be most attracted to sweet foods or beverages (sugar, honey, or spilled soft drinks), protein sources (meats and dairy foods), or grease and oils.

While ant scouts usually forage alone, they shouldn't be ignored as they will locate food sources and bring all their friends. Ant trails may involve hundreds or thousands of individuals moving back and forth between the food source and the nest, and require attention immediately. Watch for ant trails along walls, under sinks and appliances, even under the edge of carpets. They may lead to spilled food or drinks, garbage cans, or stored food products.

WHAT CAN YOU DO?

Are ants having a picnic in your classroom? Here are some tips to help keep them out, and what to do if they begin marching two by two.

1. **Clean it up!** Ants are attracted to sweets, sugar, grease, protein, and even moisture. Wipe up spills promptly, vacuum or sweep after snack time and parties, and keep those sinks and counters clean! Don't forget to clean under countertop appliances, too. Take the trash out daily and keep the garbage cans clean.

2. **Store it right!** Do you keep food in the classroom or break room? Plastic, paper, and cardboard won't stop pests like ants or cockroaches. Store food in clean, closed containers with tight-fitting lids (snap-top or screw-top with rubber seal).

3. **Rinse and recycle.** Ants are small—they don't need a lot of food, so a crumb or a drop is enough for a feast. Soft-drink cans and soiled food containers are very attractive to foraging ants, so wash with soapy water or rinse thoroughly before tossing them in the recycle bin.

4. **Plants and pets.** Pets or potted plants in the classroom? These can be attractive to ants, too. Plants can become infested with aphids or other honeydew-producing pests, and pet food debris can be an ant buffet. Monitor these attractive situations to prevent problems.

5. **Ants on the move.** If you see a few stragglers wandering through the classroom, you may be seeing the scouts for an ant invasion. Wipe them up with soapy water and a sponge and get rid of them before they report back to the nest. If you see trails of foraging ants, report them! Trails can be mopped up, vacuumed, or cleaned with soapy water and a sponge, but that alone may not solve the problem.

6. **Report the pest problem.** Contact the person at your school district who is responsible for pest management.

IPM FOR ANTS

Exclusion. Keep ants and other pests out by sealing cracks and crevices around windows, doors, wiring, plumbing and foundations. Maintain door sweeps in good condition. Since most ant pests nest outdoors, preventing access to the building is an important control measure.

Sanitation. Keep food preparation and eating areas clean. Rinse or wash recyclable food containers before storing. Empty trash cans daily and keep cans clean inside and out. At least once daily, wipe counters, sinks, and other surfaces that collect food debris. Store food in sealed containers with tight-fitting lids or inside refrigerators and freezers.

Monitoring. Regularly check pest-prone areas, such as kitchens and staff lounges, for indicators of ant problems. Moisture is also attractive to ants, so watch sinks and drains and report leaky plumbing immediately. Maintain a pest sighting log to keep track of where, when, and how many ants are seen.

Physical controls. Wipe up individual ants with a sponge and soapy water and dispose of them. Ant trails may be wiped up, mopped with soapy water, or vacuumed.

FOR MORE INFORMATION:

- *School IPM Resources for ants: http://schoolipm.wsu.edu/ants.html*
- *Odorous House Ant (EB1550E): http://cru.cahe.wsu.edu/CEPublications/eb1550e/eb1550e.pdf*
- *UC IPM Online Pest Notes (Ants): http://www.ipm.ucdavis.edu/PMG/PESTNOTES/pn7411.html (not all information is applicable to PNW.)*
- *The National Pesticide Information Center (NPIC) provides objective, science-based information about pesticides and related topics to enable people to make informed decisions. To contact NPIC, call 1-800-858-7378 or visit http://npic.orst.edu.*

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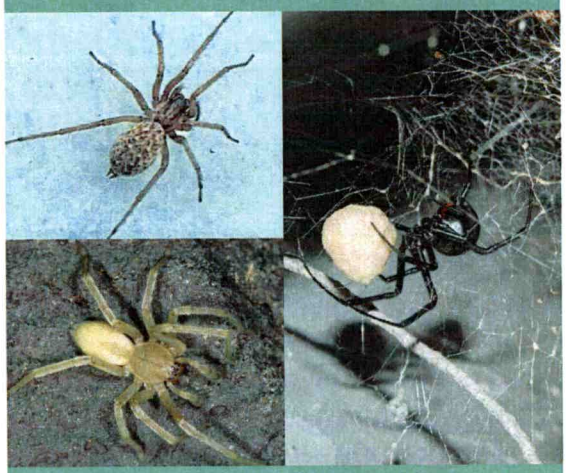
Spiders

ISSUE 8 IPM IN SCHOOLS FALL



Images courtesy of bugwood.org

Clockwise from top left: *Medically important spiders of WA and OR:. Hobo spider; black widow spider (female); yellow sac spider.*

Spider Identification

Most spiders can ***not*** be conclusively identified by "color" or "markings" as these are highly variable, even within a single species. However, accurate ID is important if a bite is suspected. If possible, capture the spider by placing a container over it. Slide a stiff card between the surface and the spider, invert and tap firmly to knock the spider into the container, then seal with a lid. To kill the spider, place the container in the freezer overnight. You may contact your school district's pest management professionals or your local Extension office for assistance with spider identification.

Spiders come in many shapes, colors, and sizes. While their appearance and habits vary widely, spiders have many features in common. All spiders have eight legs. Their wingless body is comprised of two parts—the head region (cephalothorax) and the abdomen—with a narrow waist between the two sections. They lack antennae, but do have structures called pedipalps at the front of the head. Most spiders are capable of spinning silk, which is produced in spinnerets found at the tip of the abdomen.

Spiders are useful predators in the garden, where they feed on pests such as mosquitoes, flies, and moths. Most spiders are relatively harmless to humans; however, they can be a nuisance indoors. Spiders typically enter buildings either by being carried in on items or through cracks and crevices. If you have insect problems, spiders are almost certain to follow. Commonly encountered spiders include cellar spiders ("daddy longlegs"), jumping spiders (active and curious hunters), and orb weavers, who like to build their webs near light sources to capture night-flying insects. Only three spider species in Washington and Oregon are considered medically important: the hobo spider (encountered throughout both states), the black widow (most common east of the Cascade Range and in southwestern Oregon), and yellow sac spiders (most commonly found east of the Cascade Range). Brown recluse spiders are not found in the Pacific Northwest.

Hobo spiders are shy and retiring. In spite of their other common name (aggressive house spider), they are not aggressive and try to escape when disturbed. Found throughout the Pacific Northwest, hobo spiders and their close relatives including the giant house spider build sheet-like webs with a funnel in the center where the spider lies in ambush for its prey. Male hobo spiders tend to wander and are often found in homes and garages in the late summer and early fall. They are poor climbers, so are usually found on the floor in the lower stories of a building. These spiders like dark, rather damp hiding places. Due to the scarcity of well-documented hobo spider bites, not much is known about them. A wide variety of symptoms have been attributed to hobo bites, but many have not been confirmed. Localized tissue death (necrosis) has been reported, but bacterial infections or other health problems may also be involved.

WHAT CAN YOU DO?

1. Teach students to not tease or poke at spiders and to not put their hands in dark crevices without looking first.
2. Maintain tight-fitting window screens. Seal cracks and crevices, including around doors. Brush-type doorsweeps are effective at excluding insects and other pests.
3. Store food products in secure containers with tight-fitting lids. Keep classrooms free of food debris and keep areas under sinks clean and dry. These tactics will help discourage insect pests that spiders may use as prey.
4. Vacuum regularly, including under and behind furniture and in unused corners.
5. Sticky traps can be used to monitor for wandering spiders.
6. Do not store containers, shoes, clothing, or toys on the floor, as spiders may become trapped in these items.
7. Check items brought in from outside storage sheds or garages for spiders or egg sacs.
8. Turn off indoor lights at night to avoid attracting insects to the windows.
9. Pesticides are ***not*** an effective solution for long-term spider management.
10. ***In case of a bite,*** wash the wound site with soap and water. Cold packs may help relieve initial symptoms and discomfort. Consult a doctor for further treatment. If a black widow bite is suspected, seek medical help!

Young giant house spiders are often mistaken for hobo spiders, but these spiders are considered harmless despite their somewhat alarming size.

Yellow sac spiders are primarily garden-dwellers, but these active nocturnal hunters frequently venture indoors. They move quickly and are good climbers. Indoors, they are often found along walls, particularly near the wall-ceiling junction. At night, they may become trapped in bedding or in clothing left on the floor, leading to bites when they are disturbed. Their venom may cause localized tissue death in the vicinity of a bite. Yellow sac spiders are rather aggressive and may bite with little provocation. The bite is often reported to be painful, much like a bee sting.

Black widow spiders are shy, non-aggressive spiders despite their frightening reputation. They tend to bite only when threatened, but will then defend themselves vigorously. They prefer dry, undisturbed, dark places such as crawl spaces, unused corners of garages, stacks of flower pots, and lumber piles. The female black widow builds a messy web with very strong, sticky silk. She remains in her web full-time. The female black widow's venom can be a significant health risk for the very young, elderly, or those with high blood pressure.

FOR MORE INFORMATION:

- *University of Florida IPM (Spiders). http://schoolipm.ifas.ufl.edu/newtp11.htm*
- *University of California Statewide IPM Program. http://www.ipm.ucdavis.edu/PMG/PESTNOTES/pn7442.html*
- *Utah State University (Yellow Sac Spiders). http://extension.usu.edu/files/publications/factsheet/yellow-sac-spiders08.pdf*
- *The National Pesticide Information Center (NPIC) provides objective, science-based information about pesticides and related topics to enable people to make informed decisions. To contact NPIC, call 1-800-858-7378 or visit http://npic.orst.edu.*

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www.ipmnet.org/Tim/IPM_in_Schools/IPM_in_Schools-Main_Page.html

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Nuisance Birds

ISSUE 11 IPM IN SCHOOLS WINTER

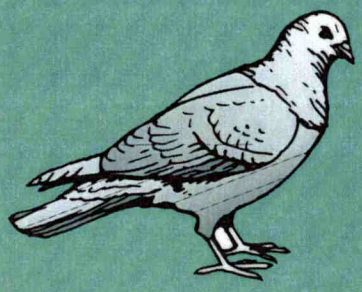

Figure 1. Pigeon or rock dove.

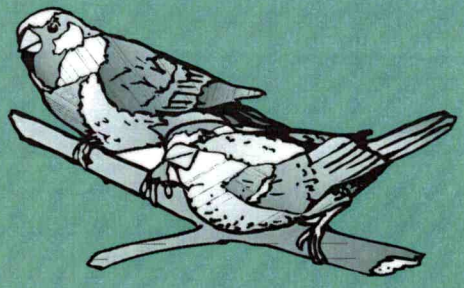

Figure 2. English sparrows.

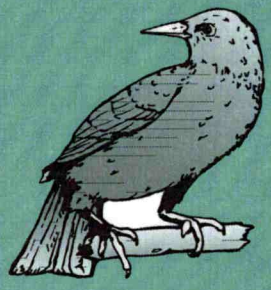

Figure 3. European starling.

Images courtesy of the Department of Communications and Marketing, Virginia Cooperative Extension, Virginia Tech.

We all enjoy birds in our gardens. However, while many birds are adapted to living around humans, three invasive species frequently become pests: pigeons (rock doves), English or house sparrows, and European starlings. Pigeons and sparrows scavenge in parking lots, picnic areas, and parks, while starlings are more likely to be seen in lawns and mowed fields where they forage for seeds and insects.

PIGEONS. Pigeons collect in flocks on structures with ledges, outcroppings, or beams such as those found in covered play areas and entryways. Color varies, but most pigeons are gray with iridescent neck feathers, red legs, and a black band on their tail. Pigeons feed on grain, garbage, and everything in between. They exhibit extreme site loyalty, do not migrate, and have excellent homing instincts, making it difficult to manage pigeons by trapping and relocation. Scare tactics are not particularly effective for pigeons, as they quickly acclimate to owl or hawk figures, noises, and other threats.

ENGLISH SPARROWS. English sparrows are medium-sized songbirds. The male has a black bib and white cheeks, while the female is gray-brown all over. They feed on grains, seeds, fruit, and human food debris. They build messy nests in sheltered locations, including on light fixtures, signs, and building ledges. Sparrows do not migrate, so are seen year-round in most areas. They generally do not respond very well to scare tactics, but nest removal and bird-proofing strategies are effective.

EUROPEAN STARLINGS. Starlings have short tails and chunky bodies. Males are glossy black with speckled feathers, while females are dull brown. Both have bright yellow beaks in the spring. These aggressive, noisy pests crowd out native birds and devour grain, fruit, seeds, and insects in gardens and fields. Starlings build messy nests in cavities such as soffits, air vents and under loose-fitting roofing. In urban areas, starlings may be a problem when they flock together to migrate or overwinter, returning to favorite roosts year after year. They quickly acclimate to repeated scare tactics, so those tactics must be varied often for best results. Branch thinning and tree removal as well as exclusion maintenance can be helpful.

BIRD MANAGEMENT STRATEGIES

English sparrow, pigeons, and European starlings are *not* protected by the Migratory Bird Treaty Act, so you have more management options. Be sure to check with your state's Department of Fish and Wildlife for current restrictions. (Native sparrows, pigeons, and doves *are* protected.)

1. Remove water and food sources, such as bird baths, feeders, and trash. Make sure outdoor trash cans are lidded. Pick up trash and food debris daily in outdoor lunch/snack areas.
2. Remove shelter by thinning or removing trees and shrubs near buildings.
3. Nest removal or destruction will help discourage sparrows and pigeons. There may be public relations issues associated with nest removal.
4. Do not handle dead or injured birds, or bird droppings.
5. Screen vent openings and holes using ¼-inch rust-proof wire mesh.
6. Mount wood, metal, or Plexiglas on ledges at a 45° angle.
7. Mount signs flush to walls or block spaces behind them.
8. Screen exposed roof beams and rafters with netting.
9. Place spikes, porcupine wire, or coiled bird wire along ledges. This may not be as effective for smaller birds such as sparrows. Several straight wires or monofilament lines may also be used, provided the spacing between the wires is narrow enough to prevent landing.
10. Apply sticky repellents along beams and ledges. For porous surfaces such as masonry, mount a strip of tape on the surface and apply the repellent to the tape. Sticky repellents become less effective as they age and are less useful in dry, dusty environments. NOTE: Bird repellents (such as gels) are classified as pesticides, so you must follow all applicable laws including posting and notification requirements when using them.

BIRD-RELATED HEALTH CONCERNS

Messy nests, feather debris, slippery and unsightly droppings, corroded surfaces, and potential disease hazards are all problems created by birds when they decide to occupy human structures. Birds also carry parasites, bacteria, and viruses which can cause illnesses in humans and other animals. Some of the most significant risks are listed below.

1. Mites, lice, and fleas can bite humans when they leave their bird hosts.
2. Bird droppings may be contaminated with bacteria such as Salmonella, which can cause food-borne illness when ingested.
3. The droppings may also cause lung infections, such as Cryptococcosis and Histoplasmosis, if inhaled.
4. Birds carry pathogens—including West Nile Virus—which can be transmitted to humans by mosquitoes.

Always wear appropriate protective equipment such as gloves and respiratory protection when removing nests or cleaning up bird debris or feces. Do not inhale dust from nests or droppings, and wash contaminated clothing and skin thoroughly after contacting bird waste.

FOR MORE INFORMATION

- *University of Nebraska-Lincoln (Urban Pest Birds). http://http://elkhorn.unl.edu/epublic/live/g2024/build/g2024.pdf*
- *Internet Center for Wildlife Damage Mgt. http://icwdm.org/wildlife/birds.asp*
- *eXtension (Cooperative Extension Online). http://www.extension.org/pages/8664/wildlife-damage-management:-birds*
- *Washington Department of Fish & Wildlife (Birds). http://wdfw.wa.gov/living/birds.html*
- *Oregon Department of Fish & Wildlife (Birds of Oregon) http://www.dfw.state.or.us/species/birds/*
- *The National Pesticide Information Center (NPIC) provides objective, science-based information about pesticides and related topics to enable people to make informed decisions. To contact NPIC, call 1-800-858-7378 or visit http://npic.orst.edu.*

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