

# UNPROTECTED BIRDS



Figure 1. House sparrow (male). Photo by Stephen M. Vantassel.



Figure 2. European starling. Photo by Ron Johnson.



Figure 3. Pigeon. Photo by Erin Bauer.

## OBJECTIVES

1. Demonstrate ability to educate clients about control options.
2. Provide a diagram of typical sets used to capture unprotected birds.
3. Identify various risks involved with buildings infested with invasive birds.

## SUMMARY OF DAMAGE PREVENTION AND CONTROL METHODS

### HABITAT MODIFICATION

Remove bird feeders

Discourage public feeding

Eliminate standing water

Cut down trees, or trim up to 1/3 of branches to open up the canopy.

### EXCLUSION

Close external openings to buildings

Screen eaves, vents, windows, doors and other openings with ¼ inch mesh hardware cloth.

Exclude nesting sites with appropriate sized mesh wire or netting.

Ledge products, including spikes, wire, coils, and electric shock

### FRIGHTENING DEVICES

Propane Cannons

Distress calls

Mylar-style tape

Scare-eye balloons

LRAD

Avitrol®

### REPELLENTS

Tactile: Polybutenes and capsaicin based products are available

Methyl anthranilate

### FERTILITY CONTROL

OvoControl P® fertility control (Pigeons only)

### TOXICANTS

Starlicide™ Complete

DRC-1339- used under supervision of USDA-APHIS-ADC only

### FUMIGANTS

Not applicable

### SHOOTING

.177 caliber pellet guns

Shotgun, No. 6 shot

.22 caliber rifles

### TRAPPING

Multiple capture cage traps

Single-bird traps

Rocket netting

Mist netting

### OTHER CONTROL METHODS

Nest removal

Falconry (Abatement or hazing)

Remove isolated bird in building

### SPECIES PROFILES

#### IDENTIFICATION

1. House sparrow (*Passer domesticus*)
2. European starling (*Sturnus vulgaris*)
3. Pigeon (*Columba livia*) also known as feral pigeon and rock dove

#### PHYSICAL DESCRIPTION

This module describes the biology and control techniques for three bird species that are not native to the US. As exotics, these three species are not protected by the North American Migratory Bird Act. State and local laws may afford them some protection.

#### HOUSE SPARROWS

House sparrows are the smallest of the birds under review, about 6½ inches long and weighing less than an ounce (Figure 1). Both genders are mostly brown with black streaks above and grayish below. Males have a black throat-bib flanked by white spots. Immature male house sparrows will look like females. Do not confuse house sparrows with native

sparrows (i.e., chipping sparrow, grasshopper sparrow, song sparrow) that are beneficial and protected by federal and state regulations.

### STARLINGS

Starlings are robin-sized, short-tailed black birds about 8½ inches long and weighing about 3 ounces. Plumage color changes with gender and season (Figure 2). Summer adults are glossy black with light speckles; winter birds have larger speckles making it look more brownish from a distance. Female starlings typically have less color and have more cream on the tips of their feathers. The dark pointy beak becomes bright yellow in spring. Both males and females have pinkish/red color on their legs. Other native “black birds” inhabit the US (e.g., red-winged blackbird, yellow-headed blackbird) and are protected by federal and state regulations.

### PIGEONS

Pigeons are the largest of the three birds; they are about 12 inches long and weigh 12 to 17 ounces. They typically are blue/gray with two black bands on the wings and 1 black band on the tail that contrasts with its white rump (Figure 3), though color morphs range from all white to mottled brown to sooty black. They are larger than the tawny brown mourning doves that are native to the US and protected by federal and state regulations. Several other protected native dove species are found in the southern and western US.

### SPECIES RANGES

All three species (Figures 4 to 6) are found throughout the US, particularly where there are people and human-altered environments.



Figure 4. Range of the house sparrow in North America. Image by Stephen M. Vantassel.



Figure 5. Range of the European starling in North America. Image by Stephen M. Vantassel.



Figure 6. Range of the pigeon in North America. Image by Stephen M. Vantassel.

#### VOICE AND SOUNDS

Sparrow calls are easily identified by a loud and repetitive “chirp.” Starling calls are quite diverse as they can mimic the sounds of other birds. A pigeon call consists of a soft and throaty cooing.

#### TRACKS AND SIGNS

Figures 7 to 9 represent tracks of house sparrows, starlings, and pigeons. All three species are diurnal and comfortable around people, making their presence easy to detect.

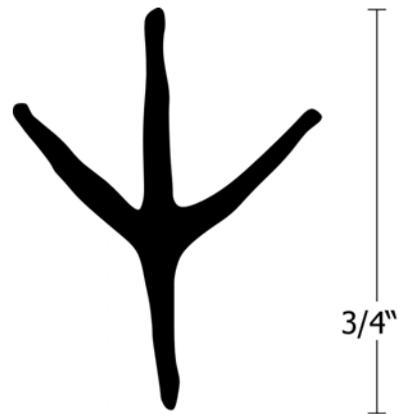


Figure 7. House sparrow tracks. Image by Dee Ebbeka.

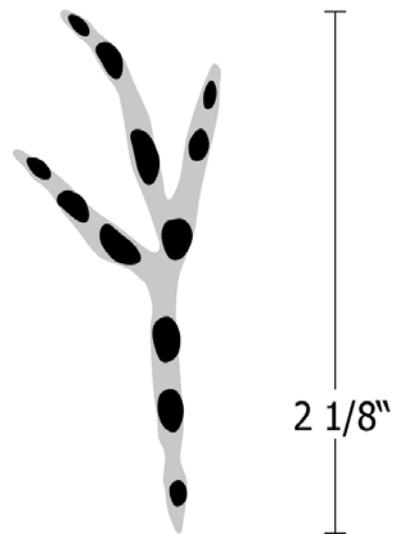


Figure 8. Starling tracks. Image by Dee Ebbeka.

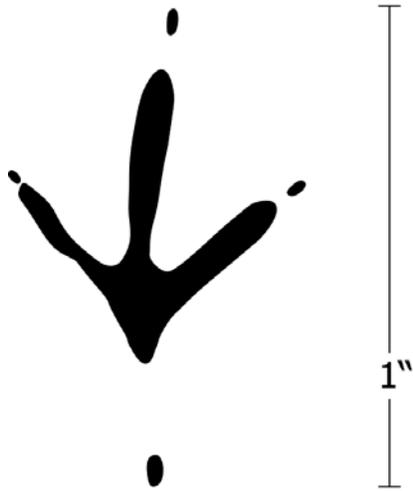


Figure 9. Pigeon tracks. Image by Dee Ebbeka.

## GENERAL BIOLOGY

## REPRODUCTION & NESTING

**House Sparrows.** Nests are messy globular piles of grasses, string, paper, and twigs that fill the void or crevice where the nest was placed (Figure 10). Females lay three to nine eggs in a single clutch and can repeat this up to five times a year beginning in early April.



Figure 10. House sparrow nest with male house sparrow standing by on the "S". Photo by Stephen M. Vantassel

**European Starlings.** Starling nests are much less conspicuous and usually associated with a cavity. Sometimes cavities inhabited by starlings can be identified by the fan-shaped spray of feces on the wall below the cavity. While preferring to construct nests in cavities, starlings have been known to construct very large nests as they try to "fill" a void (Figure 11). House sparrows also do this. Females lay four to six eggs per clutch and may nest twice per year.



Figure 11. Starling nest in an attic. Photo by Paul C. Hay.

**Pigeons.** Mating occurs year-round but most of the five to six broods per year are raised during the spring and summer when temperatures are above freezing. Nests are usually found on sheltered ledges and consist of sticks and hardened feces (Figure 12). Females usually lay two eggs per clutch but can vary from one to three eggs.



Figure 12. Simple pigeon nest with two eggs. Photo by Stephen M. Vantassel.

## BEHAVIOR

In winter, starlings form large flocks causing problems with noise and droppings.

## HABITAT

All three species utilize urban and rural environments. Starlings cause the most damage in rural settings.

## FOOD HABITS

All three species eat grains, but each has its own particular dietary preferences. Pigeons require access to water (approximately 1 ounce per day) and grit to help them grind their food for digestion. Sparrows eat fruit and fat. Starlings will eat fruit as well. Starlings and sparrows feed on insects (e.g., beetles, moths, and butterflies), particularly during the nesting season.

## LEGAL STATUS

While the Migratory Bird Treaty Act of 1918 does not afford protection to these non-native species, some states or communities may restrict their control. Before initiating control methods, accurately identify the offending species as they (especially house sparrows) can be easily confused with protected native species. Always consult local laws regarding control and use of firearms. We encourage the use of recommended techniques to control these unprotected species and to refrain from novel control methods that may cause unnecessary suffering and impacts to non-target species.

## DAMAGE IDENTIFICATION

### DAMAGE TO STRUCTURES

Bird droppings are easily noticeable by the tell-tale white stains. These droppings are acidic and can deface and accelerate deterioration of building

materials. Accumulated droppings can plug the gutters of roofs causing water damage and the weight of droppings can threaten the collapse of ceilings.

Nests can obstruct exhaust vents. Sometimes nests cause fires from overheated fans.

### DAMAGE TO PETS AND LIVESTOCK

These birds do not pose threats to pets, but house sparrows and starlings will compete with native birds for food and harborage.

These species consume grain and contaminate it with feces, raising the risk of disease transmission.

### DAMAGE TO LANDSCAPES

Starlings can damage turf when they are looking for insects. Dropping-covered sidewalks are aesthetically unpleasing (Figure 13).

Starlings damage cultivated fruits such as grapes, peaches, blueberries, strawberries, figs, apples, and cherries. They also can damage ripening corn.



Figure 13. Droppings of starlings. Photo by Stephen M. Vantassel.

## HEALTH AND SAFETY CONCERNS

Accumulated droppings may weaken bridges or other structures by their weight and acidic nature. Around airports, flocks of birds pose air strike threats to airline safety. Droppings also present the risk of disease transmission as well as being unsightly. In particular, soils contaminated with droppings encourage the growth of the fungus responsible for causing histoplasmosis.

All three species host infectious diseases, including some that can harm humans, such as encephalitis. While bird droppings provide suitable conditions to grow the fungus that causes histoplasmosis, the birds themselves do not appear to excrete the fungus. (Bat droppings, however, often host the fungus). House sparrows can carry salmonellosis, psittacosis, Newcastle disease and various parasites. Starlings have transmitted encephalitis (through the mosquito as the vector) and ornithosis. Pigeons can spread Newcastle disease, encephalitis, toxoplasmosis, salmonellosis, ornithosis, and cryptococcosis.

The role of these species in transmitting diseases to humans is not understood as well as it is for livestock. Nevertheless, people can reduce their risk of infection by avoiding contaminated areas or by wearing proper protection during bird control and fecal cleanup. Visit <http://icwdm.org> for information on proper safety guidelines. Although rare, people in areas with active roosts can suffer bites from mites that are associated with the birds.

## NUISANCE PROBLEMS

All three species are active during daylight and their presence is often noticeable.

## DAMAGE PREVENTION AND CONTROL METHODS

## INTEGRATED PEST MANAGEMENT

## TIMING, ECONOMICS, AND METHODS

These birds can be controlled whenever they become a problem. Take care during periods when flightless young may be present.

As invasive species, these birds have negatively impacted native bird species through competition for habitat and resources. For example, house sparrows and starlings often destroy the nests of native bluebirds and occasionally kill the adults. Aside from problems with individual birds, large flocks of these birds raise the most ire amongst humans. Problems can range from excessive noise to large quantities of excrement deposited on sidewalks, cars, and buildings. For example, pigeon excrement on gas station canopies can clog downspouts leading to their collapse during rainfall. The acidic nature of bird droppings also degrades marble statues and building materials, potentially threatening structural integrity. Conversely, these birds perform valuable services in removing food waste and/or eating harmful insects. Many people enjoy feeding birds and raising pigeons for fun, racing, and show. Pigeons with leg bands should be considered personal property, not feral.

## HABITAT MODIFICATION

Remove sources of food and water to reduce the attractiveness of the property to birds. Secure trash in covered containers to prevent birds from accessing waste food. Prohibit the feeding of birds on your property and encourage officials to enact local ordinances to ban feeding birds in public areas, such as city parks, bus stops, and street corners. Reduce the availability of free water by repairing leaky faucets, clearing drains, and grading surfaces to remove water. Ensure that water from condensers of air conditioners does not pool on roofs or the ground. Angle gutters sufficiently to permit proper drainage.

Birds are attracted to trees with dense leaf cover and large numbers of branches in the winter.

Regular pruning of up to  $\frac{1}{3}$  of the branches can discourage birds from using trees as roost sites (Figure 14). Secure the services of a certified arborist for pruning landscape trees. Contact an electric company if trees are near power lines.

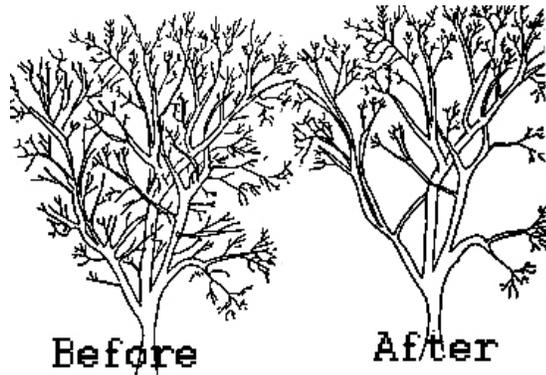


Figure 14. Pruning branches helps reduce the tree's attractiveness to birds. Image by PCWD.

## EXCLUSION

A variety of devices are available to prevent birds from perching and otherwise gaining access to structures. All openings over  $\frac{3}{4}$  inch need to be covered to exclude house sparrows, the smallest of these three species of nuisance birds. This module will only provide a brief description of the major categories.

**Netting.** Half-inch weave nets will prevent all three species from gaining access to a location. Netting is relatively labor intensive, but it is often the best way to prevent birds from accessing rafters and building frontage that have too many ledges and edges to be managed by ledge products (Figure 15). Zippers allow nets to be used in areas where access is needed such as doorways and lights.



Figure 15. Netting was used to prevent birds from accessing this porch. Photo by Unknown.

**Ledge Products.** These devices prevent birds from roosting on flat surfaces. The non-electric products include, spikes (Figure 16), wires, coils, 45 degree angle inserts, and specialty products.

Electric shock products (Figure 17) may be powered by solar chargers or electrical outlets. When birds land, their feet complete the connection discharging a mild shock, causing them to flee.



Figure 16. Nixalite® (bottom) and CatClaw® (top) are spiked products to prevent bird roosting on ledges. Photo by Unknown.



Figure 17. Bird Shock Flex Track®. Photo by Bird Barrier Inc.

## FRIGHTENING DEVICES

Several devices are available that employ audible and/or visual stimuli to frighten birds. Frightening is most effective when a variety of tactics are used before birds have habituated to the site. Frightening rarely provides long-term reduction in damage as birds become accustomed to devices that do not change over time. Vary the timing, placement, and selection of frightening devices. A wide variety of tools are available, such as distress calls, Mylar® tape (Figure 18), Mylar® balloons, owl eye balloons, predator kites, and owl effigies.



Figure 18. Irr-itape® is a mylar-style tape used to

frighten birds. Image courtesy of Bird-x. .

Shell crackers and other pyrotechnics are among the most effective of the devices, but the explosive nature of these projectiles limits their urban use. Always consult local authorities before using pyrotechnics. Avoid ultrasonic devices, as no reliable evidence indicates that they are effective.

LRADs (Long Range Acoustic Device) project a high decibel sound up to 153 dB out to 200 to 300 meters. The further the animal is from the source of the sound, the lower the decibel. LRADs are useful for hazing birds out of trees or off of surfaces.

## REPELLENTS

**Tactile Repellents.** Sticky gels can be used to prevent birds from perching on ledges and other horizontal surfaces. Avoid applying gels directly to surfaces, as they can be difficult to remove. Instead, cover surfaces with wood, plastic, or tape and apply gels on the temporary surface. Applications in areas protected from blowing dust and dirt will maintain their repellency for a longer period of time. Follow product labels carefully as over-application can trap small birds that land on the gel. Even pigeons can be “grounded” if the gel gets into the flight feathers. Be sure non-target birds are not likely to come in contact with the repellent. Choose polybutene gels suitable for temperatures above 110°F, if treating sun-exposed ledges.

**Fogging.** Methyl anthranilate (MA) is an oil-based chemical derived from grapes that when aerosolized irritates birds. In sufficient concentrations, the repellent is effective in dispersing all species of birds. It is most useful for dispersing birds roosting in trees and in confined areas, such as hangers, warehouses, and electrical substations. Other than a lingering grape odor, MA is believed to pose little risk to humans as it has been used as a food additive for Kool-Aid® and other processed foods for decades. Use a thermal fogger to rapidly disperse birds

roosting in trees and open areas. Use cold foggers and haze generators for long-term control inside buildings and areas where a buildup of MA on surfaces would present a hazard of slipping for employees.

**Frightening Repellents.** Avitrol® is a frightening agent sometimes used in bird work. The active ingredient is 4-aminopyridine. Birds that eat the treated pellets begin to act erratically and send out distress signals to other birds, causing them to flee. Death usually follows for those birds that eat the treated bait. Due to the risk of Avitrol® to protected birds, only certified pesticide applicators can purchase and apply the product. A series of procedures must be followed when using Avitrol®, including pre-baiting and removal of bait if non-target birds are observed in the area. The behavior of treated birds can be quite disturbing to onlookers, though research suggests that treated birds are not in any physical pain. Nevertheless, applicators should choose locations, bait concentrations, and time of treatments to reduce potential negative public reaction. Although the risk of secondary poisoning is quite low, dead birds should be picked up, placed in a plastic bag, and disposed of with regular municipal waste.

## FERTILITY CONTROL

OvoControl P® prevents pigeon eggs from hatching, thereby interrupting the reproductive cycle. Female pigeons that consume 5 grams of bait per day (1 ounce/5 pigeons) are effectively sterilized as long as they continue feeding on the product. Reports indicate that populations treated with OvoControl P® decline by approximately 50% annually under typical conditions. One pound of bait treats 80 birds per day. Labor costs can be reduced by installing low cost automatic feeders. Fertility control should only be considered in situations that do not require an immediate and dramatic reduction in pigeon numbers. Large sites with multiple structures and a high concentration are generally the best candidates. OvoControl P® can be combined with

live trapping if an immediate population reduction is required. OvoControl P® is an unrestricted pesticide product and does not require licensing (except in New York State).

## TOXICANTS

Starlicide™ Complete is an avicide developed for starling control. Treated birds experience kidney failure and usually die within one to three days after feeding, often at their roost. Due to the delay in mortality, the toxicant is metabolized and scavengers are unlikely to experience secondary poisoning. Dead birds should be picked up at roost sites and disposed of properly to reduce negative public reaction. You can dispose of birds by incineration or burial at least 2 feet underground and 200 feet from sources of water. Never expose bait where non-target birds can feed on it. Only certified pesticide applicators can purchase and apply Starlicide™ Complete. A series of procedures must be followed when using the toxicant, including: 1) determine where birds are feeding, 2) pre-bait with seed or any type of starling food for four days, 3) if non-targets are not observed at the baiting site, 4) switch the pre-bait with Starlicide™. After the birds have fed freely on Starlicide™, observe for two to three days to determine if the population has decreased. Carefully follow all label recommendations when using any pesticide.

## FUMIGANTS

No fumigants are registered for control of these species.

## SHOOTING

Populations of problem birds can be reduced immediately through shooting. Use .177 caliber or .22 caliber rifles. Shoot at night, when the birds are roosting, as several birds can be shot before the remaining birds become startled and leave. Shotguns are useful when controlling large flocks and/or when birds are in flight. Birds do not have to be shot at

the site of the problem. Observation of their flight patterns will reveal locations where they can be shot safely and effectively. Check local ordinances before shooting. Always follow strict shooting safety guidelines.

## TRAPPING

Traps (Figure 19) provide an excellent form of control in situations where other methods are not feasible or risk harm to protected species. Traps range from simple single-capture devices to multiple-catch traps capable of catching dozens of birds. Patience and persistence are required, particularly when dealing with large flocks of well-fed birds. Place traps where birds can easily see them, such as rooftops and raised platforms. When trapping large flocks, improve success by leaving a few decoy birds inside multiple-catch traps to lure others. Ensure that decoy birds have access to water and food and are protected from the elements. Check traps and remove excess birds daily.



Figure 19. Repeating traps for pigeons. They are partially covered and include plenty of food (with accompanying grit) and water. Photo by Stephen M. Vantassel.

Use of nest-style traps can be effective for sparrows and starlings (Figure 20) inside structures.

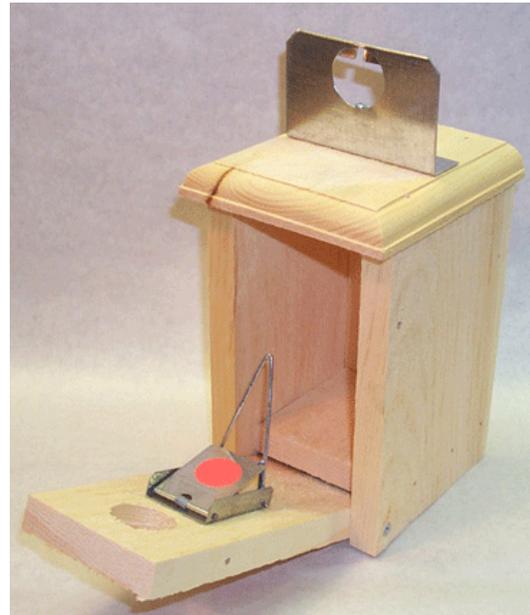


Figure 20. Sparrow trap bird house. Photo by Wildlife Control Supplies. format

A net gun is also available that uses compressed air to launch a net. This device can be very useful in capturing flocks in open areas such as parking lots or fields. Mist nets can also be used to trap sparrows, but need to be checked frequently for non-target species that may be caught.

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## HANDLING

## RELOCATION

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In rescue situations (e.g., from chimneys or basements) on-site release of birds is recommended provided the entrance has been secured properly.

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## TRANSLOCATION

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Translocation of pigeons is not recommended because of their homing ability. Pigeons can fly hundreds of miles and return to the original flock. Translocation of sparrows and starlings is not practical or recommended.

## EUTHANASIA

Carbon-dioxide is the preferred method of euthanasia for these birds. All birds expire relatively quickly in a rich carbon-dioxide environment. Wringing of the neck is another option for euthanasia. Grasp the bird firmly in one arm, and with the other grasp its head between thumb and index finger. Pull and twist in a quick jerk to break the neck.

## DISPOSAL

Refer to Volume 1 of the National Wildlife Control Program and your state regulations regarding carcass disposal.

## OTHER CONTROL METHODS

### NEST AND EGG REMOVAL

The nests of house sparrows and pigeons are conspicuous and can often be easily removed to reduce reproduction in these problem species. Nests of starlings typically are in cavities and are much less obvious. The nests, eggs, young, and adults of these species are not protected by federal law. Use a ladder or a long pole with a hook at the end to reach nests that are high off the ground. Always use caution when setting and climbing ladders and reaching for nests, especially in the vicinity of overhead wires. To avoid contact with nest mites and lice, use gloves and place nesting material and eggs in a plastic bag for disposal. If young chicks are present, quickly euthanize them with carbon dioxide, cervical dislocation, or thoracic compression. Details on euthanasia can be found at <http://icwdm.org>. Most pest birds are quick to rebuild nests, often in the same location, so block bird access to the nest site or be persistent and prepared to remove nests and eggs repeatedly from spring through fall.

## FALCONRY-BASED BIRD ABATEMENT

Raptors (Figure 21) have been used to frighten birds from larger areas such as airports. At harvest time, invading flocks of pest birds can decimate crops, especially grapes, blueberries and cherries. Falconry can scare off those pest birds much more effectively than man-made techniques such as shotguns, visual deterrents or noisemakers. While their presence immediately disperses birds, long-term control can only be achieved by regular visits by a falconer. It is a natural technique that is part of the balance of nature. It is chemical-free and non-polluting. Perch poles and nest boxes to attract raptors have not been proven to be effective. Abatement falconry describes a traditional falconer using specific falconry techniques for the purpose of pest management. Unlike raptors trained for sport or hunting, abatement raptors are trained to continually haze instead of kill pest birds.



Figure 21. A captive bred Harris's hawk on pigeon patrol at an apartment building. Photo by Michael Beran.

## LONE BIRD IN STRUCTURE

Birds sometimes get inside buildings and are unable or unwilling to leave. These situations can be quite difficult to resolve, particularly when in a public place such as big-box stores and supermarkets.

Whenever possible, restrict the area in which the bird can fly. Birds tend to fly to light so darkening an

area except for the way out will often encourage a bird to fly the right way (unless the bird is habituated to the location). The use of hand nets may work, but the bird is often able to fly around it. Mist nests can be very effective but require regular monitoring to prevent bird deaths. In many circumstances, traps and shooting will be the only viable options.

## ACKNOWLEDGMENTS

### AUTHORS

List names of authors.

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### EDITORS OF THE NWCTP

Stephen M. Vantassel, Paul D. Curtis, Scott E. Hygnstrom, Raj Smith, Kirsten Smith, and Gretchen Gary

### REVIEWERS

- Anonymous reviewer
- Michael Beran, All Animal Control of Northwest Louisiana
- Lynn Braband, Cornell University
- Rob Fergus, Bird-B-Gone, Inc.
- Mike Mengak, Warnell School, University of Georgia

## RESOURCES

### KEY WORDS

Wildlife, wildlife control, damage management, nwco

## ON-LINE RESOURCES

<http://pcwd.info>

<http://icwdm.org>

## QUESTIONS FOR REFLECTION

1. List some reasons why controlling bird damage is so difficult.
2. Explain to a client why her bird feeder needs to be removed during control activities.
3. Explain the process for trapping a flock of birds.
4. What are some of the risks to having large flocks of birds roosting in the backyard?

## OBJECTIVE QUESTIONS

1. Pigeons mate \_\_\_\_\_.
  - a. every other year
  - b. in early spring
  - c. once in Jan/Feb
  - d. twice a year
  - e. year-round
2. Starlings mate \_\_\_\_\_.
  - a. every other year
  - b. in early spring
  - c. once in Jan/Feb
  - d. twice a year
  - e. three times a year
3. House Sparrows mate \_\_\_\_\_.
  - a. every other year
  - b. in early spring
  - c. once in Jan/Feb
  - d. twice a year
  - e. three times per year
4. Match the technique with the equipment.
  - a. spikes
  - b. polybutene
  - c. audible distress sounds

\_\_\_\_\_ Exclusion

\_\_\_\_\_ Repellent

\_\_\_\_\_ Frightening

## DISCLAIMER

Implementation of wildlife damage management involves risks. Readers are advised to implement the safety information contained in Volume 1 of the National Wildlife Control Training Program.

Some control methods mentioned in this document may not be legal in your location. Wildlife control providers must consult relevant authorities before instituting any wildlife control action. Always use repellents and toxicants in accordance with the EPA-approved label and your local regulations.

Mention of any products, trademarks or brand names does not constitute endorsement, nor does omission constitute criticism.