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# MANAGEMENT OF PEST BIRDS IN URBAN ENVIRONMENTS

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A number of bird species may cause nuisance or damage problems in urban areas. These include European starlings (*Sturnus vulgaris*), house sparrows (*Passer domesticus)*, feral pigeons or rock doves (*Columba livia*), and others. Recently, increasing numbers of resident Canada geese (*Branta canadensis*) have resulted in conflicts in urban areas, particularly around golf courses, parks, and developments that have lakes or ponds surrounded by grass.

Bird damage management programs are increasingly expected to provide effective solutions in a humane and socially acceptable way. Management approaches and products are affected by clientele preferences and public opinion nationwide, which, along with small markets, have contributed to the loss of some products but the availability of some new ones. Such trends emphasize the need in management programs to understand the problem species, situation, and control options. Specific application of various techniques will vary depending on the type of problem, bird species implicated, and other factors.

## Relevant Biology

European Starlings are wide-ranging. In flocks outside the breeding season, they may commonly fly 5-10 miles between roosting and feeding sites, and may fly up to 50 miles each way. Because they are highly mobile, starlings, compared to house sparrows or pigeons, can more easily be dispersed or moved using frightening or dispersal techniques. During the breeding season, starlings nest in cavities, including cavities or small openings in buildings. Adult starlings are black, light speckled, robin-sized birds. Their medium-length bill is yellow during the breeding period (January-July) and dark at other times. The juveniles are pale brown to grey. The tail is short, and the wings have a triangular shape when outstretched in flight. Starlings eat a variety of foods, including insects, especially grubs from near the soil surface, fruits, seeds, livestock rations, and food found in garbage.

House sparrows and pigeons nearly always live in close association with humans. Unlike starlings, they generally fly only short distances in their normal activity patterns. Thus, these species are generally less responsive to frightening or dispersal programs intended to move them from an area. House sparrows nest in cavities, crevices, and ledges in and around structures and sometimes in vegetation. House sparrows may hatch 3 broods/year. Their foods are mostly seeds and grains. Pigeons nest on ledges or other flat perch areas in and around structures. Pigeons can have several broods per year. Their foods are seeds and grains.

Canada geese were once primarily migratory but increasing numbers have become permanent residents in urban areas where they are attracted to lakes or ponds surrounded by open grassy areas. Canada geese are grazers, so the grass provides attractive food, especially if it is fertilized, and open areas allow them to observe potential predators. Their diet also includes lake vegetation, grains and other foods from people. In summer, geese molt their feathers and become flightless for about a month, a time when they are more easily captured.

**Legal Status**

European starlings, house sparrows, and pigeons (rock doves) were introduced as exotics into the United States and are not protected by federal laws, nor, in most cases, by state laws.
In contrast, most other species are protected by state and/or federal laws. Canada geese are protected under the federal Migratory Bird Treaty Act, an international treaty with Canada, Mexico, and certain other countries. Protection includes the birds, their feathers, eggs, and nests. State or local laws may provide additional protection or restrictions on management methods. If you have questions on legal status, check with state wildlife officials before beginning a control program.

**Bird Damage Concerns**

House sparrows, pigeons, and starlings cause problems around businesses, homes, public buildings and other structures because of their droppings, feeding, roosting, and nest building activities; associated public health concerns; and other factors. Canada goose droppings and feather litter on golf courses, lawns, school grounds, and in parks can become excessive and interfere with walking, sitting, picnicking, and other uses. Canada geese produce about a pound of droppings per day so the amount of fecal material from large flocks can be substantial. Their feeding can damage turf and excessive droppings over-fertilize lawns. Droppings in water may lead to algae growth and possibly fish kills, and water contamination poses health concerns, particularly when in municipal water supplies.

**House sparrows, pigeons, European starlings - Damage Prevention and Control**

**Exclusion** – Normally, the most effective and lasting method to deal with birds nesting, feeding, or roosting in or around structures is to exclude them from the site – build them out. Exclusion physically separates birds from the problem site and effectiveness remains as long as the exclusion is in place. Considerable growth has occurred in the commercial availability of exclusion tools, devices, and techniques, and some sources are listed at the end.

Around structures, repair broken windows or doors and close all other access holes larger than 3/4 inch. Close nesting space behind fixtures on buildings, outside air conditioners, and around light fixtures. Such exclusion sometimes seems difficult initially, but often is quite feasible with creative thinking and innovative use of building materials. Heavy plastic or rubber strips hung in open doorways have been successful in keeping birds out while allowing people and machinery to enter. Where birds are perching or nesting on ledges, place a board, metal, clear plexiglass, or similar covering over the ledge at a $45^0$ angle. Porcupine wires are metal or nylon prongs that stick out at many angles and can be used to prevent use of various perch sites. Bird netting is useful for excluding birds from areas such as walkways, under eaves, or ceiling areas of buildings. Netting can be attached with velcro to allow easy access for maintenance.

**Lines or Wires** – Widely-spaced lines interfere behaviorally with certain birds, apparently when there is predation risk. The response varies by species and site and generally adult birds are repelled more effectively than juveniles. Spacings from three feet up to 50 or 80 feet have deterred some gulls and waterfowl from ponds or reservoirs.

Recent research has shown that house sparrows are effectively repelled from outdoor feeding sites by clear monofilament lines placed one or two feet apart. Such lines do not repel house sparrows from nesting sites. Barn swallows have been deterred from nesting on structures by placing clear

monofilament fishing lines about 6 to 12 inches apart in front of or around the potential nest site.

Another application of lines or wires is to provide a physical barrier over perch sites such as ledges, roof peaks, or pipes. Place the wires low enough so that birds can't perch under them but high enough that they can't straddle them. Wide areas may require several lines, some offset at a second or third level. For installation, ends of the lines can be fastened to L-brackets using turnbuckles. Such line arrangements are available commercially.

**Cultural Practices –** Reducing the availability of nest sites and food resources is usually a necessary part of damage management. Examples include modifying structures to prevent nesting and reducing availability of spilled grains at grain elevators, loading areas, and similar sites.

**Repellents** – Tactile repellents, made from polybutenes, are soft, sticky, nontoxic substances that discourage birds such as pigeons, starlings, or house sparrows from perching on ledges, beams, or similar areas. These are best placed on wide masking tape strips to facilitate removal and must be replaced periodically because dust and dirt coat the sticky surfaces. Electric shock systems are available to repel birds from ledges or similar sites. Birds that land close an electrical connection that results in a repelling but harmless electrical shock.

**Frightening** – Frightening strategies lower the attractiveness of an area to pest birds, so response varies depending on the degree of attractiveness in relation to other options for food or other needed resources. Frightening is a useful tool in some situations with species such as European starlings, blackbirds, and American crows. Attempts at frightening pigeons and sparrows are usually ineffective as are attempts at frightening other species from feeding sites in northern climates during the winter. Frightening birds may shift a bird problem to other sites.

A variety of auditory and visual frightening devices are available commercially. Some electronic units produce biologically-based and other sounds in a random, species-specific pattern. Balloon-like devices with eye spots have been used with some success. Ultrasonic devices, which produce sounds above human hearing ranges (above 20 kHz), are available but there is no reliable evidence of their effectiveness.

**Trapping** – Various cage traps are available for capturing starlings, house sparrows, or pigeons. Trapping can be useful where a limited population of house sparrows or pigeons is causing damage, but would be less effective where re-invasion from nearby areas was likely. Trapping is time consuming and usually an inefficient method for removing large mobile populations of pest birds such as starlings or blackbirds. Traps should be checked at least daily and nontarget birds captured released immediately. Pest birds captured can be killed humanely such as by carbon dioxide exposure or cervical dislocation (breaking neck).

**Shooting** – As with removal by trapping, shooting can be effective in reducing small pigeon and house sparrow flocks where re-invasion is limited. Pellet guns or low-powered rifle ammunition such as .22 caliber shot shells (rimfire cartridge filled with fine shot) or .22 caliber rimfire CB cartridges (a reduced-power load with a small bullet) are available. Shooting highly mobile bird species like blackbird and starlings, however, has little effect on population numbers, but may have some benefits for frightening and dispersing them temporarily.

**Canada Geese - Damage Prevention and Control**

Management of Canada geese in urban areas has no easy, quick-fix answer and is further confounded by differing opinions among various stakeholders in what should be done. Some want reduced numbers of geese whereas others want more, and opinions vary on what management techniques are most appropriate or should be used. Management techniques that have been used include habitat modification, exclusion, frightening, trapping, repellents, and others.

Habitat modification may include making vertical pond banks or adding rock barriers along banks, allowing water to freeze in winter, removing escape cover around ponds, adding cover that interferes with flight out of ponds, and reducing turf fertilizer use around ponds. Exclusion techniques include various fencing methods, netting, and line or wire grids over ponds or other areas to be protected. Trained dogs have been used successfully to disperse geese, and a variety of noise-making and visual frightening devices are also used. In some situations, geese have been trapped during the molting period by herding them into fenced areas. Trapping brings the question of what to do with captured geese; some have been used in public food-bank type programs.

Chemical repellents based on the active ingredient methyl anthranilate (MA) are available commercially (ReJeX-iT and Bird Shield). MA is a naturally occurring, nontoxic food ingredient that apparently makes grass unpalatable to Canada geese. MA is formulated as a spray to apply to grass and, more recently, as a fogging material. A new anthraquinone (AQ)-based repellent (Flight Control$^{TM}$), although not yet available, is being evaluated and appears to discourage Canada geese, especially when used with a plant growth regulator. Effectiveness of repellents for geese, as with most other repellents, varies with factors such as level of hunger or attraction to grass, type of activity (grazing versus loafing), and availability of other suitable sites.

Normally, a variety of methods integrated and used together is required to manage urban goose conflicts. Canada goose problems are recognized nationwide, as is the need to find consensus among various stakeholders on what should be done. Toward this goal, the US Fish and Wildlife Service has scheduled nine scoping meetings at sites across the country this spring to gain input for development of a nationwide management strategy (news release at web site: http://news.fws.gov), and Nebraska has initiated discussions toward developing a state management plan.

**For more information** –

Feare, C. 1984. *The Starling*. Oxford University Press. New York.

Hygnstrom, S. E., R. M. Timm, and G. E. Larson, editors. 1994. *Prevention and Control of Wildlife Damage*, chapters on house sparrows, pigeons (rock doves), European starlings, and waterfowl. This reference is available as two notebooks or on CD from the School of Natural Resource Sciences, 202 Natural Resources Hall, University of Nebraska, Lincoln 68583-0819 (Phone: 402-472-2188).

Johnston, R. F. and M. Janiga. 1995. *Feral Pigeons.* Oxford University Press, New York.

Smith, A. E., S. C. Craven, and P. D. Curtis. 1999. *Managing Canada Geese in Urban Environments, a Technical Guide*. Jack Berryman Institute Publication 16, and Cornell Cooperative Extension, Ithaca, N. Y.

Video: *Suburban Goose Management, Searching for Balance.* 1998. (28:30). Cornel Cooperative Extension. Produced by Media and Technology Services at Cornell University, Ithaca, N. Y.

**Some web pages that show bird management products**. This is not a complete list but only some sites that I have seen. This listing implies no endorsement of these sites nor criticism of any others not listed.

Avitrol Corporation: **www.avitrol.com**
7644 E 46th Street
Tulsa, OK 74145-6370
Phone: (918) 622-7763 or (800) 633-5069
Fax: (918) 622-2527

Bird Barrier America: **www.birdbarrier.com**
20925 Chico Street
Carson, CA 90278, USA
Phone: (800) 503-5444 or (310) 527-8000
Fax: (310) 527-8005

Bird-B-Gone, Inc.: **www.birdbgone.com**
24362 Via Madrugada
Mission Viejo, CA 92692
Phone: 800-392-6915 or (949) 472-3122
Fax: (949) 472-3116

Bird-X Inc.: **www.birdx.com**
300 N. Elizabeth St.
Chicago, IL. 60607 U.S.A.
Phone: 800-662-5021 or 312-226-2473
Fax: 312-226-2480

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