



European Starling ¹

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The European starling, a non-native species, has flourished over the past century in the United States. This document describes the ways of dealing with the nuisances they can cause.

Background

The European starling, *Sturnus vulgaris*, is a species introduced to the Americas. It is a native of Eurasia and North Africa. It was introduced into New York in 1890 and 1891 by an industrialist who wanted to establish all birds mentioned in the works of William Shakespeare in the United States, or so the story goes. From this unusual beginning, the starling gradually spread throughout the United States and had an estimated population of 140 million birds in 1994.

Description

The European starling can be described as a medium-sized black bird with a short tail--total length is about 8.5 inches (21.6 cm). Summer plumage is black with purple and green iridescence (Figure 1). The bill is yellow and the legs are reddish. The

starling is the only black bird with a yellow bill in Florida or the United States with the possible exception of escaped exotic mynas (common, crested, and hill mynas). *Note: A relative of the myna bird, it is almost as good a mimic, frequently imitating the calls of many other species of birds. If you hear a bobwhite quail or a meadow lark in the middle of a city, check the wires and trees for a starling.*

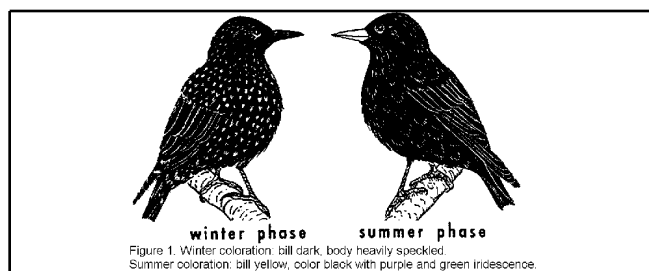


Figure 1.

Winter plumage is black with light colored tips on the feathers giving the birds a distinctly speckled appearance (Figure 1) and the bill is dark. Juveniles are brown with a dark bill and might be confused with female and juvenile blackbirds except for their characteristically short tails. The tip of the tail just

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barely extends beyond the tips of the closed wings. In flight, the starling has a distinctly triangular shape.

Range and Habitat

Although the greatest starling densities are found in the Midwest and Mid-Atlantic states, the starling is found throughout Florida. Starlings are common in Florida in the late spring through late summer, as dispersed pairs. In fall and winter months, starlings form huge, noisy, gregarious flocks as migrating starling populations from northern states swell Florida's year-round population. Starling may form large single species flocks or be part of immense flocks containing starlings, several species of blackbirds, common grackles, and cowbirds.

Food

The European starling is truly omnivorous (eats everything). Approximately half of the diet of the starling is made up of insects, especially moths and butterflies (and their caterpillars), beetles (especially their larvae, grubs in lawns), crickets and grasshoppers. Starlings are also fond of earthworms.

They eat a wide range of seeds, grains, and fruits, both natural and cultivated. They are a serious pest in grain-producing regions of the country, due to their fondness for corn, wheat, milo, and other grains. These non-natives can be very destructive to such agricultural crops as strawberries, blueberries, grapes, tomatoes, peaches, figs, apples, and cherries. They consume large quantities of livestock feed and can have a significant impact on the cost of dairy, egg and poultry production. Starlings will also pull up newly planted seeds causing reduced yields. Starlings feed on poke berries, elderberries, and wild cherries producing droppings that can cause unsightly stains.

Reproduction

Starlings breed in Florida from March through July. In spring and summer, breeding pairs disperse rather than stay with the concentrated flocks. Nests are bulky collections of sticks, dried grasses and other plant fibers, paper, feathers, and similar debris built in both natural and artificial cavities. Breeding pairs will commandeer woodpecker holes and bird houses--and nest in cavities displacing our native song birds.

Starlings commonly nest in man-made structures: between rafters in barns and open warehouses, in or behind signs, and in soffits and attics of houses. They commonly enter attics through torn or missing soffit or attic vents, openings where wires or plumbing enters the building, and even under loose siding.

A clutch normally consists of 4 to 6 blue-green eggs. The incubation period is 11 to 13 days and the fledglings leave the nest at about 21 days of age. A pair of starlings sometimes produces a second clutch in a year.

Problems and Solutions

Aesthetic Problems

The large, gregarious, and noisy flocks of starlings that occur in Florida in the fall and winter can become a serious nuisance. These flocks of thousands of birds generally roost in traditional roosts each night, damaging these trees the sheer numbers of birds roosting in them. Many people find the loud noise from these flocks disturbing.

The uric acid (white material) in their droppings can damage the finish on automobiles as well as being unsightly. When birds occupy warehouses and defecate on stored goods, it often becomes an expensive problem for the warehouse management when retailers refuse to accept contaminated goods.

Economic Problems and Calculations

Large populations of starlings in agricultural situations can cause significant economic losses due to consumption and contamination of livestock feed and stored grain, damage to fruit crops, especially blueberries, strawberries, and grapes, and they will cause some damage to tomatoes, peaches, figs, apples, and cherries as well. You can estimate the cost to livestock their operations from starling consumption of livestock feed by using this formula. See Table .

The number of starlings and other birds is estimated by counting the number of birds that enter the trough for 1/2 hour intervals several times during

the day. If 50 birds entered the trough during 2 hours of cumulative observations and there are 12 hours of daylight, then the estimate would be 300 entries.

Economic Decisions

The purpose of this estimate is to make an economically sound decision about investing in bird control methods. If a farmer is using an Integrated Pest Management program, he/she can then decide if the lost feed is worth the expense of bird management methods. If starlings cost \$100 for the feed they consume, it is financially unwarranted to spend \$200 to control them.

Similar methods can be used in fruit fields as well. Count the number of berries a single starling eats in 15 minutes. Take several counts of different birds and estimate the average number of berries consumed or damaged per hour. Then estimate the number of birds in the field per hour. By multiplying the number of birds in the field per hour with the number of hours of daylight and the number of fruit taken per bird/hour you can estimate of the fruit loss per day.

Knowing the average number of fruit/quart and the wholesale price for a quart of fruit, you can estimate a dollar loss rate. For the home gardener, economic considerations are usually secondary and they may feel inclined to protect their personal crop regardless of cost.

Health-Related Problems

The most common problem associated with starlings nesting in buildings is bird mites invading the human-occupied space during or after the nesting season. Bird mites like northern fowl mite and tropical fowl mite will bite humans and cause a small pustule, similar to a chigger bite.

Starlings are also important reservoirs and vectors of reintroduction of fowl mites into previously treated poultry houses. Starling nests can also be a source of the stick-tight fleas, soft ticks, bed bugs, and dermestid (carpet) beetles invading buildings.

Starlings have been associated with numerous disease organisms transmissible to humans and

livestock. These include the following: Five bacterial diseases including salmonellosis (*Salmonella* food poisoning); the fungal diseases *Blastomycosis* and *Histoplasmosis*; the protozoan diseases *Toxoplasmosis* and *Coccidiosis*; *Chlamydiosis*; the rickettsial disease Q Fever; six viral diseases including eastern equine and St. Louis encephalitis, Newcastle disease and fowl pox of poultry, and transmissible gastroenteritis of swine (hog cholera); the tapeworms in the genus *Taenia*; four genera of parasitic nematodes of poultry including *Tetramares* (2sp.), *Capillaria* (5 sp.), *Acuaria spiralis*, and "gapeworm", *Syngamus trachea*; and the parasitic fluke of poultry, *Collyriculum faba*. Starlings are generally a more serious disease vector to livestock, especially poultry and egg producers, than to humans. However the presence of starlings in areas where food is prepared or people eat, such as picnic areas and outdoor restaurants, should be a cause for concern about the spread of *salmonella* bacteria.

Control

Exclusion in Structures

Exclusion is always the best option to a nuisance wildlife situation as it prevents most situations from developing. First, close off all openings larger than 1-inch wide where starlings might nest. In some large structures this can be very difficult, but the more areas you close off, the fewer starlings will occupy the area. Be sure that the starlings have been flushed from the nest site before sealing the opening. In areas that can not easily be sealed, persistent removal of the nests will eventually discourage the birds from nesting in that site. Make sure all wall openings for pipes or wires are properly sealed or caulked. Make sure all attic and soffit vents are properly screened to keep birds and other animals out. Birds can be excluded from nesting inside or behind signs by sealing the edges of the sign with hardware cloth and silicon caulk or with plastic bird netting. In large open structures, like barns and warehouses, close off the space above the rafters where starlings roost and nest with industrial bird netting. See (Figure 2a), (Figure 2b), and (Figure 2c).

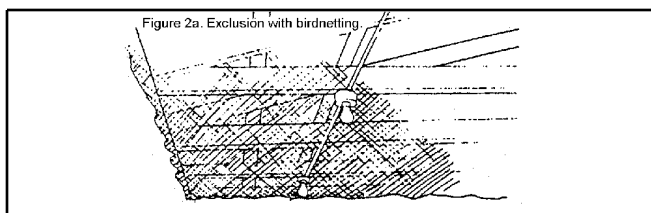


Figure 2.

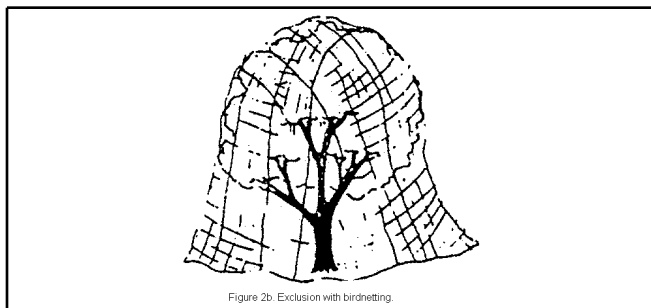


Figure 3.

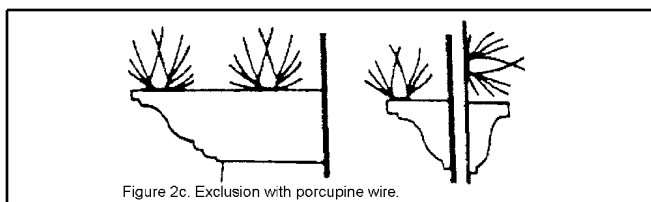


Figure 4.

Exclusion in the Field

Livestock producers can reduce starling problems:

- Clean up spilled grain and do not feed livestock on the ground.
- *Store grain and feed in bird-and rodent-proof bins.*
- Use bird-proof livestock feeders, especially for swine.
- *Feed livestock in covered areas like pole barns.*
- Use feeds difficult for starlings to handle such as blocks or cubes greater than 1/2 inch (1.5 cm) in diameter or granular meal.
- *Avoid using pellets of approximately 3/16 in (0.5 cm) in diameter. Starlings can handle these small pellets at a rate 6 times faster than feeding on fine meal.*
- Mix protein supplements with silage or other feeds to reduce the starlings access to them.

- *Adjust feeding times to when starlings and sparrows are less active--later in the afternoon is better than morning or midday.*

- Feed cattle supplements at night.

- *Where water is limited, regulate watering troughs so the water is too low to be reached from the top edge and too deep to wade in.*

- When putting up bird houses for native birds (bluebirds and wrens), do not put perches at the entrance holes.

- Close up purple martin houses when the birds leave the house, usually in September. Keep the houses closed until January when the martins return. It also discourages house sparrows.

Exclusion by Pruning

Flocks of starlings and blackbirds often congregate in large numbers in improperly pruned trees--especially in parking lots. Trees that are trimmed to form a dense round crown become an ideal roost. Avoid this by pruning the tree to create a more natural and open growth form (Figure 3).

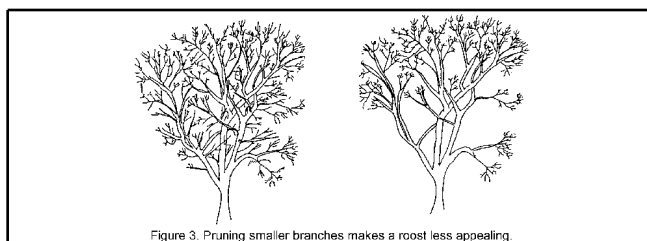


Figure 5.

Trapping

Use trapping if a local population becomes a nuisance. The sieve trap and the nest box traps are effective for taking a few nuisance individuals (Figure 4a.) It is also possible to flush the starlings from the nest into a bait or insect net held in front of the nest opening.

The decision to make, to buy or even to use a trap

should be based on the economics of the situation. Are the starlings causing enough economic loss to justify the cost of a trap? Commercially

University has shown that some ultrasonic devices have caused hearing loss in dogs. In general, ultrasonic devices rarely drive pest birds from established home ranges.

Another use of sound is using recorded distress calls of the target bird species. Originally accomplished by recording calls on tape, now calls can be digitally stored on a chip and programmed to be played in a random pattern. While birds may eventually learn to recognize that particular call over time and ignore it, this type of auditory scare device may prove effective longer than previous startle device technology.

Startle Devices

Effigies ("scarecrows") have been used to control starling damage in the past. Models of owls, hawks, snakes, and cats have all been used. To keep these "scarecrows" effective they must appear life-like and be moved often so the birds do not become accustomed to seeing them in the same spot every day. The use of balloons with eye-spots, kites with hawk silhouettes, and streamers are more effective because they are in constant motion. Mylar streamers are especially effective near roost sites: the lightweight streamers blow around in the slightest wind and make birds very nervous, especially when the long streamers reach out toward or touch the roosting birds. Roosting flocks of starlings and blackbirds can be driven from roost sites where they are creating a nuisance by harassing the flock at dusk for three or four consecutive nights or until they find a different roost. Spraying the birds with water from a hose or by mounting a sprinkler in the roost tree will encourage the birds to move on. Shaking the tree, if it is small, using fireworks, or beating on metal pans can also be used. Start harassment as soon as the birds begin roosting. Don't wait until the roost is well established and the birds develop a strong attachment for the site. Be persistent until the problem is solved.

Legal Aspects

The starling is an exotic (non-native) species in North America, listed as an unprotected species by the U. S. Fish & Wildlife Service (USFWS) and FWC. The birds, their eggs, and nests may be removed by any method except by poison, steel traps,

or with guns and lights at night. Some municipalities have issued local ordinances that protect all birds, both exotic and native. Be sure to check with local authorities before starting any bird control activities.

Suggested Readings

Field guides for identification:

Peterson, R. T. 1947. *A field guide to the birds: Eastern land and water birds*. Houghton Mifflin Co., Boston. 230 pp.

Robbins, C. S., B. Bruun, and H. S. Zim. 1966. *A guide to field identification of birds of North America*. Golden Press, NY, NY. 340 pp.

Table 1.

The cost of the feed ration consumed by starlings per day = (estimated number of starling entries into the feed troughs each day) X (0.0033 lbs. (or 0.0015 kg) consumed per starling entry) X (the cost of the feed ration per pound (0.4536 kg)).