

Starlings

It is hard to imagine now, but European starlings (*Sturnus vulgaris*, Fig. 1) were purposefully introduced from Europe into this country. After two failed attempts, about 60 European starlings were released into New York's Central Park in 1890 by a small group of people with a passion to introduce all of the animals mentioned in the works of William Shakespeare. The offspring of the original 60 starlings have spread across the continental United States, northward to southern Canada and Alaska, and southward into Central America. There are now an estimated 150 million starlings in the United States.

In 1889 and 1892, the Portland Song Bird Club released 35 pairs of starlings in Portland, Oregon. These birds established themselves, but then disappeared in 1901 or 1902. The next sighting of a starling in the Pacific Northwest was not until the mid 1940s. Presumably these birds could be genetically linked to the 1890 Central Park introduction.

It is difficult to reach a consensus on starlings. Some value the species for their creative adaptiveness and their odd beauty. Many hold a strong dislike of starlings because of their aggressive behavior at feeders and nesting sites, and their overwhelming flocks and roosting habits. There is only one thing on which agreement can be reached regarding starlings—they are ubiquitous.

Facts about Starlings

Food and Feeding Habits

- Starlings forage on lawns and other areas of short grass, such as pastures, golf courses, turf farms, and similar places.
- One of their very favorite foods is the large larva of the leatherjacket, or marsh crane fly (*Tipula paludosa*), which eats the roots of grass plants. Leatherjackets (like starlings) are not native here, and were unintentionally introduced from Europe.
- Starlings have unique jaw muscles designed both to clamp shut and spring open, allowing them to use their bills to pry things open, including openings in the soil.
- Starlings also eat fruit, seeds and suet at bird feeders, and food scraps.

Nesting and Roosting Sites

- Starlings nest in suitable holes and crevices in buildings, utility poles, decaying trees, and holes in cliff faces, 6 to 60 feet above ground.
- Males establish territories and choose nest sites, then attract females.
- Male starlings are very aggressive when claiming nest sites, taking over nest boxes and other cavities even while they are in use by such native birds as bluebirds, woodpeckers, and swallows.

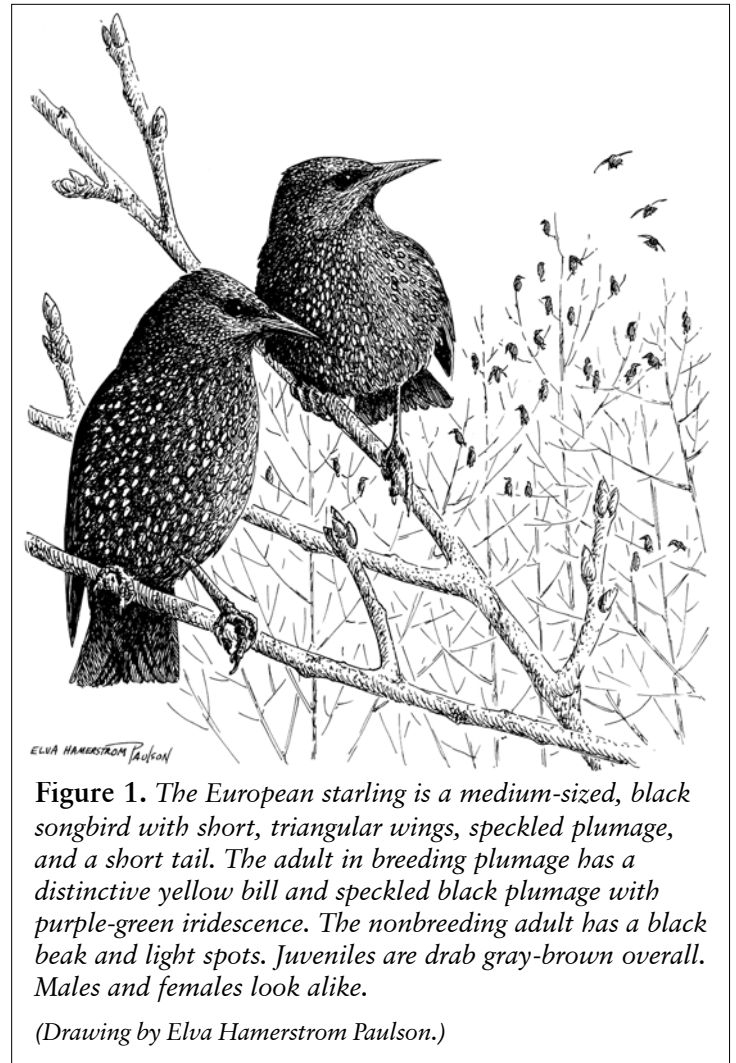


Figure 1. The European starling is a medium-sized, black songbird with short, triangular wings, speckled plumage, and a short tail. The adult in breeding plumage has a distinctive yellow bill and speckled black plumage with purple-green iridescence. The nonbreeding adult has a black beak and light spots. Juveniles are drab gray-brown overall. Males and females look alike.

(Drawing by Elva Hamerstrom Paulson.)

- The nest is an untidy collection of grasses, bark strips, twigs, rope, and other debris. The nest cup is lined with feathers, mosses, or other soft material.
- In late summer and fall, starlings form large flocks and roost in large deciduous trees. In early winter, when trees lose their leaves, starlings roost in areas that provide protection from wind and cold, including coniferous trees, areas under bridges, and in grain terminals and barns.
- During the night, individual birds change their position in the roost to minimize energy loss, with older birds maintaining the “best” positions. (See “Roost Sites” for more information.)

Reproduction

- Starlings can be building nests, sitting on eggs, or caring for young anytime from mid February to early July.
- Four to six slightly glossy, pale blue eggs hatch after an incubation period of 11 to 13 days.
- Both parents take turns with incubation during the day; at night only the female remains on the nest.
- The young begin to fly at 18 to 21 days of age, and out-of-nest care by parents lasts 2 to 4 days.
- A pair of adults can raise two broods per year. The female typically starts laying a second brood shortly after the first one fledges.
- Starling eggs (which are about the same size, shape, and color as robin eggs) often are found lying on the ground. It is believed that the females drop eggs if they are ready to lay, but the nest is not yet complete or has been taken over by another bird.

Mortality

- Adult starlings have few predators, although hawks and falcons occasionally catch them in flight.
- Loss of young starlings results from starvation, adverse weather, and predation by owls, raccoons, rats, domestic cats, and other predators.
- Humans, via control programs in agricultural areas, are probably responsible for most starling mortality.

Viewing Starlings

Starlings can be seen almost any time of the year in low elevations throughout Washington, particularly in areas associated with humans. They are among the few species of birds that tolerate high human density and poorly vegetated landscapes such as industrial sites. Starlings are normally absent only from heavily wooded areas, deserts, and areas above timberline. They appear to be partially migratory, but patterns vary regionally and individually. Many birds move into valleys and urban areas during the winter.

Starlings are often observed walking or running along on lawns, stopping to probe for crane fly, moth, and beetle larvae with their powerful beaks. The short grass makes it easy for them to walk, locate food, and view potential predators.

The wings of starlings have a triangular shape when stretched out in flight. Their flight is direct and swift, not rising and falling, like the flight of many “black birds.”

When starlings spot a perching hawk, falcon, or owl, they will “mob” it by flying around it and diving toward it, calling loudly. Dense flocks of starlings will also take flight and perform complex evasive movements in unison to avoid predators, such as falcons.

Huge, undulating flocks containing thousands of starlings can be observed during the winter months flying over towns, water, and fields.

Calls

Starlings have diverse calls and songs, such as whistles, high-pitched squeaks, and imitations of other birds’ calls and songs, including those of bald eagles and other raptors. Just before pairing in spring and on warm fall days, the male commonly gives a squeal-call near the nest hole when a female flies by.

As long ago as the Fifth Century B.C., the Greeks and Romans kept starlings as caged birds and taught them to imitate human speech.

Roost Sites

Starlings roost on structures or in trees from late summer until the beginning of the breeding season. The number of birds using roosts can vary from a hundred to 150,000 or more. Roosts are largest in late summer, when composed of newly hatched young, their parents, and other birds that did not breed. The roosts become smaller, and may change location, in fall and winter when the adults migrate or return to breeding grounds.

Each sunrise, starlings leave their roost site and scatter across the land in small flocks to feed on nearby lawns, cultivated fields, golf courses, and similar places, as well as natural areas including wetlands, tidal flats, and debris rich beaches. Starlings will fly 30 miles to a productive feeding site.

Up to two hours before sunset, the starlings farthest from the roost site begin their return trip to the roost. The birds travel along established flight lines that are used day after day. Other small flocks join them and the flock size increases as it approaches the roost site. Some members will drop out and perch on pre-roosting sites such as trees, power lines, bridges, and towers, along the way. These pre-roosting areas are constantly changing in membership as birds leave and rejoin the main flocks.

Before sunset, all birds at pre-roosting sites will have left for the primary roost, where immense flocks will be swarming. The birds make spectacular dives into the primary roost, flutter about in search of a good perch, and settle down for the night.

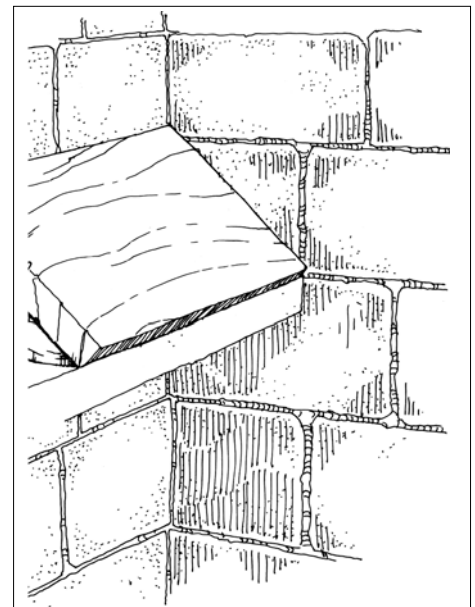


Figure 2. Starlings can be prevented from roosting on a building ledge by securing sheet metal, wood, Styrofoam blocks, or other materials at a 60-degree angle.

(Drawings by Jenifer Rees.)

Preventing Conflicts

The starling's long association with humans has strengthened its adaptive characteristics. Because these birds congregate in large numbers and aggressively search out food sources and nest sites in and around buildings, they can come into conflict with people.

The following are suggestions on how to prevent and remedy conflicts that arise. In cases where these methods are not practical, contact the Department of Agriculture for more information.

Starlings nesting in buildings: Starlings are adept at establishing nest sites in nooks or crannies in buildings. Nesting activity can damage buildings, create fire hazards, and clog gutters and drainpipes, causing water damage.

Prevent starlings from nesting or roosting in structures by installing barriers (Fig. 2, 3) and sealing all potential points of entry. Although starlings have difficulty entering holes smaller than 1½ inch in diameter, house sparrows, bats and other small mammals can slip right in. Use wood, ¼-inch hardware cloth, aluminum flashing, or similar sturdy material. Light material, such as bird netting or rags, will not keep determined starlings out. Replace any loose shingles or siding, and repair broken windows.

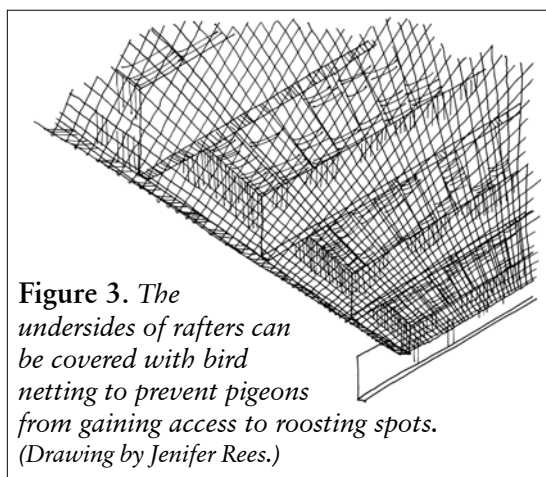


Figure 3. The undersides of rafters can be covered with bird netting to prevent pigeons from gaining access to roosting spots.
(Drawing by Jenifer Rees.)

Install commercially available vent guards to prevent starlings from entering exhaust vents and dryer vents. If necessary, cover the ends of elevated drainpipes with ¼-inch hardware cloth during the nesting season. All screening should be checked periodically to make sure it isn't clogged.

Prevent starlings from roosting on walls covered with vegetation by removing the vegetation or draping bird netting over the area. In new construction, avoid creating small cavities or spaces with access from the exterior into which starlings can enter and nest.

Starlings can be evicted from buildings and other sites any time of year. State and federal laws do not protect this species. A stick with

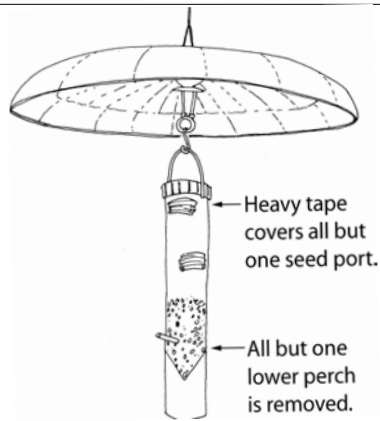


Figure 4. To reduce waste, prevent crowding at the feeder, and keep starlings away, remove all perches and cover all but one lower feeding port with duct tape or electrician's tape. (Drawing by Jenifer Rees.)



Figure 5. A hanging pine cone stuffed with peanut butter or suet will prevent starlings from accessing this simple feeder. Smaller birds will have no trouble landing and feeding. (From Link, *Landscaping for Wildlife in the Pacific Northwest*.)

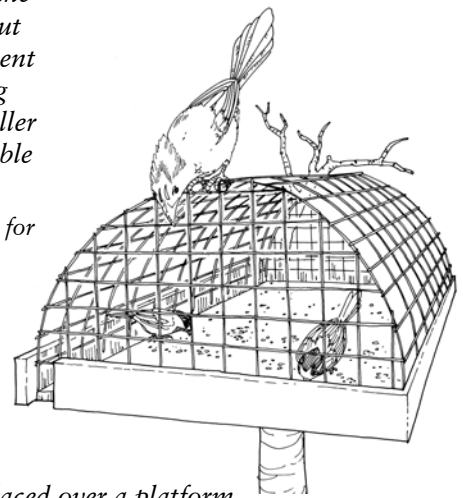


Figure 6. Wire placed over a platform feeder to allow small birds in and keep large birds out. (Drawing by Jenifer Rees.)

a 2½-inch angle bracket screwed to it can be used to remove nests. The nesting material should be collected and removed to prevent the birds from using it for a new nest. Take immediate steps to prevent starlings from rebuilding.

If the birds are caring for young, one approach is to wait until the young can fly out of the nest, then remove all nesting materials and cover all openings.

Starlings at feeders: Starlings are attracted to both seed and suet feeders, and their aggressive habits can deplete food supplies and keep smaller birds from approaching. By choosing the right bird feed, style of bird feeder, or modifying an existing feeder, you can discourage starlings.

Because starlings have difficulty cracking the commercially available black sunflower seeds, these can be offered in feeders.

Because starlings have difficulty landing on a small perch, making the perches on a feeder smaller by sawing them, or removing the perches altogether, can keep starlings off (Fig. 4). Most songbirds do not need a perch to access the seed.

Starlings may also be deterred by small feeders that swing and twirl whenever the heavy birds land on them (Fig. 5).



Figure 7. Before and after pruning of a coniferous tree to reduce its attractiveness to roosting starlings. (Drawing by Jenifer Rees.)

Because starlings have trouble clinging upside down, a suet feeder that requires the birds to clasp the feeder from below will discourage starlings. Your local bird specialty store can give you information on suet feeder designs to deter these birds.

Wire mesh placed over a platform feeder will prevent starlings from accessing the seed (Fig. 6). Don't place large amounts of birdseed on the ground or on an uncovered platform feeder.

Starlings roosting in trees: In fall and winter, the communal night roosts of thousands of starlings create accumulations of droppings below the roost. When a health official deems this a health risk to the public, steps need to be taken to disperse the flock. Options include installing visual and auditory scare devices, and thinning 30 to 50 percent of the branches of roost trees—or removing trees from dense groves—to reduce the availability of perch sites and to open the trees to the weather (Fig. 7). A tree service company can provide this service.

Protecting Native Cavity Nesters from Starlings

Although starlings can be interesting to watch in highly built-up areas where few other bird species thrive, they are a serious problem in areas where native birds exist. These introduced species compete with native, cavity nesting birds for nesting spots, which are becoming increasingly less plentiful as trees are cut down.

Male starlings are especially aggressive in their search for nest sites: They will peck holes in eggs laid by other birds, throw out their nesting material, and kill their young. Starlings will build nests on top of existing nests containing eggs, and can evict the larger wood duck from its nest boxes.

To prevent problems:

- Don't attract starlings. (Follow recommendations under "Preventing Conflicts.")
- Install nest boxes designed to exclude starlings (Fig. 8). Many native songbirds can use an entry hole smaller than the 1½ inches needed by starlings (Table 1). Be alert to hole enlargement by flickers and rodents, and replace or add a new front with the proper hole size. To reduce the size of an existing entry hole, attach a piece of wood to the front of the existing box and drill the appropriate size hole. File down all rough edges. It is also possible to buy a pre-drilled metal plate that can be attached over the entry to a nest box.
- Don't install nest boxes that have perches. Perches are used by starlings, but are not necessary for native species.
- When observing a starling building a nest in a nest box, repeatedly remove the nesting material, or plug the entry hole for a few days or longer to prevent them from entering. Carefully monitor the box throughout the breeding season for use by starlings.
- If starlings have laid eggs in a nest box, vigorously shake the eggs and return them to the nest. The adults will incubate them, but the eggs will not hatch. Because state and federal laws don't protect these birds, it is legal to remove their nests and destroy the eggs or the birds themselves.
- Clean out nest boxes each year. When not cleaned out, birds will build new nests on top of old ones. This raises the new nest close enough to the entry hole so starlings or other predators can pull out the occupants.
- If you have just a couple of boxes, take them down each year (or block the entrance holes) after the breeding season and do not put them back up until the native species are seen or heard the following spring.

Note: Since starlings do not migrate for the winter, they will be looking for nesting sites long before the migrants return in the spring.

Table 1. Entry hole dimensions needed by some small native cavity-nesting birds

Bird species	Diameter of entrance
Chickadees	1 to 1½ in.*
Tree swallows	1¼ in.
Violet-green swallows	1½ in.
House wren	1 in.*
Nuthatches	1¼ in.*
Western bluebird	1½ in.
Hairy woodpecker	1½ in.
Downy woodpecker	1¼ in.

* This species will also use the diamond-shaped entry hole shown in Figure 5.

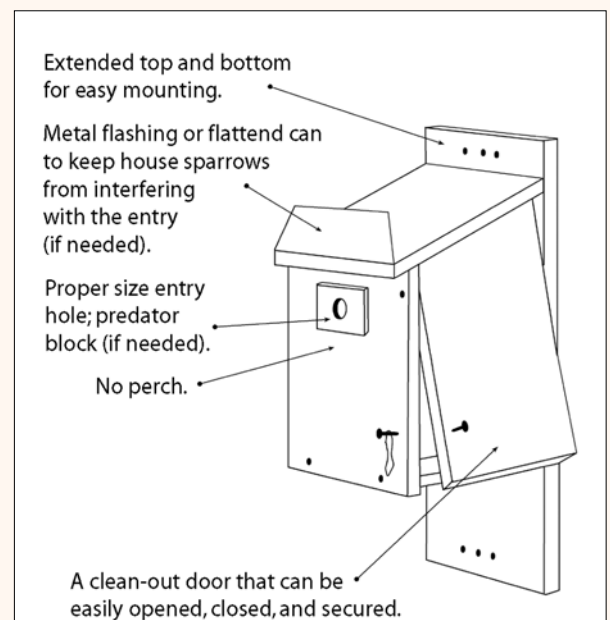


Figure 8. A nest box designed to provide a safe nesting site for native cavity-nesting songbirds. (From Link, *Landscaping for Wildlife in the Pacific Northwest.*)

Experience has shown that the best results occur when the pruning of trees is combined with scare tactics. (See the handout on Canada Geese for information on visual, auditory, and other scare devices.)

Starlings eating fruits and vegetables: A small flock of starlings can quickly ruin or remove the year's fruit or young vegetable crop.

Protect fruit crops with flexible bird netting, which can be purchased in a variety of lengths and widths at garden and hardware stores; professional quality materials and hardware are available from bird-control companies and over the Internet. Secure the base of the shrub or the tree to prevent starlings from gaining access from below (Fig. 9). Individual small branches containing fruit can be protected with an onion sack or similar mesh covering.

Row crops, such as strawberries, can be completely covered during the fruiting season. If the netting is to be used for several harvest seasons, it may be worth the extra effort to construct a frame to support the netting.

Scare devices, such as pie tins and commercially available Mylar balloons or Mylar scare tape, are known to provide temporary protection. Suspend balloons at least 3 feet above trees or bushes, or from lines between posts. Use tethers at least 3 feet long.

Attach special red and silver bird-scare tape to stakes and stretch it 18 inches above the areas that need protection. Twist the tape several times before attaching it to stakes so that the visible interval of red/silver is 16 inches. The tape should move freely, so that when a slight breeze blows it will flash in the sun. The space between tapes will have to be no more than 5 feet to be effective.

Because most birds will fly into a strawberry patch, land on the ground between the plants and eat the ripe strawberries from there, scare devices placed above the patch are not effective. Instead, place the scare tape between the rows. The tape should sag slightly but should not be less than 3 inches or more than 5 inches from the ground.

Scare devices need to be moved weekly (daily if possible) so birds don't become accustomed to them; they are also most successful if put in place before the birds become a problem. Always harvest ripe fruit immediately.

Protect germinating corn plants and other crops with bird netting until plants are about 8 inches tall. Large plastic trash bags attached to 6 to 7 foot wooden stakes, along with the above-mentioned scare tactics, can be used in areas with lots of air movement. Cracker shells and propane cannons may be needed in larger plantings. Ultrasonic devices are not effective at frightening starlings.

Other Control Techniques

Trapping

Research has shown that intensive trapping and euthanizing can temporarily reduce starling numbers and damage. This may be worthwhile in some situations, such as at a winter cattle-feeding operation or at airports. However, it has no effect on the number of starlings returning the next year unless it is done repeatedly and over 50 percent of the population is removed each time.

Small-scale traps are available from enterprises over the Internet. Check the trap every two hours for non-targeted birds.

Do not trap starlings and release them elsewhere, because they will easily return or cause problems somewhere else. If you cannot humanely kill them yourself, find a falconer or wildlife rehabilitation center that will accept live starlings to feed to birds of prey. (See the handout, "Trapping Wildlife" for information on euthanizing birds.)

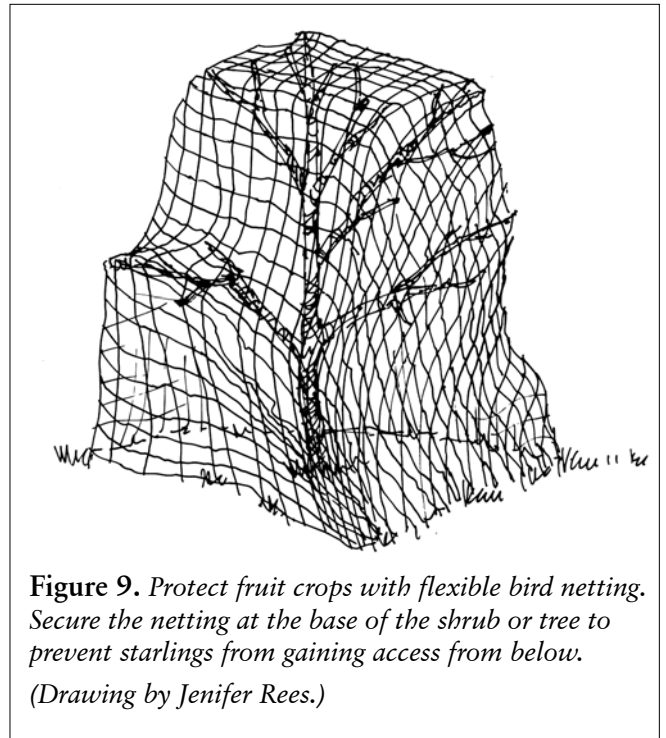


Figure 9. *Protect fruit crops with flexible bird netting. Secure the netting at the base of the shrub or tree to prevent starlings from gaining access from below. (Drawing by Jenifer Rees.)*

Shooting

Shooting is not an effective way to manage starling populations overall. The number of birds that can be killed by shooting is small relative to the size of the flock. However, shooting may be helpful where only a few birds are present, and in supplementing or reinforcing other dispersal techniques. First check with the local ordinances regarding discharging firearms.

Public Health Concerns

Although health risks from birds are often exaggerated, large populations of roosting starlings may present risks of disease to people nearby. The most serious health risks are from disease organisms growing in accumulations of starling droppings, feathers, and debris under a roost. This is most likely to occur if roosts have been active for years.

Precautions need to be taken when working around large concentrations of starling droppings. Contact the Department of Health for recommendations.

Legal Status

Starlings are exempted from protection in Washington. Their nests, eggs, young, and/or adults may be removed or destroyed at any time. No permit is required.

Internet Resources

Centers for Disease Control and Prevention:
www.cdc.gov/

Washington Department of Health:
www.doh.wa.gov/

Prevention and Control of Wildlife Damage:
wildlifedamage.unl.edu/handbook/handbook/

Washington Department of Fish and Wildlife:
<http://wdfw.wa.gov/>

Seattle Audubon's Birds of Washington State:
www.birdweb.org/birdweb/

Wildlife Control Supplies:
www.wildlifecontrolsupplies.com/

Adapted from "Living with Wildlife in the Pacific Northwest" (see <http://wdfw.wa.gov/wlm/living.htm>)

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Illustrations: As credited

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