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Blackbirds

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Figure 1. The red-winged blackbird *(Agelaius phoeniceus)* is one of the most abundant birds in North America; the late summer population probably exceeds 300 million birds. The black male, with striking red and yellow shoulder patches, is about 40 percent larger than the female. The female resembles a large sparrow more than a blackbird.

Quick Links

Human-Wildlife Conflicts

Landscapes

Red-winged blackbirds can cause considerable damage to ripening corn, sunflower, sorghum, wheat and oats in the milk and dough stages, and sprouting and ripening rice. The closely related tricolor blackbird does some damage to ripening rice in California. Damage by common grackles is similar, except that grackles will feed on mature field corn in the dent stage, removing entire kernels from the cob. Common grackles also will pull up sprouting corn.

Great-tailed grackles damage various fruits and melons, although the loss generally is minor. In recent years, however, their damage to citrus crops in localized areas of the lower Rio Grande Valley of Texas has been substantial. Great-tails peck the citrus fruit skin, creating blemishes or holes. Boat-tailed grackle (*Quiscalus major*) is a species of the Gulf and southeastern and mid-Atlantic coasts that is very similar in size and appearance to great-tails. They do some damage to sprouting rice.

Figure 2. Flocks of blackbirds and starlings often concentrate in livestock feeding areas during winter where they compete with livestock for food and cause concerns regarding disease transmission to livestock and humans.

Brown-headed cowbirds can cause damage to ripening sorghum, rice, millet; and sprouting rice. Yellow-headed blackbirds cause localized but generally minor damage to ripening corn and oats, often in association with redwings. Damage to early ripening sunflower can be high near wetlands; however, most yellowheads leave the northern prairie regions by the time corn and sunflower reach physiological maturity in mid-September. Brewer's blackbirds generally cause minor damage to oats and fruit crops, but consume large numbers of noxious insects during the summer months. Rusty blackbirds typically cause little damage to crops.

Female cowbirds lay their eggs in the nests of other songbirds. Cowbird nest parasitism has had a negative impact on populations of certain songbirds such as the endangered Kirtland's warbler (*Dendroica kirtlandii*) and black-capped vireo (*Vireo atricapillus*).

Livestock

The increased use of feedlots and dairy farms by grackles in the northern areas of their expanding range may be a cause for concern in the future, due to the potential for disease transmission. Cowbirds consume some livestock feed, but often glean waste grain and seed from dung. Brewer's blackbirds generally cause minor damage to livestock feed in feedlots.

Human Health and Safety

The close association of cowbirds and grackles with livestock at feedlots in winter (Figure 2) has the potential to amplify and spread disease to humans such as avian influenza although there is no evidence that this has happened.

The accumulation of feces at winter roosts (Figure 3), especially sites used in multiple winters, provides an enrichment of the soil favorable for the growth of the histoplasma fungus that can infect humans.

Flocks of blackbirds near airports (Figure 4) can cause a risk to flight safety because these birds can be ingested in large numbers into turbine-powered engines.

Nuisance Problems

Massive congregations of blackbirds and starlings in winter roost sites near human activity and habitations (Figure 4) can create nuisance concerns, as well as disease concerns as noted previously, because of the noise and accumulation of large amounts of feces and associated odors around the roost site.

Figure 3. Roosting concentrations of blackbirds in wooded areas near human activity can create a variety of problems, including damage to vegetation and the accumulation of feces with associated odor and disease concerns.

Damage Identification

Blackbird damage to agricultural crops often is easy to identify because the flocks of birds and the visible signs of the damage are conspicuous. However, correct identification of the species of birds in the agricultural field is important, along with evidence that the birds are actually feeding on the crop. For example, starlings superficially resemble blackbirds and sometimes feed in cornfields, yet they usually feed on concentrations of insects such as armyworms, doing little, if any damage to corn. Also, red-winged blackbirds often are attracted to agricultural fields, such as corn and sunflower, initially to feed on rootworm beetles, sunflower weevils, and other insect pests. They will not damage the crop itself until the grain has reached the milk stage. Blackbirds often forage in newly planted grain fields such as winter wheat, feeding on previous crop residue, weed seeds, and insects without bothering the sprouting grain. Blackbirds can, however, cause serious damage to newly sprouted rice.

Blackbird damage also can be confused with other forms of loss. Deer, raccoon, and squirrel damage to corn can be mistaken for blackbird damage (Figure 5). Also, seed shatter in sunflower caused by wind may resemble bird damage; however, the difference usually can be detected by examining sunflower heads (Figure 6) for the presence or absence of bird droppings and by looking on the ground for hulls or whole seeds. Careful observation of the birds in the field and a little detective work usually will result in the correct identification of the cause of damage.

Figure 4. A mixed flock of several million blackbirds and starlings enter a winter roost site at dusk in a wooded area near the Memphis, Tennessee International Airport. During the day, these birds forage in woodlands and agricultural fields up to 30 miles from the roost.

Figure 5. Damage to ripening corn by blackbirds (left) and mammals (e.g., deer [right], raccoons, or squirrels) can sometimes be confused. Blackbirds usually slit or shred the husk and peck out the soft contents of kernels, leaving the kernel coats, which turn black. Deer, raccoons, and squirrels chew through the husk and bite off the kernels. In addition, raccoons often pull stalks down to ground, leaving muddy paw prints on the corn plant.

To accurately estimate the amount of blackbird damage in an agricultural field, examine at least 10 locations widely spaced throughout the field. For example, if a field has 100 rows and is 1,000 feet long, walk staggered distances of 100 feet along every 10th row (for example, 0 to 100 feet in row 10, 101 to 200 feet in row 20, and so on). In each of the 100-foot lengths, randomly select 10 plants and visually estimate the damage on the head or ear of each plant to the nearest 1% (for instance, 2% destroyed, 20% destroyed). For corn, six kernels usually represent about 1% of the corn on an ear; for sunflower, it may be easiest to visually divide the head into four quarters and then estimate the percentage of seeds missing. When finished, simply determine the average damage for the 100 plants examined. This will give an approximation of the percent loss to the field. Multiply the percent loss by expected yield to get a rough estimate of yield loss. In small grains, such as rice, estimates of loss are more difficult to obtain. One possibility is to compare the yields from plots in damaged and undamaged sections of a field.

Figure 6. Typical damage by red-winged blackbirds to a ripening oil-seed sunflower head in North Dakota.

Management Methods

A key to damage prevention is the integration of multiple methods that are complimentary; a single technique used in isolation is seldom successful. Habitat management (see below) is the foundation of integrated pest management because these techniques provide long-term protection and enhance the effectiveness of control techniques such as frightening devices.

As discussed below, it also is important to monitor the crop or situation and apply reactive control methods before or as soon as damage begins and only if damage is likely to be substantial. Money is often wasted when (1) control techniques are directed at blackbirds in crop-damage situations after the birds have already inflicted substantial damage and are migrating or moving to other ripening fields, or (2) the overall damage inflicted is minor (e.g., less than 1% of crop) and the cost of control exceeds the losses.

Habitat Modification

Most economically severe blackbird damage to agricultural crops occurs in fields within 5 miles of roosts. Thus, one strategy is to plant non-attractive crops; such as soybeans, wheat, potatoes, or hay; in fields within a few miles of a roost. If crops vulnerable to damage, such as corn or sunflower, are planted near a roost, make alternative feeding sites available to reduce the feeding pressure on these cash crops. Delay the plowing or tilling of previously harvested cropland near roosts to provide alternative feeding sites to reduce damage to maturing crops. Fields near roosts should not be planted unusually early or late so that they mature in isolation from other fields in the area. In general, as alternative feeding sites decline, maturing grain or sunflower fields become more attractive to blackbirds, and keeping them out becomes more difficult.

Damage to sprouting rice fields planted near blackbird roosts in Louisiana and Texas can be substantially reduced by delaying planting until April. By this time, the large flocks of migrant blackbirds will have left for their northern nesting areas.

The timing of harvest can be very important in reducing damage to fields from flocks of blackbirds. For example, redwings inflict most damage to sweet corn at the time of fresh-market harvest, when the corn enters the milk stage. Timely harvest of sweet corn can substantially reduce damage. Field corn generally becomes unattractive to birds when the kernels mature. Sunflower, sorghum, and rice continue to be attractive after they mature and thus should be harvested as soon as possible. In some cases, a pre-harvest desiccant can be used on mature sunflower to advance dry down and harvest by 7-10 days.

Figure 7. Corn varieties with thick husks that extend beyond the cob (center ear) are less prone to damage by red-winged blackbirds compared to varieties with thinner, shorter-husked ears as demonstrated in this experiment in an aviary.

Hybrids of corn with long husk extension and thick husks are more resistant to damage than other hybrids (Figure 7). Sorghum that contains a high tannin content also is less preferred than low-tannin varieties. For sunflower, birds prefer oil seed cultivars over the confectionery cultivars. Using sunflower cultivars with heads that turn downward as they mature and seeds with thick hulls should also help reduce feeding by blackbirds.

Studies of red-winged blackbird feeding habits in ripening corn fields revealed that they often are attracted to fields with high populations of insect pests such as rootworm beetles, corn borers, and Japanese beetles. Cultural practices or chemical applications to reduce these insects will make the fields less attractive to the birds.

Sunflower growers in the northern plains can thin out dense stands of cattails in marshes where large numbers of blackbirds roost near sunflower fields. Apply an aquatic formulation of the herbicide glyphosate in swaths to about 70% of a cattail marsh. Thinning the cattail stands usually decreases or eliminates blackbird roosts in a marsh and increases use by waterfowl for nesting and other activities.

Exclusion

Exclusion of blackbirds and other birds from agricultural crops is practical only for small gardens, experimental plots, and high-value fruit crops. Use lightweight nets to cover trees, bushes, or small plots.

Protect individual ears of sweet corn in garden plots by placing paper bags over them after the silk has turned brown.

Frightening Devices

The use of frightening devices can be quite effective in protecting crops from flocks of blackbirds. Their use also requires hard work and long hours for the farmer, who needs to be persistent and innovative to keep one step ahead of the birds. It is especially important for devices to be employed in the early morning and in late afternoon when the birds are feeding most actively. Crops such as sweet corn, which are vulnerable to blackbirds for only a few days before harvest, may not be too difficult to protect; however, the task becomes formidable for crops such as sunflower and sorghum, which may be vulnerable for up to 6 weeks.

The effectiveness of frightening devices is highly variable, depending on the persistence of the operator, the skill used in employing a device, the attractiveness of the crop, the number of birds, and the availability of alternate feeding sites. Birds tend to adjust or adapt to frightening devices. It is usually better to use two or more devices than to rely on a single device.

Auditory

Propane exploders are the most popular frightening devices. Some have timers that automatically turn them on and off each day or have remote-controlled activators. In general, use at least one exploder for every 10 acres (4 ha) of crop to be protected. Elevate exploders on a barrel, stand, or truck bed to “shoot” over the crop, and move them around the field every few days. In addition, reinforce this technique occasionally with other frightening devices. By shooting a .22-caliber rifle just over the top of a crop, a person on a stand or truck bed can frighten birds from fields of 40 acres (16 ha) or more. Obviously, care must be taken when shooting in this manner, and the use of limited range cartridges is recommended.

A variety of auditory bird-frightening devices, including electronic high-intensity acoustic systems and tape-recorded distress calls for birds occasionally are used to rid fields of blackbirds.

Visual

A variety of visual bird-frightening devices, including helium-filled balloons tethered in fields, radio-controlled model planes, reflecting tapes made of Mylar® (Figure 8), and various types of animated scarecrows, occasionally are used to rid fields of blackbirds.

Figure 8. Mylar® reflecting tape strung above the vegetation can reduce blackbird feeding activity in agricultural fields such as this millet crop in Ohio.

Auditory-Visual

Pyrotechnics fired from a 12-gauge shotgun (shell crackers) or other pistol-type launcher (e.g., bangers and screamers) can be effective at frightening blackbirds. Shooting birds with a shotgun, using standard non-toxic bird shot, can kill a few birds and often reinforce other scare devices such as pyrotechnics and propane cannons. This technique, however, usually is not as effective in moving birds as the other devices that have greater range. Thus, a shotgun patrol should not be used as the sole means of frightening birds.

Chemical

Avitrol® is an EPA-registered chemical frightening agent (active ingredient 4-aminopyridine) for blackbirds and other pest birds that previously had labels for use in ripening corn and sunflower fields from the 1970s to early 2000s. This product is no longer registered for field crops but can be used in non-crop areas. The ingestion of one or more treated corn particles by a blackbird causes erratic flight, distress calls, and usually death. This behavior often causes the remaining birds in the flock to leave the area.

Repellents

Various bird repellents using the active ingredient methyl anthranilate currently are registered for maturing grain, sunflower, or fruit crops. Several seed-treatment repellents using anthraquinone or other active ingredients such as benzyl diethyl ammonium saccharide have been registered to reduce bird damage to freshly planted and sprouting corn, rice, and other crops. However, the registration status and trademark names of these products often change; thus, check with county extension agents or USDA-APHIS-Wildlife Services (WS) biologists for products currently registered. Always read the product label and refer to state, province, and local restrictions.

Fertility Control

No specific work is being done on fertility control in blackbirds.

Toxicants

Starlicide™ is a registered toxicant for blackbirds and starlings in feedlot situations. The active ingredient, 3-chloro-p-toluidine hydrochloride, is incorporated into pelletized bait at a concentration of 0.1% and sold commercially under the trade name Starlicide Complete®. Starlicide Technical® (DRC-1339, 98% active ingredient), which can be custom-mixed with livestock feed or other bait material, is also available through the USDA-APHIS Wildlife Services (WS) Program. Starlicide Technical® can be used only by or under supervision of WS employees.

Starlicide is a slow-acting toxicant; birds usually die 1 to 3 days after feeding. Baiting programs are most successful in winter, especially with snow cover present, when alternate foods are scarce. A successful program generally requires a period of prebaiting with nontoxic bait to accustom the target blackbirds and starlings to feed at specific bait sites inaccessible to livestock in the feedlot. Monitoring to ensure that nontarget birds such as doves, song birds, and barnyard fowl do not feed at bait sites is essential. Check the product label for details on use, application, personal protection, factors affecting efficacy, and disposal. Always read product labels and refer to state, province, and local restrictions.

Trapping

Certain species of blackbirds, particularly redwings, brown-headed cowbirds, and common grackles, often can be readily trapped in decoy traps. These traps also are effective for starlings. Consult a state wildlife official, such as a conservation officer or game warden, before putting a decoy trap into operation. A decoy trap is a large (e.g., 20- x 20- x 6-foot) poultry wire or net enclosure containing 10 to 20 decoy birds, food, and water (Figure 9). Birds enter the trap through an opening (often 2- x 4-foot) in the top of the cage that is covered with 2- x 4-inch welded wire mesh. The blackbirds can fold their wings and readily drop through the openings to the food below, generally cracked corn, millet, or sunflower seeds. A small (e.g., 2- x 2- x 3-foot) gathering cage with a sliding door attached to an opening at an upper corner of the trap can be used to collect trapped birds. A corralling baffle running about two-thirds the length of the trap can aid in driving the birds into the gathering cage.

A decoy trap often catches 10 to 50 blackbirds and starlings per day and occasionally up to 300 when located near a large roost. Obviously, the decoy trap is of questionable value when trying to reduce large roosting populations and damage to the surrounding agricultural fields. These traps, however, can be used to temporarily reduce local populations of blackbirds in special situations. For example, decoy traps have been used successfully in an 11-county area of Michigan since the 1970s to reduce cowbird populations during the nesting season. This control was initiated to increase the nesting success of the Kirtland's warbler, an endangered species whose nests often are used by cowbirds for laying their own eggs. Each year decoy traps in this area of Michigan have captured about 3,600 cowbirds. Decoy traps might also be successful in reducing localized populations around feedlots or fruit crops.

Figure 9. A typical blackbird and starling decoy trap showing elevated feed platform in center of trap and gathering cage on the far left. Birds enter the trap through a 2 x 4-foot (0.6 x 1.2-m) opening covered with 2 x 4-inch (5 x 10-cm) welded wire located directly above the feed platform.

Immediately release any nontarget songbirds accidentally captured in a decoy trap. Blackbirds to be disposed of should be killed humanely. They can be transferred from the gathering cage to a cardboard box or canvas-covered cage and asphyxiated with carbon dioxide gas. Examine all dead birds for bands, and report any bands found to the USFWS.

Shooting

As discussed under Frightening Devices, shooting to kill with a shotgun is most effective when used occasionally to supplement or reinforce other scare devices. By itself, shooting with a shotgun is not cost-effective in frightening blackbirds from large agricultural fields, and is totally ineffective as a means of reducing populations. Examine any killed birds for bands. It also may be useful to examine the stomach contents to determine if the birds are feeding on insect pests and weed seeds.

Economics

Blackbirds provide some benefits by feeding on harmful insects, such as rootworm beetles (*Diabrotica* spp.) and corn earworms (*Helicoverpa zea*), and on weed seeds, such as Johnson grass. Because of their abundance, redwings are a food source for a variety of avian and mammalian predators.

Superficial surveys of agricultural fields often overestimate blackbird damage and thus exaggerate the overall severity of the economic threat for one of four reasons: (1) the conspicuousness of blackbird flocks tends to heighten the awareness of bird damage compared with other more subtle forms of loss caused by weeds, insects, other pests, weather, and harvesting; (2) the eye naturally seeks out the conspicuously bird-damaged plants; (3) bird damage is often most severe along field edges where an observer is most likely to notice; and (4) damage by raccoons, other mammals, or wind sometimes is mistaken for bird damage (see the section Damage Identification). This is not to downgrade the problem of blackbird damage in agriculture; damage can be economically severe on occasion and quite frustrating to the farmer when relief is not readily available. It is important, however, to obtain objective estimates of damage levels likely to occur, for only then can someone make intelligent decisions regarding the amount of money and effort to be invested on control. The final decision on control measures must take into account the value of the crop, cost of control, and the degree of effectiveness of the control measure in relation to the probable levels of damage.

Studies during the past four decades concerning blackbird damage to various crops such as corn and sunflower indicate that on statewide or regional bases, overall average damage is low, generally less than 1% of the crop. This may translate into national losses per year of $150 million combined for corn, sunflower, and rice (at 2012 prices) but overall, this is a minor loss to the macro agricultural economy. If all farmers received less than 1% damage, there would be little concern; however, the damage is not equally distributed. While most farmers escape economically serious damage, a few farmers receive serious damage. For example, a bioenergetics study of blackbird damage to sunflowers in the northern Great Plains indicated an overall loss of sunflower to blackbirds was estimated to be only 1.7% of the crop. Other studies indicated that about 2% of the fields received more than 10% loss. Only in these relatively few fields that sustain high levels of damage can control measures generally be cost-effective.

While accurate prediction of damage is often impossible to obtain, knowledge of the location of a field in relation to traditional roosting sites often provides the basis for a sound estimate of potential damage. For example, studies of blackbird damage to ripening corn in Ohio and North Dakota have revealed that almost all losses exceeding 5% of the crop have occurred in fields within 5 miles of marshes containing large blackbird roosts in late summer.

Objective estimates of damage levels in previous years for the same or nearby fields are another means of predicting future damage levels, because bird damage is fairly consistent from year to year within a locality. This information also provides a good baseline for evaluating the effectiveness of management strategies. Of course, it is important that estimates be objective and apply to the entire field.

Species Overview

Identification

The term blackbird loosely refers to a diverse group of about 10 species of North American birds that belong to the avian family Icteridae. The most common species include:

- Red-winged blackbird (*Agelaius phoeniceus*)
- Common grackle (*Quiscalus quiscula*)
- Great-tailed grackle (*Quiscalus mexicanus*)
- Brown-headed cowbird (*Molothrus ater*)
- Yellow-headed blackbird (*Xanthocephalus xanthocephalus*)
- Brewer's blackbird (*Euphagus cyanocephalus*)
- Rusty blackbird (*Euphagus carolinus*)

In addition to blackbirds, this family includes orioles, meadowlarks, and bobolinks.

Physical Description

The various species of blackbirds have several traits in common. Males are predominantly black or iridescent in color. The male red-winged blackbird is a little smaller than an American robin and is black with red and yellow shoulder patches (Figure 1). The smaller female is brownish, resembling a large sparrow. The common grackle is an iridescent blackbird slightly larger than a robin with a long keel-shaped tail. The male, slightly larger than the female, has more iridescence on the head and throat. The great-tailed grackle is similar to the common grackle but with a much larger tail. The male is slightly smaller than an American crow (*Corvus brachyrhynchos*); the female is smaller and browner than the male. The brown-headed cowbird is the smallest blackbird. The male is black with a brown head and the female is brown (Figure 10). Both sexes have finch-like bills.

The yellow-headed blackbird is a robin-sized bird. The male has a striking appearance with a black body, conspicuous yellow head and breast, and a white wing patch in flight. The female is smaller and browner, with a yellowish throat and breast. The Brewer's blackbird is a robin-sized bird. The male is all black with whitish eyes and the female is brownish gray with dark eyes. The rusty blackbird is similar to Brewer's blackbird, but its fall and winter plumage has a rusty coloration.

Figure 10. The brown–headed cowbird *(Molothrus ater),* the smallest of the blackbirds, often feeds in close association with livestock. The female cowbird (above) lays her eggs in the nests of other birds

Range

The red-winged blackbird is an abundant nester throughout much of North America and winters throughout the southern United States. The common grackle is a common nester throughout North America east of the Rockies and winters in the southern U.S., often in association with other blackbird species and starlings. The great-tailed grackle is an abundant year-round resident in the southwestern U.S. (especially Texas) and Mexico. In recent years, great-tailed grackles have expanded their range northward into the central Great Plains where they gather in feedlots and dairies in winter. Cowbirds originally were a species of the Great Plains associated with bison, but with the clearing of forests for agriculture, now occur in spring and summer throughout much of North America. Cowbirds spend winters in the central to southern U.S., often roosting with other blackbird species and starlings. Yellow-headed blackbirds are locally abundant nesters in deep-water marshes of the northern Great Plains and western North America. They spend winter farther south than other blackbirds, primarily in Mexico. Brewer's blackbirds are common in the northern Great Plains and western North America. It is a winter migrant in the central and southern Plains states, sometimes roosting with other blackbird species. Rusty blackbirds occupy Canada, Alaska, and northern New England and Michigan. They migrate in winter to the southern U.S. from the Atlantic coast to east Texas. *(See Appendix 2 for range maps)*

Sign

Blackbirds are most often noticed by their visual appearance and by their congregations into large flocks outside of the nesting season. For sign associated with agricultural damage, see the section on Damage Identification.

Voice and Sounds

Each blackbird species has distinctive vocalizations that are easily recognizable with a little practice. The sounds made when large numbers of blackbirds are entering nighttime roosts can be quite cacophonous.

Reproduction

Blackbirds and grackles mature in 1 year. Nesting typically occurs from April to July. Females have 3 to 5 eggs in their open-cup nests made of grasses and other vegetation. Eggs hatch after about 12 days of incubation; the young grow rapidly and are ready to fledge about 10 days later. Females often will renest if their initial nest is destroyed. Their high mortality rate is offset by a reproductive rate of 2 to 5 young fledged per female per year.

Cowbirds do not build nests or incubate eggs; females lay their eggs in nests of other songbirds. They are the only North American songbird to do so. Females deposit 1 or sometimes 2 eggs per host nest, laying up to 25 or more eggs per nesting season. The cowbird nestlings usually out-compete other nestlings for food, crowding them out of the nest.

Mortality

The annual survival rate of blackbirds and grackles is about 50-60% for adults (1 year or older) and even less for first-year birds.

Because of their abundance, blackbirds are an important food source for a variety of mammalian and avian predators. Predation, exposure to inclement weather, and flying into wires and other structures are all important sources of mortality.

Population Status

The red-winged blackbird is one of the most abundant birds in North America. In July, after the young have fledged from nests, the continental population exceeds 300 million birds. The common grackle is the second most abundant blackbird, with a population approaching 200 million in mid-summer. Most of the other blackbird species, although not as common as the redwing or grackle, all have abundant healthy populations. Exceptions are the rusty blackbird and the tricolored blackbird (*Agelaius tricolor),* a species similar in appearance and behavior to red-winged blackbirds that has a restricted range in California.

The population of rusty blackbirds has declined by as much as 90% from 1966 to 2013 (based on Breeding Bird Survey data). The reason for this decline is not clear but some authors suggest habitat degradation as the root cause.

Habitat

Red-winged blackbirds nest in diverse habitats of marshes, hayfields, ditches, and hedge rows. Large flocks feed in fields and bottomlands. Common grackles nest in small colonies in shelterbelts (especially evergreens such as spruces), farmyards, marshes, and towns. Flocks feed in fields, lawns, woodlots, and bottomlands. Common grackles often roost with redwings, but are partial to roosting sites in upland deciduous or pine trees. Great-tailed grackles nest in colonies in shrubs and trees, sometimes in association with herons and egrets. The flocks feed around farms, pastures, and parks. In winter, great-tailed grackles gather in nighttime roosts in live oaks and other dense vegetation.

Cowbirds deposit eggs in the nests of other birds. They feed as flocks in pastures, feedlots, and lawns, and often are associated with livestock. Yellow-headed blackbirds nest in emergent vegetation over marshes and other wetlands. They feed in agricultural fields, meadows, and pastures during late summer and fall, sometimes in association with redwings or other blackbirds.

Brewer's blackbirds nest in in colonies in a variety of habitats. They feed in flocks on waste grain and weed seeds in agricultural lands, pastures, and lawns. Rusty blackbirds nest in northern swamps, bogs, and muskeg throughout Canada, Alaska, northern New England, and Michigan. They often feed on insects in a variety of habitats. During winter, rusty blackbirds prefer swampy areas and river bottoms in the southern U.S. They often roost with other species of blackbirds.

Behavior

Outside of the nesting season, blackbirds generally feed in flocks and roost at night in congregations varying from a few birds to several million birds (Figures 4, 11). These

Figure 11. A flock of over 2,000 red-winged blackbirds descends into a sunflower field in North Dakota to feed on the ripening seeds.

flocks and roosting congregations sometimes consist of a single species, but often several species intermingle. Sometimes non-blackbird species, notably European starlings and American robins, join them. The flocks will forage during the day up to 30 miles from the nighttime roost location.

Redwings, common grackles, and cowbirds generally migrate from Canada and the northern U.S in October to November, spending the winter in the southern U.S. Yellow-headed blackbirds are early migrants, departing the northern Great Plains by September, although flocks numbering several hundred can be found feeding in North Dakota in late September.

Food Habits

All blackbirds have an omnivorous diet consisting primarily of grains, weed seeds, fruits, and insects. The relative proportions of these food groups, however, vary considerably among species and even between sexes within a species.

Red-winged blackbirds feed primarily on insects during the nesting season (May through July), with the diet shifting predominantly to grain and weed seeds in late summer through winter. Males and females often forage in separate flocks, with females more insectivorous than males. The common grackle's diet is similar to that of the redwing, but the grackle is more predatory. Its diet occasionally includes small fish, field mice, songbird nestlings, and eggs. Grackles have a larger, stronger bill than redwings, allowing them to crack open and feed on acorns and other tree fruits in winter. Great-tailed grackles are omnivorous: their diet includes insects, aquatic organisms, eggs from nesting birds, fruits, and grains. The diet of cowbirds consists predominantly of weed seeds and grains, and less than 25% insects. The diet of yellow-headed blackbirds is similar to that of redwings; yellowheads primarily eat insects during the nesting season and grains and weed seeds at other times. Brewer's blackbirds eat about two-thirds grain and weed seeds and one-third insects and other animal matter. The diet of rusty blackbirds contains more insects than that of other blackbirds. Over 50% of their food is animal matter. Grain (gleaned from harvested fields in fall and winter), weed seeds, and tree fruits also are eaten.

Legal Status

Blackbirds are native migratory birds, and thus come under the jurisdiction of the Federal Migratory Bird Treaty Act (MBTA), a formal treaty with Canada, Mexico, Japan, and Russia. Blackbirds have federal protection in the U.S. Most species of blackbirds may be killed under the Depredation Order for Blackbirds, Cowbirds, Grackles, Crows, and Magpies (50 CFR 21.43), but only when found "committing or about to commit depredations upon ornamental or shade trees, agricultural crops, livestock, or wildlife, or when concentrated in such numbers and manner as to constitute a health hazard or other nuisance." In 2010, rusty blackbirds were removed from the Depredation Order and given full protection by the MBTA as has always been the case for the tricolored blackbird. Other revisions include that nontoxic shot must be used when taking birds by shotgun under the authority of CFR 21.43. Also, at the end of each calendar year anyone taking blackbirds under CFR 21.43 must provide the US Fish and Wildlife Service (USFWS) the following information: name and address of taker, species and number taken, month when birds were taken, state and county where birds were taken, and a general explanation of why the birds were taken.

Some states and municipalities have additional restrictions on the killing of blackbirds. European starlings, which often associate with blackbirds during winter, are an introduced species in North America and are not protected by the MBTA.

Acknowledgements

Figure 1. Photo by G.M. Forcey
Figure 2. Photo by J.F. Glahn, USDA
Figure 3. Photo by R.A. Dolbeer, USDA-APHIS-WS
Figure 4. Photo by S.R. Stopack, USDA-APHIS-WS
Figure 5. Photos by R.A. Dolbeer, USDA
Figure 6. Photo by G.M. Linz USDA-APHIS-WS, NWRC
Figure 7. Photo by R.A. Dolbeer, USDA-APHIS-WS
Figure 8. Photo by R.A. Dolbeer, USDA-APHIS-WS
Figure 9. Photo by R.A. Dolbeer, USDA-APHIS-WS
Figure 10. Photo by Alan Schmierer, FLICKR Commons
Figure 11. Photo by North Dakota State University

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Glossary

Blackbird: A group of new world bird species in the family Icteridae, not to be confused with the Eurasian blackbird (*Turdus merula*), which is a thrush related to the American robin.

Nesting season: The time of year, typically from April to early July, when blackbirds build nests (except for cowbirds), lay eggs and raise young to fledging.

Roost: A site of dense vegetation (trees, cattails, brush) where blackbirds gather at dusk to spend the night. Blackbirds typically gather in roosts during all seasons outside the nesting season.

Key Words

Agelaius phoeniceus, blackbird, cowbird, crop damage, grackle, *Molothrus ater*, *Quiscalus mexicanus*, *Quiscalus quiscula*, redwing, red-winged blackbird, roost, starling, *Sturnus vulgaris*

Disclaimer

Wildlife can threaten the health and safety of you and others in the area. Use of damage prevention and control methods also may pose risks to humans, pets, livestock, other non-target animals, and the environment. Be aware of the risks and take steps to reduce or eliminate those risks.

Some methods mentioned in this document may not be legal, permitted, or appropriate in your area. Read and follow all pesticide label recommendations and local requirements. Check with personnel from your state wildlife agency and local officials to determine if methods are acceptable and allowed.

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

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Internet Center for Wildlife Damage Management (http://icwdm.org)

National Wildlife Control Training Program (http://wildlifecontroltraining.com)

Appendix 1

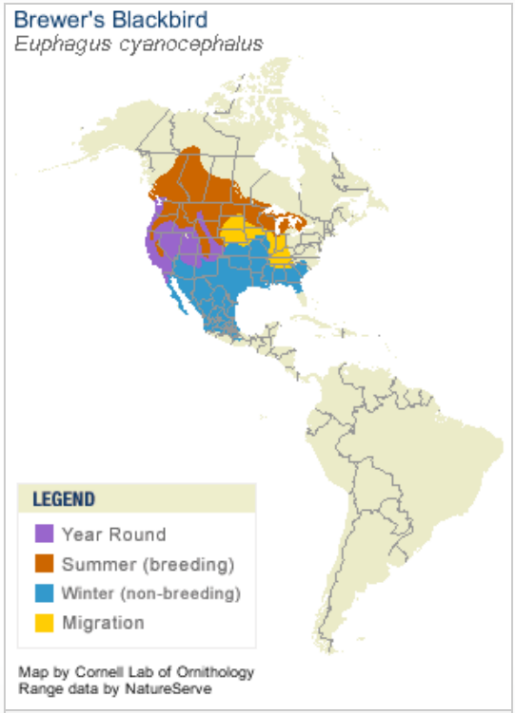
Damage Prevention and Control Methods for Blackbirds

Method of Control	Type of Crop Damage				
	Sprouting corn and rice	Ripening corn, sorghum and sunflower	Ripening rice and oats	Fruit crops	Feedlots
Exclusion	Generally not practical; netting for small plots	Generally not practical; netting for small plots; paper bags over ears/heads	Generally not practical; netting for small plots	Netting is cost effective for high-value crops	Various techniques
Cultural methods	Deep planting; avoid early planting of rice	Grow nonpreferred crops near roosts; provide alternative feeding sites; avoid early/late planting; use resistant hybrids; harvest as early as possible	Same as for ripening corn; resistant hybrids not available	Provide alternative feeding sites; early harvest	N/A
Frightening	Numerous devices available; must be varied to minimize habituation	Numerous devices available; must be varied to minimize habituation	Numerous devices available; must be varied to minimize habituation	Numerous devices available; must be varied to minimize habituation	Numerous devices available; must be varied to minimize habituation
Chemical repellents	Registered seed treatments may be available	Registered products may be available	Registered products may be available	Registered products may be available	Registered products may be available
Toxicants	None available	None available	None available	None available	Starlicide
Trapping	Generally not practical	Generally not practical	Generally not practical	Decoy traps	Decoy traps
Shooting	Helpful to reinforce frightening devices; futile for population reduction	Helpful to reinforce frightening devices; futile for population reduction	Helpful to reinforce frightening devices; futile for population reduction	Helpful to reinforce frightening devices; futile for population reduction	Helpful to reinforce frightening devices; futile for population reduction

Appendix 2

Range Maps of Common Blackbird Species. *Map by Cornell Lab of Ornithology. Data by NatureServe.*

Brewer's Blackbird
Euphagus cyanocephalus

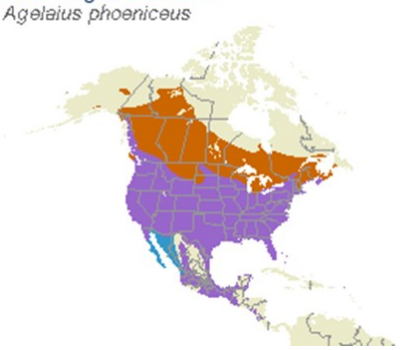


Brown-headed Cowbird
Molothrus ater

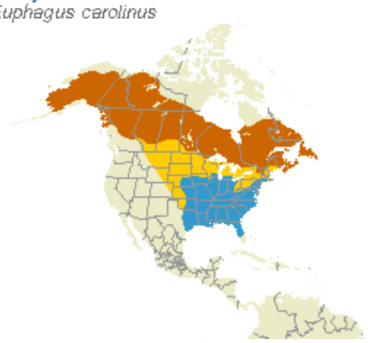
Common Grackle
Quiscalus quiscula

Great-tailed Grackle
Quiscalus mexicanus

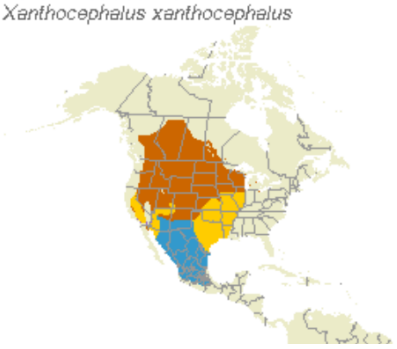
Red-winged Blackbird
Agelaius phoeniceus



Rusty Blackbird
Euphagus carolinus

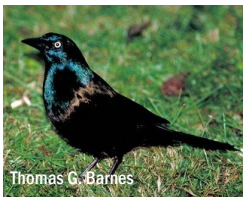
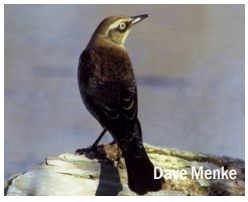


Yellow-headed Blackbird
Xanthocephalus xanthocephalus



Appendix 3

Characteristics of Selected Blackbird Species

Photo	Name	Size (Dunning 2007)	Feeding and habitat	Conflicts with humans
 Dave Menke	**Brewer's blackbird** (*Euphagus cyanocephalus*)	Male = 67 grams Female = 58 grams	Consumes large numbers of harmful insects during the summer months. Flocks feed in pastures and feedlots, and often are associated with livestock.	Causes generally minor damage to oats, fruit crops, and livestock feed.
 Alan D. Wilson	**Brown-headed cowbird** *(Molothrus ater)*	Male = 49 grams Female = 38 grams	Eats weed seeds and grains. Insects are < 25% of diet. Female lays eggs in nests of other songbirds, the only North American songbird to do so. Often roosts with red-winged blackbirds, grackles, and European starlings.	Damages sprouting rice; ripening sorghum, sunflower, and millet. Eats some livestock feed; gleans waste grain and seed from dung. Parasitizes nests of some endangered species. Winter roosts in urban areas cause disease and nuisance concerns.
 Thomas G. Barnes	**Common grackle** (*Quiscalus quiscula*)	Male = 120 grams Female = 92 grams	Omnivorous; feeds on acorns, insects, frogs, fish, and seeds. Prefers fields, lawns, woodlots, and bottomlands. Often roosts with red-winged blackbirds, brown-headed cowbirds, and European starlings.	Similar to damage by red-winged blackbirds, but will feed on corn in the dent stage, removing entire kernels. Also, grackles will pull up sprouting corn. Winter roosts in urban areas cause disease and nuisance concerns.
 John and Karen Hollingsworth	**Great-tailed grackle** (*Quiscalus mexicanus)*	Male = 222 grams Female = 116 grams	Omnivorous; feeds on insects, aquatic organisms, eggs from nesting birds, fruits, and grains on farms, pastures, and parks. Nests in colonies in shrubs or trees, sometimes in association with herons and egrets.	Damages fruits and melons, although the loss is generally minor. They will peck citrus fruit skin, creating blemishes or holes.
 Dave Menke	**Rusty blackbird** (*Euphagus carolinus*)	Male = 64 grams Female = 55 grams	More insectivorous than other blackbirds. Over 50% of their food is animal matter. Grain (gleaned from harvested fields), weed seeds, and tree fruits also are eaten. They prefer swampy areas and river bottoms.	This species does little damage to crops.. Population is declining and a specific depredation permit is required to take Rusty blackbirds. Roosts in small numbers with other blackbirds and European starlings in winter.
 G.M. Forcey	**Red-winged blackbird** (*Agelaius phoeniceus*)	Male = 65 grams Female = 40 grams	Eats primarily weed seeds and grains. Females feed on more insects than males. Nests in cattails in marshes and ditches, but also in upland hay fields and brush. Often roosts with cowbirds, grackles, and European starlings.	Damages sprouting rice; ripening corn, sunflower, rice, and other grain crops. Winter roosts in urban areas cause disease and nuisance concerns.
 Dave Menke	**Yellow-headed blackbird** (*Xanthocephalus xanthocephalus*)	Male = 80 grams Female = 50 grams	Feeds in agricultural fields, meadows, and pastures during late summer and fall, sometimes with red-winged blackbirds or other blackbirds. Nests in deep-water marshes.	Causes generally minor damage to ripening corn, sunflower, and oats, often in association with red-winged blackbirds.