

*BIOLOGY, LEGAL STATUS, CONTROL MATERIALS AND DIRECTIONS FOR USE*

**Blackbirds and Cowbirds**

Family: Icteridae



Fig. 1. Red-winged blackbird (♂; *Agelaius phoeniceus*)



Fig. 2. Tricolored blackbird (♂; *A. tricolor*)



Fig. 3. Yellow-headed blackbird (♂; *Xanthocephalus xanthocephalus*)



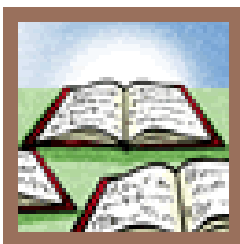
Fig. 4. Brewer's blackbird (♂; *Euphagus cyanocephalus*)



Fig. 5. Brown-headed cowbird (♂; *Molothrus ater*)



**Introduction:** The term blackbird loosely refers to a diverse group of 10 species sharing similar characteristics. The blackbird subfamilies share some common traits. The males are mainly black and they eat grain, seed, fruit, and insects, although diet percentages vary amongst species. While all blackbirds generally feed in flocks and roost at night, they have different nesting techniques, migration patterns, and impacts on agriculture. Details are provided in their respective sections.



**Legal Status:** Blackbirds and cowbirds are classed as migratory birds in the U.S. Code of Federal Regulations. In contrast to most migratory birds, you may lethally remove red-winged blackbirds (*Agelaius phoeniceus*), yellow-headed blackbirds (*Xanthocephalus xanthocephalus*), Brewer's blackbirds (*Euphagus cyanocephalus*) and brown-headed cowbirds (*Molothrus ater*) without a federal permit when they are found to be 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. However, you must attempt to control depredation using non-lethal methods before you may use lethal control, and when taking birds via shotgun, you must use non-toxic shot ([50 CFR 21.43](#))

**Important:** The tricolored blackbird (*A. tricolor*) is listed as a Species of Conservation Concern nationally, and in 2014 the tricolored blackbird received emergency “Endangered” status under the California Endangered Species Act. This listing provided temporary (6 month) protection but is expected to be renewed. The species is currently under review by the California Department of Fish and Wildlife for permanent protection.



## Red-winged Blackbird

**Identification:** The male is a little smaller than a robin and is black with red and yellow shoulder patches (Fig. 1). The female is smaller and brown and it resembles a large sparrow. The red-winged blackbird can easily be confused with the tri-colored blackbird. Red-winged blackbirds have larger shoulder patches, and the outlining color is yellow. In tri-colored blackbirds, the outlining color is white. Further information including audio is available at:

[Cornell Lab of Ornithology](#)

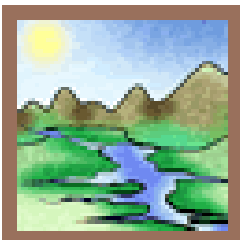


**Damage:** Damage is often focused on grain, including: rice, wild rice, milo, oats, wheat, barley, and sweet corn. They will also damage chili peppers, almonds, sunflowers, and lettuce, and cattle feed is frequently consumed at feedlots.

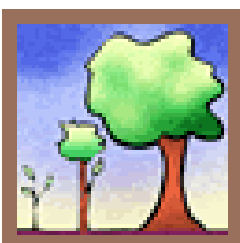


**Range:** Common blackbird found throughout most wetland habitats in California. They do not typically breed above 6,000 feet, although local populations are occasionally found at higher elevations. Red-winged blackbirds retreat from higher elevation areas during winter.

[Red-winged blackbird](#)



**Habitat:** Primarily marshes and swamps, but also inhabits hayfields, meadows and cultivated lands.



**Biology:** Nesting begins in March and continues into May, usually in colonies. Four eggs are usually laid in a nest from 3 inches to 6 feet above water or ground in cattails, tules, willows, or other vegetation. Two broods may be reared each year. Incubation takes 11 to 14 days. Young birds can fly at 11 to 14 days after hatching.

Insects and other small invertebrates are the major food sources in spring and summer; in fall and winter, grain and weed seeds are consumed in large amounts. Some of the grain is waste grain gleaned from harvested fields and spills, but local concentrations of red-wings may inflict heavy damage on grain crops from the milk stage onward. Shattering of grain caused by the landing and roosting of red-winged blackbirds in the crop can also lead to significant damage. Red-wing blackbirds do not typically eat fruit.

Typical migration does not occur in California, although flocks do move around throughout the nonbreeding season. Northern-most populations will also relocate to more southerly locations in the Central Valley during the winter. By mid-June, small family groups are feeding about the fields. By July, these groups are joining to form larger flocks, and by mid-August, some areas have become points of concentration for a large population. From then until March, their activity is a definite routine, centering first on a food supply and second on a favorable roosting location.



## Tricolored Blackbird

**Identification:** The male is a medium-size bird that is black with red and white shoulder patches (Fig. 2). The adult male red-winged blackbird can easily be confused with the tricolored blackbird. Red-winged blackbirds have larger shoulder patches, and the outlining color is yellow. In tri-colored blackbirds, the outlining color is white. Adult females are dark brown in color with dark gray and brown streaks. Adult female tricolored blackbirds can be distinguished from their red-winged blackbird counterparts by their darker brown bellies. Further information is available at the [UC Davis Tricolored Blackbird Portal](#):

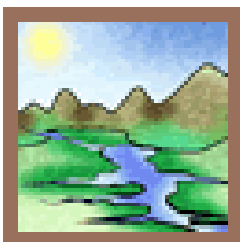


**Damage:** Same as red-wing blackbirds.

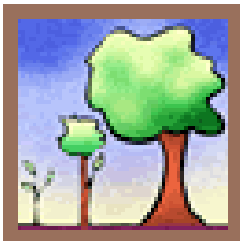


**Range:** Current breeding distribution is primarily found in the Central Valley and southern California. Wintering populations are focused primarily in the Sacramento-San Joaquin Delta and the central coast.

### [Tricolored blackbird](#)



**Habitat:** Historically, freshwater swamps, marshes, and surrounding open areas have been preferred habitats. More recently, tricolored blackbirds utilize grain fields extensively. Fields with abundant herbaceous growth (e.g., mustards [*Brassica* spp.], mallows [*Malva* spp.], and thistles [*Cirsium* spp.]) are preferred.



**Biology:** Nesting begins in March and continues into May. Three to five eggs, usually four, are laid in a small open-cup nest, which may be in a colony of thousands of nests. Tricolored blackbirds are the most gregarious songbird in North America. Incubation takes about 11 days, and first flight of the young occurs 10 to 14 days after hatching. Females may nest twice per year and are capable of breeding at 1 year of age; males do not usually breed until their second year.

The tricolored blackbird's diet is similar to the red-winged blackbirds, but because flocks are larger, the damage to grain can be greater. Movements are irregular. The birds often desert the nesting location as soon as the young are able to fly. During August, flocks from the various nesting marshes begin to concentrate into areas of abundant food. The roosting location may continue as a center of activity throughout the winter.



## Yellow-headed Blackbird

**Identification:** Similar in size to the red-winged blackbird, the male has a bright yellow head and breast (Fig. 3). They also have a white wing patch when in flight. The female is smaller and has a browner overall appearance. In contrast to males that have a complete yellow head, females have a yellow throat and breast.

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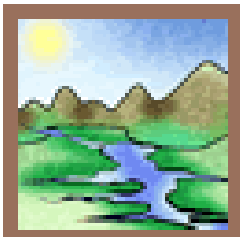


**Damage:** Diet is similar to red-winged blackbirds, consisting of grains for most of the year, but switching to insects during the nesting season.



**Range:** Distribution is somewhat erratic in California, with the largest concentrations in California east of the Sierra and Cascade ranges and in the Imperial Valley.

[Yellow-headed blackbird](#)



**Habitat:** Historically, freshwater swamps, marshes, and surrounding open areas have been preferred habitats. Yellow-headed blackbirds also heavily utilize grain fields in close proximity to the preferred freshwater swamps and marshes.



**Biology:** Most yellow-headed blackbirds migrate out of the state in winter, although they remain fairly common in the Imperial Valley during winter. Nesting commences following their return in mid-April. Nests are built in reeds over large bodies of water 2 to 4 feet deep. Nests may be from 6 inches to 3 feet above the water and contain 3 to 5 eggs, usually 4. Yellow-headed blackbirds usually nest in colonies and defend their territory against other blackbirds. Polygamy is suspected, as breeding females usually outnumber males at the nesting site by about 2:1. This is likely because it takes males 2 years to gain their striking plumage, whereas females are ready for breeding after 1 year.

Yearling males are chased away from the nest colony by mature males, and the yearlings usually settle a short distance away. Incubation takes 12 to 13 days and nestlings fly after 9 to 12 days. Food is mostly grain and weed seeds, though insects and other invertebrates make up about 33 percent of the diet, primarily during the nesting period. The yellow-headed blackbird is rarely found in sufficient numbers to require control measures directed against it alone. In company with red-winged blackbirds, it may enter into grain fields. In such instances, it is adequately controlled by the methods used for red-wing blackbirds.



## Brewer's Blackbird

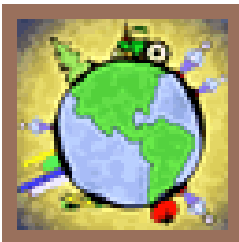
**Identification:** Both males and females are approximately robin-size. Males are all black with whitish eyes (Fig. 4), while the female is brownish gray with dark-colored eyes.

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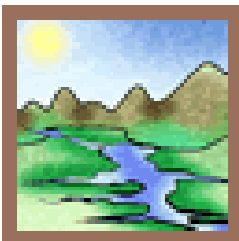


**Damage:** Brewer's blackbirds will damage grain, fruit, lettuce, cabbage, almonds, prunes, and tomato crops. They will also consume cattle feed at feedlots. However, damage from this species is typically less than that experienced by many other blackbird species.

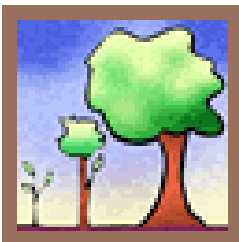


**Range:** Common throughout California. Winters in valleys and along the coast from San Francisco southward.

[Brewers Blackbird](#)



**Habitat:** Brewer's blackbirds utilize a variety of open habitats including coastal scrub, meadows, and urban environments.



**Biology:** In February or March, flocks return to their breeding location where during the initial weeks, the birds pair off into more or less permanent pairs; pairing may break down in the non-breeding season but is usually reestablished each spring. Occasionally polygamy occurs in the flock when the number of females exceeds the number of males. Nests are built in loose colonies on the ground or in trees at distances up to 150 feet above the ground. Females lay between 3 and 7 eggs, with incubation lasting 12 to 14

days. Age at first flight is 13 to 14 days. If the first clutch of eggs does not survive, the pair will generally attempt a second or even third, but if the first brood is successful, there is seldom a second attempt.

Food is about two-thirds vegetable matter, largely grain, with various insects and small invertebrates making up the remainder. After the nestlings can fly freely, the nesting population often joins with flocks of other blackbirds, and the entire flock may roost at their nesting sites or in other suitable places. The roosting place will often change. Part of the flock may move south in the winter. There is some evidence that winter residents contain a disproportionate number of adult males.



**Brown-headed Cowbird**

**Identification:** The smallest of the blackbirds; males are black with a brown head (Fig. 5), while females are brownish gray. Brown-headed cowbirds have a shorter tail and thicker head than other blackbirds.

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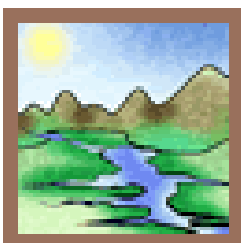


**Damage:** They can damage grain crops and will consume cattle feed at feedlots. They also parasitize other songbirds' nests, negatively impacting the reproductive capabilities of these songbirds.



**Range:** The brown-headed cowbird is a common breeder throughout California. They withdraw from montane and northerly locations during winter, but are common in the Imperial and Colorado River valleys during this season. Brown-headed cowbirds are also fairly common in coastal areas during winter.

[Brown-headed cowbird](#)

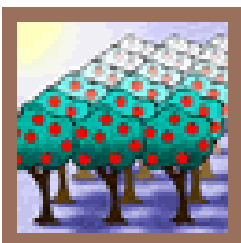


**Habitat:** Prefer grasslands, farmlands, forest edges, groves, and riparian woodlands. They are found about everywhere except for forests.



**Biology:** The brown-headed cowbird is a nest parasite, laying its eggs in the nest of other birds. Cowbirds have laid eggs in more than 220 different species nationwide, but favored species include warblers, small sparrows, and red-winged blackbirds. In central California, females lay about 30 eggs each season, with usually 1 to 2 eggs laid per nest. The cowbird egg hatches sooner than the eggs of the host, and, being older, the young cowbird often gets so much more of the food that the other nestlings do not

Incubation lasts 11 to 12 days and the age of first flight is more than 19 days. Food of adult birds is more than 75 percent vegetable matter, such as seeds and grain. The cowbird is named for its common association with bison and cattle, whose movements stir up insects eaten by the cowbird. Cowbirds flock with other blackbirds to feed and are responsible for some grain damage.

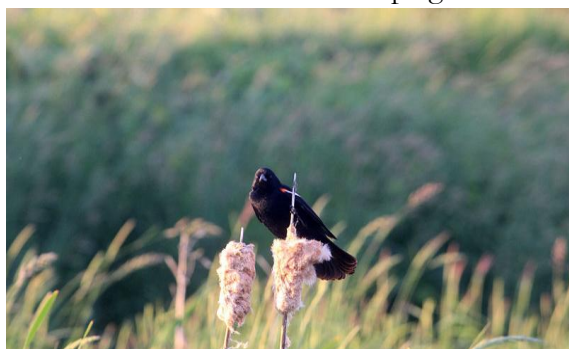


**Damage Prevention and Control Methods (All Blackbirds and Cowbirds)**

**Exclusion:** Exclusion of blackbirds from agricultural crops is practical only for small gardens, experimental plots, and high value fruit crops. Use lightweight netting 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.

**Habitat Modification:** Most 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, alternative feeding sites should be made available to reduce the feeding pressure on these cash crops. Delaying the plowing or tilling of previously harvested cropland near roosts to provide alternative feeding sites is one strategy to reduce damage to maturing crops. Also, 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.

Aquatic formulations of the herbicide glyphosate can be used to thin out dense stands of cattails in marshes where large numbers of blackbirds roost. The herbicide is applied in swaths to about 70 percent of the marsh. Thinning the cattail stands decreases blackbird roosts in the marsh and increases use by waterfowl for nesting and other activities.





The timing of harvest can be very important in reducing damage to fields from flocks of blackbirds. For example, red-winged blackbirds 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. Although 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. Hybrids of corn with long husk extension and thick husks are more resistant to damage than other hybrids. Sorghum that contains high tannin content is also less preferred than low-tannin varieties. For sunflowers, 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.

**Frightening Devices:** The use of frightening devices can be 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. Devices need to be employed in the early morning and in late afternoon when the birds are most actively feeding. 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 more formidable for crops such as sunflower and sorghum which may be vulnerable for up to 6 weeks.

Propane exploders (some with timers that automatically turn them on and off each day) are the most popular frightening devices. In general, use at least one exploder for every 10 acres 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 scare devices. Also effective are shell crackers, 12-gauge shotgun shells containing fire cracker projectiles that explode after traveling up to 150 yards. Shooting birds with a shotgun, using standard bird shot, often can kill a few birds and reinforce other scare devices. This technique, however, is usually 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 since they often just move out of range.

A variety of other bird-frightening devices, including electronic noise systems, helium-filled balloons tethered in fields, radio-controlled model planes, reflecting tapes made of Mylar®, electronic-recorded distress calls for birds, and various types of scarecrows are also occasionally used to rid fields of blackbirds. The effectiveness of these 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. As mentioned with regard to propane exploders, birds tend to adjust or adapt to frightening devices. It is usually best to use 2 or more devices than to rely on a single device.



**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 usually cost-effective in frightening blackbirds from large agricultural fields, and it is totally ineffective as a means of reducing populations.

**Fumigants:** No fumigants are registered or practical for use for blackbirds.

**Repellents:** Methyl anthranilate is a repellent registered for use on maturing grain, sunflowers, and some fruit crops. Efficacy can be spotty with this repellent, particularly on grain crops. Several seed-treatment repellants using anthraquinone have been registered to reduce bird damage to corn, rice, and other crops in some states, but it is not currently registered for use on California. The registration status of these products changes continually; thus, check with your local county agricultural commissioner or Cooperative Extension staff for information on current registration of repellents. Up to date information is also available at the [California Department of Pesticide Regulation website](#).

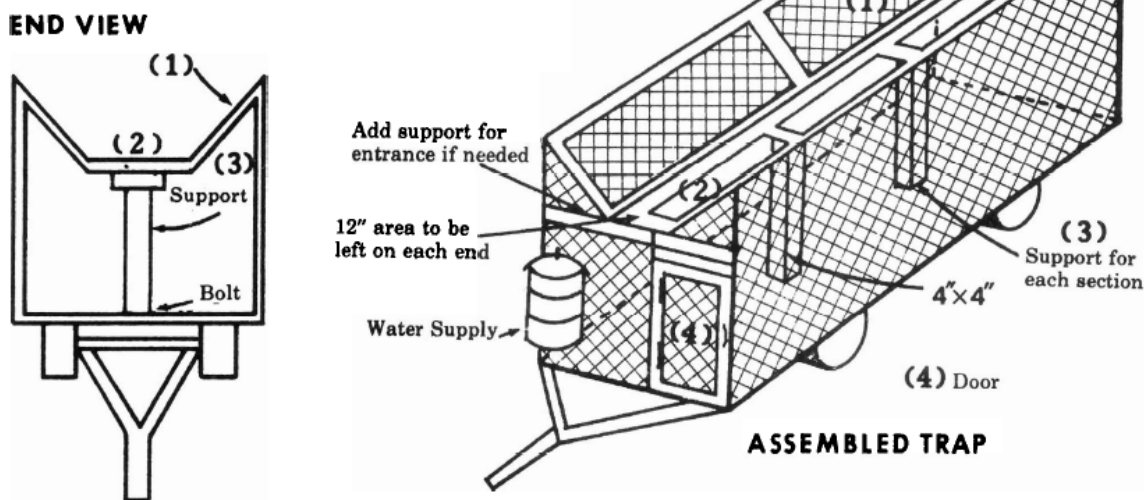
**Trapping:** Certain species, particularly red-winged blackbirds and brown-headed cowbirds, often can be trapped in decoy traps. Consult a state wildlife official before putting a decoy trap into operation. A decoy trap is a large (for instance, 20 x 20 x 6 feet) poultry wire or net enclosure containing 10 to 20 decoy birds, food, and water. A cotton trailer may be converted to a large mobile trap by constructing an entrance on top and plugging all escape holes. Birds enter the trap through an opening (often 2 x 4 feet in the top of the cage that is covered with 2 x 4 inch welded wire. The blackbirds can fold their wings and readily drop through the openings to the food (generally cracked corn, millet, or sunflower seeds) below. A small (for example, 2 x 2 x 3 feet) 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 per day and occasionally up to 300 when located near a large roost. Obviously, the decoy trap is of questionable value in 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. Decoy traps might also be successful in reducing localized populations around feedlots or fruit crops.

Any nontarget birds accidentally captured in a decoy trap should be released immediately. Blackbirds to be disposed of should be killed humanely. They can be transferred from the gathering cage to a cardboard box or plastic-covered cage and asphyxiated with carbon dioxide gas from a CO<sub>2</sub> bottle. All dead birds should be examined for bands, and any bands found should be reported. Dispose of dead birds by burying or in plastic bags in the trash.

**Converted Cotton Trailer Trap**

Cotton trailers can be converted to a very mobile and efficient trap by covering the top in the same design as a modified Australian crow trap. Cotton trailer traps can be used to capture the same type birds as with the modified Australian crow trap.





**Toxicants:** Avitrol® is a registered chemical frightening agent for blackbirds but is no longer registered for use in field crops. It can be used in some non-crop areas adjacent to field crops. The ingestion of one or more treated particles by a blackbird induces erratic flight, distress calls, and usually death. This behavior often causes the remaining birds in the flock to leave the field. Careful consideration must be given to the timing of initial and repeat baiting. Begin baiting when birds first initiate damage, and repeat as necessary, typically at 5 to 7 day intervals. Avitrol® is a restricted-use pesticide and is reserved for use by public agencies and licensed pest control operators qualified in bird control. Use according to label directions.

The avicide DRC-1339 (3-chloro-4-methylaniline hydrochloride, also known as Starlicide®) is an effective option for reducing blackbird populations around feedlots and poultry barns. This slow acting toxicant is a restricted-use pesticide that can only be used by USDA/APHIS/Wildlife Services personnel. The toxicant requires 1 to 3 days for mortality to occur, thereby reducing potential bait avoidance concerns. If substantial problems with large populations of blackbirds occur around a feedlot, contact Wildlife Services to determine the feasibility of such a baiting program.

## REFERENCES AND ADDITIONAL READING

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\*\*Adapted from several previous additions authored by D.O Clark, J.P. Clark, and T.P. Salmon, among others.