

BIOLOGY, LEGAL STATUS, CONTROL MATERIALS AND DIRECTIONS FOR USE

Blackbirds and Cowbirds

Red-winged, *Agelaius phoeniceus*, and its subspecies

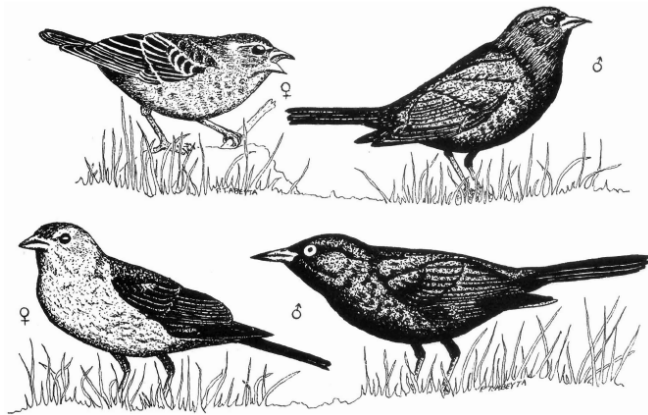
Tricolored, *Agelaius tricolor*

Yellow-headed, *Xanthocephalus xanthocephalus*

Brewer's, *Euphagus cyanocephalus*

Brown-headed Cowbird, *Molothrus ater*

Family: Icteridae



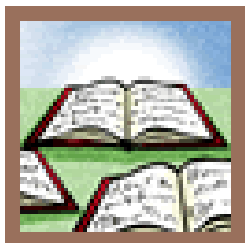
Introduction: The term blackbird loosely refers to a diverse group of 10 species sharing similar characteristics. The blackbird subfamilies share some common traits. The males are mainly black and they eat grain, seed, fruit, and insects, although diet percentages vary amongst subspecies. While all blackbirds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



Identification: The five subspecies of blackbird commonly found in California are summarized below. Further information is available at:

[Cornell Lab of Ornithology](#)

[The Royal Society for the Protection of Birds](#)



Legal Status: Blackbirds and cowbirds are classed as migratory birds in the U.S.

Code of Federal Regulations. These birds may be controlled 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.

Important: The tricolored blackbird (*Agelaius tricolor*) is listed as a Bird of Conservation Concern regionally and nationally, and as a California Bird Species of Special Concern. It is under status review as a candidate for possible federal listing as a threatened or endangered species.

Red-winged Blackbird



Identification: The male is a little smaller than a robin and is black with red and yellow shoulder patches. The female is smaller and brown and it resembles a large sparrow. Further information including audio is available at:

[Cornell Lab of Ornithology](#)

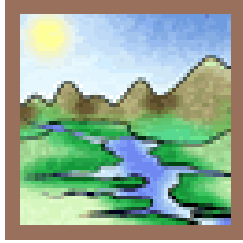


Damage: Grain, including: rice, wild rice, milo, oats, wheat, barley, and sweet corn; chili peppers, almonds, sunflowers, and lettuce; cattle ration consumption at cattle feedlots.



Range: Six sub-species of red-winged blackbird are known to inhabit portions of lowland California. Most of the members of these races do not migrate out of their summer range area. The *A p californicus* subspecies of the central valley is distinguished by the lack of any orange border on its Red-wing patches, but the other subspecies are not readily separated in the field. Some integration between races may occur along range boundaries. Breeding ranges of the subspecies are as follows: Sacramento and San Joaquin Valleys from Red Bluff to Visalia, *A p californicus*; northeastern California east of Sierra summit, and wintering on the Central Valleys, *A p nevadensis*; Imperial Valley and lower Colorado River Valley, *A p sonoriensis*; valley of the south fork of the Kern River, Kern County, *A. p. aciculatus*; central coastal California from Lower Lake to Soledad, *A p mailliardorum*; north coast from Mendocino County northward, *A p caurinus*; south coast from San Luis Obispo County southward, *A p neutralis*.

[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 14 feet above water or ground in cattails, tules, willows, or other vegetation. Some authorities say two broods are raised each year. Incubation takes 11 to 14 days. Young birds can fly at 11 to 14 days after hatching.

Food: 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-wings are not known to eat fruit.

Movements: Migration out of the subspecies range is uncommon, though some southward relocation does occur. 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

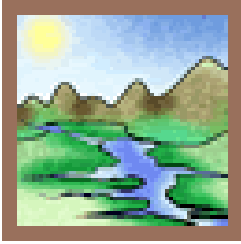


Damage: Same as red-wing blackbirds.

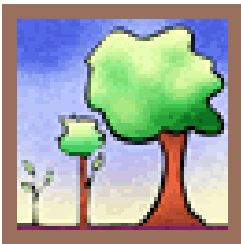


Range: Nests from the Klamath Lake area southward, west of the Sierra Nevada, into Baja California. It winters in its California range to Baja California.

[Tricolored Blackbird](#)



Habitat: Freshwater swamps and marshes and surrounding open areas.



Biology: Nesting begins in March and continues into May. Three to five eggs, usually four, are laid in a nest like the red-wing's, which may be in a colony of thousands of nests. Tricolors are very gregarious. Incubation takes about 11 days, and first flight of the young occurs 10 to 13 days after hatching. Food is similar to the red-wing's, but because flocks are larger, the damage to grain is typically 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

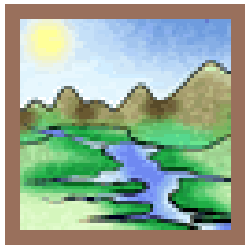


Damage: Grains.



Range: Distribution is erratic in California with the largest concentration in northeastern California.

[Yellow-headed Blackbird](#)



Habitat: Freshwater swamps and marshes and surrounding open areas.



Biology: Most yellow-headed blackbirds migrate out of the state in winter. Nesting commences following their return in mid-April. Nests are built in reeds over water 2 to 4 feet deep. Nests may be from 6 inches to 3 feet above the water and contain three to five eggs, usually four. 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 probably because it takes males two years to gain their striking plumage, whereas females are ready for breeding after one 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. The yellow-headed blackbird is rarely found in sufficient numbers to require control measures directed against it alone. In company with red-wings, it may enter into grain fields. In such instances, it is adequately controlled by the methods used for red-wing blackbirds.

Brewer's Blackbird

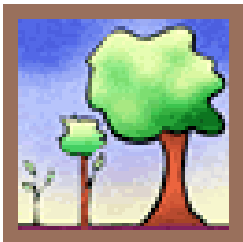


Damage: Grain, fruit, lettuce, cabbage, almonds, prunes, and tomatoes; consumption of cattle ration at cattle feedlots.



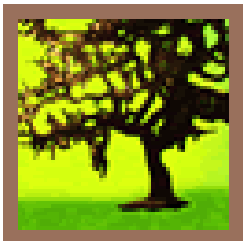
Range: Common throughout California. Winters in valleys and along the coast from San Francisco southward.

[Brewer's Blackbird](#)



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. Three to seven eggs may be laid; usually five, and incubation lasts 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



Damage: Grains and consumption of ration at cattle feedlots. Nest parasite on small native birds.



Range: Resident throughout the state. Cowbirds from northern regions over-winter in California and Mexico.

Brown-headed Cowbird



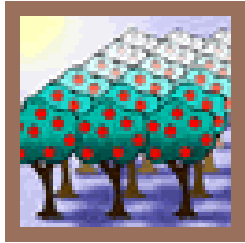
Habitat: Farmlands, forest edges, groves, and riparian woodlands.



Biology: The cowbird is a nest parasite, laying its eggs in the nest of other birds. Nationwide, 101 different species have been known to rear young cowbirds successfully, but favored species include warblers, small sparrows, and robins. Authorities differ as to the number of eggs laid in a season (Reilly, up to five; Pickett, eight to ten), but they agree that each egg is usually laid in a different 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

survive.

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 grazing 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.

Experimental programs are underway in sunflower production areas of the northern plains to thin out dense stands of cattails in marshes where large numbers of blackbirds roost. A registered herbicide (Rodeo[®]) 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.



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. 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: 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 six 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, tape-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 two or more devices than to rely on a single device.

Repellents: No bird repellents are currently registered for maturing grain, sunflower, or fruit crops. Several seed-treatment repellents such as Ro-pel[®] (active ingredient is benzyl diethyl ammonium saccharide) and Sevana Bird Repellent[®] (ground garlic and pepper) have been registered to reduce bird damage to freshly planted and sprouting corn and other crops. However, the registration status of these products changes continually; thus, check with your local county agricultural commissioner or USDA-APHIS-ADC biologists for products currently registered. Up to date information is available at the [California Department of Pesticide Regulation website](#).

Toxicants: Avitrol[®] is a registered chemical frightening agent for blackbirds in corn and sunflower fields, though it is not commonly used in California. The bait is applied to fields in swaths, often by airplane, at the rate of 3 pounds per acre to one third of the field. 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 five to seven day intervals. Dense weed populations that hide bait, ground insects such as crickets that eat bait, and excessive rainfall can contribute to making the product ineffective.

Trapping: Certain species of blackbirds, particularly redwings, brown-headed cowbirds, and common grackles, often can be trapped in decoy traps. 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 (for instance, 20 x 20 x 6 feet) poultry wire or net enclosure containing 10 to 20 decoy birds, food, and water. 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.

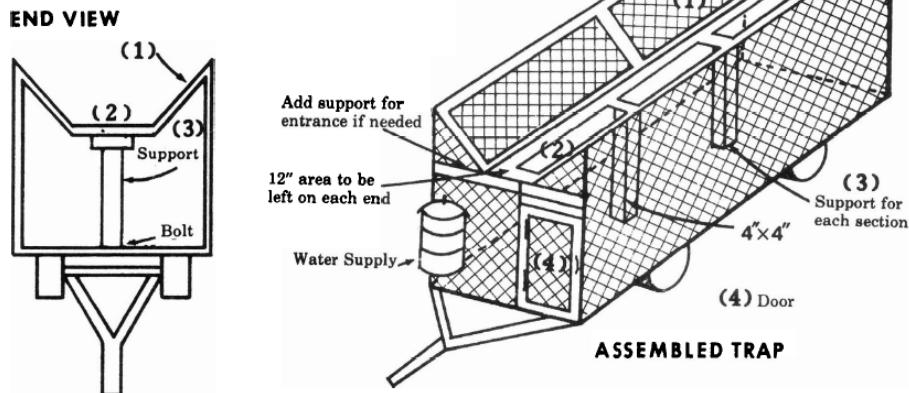
A decoy trap often catches 10 to 50 blackbirds and starlings per day and occasionally up to 300 when located near a large roost. Obviously, the decoy trap is of questionable value in trying to reduce large roosting populations and damage to the surrounding agricultural fields. These traps, however, can 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 CO₂ 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.

Shooting: As discussed under Frightening, 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.

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.



REFERENCES AND ADDITIONAL READING

Askham, Leonard R., 1990. Effects of Artificial Perches and Nests in Attracting Raptors to Orchards. Proc. 14th Vertebrate Pest Conf. (L.R. Davis and R.E. Marsh, Eds.) Published at Univ. of Calif., Davis. Pp. 144-148.

Askham, Leonard R., 2000. Efficacy of the Aerial Application of Methyl Anthranilate in Reducing Bird Damage to Sweet Corn, Sunflower, and Cherries. Proc. 19th Vertebrate Pest Conf. (T.P. Salmon & A.C. Crabb, Eds.) Published at Univ. of Calif., Davis. Pp. 22-25.

Avery, Michael L., D.G. Decker, 1994. Field Tests of a Copper-Based Fungicide as a Bird Repellent Rice Seed Treatment. Proc. 16th Vertebrate Pest Conf. (W.S. Halverson & A.C. Crabb, Eds.) Published at Univ. of Calif., Davis. Pp. 250-254.

Avery, Michael L., D. Becker, J.S. Humphrey, 1998. Development of Seed Treatments to Control Blackbirds. Proc. 18th Vertebrate Pest Conf. (R.O. Baker & A.C. Crabb, Eds.) Published at Univ. of Calif., Davis. Pp. 354-358.

Avery, Michael L., D.A. Whisson, D.B. Marcum, 2000. Responses of Blackbirds to Mature Wild Rice Treated with Flight Control Bird Repellent. Proc. 19th Vertebrate Pest Conf. (T.P. Salmon & A.C. Crabb, Eds.) Published at Univ. of Calif., Davis. Pp. 26-30.

Beason, Robert C., 2004. What Can Birds Hear? Proc. 21st Vertebrate Pest Conf. (R.M. Timm and W.P. Gorenzel, Eds.) Published at Univ. of Calif., Davis. Pp. 92-96.

Blackwell, Bradley F., 2002. Understanding Avian Vision: The Key to Using Light in Bird Management. Proc. 20th Vertebrate Pest Conf. (R.M. Timm and R. H. Schmidt, Eds.) Published at Univ. of Calif., Davis. Pp. 146-152.

Blackwell, Bradley F., B.E. Washburn, M.J. Begier, 2004. Evaluating Population Management Scenarios: Crunching the Numbers Before Going to the Field. Proc. 21st Vertebrate Pest Conf. (R.M. Timm and W.P. Gorenzel, Eds.) Published at Univ. of Calif., Davis. Pp. 306-311.

Cummings, John L., E.W. Schafer, Jr., D.J. Cunningham, 1990. An Evaluation of DRC-2698 Treated Baits for Reducing Blackbird Populations Associated with Sunflower Damage. Proc. 14th Vertebrate Pest Conf. (L.R. Davis and R.E. Marsh, Eds.) Published at Univ. of Calif., Davis. Pp. 357-360.

Cyr, Andre, D. Lancombe, 1992. Sterilants for Managing the Populations of Red-Winged Blackbirds (*Agelaius phoeniceus*) Proc. 15th Vertebrate Pest Conf. (J.E. Borrecco & R.E. Marsh, Eds.) Published at Univ. of Calif., Davis. Pp. 54-55.

Decker, David C., M.L. Avery, M.O. Way, 1990. Reducing Blackbird Damage to Newly Planted Rice with a Nontoxic Clay-Based Seed Coating. Proc. 14th Vertebrate Pest Conf. (L.R. Davis and R.E. Marsh, Eds.) Published at Univ. of Calif., Davis. Pp. 327-331.

DeFusco, Russell P., The U.S. 1998. Air Force Bird Avoidance Model. Proc. 18th Vertebrate Pest Conf. (R.O. Baker & A.C. Crabb, Eds.) Published at Univ. of Calif., Davis. Pp. 59-60.

Del Villar Gonzalez, David, N.A. Perez, 2002. Assessment of Bird Damage to Early-Ripening Rice in Cuautla, Morelos State, Mexico. Proc. 20th Vertebrate Pest Conf. (R.M. Timm and R. H. Schmidt, Eds.) Published at Univ. of Calif., Davis. Pp. 157-160.

Dolbeer, Richard A., S.K. Ickes, 1994. Red-Winged Blackbird Feeding Preferences and Response to Wild Rice Treated With Portland Cement or Plaster. Proc. 16th Vertebrate Pest Conf. (W.S. Halverson & A.C. Crabb, Eds.) Published at Univ. of Calif., Davis. Pp. 279-282.

Dolbeer, Richard A., 1998. Population Dynamics: The Foundation of Wildlife Damage Management for the 21st Century. Proc. 18th Vertebrate Pest Conf. (R.O. Baker & A.C. Crabb, Eds.) Published at Univ. of Calif., Davis. Pp. 2-11.

Gadd Jr., Pierre, 1996. Use of the Modified Australian Crow Trap for the Control of Depredating Birds in Sonoma County. Proc. 17th Vertebrate Pest Conf. (R.M. Timm & A.C. Crabb, Eds.) Published at Univ. of Calif., Davis. Pp. 103-107.

Gorenzel, W.P., T.P. Salmon, A.C. Crabb, 2000. A National Review of the Status of Trapping for Bird Control. Proc. 19th Vertebrate Pest Conf. (T.P. Salmon & A.C. Crabb, Eds.) Published at Univ. of Calif., Davis. Pp. 5-21.

Hueth, Brent, D. Cohen, D. Zilberman, 1998. Non-Predator Vertebrate Pest Damage in California Agriculture: An Assessment of Economic Impacts in Selected Crops. Proc. 18th Vertebrate Pest Conf. (R.O. Baker & A.C. Crabb, Eds.) Published at Univ. of Calif., Davis. Pp. 371-377.

Johnston, John J., J. Cummings, D.J. Kohler, R. Stahl, 2006. Probabilistic Model to Optimize Formulation and Baiting Strategies for the Pesticide CPTH (3-chloro-4-methylaniline hydrochloride). Proc. 22nd Vertebrate Pest Conf. (R.M. Timm and J. M. O'Brien, Eds.) Published at Univ. of Calif., Davis. Pp. 440-446.

Larkin, Ronald P., 2006. Locating Bird Roosts with Doppler Radar. Proc. 22nd Vertebrate Pest Conf. (R.M. Timm and J. M. O'Brien, Eds.) Published at Univ. of Calif., Davis. Pp. 244-249.

Linz, George M., D.L. Bergman, W.J. Bleier, 1992. Progress on Managing Cattail Marshes with Rodeo Herbicide to Disperse Roosting Blackbirds. Proc. 15th Vertebrate Pest Conf. (J.E. Borrecco & R.E. Marsh, Eds.) Published at Univ. of Calif., Davis. Pp. 56-61.

Linz, George M., H.J. Homan, 1998. Tracing the History of Blackbird Research Through an Industry's Looking Glass: The Sunflower Magazine. Proc. 18th Vertebrate Pest Conf. (R.O. Baker & A.C. Crabb, Eds.) Published at Univ. of Calif., Davis. Pp. 35-42.

Linz, George M., A.E. Barras, R.A. Sawin, H.J. Homan, D.L. Bergman, W.J. Bleier, 2002. Spring Migration Phenology and Habitat Use of Red-Winged Blackbirds in Eastern South Dakota. Proc. 20th Vertebrate Pest Conf. (R.M. Timm and R. H. Schmidt, Eds.) Published at Univ. of Calif., Davis. Pp. 97-102.

Linz, George M., Schaaf, Dionn A., P. Mastrangelo, H.J. Homan, L.B. Penry, W.J. Bleier, 2004. Wildlife Conservation Sunflower Plots as a Dual-Purpose Wildlife Management Strategy. Proc. 21st Vertebrate Pest Conf. (R.M. Timm and W.P. Gorenzel, Eds.) Published at Univ. of Calif., Davis. Pp. 291-294.

Linz, George M., H.J. Homan, L.B. Penry, 2006. Evaluation of Potential Insect Baits for Red-Winged Blackbirds. Proc. 22nd Vertebrate Pest Conf. (R.M. Timm and J. M. O'Brien, Eds.) Published at Univ. of Calif., Davis. Pp. 256-257.

Marcum, Daniel B., W.P. Gorenzel, 1994. Grower Practices for Blackbird Control in Wild Rice in California. Proc. 16th Vertebrate Pest Conf. (W.S. Halverson & A.C. Crabb, Eds.) Published at Univ. of Calif., Davis. Pp. 243-249.

Marsh Rex E., W.A. Erickson, T.P. Salmon, 1992. Scarecrows and Predator Models for Frightening Birds from Specific Areas. Proc. 15th Vertebrate Pest Conf. (J.E. Borrecco & R.E. Marsh, Eds.) Published at Univ. of Calif., Davis. Pp. 112-114.

Miller, Lowell A., K.A. Fagerstone, 2000. Induced Infertility as a Wildlife Management Tool. Proc. 19th Vertebrate Pest Conf. (T.P. Salmon & A.C. Crabb, Eds.) Published at Univ. of Calif., Davis. Pp. 160-168.

Okurut-Akol, Flavian H., R.A. Dolbeer, P.P. Woronecki, 1990. Red-Winged Blackbird and Starling Feeding Responses on Corn Earworm-Infested Corn. Proc. 14th Vertebrate Pest Conf. (L.R. Davis and R.E. Marsh, Eds.) Published at Univ. of Calif., Davis. Pp. 296-301.

Pipas, Patricia A., J.L. Cummings, J.C. Hurley, K.H. Sheffer, 2004. Evaluation of Different Rice Baits and Chemicals to Improve Efficacy of 2percent DCR-1339 to Reduce Blackbird Damage to Rice. Proc. 21st Vertebrate Pest Conf. (R.M. Timm and W.P. Gorenzel, Eds.) Published at Univ. of Calif., Davis. Pp. 77-82.

Poche, Richard M., 1998. Development of a New Bird Repellent, Flight Control. Proc. 18th Vertebrate Pest Conf. (R.O. Baker & A.C. Crabb, Eds.) Published at Univ. of Calif., Davis. Pp. 338-344.

Rodriguez, Ethel N., M.L. Avery, 1996. Agelaius Blackbirds and Rice in Uruguay and the Southeastern United States. Proc. 17th Vertebrate Pest Conf. (R.M. Timm & A.C. Crabb, Eds.) Published at Univ. of Calif., Davis. Pp. 94-98.

Slater, Arthur J., 1998. Twenty-Five Years of Managing Birds associated With Buildings at the University of California, Berkeley. Proc. 18th Vertebrate Pest Conf. (R.O. Baker & A.C. Crabb, Eds.) Published at Univ. of Calif., Davis. Pp. 315-318.

Stahl, Randal S., H.J. Homan, G.M. Linz, J.J. Johnston, 2004. Using Fatty Acid Profiles to Assess Dietary Intake of Sunflower in Red-Winged Blackbirds. Proc. 21st Vertebrate Pest Conf. (R.M. Timm and W.P. Gorenzel, Eds.) Published at Univ. of Calif., Davis. Pp. 87-91.

Swindle, Kelly F., 2002. Current Uses of Avitrol for Bird Management. Proc. 20th Vertebrate Pest Conf. (R.M. Timm and R. H. Schmidt, Eds.) Published at Univ. of Calif., Davis. Pp. 114-116.

Tobin, Mark E., 2002. Developing Methods to Manage Conflicts Between Humans and Birds- Three Decades of Change at the USDA National Wildlife Research Center. Proc. 20th Vertebrate Pest Conf. (R.M. Timm and R. H. Schmidt, Eds.) Published at Univ. of Calif., Davis. Pp. 91-96.

Wenning, Krista M., M.J. Begier, R.A. Dolbeer, 2004. Wildlife Hazard Management at Airports: Fifteen Years of Growth and Progress for Wildlife Services. Proc. 21st Vertebrate Pest Conf. (R.M. Timm and W.P. Gorenzel, Eds.) Published at Univ. of Calif., Davis. Pp. 295-301.

Wimberly, Ryan L., T. A. Slowik, H.J. Homan, L.B. Penry, 2004. Using Geographic Information System (GIS) Software to Predict Blackbird Roosting Locations in North Dakota. Proc. 21st Vertebrate Pest Conf. (R.M. Timm and W.P. Gorenzel, Eds.) Published at Univ. of Calif., Davis. Pp. 83-86.

Yoder, Christi A., L.A. Miller, 2006. Avian Contraception Tools: One Size Does Not Fit All. Proc. 22nd Vertebrate Pest Conf. (R.M. Timm and J. M. O'Brien, Eds.) Published at Univ. of Calif., Davis. Pp. 110-115.

