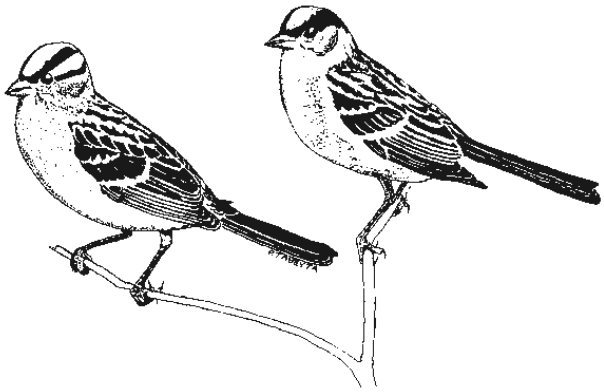
BIOLOGY, LEGAL STATUS, CONTROL MATERIALS AND DIRECTIONS FOR USE

Crowned Sparrows

White-crowned Sparrow, *Zonotrichia leucophrys*

Golden-crowned Sparrow, *Zonotrichia atricapilla*

Family: Fringillidae



Introduction: Four of the five subspecies of white-crowned sparrows are migratory. Elegantly marked in gray, brown, black, and white, the white-crowned sparrow is one of the best-studied songbirds in North America. Much of our knowledge of bird song and development is based on studies of this species. This sedentary race lives in a very narrow band along the California coast. The most widespread race, breeding across northern Canada and wintering in the eastern United States, is the least-studied and least well known of all the races.

Identification: White-crowned sparrows have a distinct pink or yellowish bill, erect posture, gray throat and breast, and a visible crown streaked with black and white. Their call is a clear whistle.

Golden-crowned sparrows are similar, except they have no white head stripes. A golden yellow central crown stripe is prominent with black borders. Their call is three to five clear whistles. Overall, golden crowned sparrows are less numerous and cause fewer problems than white-crowned sparrows. Further information including audio is available at:

Cornell Lab of Ornithology

Legal Status: Crowned sparrows are classed as migratory nongame birds in the U.S. Code of Federal Regulations. They may be controlled under the general supervision of the county agricultural commissioner or under a depredation permit from the U.S. Fish and Wildlife Service.

Damage: Crowned sparrows are involved in crop depredations over a wide area and upon a great variety of crops. Newly sown lawn grass and garden and flower seedlings are often completely consumed. Waves of migrating crowned sparrows have been known to destroy every small flower and vegetable planted in home gardens. The damage is most severe in areas adjacent to brushy river bottoms. Extensive damage often occurs to commercial plantings of lettuce, broccoli, sugar beets, alfalfa, and grain. Most of this damage occurs during the fall and winter period. Depredations are most noticed around field crops that have shrubbery or trees planted for windbreaks. These fields may be adjacent to river bottom brush or weedy fields. The damage occurs along the margin of the fields near dense cover that is favored by these birds. Often, this damage doesn't extend to more than 50 to 100 feet into the field. When the crop seeds germinate and emerge from the soil the seedlings are consumed by the birds. Damage normally stops when the seedlings reach a height of 3 or 4 inches.

Crowned sparrows play a minor role in disbudding attacks upon almond and other deciduous fruit trees. Occasionally, a few trees near a wood or brush pile may be severely attacked. Depredations increase as the buds swell.

Range: Three races of white-crowned sparrow are responsible for crop depredation in California west of the Sierra Nevada. The more important, Gambel's race, breeds in Alaska and Canada, but winters in the interior valleys of California and from San Francisco Bay southward. The Nuttall's race breeds in a narrow coastal strip from Santa Barbara to San Francisco, then more widely through the humid coastal area to British Columbia. In California, the Nuttall's race winters along the coast from Mendocino County to Santa Barbara County. The Puget Sound race breeds from northwestern California to British Columbia, and winters along the coast to central California. The golden-crowned sparrow breeds along the cost from Alaska to northern Washington and winters west of the Cascades and in the Sierra Nevada to Baja California.

White-crowned Sparrow

Golden-crowned Sparrow

Habitat: White-crowned sparrows are found in chaparral, brushy river bottoms, brush piles, fence rows, weedy fields, suburbs, etc. Depredations are usually noticed near such cover, especially near brushy river bottoms. They commonly winter in dense hedges and thick plantings of shrubbery. Golden-crowned sparrows are birds of spruce forests, stunted forests of Arctic and mountain slopes; in winter, denser thickets and scrub growth.

Biology: Golden-crowned sparrows usually arrive in October and the latest individuals leave in April. Gambel's white-crowned sparrow appear in California in September, reaches its maximum density during October, remains abundant until March, and is not commonly seen after May. By midwinter, groups have stabilized into flocks of 30 to 50 which stay until spring. Some birds commonly return to the same location each fall. Recurrent waves of migrants pass through some areas in spring and fall, making control difficult unless suitable cover is removed. The two races of white-crowned sparrow that breed in California arrive at breeding grounds in May. The pair bond is established and a nest is built in a bush or on the ground among mosses sheltered by some higher vegetation.

Three to five eggs are laid. Incubation takes 12 days and age at first flight is commonly 10 days. One brood per year is raised.

Food of white-crowned sparrows averages 75 percent vegetable matter and 25 percent animal food. Most of the animal food is taken during the breeding season, and, while in California in winter, white-crowned sparrows live largely on seeds. Golden-crowned sparrows are less numerous and less well-known than white-crowned sparrows but diet is thought to be comparable.

Damage Prevention and Control Methods

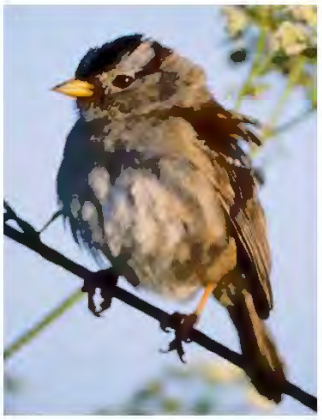
Exclusion: To protect flower seedlings and home vegetable gardens, grow plants under frames covered with wire or plastic netting.

Protective Devices: For the protection of flower seedlings and small vegetable gardens, plants should be grown under frames covered with ½ inch mesh hardware cloth or ¾ inch octagon rabbit wire or a netting of small enough mesh to exclude sparrows.

Habitat Modification

Elimination of Cover: Since crowned sparrows feed within a few yards from a safe retreat, the elimination of brush piles, rolls of wire, and stocks of wood around vulnerable crops can be effective in reducing damage. Weed borders along fields; fence rows and unnecessary shrubbery should be removed if occupied by sparrows.

Frightening Devices: Historically the most widely used sound devices for minimizing crown sparrow depredations were the automatic propane exploders. These units should be moved every day or two to prevent the birds from becoming habituated to the sound. Shell crackers fired from a 12-gauge shotgun, bird bombs®, and bird whistlers® discharged from a 6mm flare pistol are commonly used to frighten sparrows from fields. Some growers have reported limited success with raptor-mimicking kites tethered to stationary posts positioned along crop borders. Unfortunately, since crowned sparrows are so closely associated with available cover, frightening them often just drives them back into the cover and not from the general area.



Fumigants: Not a recommended method of control. None are registered.

Repellents: Capsicum in granular formulations is federally registered for repelling sparrows from certain fruit, vegetable, and grain crops. Always read product labels for specific information. These have not been reported as very effective.

Toxic Bait: None are registered.

Trapping: Crowned sparrows are usually quite easy to trap by using a lily-pad or clover-leaf trap and have been taken in modified Australian crow traps. A trap 3 feet high and 3 feet in diameter will take quite a number of birds at one time. Effective bait for trapping has been milo or finely cracked corn (chick scratch). Trapped birds should be euthanized using CO_2 gas from a bottle.

REFERENCES AND ADDITIONAL READING

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.