

## THE ECONOMIC STATUS OF FLOCKING BIRDS

By W. L. McATEE

While not one of those who viewed the Passenger Pigeon in its glory, the writer has seen flights of other birds that stretched from horizon to horizon, as geese in Louisiana and blackbirds in Texas. The span of such a local horizon is not great, yet a broad, many-ranked flock of birds straggling across it comprises a vast number of individuals. There are enough of the blackbirds, one thinks, to clean up quickly all of the grain in a ricefield. That this does not happen more often appears to be a dispensation of fate as the possibility of total consumption of a crop is ever present. When there still were a few rice plantations in the Bobolink's autumnal flyway along the South Atlantic Coast, the writer saw hordes of these apparently insatiable "rice suckers" attack the grain so pertinaciously it seemed that every kernel would be milked. Only the most active and persistent defensive efforts enabled the planters to save a worth-while part of the crop.

The case of the Bobolink is, perhaps, an extreme example, but the fact remains that flocking species are responsible for most of the economic losses caused by birds. Thus the Division of Economic Ornithology and Mammalogy, forerunner of the Biological Survey, gave much attention in its early years to the depredations of ricebirds, blackbirds, the English Sparrow, Cedarbird, and the Crow. Among the publications it was deemed expedient to issue in the first score of years, those on the "Food of the bobolink, blackbirds, and grackles," "The relation of sparrows to agriculture," and "The horned larks and their relation to agriculture" dealt with typically flocking birds. The first release devoted chiefly to "control" of a bird was "How to destroy English sparrows" (1910). The discussion which follows is based largely on data contained in leaflets in the wildlife series issued by the Biological Survey and the Fish and Wildlife Service.

As time went on, demands for assistance in bird control increased but it remained evident that in most instances flocking species were at fault. Among them was the Piñon Jay, bands of which emerge from their usual haunts, the piñon-juniper covered hills, to damage near-by fields of grain. Of the White-necked Raven we read, "It is the gregarious habits . . . that make it capable of inflicting damage to unharvested crops," particularly grain sorghums, corn, melons, and peanuts. Horned Larks, especially in California, damage vegetable and seed crops in their early stages when the population of the birds in the farming valleys is increased by influx of old and young after the breeding season in the surrounding foothills. Unusual culprits are the flocks of shore-feeding Herring Gulls that sometimes leave the beach and ravage the blueberry crop in Maine, and the Cape May and Tennessee warblers, ordinarily highly insectivorous, which puncture grapes to a serious extent when collected in numbers on their southward migrations. It is, of course, flocking birds that become obnoxious by roosting where not wanted and whose objectionable presence has called for much study as to means of dislodging the roosts or destroying the birds. These comprise chiefly Starlings, blackbirds, and feral pigeons, but sometimes also such more desirable species as Purple Martins and Robins. Continued attention to depredation on grains by blackbirds has been required and special groups of birds in California have occasioned losses so great that organized study and cooperative control have been necessitated.

Again these are mostly flocks, including the blackbirds and Horned Larks, previously mentioned, the House Finch which attacks buds, fruit, and even grains, and the

crowned sparrows, injurious to young garden and ornamental plants and to buds and blossoms. Waterfowl, so well known as flocking birds, in their recently increased numbers have committed agricultural damage in various parts of the country, as to rice in California and Arkansas, lettuce in Washington, corn in Colorado, and buckwheat in Michigan. Control of these game birds has included not only the use of a variety of frightening devices but also the opening of special seasons in which the birds could be shot. Similar treatment of Band-tailed Pigeons has been required because of their depredations upon cherries.

Sometimes economic loss results from the activities of local populations of very common birds, as through small fruit eating by Robins and Starlings in the East and of the rice depredations by the colony-nesting Tricolored Blackbird in California. In plain language suiting all these cases, there are too many birds of one kind in one place. But remedies also should be local and corrective rather than sweeping and vindictive.

But is there not another side to this matter? Indeed, there is, for as the flocking birds can do great harm by feeding on crops, they can also do great good by preying upon injurious insects. Illustrative discussion may be found in papers by the writer in the Annual Report of the Smithsonian Institution for 1920 and 1925 and by others in leaflet number 224 of the series mentioned above. It was flocks of California Gulls, for example, that saved vital crops for settlers in Utah from ravages of the Mormon cricket—a rescue that won for these birds the unparalleled recognition of commemoration by monument. Meadowlarks have rendered similar aid against the related coulee cricket in Washington State. Infestations of canker-worms in California have been wiped out by flocks of Brewer Blackbirds and of climbing cutworms by Crows. In Manitoba, it was recommended that farm practice be planned with the view of best utilizing the services of birds in destroying white grubs—a remarkable tribute to the utility of birds, including gulls, terns, crows, and blackbirds, which were found to destroy 90 per cent of the white grubs exposed by plowing. When the Rocky Mountain locust was so serious an enemy of the crops of early tillers of the Great Plains region, gregarious birds, especially the Yellow-headed and other blackbirds, utterly destroyed the pests locally. In recent times, outbreaks of other grasshoppers in the same region have been subdued by mass attack of Franklin Gulls. In North Carolina, the writer found flocks of native sparrows removing “green bugs” or wheat aphids at the rate of a million a day on a single farm. Among the most effective enemies of the leaf-tier and other insect depredators in the commercial, celery-growing region of Florida have been such flocking species as Tree Swallows, Red-winged Blackbirds, and Bobolinks.

In reading these names of bird friends, we note several that were previously indicated as foes, but that is the way of the relations of birds to man. There is usually no clear-cut, dividing line between ally and enemy. Time, place, and the number of birds involved are great modifying factors. The birds take advantage of conditions for their own good, not for ours, and it is up to us so to plan as to reduce their harmful, and increase their useful, effects by all practicable means.

In summary, the special economic status of flocking birds results from concentrations. Assuming the same food habits, depredations by scattered pairs are scarcely noticed, but those involving the multiplied impact of flock feeding upon a valuable crop can be disastrous. The very fact of flocking, involving desertion of large, and concentration in smaller, areas may result in harm being done where no good is accomplished by the same species. The person suffering loss thus feels he is being attacked by an alien invader. There should be some give and take, however, as his birds may have joined flocks that will harass a distant planter, and on the other hand he may be benefitted by

timely attack on some insect pests by birds that have gathered in from a great area. Some form of crop insurance might serve to equalize losses and make them easier to bear.

In any event, it should be remembered that if we destroy birds, we can no longer count on their help in the warfare against insects. Hence, control should always be limited as to locality and season and should be carried out in so reasonable a manner as not to threaten the existence of birds, which although at times vexatious pilferers, at other periods are industrious helpers.

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