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THE PURPOSE OF BIRD CENSUSES AND
HOW TO TAKE THEM.

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WHY TAKE A BIRD CENSUS?

One of the chief means of solving many problems concerning the distribution of bird life is found in bird censuses, or counts of breeding birds, such as have been made for several years under the direction of the Biological Survey. It is very desirable that this form of research work be continued on an increased scale, in order that more information may be available regarding the numerical distribution of the birds breeding in different sections of the country and on different types of land; the relative numbers of the several species; and the fluctuations that take place in bird life. Knowledge of the approximate numbers and relative abundance of birds, both game and insectivorous, such as can be gained in this manner, is not only of great value but is also a prerequisite for the proper administration of Federal and other laws for bird conservation. For this reason data are needed to show what effect existing laws have had; how much birds have increased under protection; and what species have been most affected.

To obtain satisfactory results the work must be continued for many years. It is of the utmost importance that the counts be repeated on the same tracts year after year, in order that the accumulated records may furnish material for comparisons by which to learn what changes take place in the number and distribution of birds. For this many more series of reports are needed. Usually records for at least five years for a given tract are necessary for forming an adequate idea of the bird life thereon.

The department has no funds to pay for this work, but must depend wholly on the assistance of volunteer observers. The work of those who have helped in the past is greatly appreciated; and it is hoped that not only will their cooperation be continued, but also that many more will give assistance in this interesting and valuable work.

WHAT A BIRD CENSUS IS.

By a bird census is meant the exact enumeration of the birds actually nesting within the boundaries of a selected tract of land. Birds that only visit the area should not be counted, no matter how close to the line their nests may be situated. Approximate figures, though of interest as descriptive of the tract, are quite useless for purposes of comparison. Only the person who surveys the land has the necessary knowledge of conditions to tell whether "2-4" means 2, 3, or 4 pairs of birds. Reports so rendered can not be used in tabulating results.

HOW TO DO THE WORK.

The most convenient way of taking a bird census is to count the singing males early in the morning before they begin to feed. Then every male bird can be found usually in full song, and near the nest site; and, after migration is over, it may safely be considered to represent a breeding pair.

Begin at daylight some morning at the height of the breeding season, and zigzag back and forth across the tract, counting the singing birds. Care must be exercised to count each bird only once (especially if it is necessary to retrace one's steps) and only one of a pair. Mistakes in the latter particular are especially to be guarded against in the case of species in which the sexes are nearly or quite alike. The count should be repeated at least once, a few days later, or checked by subsequent observations throughout the breeding season, to be sure that no birds have been missed and that all birds counted actually nest within the selected area. In the case of unusual species, and especially those outside their usual breeding range, the nest must be found or other satisfactory evidence obtained to show that the birds are actually breeding and are not merely wanderers or delayed migrants. A note regarding this evidence should accompany the report.

THE TIME TO BEGIN.

Censuses should be made after the migration is over, at the height of the breeding season, when the greatest number of birds have eggs or young in the nest. If the work is done too early, some individuals may be counted as nesting that will go farther north before they breed, and if done so late in the season that the young are on the wing, some may have left the area where they were hatched. In the latitude of Washington, D. C.—latitude 39°—the first count should be made about June 1; in the latitude of Boston, work should not begin until at least a week later; south of Washington, a correspondingly earlier date should be chosen.

AREA TO BE COVERED.

The plot chosen should contain from 40 to 80 acres. A tract of less than 40 acres, especially in the case of farm land, will seldom be representative, and 80 acres are as much as can be accurately covered by one enumerator under most circumstances. So far as possible, areas should be selected on which conditions are not likely to change

for several years. It will then be evident that any fluctuations in the bird life are not due to artificially changed environment. The response of birds to changes in their environment is an interesting and important study in itself; for this reason counts on land where conditions are changing will also be useful, when accompanied by full notes regarding changes in conditions from year to year.

KINDS OF CENSUSES DESIRED.

Several kinds of censuses are needed for purposes of comparison and of learning the response of birds to different conditions. Those most desired are suggested below, but inability to find a tract that falls under one of these heads need not deter any one from taking bird censuses. All that can be obtained are desired. The repetition of a census on the same tract year after year is as important as the selection of a special kind of land for the purpose.

FARM LAND.

The farm-land tract selected should represent as nearly as possible the average farm conditions for the locality in regard to the proportion of land under cultivation; pasture, waste land, etc., and should not have an undue proportion of woods or orchard. The majority of the censuses to date have been taken on about 50 acres about the farm buildings, including lawns, gardens, and orchard. Censuses on those areas should be continued, but it is necessary to have also counts of the birds breeding on the wilder parts of the farm, and on parts of the farm more completely under cultivation; they are especially desired on the same farms where counts have been made on the land about the buildings. When two or more counts are made, it is preferable that they be on adjacent tracts, for then each report adds to the interest and value of the other, since a larger area is thereby represented and at the same time the local distribution is indicated.

WOODLAND.

Counts of the birds breeding in isolated pieces of woods comprising 10 to 20 acres are desired, and also data concerning the birds of the continuous forest. The tract selected for the latter—40 acres or more—should be part of a large tract of timber.

In the case of woodland counts the report should include, besides a description of the area and its exact boundaries, a list of the principal varieties of trees and a statement as to whether there is much or little underbrush.

IRRIGATION PROJECTS.

In many parts of the West, where irrigation is changing the character of the country from desert to farm land, the character and probably also the amount of the bird life will be greatly changed. The only means of learning what these changes will be, and how rapidly they will take place, is through series of bird censuses covering the same tracts of land for several years before the water is turned on it, and for years thereafter. It is hoped that such series may be reported.

MARSHLAND.

There is at present no means of knowing how abundantly birds breed in marshland. For this reason it is desirable to have counts made on such areas, both of isolated patches and of sections of larger tracts.

SPECIAL AREAS.

There are many areas, such as city parks, cemeteries, etc., in which, because of their proximity to centers of human population, it is desirable to have a large number of native birds. To know how many nesting birds there are in such places is important.

Counts in the past have shown that birds respond to protection and sometimes nest very abundantly on areas where they are protected. It will be of much interest to know how densely they will nest in such places, and also to have counts made on the adjacent territory to see whether there has been any corresponding increase there, or whether the birds have concentrated for nesting purposes on the smaller area where they recognize the advantages of protection.

REPORTS.

The final results of bird censuses should be sent to the Biological Survey as soon as convenient and should be accompanied by a statement of the exact boundaries of the area selected for the work, so explicitly defined that it will be possible years hence to have the count repeated. The name of the present owner should be given, together with a careful description of the character of the land, including a statement of whether it is dry upland or moist bottomland; the number of acres in each of the principal crops, in permanent meadow, pasture, orchard, swamps, roads, etc.; the kinds of fencing used; and the amount of brush along fences, streams, roads, or in permanent pasture. The value and usefulness of a report is increased if some information is given regarding the land surrounding the tract surveyed, whether this land is wooded, cultivated, waste, or pasture, and if cultivated, whether in grain, hay, or garden.

Blanks for recording the results of bird censuses, together with return envelopes which require no postage, will be furnished on request addressed to the Biological Survey, United States Department of Agriculture, Washington, D. C.

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