

are carried out of their usual range by storms. It must be remembered, however, that prevailing winds and storms are in an easterly direction, a fact which has been forcibly impressed upon transatlantic airplane flyers. These stragglers may have come by easy stages, stopping at the British Isles, Iceland, and Greenland, thence to the mainland of America, or possibly following the course taken by such other birds as the Arctic Tern.

The migration routes of the Black-headed Gull and the Arctic Tern coincide for a considerable distance through southwestern Europe and Africa. Hence it is reasonable to conceive that an occasional Black-headed Gull, if it becomes separated by storms or other causes, from individuals of its own kind, might follow the Arctic Terns on their journey to northeastern North America. This gull, number 851, was taken on the Labrador coast, where the terns are most abundant, and the fact that it was associated with terns when collected is significant and gives strength to the supposition.

Mr. Cogels has sent me a fine photograph of the Black-headed Gulls taken at a breeding colony near Groote Meer, the place where the bird was banded.

Bird-banding is a phase of ornithology which frequently becomes of international interest. It has been a thrill for me to receive an introduction to Mr. Cogels, a bird-bander and an ornithologist in Holland, through one of his banded gulls.

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THE DISTRIBUTION OF THE BIRD-BANDING STATIONS

By O. A. STEVENS

EVER since I have been connected with the work I have wished that we might have a complete list of station operators and a map which would show their locations. Recently it has seemed worth while to prepare a tabulation and map based upon the work of the fiscal year ending June 30, 1934, as summarized in "Bird Banding Notes" for September, 1934. This is admittedly quite incomplete, since it includes only about three hundred stations. In the main, however, it probably gives a fair idea of the distribution. It is not a full review of the year's work in that many reports probably were received soon after July 1st. In my own region I know of three stations within a one hundred-mile radius which are missing. Since other reports were received shortly after July 1, 1933, this feature should be balanced and may be disregarded.

The number of stations and the total number of birds banded as given in the report are as follows:

64 stations, banding over 1,000.....	159,438
13 stations, banding 800 to 1,000.....	11,700
19 stations, banding 500 to 800.....	12,350
55 stations, banding 300 to 500.....	22,000
46 stations, banding 200 to 300.....	11,500
100 stations, banding 100 to 200.....	15,000
Total 297 stations, banding over 100.....	231,988
1,577 stations, banding less than 100.....	131,917
Total.....	363,905

It will be noted that the stations banding less than one hundred birds each have contributed a very substantial portion of the total number for the year (36 per cent).

Listing the stations by States and Provinces, we find thirteen reaching totals of five thousand or more. These are listed below with their respective totals, and the others are arranged in three groups.

Massachusetts.....	27,515	British Columbia....	9,940
Illinois.....	23,345	South Dakota.....	9,239
Ohio.....	22,117	Louisiana.....	8,135
Michigan.....	19,677	Wisconsin.....	7,968
California.....	18,191	Pennsylvania.....	6,248
New York.....	14,841	Oregon.....	5,662
North Dakota.....	10,926		
1000-5000	Florida, Indiana, Kansas, Maryland, Minnesota, Mississippi, Missouri, Montana, New Hampshire, New Jersey, South Carolina, Tennessee, Utah, Alberta, Manitoba, Nova Scotia, Ontario.		
100-1000	Arizona, Arkansas, Colorado, Connecticut, Delaware, District of Columbia, Iowa, Maine, North Carolina, New Mexico, Oklahoma, Rhode Island, Texas, Virginia, West Virginia, Quebec, Saskatchewan.		
None over 100	Alabama, Georgia, Idaho, Kentucky, Nebraska, Nevada, Vermont, Washington, Wyoming, New Brunswick, Prince Edward Island, Yukon, Northwest Territory.		

The map shows a scarcity of stations in the South, in the Middle West, and in the mountainous regions; a strong concentration in a few areas. The former probably can be accounted for on a basis of human population. The latter is due in part to the same thing, but also to the infectious enthusiasm which plays a large part in bird-banding.

One feature which is shown prominently on the map is the scarcity of stations in certain States. Thus Iowa and Nebraska are poorly represented, where the opposite might have been expected. Vermont is not represented, although New Hampshire totals over three thousand. Washington is not represented, although Oregon and British Columbia both are above five thousand.

These figures should be sufficient cause for some serious consideration of the further development of the work. In the same report the Survey expresses the hope that "it will be possible to have 5,000 active banding stations in well organized chains, not only in the United States and Canada, but also in the Latin American

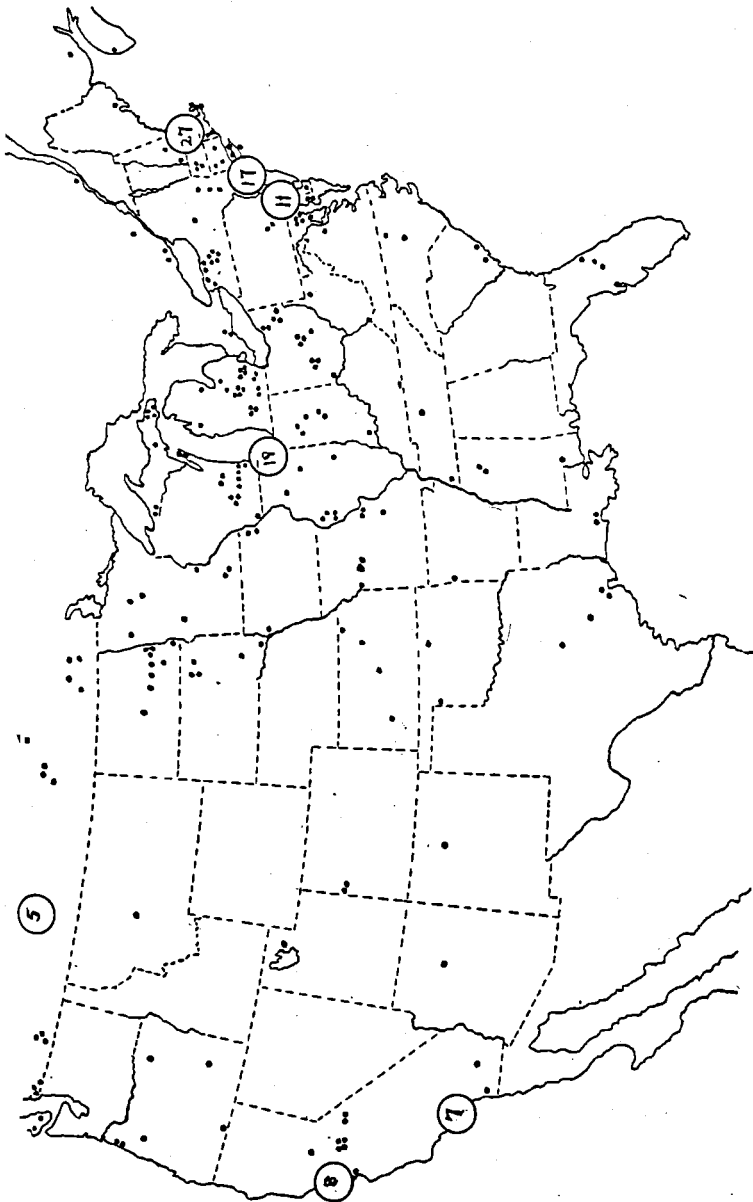


Figure 1. Outline map of the United States showing approximate location of stations which reported the banding of one hundred or more birds for the year ending June 30, 1934. Numerals in the circles represent that number of stations too close together to show well on the map.

countries." This would mean, let us say, three thousand in the United States, or ten times as many as are shown on the present map. The value and need of closer coöperation of station operators is being felt more and more. The advantages coming from the aid of one or more near-by stations, are being repeatedly demonstrated. At the present time special attention should be given to the development of stations in locations where they are most needed or most likely to yield results of value. I have previously called attention (*Inland Bird Banding News*, 3 (4): 5. 1931) to the importance of the lower Mississippi Valley area. There are many other regions where additional stations might be established to special advantage. More detailed study of the work of various stations would probably aid in determining the most suitable locations for new ones.

I doubt whether there is any subject in which the scientific and popular interests are so inseparable as in ornithology. The specialist, to be sure, may bury himself in his investigations and disregard the popular side of the story. The layman, on the other hand, has continual opportunities to make additions to our scientific knowledge. So often is he unconscious of these opportunities that he cannot develop them, and the observations made are either not recorded or become lost in the endless amount of similar fragments.

It might be said that bird-banders are born, not made. Certainly there are many individuals who possess the natural ability to conceive problems and to carry out the various details which are required of a successful station. There are perhaps few who have the indefatigable industry which promotes a large station and carries it on for a number of years. It is equally true that there are many who have the ability to carry on, and need only to have their attention directed to the work. Here is needed the enthusiasm derived from that personal contact which has been responsible for the development of many of the successful stations.

A number of people have demonstrated what can be accomplished by intensive study of a particular species. Probably there are not a large number of stations where extensive studies can be carried on, but even on a small scale it will be well to consider what can be done in this direction. Whether or not other species should be disregarded when specializing upon a certain one, is a matter to consider. To a certain extent the trap requirements of many species tend to exclude various other species. Ordinarily we should say that all birds taken should be banded, but it is possible that some better arrangements can be made. A careful study of the work of various stations, especially of closely associated ones, may suggest lines of procedure.