

STATE DISTRIBUTION OF RETURNS FROM
BANDED DUCKS

*Fifth Paper: Pennsylvania, Saskatchewan, South Carolina,
Texas, Utah, and Wisconsin¹*

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In the present paper there is briefly discussed the data resulting from ducks banded in Pennsylvania, Saskatchewan, South Carolina, Texas, Utah, and Wisconsin. The purpose of the series (of which this is the last) is to acquaint students of birds, sportsmen, conservation officials, and others with the information relative to the movements of our migratory waterfowl that is being accumulated by the Biological Survey through the banding of large numbers of birds at various stations throughout the country. This is a thoroughly modern method for such investigations, and it is hoped that in these brief summaries this fact has been demonstrated to all those concerned with these birds, whether from the viewpoint of science, sport, or administration. In the opinion of the author the banding method is the "Court of Last Appeal" for the development of incontrovertible evidence that may be applied to many problems associated with our avifauna.

The maps presented show the banding point or points as a circumscribed area in which the number of local recoveries may be designated, or this figure may be placed close by at the end of a short line. Lines have been drawn from the circumscribed areas to the different States and Provinces where the banded birds have been retaken. These lines should not be interpreted as indicating flight lines or routes of migration. The numbers represent the total of return records for all species, although the status of each is usually given in the accompanying statement. The data used in these reports are as compiled on July 1, 1932, material accumulating since that time being omitted, to permit proper comparisons. These statements are much condensed because of the limited space available. Detailed technical reports relative to the distribution and migration of the different species are planned for future publication.

¹ First paper, *Bird-Banding*, Vol. 3, pp. 140-142, October, 1932.
Second paper, *Bird-Banding*, Vol. 4, pp. 19-32, January, 1933.
Third paper, *Bird-Banding*, Vol. 4, pp. 88-99, April, 1933.
Fourth paper, *Bird-Banding*, Vol. 4, pp. 132-146, July, 1933.

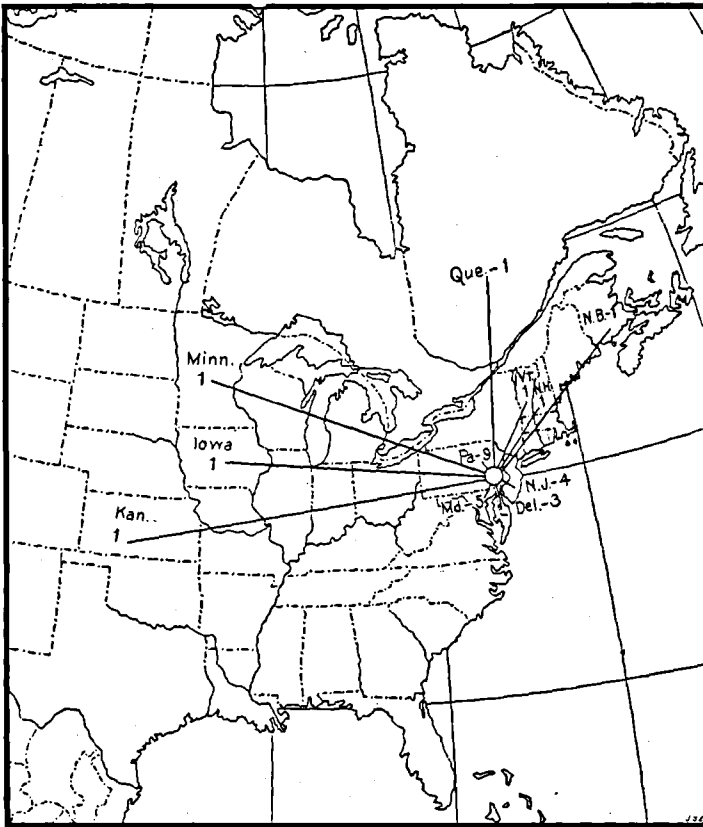


Figure 1. Distribution of Returns from Ducks Banded in Pennsylvania.

Return data from the following States and Provinces have been discussed in the preceding papers: Alberta (first paper); British Columbia, California, Connecticut, Georgia, Illinois, Iowa, and Kansas (second paper); Louisiana, Maine, Massachusetts, Michigan, Minnesota, and Missouri (third paper); and Montana, Nebraska, New Jersey, New York, North Dakota, Ontario, and Oregon (fourth paper).

PENNSYLVANIA

Waterfowl banding in Pennsylvania has been limited to the operations of Frank B. Foster, Montcalm Game Farms, near Phoenixville. The birds have been all hand-reared, produced from stock originally captured in Alberta. When advised that a large number of these birds were to be released full-winged, the Biological Survey gladly coöperated and furnished bands from the regular series, in the belief that the resulting data might have a far-reaching influence upon future restocking plans. Altogether 2,300 Mallards were banded, 800 in 1930, and 1,500 more in 1931. From these birds 29 returns have been received. The small percentage of recoveries is most significant, since from this number of wild-caught Mallards the normal first-year expectancy would be at least 230 returns, which during four or five years next ensuing should increase to between five and six hundred. The indication is that either these hand-reared birds failed to migrate or that they were unable to care for themselves and soon succumbed from causes other than shooting. With this situation in mind it is of interest to examine the map (Fig. 1).

It will be noted that an area with a radius of 100 miles has accounted for 21 of the 29 records and that none of these ducks have been recovered south of Chesapeake Bay, indicating almost complete localization in the general region of liberation. On the other hand consideration must be given to the few birds that obviously did associate themselves with wild flocks and migrate to northern breeding grounds. It is particularly noteworthy that some of these succeeded in reaching the great interior breeding grounds as is shown by the single records from Michigan,² Minnesota, Iowa and Kansas.

SASKATCHEWAN

The total number of ducks that have been banded in Saskatchewan is about 700. The work was begun in 1923 at Muscow, by Richard H. Carter, Sr., and his sons Richard H., Jr., and John R.; and at Davidson, by Reuben and Bert Lloyd. The operations at these stations have been continued each season. Starting in 1926 and continuing during several seasons since, J. A. M. Patrick has banded several ducks in the general vicinity of Yorkton. Of the total number banded in this Province, Mallards constitute nearly 500, the others including

² Through an error on the original map a line to Michigan was omitted, and this was not detected until after the cut had been made.—F. C. L.

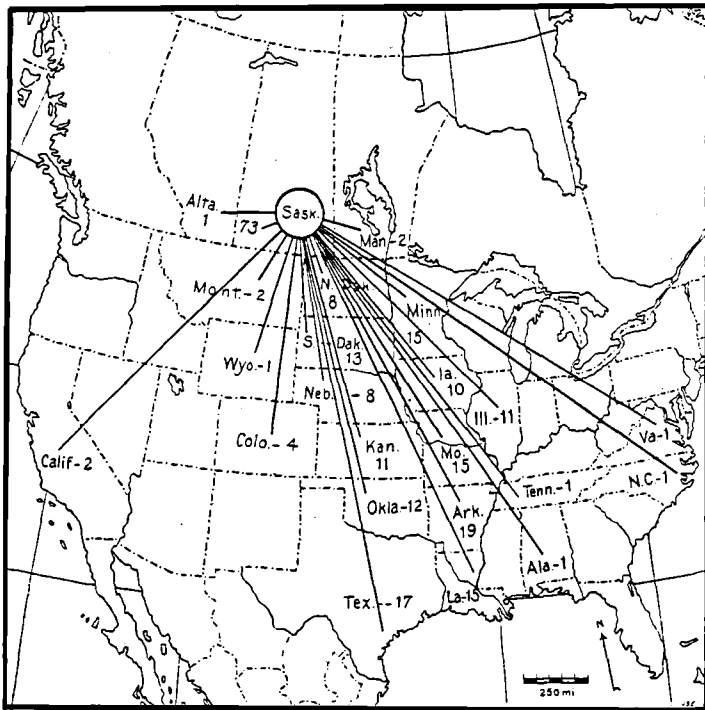


Figure 2. Distribution of Returns from Ducks Banded in Saskatchewan.

about 50 Pintails, and a few each of the Canvasback, Redhead, Lesser Scaup, Shoveller, Gadwall, Green-winged Teal, and Blue-winged Teal. Some of the Mallards banded at Muscow have been hand-reared birds and in some instances they have been hybrids between native stock and the so-called English call duck. From these activities 243 return records are available for study, the return ratio being unusually high.

The southward migration is clearly shown across the Plains States southeastward to the Mississippi Valley (Fig. 2), with most of the ducks finding winter quarters in the lower Mississippi Valley, and in Texas. It is noteworthy that while there are 15 records from Minnesota there are none from Wisconsin, indicating that the eastern boundary of the main flight is very

sharply defined. The only State east of the Mississippi River reporting more than one return record is Illinois, where the valley of the Illinois River causes a short eastern curve in the flight, which, however, swings back to the west as or before it leaves that State. The Atlantic Coast records were made by a Lesser Scaup that was recovered in Virginia, and by a Widgeon that was killed in North Carolina. Both of the California records are for Pintails.

Attention also should be directed to the small number of birds banded in Saskatchewan that have been recaptured in neighboring Provinces even in succeeding seasons, which suggests that the majority of the birds return to breed in the region where they were banded.

SOUTH CAROLINA

Extensive banding of migratory waterfowl in South Carolina was begun by Clarence E. Chapman, owner of Mulberry Plantation, near Oakley, during the early spring of 1924, and since that time this station has been operated for a month or more practically every year. About 1,200 ducks have been banded, chiefly Ring-necks, Mallards, and Blue-winged Teals, but including also Black Ducks, Wood Ducks, Lesser Scaups, and a few Ruddy Ducks.

Dr. Henry Norris, owner of Litchfield Plantation, at Waverly Mills, banded 26 Ring-necks and Black Ducks during February, 1928.

In February, 1930, E. Milby Burton, Director of the Charleston Museum, started banding operations with waterfowl, working chiefly in Colleton County. A total of 594 birds, mostly Lesser Scaups and Ring-necks, have been marked. In addition to the species named this total also includes 58 Pintails and a few Mallards, Black Ducks, Widgeons (one European), and Blue-winged Teal.

During December, 1931, and January, 1932, Dr. Oliver L. Austin, Jr., of the Biological Survey, operated a duck banding station at Bonneau Ferry Plantation, near Cordesville, banding 320 Ring-necks, 609 Scaups, both Greater and Lesser, 34 Wood Ducks, 7 Pintails, and 4 Widgeons. The total for the State is 2,783, from which 226 return records have been received as follows: Mallard, 46; Black Duck, 11; Pintail, 17; Blue-winged Teal, 72; Ring-neck, 32; Scaups, 48.

The heavy percentage of local records (Fig. 3) is due in part to retrapping, as Mr. Chapman has recaptured many of the ducks banded by him in previous seasons.

wider area east of the Mississippi River than has been observed in the case of the birds from any other banding locality.

Breeding grounds are indicated in Michigan, Wisconsin, Minnesota, Ontario, and the Prairie Provinces of Canada. In the return of the birds to winter quarters it appears that the flight direction is principally southeast across these States and also through Illinois, Indiana, and Ohio. South of Minnesota it will be observed that only a few ducks were recovered west of the Mississippi River.

TEXAS

A waterfowl banding station was started in May, 1928, at the Tehuacana Lake Club, near Waco, by William P. Sparks. At that point 1,055 ducks have been banded. Of these the Pintail leads with 803, followed by the Green-winged Teal with 112, and the Blue-winged Teal with 43. Smaller numbers of Mallards, Widgeons, Lesser Scaups, Redheads, Gadwalls, and Shovellers, also have been banded.

More recently Mrs. Mary D. Woodson, also of Waco, has established a station. Her records are not, however, considered in the present study.

Return records to the number of 135 have been received from birds marked by Mr. Sparks, of which 104 are for the Pintail, 10 each are for the Mallard and the Lesser Scaup, while the balance is scattered between the Gadwall, Widgeon, Shoveller, and Green-winged and Blue-winged Teal. The map (Fig. 4) accordingly can be considered as an excellent illustration of the migration of those Pintails that winter chiefly in Texas. The route is obviously almost due north to the Canadian boundary where it turns northwestward, a few penetrating the north as far as Mackenzie and Alaska. With the exception of the six records from Illinois (one of which is for a Mallard) and the one (Green-winged Teal) from Alabama, it will be observed that all returns are from points west of the Mississippi River. In this vast area, however, there is a wide dispersal which is best evidenced by the fact that the single records from British Columbia, Montana, and Washington, the two returns from Nevada, and 16 of those from California, are for Pintails. The other record from California is for a Mallard (No. A655168), banded in February and recovered near San Francisco during the following November.

The great range of the Pintail also is well illustrated by the fact that all of the Texas banded ducks reported from Mexico have been of this species.

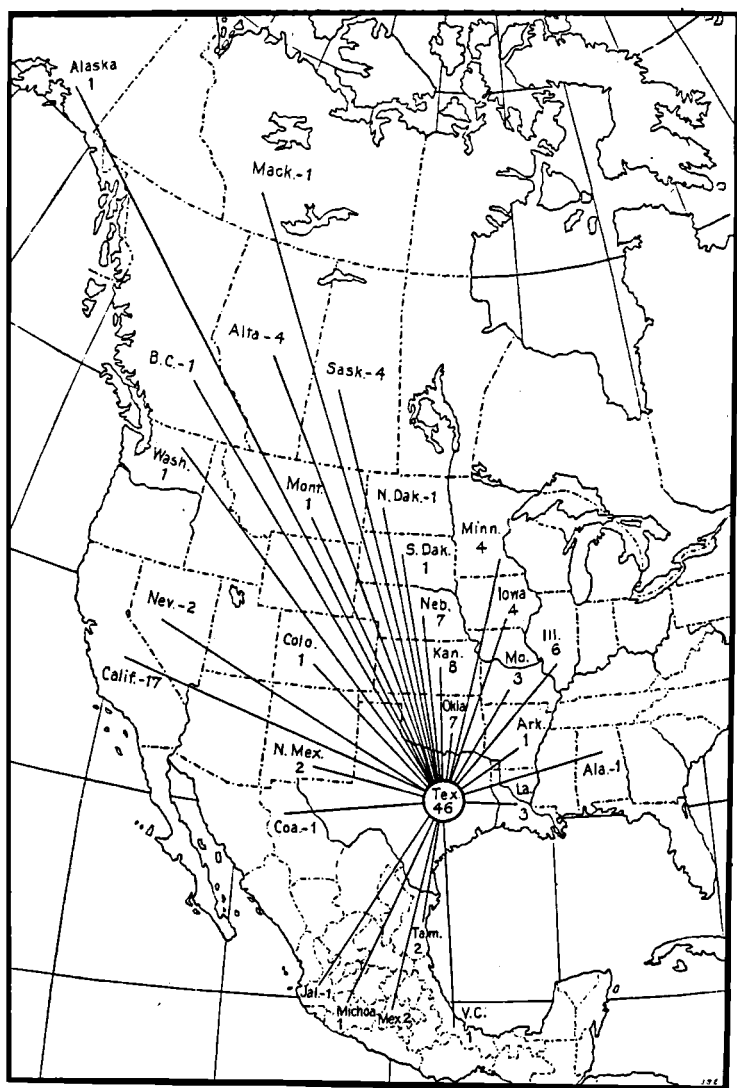


Figure 4. Distribution of Returns from Ducks Banded in Texas.

UTAH

The pioneer banding work of the Biological Survey was conducted by Dr. Alexander Wetmore in the Bear River Marshes at the north end of Great Salt Lake during the period from 1914 to 1916. Bands were placed on 994 ducks of nine species, most of them being Redheads, Green-winged Teals, and Pintails, but including also Mallards, Gadwalls, Cinnamon Teals, and Shovellers. The recovery records from these birds formed the subject of a special report by Doctor Wetmore.⁴ For the sake of completeness they are included in the present study.

During the summer of 1926 the author visited these marshes and banded 881 ducks as follows: 375 Redheads, 182 Cinnamon Teals, 106 Pintails, 99 Mallards, 40 Green-winged Teals, 32 Shovellers, 30 Gadwalls, 13 Ruddy Ducks, and 4 Canada Geese.

The work resumed at that time has been continued chiefly by Archie V. Hull, of Brigham, under the direction of Mr. George E. Mushbach, Superintendent of the Bear River Migratory Bird Refuge. The number of ducks so added is 4,041, divided by species as follows: 2,327 Redheads, 1,063 Green-winged Teals, 412 Pintails, 102 Cinnamon Teals, 69 Shovellers, 51 Mallards, 31 Gadwalls, 8 Widgeons, 7 Ruddy Ducks, 1 Lesser Scaup, and 1 Buffiehead.

The total number of ducks banded in Utah by all parties, is 5,916, from which 824 return or recovery records have been received. Of these 471 are for the Redhead, 156 are for the Green-winged Teal, and 103 are for the Pintail.

The region about Great Salt Lake, particularly its eastern and northern shores is an area of intensive shooting, not only on open land and private clubs, but also on State-owned public shooting grounds. It is accordingly not surprising that there should be such a large percentage of local recoveries.

It should be particularly noted that only nine records are from points north of the Canadian border (Fig. 5). The reason is, of course, that most or all of the ducks banded in Utah were marked during the summer months or early autumn and were actually on their breeding grounds. Such being the case, the migration lines indicated by the return data are of unusual interest. In addition to the movement to the southwest into California and southeast across the mountains and

⁴ Migration Records from Wild Ducks and Other Birds Banded in the Salt Lake Valley, Utah. U. S. Dept. Agri. Bull. 1145, May 10, 1923.

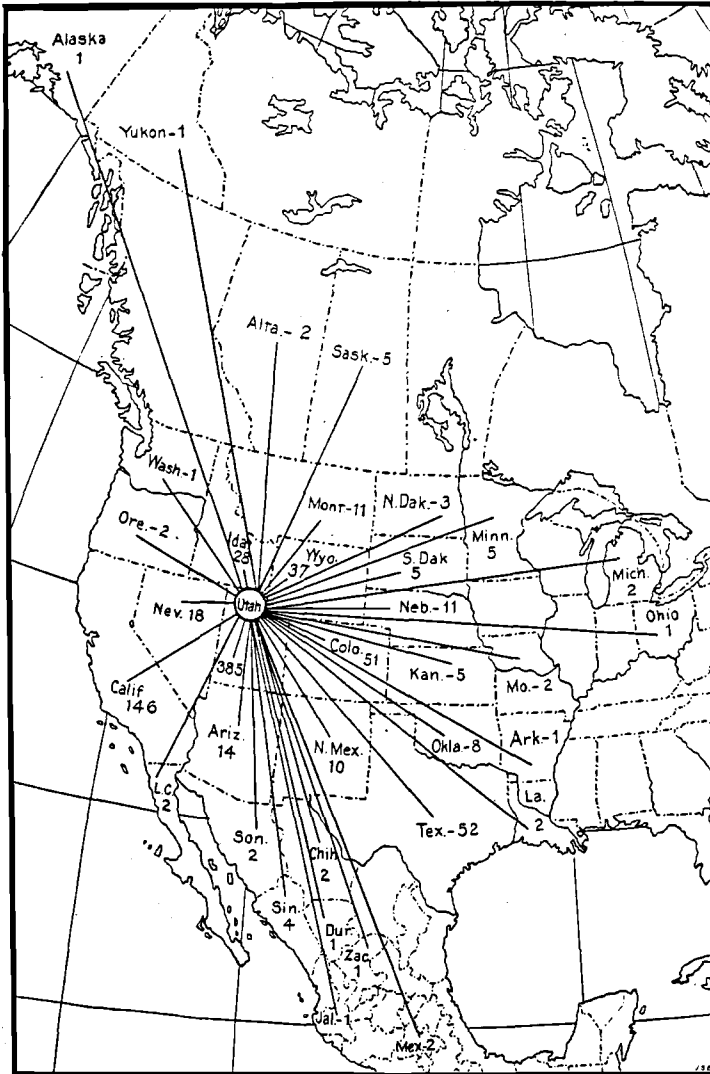


Figure 5. Distribution of Returns from Ducks Banded in Utah.

down some of the Plains States to the Gulf Coast, it appears that many ducks from this area actually leave in a northeasterly direction. This is particularly true of a part of the Redheads, 36 of which were recovered in Wyoming, 9 in Montana, 4 in South Dakota, 3 in North Dakota, 5 in Minnesota, 2 in Michigan, and 1 in Ohio. Some of these birds were killed within two or three months after they were banded in midsummer and appear to furnish definite proof that many Redheads from the Bear River region have a northeasterly flight line that connects with the route of this species coming down out of the Prairie Provinces of Canada in a southeasterly direction by way of the Great Lakes, and which has its southeastern terminal on the Atlantic Coast, chiefly south of Delaware Bay. Actually, however, no Bear River Redheads have as yet been recovered on the Atlantic Coast but it would seem that such records may be confidently anticipated.

Another feature illustrating the value of these marshes is the large number of return records from California which indicate this to be the most important wintering grounds for the ducks from Utah, a fact that has much significance for California sportsmen.

The record from Yukon Territory is for a Green-winged Teal, the one from Alaska is for a Pintail, while the 15 from Mexico are for 4 Pintails, 2 Cinnamon Teal, 1 Green-winged Teal, and 8 Redheads.

WISCONSIN

Waterfowl banding in Wisconsin was started in 1928, when Frank Hopkins opened a station at the Moon Lake Wild Life Refuge, near Campbellsport, and Frank A. Schader (operating under the direction of L. H. Barkhausen, of Chicago, Ill.) started a station at Big Suamico, on Green Bay. The operations of these stations have been continued each season and as a result 4,135 ducks have been banded. The division by species is: Mallard, 2,795; Black Duck, 695; Wood Duck, 170; Pintail, 40; Bluewinged Teal, 38; Green-winged Teal, 17; Ruddy Duck, 9; Lesser Scaup, 7; Shoveller, 4; Greater Scaup, 3; Hooded Merganser, 3; Widgeon, 2; Gadwall, 2; Ring-neck, 1, and Canada Goose, 50. From this work 706 return records are available for study. The large number of local captures (Fig. 6), together with the relatively small number from the Canadian Provinces seems to indicate important breeding grounds in the region of the banding stations. It is probable that this includes not only a large part of the State of Wis-



Figure 6. Distribution of Returns from Ducks Banded in Wisconsin.

consin, but also adjoining parts of Minnesota and the upper peninsula of Michigan.

Two well defined flight lines are indicated by the data at hand. The first is the important Mississippi Valley route and in this case it will be noted that there is a more nearly uniform distribution of the records from the States on both sides of the river. Winter quarters for these birds seem to be chiefly in Arkansas, and the Gulf States.

The other route is to the southeast by way of Michigan and Ohio, thence cross-country to the Atlantic Coast. A few, working along the south shores of Lakes Erie and Ontario, reach western New York, and a few may possibly cross this State to the coasts of New Jersey and Long Island, although as yet the evidence does not warrant full acceptance of this hypothesis.

The record from Prince Edward Island is for a Mallard that was killed two years after banding.

In view of the small number of Ruddy Ducks that are banded, two returns for this species are of unusual interest. Both (Nos. B600420 and B600421) were banded as immatures at Big Suamico, on September 25, 1931. One was killed on Carman's River, Long Island, on November 18, 1931, while the other was recaptured at Raspeburg, Maryland, on December 9, 1931.