

Massachusetts, (about four miles away) having been caught there at night on June 18, 1936. There is also our record of two birds from a brood banded in the N. Graves barn (No. 14) last year which appeared in our barn in the daytime on successive days this spring. We have no idea, however, of the ultimate destination of these two birds; it is doubtful if they stayed with us. Our various return records of individual nestlings prove nothing at the present time other than that a young bird may return to the barn in which it was hatched or go elsewhere.

The locations of the barns we have visited are shown on the accompanying map, and these are most of the barns in the local Shirley area in which Swallows nest. There are, we believe, no barns south of the Sanderson barn (No. 3) having nesting Swallows, for a distance of about five miles, nor are there any within three miles of us to the east.

Conclusions are risky with Barn Swallows, for they seem constantly to break rules, but the work is fascinating and the results as they accumulate have been most interesting. We hope to be able to continue from year to year and trust that others also will try some intensive work with this species.

Shirley, Massachusetts.

SUMMARY AND ANALYSIS OF SOME RECORDS OF BANDED OSPREYS

By C. BROOKE WORTH, M.D.

LINCOLN, in *Bird-Banding*¹, reported that up to July 1, 1936, 637 Ospreys (*Pandion haliaëtus carolinensis*) had been banded, and that 46 returns had been received.

This paper is a report of the Ospreys banded by Buckalew, Wilcox, Gillespie, and Worth, who, in that order, have been most successful in banding Ospreys, having tagged a total of 369 up to January 1, 1936, or somewhat over half of the entire number. They have had 47 recoveries to date, 43 of these up to July 1, 1935.¹

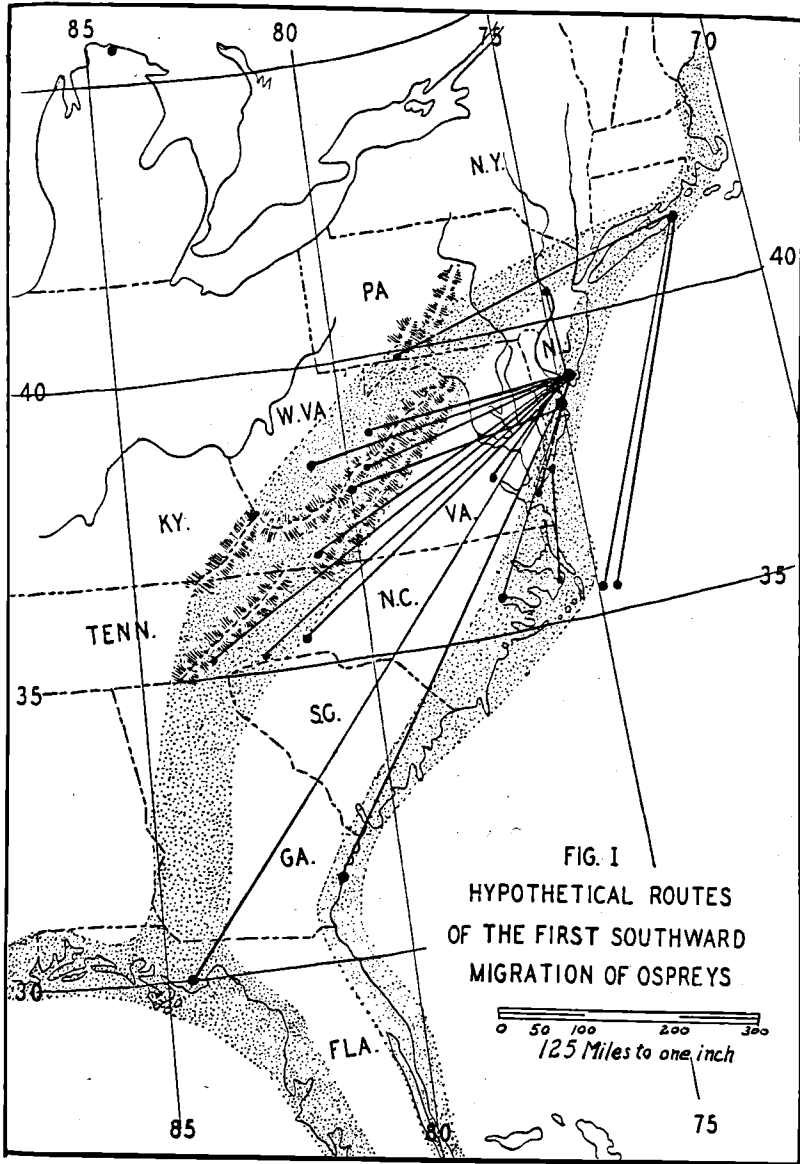
Mention is also made in this report of six additional Osprey returns cited by Lincoln in the same article in *Bird-Banding*.

Herbert Buckalew has done by far the most extensive work, having banded many adult Ospreys, whereas, so far as I can discover, all other workers have confined their attention to fledglings in the nest. Buckalew uses a noose baited with fish and attached to a heavy log. He sets these snares along an exposed beach.²

He has banded 149 birds, all in Delaware. Of these, 26 were

¹Vol. VII, pp. 38-45, 1936.

²*Eastern Bird-Banding Quarterly*, Vol. I, pp. 4-5, 1934.



fledglings and 123, adults. He has had 23 recoveries, 3 of nestlings and 20 of adults. Of the 20 adult recoveries, 16 were birds which returned in subsequent years to Delaware; the other 4 were as follows:

1. A709807, shot on the Virginia Coast during the Delaware breeding season;
2. A719072, shot in North Carolina during the Delaware breeding season;
3. A719002, shot in Jamaica, British West Indies, in March, and therefore possibly during its normal winter sojourn there;
4. A719077, shot in the Gulf of Venezuela near the end of June. This bird was an adult; it seems to have failed entirely to migrate northward at the normal time.

Buckalew has, therefore, recovered about 16 per cent of his adult banded Ospreys, though this high percentage is obtained in large measure by his having retrapped seven birds in subsequent years. Five were drowned in staked fish-nets off the Delaware Coast.

Of Buckalew's recovered adults, 80 per cent had returned to their breeding territory, 15 per cent definitely had not, and the remaining 5 per cent (1 bird, in Jamaica) might have, had it not been shot in winter.

Leroy Wilcox has banded 77 Ospreys, all fledglings. Thirty were banded on Long Island, New York and 47 on Gardiner's Island, New York. He has had only three recoveries.

John A. Gillespie has banded 73 fledglings, 68 in New Jersey and 5 in Delaware. He has had 8 recoveries.

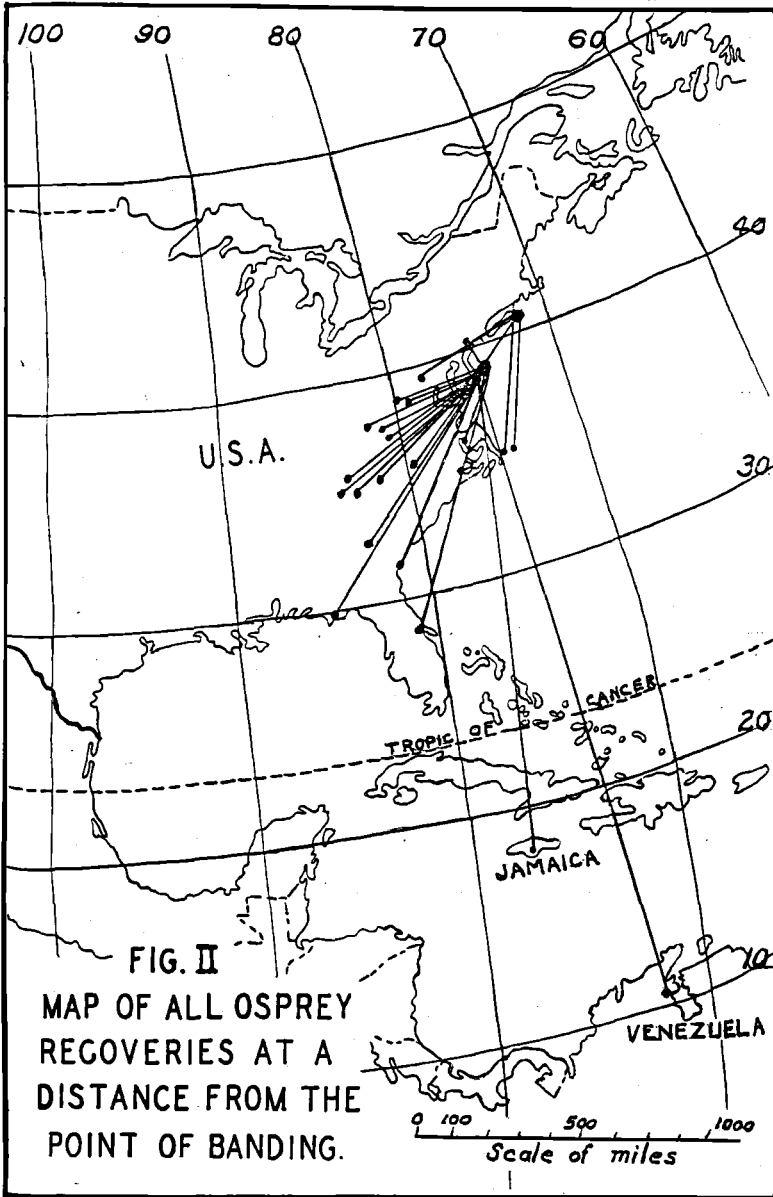
C. Brooke Worth has banded 70 fledglings in New Jersey and has had 13 recoveries.

Recoveries of nestlings banded by these four coöperators total only 11 per cent, compared with 16 per cent among Buckalew's adults. Of nestling recoveries, about a quarter occur near the nesting-site soon after the banding date and appear to be casualties during the time when the birds are inexperienced flyers. Thus only 8 per cent of nestlings yield recoveries of significance so far as migration is concerned. On the other hand, if all coöperators trapped adults, this figure would probably be augmented, though Buckalew has not retrapped any birds which he banded as nestlings. Two of Gillespie's nestlings banded in New Jersey were recovered two and three years later respectively in New Jersey. One of his and one of Worth's were recovered in Virginia during the New Jersey nesting season in years subsequent to banding.

A number of years ago Gillespie³ conceived the idea that juvenile Ospreys on their first southward migration pursued an inland route following the Appalachian mountain chain in order to find calm waters in which to fish and also to avoid the autumnal storms of the coast. The data now available on this subject are as follows:

Eighteen Ospreys have been recovered in their first southward flight; of these eleven have been inland and seven have been coastal. The inference must therefore be that both routes are used, though

³*Eastern Bird-Banding Quarterly*, Vol. I, p. 4, 1934.



the inland one seems to be given preference. Two of the coastal birds have been recovered by ships sixty to seventy miles off Cape Hatteras, North Carolina, and these seemed definitely to have been in distress (A727056, banded by Beals, and 422611, banded by Wilcox, both on Long Island, New York). Further evidence for the inland route is found in the observation of Ospreys at Hawk Mountain, Pennsylvania. Broun⁴ reports that "Ospreys sailed down the ridge at infrequent intervals from September 15 to October 11. Ten individuals flew by on October 7, but it was usual to see one or two a day."

Figure I shows the two probable routes on the first southward migration.

Of the adult Ospreys banded by Buckalew only two were recovered during the fall migration period (A709808 on September 23, 1932, and A719005 on August 20, 1935), and neither of these had begun to migrate. It thus remains unknown whether any proportion of southward-migrating adults use the inland route. Presumably, however, they are strong of wing by then and can migrate competently along the coast, though this is mere speculation.

Two Ospreys have been recovered twice. A721063, banded by Gillespie on August 20, 1933, had its nest destroyed by a hurricane on August 22, 1933 and was found buried in the overturned structure by Worth on August 23, 1933. He took it home and reared it by hand. It was released at St. Davids, Pennsylvania, and was last seen there on October 14, 1933. Its leg with the band attached was found at Edenton, North Carolina, on May 1, 1934. A700308 was banded by Worth on August 10, 1929 and was found with a broken wing in North Carolina on September 18, 1929. It was taken home and the broken wing was splinted until it healed; then it was released. It was caught in a padded steel strap in Florida on January 2, 1932. It was taken home over night and then released; it could fly perfectly and had a five-foot wing-spread.

The longevity record for any bird, as far as the Biological Survey's records are concerned, is held by an Osprey, as reported by Lincoln in the aforementioned number of *Bird-Banding*. This was ABBA-26584, banded at Gardiner's Island, New York, on June 19, 1914 by Cleaves and found dead there on June 1, 1935. It was banded as a nestling.

The distance record for an Osprey is A719077, banded as an adult at Slaughter Beach, Delaware, on April 26, 1934, by Buckalew, and killed at El Mojan-Estado, Zulia, Venezuela, South America, on June 28, 1935. This record is also cited by Lincoln in *Bird-Banding*.

Figure II shows all Osprey recoveries at a distance from the point of banding.

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⁴"The Hawk Migration during the Fall of 1934, along the Kittatinny Ridge in Pennsylvania," *The Auk*, Vol. LII, pp. 233-248.