Seasonal Movement of House Finches in the Midwest

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House Finches *(Carpodacus mexicanus)* are native to the western United States and Mexico. During the 1930's, House Finches were trapped in California, given the names Red-headed Linnet or Hollywood Finch, and sold as caged birds in the East. House Finches held by pet dealers in New York City were released in the early 1940's because of an impending enforcement of a ban on the commercial trade in domestic song birds. Although the actual number of birds initially released is not known, by 1943 it was clear that the species had established a foothold on the East Coast when a nest was found in an area occupied by a colony of 12 birds (Elliott and Arbib 1953).

In the first field study of the eastern population, 355 House Finches were banded at Kalbfleisch Field Research Station in Suffolk County, Long Island, from 1958 through 1963 (Gill and Lanyon 1965). This study showed a marked dispersal of banded birds over a large area during winter, but their movements were more restricted during the breeding season. Of 65 birds banded by Gill and Lanyon as nestlings or immatures, several traveled at least 24 km during the post-breeding season. Gill and Lanyon (1965) suggested that they might have been working with two populations of birds--one group that appeared regularly during the breeding season and only irregularly throughout the non-breeding period, and another group seen only in the non-breeding season. McEntee (1976) found the winter population was in a state of constant flux and was entirely different from the birds in her area during the breeding season in New Jersey. She estimated that the 1000+ birds banded at her station represented from 5-10% of the winter population. In a study of House Finches wintering in North Carolina, Stewart (1989a) estimated that 54.5% of the finches traveled to Pennsylvania for the nesting season and many others were found in New Jersey and Massachusetts. In a follow-up study, Stewart (1989b) found that 20% of House Finches in New York and Pennsylvania remained throughout the winter within the same ten-minute block (approximately 262 km^2) of their summer banding.

On the West Coast, Thompson (1960) found House Finches to be fairly sedentary with very few instances of travel over 320 km between the place of banding and recovery. He concluded that in winter there was little southward movement at the northern limits of the House Finch's range; therefore, he considered the species non-migratory. In another study of western House Finches, Aldrich and Weske (1978) concluded that only 4.0% of western House Finches move as much as 200 km.

METHOD

To find evidence of seasonal movement of House Finches in the Midwest, I perused the U.S. Fish and Wildlife Service banding records of House Finches captured between 1980 and 1990 in the following states and province: Alabama, Arkansas, Illinois, Indiana, Iowa, Kentucky, Louisiana, Michigan, Minnesota, Mississippi, Missouri, Ohio, Ontario, Tennessee, and Wisconsin. Of the 69,268 House Finches banded in this ten-year period, 200 birds were recaptured in 12 states and one Canadian province. These records were then divided into four categories based upon the following criteria: (1) banded in summer, recaptured in winter; (2) banded in winter, recaptured in summer; (3) banded in summer, recaptured in summer; and (4) banded in winter, recaptured in winter. For this study, "summer" was defined as May, June, July, August and September; "winter" was defined as November, December, January, February, and March. The months of October and April were considered transitory periods and omitted from the analysis.

Movements of birds banded in the summer and recaptured in the winter were mapped. In addition, a map of movements of birds banded in the winter and recaptured in the summer was prepared. Birds that were banded in the summer and recaptured in a succeeding summer were identified on a third map. A fourth map was based on House Finches banded and recaptured in succeeding winter months.

RESULTS

Four maps based on Fish and Wildlife Service banding data are found in Figures 1, 2, 3, and 4. Circles represent areas where birds were recaptured within 25 km of the initial banding site. Each concentric circle represents one

bird recaptured within the same 25 km circle (e.g. in Figure 1, southeastern Michigan had two recaptures while northeastern Ohio had three). Arrows indicate direction of net movement and black dots represent sites of banding and/or recovery. In Figure 1, arrows with thick lines represent two or more birds that traveled between the same two points.

DISCUSSION

The general pattern of arrows in the maps in Figures 1 and 2 suggests a strong north-south movement of House Finches with seasonal changes. This is in contrast to net movements from summer to summer which appear to be primarily limited to an area near the original site of banding. Winter-to-winter movements (Figure 4) show a net southerly direction somewhat similar to that seen in Figure 1.

It is important to note that the season in which a House Finch was encountered a second time was sometimes more than a year later; in some cases, several years lapsed before the birds were recaptured. Unfortunately, we have no way of knowing where the birds spent the intervening time.

Many House Finches were recaptured in the season opposite to the one in which they were banded. Of 50 birds banded in summer and recaptured in winter, 62.0% were recaptured in less than 11 months. Average distance between captures was 344.9 km (n = 50, SD = 301.7) with one bird traveling over 1,000 km. As illustrated in Figure 1, almost all were recovered in a more southern location. Of 25 birds banded in winter and recaptured in summer (Figure 2), 19 were recaptured within 11 months of banding and all except two had moved in a northern direction. Average distance between captures was 416.4 km (n = 25, SD = 351.3).

House Finches show a strong tendency to return to the same general area from summer to summer. In the summer months, average distance between banding and recapture sites was 77.2 km with 31.0% recaptured within 25 km of their banding sites (n = 29, SD = 145.3). Some birds banded in winter and recaptured in winter appear to have a strong loyalty to the same wintering site with 31.6% recaptured within 25 km of their original banding site. However, others were recaptured much farther away for an average distance of 274.0 km (n = 19, SD = 289.9).

CONCLUSIONS

The eastern population of House Finches appears to have developed some migratory behavior. These data suggest there is a general movement of birds in a southern direction for winter months and movement to the north for summer. House Finches show a strong tendency to be in the same general area from summer to summer. However, the tendency to be in the same area from winter to winter is much weaker.

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LITERATURE CITED

Aldrich, J.W. and J.S. Weske. 1978. Origin and evolution of the eastern House Finch population. *Auk* 95:528- 536.

Elliott, J.J., and R.S. Arbib, Jr. 1953. Origin and status of the House Finch in the eastern United Stated. *Auk* 70:31-37.

Gill, D.E., and W.E. Lanyon. 1965. Establishment, growth, and behavior of an extralimital population of House Finches at Huntington, New York. *Bird-Banding* 36:1-14.

McEntee, E.G. 1976. A new look at the House Finch spring migration. *EBBA News* 29:255-261.

Stewart, P.A. 1989a. Nesting locations of House Finches wintering in North Carolina. *Chat* 53:90.

_____.1989b. Movements of House Finches banded in New York and Pennsylvania. *No. Am. Bird Bander* 14:118-119.

Thompson, W.L. 1960. Agonistic behavior in the House Finch. Part 1: Annual cycle and display patterns. *Condor* 62:245-270.

Figure 1. Locations of 50 House Finches banded in "summer" (May-Sept.) and recaptured in "winter" (Nov.-Mar.). Arrows point in the direction of net movement. Thick arrows represent two or more birds. Circles represent birds recaptured within 25 km of banding site.

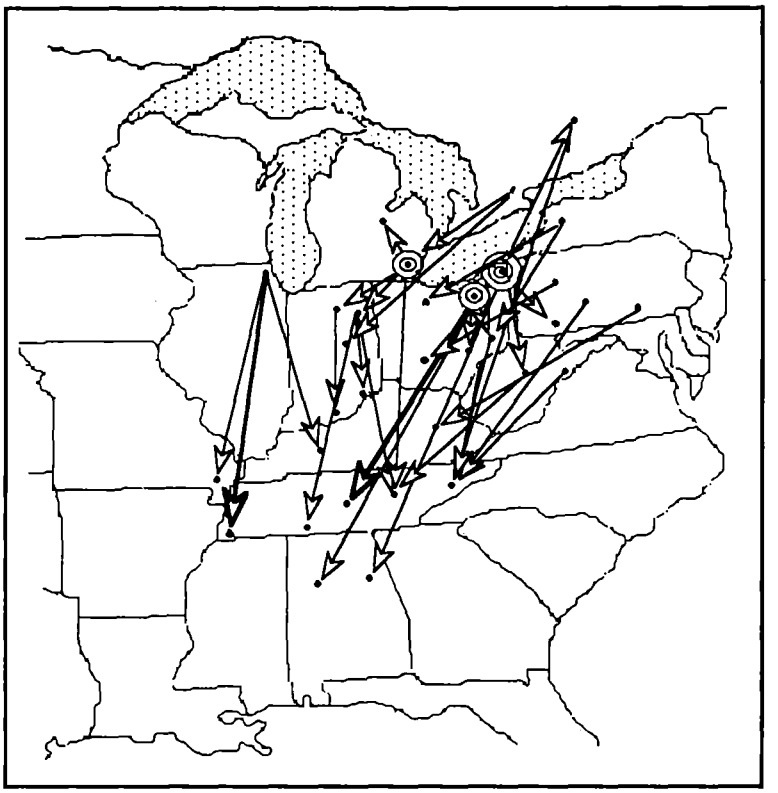

Figure 2. Locations of 25 House Finches banded in "winter" and recaptured in "summer." Arrows point in the direction of net movement. Circles represent birds recaptured within 25 km of banding site.

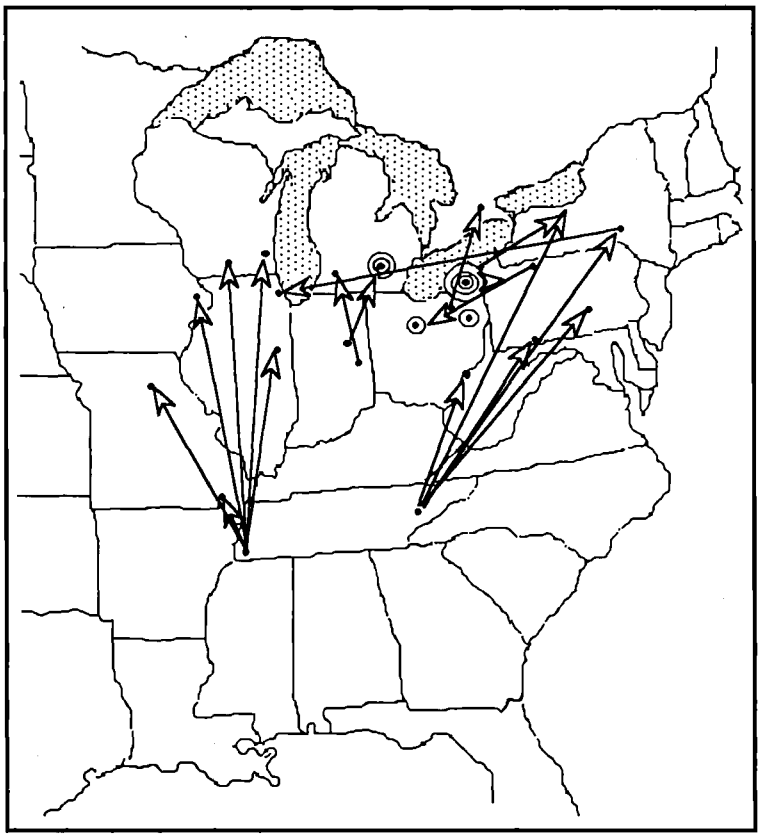

Figure 3. Locations of 29 House Finches banded in "summer" and recaptured at least one year later in "summer." Arrows point in the direction of net movement. Circles represent birds recaptured within 25 km of banding site.

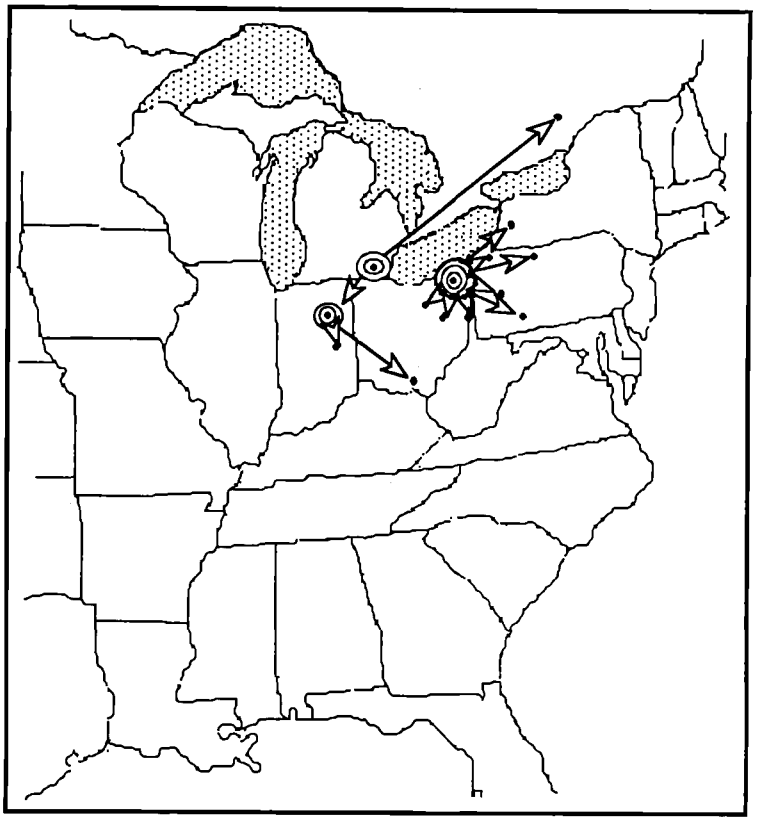

Figure 4. Locations of 19 House Finches banded in "winter" and recaptured at least one year later in "winter." Arrows point in the direction of net movement. Circles represent birds recaptured within 25 km of banding site.