

## SPRING BANDING AT HUGHES HOLLOW, MARYLAND, IN 1971

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McKee-Beeshers Wildlife Management Area, Maryland, better known as Hughes Hollow, is located along the Potomac River about 26 miles upstream from Washington, D.C. A wide variety of habitats (well drained upland forests, woodland swamps, floodplain forests, fresh water marshes, overgrown fields, cultivated fields, and grasslands) and birds (about 200 species recorded) makes it an ideal area for ornithological field work. Since March 1969 my associates and I have been conducting several banding studies there. This paper briefly summarizes the spring 1971 results of one study.

This study has two simple objectives: to study migration within a limited area and to determine adult survival rates for as many species as possible. Naturally much other data, such as distribution and abundance of various species within the area and movement within the area, will accumulate during this study, but this is of secondary importance.

The banding area, consisting of about 6 acres of mixed habitat, is in an opening of the floodplain forest about 1,000 feet from the river. Much of the area is relatively open with widely spaced trees and herbaceous understory, mainly golden-rods, while the remainder is woodland. Tallest trees are about 40 feet high, but the majority are in the 20-25 foot range. Dominant tree species are pin oak, american elm, shadberry, red maple, green ash, persimmon, viburnum, and hawthorn. During rainy periods there is much standing water in the area, but only two small permanent waterholes are present. A six foot wide trail runs through the center of the area.

Thirteen net lanes, consisting of 1 to 3 twelve meter long nets, have been established throughout the area. During spring 1971 only 5 net lanes (10 nets) were used. This is my standard operation and these same lanes were operated in the spring of 1969 through 1971, summer of 1969, and fall of 1970; the other lanes are run irregularly. These five lanes are spaced relatively evenly along the trail in productive spots, generally near standing water and perpendicularly to known flightpaths.

Banding began on April 8 and continued irregularly to April 25 and then regularly to June 1. When possible, nets were operated from dawn to dusk. On the other days they were run from dawn to late morning or from early afternoon to dusk. During the 28 days and 1,751 net hours of operation, a total of 510 individuals of 57 species were banded, 80 individuals of 18 species banded in previous seasons were recaptured, and 65 of these birds repeated for a total of 655 captures. Birds per 100 net hours were 29, 4, 3 and 37, respectively.

The ten most abundant species were Catbird (64), American Goldfinch (57), Rusty Blackbird (46), Northern Waterthrush (43), Swamp Sparrow (42), Yellowthroat (32), Blackpoll Warbler (31), Indigo Bunting (25), White-throated Sparrow (21), and Yellow-breasted Chat (16). The best days were 5 May (55 birds), 9 May (54 birds), 12 May (57 birds), and 15 May (47 birds). Noteworthy totals included 9 Solitary Sandpipers, 31 Blackpoll Warblers, 5 Orchard Orioles, and 46 Rusty Blackbirds.

Six species were banded for the first time in the area: Worm-eating Warbler, Golden-winged Warbler, Louisiana Waterthrush, Baltimore Oriole, Rusty Blackbird, and Lincoln's Sparrow, bringing the grand total of the area to 92.

The 80 returns had been banded during the following periods: spring 1969 (26), summer 1969 (1); winter 1969-70 (4) spring 1970 (20), fall 1970 (27), and winter 1970-71 (2). Commonest species were Yellowthroat (14), Catbird (12), American Goldfinch (7), Yellow-breasted Chat (6), Field Sparrow (6), and Song Sparrow (6).

One interesting feature of this spring's operation was the recapture of 15 birds banded as birds of the year (HY) in fall 1970. Some of their recapture rates were impressive: Tufted Titmouse, 21.4% (3 of 14); Carolina Wren, 33.3% (3 of 6); HY-Female Yellowthroat, 20% (4 of 20); and HY-Female Rufous-sided Towhee, 100% (1 of 1). These rates are as high as adults of some breeding species, such as the Acadian Flycatcher.

In the future I will be able to determine adult survival rates for the following species: Acadian Flycatcher, Tufted Titmouse, Catbird, Wood Thrush, White-eyed Vireo, Yellowthroat, Yellow-breasted Chat, American Redstart, Indigo Bunting, American Goldfinch, Field Sparrow and Song Sparrow.

On the whole, migration this spring was later and more prolonged than usual. Rusty Blackbirds, White-throated Sparrows, and Swamp Sparrows were captured in good numbers until the 9th of May. Usually most of them have left the area by late April; the time I am usually just beginning to band there. Therefore I banded more individuals of these species than usual. The first and probably the only big migration wave passed through the area from 10 to 12 May. Blackpoll Warblers and Canada Warblers were apparently more common this spring than last year, but the following species were less common: Yellow-billed Cuckoo, Red-eyed Vireo, Tennessee Warbler, Chestnut-sided Warbler, Bay-breasted Warbler, and Wilson's Warbler.

Further data were gathered this spring on the differences between spring and fall distribution and abundance patterns of various species in the area. Generally they are more common in the fall and may be absent in the spring.

Presently I believe there are at least five reasons for these differences. The first one is simple - there are more individuals present in fall because of natality. Although true of all species, in the netting area it applies mainly to breeding species such as the Catbird and Yellowthroat, which are common in the spring, but more so in the fall. Some species, such as the Carolina Wren and Chipping Sparrow, do not breed in the immediate vicinity but after breeding nearby disperse into the netting area and are therefore more common in fall and may, in fact, be absent in spring. Thirdly, there may be a difference in behavior and habitat requirements. The best example is the Myrtle Warbler, which is common both seasons, but rarely captured in the spring and abundantly caught in the fall. In the spring they feed mainly near the tops of trees, while in fall they feed near the ground; thus they are more likely to be captured in the fall. The fourth reason is a difference in the timing of migration (the species moves through the area in spring before banding begins). The Eastern Phoebe and Fox Sparrow are examples. The last reason is differential migration routes. Blackpoll warblers are common in spring, but not in fall, while the Yellow-bellied Flycatcher, Least Flycatcher, Magnolia Warbler, Ovenbird, and Connecticut Warbler are common in fall but rare or absent in spring. Based on banding and visual observations I think these species are not present in the area during one season and are therefore migrating along a different route. I need more data to verify this point.

All in all this was the best spring of banding I've had at Hughes Hollow. This was due mainly to an increase in the number of net hours and days I banded. I plan to band at this location at least two more years. At the end of this time I will publish the details of this study.

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