# DO DOWNY WOODPECKER ABANDON THEIR BREEDING TERRITORIES IN WINTER AND RELOCATE NEAR A PERMANENT FOOD SOURCE?

**Amy L. Gordon and John L. Confer**
Biology Department, Ithaca College
Ithaca, NY 14850

**ABSTRACT** — In the winter in central NY the Downy Woodpecker (*Picoides pubescens*) commutes long distances (over 200 meters) from its breeding territory to a reliable, abundant food source.

## INTRODUCTION

The Downy Woodpecker (*Picoides pubescens*) is the smallest woodpecker in North America and is very common and widely distributed. Our study of this species was conducted in Tompkins County, in central NY, during the winter of 1994-95. Analyses of banding returns suggests that downys do not migrate (Browning 1995), yet observations on the outer shores of Long Island suggest migratory movement (Bull 1974). Downys do maintain permanent territories which usually provide everything that a downy needs to sustain itself: winter food and shelter, a buffer around the nest and food for its young. Lawrence (1967) observed that the territory defended by an individual downy is nearly identical from year to year.

Downys excavate winter roost holes that are separate from their nest holes (Kilham 1983). Kilham observed downys excavating winter roost holes in logs that he placed in his yard in close proximity to a suet feeding station. In our study we examined the effect of an abundant, reliable food source on winter territorial behavior. We tested whether most downys abandon their territories and excavate winter roost holes close to a suet feeder, as Kilham noted, or stay on their territory in the winter and commute to an abundant food source. For this study we utilized a feeding station which has provided suet in both summer and winter for more than a decade and which is adjacent to a large forest.

Winter territorial behavior of Downy Woodpecker in the vicinity of this banding/feeding station has been studied before. One downy was seen several times on its territory in winter about 900 m from the feeder, yet it was also repeatedly seen at the feeder, which suggests that it routinely commuted from its territory. On the other hand, the territory of one

downy was determined on two consecutive summers about 1000 m from the feeder, yet that bird was seen entering a winter roost hole near the feeder throughout the intervening winter. Defense of territories in fall and winter was examined by playback of taped drumming and whinny calls. Downy Woodpecker responded to playbacks by flying towards the sound and giving a whinny call in fall. In both 1993 (J. Larkin pers. com.) and 1994 (T. Mattey pers. com.) downys ceased responding to taped playbacks in late October. The absence of a territorial defense in winter is compatible with the hypothesis that many downys abandoned their territory in winter and moved into the feeder. Yet in fall and early winter of 1994, Bajohr spent about 25 evenings trying to detect downys entering their winter roost hole. Despite this extensive effort, no downy roost holes were located.

These prior studies establish that some downys stay on their territory in winter and commute to a feeding station, while others excavate a winter roost hole near the feeder. In this study we hoped to determine which behavior was adopted by the majority of birds.

## MATERIALS AND METHODS

This banding/feeding station is located on a ridge with valleys on two sides and some open fields. Birds were caught in a net put up near the feeders. Downys were banded with an aluminum band and two colored bands. Each bird had its own color pattern and could be uniquely identified.

The downys were observed in the early evening from 4:30-6:30, close to the time that downys normally go into their roost hole for the night. The birds were observed from 27 January to 8 April 1995. Binoculars and a telescope were used to determine the banding of a bird at the feeder. After a bird was identified at the feeding station we tried to keep sight of that bird until it departed, as much as 30-52 minutes after feeding. The departure flight path for each bird was recorded on a xeroxed copy of a topographic map. From this drawing we determined the distance and compass angle of departure from the feeder to the point where it disappeared from sight. After we saw a bird depart once, we could anticipate it's subsequent departure direction. Often we could observe a longer departure distance by having one person at the feeder watching the bird and another person ~100 m from the feeder in the direction previously taken by that the bird. Walkie-talkies were used to alert the person in the field when the bird was leaving the feeder and where to look for it.

## RESULTS

Over 170 person-hours were spent observing the birds depart from a feeder on ~40 evenings. Nine volunteers spent 1-4 evenings each. At least 26 birds came into the feeders. Data were not collected on at least 5 of the birds using the feeder because they were not banded. We did not attempt to collect departure data on 3 banded birds because they were seen only 2-3 times each.

*Angle of Departure* - Most birds had a narrow range of departure angles (Table 1). For 13 birds for which we had two or more observations of departure, the range of departure angles varied from $15^{o}$ to $110^{o}$ with an average of $36^{o}$. For 10 birds the range of departure angles was between 15 and $30^{o}$. Only three had larger ranges of 57, 85 and $110^{o}$. Consistent departure directions by individual birds show that a bird is going to the same place each night after feeding. Different birds left in different directions, suggesting that individual birds were going to different places. We believe these birds were returning to their roost holes.

*Length of Departure Flights* - We never observed a bird land in a tree at the end of its departure flight. In every instance the bird vanished because it was so far away, or because it was flying through trees. Many of the birds were still very high and still flying when we lost sight of them. Most observations of short departure distances occurred while we were learning the departure flight path. We believe the mean departure distance underestimates how far the birds were going each night and suggest that the maximum distance is the best indicator of the distance to a downy's roost hole.

There are a great many trees with soft, dead wood suitable for excavation of roost holes near the feeding station so that the environment could have allowed all birds to roost within 100 m of the feeding station. Only four of 18 birds for which we determined even a single departure distance flew less than less than 200 m (Table 1) before disappearing. We did find one roost hole 100 m from the feeders which was occupied by an unbanded female downy. For 78% of the birds the maximum departure distance was over 200 m. Five departure distances exceeded 500 m. It seems implausible that birds would leave the feeder shortly before sundown, fly for hundreds of meters, and then turn around and return to the vicinity of the feeder to roost. These long departure distances provide further evidence that the birds are flying towards their roost hole. Departure distances over 200 m, as shown by most birds, strongly suggests that the majority of birds do not abandon their breeding territories in winter and do not build winter roost holes close to a permanent food source.

Three of the birds for which flight paths were observed were born last summer (1994). All of these subadults had observed flight distances over 200 m, and two had distances above 800 m. Even though younger birds have not established breeding territories and seemed more likely to build a roost hole close to the feeder, they all had long distance departures.

## DISCUSSION

Certain birds were easier to follow because of their behavior. Such birds would come in to feed, move to the top of one of the largest nearby trees and stay there for a few minutes. Some birds preened briefly, climbed to the extreme tip top of the tallest branch in the vicinity, leaned in the direction of flight, and then departed. Such birds often took a very high flight path back to their territories, and were easy to follow because we could anticipate when they were going to leave and where they were going. Male lG/lG A for example, exhibited this behavior and we were able to observe him taking long flight paths on several occasions.

In contrast, female O/O A never moved to a tree top before she left. She always flew a mid-height from tree to tree through the forest. It was difficult to track her for long distances through the woods because she was easily lost in the trees. In April we found that female O/O A had a breeding territory which actually overlapped with the feeding station. Perhaps she never took high flight paths back to her roost hole because her roost hole was so near.

Some birds were difficult to follow because when they come in they stayed for a long time and got into fights with other birds. Fights included displacements, chases, and rapid circling around a branch. Identification of an individual bird is difficult to maintain. Downys move quickly when fighting and fights usually occurred high in the trees where the bands are very difficult to see.

The direction of departure also had an effect on our data collection. Some birds, like male lG/lG A, took flight lines over open hay fields. Long departure distances could easily be obtained because there were no trees or other obstructions blocking our view. Male A O/lB and female dB/W A also had flight paths over open fields. Both birds were observed flying very high until they became invisible. These two birds had very similar flight paths and often came in to the feeder and departed from the feeder within minutes of each other. We suspect they are a pair.

Some birds, like male Pi/Y A and female O/O A, took flight paths that crossed over forests. These birds are very hard to track because they could not be seen through all the trees. After all measurements of depar-

tures were completed, male Pi/Y A was observed defending his territory with an unbanded female just beyond where his departure flights had gone.

Long flight paths that were observed were seldom straight lines, long flight paths often had lots of zig zags and turns in them. This contributes to the range of departure angles.

## CONCLUSION

In conclusion we found that the majority of the birds had narrow ranges of departure angles. This suggests they return to the same place each night after they feed. Most likely they return to their territory. Departure flight paths for most adults as well as young-of-the-year were over 200 m. Thus, it seems that most downys in our study area in central New York do not abandon their breeding territories in winter. Instead, they commute long distances to a reliable, abundant food source.

## ACKNOWLEDGMENTS

We thank Karen Allaben-Confer for her time and help with this project. We appreciate that Jeff Larkin, Michele Bajohr, and Tim Mattey shared their results from previous studies. We also thank all the other volunteers, especially Tim Alefantis and Michelle Thornton, who helped observe the downys.

This paper was presented at the Annual Meeting of the Federation of New York State Bird Clubs in Fredonia NY on October 7, 1995.

Table 1. Status of 18 color-banded Downy Woodpecker observed in this study. Banding codes read from left to right leg and top to bottom. For example, Pi/Y A stands for pink over yellow on the left and aluminum on the right. Angle and distance as described in text. Abbreviations: Ad = adult, Suba = born summer 1994, Unk = banded in 1994-95 but age not determined, n = number of times departure flight was observed.

| Date | Current | | | | Angle | | Distance | | |
|---|---|---|---|---|---|---|---|---|---|
| Banded | Age | Sex | Bands | n | Mean | Range | Mean | Max | Min |
| 9 Feb 90 | Ad | M | A Y/Y | 5 | 222 | 28 | 227 | 390 | 124 |
| 15 Nov 94 | Ad | M | Pi/Y A | 2 | 308 | 15 | 159 | 212 | 106 |
| 15 May 93 | Ad | M | R/R A | 1 | 295 | - | 177 | - | - |
| 6 Feb 93 | Ad | M | A Pu/Y | 2 | 12 | 24 | 186 | 195 | 177 |
| 20 Nov 94 | Ad | M | A O/IB | 9 | 24 | 85 | 383 | 920 | 71 |
| 23 Jan 93 | Ad | M | Y/Pu A | 2 | 205 | 20 | 585 | 850 | 319 |
| 12 Nov 93 | Ad | M | O/O A | 6 | 283 | 15 | 318 | 550 | 89 |
| 16 Feb 90 | Ad | F | Y/IB A | 1 | 326 | - | 230 | - | - |
| 29 Feb 89 | Ad | F | IB A | 4 | 293 | 20 | 182 | 230 | 106 |
| 12 Nov 93 | Ad | F | O/O A | 4 | 171 | 57 | 239 | 301 | 159 |
| 14 Nov 92 | Ad | F | O/Y A | 1 | 210 | - | 460 | - | - |
| 11 Feb 95 | Suba | M | IG/IG A | 4 | 240 | 17 | 593 | 832 | 89 |
| 11 Feb 95 | Suba | M | dB/Y A | 2 | 285 | 20 | 151 | 212 | 89 |
| 11 Feb 95 | Suba | F | dB/W A | 4 | 14 | 25 | 438 | 814 | 142 |
| 29 Jan 95 | Unk | M | A Y/Pi | 1 | 190 | - | 336 | - | - |
| 11 Feb 95 | Unk | F | A Y/Pi | 1 | 50 | - | 160 | - | - |
| 11 Feb 95 | Unk | F | dB/dB A | 4 | 325 | 110 | 111 | 212 | 35 |
| 11 Feb 95 | Unk | | dB/y A | 5 | 287 | 30 | 167 | 195 | 124 |

## LITERATURE CITED


Askins, R.A. 1987 Territories: A key to understanding bird behavior. *American Birds* 41:35-40.

Bajohr, Michele. 1994 The effect of a dependable food source on territoriality of *Picoides pubescens*. Undergraduate research. Ithaca College. Ithaca, NY.

Bull, J. 1974 *Birds of New York State*. Doubleday, Garden City, NY.

Browning, Ralph M. 1995. Do Downy Woodpeckers migrate? *Journal of Field Ornithology* 66:12-21.

Lawrence, Louise D. 1967 *A Comparative Life-History Study of Four Species of Woodpeckers*. The Allen Press Inc., Kansas.

Kilham, Lawrence. 1962 Reproductive behavior of Downy Woodpeckers. *The Condor* 64:126-133.

Kilham, Lawrence. 1983. *Woodpeckers of Eastern North America*. Dover Publishers, New York.