

A TECHNIQUE FOR STUDYING THE LOCAL MOVEMENTS OF WINTERING BIRDS
By Ralph W. Condee

How far do different species of birds move in their search for winter food? Do they move in flocks of stable membership or in random groups? Do they keep within a definite territory? All these are questions that banding can answer, but they are difficult questions if work is done only at a fixed banding station. And it is quite possible that the presence of the banding station, being a quasi-bird-feeder, may distort the results by attracting birds into areas they would not otherwise enter. The solution is to use a portable banding station.

The following technique seemed, in the case of a study of Tufted Titmice (Parus bicolor), to find out what birds were where, and to produce no "bird-feeder distortion". At the same time it permitted mobility for banding in all parts of a 220-acre mountainous tract. The results of the study itself will appear shortly in the Wilson Bulletin.

The most effective trap for this study was a three-celled Potter, available from W.K. Bigger (see "Banders' Aids" in this issue. -Ed.). The trap should rest on a half-inch plank about 23" x 10" (slightly larger than the dimensions of the trap). The four corners of the plank are suspended by wires from a metal tripod which consists of three light-weight metal clothes poles, seven feet long. The poles I use have a loop of heavy wire at the top; the tripod is more stable if another loop of wire holds the tops of the three poles together. The plank with the trap then hangs from the convergence of the three poles.

Weight, of course, is one of the major problems in portability. Biggers's three-cell trap weighs 2 lbs. 14 oz.; the plank and wires to support it weigh four pounds, and each pole weighs one pound. The total is 9 lbs. 14 oz. Actually the weight is not as much of a problem as the unwieldiness of the seven-foot poles when they must be carried through underbrush. But one develops skill.

Another factor is the portability of the banding equipment. Two requirements are essential: (1) that the bands be contained securely, so that if the container rolls down a brushy mountainside, the bands, pliers, etc. are not lost; (2) that the container be light in weight and convenient to carry. The late Walter Terry, at an EBBA meeting, showed me an ideal solution: he used a plastic scrub-bucket - there is a picture of Mr. Terry and his banding bucket in EBBA News 31:6, p. 239. He had a row of short bolts at the top of the bucket and a corresponding row at the bottom. The bands were then strung vertically, one band-size to a pair of bolts, on the inside of the bucket. Wire loops in the side of the bucket held banding pliers, pencils, etc. Any other equipment could be tossed into the bottom of the bucket. I find it useful also to throw in a couple of old socks. These serve (1) to hold birds for return to the

shack for weighing, further study, etc., when necessary; and (2) to keep the extra equipment from falling out of the bucket when it turns over. My version of Mr. Terry's banding bucket weighs two pounds fully loaded, and it can be slung over the clothes-poles, or even carried with one finger. Inadvertently I have rolled it down mountainsides countless times with no loss of equipment.

In plotting the movements of titmice with this equipment, the traps were kept at least 100 yards apart in order to avoid the distortion of a feeding station. Whenever the trap caught a titmouse, the trap was moved at least 100 yards and not returned to its previous place for at least two weeks. Maps recording the precise trapping points accumulate data which then reveal the patterns of the birds' local movements, territories, interrelations, and so forth.

As a by-product of this study, it was also possible to gather information about the local movements of other species which wandered into the traps - Downy Woodpeckers, White-breasted Nuthatches, and Black-capped Chickadees.

One needs large expanses of land for a study such as this, since one titmouse, for example, will move as far as 3,000 feet in its foraging. Our own land is 23 acres, and that is not nearly enough; but our neighbors, especially in return for permission to hunt rabbits on our land, have been cooperative and I now have permission to trap over an area of $2\frac{1}{4}$ square miles - far more than one bander could possibly cover. All traps should, of course, be tagged according to U.S. Fish & Wildlife regulations, and permission obtained for trapping on public or private land.

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