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November 1976

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Bray, Olin E.; Royall, Willis C. Jr.; and Guarino, Joseph L., "LINKING OF BREEDING AND WINTERING POPULATIONS OF RED-WINGED BLACKBIRDS BY COLOR-MARKING TERRITORIAL MALES" (1976). *Bird Control Seminars Proceedings*. 68.

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## LINKING OF BREEDING AND WINTERING POPULATIONS OF RED-WINGED BLACKBIRDS BY COLOR-MARKING TERRITORIAL MALES

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Since 1960, personnel engaged in bird damage control studies at the Denver Wildlife Research Center have banded more than 80,000 Red-winged Blackbirds (*Agelaius phoeniceus*) in the western United States. One objective was to link breeding and wintering areas of different Redwing populations to obtain information necessary for planning bird damage control programs.

### Banding in Wintering Areas

One approach was to band (and often color-tag) Redwings in wintering areas in anticipation of recoveries during the breeding season. However, few birds were recovered during the breeding season. For example, Center personnel have banded about 50,000 Redwings in Colorado (most of them in the winter), but fewer than 20 of these have been recovered during the breeding season. These recoveries were scattered, occurring in Colorado, Nebraska, Wyoming, Montana, and Saskatchewan. We tried to increase the recovery rate by searching in suspected breeding areas for birds that were color-tagged, but this proved fruitless.

### Banding Nestlings

A second approach was to band (and sometimes color-tag) Redwing nestlings in hopes that they would be recovered in the winter. Because of the high mortality rate of young birds, however, this was even less productive than winter banding. For example, Center personnel banded over 4,200 Redwing nestlings in western Idaho and eastern Oregon, but only one was recovered during the winter.

### Banding Territorial Males

Our third approach was to capture and color-tag male Redwings on northern breeding territories and then search for the birds the following winter in known roosts and surrounding feeding areas to the south. We used the compact trap and trapping procedures described by Bray, et al. (1975). The trap employs a live male Redwing decoy to attract a territorial male. Males were color-marked with 1 x 4 inch Saflag tags (Safety Flag Company of America, Pawtucket, Rhode Island<sup>1</sup>) attached to the leg with a U.S. Fish and Wildlife Service band (Guarino, 1968).

In 30 man-days of trapping from 1972 through 1974, 1,360 territorial male Redwings were banded and color-tagged in central and north central Wyoming (912) and south central Montana (448). Subsequent searching by Center biologists in Colorado, northern Texas, western Kansas, and western Nebraska, resulted in the following direct winter sightings: 9 Montana and 55 Wyoming Redwings in the Denver-Longmont, Colorado area, 1 Montana and 13 Wyoming Redwings near Las Animas, Colorado, and 1 Wyoming Redwing near Fort Morgan, Colorado. From these sightings we are confident that most male Redwings breeding in the trapping areas winter in eastern Colorado. Six of the Wyoming birds and one Montana Redwing were shot the winter after banding. Band numbers allowed us to link the breeding marsh with the wintering area.

Loss of tags may have accounted for the higher proportion of Wyoming (yellow) than Montana tags (green) sighted. DeHaven (1975) ran an aviary study and found that green Saflag tags were lost earlier than yellow Saflag tags. He thought that this difference was caused by variation between the color tags in thickness and weight and by differential response of birds to the colors.

We believe that information similar to that obtained from trapping in Wyoming and Montana can be obtained on other Redwing populations by color-marking males on breeding territories and searching for them the following winter near known roosts. Some of the birds may even be sighted in crops during damage seasons, which would also link breeding areas with damage areas.

## SUMMARY

Three approaches were taken to link breeding and wintering areas of Red-winged Blackbirds: (1) banding in wintering areas, (2) banding nestlings, and (3) banding territorial males. Information gained from the first two approaches was meager compared to the manpower involved. The third approach was to capture, band, and color-tag male Redwings on northern breeding territories and then search for the birds the following winter in known roosts and surrounding feeding areas to the south. The third approach was very productive. It resulted in the linking of Redwing breeding areas in Wyoming and Montana with wintering areas in Colorado. Information similar to that obtained from trapping in Wyoming and Montana can probably be obtained on other Redwing populations by following the third approach.

## ACKNOWLEDGMENTS

Jerome F. Besser, John L. Cummings, C. Edward Knittle, and Donald F. Mott helped trap territorial male Redwings. John L. Cummings, C. Edward Knittle, and Donald F. Mott also helped search for birds tagged in Wyoming and Montana. We thank each of the above individuals for their help.

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<sup>1</sup>Use of trade names does not imply endorsement of commercial products by the United States Government.

## LITERATURE CITED

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## DISCUSSION

- Question: What was the rate of recovery you were able to determine of all those tagged with streamers?
- Answer: In the Platte River Valley we had 55 Wyoming birds; 1 at Fort Morgan, that's 56, and 13 more, that's 69 Wyoming birds. We banded just a few over 900. We had 10 color tag sightings of Montana birds. We tagged about 450 redwings in Montana.
- Question: This may be a sticky question, but can you give a rough estimate of what a program like yours would cost?
- Answer: I can't really answer as to what it would cost, but in comparison to the other 2-banding methods that we used, it was very cheap. We spent 30 man-days of trapping to capture approximately 1300-1400 birds. I don't have any figures on the man-days that we spent searching, because some of it was done incidental to other work. We'd go out to band birds in a feedlot, and while we were there we'd search the surrounding area for color-tagged birds. But in comparison to running decoy or Australian crow traps all winter, it's pretty cheap. The traps are inexpensive to make, but as you know man-power is the most expensive thing.
- Smith: Those numbers, for example 55 birds, are those birds or sightings?
- Answer: They're sightings.
- Question: I understand the Bird Banding Laboratory at Patuxent, MD does not allow streamers like that to be used anymore on the legs. It's 1 cm by 4 cm that is the maximum used because of aerodynamic problems to birds when they fly. I was wondering if you saw any of this with your work - problems in bird flight?
- Answer: You could be right. We haven't been told that we can't use the 1 x 4 inch tags. I've observed that in high winds the tags appear to slow the birds down; they would tend to be at the end of the flock. In general I don't think it affects the birds at all. I've done some work with radiotelemetry, where we're putting transmitters on and adding 3 to 4% of the bird's weight. We can't tell that that affects the birds behavior, so I don't really think the color tags do that much.
- Question: It wasn't weight. It was aerodynamics with that thing flapping in the wind. It might have obscured their eyes or something like that.
- Answer: I have seen where other researchers reported ice on tags, but not blackbirds, so maybe that's something to consider.
- Stickley: Has this technique been tried on other species of birds at all?
- Answer: No, not to my knowledge.