An 'Orange Variant' Northern Cardinal

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ABSTRACT

This is a report on the mist net capture and banding of a color variant of a Northern Cardinal (*Cardinalis cardinalis*) with orange instead of red feathers.

INTRODUCTION

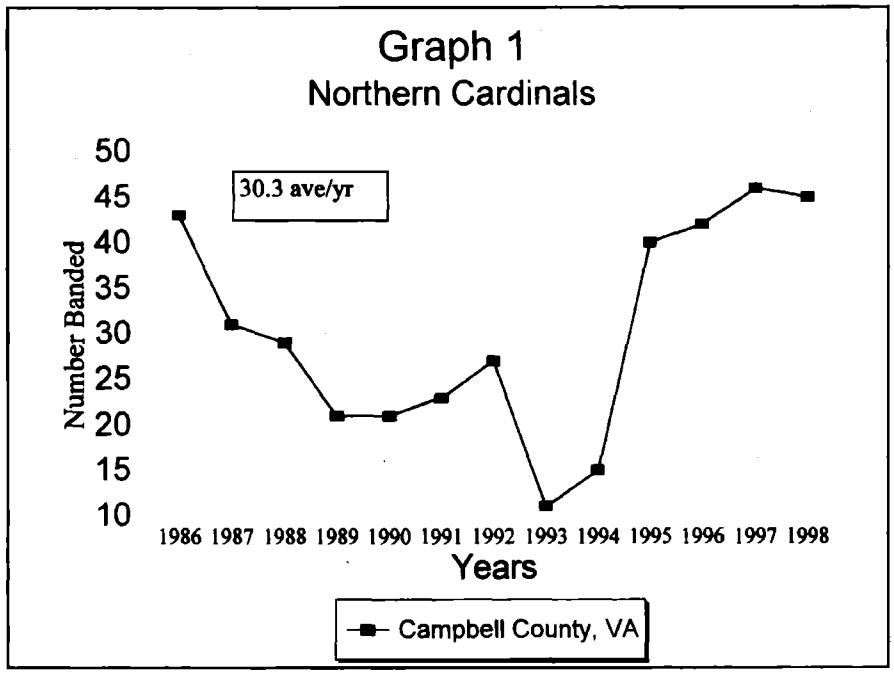
Mist net captures of birds have been used by us since 1986 to study the suburban bird population in the Virginia Piedmont physiological region. The local suburban bird population was partially characterized in 1991. Other events affecting the local bird population during this study included a 1988 Pine Siskin invasion, a 1992 American Goldfinch incursion and more recently, in 1998, a heavy goldfinch flight.

METHODS

The banding station is located in a residential suburb west of Lynchburg, Virginia, in the western portion of Campbell County. The station is opened on a random basis throughout the year during daylight hours. Generally, one to three mist nets are used. The station habitat has been described most recently in Hansrote and Hansrote (1999).

RESULTS

In the course of this study, Northern Cardinals are among the 50+ bird species captured from within the local suburban bird population. The graph shows a total of 394 cardinals captured during the study, an average of 30.3 cardinal captures per year up to the end of 1998. The graph reveals a gradual drop, then recovery, in the number of cardinals banded. Although a detailed analysis to determine the cause behind the drop was not carried out, it is speculated that the reason for variation in cardinal captures was due to severe habitat changes near the banding location.



A description of a male Northern Cardinal in Farrand, Jr. (1983) states, "[They] are brilliant red with an erectile crest and a red bill surrounded by a jet-black area that extends down the throat and back to the eye." On 8 November 1998, a Northern Cardinal with an orange plumage was captured, banded [841-86536], and sexed as an after-hatching-year female. In retrospect, the 'orange' bird should have been sexed and aged as unknown.

Photographs were taken of the 'orange' plumaged bird held next to a 'normal' red-feathered male cardinal. When placed side-by-side, the contrast in color, between the two birds was observable easily. Efforts to locate a literature reference citing the banding or sighting of an 'orange' Northern Cardinal proved unsuccessful. No photograph was taken of the orange variant and a normal adult female cardinal.

It was suggested that Smithe (1975) be consulted to include standard color designations for the reader as the color photographs will not reproduce here. As a copy of Smithe could not be located immediately, a commercial color chart (Pantone Textile Color Guides 1984, 1992) used by an experienced paint professional who assigned color values to the four photographs of the 'orange' cardinal. He selected Pantone 145 (14 parts yellow, 2 parts rubine red and ¼ part black). Five other persons selected color swatches that matched the variant's feather color in the photograph. The average value for the six rankings was Pantone 144 (14 parts yellow and 2 parts rubine red).

Later, using a copy of Smithe's color guide, ten individuals were asked to select the color swatch that matched the 'orange' cardinal in each of the four photographs. The average standard color selected varied between Color 16 (Chrome Orange) and Color 17 (Spectrum Orange.) The 'normal' red-cardinal was rated as Color 13 (Geranium Pink) and Color 14 (Scarlet).

DISCUSSION

The plumage colors during the different stages in the life of a Northern Cardinal have been described in Bent (1968) as "natal down–a "mouse gray"; juvenal (both sexes alike)–above, sepia brown, wings darker suffused with dull dragon's blood and brick red with the tail, crest and forehead largely brick-red. In addition, traces of black on lores and chin while below, wood brown, cinnamon tinged on throat, sides and flanks. In August the cardinal undergoes a complete molt leading to a scarlet plumage, veiled with olive-gray edge. This if followed by a first nuptial plumage (no molt only wear of olive-gray edge). Then adult birds undergo a complete postnuptial molt in late summer." No historical reference to an 'orange plumage' variant Northern Cardinal was found in Bent's (1968) series for the Smithsonian. Pettingill's ornithological textbook (1970) is suggested for those who would like a brief elementary presentation on colors in bird feathers. The textbook also discusses the various causes for variation in bird feather color.

Ehrlich et al. (1988), discussing color in birds, used the cardinal to illustrate a bird containing pigment in its feathers. This feather pigment absorbs all the wavelengths except the ones that, when they enter our visual system, register as red. There is no evidence to explain the orange color in the feathers of the orange variant cardinal. Speculation as to what caused the Northern Cardinal to have 'orange' feathers could include dietary deficiency, an enzyme deficiency, or even an aberrant change in the structure of the feather pigment.

An orange-variant bird was observed on 3 February and 14, 16 March 1999 at the feeders located in the station banding area. Three local residents reported seeing an orange-colored cardinal at their feeders similiar to the orange-variant cardinal in our photographs. In 1998, a similar colored bird was seen at a feeder in Bedford County, 14.4 km (8.9 miles) in a straight-line northwesterly direction from the banding station.

One bird was observed at a feeder in Campbell County 2.6 km (1.6 mile) in a straight-line north-northeasterly direction from our banding station. It was described by one of the observers as "scruffy" in appearance. The sighting occurred around the last week in September or the first week in October 1999. Neither sighting reported a band on the bird. While both sightings are interesting observations, there is no way of ascertaining if this was the

banded bird or why an orange variant was detected in other nearby areas.

The referee of this paper compared the orange cardinal photographs with 81 cardinal specimens with no match. The 'normal' male red cardinal in the comparison photograph was judged by the referee as a second year (SY) male based upon its color.

It is hoped that the banded 'orange' cardinal will be recaptured to compare its current plumage color with that in the earlier photograph. It would be interesting to know if other banders have observed or banded an 'orange' colored Northern Cardinal.

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