

1970 BIRD NESTING STUDY AT WILLIAM B. UMSTEAD STATE PARK, WAKE COUNTY, N.C.

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During the summer of 1970 I made a study of the breeding bird populations at William B. Umstead Park, Wake County, N.C. My main objective was to determine the habitat relations of the nesting species by a series of breeding bird censuses. Much of my time, however, was spent in studying the overall nesting populations. Seven species were given special attention either because of their rarity in the Park or in the rest of Wake County.

SPECIES OF PARTICULAR INTEREST

Black Vulture (*Coragyps atratus*)—On the evening of 10 April Edmund LeGrand and I found a nest of this species in the central part of the Park. The nest site was an approximately one-half acre clearing surrounded by pine and mixed woods. The clearing was evidently at one time the site of a residence but is now densely covered with brambles, vines, and bushes.

The nest was a cleared area on the ground in the midst of a thick mat of vines and small shrubs. Two eggs were in the nest, which was under the overhang of a vine-covered bush. An adult, probably the female, flushed from the nest before we reached it. The bird flew to the top of a small tree 50 feet away and calmly watched us examine the nest. This behavior was repeated on every trip made to the nest until late May. Between 28 February and early April both adults were seen in the area, and their presence at this most unusual location (at least a mile from the nearest open country) made me believe a nest was in the area.

On 18 April Robert J. Hader saw the two eggs, and on 22 April he and Eugene Hester observed two young birds, which were photographed by Dr. Hester. For the next several months I made weekly visits to the nest. By early June the nestlings had well-developed wing feathers but otherwise were covered with buffy down. The young also had made tunnels among the vines that provided protection but made watching them difficult. By late June the young were full-grown and perhaps making small flights around the nest. Not until 13 July did I actually see a young out of the nest. It was in a nearby tree and was fully plumaged except for a buffy crown, a few down feathers on its head, and a gray-tipped bill.

Since the eggs hatched about 20 April and the offspring were ready to leave the nest by the end of June, about 70 days were required to fledge the young. Bent (1937) has little data on the number of days in which the young gain the ability to fly, but one record gives 66 days as the age at the time of first flight. In my case the young remained at the nest for at least 12 weeks (84 days), whereas anywhere from 60 to 74 days is the normal age for the young to leave the nest (Bent, 1937).

Broad-winged Hawk (*Buteo platypterus*)—On 2 July I found a nest of this species about 50 feet up in a loblolly pine (*Pinus taeda*) in an otherwise dry hardwood forest. I was drawn to the nest by the call of a bird, which I found to be a juvenile. On 8 July I saw three juveniles, all able to fly well, but I never saw an adult on the five trips made to the nest. However, I often saw adults at nearby Boathouse Lake, around which they probably did much of their feeding.

Solitary Vireo (*Vireo solitarius*)—This species is strictly a bird of rather mature pinewoods (preferably loblolly pine) at the Park. In fact, at Umstead only the Solitary Vireo and the Pine Warbler (*Dendroica pinus*) are limited to this type of habitat in the breeding season. This summer I noted about 15 singing males in the Park, but only a few

of these birds appeared to have a mate. I found a Solitary Vireo nest on 12 June, 35 feet up in a loblolly pine. The female was incubating at the time, and the male was singing nearby. On 20 June the female was still incubating, but by 23 June the nest had been abandoned. At another location in the Park I saw an adult carrying food, but I did not see a young bird at the time.

Solitary Vireos are fairly common summer residents at the Park, but they are uncommon elsewhere in northern and western Wake County. They are probably rare in the southern and eastern parts of the county. There are several nesting records for the county, one of which is as far east as Wakefield, a small town located 1 mile N of Zebulon (Pearson et al., 1942).

Worm-eating Warbler (*Helmitheros vermivorus*)--On 16 June I saw one bird in the understorey of a deciduous lowland forest. Since I had worked the area heavily on many occasions before 16 June, I feel that the bird was just a transient or wandering summer visitor. I saw no other Worm-eating Warblers in the Park this summer.

Worm-eating Warblers have not been found nesting in Wake County. However, this summer Robert Soots (pers. com.) saw one in mid-July at Raven Rock State Park in Harnett County; he believes this bird was a transient. Elizabeth and Robert Teulings (1966) banded a pair of this species in Durham County in late June 1965. At present, Worm-eating Warblers may be considered rare to very rare nesters (away from the mountains) south to Iredell, Orange, and Bertie Counties (Pearson et al., 1959).

Scarlet Tanager (*Piranga olivacea*)--This summer the highest population ever was recorded for the Scarlet Tanager, not only in the Park, but elsewhere in Wake County. At Umstead, males were common in almost every type of woods, but they preferred mature mixed woods. I saw only about five females, indicating that many or most of the males were unpaired. The first nesting of this species in Wake County was recorded on 9 June, when I observed a female feeding a fledgling on several occasions in a deciduous lowland forest along Crabtree Creek. I found no nests of this species in the Park.

Scarlet Tanagers were found at many locations in Wake County this summer, and they were also common at Raven Rock State Park in western Harnett County (Robert Soots, pers. com.). It may now be said that the Scarlet Tanager is an established summer resident in North Carolina east to northwestern Wake County and western Harnett County (LeGrand, 1970).

Red Crossbill (*Loxia curvirostra*)--It is now well documented that this species staged the most extensive flight on record into North Carolina during the winter of 1969-1970. However, it was quite a surprise to me and several other birders in the State to find that all of the crossbills did not leave along with the departure of the other winter finches. Instead, a few remained, and at Umstead State Park I noted birds on seven dates (maximum of four birds on 5 June) as late as 17 June. They were usually flying and calling overhead, but I did see two perched on one occasion in a tree top. I also saw a male and female, possibly mated, in northern Wake County on 23 and 30 May.

The Red Crossbill is an erratic but usually early nester (Bent, 1968). Eggs are often laid in March, and Hader (1969) states:

"The next published record is 12 March to 6 May 1967 when from one to eight were seen regularly; P.W. Sykes Jr. collected an adult male, an adult female, and an immature female on 6 May. The adult female contained a fully formed egg and another about half developed. The immature was examined at the US National Museum by Roxie Laybourne and estimated to be about 5 weeks old. There is a good possibility it had hatched in Wake County (pers. com. from P.W. Sykes Jr.)."

Since I saw birds at Umstead until mid-June, I believe that one or two pairs may have nested there; however, their restlessness and the lack of singing suggest non-breeding. Also, their departure in mid-June, presumably to the north or west, confuses matters. Is it possible that a few birds could nest on their wintering grounds in the spring and then

return to their normal breeding grounds to spend the rest of the summer? The answer may be "yes."

Bachman's Sparrow (*Aimophila aestivalis*)—Two males were present all summer just outside the Park at the Raleigh-Durham Airport. Both possibly were mated. In mid-April both male and female of one pair were seen, but no females were seen afterwards. Both males sang often from scattered pine saplings, but they were shy and disappeared when I approached them. I spent about five hours searching unsuccessfully for a nest or young of this species. However, since Bachman's Sparrows have been present at this location for at least the past four summers, they almost certainly nest here. No other presently known nesting locations have been reported in Wake County, though a few birds are recorded on some of Raleigh's spring counts.

GENERAL BREEDING ACTIVITY

I recorded breeding evidence for a total of 45 species. In the majority of instances young birds just out of the nest were seen and heard begging for food. Because I began work well after the nesting season had begun, in late May, I found only 19 nests. Four nests were of Acadian Flycatchers (*Empidonax virescens*), indicating that they were one of the latest nesting species at the Park. A Yellow-billed Cuckoo (*Coccyzus americanus*) was seen carrying food on 5 September, and the fact that I saw no young cuckoos at all during the summer indicated that these birds may have nested in July and August, for the most part. Also, cuckoos sang much more commonly in late summer than early summer. American Goldfinches (*Spinus tristis*) were the latest nesters of the Park's breeding birds, but the only young bird I saw was one with its parents on 21 September.

The nesting activity for the summer resident species reached a peak in late May, and by early June most of the young birds were beginning to leave the nest. The first broods of the permanent resident species had mostly been reared by the time I started work in late May. Young of second broods were seen from late June to mid-July. After mid-July the singing of many species declined considerably; and a few species, such as the Ovenbird, Yellow-throated Warbler, and Prairie Warbler, were hard to find after this time.

A total of 90 species were recorded in the Park between 28 May and 15 August. Approximately 70 species nested or probably nested in the Park. About 15 species were recorded in the Park but probably nested outside its boundaries. The following were believed to be in this category: Turkey Vulture, Red-shouldered Hawk, Sparrow Hawk, Chimney Swift, Red-headed Woodpecker, Horned Lark, Barn Swallow, Purple Martin, Fish Crow, Mockingbird, Robin, Loggerhead Shrike, Starling, Orchard Oriole, and Common Grackle. The following species were transients: Great Blue Heron, Little Blue Heron, immature night heron, Spotted Sandpiper, and Black-and-white Warbler.

Several species that are fairly common or common nesters in Wake County were not recorded in the Park on this study. They were: Killdeer, Chuck-will's-widow, Common Nighthawk, House Wren, Prothonotary Warbler, Yellow Warbler, and House Sparrow.

DISCUSSION AND RECOMMENDATIONS

Since my main objective was to study the nesting bird populations, in particular the habitat relations of them, I believe the best period for this type of study is from mid- or late-May to mid-August. My study covered nearly all of this period (28 May to 15 August). On the other hand, I believe a study of bird nests and related breeding activities should begin in March and run through July. A study of nesting populations should not, however, begin before May because many individuals of nesting species are migrating through the area in the spring.

SUMMARY

A study of the nesting species and populations at William B. Umstead State Park, N.C., was made during the summer of 1970. Seven species recorded on this study were

either rare in the Raleigh area or in Umstead State Park. Nesting activity reached a peak in late May and early June. Of the 90 species recorded, about 70 nested in the Park.

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