

material from the nest rather than adding it. He then flew off. Mitchell saw no sign of the female. In the afternoon of the same day we set our telescope on the nest and promptly saw the male appear silently at the nest and begin to pick small bits of lichen from the outside. He did this methodically for a minute or two until he had a beakful. He then moved about three feet to the right and disappeared into the interior of the tree. We did not see him leave the tree. He never looked into the nest itself while he was there. We saw no sign of the female although we continued to watch for an hour. In subsequent days we visited the nest site repeatedly, as did Mitchell, but we never again saw either Pine Siskin, and we were forced to conclude that they had abandoned the nesting attempt.

We believe this observation is significant because the pair did complete the nest and apparently began to incubate a clutch of eggs, as indicated by the behavior of the female on 19 April. Thus, this seems to be the first documented nest-with-eggs for the Pine Siskin in North Carolina. In addition, the fact that the pair built a nest at the relatively low elevation of 2,650 ft. confirms our suspicions, stated in an earlier *Chat* article (Siebenheller and Siebenheller, 1987) that this species should be looked for at all elevations during the spring breeding season, not just at the higher "northern" altitudes, as is usually indicated.

One thing about the 1991 attempted nesting surprised us greatly. During the winter of 1990-91, Pine Siskins were scarce to absent in this area. In all our previous experience, (Siebenheller and Siebenheller, 1982, 1987) every instance of possible, probable or confirmed nesting occurred after a winter in which the species was very plentiful in the area.

In 1978 the "invasion" into southern New York did not occur until March, but the birds were abundant after that into the spring. In 1991, however, we personally saw no Pine Siskins at all during the winter, and heard only scattered reports of a few at feeders in the county. So this pair, nest building in April, took us completely by surprise.

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Northern Raven (*Corvus corax*) Nesting in Forsyth County, N.C.

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The Northern Raven (*Corvus corax*) is an uncommon permanent resident in the higher elevations of the Appalachian Mountains, usually above 3000 feet (Potter et al. 1980). In March 1974, a nesting pair was discovered on the east wall of Big Pinnacle at Pilot Mountain State Park in Surry County at an elevation of 2400 feet (Teulings 1974). The Pilot Mountain nesting constituted the easternmost breeding record of the Northern Raven in North Carolina.

In 1978, a Northern Raven was observed in Forsyth County on the Spring Bird Count (Fussell 1979). Subsequent sightings occurred during the following years, usually in the northern sector of the county. These sporadic sightings were attributed to vagrant birds flying from the Pilot Mountain site, which is only 13 air miles to the northwest.

An extensive search was undertaken in the spring of 1991, after another raven sighting was made during the 1990 Forsyth County Christmas Bird Count. Personnel of the Vulcan Materials Company Quarry, located near the area of sightings, indicated the ravens had nested on the rock face of the quarry walls.

On 22 February 1991 we visited the quarry area, observed a distant raven perched on a bare tree, and later located an apparent nest near the top rim of a northeastern sheer granite wall. Splashes of "whitewash" were noticeably visible on the rock ledge and also on a jutting rock ledge several feet lower. Later, we determined this particular site was a favorite perching area rather than a nesting site.

On 1 March 1991, we observed two ravens flying in the immediate quarry area. From the opposite (west) wall, at a distance of 1000 feet, we observed a nest near the top rim of an eastern sheer granite wall. The nest was located on a rock ledge out-cropping 250 feet above the quarry floor and sheltered by an overhanging rock ledge. Using a 50x Questar telescope, we spotted one adult on the nest. The bird went through motions of apparent egg-turning. Meanwhile, the other adult flew back and forth several times, carrying a white object; the bird perched on a high rock promontory, pecked at the object for a few minutes, then flew to the nest site with the object and disappeared from view into the site. Subsequently, the same bird flew out without the object and perched nearby on the sheer wall.

When an adult bird flew to the nest on 8 March, two hatchlings with heavy gray down were clearly observed. Only slight movement of the young was detected. Twelve days later, we returned to the quarry and spotted two young birds in the nest. When a adult arrived, three young were clearly seen, actively gaping for food. The bright red mouth and the yellow bill edge were readily seen with the telescope. The young were showing some black pinfeathers but still had an abundance of gray down. We checked the site on 28 March, a hot, muggy day with the nest in full sunlight. The adult bird was brooding the young birds during the entire observation. On 3 April, three well-feathered young were seen in the nest. One young, at the front edge, flapped vigorously while the other two nestlings were less active. Both adults were perched in trees nearby. The final nesting observation occurred on 17 April at which time four young and both adults were observed. The young had left the nesting site but were present (in pairs) on the quarry wall face approximately 50 feet below the nest. The four young ravens were all actively flying with the two adults on 29 April. Subsequently, all six ravens departed together on 1 May, but only the adults returned about two weeks later. This departure is a typical raven behavior in removing young birds from adult territory (Bent 1946).

Quarry personnel were very helpful in providing the following additional information: The adult birds fed regularly from "handouts" at noon each day and stored excess food in crevices of the rock wall; an adult was seen carrying a large rat to the nestlings; the ravens have been at the quarry year-round for approximately seven years but did not nest the first two years; the adults raised

four young each year; annually the birds all departed as a family, but only the adults returned; the adult birds began destroying the nest, forcing the young to fledge.

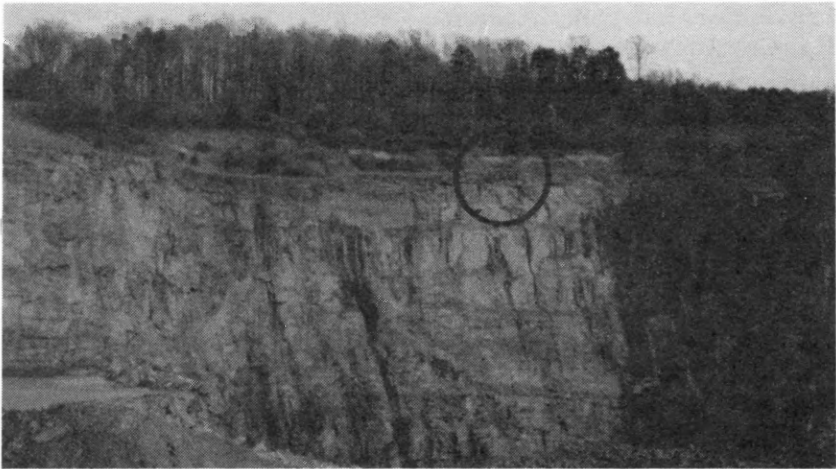


Fig. 1. Northern Raven nesting site in Forsyth County, NC

The extralimital nesting of Northern Ravens documented herein constitutes the first breeding record for Piedmont North Carolina, the lowest known elevation (850 feet) for breeding in the state, and the easternmost nesting locality reported in the state. Selection of this nesting site may reflect nothing more than aberrant behavior of a single pair that happened to discover a favorable manmade habitat outside the mountains. On the other hand, use of the Forsyth County quarry could presage a widespread reoccupation of low- and middle-elevation sites that may have been occupied when the species was more abundant than it has been throughout most of the present century. All March and April sightings of Northern Ravens outside their normal range definitely warrant prompt and thorough investigation.

Acknowledgments. We thank Billy and Susan Hammond for the consistent sightings of the adult birds, which led to the nesting documentation; the Vulcan Materials Company for granting us permission to monitor the birds; and the quarry personnel, especially Roger Bullins and Ricky Slate, who patiently escorted us and provided valuable information throughout the observation period.

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