

## Common Raven Breeds at Table Rock Mountain in South Carolina

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A pair of Common Ravens (*Corvus corax*) nested at Table Rock Mountain, Pickens County, S.C. in 1986. I discovered a bulky nest placed deep in a crevice of a crag on the northeast face of the massive granitic dome of Table Rock Mountain (950 m) on 26 March. The nest crevice was located about 12 m below the northeast section of the dome and 22 m above the base. The nest crevice had an overhang above and a steep rock face below. The nest-site is located near the Saddle which connects the base of Table Rock to the Stool (799 m) and overlooks Table Rock Reservoir. The surrounding habitat is primarily Oak (*Quercus spp.*) forest on steep slopes with some Canadian Hemlocks (*Tsuga canadensis*) in narrow ravines and pines (*Pinus spp.*) on the xeric dome of Table Rock Mountain.

Twice, I saw one or two young appear above the nest rim briefly, appear to beg, and flap their wings. Their flight feathers and anterior contour plumage were fairly well developed. The adults, which had left the vicinity of the nest before my arrival, did not approach the nest closely while I was present, but the male did protest occasionally at a distance. The visible side of the nest rim was fouled with excrement. Several branches of a small bare deciduous sapling that projected 1 m beyond the rock face from beneath the nest was also fouled with excrement. Another ledge, unsuitable as a raven's nest-site (Hooper, 1977) was located 7 m above the nest crevice and was slightly fouled with excrement. This ledge (henceforth called the high ledge) was used by both adults and was the nocturnal roost site of the male which does not incubate the eggs or brood the young (Goodwin, 1976).

I could not see if the nestlings' eyes were open, but assuming a fledging period of 41 days (Stiehl, 1985), I guessed that the young were about 3 weeks old. Assuming ravens lay eggs once a day, begin incubation with the second egg laid, and have a mean incubation period of 21 days (Stiehl, 1985), I estimate that this pair of ravens must have begun egg-laying around 15 February. Most ravens in SW Virginia lay eggs by 8 March (Hooper, 1977), which roughly agrees with my observations. Temperatures were very mild in the mountains of South Carolina in February 1986 and snowfall was much less than normal; under these conditions, early egg-laying would be expected for Common Ravens.

On 3 February 1986, this pair of adults was on territory and roosting or resting on both ledges. I heard call-types, i.e., the Rattle and Bell-like vocalizations associated with several courtship and aerial displays (Conner, 1985), but saw no nest-building. I did see some sticks in the nest crevice but could not discern whether they formed a bonafide nest. Evidently, the pair of ravens built the bulky nest between 3 February and about 15 February which also agrees with Hooper (1977).

I have checked Table Rock Mountain annually in late winter and spring since 1983 and a pair of ravens have been present every year on the same territory. However, I was uncertain if nesting occurred because I could not clearly see inside the rock crevice. On 19-20 March 1983, a pair of ravens defended the high ledge, and the male occasionally pursued Turkey Vultures (*Cathartes aura*) when they approached the high ledge too closely. The adults engaged in courtship displays. I also watched both sexes, but primarily the male fly down the ravine between Table Rock Mountain and the Stool to the vicinity of the major recreation areas in Table Rock State Park, return with refuse, usually bread, and fly to an invisible site below the high ledge. The male was particularly active in this activity on 20 March when I saw the female only twice in four hours of intensive observations. My observations are consistent with both parents bringing food to the young, primarily the male, and with the female brooding the young (Goodwin, 1976). Later, I checked the probable nest crevice below the high ledge, saw some excrement streaks on the rock face below, but could not clearly discern any substantial nest structure.

Next year, I did not see a pair of Ravens on 15 February 1984, but a pair was on territory on 5 April and my observations were similar to those before. I flushed the female from the probable nest crevice at 1700 hr and the bird did not return while I was present. Some sticks were visible in the nest crevice but no structured nest was visible. Some excrement was present on the rock face below the nest and on the bare deciduous sapling.

The following year, I saw a pair of ravens on territory on 18 March 1985 but did not see them defend a ledge. Otherwise, my observations are similar to those of the previous two years.

In retrospect, I believe a pair of ravens has nested at Table Rock Mountain since at least 1983 but a substantial nest structure was not clearly visible in the crevice until 1986. That year, the nest was bulky, probably because the ravens built upon the foundation of previous nests; thence, part of the bulky nest was visible which permitted me to see young in the nest if they appeared above the nest rim.

Common Ravens certainly bred in the Blue Ridge Physiographic Region of South Carolina in Oconee, Pickens, and Greenville counties during the nineteenth century but no definite records exist. Loomis (1889, 1890, 1891) stated ravens nested at Table Rock Mountain, Caesar's Head, and possibly Mount Pinnacle (Pickens County). Apparently, the habitat at the high elevations of these mountains was forested much like today, though sheep were common in pastures on the lower slopes and narrow valleys. Though adequate evidence is lacking, the raven was possibly persecuted and their nests destroyed because residents believed ravens preyed upon live new-born lambs and not just placentae of the afterbirth.

Only two definite records of ravens exist for the mountain region since the nineteenth century until the 1940s. M. B. Stevens reported one in Oconee County on March 1935 and J. M. Sitton also reported two or three here, in the Walhalla area, in 1936 (Sprunt and Chamberlain, 1970). While ravens may have been extirpated in several other regions of the Southern Appalachians during this period, such as in eastern Kentucky (Fowler et al., 1985), I don't believe ravens were

extirpated from the mountain region of South Carolina despite the near **absence** of records for a 40- to 60-year period because the habitat did not change **much**. Ravens were widespread in neighboring Georgia and North Carolina during this period (Burleigh, 1958; Pearson et al., 1959). In addition, observer coverage of the mountain region in South Carolina was virtually nonexistent during the 20th century until 1973. Nearby, insufficient observer coverage was also true in Tennessee where only one nesting locality of Common Raven was known through 1977 (Williams, 1980).

Simpson (1970) reported ravens at a dump near possible breeding habitat in Oconee County, South Carolina in 1969, though apparently at least two ravens were present each year near the Walhalla Fish Hatchery since about 1940. No one visited suitable potential nest-sites in the mountains until my visits began in 1983 but several previous records are suggestive of possible earlier breeding. On 11 June 1977, H. LeGrand and P. Hamel had 4 ravens at Table Rock State Park at an approximate elevation of 400 m (*Chat* 42:18). The following year at the same locality, both observers had 7 ravens on 10 June (*Chat* 43:23; *Am. Birds* 32:1161). Both these groups may have been of families but details are unknown.

Several Peregrine Falcons (*Falco peregrinus*) were hacked from Table Rock Mountain in 1985 in an attempt to reintroduce breeding pairs in South Carolina. Peregrine Falcons occasionally evict ravens from nest-sites but eviction of Peregrines from nest-sites by ravens is unknown (Ratcliffe, 1980). Ravens do have more specific nest-site requirements, i.e., a suitable ledge with an overhang above and steep rock face below, than Peregrines which do not require an overhang above. Ravens frequently use alternate nest-sites at the same locality (Hooper, 1977). The granitic dome of Table Rock Mountain is generally smooth with few suitable sites for either species despite its extensive vertical rock surface. One pair of ravens at Table Rock Mountain appears to have used only one nest-site for at least four consecutive years. This also suggests nest-sites are limited based on raven inspections of Table Rock Mountain. Ravens may nest in trees in the southern Appalachians, however. Hooper (1977), for example, found three nest-sites in pine trees. If ravens establish a breeding population in South Carolina of more than several pairs, such additional pairs will probably breed in trees. Finding such sites in the heavily forested mountain region of South Carolina will be difficult.

Ravens will probably continue to breed at Table Rock Mountain as long as a pair is present because the nest-site is not readily accessible and breeding activity begins in mid-winter when disturbance by people is minimal. Furthermore, the nest-site cannot be observed from the top of Table Rock Mountain nor can thrown objects from above hit the nest or its vicinity. Adult ravens, particularly the male, will fly near the dome when people are present and evidently tolerate the disturbance.

Records in Briefs for the Files of *The Chat* and in Southern Atlantic Coast Region of *American Birds* are not referenced below.

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