

Onset of Evening Calling by Chuck-will's-Widow

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Chuck-will's-widows (*Caprimulgus carolinensis*) are crepuscular and nocturnal insectivores common in the coastal plain of the Carolinas. Calling and foraging behavior of caprimulgids after sunset has been correlated with nocturnal brightness (moon illumination level) in studies by Brauner (1952), Cooper (1981), and Mills (1986). Von Siebold Dingle (1956) studied the calls of both Whip-poor-wills (*C. vociferus*) and Chuck-will's-widows in South Carolina. He found that Chuck-will's-widows often call before dark. Chamberlain (1954) timed the rate of calling by both species in North Carolina.

The initiation of calling at dusk (before significant lunar illumination occurs) has not been examined in Chuck-will's-widows. In this study I investigated the time of first calling in relation to calendar date, sunset, temperature, cloud cover, and wind speed.

MATERIALS AND METHODS

On 76 nights between 24 April 1991 and 23 July 1991, I recorded the time of first calling by Chuck-will's-widow in the Sneads Ferry area of Onslow County, North Carolina. All recordings were made from the deck of my house located in a rural setting of early-successional abandoned farm land and recently logged mixed pine/hardwood forest. The date, time of sunset, percent of cloud cover, ambient air temperature (2 m above ground), and wind speed (2 m above ground) were recorded.

Unfortunately, I did not have access to a light meter to assess light levels at the time of first calling. At dusk, light levels varied tremendously within habitats. On many occasions ambient light levels were high in open areas but significantly lower 50 m away under a pine/oak canopy. The microhabitat of the calling birds was not known. Therefore, light readings would have been of little comparative value unless they were made in the microhabitats occupied by the calling birds.

RESULTS

The onset of calling by Chuck-will's-widows ranged from 17 minutes before sunset to 19 minutes after sunset and averaged 3.6 minutes after sunset. First calling occurred between 1953 and 2000 h in late April 1991, approximately 5 minutes after sunset. As the days became longer and sunset occurred later, the onset of calling was similarly later (Figure 1). By late June 1991 sunset occurred at about 2027 h, and average first calling time was about 2030 h. Later in the season (mid-July 1991), calling time was initiated somewhat later than sunset (2020 sunset; 2032 calling).

On 36 nights when the cloud cover was less than 50%, first calling averaged 5.1 minutes after sunset (range -7 to +19 minutes). On 32 nights when the

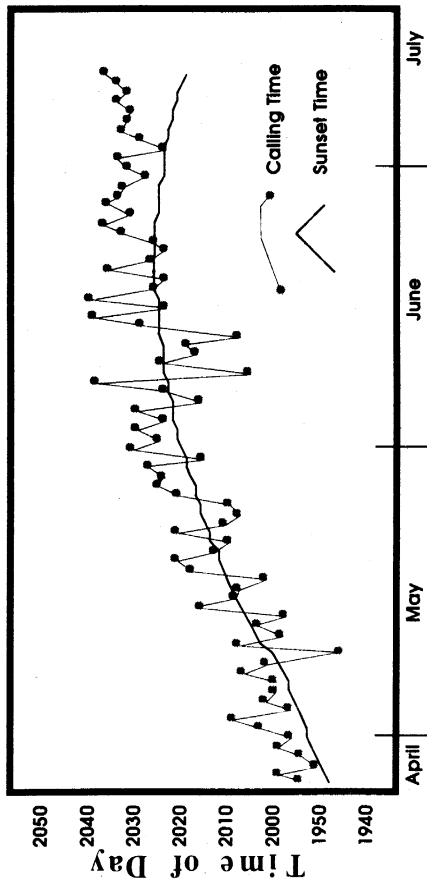


Figure 1. Onset of calling by Chuck-will's-widows with respect to time of day and time of sunset.

cloud cover was greater than 50%, first calling averaged 4.4 minutes after sunset (range -17 to +15 minutes). Significant correlations were documented between time of first calling and calendar date, time of sunset, ambient temperature, and wind speed (see Table 1). Calling was initiated later in the evenings

Table 1. Correlation coefficients (r) and probability values between calling time of Chuck-will's-widows and environmental factors.

Variable	r	P
calendar date	0.8710	0.000*
time of sunset	0.8365	0.000*
cloud cover	-0.0990	0.392
temperature	0.5792	0.000*
wind speed	0.2810	0.013*

* significant correlations

when temperatures were higher. For example, on cooler evenings (19°–23° C) most calling began about 2000 h and on warmer evenings (28°–32° C) most calling was initiated between 2020 and 2035 h. There was more scatter in the data correlating calling time with wind speed (indicated by the lower "r" value). However, on evenings with higher wind speeds, calling began later.

DISCUSSION

Cooper (1981) found no significant correlations of calling activity by Chuck-will's-widow with calendar date, sine curve date, temperature, relative humidity, wind velocity, visibility, or moon phase. Calling by Whip-poor-wills was significantly correlated with moon phase in Cooper's (1981) study. His 20-station survey route was initiated at sundown and terminated about 2 hours later. Thus, he did not examine the time of first calling, but rather correlated calling activity during a 2-hour time block beginning at sunset. Locomotory, vocal, and nest activity by Whip-poor-wills were significantly higher on moonlit nights (Mills 1986). Mills (1986) demonstrated that moonlight influenced activity only when the sun was more than 13° below the horizon. In my study, onset of first calling occurred before the sun was down 13°. Moon illumination near sunset was insignificant compared with solar illumination. Mills (1986) found no correlation of calling with wind. Brauner (1952) correlated vocal and locomotory activity of Poor-wills (*Phalaenoptilus nuttallii*) with light levels. Birds usually initiated calling at light levels below one foot-candle. Calling by Poor-wills generally occurred earlier on overcast days and later under clear sky conditions. On autumn mornings, Zammuto and James (1982) found significant correlations between onset of vocalizations and several environmental factors (time of sunrise, wind speed, cloud cover, and barometric pressure) in a study of 28 species of birds in Arkansas.

Calling intensity by Chuck-will's-widows was greater earlier in the season (April-May), corresponding with their arrival in the study area and competition for mates and territories. The number of calling birds subsided in mid-season, corresponding with nesting activities. Later onset of calling with respect to sunset in July may be associated with declining hormonal/territorial/nesting activities.

In summary, the initiation of calling activity by Chuck-will's-widows was documented on 76 nights between 24 April 1991 and 23 July 1991 in Sneads Ferry, North Carolina. First calling varied from 17 minutes before sunset to 19 minutes after sunset and averaged 3.6 minutes after sunset. Significant correlations were found with calendar date, time of sunset, temperature, and wind speed.

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Black-throated Gray Warbler at Greensboro, N.C.

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The senior author was birding at Guilford Courthouse National Monument in Greensboro, NC, on 24 February 1992. While searching for birds at the edge of a thicket behind the rest room station on the tour loop, he saw an apparent female Black-throated Gray Warbler (*Dendroica nigrescens*). The bird was in a mixed flock of Yellow-rumped Warblers (*D. coronata*), Tufted Titmice (*Parus bicolor*), Carolina Chickadees (*P. carolinensis*), and kinglets (*Regulus* spp.). The weather at the time of the observation was a heavy overcast; intermittent light rain occurred during the day, but not during the observation.

Sorenson noted that the Black-throated Gray was slightly smaller than the Yellow-rumped Warblers accompanying it and that it had a posture and conformation reminiscent of a Black-throated Blue Warbler (*D. caerulescens*), being somewhat plump and compact compared with the Yellow-rumped. It was mainly a slate gray color on the back and rump and dingy white underneath (belly, sides, flanks, and crissum). The crown was medium slate gray bordered on the lower margins by darker gray shading to black. There was a bright white superciliary line that stopped at the nape and a dark gray line through the eye that continued through the cheek to the nape. The chin and throat were dingy white; the throat was marked with a few short, gray streaks. The nape and upper back were the same gray as the remainder of the upperparts. The diagnostic mark was a bright yellow loreal spot between the eye and the bill. This individual lacked the black upper chest depicted in most field guides; however, Sorenson has observed some individuals of this species in the West that have also lacked this black patch. There were some diffuse, grayish stripes on the chest and sides. The bird had two white wing bars, and the underside of the tail showed white tail spots on individual feathers. The tail looked somewhat short for a *Dendroica* warbler. The legs and bill were both dark, as were the eyes. The gray crown, white supercilium, gray eye stripe, and white throat, coupled with the yellow loreal spot, eliminated other species.