



**STATUS: HIGH
CONSERVATION
PRIORITY IN IOWA**

Chuck-will's-widow *Caprimulgus carolinensis*

Introduction

Species in this genus occur on six continents and contain well over half of all species in the nightjar family. Unlike the nighthawks, these birds are probably all strictly nocturnal, and have loud and distinctive voices.

Chuck-will's widow sings its name, and this loud song echoes through woodlands where it is found on summer nights. During the day, the bird is seldom detected as it rests on horizontal tree limbs or on the ground, where its dead-leaf pattern camouflage is very cryptic. If disturbed on the ground it will flap away on silent wings, sometimes giving a low clucking call in protest.

Chuck-will's widow is found throughout much of the Southeastern United States where open forests provide suitable habitat. This species is larger, equally vocal, and more likely to be found in the open than its well-known relative, the Whip-poor-will. Like most goatsuckers, the Chuck-will's-widow sings its distinctive song primarily at dawn and dusk, but also during nights when the moon is full or nearly so. The nocturnal habits have created mystery behind its life cycle and have limited research. Not one nesting study exists, for example, to provide information about their breeding success.



Many reports of this species have been anecdotal and provide limited insight into its habits. Those studies that have significantly contributed to the understanding of the Chuck-will's-widow include only research on its vocal array and molting sequence. Little is known about its nesting behavior, habitat use, and population status, and each is a knowledge gap that is especially troubling. Although Chuck-will's-widows are known to nest in suburban habitat, the extreme nature of urban sprawl and intensified agriculture may be causing population declines that are as yet undetected.

Since the nineteenth century, this species has moved beyond its stronghold in the Southeastern U.S. to expand its range north and west. It is still rare in Iowa, but it seems to be present slightly more often in recent years, and it often returns to the same locations year after year.

Habitat Preferences

Chuck-will's widow occurs within open deciduous, pine, oak-hickory, and mixed forests. It also inhabits oak groves, forest edges, and riparian areas. Openings, including forest gaps, and pastures, appear to be an important habitat component for foraging, and it persists in areas undergoing suburban development, provided enough forest cover remains. But comparative use of habitat types has not been studied in this species.

In places where Chuck-will's-widow and Whip-poor-will both occur, the former is associated with more open habitat, while the latter with more heavily forested habitat. In the Southeastern U.S. along a roadside-count route, Chuck-will's-widow was more common than Whip-poor-will in areas that were about 50% forested and 50% agriculture, and the reverse was true in areas that were about 90% forested and 10% agricultural. The two species were

about equally common when both were found in predominantly suburban areas.

Feeding Habits

The Chuck-will's-widow forages at night, and hunts actively by flying low over the ground in search of night-flying insects, especially beetles and moths, but also a variety of other insects. Foraging tends to peak near dusk and dawn (crepuscular feeding), and like Whip-poor-wills, crepuscular behavior may be because of visual constraints rather than changes in insect availability. This may also help explain why this species remains active all evening during full moons.

While in flight, Chuck-will's-widows "scoop" up insects using rectal bristles, which serve as sensory mechanisms and help funnel insects and other prey into the large bill.

Occasionally, small passerines and bats are included in its diet. During primary molt, when maneuvering for flying insects may be difficult, individuals are sometimes seen on the ground under street lamps foraging for ground-dwelling insects and even small frogs. When outer primaries, some secondaries, rectrices, and rectal bristles are being replaced, ability to forage on the ground may be important for survival.

Small stones on roads are ingested at night. Diet samples from specimens indicate several had either stones or sand in their stomachs. Presumably these particles help grind up chitinous portions of insects on which this species regularly feed.

Breeding Biology

Chuck-will's-widows probably arrive in Iowa in later April or early May, and usually return to the same area, and possibly to the same site, year after year. During daytime courtships, males strut or sidle up to females with body plumage puffed up, wings drooped, and tail spread; and move with jerky actions and calls.

No nest is built per se, but 2 eggs are usually laid (with a range of from 1 to 4) on the flat ground on leaves or pine needles, with the location being in rather open areas within the shady understory of woodlands. Incubation takes 3 weeks, and probably is by the female only. If the nest is disturbed, the adult may move the eggs several feet away.

The young are apparently cared for by the female alone. The cryptic coloration of the adult conceals incubating and brooding individuals, allowing them protection from predators. This protective coloration also makes finding eggs or young difficult, because adult rarely move until nearly stepped on. Females brood the young and provide shelter for them during the day. Regurgitated insects make up the food for the young.

The first flight takes places about 17 days after hatching. And adults and young probably leave Iowa by late September.

Concerns and Limiting Factors

The nocturnal habits of Chuck-will's widow have created a sense of mystery about its life cycle and have limited research, and no detailed study has been conducted that provides information about their breeding success.

Another concern is that most of what we know about this species has been from anecdotal observations rather than from planned scientific studies. Consequently, little is known about nesting behavior, habitat use, or population status. Although Chuck-will's-widow is known to nest in suburban areas, the extreme nature of urban sprawl and intensified agriculture may be causing population declines that are as yet undetected and not evaluated.

Due to this species' insectivorous diet and its habit of foraging over fields and pastures, there is potential vulnerability to pesticides and other contaminants and

toxins. But no data are available. Obstructions such as TV, radio and cell phone towers are also a concern for this nocturnal feeding and migrating species. Even with its increased ability to see at night, Chuck-will's-widows are frequently struck by vehicles as they dust-bathe, ingest pebbles, and roost on roads at night.

Changing landscape use may be correlated with change in ranges of both Whip-poor-will and Chuck-will's-widow. Chuck-will's-widows appear to be more common in agricultural landscapes, and adults are very sensitive to disturbance at nest sites, but instead of abandoning the site, adults may simply move the eggs or young to a location up to several feet away.

Vocalizations and molting have been covered by a major published paper, virtually every other aspect of the biology of this species is in need of additional information. Topics particularly in need of research include survival rates, fecundity, population density, territory size, habitat use for nesting and foraging, factors limiting populations, and the manner in which these factors relate to land-use patterns. Telemetry studies on these topics are likely to be especially informative.

Diet studies, while present in the literature, have tended to focus on unusual observations such as depredation on vertebrates, rather than quantification of normal prey – large insects. If these prey, especially large butterflies and moths, are declining in abundance due to pesticides, land-use changes, or other factors, then any of these factors could, in turn, be a cause for population declines.

Habitat Management Recommendations

While there are no known conservation or land management measures which have been directed toward helping this species, a *Species Management Abstract* has been

developed by the Nature Conservancy's Wings of the Americas Program.

As a species of high conservation priority for Iowa's IBA Program, there is concern about maintaining and hopefully improving the woodland habitats that this species requires.

For general information about habitat management for Chuck-will's widow, see the sections on Woodland Management for Birds. And for more specific details see Recommended Woodland Management Practices. Both of these sections are in Part 3.