Whip-poor-wills and Moonshine

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When a birder sets out to spend substantial time studying, monitoring or otherwise getting to know a particular species, it becomes apparent how little even keen naturalists know about such species' habits and behaviour.

During the 1980s, I had the enjoyable opportunity to study a bird that I knew (at least through personal experience) very little about. Even the writings of other naturalists and the experience of my many naturalist friends were rather spare in many details.

I had long had an interest in night birds, and had always found Whip-poor-wills particularly fascinating. Never active during the day, singing loudly and long during the deep twilight and night, virtually unfindable during the day, gobbling up flying insects in the dark—all these mysterious traits made them a challenging and attractive species to study.

How do slow moving humans with poor night vision study such creatures? At that time, radio telemetry was becoming fairly sophisticated, and I made use of this powerful tool for studying animal behaviour.

Radio telemetry first requires the placing of a small radio transmitter of a particular frequency on a free roaming animal and then involves the monitoring of its activity using a portable radio receiver. To use commercial radio parlance, the animal is a moving radio station, and the scientist is a nearby radio.

Male Whip-poor-wills are easy to catch. (*You must have a CWS permit.)* By using a mist net and a loud tape of a territorial song, they are easily lured in and caught. Females are rarely attracted in this way, although I did catch a few.

Once caught, I placed the radio receiver on the bird. The receiver was like a little backpack with straps made of elastic hairbands, one over each wing, so that the receiver sat in the middle of the back with the short antenna extending down the length of the back. The whole procedure from the time of capture to the time of release usually took about 60 seconds.

I wanted to monitor Whip-poor-will nests. Unfortunately, not only were females rarely caught the way I've described, the males spent little time on the nest, although this proved to vary among birds. How many readers have found Whip-poor-wills' nests other than by accidentally stumbling upon one during a daytime ramble in the woods? Not many I'm sure.

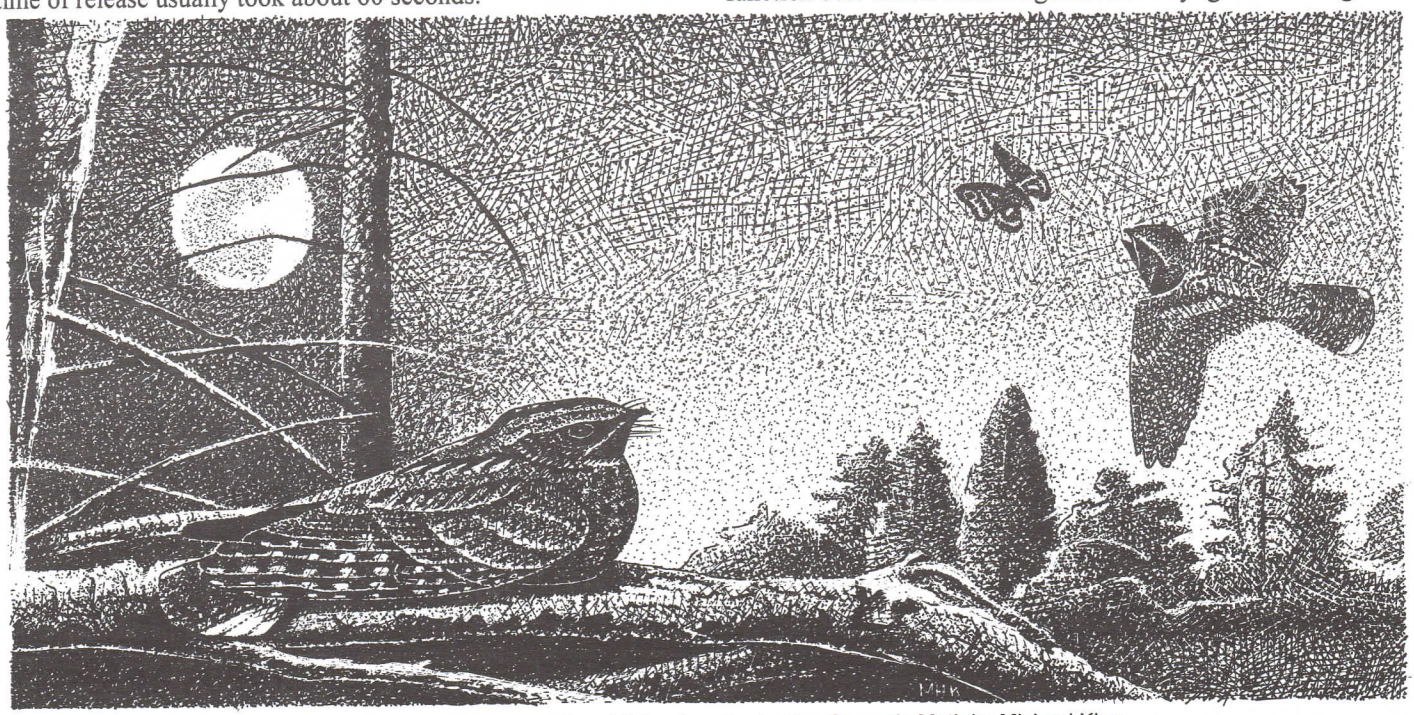
Whip-poor-wills have big light-catching eyes that have a reflective retina designed to make extra use of the light collected. Most night mammals have the same and I'm sure everyone is familiar with the resultant eyeshine from animals seen on the roadside at night.

We employed this trait to find Whip-poor-wills' nests. Concentrating in areas where we believed from the male's behaviour the nest might be, we searched the forest floor at night with powerful lights. In order for this technique to work the light must be near one's eyes, since the retinal mirror reflects the light right back to the source.

Wandering the woods at night in this way is fascinating. With a bright light, not only can you find the reflected eyeshine of many mammals, but the eyes of countless spiders and moths fairly twinkle in the foliage. Nonetheless, this system worked, and we did find incubating female Whip-poor-wills, but usually not without a lot of effort and perseverance. Once the nest was found, it was easy to flush the female from it and into a mist net for equipping her with a radio transmitter.

In the two summers north of Kingston I studied five pairs and seven nests. We monitored their movements, their parenting, their feeding, their vocalizations and their territorial responses. By comparing those data with light data (the position of the sun, the position of the moon, the amount of moonface illuminated), I was able to draw several conclusions.

Sparing you the numbers and statistics, Whip-poor-wills function best within certain light levels. Daylight is too bright and



Perched male Whip-poor-will and flying female chasing Cecropia Moth by Michael King

night without moonlight is too dark. They operate optimally during twilight and moonlight. Singing, responding to intruding birds (i.e. tapes), feeding the young, foraging, and moving about their territory are all concentrated during these periods.

During the dark part of the night, they are generally quiet and still, although less so than during the day. This means that during the period of the new moon, Whip-poor-wills must accomplish virtually everything they have to accomplish between dawn and dusk, a period of about three hours.

I also collected dozens of nest records of Whip-poor-wills and their close relatives and was able to determine that they generally (though not always) synchronize their nesting cycle with the lunar cycle. The eggs tend to hatch as the bright half of the lunar cycle is beginning.

And why not synchronize things this way? I speculate that the first two weeks of the nestlings' lives are the most precarious and the moonlight allows foraging by the parents through the night. I further speculate that during the second two weeks the nestlings will have some reserves, allowing them to get through the dark periods, and during the third two weeks they are becoming independent and need all the help from moonlight they can get.

These were interesting results for me, and the relationships with twilight and the moon were distinct and obvious. Spending hundreds of hours with these birds, however, yielded other bits of information.

Whip-poor-wills are sometimes double-brooded. One of my pairs began a second clutch before the first brood (of which only one survived) was independent. It was clear that the first nestling was primarily the male's responsibility while the new clutch was the female's. Both clutches synchronized with successive lunar cycles.

Whip-poor-wills become torpid in cold weather. We searched in vain one cold May for a radio-tagged bird. Eventually, an assistant of mine stepped on its tail! We were able to pick it up. Except for a groggy head-rolling, the bird seemed dead, and I lamented—prematurely—the loss of one of the study animals. However, that evening it was flying around, singing loudly, defending its territory, none the worse for its earlier condition.

At the end of the season, I was able to remove most of the radio tags. Although many people object to causing stress to birds by such studies, I can confirm that of the five pairs I studied, four pairs successfully raised young despite the fact the parents were tagged. Five of my seven nests were successful, a remarkably high ratio when compared with most studies of other birds.

Identifying birds and listing is fun. Finding rare species is exciting. However, there is a deeper satisfaction in patiently studying and getting to know a particular species or group of individuals.

Reference

Mills, A. 1986. The influence of moonshine on the behaviour of goatsuckers (Caprimulgidae). ***Auk*** 103: 370-378.

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