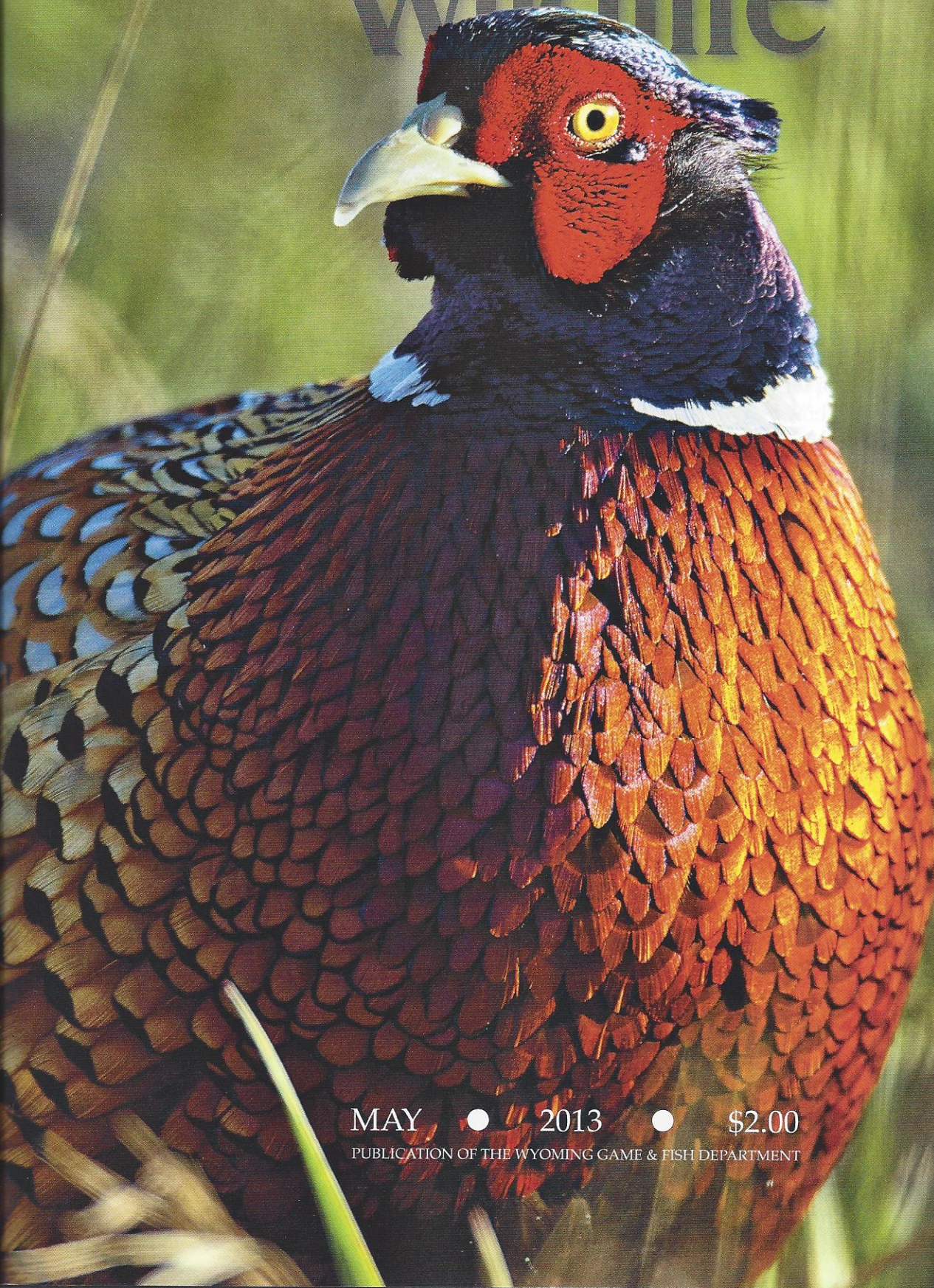


Wyoming Wildlife



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The common nighthawk
and poorwill pluck insects
out of the air on Wyoming's
summer evenings



NIGHTHAWK

We stood under a big silver moon and a velvet black sky one night in July, listening for the unmistakable sound of nightjars. A light wind stirred the leaves of a nearby cottonwood. I heard a chorus frog trill and then another answer briefly. But otherwise, silence. The timeless words of Frederick Knowles, an early twentieth century poet, drifted into my mind: “The night walked down the sky with the moon in her hand.” A

perfect description of the incandescent moon’s passage across a dark night sky, I thought, before closing my eyes and focusing again on listening.

And then, like the memory of an echo, a faint chanting call came from the dark hills silhouetted on the horizon. “Poor Will, poor Will, poor Will,” the voice called with haunting sweetness. A smile broke out on my face. It was going to be a successful night after all, I thought as I marked common poorwill on my data sheet. Then bright red and blue lights suddenly flashed behind us as a deputy sheriff pulled in behind our parked car.

As he strolled up to us, I wondered how ludicrous any explanation of our strange behavior would sound to him. After exchanging polite but terse

greetings, I quickly volunteered that my husband and I were conducting a nightjar survey— a survey of several species of nocturnal birds— and were only parking on the edge of the road for a few minutes while we listened for their calls.

To my surprise, the deputy took this information in good-humored stride, merely suggesting that we move a short distance up the road where there was a dirt road onto which we could pull off safely. Rather than explain that we had to stop every mile along a predetermined ten-mile route for our survey, we readily agreed to head up the road, knowing that the dirt road he’d indicated was the next stop on our route.

“I live on a ranch down that road,

and I see those birds at my place sometimes,” the deputy surprised me by saying. “If you want, I can let you know if I see any.”

“That would be great,” I responded, touched by his interest and not wanting to dim his enthusiasm by telling him that these surveys followed a strict protocol that allowed biologists to combine and analyze data that were being gathered nationwide by an army of volunteers. After chatting pleasantly about birds and other matters, the sheriff sent us on our way and headed home.

Continuing down the road, we stopped at our next survey point and again stood outside our car and listened for six minutes, noting and recording the number of individual nightjars we heard during each minute. Denizens of the night, nightjars are well-camouflaged birds whose large eyes allow them to find night-flying insects in low light.

Wyoming has two nightjar species, the common nighthawk, whose dawn and dusk flights are familiar to many Wyomingites, and the more elusive, strictly nocturnal common poorwill, which often surprises night drivers by flying up from dirt roads in front

of their headlights. The nightjar's diminutive legs are matched by a tiny bill that opens to reveal a surprisingly cavernous mouth. Years ago, I reached down to pick up what I thought was a road-killed poorwill and quickly jumped back in alarm as I was unexpectedly confronted by an enormous hissing mouth. Adaptations to their lower jaw allow nightjars to open their mouths horizontally as well as vertically to better catch insects in low light.

Nightjars are also known as goatsuckers for the mistaken ancient belief that these birds suckled milk from goats. This myth likewise is memorialized in their scientific family name, *Caprimulgidae*, which means goat milkers. The common poorwill typically hunts from a low perch or from the ground, grabbing large moths and beetles as they fly past. Nighthawks, the other group of nightjars, are aptly named for their very visible habit of courting the skies and hawking a variety of insects, including high numbers of flying ants. Worldwide, eighty-nine species of nightjars enliven the night with their activities, ranging over all but the polar regions. Some species in Africa and South America have extremely elongated wing or tail feathers, giving these birds a strikingly ornate appearance that makes them much sought after by birdwatchers.

With long, thin wings that sport a bold white racing stripe near the tips, the common nighthawk is often seen flitting erratically over street lamps in town and the open country beyond. The common nighthawk is a widespread species that breeds throughout North and Central America and migrates to South America in the winter. Although it is one of the last of our migrants to return to Wyoming in the spring, showing up in mid- to late-May, it's also one of the first to

depart. Nighthawks often congregate in large flocks prior to their southward migration, which can begin as early as late July, usually peaks in mid- to late-August, and can continue into mid-September.

In Wyoming, the nighthawk can be found in both urban and rural areas, but it typically frequents relatively open habitats, including forest clearings and open woodlands. In the spring, the nighthawk's nasal "peent" call is often accompanied by a strange booming sound like a train going into a tunnel. This sound is produced by the air rushing through the flexed primary wing feathers of adult male nighthawks as they swoop earthward during their dramatic courtship flights.

During their brief sojourn in Wyoming each year, female nighthawks lay their two speckled eggs directly on the ground in open areas in sagebrush and grasslands, open or burned forests, or gravel beaches. They nest readily on flat gravel roofs in towns. Females rely on their cryptic brown, black, and white plumage to blend into the landscape and keep their nests hidden from predators. The chicks hatch after a little over two weeks and grow quickly on a diet of regurgitated insects fed to them by their attentive parents. After about three weeks of care, young nighthawks are able to make their first short flights.

Common poorwills are as elusive as nighthawks are visible. More often heard than seen, poorwills might escape notice altogether if not for their proclivity for lying on warm roads at night. During one of our surveys, we accidentally flushed a poorwill off the road as we approached it in our car. It perched on a rock outcrop just upslope from the road, and while its form was lost to us in the dark, its large eyes glowed like embers. Nightjars are unusual among birds in having a

reflective surface at the back of the eye that allows them to see better at night, and gives them a distinctive eye-shine in artificial light. Each time our poorwill flew up to catch a passing insect, we could trace its passage in our headlamps by its glowing eyes. Up close, its repetitive "poor will" call had a rich liquid quality that haunted the night.

Unlike the more widely distributed common nighthawk, the poorwill is strictly a western species, ranging from central Canada to central Mexico. Avoiding heavily forested and agricultural areas, common poorwills are open-country creatures that are patchily distributed across the West's abundant sagebrush, grassland, and arid scrub habitats, particularly in rocky areas.

Although superficially similar in appearance to the common nighthawk, the poorwill has rounded wings that lack the nighthawk's distinctive white stripe, and prominent whiskers, known as rictal bristles, around its bill. While the nighthawk's flight is erratic and buoyant, the poorwill's is slow and moth-like. Smallest of the North American nightjars, poorwills appear even larger eyed, flatter headed, and larger mouthed than do nighthawks.

However, what really sets the common poorwill apart from all other birds is its unique ability to go into a hibernation-like state of deep torpor, particularly for long stretches during the winter. The Hopi Indians were familiar with the poorwill's unusual behavior, calling this strange bird "Hölchoko" or "the sleeping one." Poorwills regularly go into torpor in response to low ambient temperatures or when food is limited. Indeed, in the southern part of the poorwill's range, where northern birds retreat for the winter, poorwills may remain completely inactive for days or weeks at a time.

Lying immobile at the base of a shrub or among rocks, poorwills consume ninety percent less oxygen when in a state of torpor than under normal conditions, and their body temperatures may drop to as low as forty-one degrees Fahrenheit, the lowest recorded body temperature for any species of bird. Torpor appears to be a useful survival strategy for wintering poorwills, but it also serves those poorwills that return to their breeding grounds in Wyoming in late April or May well, since they are often met with cold nights and wet weather.

Like nighthawks, poorwills lay their two eggs on the ground in a slight depression scraped into bare earth, gravel, or leaf litter, beneath the shelter of shrubs or rocks. The downy

young hatch after about twenty days and can move short distances at only two days of age. The precocial chicks are cared for by both parents, though the female may begin a new nest nearby while the male is still caring for the first batch of youngsters, which typically takes its first flights about three weeks after hatching. Many mysteries remain about the lives of the common poorwill: its nocturnal habits, cryptic plumage, long periods of winter inactivity, and secretive nature make it one of North America's least understood birds.

The difficulty in detecting and observing nightjars makes it difficult to determine how these birds are faring. In recent years, though, biologists and the general bird-watching public

In Wyoming, it's not unusual to see a nighthawk snoozing on a fencepost during the middle of the day. Nighthawks often roost in trees, perched lengthwise along a branch so that they are almost invisible. Where trees are scarce, the birds may also rest on the ground or, in town, on the flat graveled roof of a big box store.





The common poorwill's short tail and buoyant wing strokes are reminiscent of a screech owl's. The bird forages most actively at dawn and dusk and on bright, moonlit nights. Little is known about its ecology and movements.

increasingly have felt that nightjar populations are declining, perhaps dramatically. For example, the common nighthawk is now considered critically imperiled in much of New England and is listed as threatened in Canada.

Nightjars may be declining because of pesticide use that reduces the availability of their insect prey, habitat loss and conversion, collisions with vehicles, or other factors. Populations of urban nighthawks also have suffered from changes to urban rooftop designs, many of which now provide a less suitable nesting surface. The growth of forests and a decline in open farmlands in the Northeast also may have led to nighthawk declines in that region. And populations of many predators, including crows, ravens, coyotes, foxes, and skunks, have increased at the edges of our towns and around industrial sites like oil and gas fields, posing a heightened risk for ground-nesting nightjars and their eggs.

Traditional bird surveys are not very successful at finding nocturnal nightjars, let alone determining population trends of these enigmatic species. As a result, the Center for Conservation Biology, an avian research organization housed at the College of William and Mary and Virginia Commonwealth University, initiated a nightjar survey network in 2007. Developed and coordinated by Mike Wilson with the center, the survey is a powerful monitoring effort that collects information on nightjar population distributions and trends

over large regions. Over time, it will provide insights into how the nation's nine nightjar species are faring and will alert researchers to any dramatic declines in specific areas.

In the short term, researchers also hope to learn how different habitats influence the abundance of nightjars across landscapes. The survey effort started regionally in the southeastern United States, then was expanded in 2008. Summer nightjar surveys are now conducted annually by conservation-minded volunteers along more than 3,000 routes.

Wyoming currently has 117 of these nightjar survey routes, forty-two of which have been "adopted" by volunteers so far. That leaves more than half of the state's routes untended, but Wyoming still ranks eighth among participating states for the number of individual routes being surveyed, despite its relatively small population size. Participants in this citizen science survey effort enjoy the field time and also feel they are contributing to our limited knowledge of these elusive birds.

Based on research he conducted while at the College of William and Mary, Wilson has concluded that nightjar behavior is strongly influenced by moonlight. Nightjars call and forage most actively on bright, moonlit nights. Breeding activities also may be directly tied to lunar cycles. Nightjars are therefore more reliably detected if surveys are restricted to nights when the moon is shining brightly. Because nightjars return late to Wyoming's high-elevation habitats, the state usually has only one survey period in June or July.

Meeting the perfect conditions that the survey demands— a bright moon, low wind, and relatively clear skies— can be a challenge in Wyoming. Volunteers occasionally head out to begin a survey on what

appears like a perfect night, only to be foiled by sudden high winds or nighttime thunderstorms. But when the moon spills its bright light over the landscape, when the winds are calm and the ink-black sky is clear of clouds, the sound of nighthawks engaging in aerial courtship maneuvers and poorwills calling plaintively from hidden perches imbue the night with magic. Long after the last of my summer nightjar surveys come to an end, the haunting call of the poorwill still lingers in my mind.

A few weeks after conducting my survey, the jarring ring of my phone disrupted my daily work. I picked it up distractedly, but the caller quickly gained my undivided attention by barking out my name in an authoritative voice. And I froze like a rabbit in headlights when he continued, "This is Sheriff. . . ."

I heard nothing after the word "sheriff." The memory of an old parking ticket jumped to mind. I'd planned to pay it with the rest of my bills at the end of the month and had realized with a shock when shuffling through my papers earlier that very morning that the city required payment in fifteen days. I was late. Very late. It looked like I was headed to traffic court.

Suddenly, my runaway mind was stopped short as the sheriff's next words sank into my panicked conscience. "I've got three nighthawks to report to you." I almost laughed aloud with relief. The deputy we'd met, conscientiously doing his avian duty. After a few minutes of pleasant chitchat about nightjars, we hung up, and I realized I was smiling from ear to ear. Those elusive nightjars could light up a person's day as much as they enliven Wyoming's nights.

Sophie Osborn is a trained wildlife biologist whose Condors in Canyon Country won the National Outdoor Book award in 2007.