

Conservation Corner:

How to Hunt for Nighthawks

By Niki Wilson



As Brenda Shepherd walked home around 10:30pm one summer night in the town of Jasper, she heard the PEEEEENT of a nighthawk. “Seriously?” she said to herself. Shepherd, Jasper National Park Conservation Biologist with Parks Canada, had spent the summer overseeing a project designed to detect this very call in a number of grasslands and meadows throughout the Park. At that point she’d had only a handful of detections. “But that’s the thing,” says Shepherd. “It’s a rare bird that people can hear in their backyards.”

Nighthawks are members of the nightjar

family of birds, known for their distinctive vocalizations, along with long wings, short beaks, and at times erratic flight patterns. Their populations have experienced massive declines across the country, likely due to a number of factors. They feed mainly on airborne insects, and insects are disappearing around the globe. One study estimates there has been a global decline of 45 percent in insect abundance over the past four decades. Other factors, like pesticides, habitat loss, and hunting from domestic animals may also play a role. For these reasons nighthawks are considered a Threatened species under Canada’s *Species At Risk Act*, and a *Sensitive* species in Alberta.

These designations have shone a light on a species that needs attention, says Shepherd. “So we’ve identified some conservation measures that we hope in the future will provide them with extra protection.”

One of these measures is to identify breeding sites that could easily be disturbed by human activities. However, nighthawks are cryptic birds, unique even among the group of songbirds referred to as aerial insectivores—those that hunt insects on the wing. Nighthawks call only in the dim twilight of late dusk and early dawn—difficult times of day for people to do surveys says Shepherd. In Jasper National Park, they make up a consistent but only small part of the bird community. So the hunt for nighthawk nesting areas has

been a multi-step process that Shepherd is refining as it unfolds.

Shepherd and her team began their search in the spring and early summer of 2016. They set-up bioacoustics monitors at 26 sites across the Park hoping to collect audio recordings of the distinctive PEENT of the nighthawk. The call of the nighthawk was recorded at only one location that season, with visual confirmation reported at one other site. This confirmed the team’s suspicion that nighthawks are uncommon in Jasper and they decided to conduct longer surveys at only high quality sites in 2017.

In some ways, nighthawks aren’t choosy. High quality sites can range from dry grasslands to wet meadows, and even flat roof tops. But they all have one thing in common—water is somewhere nearby. Water may increase the likelihood nighthawks will encounter the clouds of insects on which they feed. Nighthawks have been observed flying low to snatch insects hovering over lakes, rivers, and streams. Sometimes they get too low and make navigation errors. In a recent report, they were even seen crashing into a river, yet easily righting themselves and taking off from the water’s surface apparently unharmed. Still, their feeding isn’t limited to water habitats. They will fly as high as 150 metres to snatch insects from the sky.

Back on the ground, in 2017 Shepherd’s team, including biologist Serge Aucoin, deployed eight bioacoustics monitors, but this time for longer periods. The team collected nearly 6,000 hours of audio recordings. That’s A LOT of data. “To sit there and listen to all those recordings would be over-



One of the bird detectors biologists in Jasper National Park are using to sample the common nighthawk population in the Park. If you happen upon one of these devices in your travels through the Park, please do not tamper with the device. PHOTO: © B. SHEPHERD

whelming,” says Shepherd, “but we’ve been working with Elly Knight, a PhD student at the U of A to solve that problem.”

Knight works in the Bioacoustics Unit of the Alberta Biodiversity Monitoring Institute. She’s developed computer software that can identify nighthawk calls from the hours of audio collected by Shepherd and others studying the species. Knight says nighthawks are easily detected with the software because they have distinctive calls with a simple structure, they call frequently making them highly detectable, and they also call at times of days when there is little other noise.

“We’ve been using nighthawks to help develop a whole host of bioacoustics tools,” says Knight. She hopes these tools will help the biology community better understand nighthawk behavior and the way the bird uses its habitat. Nighthawks are mysteri-

ous because they don’t behave like other songbirds, she says. They forage at a different time of day from many songbirds that feed on the wing, which may reflect a different food supply. Another difference is that they aren’t traditionally territorial like other songbirds. “I’m a song bird biologist by training,” says Knight, “but I’ve had to check a lot of my assumptions about avian behaviour at the door with nighthawks.”

Knight looks forward to the results of Shepherd’s study, which will provide further information about how nighthawks behave in different habitats. This past season the Jasper team was able to detect the presence of common nighthawks at five of the eight sites they surveyed with bioacoustics recorders. It’s hard to know if these calls were from breeding sites. Nighthawks are notoriously bad homemakers—they don’t build nests but instead choose to lay

eggs on the ground and leave little evidence afterward of their presence.

Still, the environment and type of “territorial call rate” at two of the Jasper detection sites suggests they are likely breeding there. Next year, in addition to bioacoustics monitoring, the team will go to areas they suspect are breeding grounds. There they will play the calls of breeding nighthawks in hopes of a response.

Based on those results, Shepherd and her team will figure out what role to play in helping to recover the species. “Once we begin to better understand their distribution, we’ll move into the next phase of trying to protect them.”

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A bioacoustics monitor deployed in promising common nighthawk habitat. PHOTO: © B. SHEPHERD