

A BLACK **FLASH** IN THE MOUNTAIN SKY

It nests behind remote waterfalls, flies high beyond human sight, and winters in places unknown. As it has for more than a century, the black swift remains Montana's most mysterious bird.

BY ELLEN HOROWITZ

The long days of summer make it easy to stay out late, but for Chris Hammond, Kaitlyn Farrar, and Alissa Anderson, that's not necessarily a good thing. Their search for one of North America's most mysterious birds, the black swift, requires surveying at night, which means workdays that sometimes last until well beyond midnight.

After hiking up a narrow canyon late one July evening, Hammond, a Montana Fish, Wildlife & Parks nongame wildlife biologist in Kalispell, and Farrar and Anderson, FWP wildlife technicians, arrive at a waterfall in the Kootenai National Forest near Libby at about 9 p.m., not long before dusk. The air is filled with the spray of cascading water, and the lush green moss and ferns below create an oasis-like setting in the otherwise harsh mountain environment. Hammond and his crew scramble over downed logs and rocks looking for places where they can sit and look through binoculars for mossy, cup-shaped nests hidden on ledges behind the veil of water. After just a few minutes, Hammond spots a nest tucked into a pocket-like niche in the cliff. In the nest is a single soot-colored black swift nestling.

As twilight approaches, an adult black

swift streaks through the darkening canyon on long, sickle-shaped wings before stopping abruptly to perch at the edge of the nest. It's here to provide the fledgling's dinner—perhaps its only meal of the day—and spends several minutes regurgitating flying ants and other winged insects into the chick's gaping mouth before disappearing back into the night. Even under the best lighting conditions, a blink of an eye is enough to miss an adult swift traveling up to 100 miles per hour. At dusk the wildlife crew must watch with particular intensity.

As the waning light diminishes, another black swift shoots through the canyon and lands at a different nest. Then a third bird zips overhead, the crew oohing and aahing like spectators at a fireworks display. Silhouettes of the long-winged birds continue to dart past as night falls, but soon it's too dark to see. "We have about a 45-minute window, and then it's over," says Hammond. The crew members confirm four nests and suspect a fifth, but they'll need to return during daylight to confirm that location. They turn on their headlamps for the long, rugged hike out and reach the truck around 11:30. It's still a three-hour drive back to town.

BEYOND HUMAN SIGHT

For more than 150 years the black swift confounded the ornithological world. It was

one of the last bird species described to science, in 1857, largely because it flew to heights beyond the range of human sight. Because the bird nests in remote cliffs, behind waterfalls, and in caves, it took scientists another 44 years to discover the first black swift nest and egg. Then it wasn't until 2010, using sophisticated tracking technology, that biologists learned where at least a few of the birds wintered. For ornithologists, the black swift has been nearly as elusive as the likely extinct ivory-billed woodpecker of the American Southeast.

The first recorded sightings of black swifts in Montana came in the 1940s, in the Mission Mountains and Glacier National Park (GNP). It took until the early 1960s before the first two nest colonies (areas containing two or more nests) were discovered, in GNP. More than 40 years passed before biologists next documented a nesting colony.

For the past decade, biologists have been trying to make up for lost time. Across the West, researchers are scrambling to find additional nesting sites so they can learn more about the birds and protect their rare, critical habitats. So far, only about 200 nests have been documented range-wide.

In Montana, Hammond credits Dan Casey with starting the state's black swift monitoring project in 2004. That same year Casey, at the time the Northern Rockies

GLENTERPAC/WIREO

SWIFTLY THROUGH SPRAY Flying up to 100 mph, black swifts dart in and out of an unidentified waterfall. The birds nest near or even behind falls in remote mountainous areas of Glacier National Park and other parts of northwestern Montana.

conservation officer for the American Bird Conservancy, discovered a new nest colony in Glacier at Haystack Falls, bringing the state's total at the time to three. "By putting together a list of 32 waterfalls that had the right characteristics for nesting, Dan got us on track for how to survey and what to look for," says Hammond.

With its hundreds of waterfalls, Glacier is a black swift nesting mecca. But finding which falls contain nests is not easy. Biologists focus surveys on areas that appear to have quality nesting habitat and where hikers and others have reported seeing the birds. Researchers in Colorado found that black swift nests are most likely found behind waterfalls that 1) have flowing water during late summer, 2) are inaccessible to predators such as mink, 3) provide unobstructed flyways to and from the nest, and 4) contain moss for nest building.

Because many mountain waterfalls are far from managed trails, reaching them requires the climbing skills of a mountain goat. Survey crews must bushwhack through tangles of brush and blowdown, wade streams, and trudge across steep, rocky, wet terrain. "Hiking down slippery slopes in grizzly country in the dark is not for the faint of heart," says Glacier National Park wildlife biologist Lisa Bate.

Nesting behind waterfalls isn't the black swift's only odd trait. Unlike other "neotropical" birds—those that breed in the United States and Canada while wintering south of central Mexico—the black swift is a late nester. "Most neotropical migrants finish their breeding season by the Fourth July in this area, and black swifts are just getting started," says Bate. "And the fact that they build their nests where it's cool and wet is totally counterintuitive."

Unlike North America's other three swift species, the black swift lays only a single egg and sits on it for an average of 26 days—



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a week longer than other swifts' incubation periods. The chick remains in the nest for 48 days, nearly twice as long as birds of similar size. Another unusual thing about black swifts: Adults usually disappear from the nest all day to feed, and only return to feed their chick at dusk.

WINTER IN BRAZIL

Until recently, no one had any idea where black swifts spend the winter. In 2009, Colorado scientists fitted four black swifts with small, backpack-style tracking devices. The following year, when the birds returned to their western Colorado nesting sites, researchers recaptured three of them and retrieved the data. They learned that the black swifts had wintered in the lowland rainforests of Brazil—a country previously not known to house the species.

While thrilling to ornithologists, the discovery created more questions. How did the black swifts make their 8,600-mile round-trip journey? Did they "aerial roost"—an avian form of autopilot that allows them to shut down part of their brain to rest while flying during migration—when they traveled up to 244 miles per day? Why Brazil? Why couldn't the birds have found suitable wintering areas closer to Colorado? And what about other black swifts in Colorado and elsewhere? Do they too winter in Brazilian rainforests?

While American bird conservationists try to identify and protect black swift nesting sites in this country, it appears that the fate of the birds' South American habitat is equally important.

The North American Breeding Bird Survey estimates a total population of only 15,000 black swifts, and numbers appear to be declining range-wide at about 6 percent per year. Logging in the Amazon Basin could be one factor. Another may be rising global temperatures drying up breeding areas in the bird's northern range.

Bate says black swifts don't return to nest where waterfalls in the park have dried up, such as during a drought (though they sometimes return if water begins

flowing again). The colony recorded in 2004 at Haystack Falls originally contained three nests. Bate says that for the past three years, as the flow has dropped to just a trickle, black swifts have used only one nest. "Will those other nests ever be reoccupied? We don't know," she says.

In every western state and province where it lives, the black swift is a species of conservation concern. Last year Alberta listed it as an endangered species. Hammond says FWP recognizes that the best way to conserve the black swift population in Montana is to gather as much baseline information as possible. "Only with that data can we later see how the population might be changing and get to the bottom of why," he says.

The black swift is classified in Montana as a Species of Greatest Inventory Need. Because they know so little about the bird, biologists here have no idea if the population is thriving or on the verge of disappearing. Though scientists have identified where some black swifts in Colorado winter, no one knows if Montana's swifts migrate to Brazil or elsewhere. Research done in Montana reveals little about the species' populations. "Even if we find a nest, we may never know if it actually fledges a young," Hammond says. "We're only there in a snapshot of time and space."

By the end of the 2015 field season, Hammond and his crew had conducted 23 ground surveys and found two new nest sites. Five surveys by park staff in Glacier



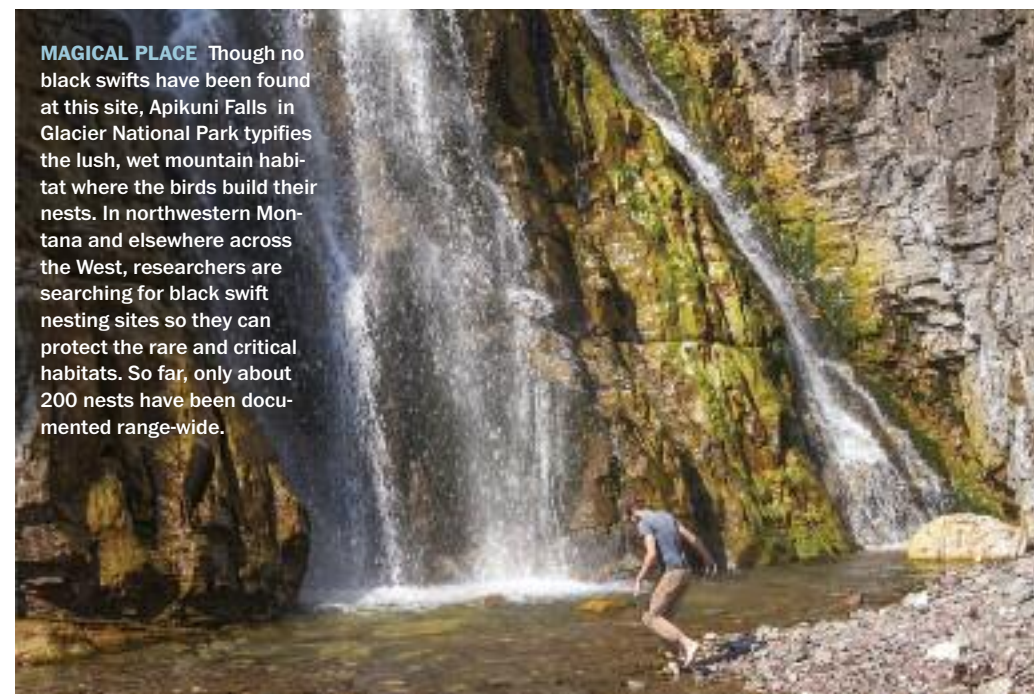
FINALLY After feeding all day, an adult black swift returns to the nest and regurgitates flying insects into the mouth of its single fledgling, which stays in the cool, wet nest for 48 days.

turned up no new colonies. That brought the known number of black swift nesting colonies in the state to 13: six in Glacier, one in the Bitterroot Valley, and six in the Flathead and Kootenai areas.

Hammond says that even though surveying black swifts is time consuming and often grueling, it's a thrill when he finally finds one. "We celebrate," he says. "It's like, they really do exist!" The biologist notes that identifying more nest sites and the characteristics of the sites will help him and other scientists understand how the habitats are changing and how the birds respond to the changes. "We may

not know how the black swift fits in," he says, "but the fact that it's part of a bigger picture that we humans also belong to is reason enough to protect it." 🐼

If you're hiking, camping, or picnicking near a waterfall, watch for these speedy flyers with long pointed wings dashing behind the falls. During stormy weather when barometric pressure lowers, look for black swifts foraging for insects above the surface of lakes or close to the ground. Please report sightings to Chris Hammond at chammond@mt.gov or Lisa Bate at lisa_bate@nps.gov.



MAGICAL PLACE Though no black swifts have been found at this site, Apikuni Falls in Glacier National Park typifies the lush, wet mountain habitat where the birds build their nests. In northwestern Montana and elsewhere across the West, researchers are searching for black swift nesting sites so they can protect the rare and critical habitats. So far, only about 200 nests have been documented range-wide.

CLOCKWISE FROM LEFT: DEE UNWELL/BLANK; TOM ULRICH; SHUTTERSTOCK

THREE BLACK SWIFTS' AMAZING 8,600-MILE JOURNEY

Biologists have long known the winter range of every North American bird species except one: the black swift. Difficult to find, see, and capture, the elusive bird has long challenged scientists eager to learn where it went after leaving the remote Rocky Mountain West waterfall habitats where it breeds. In 2009, researchers in Colorado—home of roughly half the black swift nesting sites in the United States—used fishing nets on long poles to scoop four black swifts out of the air. They fitted the birds with tiny backpacks containing miniature geolocators. In 2010, the researchers recaptured three of the birds and downloaded the geocator information to learn that the birds had spent the winter in the lowland rainforests of Brazil, more than 4,000 miles away. The exciting news raises concerns: Amazon forests are being clear-cut for agriculture. Researchers are now tracking other black swifts. If they can learn where the birds congregate, conservationists could then work to protect that critical winter habitat.



Amazon clear-cuts could threaten black swifts.