Black Swift Movement: DFO-funded Research Project Update

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Together with our research team, I am leading an effort in a multiyear Bird Conservancy of the Rockies project to understand the movement ecology of the Black Swift during breeding season. Our objective is to learn more about the swifts' foraging patterns and identify their daily foraging routes, both of which are unknown. This promising work is funded in part by a 2018 grant from the Denver Field Ornithologists' Research, Education and Conservation Fund.

In 2017, U.S. Forest Service biologist Kim Potter, citizen scientist Carolyn Gun, Bird Conservancy Science Director Luke George and I attached Global Positioning System (GPS) tags to five swifts at sites in western Colorado. We are now are attempting to recapture these birds, a feat that will require patience and perseverance.

During a clear evening last summer, Bird Conservancy Banding Coordinator Colin Woolley and I arrived at Box Canyon State Park above the town of Ouray. We were greeted by Sue Heirshman, another devoted Black Swift conservationist. She informed us that the same nest where we had previously attached a GPS tag to an adult male was active, but she was not able to determine if the same bird with the tag had survived its long migratory trip back from South America. As the sky darkened, we discussed our recapture plans. We were eager to see if the bird with the GPS tag was on the nest.

Chattering overhead, swifts streamed in and out of the canyon as we edged along the steel walkway. Before descending to the canyon floor, we stopped to look at the nest, which sits on a knob protruding from the canyon wall. As our headlights beamed over the nest, we saw a fledgling and then an adult with an antenna sticking up from its back. We looked at each other in disbelief and excitement.

To minimize further disturbance to the birds, we switched our headlamps to red and descended. At the bottom, the sound of the crashing waterfall was deafening. We set up wildlife ladders and readied our equipment for the slow climb back up to capture the swift in a hand-held net. After our successful recapture, we removed the GPS tag, with data that will answer basic foraging questions new to science. The male swift appeared strong and healthy. After weighing him, we took a few measurements and returned the swift to his nest.

Five years before tagging these birds, we discovered the annual migratory path and wintering destination of their species in the lowland rainforests of Brazil. Since 2012, we have continued to learn more about their movement ecology (flight and foraging patterns) to help inform conservation needs.

The Black Swift spends most of its time on the wing foraging for insects. Its cryptic nature and difficult-to-access nesting locations make it one of the least understood bird species in North and Central America. It nests in remote areas on wet rock faces, in moist coastal caves or on ledges near waterfalls. Designated as a species of Continental Concern in the U.S. and Canada, the Black Swift has lost 94 percent of its population according to Breeding Bird Survey data. Unfortunately, the wider array of aerial insectivores (swallows, martins, nightjars, whip-poor-wills and flycatchers) also is experiencing steep population declines across North America. This continent-wide pattern implies that broad factors are the cause. The need to fill the information gaps is urgent.

Black Swifts are thought to forage long distances from their nests, but their basic movement ecology is unknown. Answers to foraging distance and daily foraging routes will help us identify flight patterns, foraging hotspots and habitat relationships to help with conservation planning for this species.

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We retrieved a second GPS tag at Zapata Falls, in southern Colorado's Sangre de Cristo Mountains next to Great Sand Dunes National Park & Preserve. In moonlight before sunrise, we began our walk upstream to the falls through a pinyon-and-juniper-scented landscape. The cold of the creek's water penetrated my waders, reeling me back and refocusing me to keep my balance as we approached the netting site. Capturing swifts at this location required a double-stacked, 21-foot-high net across the stream at the canyon entrance. We raised the nets just before sunrise as the birds foraged for moths in the moonlight. We were excited to find a bird with an antenna among the handful we captured soon after raising the nets.

We are still analyzing the data from these recovered tags, but exciting early results suggest Black Swifts travel an average of about 100 miles a day while foraging during breeding season, at an average elevation of 10,200 feet. These distances and heights exceed by far the foraging movements of most land birds.

During our recapture efforts, independent researcher Greg Levandoski, along with Woodley and me, also deployed wing activity devices on other birds to determine whether Black Swifts perform aerial roosting. This is an incredible adaptation in which swifts sleep while on the wing, spending months in the air without landing. We are now collaborating with the same team that made that aerial roosting discovery for the Common Swift, the European counterpart to the Black Swift. We hope to recapture the birds with wing-activity devices next year.

I think we are drawn to the Black Swift because it reminds us of the wild places and rugged Colorado terrain this bird inhabits. Flying over vast expanses, streams and mountains, Black Swifts represent wild and untamed nature. We love and value these places, and we hope to leave them intact for future generations to explore. The Black Swift will require our help if the species is to be a continuing part of that future.

Annual Election of Board Officers and Directors

The April 22 program at Unity Spiritual Center will begin with the annual election of officers and directors for the DFO Board. The Nominating Committee offers the following slate of candidates, which was approved by the DFO Board at its Feb. 24 meeting.

Officers of the DFO Board are elected to one-year terms:

President:	David Hill
Vice President:	Susan Blansett
Treasurer:	Sue Summers
Secretary:	Debbie James
Membership Chair:	Mary Cay Burger

Directors of the DFO Board are nominated to three-year terms:

Tom Behnfield	Finance Committee Chair
Chris Goulart	Grants Committee Chair

Two additional director positions are open and the Nominating Committee is seeking candidates for those positions *(see Volunteer Opportunities with DFO on page 7)*.