

FREQUENT FLYERS

LDWF Telemetry Projects Allow Biologists To See And Learn More About Waterfowl Migration Patterns

story by **TREY ILES,**
LDWF Public Information

That waterfowl migrate north in the spring is certainly no revelation. But researching the migration patterns of geese and ducks is paramount for biologists to gain a better understanding of these species.

A female greater white-fronted goose, also known as a speck or specklebelly, tagged in southwest Louisiana by Louisiana Department of Wildlife and Fisheries' (LDWF) biologists in November of 2018 helped open the window into the incredible journey the birds make.

The goose trekked more than 5,470 miles over the course of eight weeks on her spring migration, starting near the Texas-Mexico border to Alaska's Arctic North Slope region, said biologist Paul Link, LDWF's North American Waterfowl Management Plan Coordinator.

"And that doesn't account for all the daily foraging flights she made," said Link, who captured and tagged the bird on Nov. 22, 2018. "It's crazy to think she racked up more than 11,000 miles on her annual migration. Amazing birds. Amazing technology unlocking their mysteries."

The tagged goose is part of an LDWF study in which the primary goal is to determine use of habitats by white-fronts in Louisiana then look at status and trends of those habitats over time. Link started the project in 2015 and is collaborating with other scientists to assess other aspects of the data.

It is one of three telemetry projects aimed at better understanding life habits and routines of three species important to Louisiana hunters.

The trek made by the spec is just one example of how these studies are helping LDWF biologists get a better understanding of waterfowl migration.



Photo by Tom Reichner, Shutterstock



White-fronts making this long migration is nothing new. Band recovery data has documented this for decades and LDWF radio-marked birds have selected this area in previous years. What makes this individual bird's trip so impressive is that it was tracked in near real time.

New cell towers being constructed in Arctic villages and research stations enabled two data transmissions on this bird's spring migration. Normally that data wouldn't be retrieved until the bird initiated fall migration and hit cell service somewhere in Prairie Canada.

The transmitters gather more data than just a spot on a map.

"The data these transmitters collect is just phenomenal," Link said. "They collect everything from the air temperature and the percentage of cloud cover to the barometric pressure from the nearest weather station as well as accelerometer (how fast the bird flies) data. During flight we know she is heading 283 degrees at 117 kilometers per hour and is 2,083 meters in altitude. All that information can be pieced together to determine their energetic demands, or how much fuel they need to make those big moves."

She flew 636 miles non-stop to the Isabel, Kansas area on her first migration leg. She then flew 415 miles on another leg and 325 miles to Peace River area in Alberta, Canada.

On May 4, she made a 770-mile non-stop flight from the Peace River to a frozen mountain lake 75 miles northeast of Whitehorse, Yukon Territory. The very next day she flew 1,038 miles to the Bering Land Bridge National Preserve off Alaska's Bering Sea.

"That's roughly the distance between Baton Rouge and Minneapolis," Link said. "That is some rugged country without any food along the way. Everything is still frozen solid and snow covered up there right now."

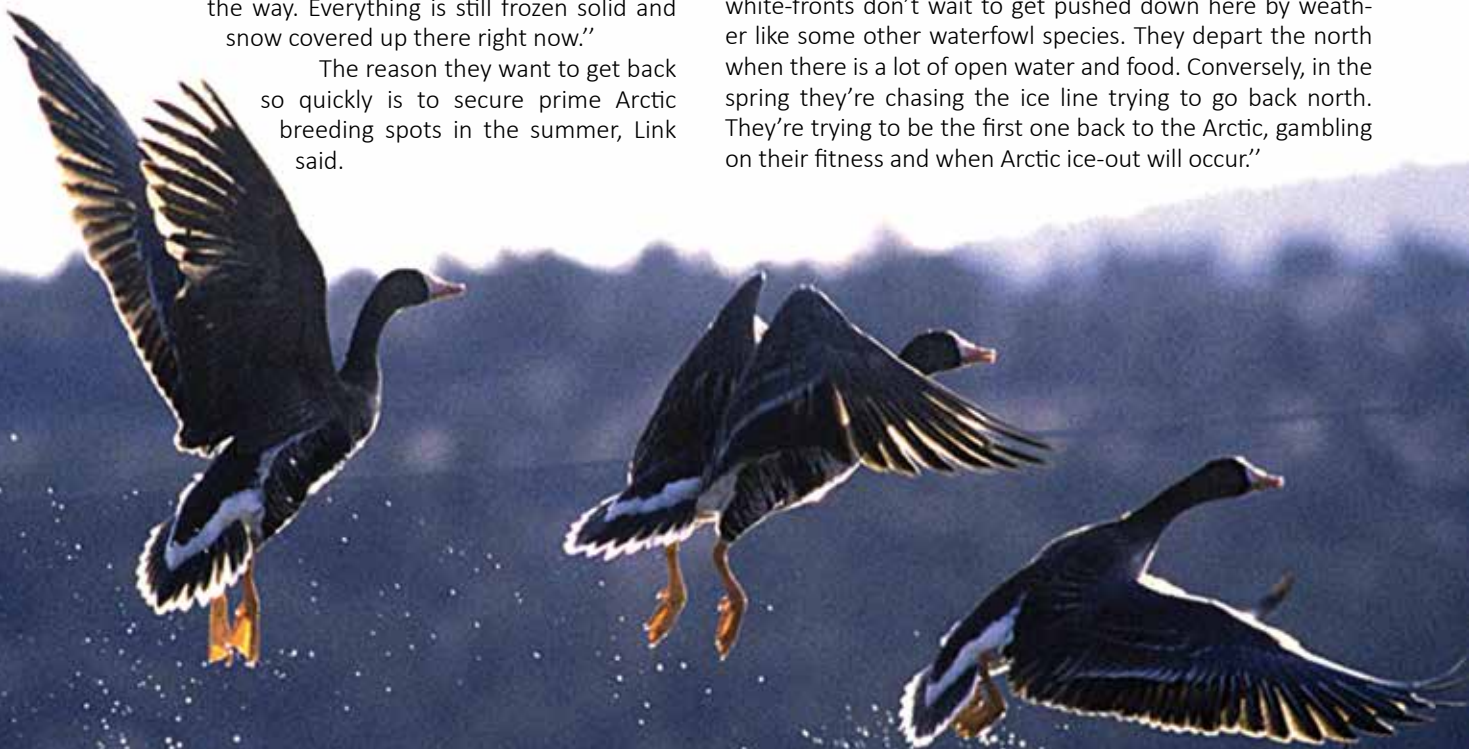
The reason they want to get back so quickly is to secure prime Arctic breeding spots in the summer, Link said.



Paul Link, LDWF's North American Waterfowl Management Plan Coordinator, said current technology enables biologists to collect valuable data on migrating waterfowl.

Finally, she flew another 360 miles coming close to Russia during the flight and to her last known location on Alaska's North Slope.

"They're an interesting species because they arrive down here (Louisiana Gulf Coast) really early," Link said. "Most white-fronts don't wait to get pushed down here by weather like some other waterfowl species. They depart the north when there is a lot of open water and food. Conversely, in the spring they're chasing the ice line trying to go back north. They're trying to be the first one back to the Arctic, gambling on their fitness and when Arctic ice-out will occur."



Link said there is an advantage to the birds getting to the region early so they can defend their preferred spot.

“These birds have a nest bowl on the edge of a wetland,” Link said. “The male will chase other geese away from their chosen piece of real estate. Goslings are going to be flightless for 4-5 weeks after they hatch. They select nest sites where they can walk the young to prime grazing areas. If they don’t get a good spot, they may have a farther walk to get the goslings to a safe place.”

The birds Link has captured span the entirety of the breeding range of white-fronts from east to west.

“It’s an enormous area spanning 2,300 miles from eastern Nunavut (in northern Canada) to the North Slope of Alaska,” Link said. “I capture the birds as independently as possible during the fall and winter and they branch out and go their own way. It’s great to see that we’re getting birds from the entirety of their range, not just a couple of breeding colonies. We’re learning but still have a lot of work to do.”

The tagged goose, which was harvested by a subsistence hunter on May 15 near the small Inuit village of Point Lay, made some long single-day flights as well, according to the data gathered.

Link, who was able to retrieve the transmitter from the goose, said the data gathered from the study, which will continue for at least two more years, has been invaluable.

Research like this with the telemetry projects not only assists in keeping up with migration patterns but also other issues facing waterfowl.

“The data gathered are vital in monitoring nesting birds, determining pathways of potential disease spread and identifying habitats in need of protection or management to enhance populations,” LDWF Waterfowl Program Manager Larry Reynolds said. “They may also help us to manage hunting activity to improve harvest opportunity while protecting populations.”

The species targeted in the three telemetry projects are mottled ducks, blue-winged teal and white-fronted geese. LDWF is providing funding and staff in addition to coordinating with other partners on these projects.

These projects use cutting-edge technology with solar powered GPS/GSM transmitters. The units collect GPS coordinates, motion and environmental data, which is transmitted via cell-phone towers to researchers, allowing them to determine the birds’ precise location, activity, flight speed, direction and altitude.



“These new telemetry units allow researchers to determine what specific habitats birds use during certain times of the day and different seasons of the year, such as breeding versus molting versus wintering or hunting versus non-hunting, and throughout their fall and spring migrations,” Reynolds said. “They allow us to see how long marked birds spend in different geographic regions or different habitat types and how and when they move between them.”

In the mottled duck project, LDWF has partnered with Dr. Kevin Ringelman of LSU, tagging 65 ducks in 2017 and another 57 in 2018 with 31 currently providing data. The primary goal is to explore the nesting ecology of mottled ducks. Substantial data, more than 100,000 locations thus far, is collected on movements and habitat use during the entire annual cycle.

Link is coordinating the white-fronted goose project. It began in 2015 with contributions from private donors to purchase transmitters and assist with capture.

Since then, Link has put transmitters on 95 white-fronts in Louisiana, with 44 of those currently providing data. The primary goal is to determine use of habitats by white-fronts in Louisiana and look at status and trends of those habitats over the last 30 years for potential explanation of the changing winter distribution of this species.

Like the mottled duck project, data collected will be used to study many other aspects of white-fronted goose ecology throughout their annual cycle.

Link is also leading the blue-winged teal project, where LDWF has partnered with the USGS Missouri Cooperative Fish and Wildlife Research Unit, several Louisiana Delta Waterfowl Chapters, Ducks Unlimited, Ducks Unlimited Canada, the Louisiana Wildlife and Fisheries Foundation and private donors to place transmitters on birds in Louisiana and Saskatchewan.

Thus far this year, 10 units have been placed on spring-migrating blue-winged teal in Louisiana in conjunction with on-going avian flu research. Additional teal will be captured and fitted in the breeding grounds this year by cooperating partners. 🦋

ADDITIONAL INFORMATION

For more information on these projects, contact: Larry Reynolds
lreynolds@wlf.la.gov | 225-765-0456
Paul Link
plink@wlf.la.gov | 225-765-2358

To learn how you can help, visit
www.lawff.org/geese or contact Link

PLEASE CONSIDER DONATING!

The Louisiana Wildlife & Fisheries Foundation (LWFF) is a nonprofit, charitable foundation 501(c)3, created for the purpose of promoting the Louisiana Department of Wildlife & Fisheries (LDWF) and to encourage public conservation and enjoyment of our state's natural resources. The Foundation's goals are to aid LDWF in habitat conservation, youth recruitment, environmental education and training, natural resource research and management, and financial assistance to LDWF programs.

The Louisiana Wildlife & Fisheries Foundation may accept tax-deductible gifts in support of the LWFF mission. Your support helps the Foundation advance its mission to protect the habitat and wildlife in the state of Louisiana.

DONATE TODAY!

Gifts to LWFF are recognized under sections 501(c)(3), 509(a)(1), and 170(b)(1)(A)(vi) of the Internal Revenue Code, and its federal taxpayer identification number is 72-1314968.

Make Checks Payable to:

Louisiana Wildlife and Fisheries Foundation

Mail Forms and Payments to:

*LWFF
P.O. Box 80378
Baton Rouge, LA 70898-0378*

For Online Contributions, go to:

www.lawff.org



**LOUISIANA
WILDLIFE & FISHERIES
FOUNDATION**