

# The Incredible Journey of Hope



courtesy of  
Barry Truitt/TNC

by Curtis J. Badger

“True hope is swift, and flies with swallow’s wings,” Shakespeare wrote in King Richard III. Today we could amend that to say that Hope not only is swift, but strong and resilient, and flies with whimbrel’s wings.

Our modern Hope would be a bird of the marsh and tidal flats, a large brown shorebird fond of fiddler crabs, a part-time resident of Virginia that regularly makes the commonwealth a rest stop on an annual journey of astonishing reach. Hope is a whimbrel, so named by biologists in May 2009 after they trapped her on a tidal marsh called Box Tree in Northampton County. There, fitted with a satellite transmitter to her back she was released to resume a journey that would surprise even veteran ornithologists who have long been aware that these birds typically fly long distances when migrating between breeding grounds in the north and winter habitat in the tropics.

Hope was tracked for nearly a year, and in April of this year returned to the same tidal flat at Box Tree where she had been fitted with the transmitter in 2009, which amazingly was still broadcasting a signal. In eleven months she

had flown from Virginia to Hudson Bay in Canada, and from there to the Northwest Territories on the Beaufort Sea for the summer. In August she returned to Hudson Bay, and from Southampton Island flew non-stop to St. Croix in the U.S. Virgin Islands, where she spent the winter. On April 11, 2010 she returned to Box Tree, completing a journey of 14,107 miles. The “Audacity of Hope,” indeed.

“We knew that whimbrels flew long distances, but we had no idea they went west to the Northwest Territories,” said Fletcher Smith, a research biologist with the Center for Conservation Biology at the College of William and Mary. “It was as-



courtesy of Barry Truitt/TNC

Whimbrels feed almost exclusively on fiddler crabs of the tidal flats.

A shorebird teaches us something about survival.

sumed in Virginia that the eastern birds flew north to the James Bay and Hudson Bay breeding grounds. The first bird we put a transmitter on flew non-stop from Virginia to the Northwest Territories, which is the breeding grounds of the western race of whimbrels. No scientist would have even guessed that the East Coast harbored a percentage of the population of the western breeding whimbrels. That was a scientific breakthrough.”

The Center for Conservation Biology began tracking whimbrels in 2008 in cooperation with Virginia Commonwealth University and the Virginia chapter of the Nature Conservancy. Six birds were fitted with 9.5-gram solar powered transmitters, and two of them flew to western breeding grounds. “This was a complete surprise,” said Smith. “This family of curlews is known for flying long distances, but no one would have guessed East Coast to West Coast.”

The study also demonstrated the birds’ amazing fidelity to migratory stopover sites. Hope, tracked for the entire migratory cycle, returned to the same tidal flat where she had been trapped the previous year. Her

journey further reveals the importance of the Virginia coast to migratory species such as these shorebirds. Whimbrels feed almost exclusively on fiddler crabs, small crustaceans that live on the banks of salt marshes and on tidal flats. The down-turned bill of the whimbrel is designed to probe the burrows of fiddler crabs, and the bird is also adept at chasing and catching their prey as the crabs feed on the flats.

Much of the Virginia coast is protected as national wildlife refuges or state natural area preserves, or through private conservation efforts by The Nature Conservancy—which owns about 40,000 acres of barrier islands and tidal marsh. So fiddler crab habitat is protected here in this im-

portant migratory stopover. What worries Smith and other research biologists is that the overall population of whimbrels is down. Since whimbrel surveys began on the Virginia coast in the mid-1990s, the birds have declined in number by 50 percent. “Not much has changed on the Virginia coast in that time,” said Smith, “so there probably have been changes either on the breeding grounds or wintering grounds. There has been a steady decline of more than three percent per year, and it’s not a matter of the birds shifting migratory range. It is a true decline.”

Whimbrels feed almost exclusively on this crab regimen, except when they are on breeding grounds in the north, where there are no fiddlers. If

habitat is disturbed on their wintering grounds in the tropics, and if fiddler crab populations fall, whimbrels will likewise decline.

“These birds are fiddler specialists,” said Smith. “The bill is the same length and shape as the fiddler burrow, so if it’s cold and the crabs are not foraging, the bird can reach in and get it. If the crab is muddy, the whimbrel



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Whimbrels light up the sky along Virginia’s Eastern Shore each May, as the birds make their annual spring migration north. This year they continued a flight to the Northwest Territories, Canada.

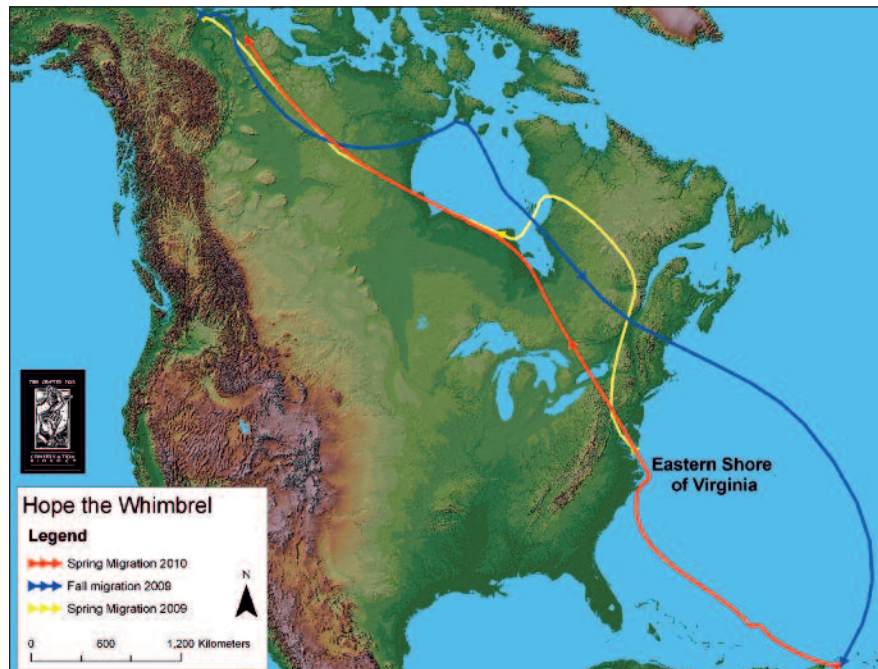


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## Tracking Whimbrels

Whimbrels are tracked using tiny, 9.5-gram transmitters attached to the backs of the birds. The transmitter is attached with a Teflon ribbon harness, and it is positioned between the wings where fat does not accumulate. So if the bird loses weight, the harness will not become loose.

Each transmitter is equipped with a small solar panel, and it broadcasts a signal on a cycle of 5 hours on, 24 hours off. The unit recharges during the off cycle. During the five hours on, if satellites are in the correct position the transmitter broadcasts a signal which is triangulated between them, and the position is picked up by a receiver on the ground. Battery life is said to be at least nine months, but the unit on Hope has been functioning for over a year. The process is not as precise as a Global Positioning System, but it can allow researchers to track a bird's position to within about 150 meters, which is fine for long-range tracking.



The map above shows Hope's non-stop 3,200-mile migration route from the Eastern Shore of Virginia to breeding grounds in the Mackenzie River Delta of the Northwest Territories of Canada this spring. Also shown are previous migration events, including the non-stop 3,800-mile flight during the fall of 2009 from Southampton Island in northern Hudson Bay to St. Croix, U.S. Virgin Islands.

Map courtesy of Fletcher Smith, Center for Conservation Biology, The College of William and Mary

will take it to the water and rinse it off before eating it."

Whimbrels arrive on the Virginia coast in early to late April and de-

part by early June, so there is a narrow window when all of the birds on the Eastern Shore will be leaving. Birds that arrive early in the migra-



courtesy of Barry Truitt/TNC

Scientists at the Center for Conservation Biology work around the clock to trap, weigh, and band the birds during their brief stopover in Northampton County.



courtesy of Barry Truitt/TNC

Banded whimbrels are released by enthusiastic researchers to continue their amazing journey north.

tion will stay longer, and late arrivals will have a briefer stay. While they are here, they have one goal, and that is to gain weight to fuel the migration and begin breeding. Smith and his colleagues trap birds, weigh, band, and examine them.

"We caught 23 birds early in the season and the mean weight was 330 grams," Smith reported. "Birds captured later in the period, when we begin attaching satellite transmitters, have a mean weight of 550 grams. So the percentage of weight gain is tremendous. After a bird has been here for three or four weeks feeding on crabs, it is very fat. The fiddlers are an almost unlimited resource, and the birds need them. Whimbrels heading to the western breeding grounds are facing a flight of more than 4,000 miles, which is quite a feat."

Smith believes that fat put on at the staging grounds in Virginia is important not only to fuel the trip, but to begin breeding activities in the north, where the nesting female is

not free to forage, and where the males must be fit to attract a mate. "The amount of fat they put on in Virginia is extremely important for breeding success after they arrive in the north," he says.

To the casual eye it seems an unlikely relationship: fiddler crabs foraging on a mud flat, the male waving its huge claw as part of a mating ritual, and then comes a bird that will be on the Virginia coast for perhaps three or four weeks, its bill the exact length and shape of the crab burrow. And the birds will feed until they can eat no more—a "digestive bottleneck" Smith calls it—and then they will be gone, leaving the crabs to contend with the resident clapper rails and night herons. But on closer examination, it all makes sense, as, in most of nature, it usually does. □

Curtis Badger, whose most recent book is *A Natural History of Quiet Waters* (UVA Press), has written widely about natural history and wildlife art. He lives on Virginia's Eastern Shore.



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The whimbrel's bill is uniquely fitted to the burrow of a fiddler crab.