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## This Journey to Save the World Begins With a Dwindling Flock of Red Knots

By LANNY MCDOWELL

We had committed to spending the last week of May along the New Jersey side of Delaware Bay, on the beaches that stretch north from Cape May. One of my two partners in this project, Porter Turnbull, had set up our first meeting at a service stop far down the Garden State Parkway. Our discussion was with a longtime fisherman who has been an advocate for commercial horseshoe crab harvesters. The meeting outlined the complexities of balancing the interests of crab fishermen, shorebird researchers and the wildlife that served both. The meeting also answered our immediate question: where are the most shorebirds feeding on horseshoe crab eggs at the moment? His answer was Moore's Beach; directions were noted.



Conspiring to help: Avid birders band together to save Red Knots.

We went there straightaway, following a crumbling blacktop one-laner through vast marshes, one of us at the wheel, the other out ahead wading through enormous puddles and the tidal streams crossing the roadbed, feeling for deep holes underfoot that would snare our rental. There was only one that deep and, fortunately, Porter found it, much to his surprise and up to his thighs in marsh water.

We emerged from our rite of passage to dead-end at an abandoned fishing outpost that remained only as shards of busted-up concrete and useless dock pilings. A tidal estuary flowed into Delaware Bay between the mud banks of the marsh and the pebbled flats near the beach. Shorebirds were flying in from the southeast as singles, in two and threes, and in small flocks. The late light was striking from the west. Off to the south along the sandy bayshore there were laughing gulls wading in tight feeding mobs. The pebbled flats were covered with thousands of birds, all feeding actively and close together: ruddy turnstones, dunlins, some semi-palmated

sandpipers, some sanderlings and, most important to us, maybe one third of the East Coast population of migrating red knots (*Calidris canuta rufa*), the reason we were there.



Sandpiper-like red knots need more abundant food supply.

The amazing annual cycle of migration for an adult red knot begins on a tidal mud flat along the coastline of Patagonia. They fly north, typically to the northern shores of Brazil. There they feed intensively, building up fat deposits to burn as fuel as they fly the next long leg over open ocean to the U.S., where almost all of them make landfall at Delaware Bay, a specific stopover area where fueling up for the last northward leg is top priority. Dispersed over vast areas of the arctic tundra, they will mate, nest and hatch out young, which are precocious and quite capable of feeding themselves in the endless daylight.

Red knots are a large sandpiper about the length of a robin, but bulkier and longer-winged. They are sometimes seen in passage on the Vineyard in small numbers, usually in late summer on flats interior to our south side barrier beaches, while much larger numbers gather at South Beach (off Chatham) and the Monomoy islands, staging for direct return flights to South America. Red knot population declines have researchers puzzled and worried. After tracking the radical drops in shorebird populations over the last 30 years, they fear that extinctions of this and other shorebird species are looming, a real possibility in even the next few years.

The migratory flight segments of red knots run up to 2,500 miles long, nonstop, 18,000 miles total in a year. To power this kind of sustained flight at up to 40 miles per hour they increase their body weight from 50 to 100 per cent when sufficient food

is available. They even shrink certain digestive organs in the interest of trimming unusable weight. At the end of those flights they are usually emaciated and exhausted . . . and very hungry.



A large flock of red knots is an impressive sight to behold.

My interest in these incredible travelers began a few years ago when a friend of mine, an ad man and writer on the Vineyard named Geoff Currier, gave me a book he had received as background for an advertising job. It was called *Flight of the Red Knot* by Brian Harrington (with Charles Flowers), who happens to have longstanding ties with the Vineyard and a career in shorebird research associated with the Manomet Center for Conservation Sciences. A couple of years

later, another West Tisbury friend, Richard Cohen, suggested that he and I enroll in a shorebird monitoring program in Delaware. We learned how to trap, handle, band, measure and weigh turnstones and knots, as well as how to read and interpret the leg bands of birds caught previously. Then, two years ago in June, I was invited to go up to Lubec, Me., by Porter Turnbull, who wanted me to meet a biologist friend of his, Norman Famous, his ornithologist mentor from college days. We were all birders. In the course of our stay there the precipitous declines in red knot numbers was discussed, along with the related problems that the horseshoe crab industry was enduring. We wondered if some practical approach which went beyond the research efforts could be applied to the problem. In other words, was there a way to directly stall or reverse the red knot declines; and could part of a solution be to supplement the available food sources at the Delaware Bay stopover? It seemed an elegant solution, if it were actually doable.

Researchers and activists had long been spearheading efforts to mandate the regulation or outright ban of commercial harvesting of horseshoe crabs in and around Delaware Bay, on both the New Jersey and the Delaware sides. The over-fishing of the crabs for bait in conch traps and for medical uses is recognized as a direct contributor to the diminished abundance of eggs on the beaches where the shorebirds need them in great numbers to fuel their flight north in June. Harrington estimates that a red knot will consume 135,000 eggs at this stopover. In addition to the fat requirements for the flight up to the arctic, the birds may arrive to find a snow-covered landscape that is not yet warm enough to produce food for them, so they may have to live off reserves for another two weeks.

An ad hoc committee, the Global Conservation Alliance, consisting of Famous, Turnbull and this writer, was formed to save the planet. Well, at the least we would sample the political waters of an issue that had pitted commercial interests against naturalist researchers and bird huggers, and we would look into the possibilities of

finding and obtaining a supplementary food provision for the birds. This would involve initiating some activity that would increase the food supply for the birds during a crucial time, provide an interim opportunity for the diminished stocks of breeding-age horseshoe crabs to recover, and find a way to integrate the fishing and naturalist communities in a process that is sustainable and mutually beneficial. We also acknowledged to each other that we would be addressing only one of enumerable factors in a life cycle that literally spans the globe.

Our first discussions within GCA had the nervous self-righteousness of the outsider: Why are all those folks just studying them? When are they going to do something? Don't we already know they are dying off faster than we can keep count? What if something bad happens in Delaware Bay, like an oil spill? What if there's a late snow on the breeding grounds? Are they hunted for food in South America? At the current rate of loss, how many years are left? Does anyone really care, besides us? What if the horseshoe crab fishermen cheat on the harvesting bans? What if the net effect of trapping the birds for research is to stress the m beyond recovery?



Hunt for horseshoe crab eggs begins here.

When Norman joined us in Cape May he had a station wagon stacked with bags of fish-based food product which a subsidiary of Land O'Lakes produces to supply zoos. The Aquamax pelletized feed was the best manufactured food item we could find in terms of size, appearance and nutritional content, the closest to horseshoe crab eggs and what we hoped would appeal to ravenous shorebirds in a feeding frenzy. A grant from the Marine Conservation Action Fund at the New England Aquarium paid for the product. Bottom line, our trials did not have much success getting shorebirds to eat the food, in part because of limits placed on where we were allowed to deploy it and partly because the birds did not readily recognize it as a prey item. The laughing gulls, however, really liked the food we spread on the beaches and would stand shoulder-to-shoulder to devour it until the last morsel was gone.

The week was an unqualified success in other terms: our ability to assess the politics of competing factions, getting the lay of the land, the personal contacts we made and, especially, the resolve we came away with to pursue whatever combination of solutions seems most likely to slow the demise of the shorebirds and restoring the egg-laying population of the struggling horseshoe crab, a beast that has been doing what it does for untold millions of years, in the waters of Delaware Bay and in the waters of the Vineyard.

Where does the GCA partnership go from here? Meetings with fish and wildlife

personnel here in Massachusetts are ongoing and we are in touch with an expanding list of allies and interested parties from Virginia to Maine. The current best guess is that three strategies will emerge as the most practical and the most promising: find a supplemental food that red knots will eat in their natural context; rake the beaches holding the horseshoe crab eggs to turn over the top few inches to expose more eggs to predation by shorebirds; distribute food that will distract competing gulls to locations other than those where the shorebirds are feeding on horseshoe crab eggs. Any and all of these approaches will require funding, permitting and testing. That's the plan that is taking shape.

*Lanny McDowell is an artist and avian photographer who lives in West Tisbury and contributes frequently to the Gazette. The red knot project administered by Global Conservation Alliance, a nonprofit organization, is looking for funding from private and public sources. To read the 2008 project report, updates and contact info, go to the author's Web site at [LannyMcDowellAvianArt.com](http://LannyMcDowellAvianArt.com); find Blog and then the Crusade page.*