

A Shorebird, a Crab and a Call to Action

by GLENN SWAIN • MARCH 23, 2012



Associated PressA red knot, center, among ruddy turnstones and sanderlings on the Delaware Bay shore in Middle Township, N.J.



The red knot has begun its 9,300-mile migration from its wintering areas in the Patagonia and Tierra del Fuego regions of Argentina to its mating grounds in the Canadian Arctic. Like clockwork, the shorebird makes a crucial two-week stop each May in Delaware Bay; it is estimated that nearly 90 percent of the entire red knot population of can be found there on a single May day.

The bird's annual arrival coincides with horseshoe crab spawning. Crab eggs are essential to the red knot, which consumes enough to double its body weight and gain the strength to complete the nonstop last leg of the journey north.

Around 2000, it became clear to scientists that the red knot population was crashing, possibly because of accelerated commercial harvesting of the horseshoe crab in Delaware Bay in southern New Jersey and on Delaware's eastern shore during the 1990's. Fewer horseshoe crabs meant fewer eggs. It is estimated that fewer than 13,000 of the long distance migrant red knots remain, down from around 60,000 in the 1980's. Last month the New Jersey Department of Environment Protection placed the

red knot on its endangered species list.

To bring attention to the threat, the Massachusetts-based [Manomet Center for Conservation Sciences](#), along with the environmental public relations firm [EnviroMedia](#) in Austin, Tex., are beginning to research the knowledge and attitudes of Delaware Bay residents on the red knot question. Results will be used for a social marketing campaign and action plan that will get started in May and continue for two years.

Manomet is also working closely with various conservation groups in the area, including [New Jersey Audubon](#) and Delaware Riverkeeper.

As red knots skitter along Delaware Bay beaches looking for soft crab eggs in May, scientists from Kenya, New Zealand and other countries will lead talks at local social clubs and libraries on the bird, the importance of shorebird habitat, the possible extinction of the species and the sustainability of both the red knot and horseshoe crab. The idea is to galvanize public opinion so that regulators and lawmakers will take notice.

“We want to start with an emotional hook,” said Charles Duncan, director of Manomet’s Shorebird Recovery Project. Then the organization will supply a wealth of information and suggest steps that people can take to make a difference, he said. The hope is that local pride will generate a constituency for saving the red knot and keeping Delaware Bay healthy.

“The main component missing is the public will,” says Lawrence Niles, a wildlife biologist with [Conserve Wildlife Foundation of New Jersey](#).

Manomet had met with success in similar campaigns like one to generate local interest in important red knot sites in Argentina, an effort coordinated with [Rare](#), a social marketing firm in Virginia that focuses on conservation issues.

Since the mid-1980’s, the red knot has become a flagship species of study in the Delaware Bay area. Weekly aerial surveys are carried out every May to determine population numbers. On the beaches, Dr. Niles and other scientists use cannon nets to capture the birds before weighing and measuring them. Then they color-band their legs and release them so they can be identified years later.

Red knots get ready for migration by physiologically shrinking their digestive system, turning their

bodies into a stout flying muscle. When they arrive at Delaware Bay, they are often emaciated, their gizzards so shrunken that the birds are incapable of eating the clams and mussels that are a normal part of their diet. (They cannot digest the hard shells.) Nature provides the soft eggs for the bird's survival.

The future of the red knot is inextricably tied to the population of the horseshoe crab. A percentage of crabs are harvested for fishery bait while others are used for medical purposes. The crab goes through a bleeding process in a lab where 30 percent of its blood is removed to harvest a chemical compound called Limulus Amebocyte Lysate, which is used to detect biological contaminants in drugs, vaccines and intravenous devices. The crabs are then returned to the water. On average, there is a 15 percent mortality rate.

Manomet hopes that years of scientific findings will yield a complex data model that regulators can use to determine how many horseshoe crabs should be commercially harvested so both species will survive.

That data model cannot come soon enough for conservationists. The red knot remains a candidate for a federal endangered species designation, and Dr. Duncan hopes that an official listing will materialize soon.
