

Yale Book News

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Breaking News: The rufa red knot has just become the first bird in the U.S. listed as threatened under the Endangered Species Act because global warming imperils its existence.

For Release: Publication Date April 28, 2015
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The Narrow Edge **Two Amazing Creatures, Why Humans Need Them,** **And a World at Risk**

Red knots are tiny shorebirds that live extraordinary lives. Each year, they fly a 9000 mile journey from Tierra del Fuego, off the southernmost tip of South America, to the Arctic, and back. Along the way, they feed on beaches in Texas, Georgia, the Carolinas, Virginia, Maryland, Delaware, New Jersey, and New England.

Horseshoe crabs are ancient animals, essentially unchanged across 450 million years. Growing as large as dinner plates, they are iconic symbols of the Atlantic coast. Their amazing blue blood, essential to human health, detects life-threatening contamination of medicines and commonly-used medical devices. The energy-rich eggs of horseshoe crabs are critical food for the red knot's seemingly impossible long-distance journey.

In *The Narrow Edge: A Tiny Bird, an Ancient Crab, and an Epic Journey*, to be published April 28 by Yale University Press, author Deborah Cramer follows the odyssey of the red knots from one end of the Earth to the other. In this firsthand account, she chronicles the knots' mind-bending physical achievement and explores the threats they face as they strive to reach the arctic in time and in good enough condition to breed successfully.

The story of the red knot is inextricably tied to the story of the horseshoe crab. The crabs come ashore once a year to lay millions of pinhead sized eggs, which nourish and fatten starving knots before the final leg of their astonishing trip. Red knots have declined by 75 percent since the

1980s, and the decimation of horseshoe crab populations, especially in the Delaware Bay, is surely part of the reason. Despite their essential role protecting human life and their critical place in the food chain, hundreds of thousands of horseshoe crabs are killed each year for bait. And although crabs bled for the pharmaceutical industry are returned to the water alive, information is lacking about how many die or fail to reproduce after their release. In *The Narrow Edge*, Cramer describes how the current situation is untenable and explores potential solutions, including alternative bait, a controversial synthetic toxin detector to replace crab blood, and more.

The rufa red knot, now threatened under the Endangered Species Act, is likely to be in danger of extinction in the foreseeable future. Threatened across its entire range—40 states and 24 countries—it is the first U.S. bird listed specifically because its existence is imperiled by global warming. The 21st century's canary in the coal mine, it will not be the last: global warming's rising sea-levels, more powerful storm surges, and corrosion of sea water jeopardize the lives and livelihoods of millions of long-distance migrating shorebirds and hundreds of millions of people living at the sea edge. In *The Narrow Edge*, Cramer makes vivid what's at stake. Throughout the book, she offers an uplifting portrait of tenacity: both of small birds and of the many people who, bird by bird and beach by beach, devote their lives to keeping red knots flying, giving them safe harbor, and building the resiliency of our coast. "Their home is ours," she writes. "We stand together, all of us on the edge, facing a time fraught with challenge, filled with promise."

Sobering and at the same time heartening, *The Narrow Edge* is essential reading for lovers of birds, beaches, horseshoe crabs, and the natural world.

For more information or to arrange an interview, please contact Liz Pelton, Yale University press, 410-467-0989, Elizabeth.pelton@yale.edu.

The Narrow Edge: A Tiny Bird, an Ancient Crab, and an Epic Journey

By Deborah Cramer

To be published April 28, 2015

By Yale University Press

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Advance Praise

“Deborah Cramer has written a lovely, intrepid book about a lovely, intrepid, and increasingly threatened bird. *The Narrow Edge* is at once an intimate portrait of the small red knot and a much larger exploration of our wondrous, imperiled world.”

—**Elizabeth Kolbert, author of The Sixth Extinction**

“In the face of global warming, is our big brain connected to a big enough heart that we might preserve the beauty of the earth we were given? Heart is no problem for the red knot—20,000 miles on the wing demonstrates that. The finely told story of this bird will, hopefully, help summon greater affection for our home planet.”—**Bill McKibben, author of Eaarth**

“Two great cycles intersect every May in Delaware Bay: the epic journey—just shy of global circumnavigation—of red knots and the primordial migration of horseshoe crabs, whose eggs provide critical fuel for shorebirds. They intersect on the narrow edge of the bay, but Deborah Cramer provides a superbly written and gripping account of the full journey. Perilous under any conditions and fraught with additional danger from human impacts, this account is more thrilling than the Kentucky Derby. This book is for anyone who loves adventure: an interwoven tale of humanity and nature in which nature never fails to surprise and delight.”

—**Thomas E. Lovejoy, University Professor of Environmental Science and Policy, George Mason University, and National Geographic Conservation Fellow**

“A plaintive cry from deep within, an elegy to epic lives lived at full burn, and a warning of the great unraveling that humans are inflicting on this planet’s co-voyagers. A book so multidimensional, yet somehow so admirably succinct, I wish I’d written it—but it’s written as only Deborah Cramer could. Thank goodness for that.”

—**Carl Safina, author of Beyond Words: What Animals Think and Feel**

“Cramer’s pole-to-pole pursuit of an elusive and threatened bird provides the vehicle for her eloquent exploration of our relationship to nature. The message is both sobering and inspirational.”

—**Nancy Knowlton, Sant Chair of Marine Science at the Smithsonian’s U.S. National Museum of Natural History, and author of Citizens of the Sea**

“Deborah Cramer has crafted a remarkable tale of science, nature, and humanity. She takes us on a sweeping adventure as she paints the portrait of an unimaginably hardy yet threatened bird.”

—**Susan Solomon, Founding Director, Environmental Solutions Initiative, MIT, Ellen Swallow Richards Professor of Atmospheric Chemistry and Climate Science, MIT, and author of The Coldest March**

“Deborah Cramer provides a unique, first-hand account of a little known and even less appreciated bird. Her adventures with researchers easily take the reader into the world of science and its complex and evolving findings.”

—**John Marzluff, James W. Ridgeway Professor of Wildlife Science at the University of Washington and author of Welcome to Subirdia**

“The long journey of a tiny bird is powered by the energy-rich eggs of horseshoe crabs, ancient creatures of sea and coast whose blood plays a critical but little-known role protecting human health. Cramer brilliantly presents us with an ecosystem of many parts.”—**Donald Kennedy, President Emeritus, Stanford University**

Did You Know?

*Red knots are in sharp decline at some of their traditional stopping points. In Rio Gallegos, Argentina, a city with a booming human population, 3000 knots stopped to feed in 2006. By 2010, the number was 100. (See page 37.)

*When red knots are refueling, they can double their body weight in a month. They then fly 2,000, 3,000, or even 4,000 miles without food or rest. (See pages 41, 47.)

*In 1857, horseshoe crab eggs on Delaware Bay were “so thick they could be shoveled up and collected by the wagonload.” (See page 62.)

*In the late 1800s, horseshoe crabs were nearly wiped out in Delaware Bay for the manufacture of fertilizer. In 1880 alone, 4 million were removed. (See pages 64-66.)

*In 1991, New Jersey beaches had 300,000-500,000 horseshoe crab eggs per square yard. By 2005-2007, the average density was 4,000 eggs per square yard. (See page 84.)

*The number of red knots stopping at Delaware Bay, their most important feeding ground, has dropped by 70 percent since 1989. (See page 79.)

*In 1998, almost 90% of red knots leaving Delaware Bay had enough fat to reach the breeding grounds, if necessary weather an inhospitably late spring, and still produce viable offspring. Four years later that percentage had dropped by two thirds. The number of knots surviving year to year, once over 90%, plummeted to 56%. (See page 85.)

*Horseshoe crabs were traditionally known to spawn in pairs. Unequal capture of the larger females has led to extreme discrepancies in sex ratios in many locations, with 7, 8 or more males per female. (See page 112.)

About the Author

Deborah Cramer is the author of **Great Waters: An Atlantic Passage** and **Smithsonian Ocean: Our Water, Our World**. She lives with her family on a salt marsh in Gloucester, MA.

*Cramer logged over 40,000 miles tracking down red knots.

*To visit their Arctic nesting grounds, she was required to obtain a gun license in the United States (she now has a license to carry a large capacity fire-arm) and to learn how to use a 12-gauge shotgun.

*When Cramer began researching and writing *The Narrow Edge*, scientists weren't sure where young knots spent their first winter. She was with them as they uncovered two “new” knot homes, one on the islands of South Carolina, and the other in Texas's Laguna Madre.

*Cramer spent three and a half weeks on knot nesting grounds on the windy, snowy, and freezing Arctic tundra. The birds were warmed by their fat and feathers: Cramer wore two layers of long underwear, a fleece sweater and pants, wool sweater, wind pants and jacket, and was still cold.

