



RECOVERING SHOREBIRDS *in the* AMERICAS

If you let them, shorebirds will completely redefine what you thought birds are capable of.

Consider this: On August 22, 2011, a Whimbrel, named Chinquapin by biologists, headed southward from Canada's upper Hudson Bay carrying a tiny satellite transmitter. After two days and nights of non-stop flying, he encountered Hurricane Irene, with sustained winds over 111 mph. Ask anyone with a sailboat what this must have been like for a bird that weighs about a pound. To the amazement and relief of the researchers tracking him, Chinquapin flew on through the storm, then changed course and landed in the Bahamas for a several-week stay before resuming his migration. As I write, he is wintering in Suriname, exactly where he did last year, apparently none the worse for his experience.

Or this: In preparing to migrate north from Tierra del Fuego, at the southern tip of South America, Red Knots increase the mass of their flight muscles while simultaneously shrinking their digestive system. The change is so drastic that when they arrive at stopover sites in the United States, they are incapable of digesting the clams and mussels they eat most of the year. Yet if soft food, such as the eggs of horseshoe crabs, is

sufficiently available, they can almost double their weight in just two weeks. You could think of a 105-lb. human reaching 200 lbs. in that short time (but maybe it's better not to).

Or try this: a Red Knot named B95 has so far flown a cumulative distance equivalent to the Earth to the Moon and part way back – more than 350,00 miles! B95, now at least 18 years old, was photographed late last year by some of the same people who first caught him in 1995. They all look much older than in the earlier photographs, but he looks the same.



"Chinquapin," a Whimbrel, being fitted with a solar-powered satellite transmitter. Photo: M. Friel

Many—but not all—shorebird species aggregate at a small number of food-rich "stepping stone" sites along coastlines and inland wetlands during their lengthy migratory cycle. Some, such as the Sanderling and the

well-named Solitary Sandpiper, are "dispersed migrants" found in small numbers along extensive coastlines or rivers. Other shorebird species, endemic to South America, are among the world's least understood groups of birds in both their natural history and their conservation status (see page 26).

For all shorebirds, threats including loss of habitat through development, chronic disturbance from beachgoers and dogs, "coastal engineering" projects, climate change, and overfishing of their food resources, have taken their toll. In fact, the U.S. Shorebird Conservation Plan (www.fws.gov/shorebirdplan), shows that no species



Researchers use colored "flags" to follow the movements of Red Knots. This bird was first banded in Argentina at the San Antonio Bay stopover. Photo: Mark K. Peck

of breeding or migrant shorebird in North America is in the category of "not at risk," and half are classified as "of high concern" or "highly imperiled."

What then is to be done? Effective conservation of shorebirds must address three inherent challenges: 1) shorebirds are among the most migratory animals on the planet and require concerted action over an enormous geography; 2) for the many species that congregate in large



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Solitary Sandpiper: Greg Homel

The following facts give a sense of the situation:

- The number of long-distance migrant *rufa* Red Knots has dropped from 50,000 to 15,000 since 1985.
- Numbers of migrant shorebirds using Delaware Bay have declined by 80% since 1982.
- Semipalmated Sandpipers have dropped by 80% — from 1.8 million to 350,000 birds — in their core winter range in northern South America since 1982.
- Populations of shorebirds using Kachemak Bay, Alaska, have fallen by 70% since the 1990s.

groups, their critical stopover sites are essentially irreplaceable; and 3) coastal and wetland habitats have been lost or degraded even faster than other habitat types. Climate change exacerbates all three of these challenges.

Faced with these challenges, it quickly becomes obvious that no single group, corporation, government, or treaty organization in the world has enough resources—or authority—to recover shorebird populations on their own. The only way forward is through “collective impact,” where many organizations from various sectors work towards the same goal, and measure progress the same way. Success depends on having a backbone organization that actively coordinates actions and shares lessons learned among participating groups.

One of the best-known and most effective organizations is the Western Hemisphere Shorebird Reserve Network (WHSRN, www.whsrn.org). Begun in 1985, and now comprising 85 sites covering some 30 million acres in 13 nations, WHSRN is a voluntary, non-regulatory coalition whose mission is to conserve shorebirds and their habitats through a network of key sites across the Americas.

WHSRN enrolls sites based on two simple criteria: 1) importance to shorebirds as demonstrated by annually hosting at least 20,000 shorebirds or 1% of a population, and 2) a simple letter of commitment from the landowner(s) agreeing to make shorebird conservation a priority at the site. WHSRN’s Executive Office, with staff in Maine and Massachusetts; Baja California, Mexico;

and Santiago, Chile, is operated by the Manomet Center for Conservation Sciences, and serves as the critical “backbone organization.” A Hemispheric Council, made up of 16 influential members of governments and non-profits in the Americas and beyond, shapes the WHSRN strategy and makes decisions on new site nominations.

Curiously, the very power of WHSRN is that it has no formal legal or treaty basis, and maintains a low barrier-to-entry. Rather than placing prerequisites on landowners and managers (such as having a functioning shorebird management plan), WHSRN first helps them appreciate their connection to the rest of the hemisphere and provides them not only the will (pride of place) but also the way (knowledge, tools, and connections) to ensure effective conservation of the site.

A second area where collective impact for shorebird recovery is necessary is in building a scientific foundation for action. What are the drivers that have caused shorebirds to decline? Answering this and similar questions is the purpose of the Shorebird Research Group of the Americas (www.shorebirdresearch.org), a consortium of researchers from academia, government, non-government organizations, and the public, whose purpose is to encourage collaborative research, provide communication among individuals and groups, and to be a clearinghouse for emerging ideas and issues related to shorebirds.

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ASDN’s work combines unprecedented and sophisticated understanding of experimental design and biostatistics with the almost



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Sanderlings: Greg Lavaty, www.texasatargetbirds.com



unimaginable logistical challenges of placing qualified teams of field biologists at sites across the Arctic breeding grounds (and getting them safely home).

Using carefully formulated scientific protocol, ASDN will provide information on the mechanisms behind declines (e.g., poor reproductive success or low adult survival), and also help determine when shorebird population sizes are likely to be limited (e.g., breeding, migration, non-breeding). The results will make future conservation actions more efficient and surgically targeted. ASDN is coordinated by Manomet, the U.S. Fish and Wildlife Service, and Kansas State University. The project is funded by the U.S. Fish and Wildlife Service, Canadian Wildlife Service, the National Fish and Wildlife Foundation, the Neotropical Migratory Bird Conservation Act, and several generous individual donors.

Any conservation effort needs to hold itself accountable by providing measures of success. For shorebirds, recovered and stable populations are the best measure of the success of conservation efforts. However, measuring and quantifying this requires a baseline from which to start, and ongoing monitoring at

thousands of sites. Fortunately, in 1974, Brian Harrington, organized the International Shorebird Survey (ISS), one of the first large-scale “citizen-science” projects, with hundreds of volunteer teams counting shorebirds during spring and fall migrations. With modest financial resources, the ISS has contributed reliable data on shorebird populations for nearly 40 years, with over 69,000 surveys and total observations of more than 60 million shorebirds at more than 1,500 locations across the Western Hemisphere.

With the companion Atlantic Canada Shorebird Survey, the ISS has become among the most significant sources of monitoring information for shorebirds in North America.

Recently, statistician Dr. Paul Smith collaborated with Manomet to analyze the ISS data from 1974 through 2009 for 41 species (80% of all regularly occurring shorebirds in North America). The results demonstrate that shorebirds continue to face significant conservation challenges. Although ongoing declines for many species warrant concern, the analyses also suggested some reasons for optimism. For all shorebirds combined, the troubling declines observed through the 1990s may have slowed,

perhaps because of conservation efforts by WHSRN and many other groups. Five species were found to be increasing. These include the American Oystercatcher, the subject of significant management efforts, and the Semipalmated Plover, not previously known to be increasing.

Despite these encouraging trends, the estimates also suggest that declines are ongoing for 23 species, and at statistically significant rates for five species. These include some already known to be of conservation concern, such as the Red Knot and Long-billed Curlew, but others, such as the Black-bellied Plover, for which there was previously no specific conservation concern.

What can you do? Help others understand how amazing these heroic little birds are and why they deserve our protection; contribute to knowledge by reporting sightings (<http://ebird.org/content/iss/>); avoid disturbing roosting or feeding shorebirds; and contribute financially to conservation groups such as ABC and Manomet.

Together we can create a conservation success story equal to that of waterfowl in the 1920s or raptors in the 1980s.