

The Wildlife Word, Episode 1: Interview with Wendy Walsh, the national lead on the Rufa Red Knot

****Nature and animals noises****

Brad Thomas: Thanks for listening to our first episode of The Wildlife Word! We are based out of the U.S. Fish and Wildlife Service's New York Field Office, and we're looking to give you a more in-depth look at some of the work we do here in the Service. I'm your host, Brad Thomas, and I'm here with my co-host Bret Serbin. So, Bret, what's the word today?

Bret Serbin: Thanks, Brad. For this episode the word is actually two words: red knots. These are a federally threatened shorebird that the Service protects in New York and many other states. And there's no one better to catch up with than endangered species biologist Wendy Walsh from the New Jersey Field Office, who is the national lead on the red knot.

Brad Thomas: Great! Let's get into our interview with Wendy. So the first question I have, Wendy, is how did you become an endangered species biologist and then eventually get to work with shorebirds?

Wendy Walsh: As far back as I can remember as a kid, I was always really interested in nature, thinking back to summer camps and high school biology class. My mom jokes with me that no matter where we went on vacation, I would always find ducks and take pictures of ducks.

Like a lot of people in our region who are interested in natural resources, my first job was as a Piping Plovers intern. That's a pretty common background story. After a few more temporary jobs, I was able to get a position with the Service back in my home state. It's kind of been on-and-off working on plover issues ever since.

Brad: How did that studying and getting into that position lead to becoming the national lead on the red knot?

Wendy: Every species that's listed has a designated lead office. New Jersey was the lead for red knot prior to listing. We ended up in that role because we support one half of the Delaware Bay.

Bret: And could you also talk about the work that you've done on The Endangered Species Act (ESA)?

Wendy: So piping plover and red knot are two species I've worked with, but there's been a handful of others over the years. There's a plant called swamp pink, and another plant called seabeach amaranth. I spent some time working on bog turtles. And for all of these species my work has mainly focused on two areas.

One is what we call consultation, where we review projects to try to avoid and minimize impacts from activities that people want to do. The other area is more proactive, where we're working on recovery, trying to do projects, initiate partnerships and do other actions that will help the species eventually recover. It wasn't until the red knot that I had an opportunity to work in a new area of the ESA, which is listing. It was a whole new learning experience but a rewarding one.

Brad: Focusing more in on the red knot, what is an average day like for a red knot? What are they looking to eat, or where are they looking to nest, for people who aren't familiar with the species?

Wendy: An average day probably depends a whole lot, like it would for a person, on the time of year. So knots spend winter in three different regions. They're in the Caribbean and the U.S., from Texas to North Carolina. The second region is along the Northern coast of South America. And the third region is all the way down at the tip of South America in an area called Tierra del Fuego.

Knots in all three areas probably have a pretty similar day in the wintertime. They're mostly feeding on small shellfish like little clams and snails, and resting in flocks. Depending on which region they're in, they'll start getting the urge to migrate sometime between February and April. So an average day in migration could be completely different.

It could literally be spent doing nothing but flying. Some of these birds will fly for days nonstop, alternating with stopping to essentially gorge themselves on food because they need to refuel for that next flight. Migration is a pretty different time of year. And then, of course, nesting would vary as well, once they arrive in the breeding grounds, which is way up in Arctic Canada on the tundra.

There they're going to be courting, establishing territories, and eventually incubating eggs and brooding chicks. And there their diet's going to change. They're going to lead those chicks down to some freshwater wetland areas where they're going to be mainly feeding on insects. So a little bit of variation throughout their annual cycle.

Bret: Definitely. And going along with all of that, they travel more than 9,000 miles, they go from their Arctic breeding grounds all the way down to the tip of Tierra del Fuego, what is it that makes them able to withstand such a long journey?

Wendy: Red knots have some pretty amazing adaptations to allow them to pull this off. When they're getting ready to migrate, they undergo a pretty remarkable physical transformation, something I think, as humans, we couldn't quite relate to. Within just days or weeks, they're going to put on a ton of fat. Their digestive organs shrink and atrophy along with their legs, whereas their heart and their flight muscles are going to really beef up and get stronger and larger. So this will allow them to really power through these flights nonstop, sometimes as long as 1,500 miles.

So then when they arrive in their stopover areas, they have to reverse the process and get that digestive gear back to full speed. Because then they might need to almost double their body weight in as short as ten to fourteen days. So a pretty remarkable physical transformation.

The diet switching is also pretty interesting. You think about a bird that spends nine or ten months of the year eating little things it's probing out of the sand, and then it needs to switch to catching insects, so it has some adaptations to its visual field as well that allow it to make this prey switching.

Bret: That's really interesting. Is there anything else that people would be surprised to know about it?

Wendy: Well, a lot of people are surprised about the life span. Red knots are thought to live about seven to ten years, which is pretty long-lived for a shorebird. But some can live much longer.

There was a marked bird with a flag code B95, and that bird was at least 22 years old when it was sighted. In fact, it became a bit of a celebrity. It was nicknamed "Moon Bird" because it had flown enough miles in its lifetime that it could've gone to the moon and at least halfway back. There's a book about Moon Bird and even a statue to Moon Bird in Delaware. So that usually gets a lot of startled responses.

Bret: I bet! That's great.

Brad: What are some of the reasons why they are federally listed as a threatened species?

Wendy: I mentioned Delaware Bay, and somewhere in the neighborhood of 50 to 80 percent of all rufa red knots are thought to stop over at Delaware Bay during that spring migration. When they're in Delaware Bay, they're actually switching prey again a little bit. Instead of little clams and snails and hardshell prey, they're actually feasting on the eggs of the horseshoe crab, which comes up to spawn in the bay. And the volume of horseshoe crab eggs is so large during this stopover period--which is perfectly timed, by the way, to the spawning of the crab--is why the Delaware Bay is thought to be such an important stopover.

And it's also what we think unfortunately led to the decline of the birds. Between the 1980s and the 2000s, the Delaware Bay stopover population, as well as the Tierra del Fuego watering population both declined by, we think, as much as 75 percent. The best evidence we have suggest that this was due to a spike in the harvest rates of horseshoe crabs. The crabs are used primarily in the bait industry to catch other marine creatures, but they're also used for other purposes such as biomedical purposes. So they crab harvest was regulated starting in the late 90s and has since come down and levelled off. Red knot populations have likewise stabilized, but at a relatively low level. And now the listing really looks at the pretty large number of hurdles

that the red knots have to recover those earlier numbers. Things like sea level rise, coastal development, human disturbance, oil spills. And there's also a range of impacts from climate change that are sort of reconfiguring both the marine food webs that the red knot relies on for food, as well as sort of the Arctic ecosystem where the birds nest. So there's kind of a lot of hurdles to recovering those earlier population numbers.

Bret: In addition to that Delaware Bay stopover point, obviously we are from the New York Field Office, so could you speak to the use of Long Island beaches as a stopover point and maybe opportunities for recovery?

Wendy: Sure. Delaware Bay is certainly the single most important one, but it's pretty time-constrained. The knots are really only there for about four to six weeks in May and early June. It's not the only spring stopover area by any means. There are other really important ones.

And then in the fall, the birds are a bit more spread out in both time and space. Really any sort of intertidal mud flat or sand flat in the Northeast is going to be potential red knot stopover habitat. Many are known and pretty well-used year after year. Others may only be used sporadically. The birds are really known for following the food. They're going to stop in migration wherever the food resources warrant. So there's definitely a lot of potential stopover and known, occupied stopover habitat in Long Island and other parts of the Northeast.

Bret: Ok.

Brad: Cool. And what are some of the ways listeners can support the red knot migration and contribute to a successful recovery?

Wendy: Well a really simple thing that anyone can do is if you find yourself at the beach, or out on a boat, near a shoal, near a mud flat, just give shorebirds a little bit of elbow room. If you see a flock of shorebirds, try to avoid walking or driving through it. If you have a dog, keep it at a distance and keep it on a leash.

It might be kind of cool to see a flock of shorebirds take off if you walk through it or if your kid chases it, but from the birds' point of view, when that disturbance happens time after time, day after day, the bird is now spending a lot more energy to fly and react to the human presence. It also doesn't have as much time to feed, so the birds might not have as much time to gain weight the way they need to. They might not be able to complete their migration. Some could even die.

So giving them some space is one thing everybody can do. Red knots are particularly skittish, so some research indicates they may need as much as 400 feet of elbow room between themselves and people to avoid the flock getting spooked. So that's one thing that really everyone can do.

Bret: That's really good to know!

Brad: I'm sure everyone listening learned at least something about the red knot.

Bret: Thank you so much! This is really great information for us and hopefully for a broader public as well.

Wendy: Great! Thanks so much! Always a pleasure talking about red knots.

Brad: From everyone here at the New York Field Office, we would like to thank Wendy for taking the time out of her busy schedule to talk to us today about the red knot.

Bret: And now you've heard The Wildlife Word! To keep up with exciting work like this, make sure you're following our Facebook page: [USFWS Conserving New York](#).

Brad: Look for another episode of The Wildlife Word next month, and thank you for listening.