



# WESTERN CUYAHOGA AUDUBON SOCIETY

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## Restoring Endangered Seabirds: Lessons from Puffins and Terns with Dr. Stephen Kress

Dr. Stephen Kress is Vice-President for Bird Conservation, National Audubon Society and Director, Seabird Restoration Program & Hog Island Camp. With Nancy Howell, Western Cuyahoga Audubon.

### Early Interest in Coastal Seabirds

**Nancy Howell:** Hi, I'm Nancy Howell and I'm on the Board of Western Cuyahoga Audubon. I have the honor of interviewing Dr. Stephen Kress. Dr. Kress has done a wonderful job of restoring seabirds, puffins, common terns, along the east coast of the United States. Dr. Kress is the Vice President for Bird Conservation at National Audubon Society and the Director of the Seabird Restoration Program, and, Hog Island Camp. Dr. Kress, how did you get interested in Puffins and seabirds that were endangered?

**Stephen Kress:** Maine was always a destination that I always wanted to go to even as a little kid growing up in Columbus, Ohio. Coming up to Maine was always a goal of mine. When I was offered an opportunity to teach at an Audubon camp on Hog Island in 1969 I jumped at that chance! I've been associated with that special place ever since.

Once I was a bird life instructor there I began realizing that the birds we were seeing in the late 1960's were not the birds that used to breed there according to all the historic records. History tells us that the islands off the coast of Maine were once the nesting places for Puffins and several species of Terns, Razorbills - all these northern birds that reached their southern limit on the Maine coast. They had all but disappeared because of excessive hunting and for their feathers, especially in the late 1800's.

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## Developing Tools for Restoration

**Nancy Howell:** All that you've learned about getting Puffins to nest, Terns to nest, by bringing the young birds in, and "fostering" them, has this helped other species in other parts of the world? Have you worked with other organizations returning seabirds? What other birds?

**Stephen Kress:** In order to bring the Puffins back to Maine, we had to invent methods because this hadn't been done previously. Those methods, like translocation of chicks, and attraction of birds using decoys and audio recordings, those were novel methods at the time. But now those methods are basic tools for seabird conservation, especially for people who are eager to try to restore historic colonies of birds.

And historical colonies of birds may mean a bird population that was decimated by an oil spill, or ocean level rise. There's many applications now for the methods we developed but in Maine it was trying to make up for the hunting that happened one hundred years ago, the hunting that caused Puffins to decline to just one pair in 1901.

We had to start from the beginning to develop these methods but they are now becoming basic tools for seabird conservation. I know of at least fifty species of seabirds that have benefitted by the same methods that were pioneered in Maine.

## Distribution of Manufactured Conservation Tools

[00:03:48]

**Nancy Howell:** That's amazing and wonderful! I have a colleague that has moved to Hawaii. Have you done anything with the Hawaiian Petrels, some of the species that are critically endangered on an island, like Hawaii?

**Stephen Kress:** One of my graduate students, Richard Podolsky PhD, is learning how to attract Laysan albatross, and he experimented with two dimensional and three dimensional decoys, and audio recordings. His work actually seeded the new colony of Laysan Albatross at Kauai and Oahu (after a 1,500 year absence)<sup>1</sup>. People who go to Hawaii now can see Albatross nesting there, and from there, they're spread out to places on other islands.

The methods are being now used for Hawaiian Petrels as well as the Newell's Manx shearwater<sup>2</sup> and it's always some little twist, either some translocation of chicks, or attraction using audio recordings, occasionally using scent as well. Sometimes using reflective mirrors, special mirror boxes. We're proud of the fact we developed these things and just this year we had a company develop a line of conservation decoys, seabird decoys, a very niche industry, shipping these all over the world. This family business retired and they donated their company to National

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<sup>1</sup> Dr. Richard Harris Podolsky, CEO, Ecology and Technology;

<http://ecologyandtechnology.com/recent-projects/richard-podolsky-cv/>

<sup>2</sup> The Manx shearwater (Puffinus puffinus); [https://en.wikipedia.org/wiki/Manx\\_shearwater](https://en.wikipedia.org/wiki/Manx_shearwater)

Audubon Society. So we're now making conservation decoys also. Just since January, we've shipped these out to five countries and about six different states.

We just want to make sure people have the tools they need to do this work. I think we made about ten sound boxes, projects, all over the United States.

Audio recordings, it turns out, are one of the great tools to attract seabirds. The don't like to nest by themselves, they want to nest in places where they see others and that's where the decoys come in. And where they hear the sounds of other seabirds, that's where the audio boxes come in.

## Unique Burrow Smell Aids Nesting Petrels

[00:06:15]

**Nancy Howell:** Do many seabirds have a sense of smell?

**Stephen Kress:** Probably most birds have a sense of smell. There was a time when most people thought birds didn't have a sense of smell. There's more work now showing that they do but seabirds, the Petrels especially, are famous for this. They have such keen smell, they can pick up patches of plankton.

They can also pick up the smell of their nesting island. Even though they live in very windy places, that smell is being broadcast. They can follow the smell, like a salmon returning to its river. They follow this aerial river of Petrel scent, not just to their home island but to their nesting burrow because their burrow smells different from all the other burrows and they may live in colonies of hundreds of thousands.

## Puffins Feel Strong and Powerful

[00:07:21]

**Nancy Howell:** What does a Puffin feel like?

**Stephen Kress:** Puffins are about ten inches tall. The feel of a Puffin, or any seabird in the hand of an adult, is just sheer muscle. They are very powerful birds. If you think about it, it's all you can do to hold their wings in. When they're underwater they're using their wings to dive, so they're essentially flying underwater which suggests they must have powerful breast muscles not to just stroke the air to fly, but to stroke the water.

So they use these to dive to one hundred feet or more, so if you have the opportunity to hold one, it's a massive muscular bird for only ten inches tall. Another thing about it is that even though they look cute and cuddly, if you stick your hand in a Puffin's burrow, you'll be reminded it's not so cute and cuddly because of its sharp tipped beak will grab you and once they do they just shake their head and hang on!

## Are Puffins Cuddly?

[00:08:32]

**Nancy Howell:** That's the next thing I was going to ask, "Have you ever been bitten by one?"

**Stephen Kress:** Oh, yes! And they have sharp toenails too because they use their toes to dig holes in the ground. They can dig a nest eight feet underground and they return to the same burrow year after year which is an investment to dig a deep hole like that. They come back and the hole goes straight in and then it twists in one direction or another with a little dark nesting chamber at the very end of it. To band them, you take your longest armed intern and have them reach into the hole.

## How Many Eggs Do Puffins Hatch?

[00:09:21]

**Nancy Howell:** One or two chicks in a borrow?

**Stephen Kress:** They only have one egg and they lay that egg when they're about five years old at the earliest and maybe not until they are seven. They may live to be thirty-five years old. Both parents incubate the egg and it takes about six weeks, twice the length of a chicken egg to hatch. And another six weeks to rear the chick, so three months underground.

## What Dangers Do Seabirds Face?

[00:09:55]

**Nancy Howell:** What are some of the dangers seabirds are facing now? You mentioned hunting, and I know there is some hunting in other countries.

**Stephen Kress:** Puffins were hunted but their now protected fortunately. They are protected by the Migratory Bird Treaty Act. The problems Puffins face today are much more difficult to control than the problems of the eighteen hundreds when you could pass some laws, hire a few wardens and fix that problem.

The problems today are much greater today because they relate to the Puffins marine habitat. It turns out Puffins are excellent indicators of the health of the oceans, so if something is going wrong out there or changing, they're not going to be able to adapt right away.

Climate change is the biggest problem for all birds not just the Puffins. We often think about it in terms of land birds and people don't always think about seabirds being affected but they are. The Gulf of Maine, for example, is warming up faster than any other body of marine water in the world. It is affecting everything from the plankton on up to the big fish.

The kinds of plankton are changing, they're not as nutritious and the small fish are moving in different places, they are going to where they can find food, the little fish do, and those places are not always where the Puffin nesting islands are. Some islands are doing okay still, some

islands are not. This is an indirect result of climate change.

## The State of Fish Food Supplies

[00:12:00]

**Nancy Howell:** How about fishing, overfishing, harvesting?

**Stephen Kress:** Overfishing is always a challenge for fish because the technology is so efficient. The forage fish we see seabirds feeding on tend to live in schools, often big balls of fish and they find protection by living in these big balls but that makes those schools very vulnerable to high tech fishing fleets that have sonar and spotting planes. They can spot these and the mobile fishing boats go out and capture these whole balls of fish.

That is, actually, an opportunity. Because that's a policy management thing, and that's something that can be affected by conservation more directly, even, than climate change. Right now, a lot of what we're focusing on in our work, is policy for protecting the forage fish so that there's enough fish left in the sea for birds, and whales, and seals and turtles and big fish.

[00:13:16]

**Nancy Howell:** It is a global issue in national and international waters, the climate change - we don't often think about these things but it's the small things like the plankton, the changing climate, the forage fish, all up the food chain, that we sometimes don't think about.

**Stephen Kress:** They're not in our vision but just today it made the news that the worm populations of Maine have dropped off by about half, the marine worms that live in the sand. That became an issue for people who have gone out and harvested those worms for fishing. So they're upset because they can't harvest those worms. But what is causing that? That could well be a climate affect.

## Responsible Fisheries Management Can Bring Success

[00:15:45]

**Nancy Howell:** I'm hoping we can close on a positive note.

**Stephen Kress:** Well, there is positive news. I'm going to share a short story right now. It is about the fisheries. There have been some responsible fisheries management going on since the 1970's with the Magnuson Fisheries Conservation Act<sup>3</sup>.

There are at least two species of fish that are recovering and have had the opportunity to recover, the Haddock and the Acadian Redfish, both were way overfished. The Acadian Redfish was actually on the endangered species list, it's recovered to a point where there can be a moderate fishery on it and the Puffins have found it, that's one of the new fish they're coming

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<sup>3</sup> The Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) is the primary law governing marine fisheries management in U.S. federal waters.

back and feeding their chicks now.

This answers your question, that, yes, fisheries can also be an opportunity because if the fisheries are well managed there is enough fish for the fisherman to catch and for us to eat and for the Puffins to eat. It's about knowing about how much fish to catch.

**Nancy Howell:** Thank you I like to end on a positive note! I appreciate the time you've taken for this short but very informative interview. Thank you so much!

**Stephen Kress:** Thank you so much!

*Recorded April 28, 2017 at the Cleveland Museum of Natural History, 1 Wade Oval Dr, Cleveland, OH 44106.*

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### **Dr. Stephen W. Kress**

Steve is Executive Director of the Seabird Restoration Program and Vice president for Bird Conservation of the National Audubon Society. He received his B. S. in Zoology and M.S. in Wildlife Management from [Ohio State University](#) and his Ph.D. in Environmental Education from [Cornell University](#). Steve began Project Puffin in 1973 and has remained its Director since the beginning. He is also Manager of National Audubon's [Maine Coastal Island Sanctuaries](#). He was Ornithology Instructor at the [Audubon Camp in Maine on Hog Island](#) from 1969 through 1981, was the Director of the Camp from 1982 through 1986, and is currently serving as the Director once again. He is a Laboratory Associate at the [Cornell Laboratory of Ornithology](#) in Ithaca, NY, where he teaches a very popular annual birding course called [Spring Field Ornithology](#). - National Audubon Society

Audubon Project Puffin <http://projectpuffin.audubon.org/about/staff>