



Believing in the Environment

Some people know what they want to do with their lives from a young age. But not **Stephanie Jenouvrier**. She had never envisioned she would someday help people realize the devastating effects that global climate change is having on the environment. “I never planned to be a researcher,” says Stephanie, currently a population ecologist at the Woods Hole Oceanographic Institute in the United States. “When I find something I am interested in, I just follow my feelings. That is what I have always done.”

Visiting the Antarctic

Stephanie got her first taste of research in high school, back in France where she grew up. Her biology teacher often organized trips to a nearby research center where students conducted small projects. “I had a really good experience and loved it,” recalls Stephanie. Because of that, she attended university to study biology, focusing on animal ecology—what seemed like a good fit for someone who had always loved the

outdoors and animals. As part of her studies, Stephanie worked in national parks, monitoring the numbers of brown bears. Again, she loved that work.

She applied to graduate school to work in the laboratory of Henri Weimerskirch, research director at the Center for Biology Research in Chizé, France. Her Ph.D. focused on how changes in climate affect sea birds living in Antarctica. Part of her research required visiting the French Antarctic territories for two- to three-month stretches to gather data. Global climate change is impacting many ecological processes all over the world, but the consequences seem to be particularly dramatic in the polar regions.

Observing Penguins

Much of Stephanie’s work during those months consisted of catching birds to attach an identification ring on their leg, so that they could be tracked over time. She also monitored previously tagged birds to see when and where they would return to

their breeding colony on Antarctic islands, and whether they would breed, feed, nest, and so on. “Last time I went to the Antarctic I was responsible for following penguins. Our team would survey them for 24 hours, so sometimes my shift lasted until 4 o’clock in the morning,” she recalls. “It is very intense work, but I love that. It is so unique to spend a day observing penguins.”

To be able to predict the fate of these animals Stephanie knew it would not be enough to merely observe them. She would need to join forces with experts in mathematical models. With support from a UNESCO-L’Oréal Fellowship, she was able to move to the United States to work with mathematicians at Woods Hole. The fellowship paid for part of her salary while she worked there and also allowed her to visit climate scientists working at the National Center for Atmospheric Research and the National Snow and Ice Data Center in Boulder, Colorado. “The fellowship allowed me to spend several weeks in Boulder,” says Stephanie. “Any biologist who studies the impact of climate change should have this kind of collaboration with climatologists.”

Indeed the interaction and sharing of ideas with these scientists allowed Step-

hanie to use models of climate change to predict what would happen to emperor penguin populations if current trends in greenhouse gas emissions continue. “If I can provide scientific evidence that climate change affects populations of animals, I can convince people that it is important to do something about it,” she explains.

Staying Flexible

And she is well on her way to doing just that. The results she obtained while working in Woods Hole were recently published in the scientific journal, *Proceedings of the National Academies of Science*. They provide a dire warning. Stephanie’s work predicts that the number of emperor penguin “couples” will decline from 6,000 to 400 by the year 2100.

Despite only being at the start of her career, Stephanie’s research is already having an impact. But success does not come without sacrifices. “My mother always asks me ‘When are you going to have children?’” she says with a laugh. “But it is not easy to have children while you are doing your Ph.D. and postdoctoral studies. You have to be able to travel and be flexible.” Still, she would not trade in her lifestyle for anything, at least not for now. “I have not been to the Antarctic in a year now and I hope to be able to go back soon,” she says.



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