



Ben Collen (above), a research fellow in the Living Conservation unit of the Zoological Society of London, adjusts a time-lapse camera that allows him to capture daily images of the penguins as part of a research project supported by the Calgary Zoo.

The days are long in the Antarctic summer. In fact, they never really end. The beaming sun glistens on the water as an ice-strengthened ship makes her way towards the Antarctic Peninsula. She's just come through the infamous Drake Passage, where a two-story-high wave isn't that unusual. The sight of dry land is a welcome relief for those aboard.

"Antarctica is still such an inaccessible place," says London-based penguinologist Ben Collen, who hitchhiked the ride with a tourist group eager to see the bottom of the world. "So to be able to go there is a fantastic privilege."

As a research fellow in the Living Conservation unit of the Zoological Society of London, Collen has worked in several countries around the world. But nothing prepared him for his first glimpse of a king penguin colony.

"THERE WERE 200,000 BREEDING PAIRS OF KING PENGUINS STANDING ON THE BEACH," HE RECALLS. "THAT'S PENGUINS AS FAR AS THE EYE CAN SEE."

And as far as the nose dares smell. Collen refrains from describing that particular aspect of the journey. Suffice it to say, penguins may look like they're dressed for a party, but they smell like the day after.

"It's hard to look at a penguin on land and not smile," he says. "They look slightly ridiculous. They're incredibly charismatic, though. They'll walk right up to you, nip at your legs, and try to find out what you are. And then you see them in the water, where they are simply majestic."

Despite an enduring resistance to the elements, penguins are far from immune to the impact of

a changing planet. Many live in the most remote regions of the planet, in the harshest, coldest environments. So it may seem surprising that the biggest threat to their existence is warmth.

One might call that a small blessing in a place that holds the record for coldest temperature ever recorded on Earth.

BUT FOR THE MAJESTIC KING PENGUIN, A WARMER WORLD IS THE MOST INHOSPITABLE. EVEN A TINY INCREASE IN OCEAN TEMPERATURE IS ENOUGH TO START A DISASTROUS DOMINO EFFECT.

Warmer waters mean fewer phytoplanktons, the microscopic base of the marine food chain. That leaves less food for krill, which in turn leaves less krill for the penguins to share with the whales and seals.

Finding a solution to such a global scale problem is an overwhelming concept. So for now, Collen is focusing on something more tangible. He and his colleague Tom Hart, the ZSL's resident penguinologist, want to track the penguin colonies on the Antarctic Peninsula to get a better understanding of what helps them survive.

"Historically, monitoring in the Antarctic has been costly because of the logistics of working in such a remote area," Collen explains. "As a result, we're lacking data that's at a sufficient scale to answer the big questions about penguin conservation."

Amazingly, the scientists found a relatively simple and inexpensive way to watch the king penguins - right from their offices in London. With support from the Calgary Zoo, Collen and Hart developed a monitoring system that uses time-lapse cameras. They set up cameras in

seven different locations to capture daily images of the penguins.

"We're able to see the number of penguins present and observe their life cycles at different locations, such as when they arrive at the nesting site and when they have their chicks."

The cameras have been in place for a year now. It's been so successful that they're on their way back to Antarctica this month (Feb 2012) to install even more.

The camera trap is just one of three conservation projects the Calgary Zoo has taken under its wing in the lead up to its penguin exhibit. Kevin Strange, the zoo's head of conservation outreach, says it was a conscious decision to start supporting penguins in the wild before they made their zoo debut.

"THE THEORETICAL GOAL IS TO BE ABLE TO CONNECT ALL OUR SPECIES TO THEIR WILD COUNTERPARTS," HE SAYS. "BUT THAT WOULD BE WAY TOO MANY PROJECTS AND WE DON'T HAVE THAT MUCH MONEY. SO WHERE WE CAN, WE MAKE THOSE CONNECTIONS WITH CHARISMATIC SPECIES."

Those projects include hippos, snow leopards, gorillas and now penguins. And it's clear from the energy in his voice that Strange is among the most excited to welcome the newest subjects of his conservation efforts.

"I don't think anybody could tell you that penguins aren't charismatic," he exclaims. "They engage people right away."

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Public education is an important part of a Calgary Zoo-supported, grassroots project to conserve threatened Humboldt penguins in Chile and Peru. Here a penguin mascot leads a procession to raise awareness in local communities about how their actions can affect the penguins' ability to thrive

It's hard to pinpoint the epicentre of penguin charm. Perhaps it's the awkward waddle. Perhaps it's the oddity of a flightless bird that can swim like a torpedo. And if you haven't seen the YouTube video of Cookie at the Cincinnati Zoo, you should probably go watch it right now. But sometimes that sweet naivety works against these toddling tuxedo-plumed birds. Such is the case for the threatened Humboldt penguin.

A Humboldt penguin's environment is a world apart from its Antarctic-living cousins. These little guys, a breed often found in zoos, live along the Pacific Coast of South America. They maintain their penguin roots by catching their food in the coldwater current that comes up from the Southern Ocean. These same waters are where the fishermen of Chile and Peru make their living – sometimes with devastating intensity.

"Animals die in fishnets, by fishing through the illegal use of dynamite or they are caught and eaten or used as fish bait," Christina Schubert explains. Schubert is the vice president of Sphenisco – Conservation of the Humboldt Penguin. The organization was born of an odd collection of partners. Schubert, for example, works for the Zoo Landau in der Pfalz, Germany. Other founders include zoos in Ireland and Sweden. They work along side organizations in Chile and Peru to find ways to protect Humboldt breeding colonies.

"THE NUMBERS OF FREE RANGING HUMBOLDT PENGUINS ON THE COASTS OF CHILE AND PERU ARE DECLINING," SAYS SCHUBERT. "THERE ARE ONLY ABOUT 10,000 BREEDING PAIRS LEFT. ACCORDING TO THE INTERNATIONAL UNION FOR CONSERVATION OF NATURE (IUCN) THE STATUS OF THE SPECIES IS LISTED AS VULNERABLE AND THE EXTINCTION OF THE SPECIES IS LIKELY TO HAPPEN WITHIN THE NEXT 100 YEARS."

One of the most important aspects of Sphenisco's work revolves around public education. Working with the ACOREMA (Areas Costeras y Recursos Marinos) organization in Peru, the conservationists are trying to educate the local communities about their effect on the penguin's ability to thrive.

Uncontrolled tourism is a major threat to the Humboldt's ability to breed undisturbed. Also, she says, it's common for Peruvians to keep Humboldt penguins as pets or as a tourist attraction even though it's illegal.

"ACOREMA was facing skepticism when they started their first campaign in 2010," says Schubert. "The fishermen were not aware of the problems of the Humboldt penguins and did not want outsiders to interfere in their work."

Now, Schubert says many of them help develop educational material for their colleagues. ACOREMA is launching a second educational campaign for school children as well as the fishermen. This project is supported almost entirely by the Calgary Zoo.

"When we received the request from the Calgary Zoo asking for opportunities to support Sphenisco we were delighted, of course, but also very surprised. We did not expect to be contacted from the other side of the globe! We are very thankful and, to be honest, a little bit proud that we could raise the awareness of colleagues in Calgary."

Back in Calgary, Kevin Strange has a perfectly logical explanation for getting involved in this kind of little-known, grassroots project.

"Virtually no one who visits the zoo knows the Calgary Zoo even does this sort of work," he says. "I'd say even fewer people in the general population know that. It's a secret we don't really like to keep."

Strange is hoping the Southern Rockhopper penguins help change that. When the exhibit finally opens, he wants the zoo's conservation connections to be front and centre.

"We're hoping we'll be engaging people in conservation," he says. "In my mind, a 21st Century zoo should be trying to generate resources and participate in work that helps protect the animals they exhibit. It's what will make the zoo relevant in the future. It doesn't do any good to be exhibiting species that will one day be extinct."

The Northern Rockhopper penguins are at a particular disadvantage. Their home is a sparsely populated, miniscule spec on the southern Atlantic Ocean called Tristan de Cunha. They share the island with a few hundred fishermen and potato-farming families. Last March, a cargo ship found its way to the shores of this random land spilling its fuel on the penguins' fragile home.

"The islanders rallied to the penguins' rescue," says Strange. "They ended up draining their swimming pool and refilling it as a temporary penguin habitat. Then they washed hundreds of penguins."

The Calgary Zoo is supporting their efforts, likely with the purchase of an all-terrain vehicle. Strange admits it doesn't sound very exciting. But he says it will help the islanders reach the places where penguins come to shore.

Strange says until now, the Calgary Zoo hasn't had many exhibits that demonstrate the complexity of marine ecosystems. From a conservation point of view, he says he couldn't think of a more engaging species to connect the people of this land-locked province with the fascinating, fragile world of ocean life. **-WL**

ABOUT THE WRITER:

Alison Myers is an award-winning freelance journalist in Calgary. She spent 12 years with CBC Radio - the last five as the National Reporter for Alberta, sharing stories from across the country and abroad including dispatches from Parliament Hill, London, UK, and Washington, DC. Alison was part of the team covering the Vancouver Olympics in 2010, tasked with telling stories that would convey the energy and ambiance of the city to all the Canadians who couldn't be there. She has won several awards, including the coveted Grand Prize at the New York Festival for a documentary on siblings torn apart by Huntington's Disease. Alison lives with her husband and daughter in Calgary.



