WE STAND FOR WILDLIFE

ANNUAL REPORT 2016

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Message from WCS Canada President, Dr. Justina Ray

CANADA IS A VAST COUNTRY and we are lucky to be one of the few places in the world that still has many large wild areas that are unchanged by human development. When I fly over the boreal forests of northern Ontario in search of caribou or wolverine, I am always struck by the sea of green forests and sparkling blue lakes stretching out below me to the horizon.

But even from just a few hundred feet up in the air, it can be hard to see where ecosystems are thriving and where they are not. That's why it is important for us to find out where we need to take a closer look by putting boots on the ground to assess the state of these globally important forests and lakes and to better understand what we can do to keep them and wildlife thriving.

Over the last year, we have been fine-tuning a plan to build on our work to conserve wildlife and wild places across Canada. We are focusing on key areas that we think offer prime opportunities to take new conservation approaches, including the vast northern boreal region of Ontario and its globally important wetlands, wild rivers and deep lakes. The Northern Boreal Mountain region straddling the British Columbia – Yukon border is another area where we are mapping out a plan for keeping rich valley bottoms, wild rivers and mountain slopes teeming with wildlife. And in the Western Arctic, we are diving deep into the cold, rich arctic waters and working with local people to track a fast changing climate and its impacts on critical arctic food chains.

Landscapes are important, but so too are individual species, especially those that shape landscapes or ecosystems in important ways. I've spent countless hours tracking, researching and speaking out for caribou across Canada because I know that they are a key component in healthy boreal and arctic ecosystems. WCS Canada has led the way, detailing what needs to be done to help at-risk caribou survive and we will continue to use our research to show the urgent need for effective caribou conservation action.

Similarly, in British Columbia and Alberta, WCS Canada has raised the alarm about what the arrival of a deadly disease – white-nose syndrome – could mean for bats. Bats are voracious insect eaters and their sudden absence could trigger sweeping changes to everything from forests to fisheries. And in the Arctic, we are looking at what more frequent shipping through increasingly ice-free waters could mean for marine mammals such as seals that will have to deal with a noisier and more dangerous environment.

I think what makes WCS Canada's work unique is the way we combine a high-level view of the conservation challenges facing Canada with on-the-ground research to develop innovative conservation approaches and policy solutions that will protect our rich and irreplaceable biodiversity and, ultimately, our country's wild character.

Here at WCS Canada, we believe in science and in using science to build a better country for both people and wildlife. Your support helps us to take our research further, to explore more places and species, and to have a greater impact on conservation. Thank you.

© Susan Morse

Dave Hobson

Hilary Cooke / WCS Canada

Cover photo: © Susan Morse

BIG WILD PLACES

The boreal forest that straddles the Yukon-British Columbia border has one key difference from the forests that run across the northern half of eastern and central Canada: mountains.

As the boreal forest climbs up and over the mountain ranges of the west, it adds a whole new dimension to life in the northern forest: altitude. Here broad valleys are hemmed in by rugged mountains, which in turn may be divided by high alpine plateaus. This topographical element adds immensely to the habitat diversity of one of Canada's – and the world's – wildest regions.

This is a place where you can still come across wolverine, grizzly bears, and wolves moving freely through a wild landscape. They may be pursuing mountain caribou or thin-horn sheep, which remain abundant in the region. More than 200 bird species find what they need for over-wintering or just refuelling on long migratory journeys through these forests and wetlands. Salmon, meanwhile, spawn in the cold, clean waters of the Yukon River as they begin their 3,000 kilometre run to the Bering Sea.

These wild characteristics have drawn WCS Canada's scientists to the region with an eye to understanding how we can keep this area's wildness intact as interest grows in the resources it contains, from minerals and timber to oil and gas. Fortunately, we expect the Yukon Government to restart broad-scale land-use planning for the territory and we'll be bringing our scientific insights to the table in that process.

Photo, left: © Susan Morse; right, Hilary Cooke / WCS Canada

BIG WILD PLACES

WCS scientist Dr. Hilary Cooke has already been looking at both what it would take to retain the rich biological diversity of the region and how to develop conservation-focused land-use plans that leave plenty of room for both wildlife and wild forces, like wind and fire. Her research has highlighted the need to preserve connections and core habitat areas in the face of both these large natural forces and a changing climate and she has developed a model for designing integrated conservation networks that can ensure the long-term protection of biodiversity.

Thinking big is the only way to keep such a globally important area naturally functional — small, isolated natural areas lost in a sea of development are just not going to do the trick. In fact, Dr. Cooke is focused on reversing this conventional approach by instead isolating development impacts in a region where natural areas remain intact and well connected.

The planning approach being followed by WCS Canada takes its cues from the landscape itself — the way species like caribou or wolverine travel across vast areas, the way fire or insects consume and then regenerate forests across huge areas or the way nutrients are spread throughout a watershed by fish travelling hundreds of kilometres downriver. In short, we are building a picture of what it will take to keep one of Canada's most natural regions at the pinnacle of wildness.

FIRE IS AN ECOLOCIALLY IMPORTANT FORCE in the boreal forest and why we need large conservation networks that can accommodate sweeping fires or windstorms.

Dr. Hilary Cook explores an area of old spruce forest common along the shorelines of Yukon's wild rivers.

Photo, left: Hilary Cooke / WCS Canada; right, Biz Agnew / WCS Canada

KEY WILD SPECIES

For many Canadians living in southern cities, that quarter they slip into a vending machine is one of the few times they see a caribou. But caribou are an essential part of the True North and a key indicator of how well we are doing in keeping the wild alive across this vast land.

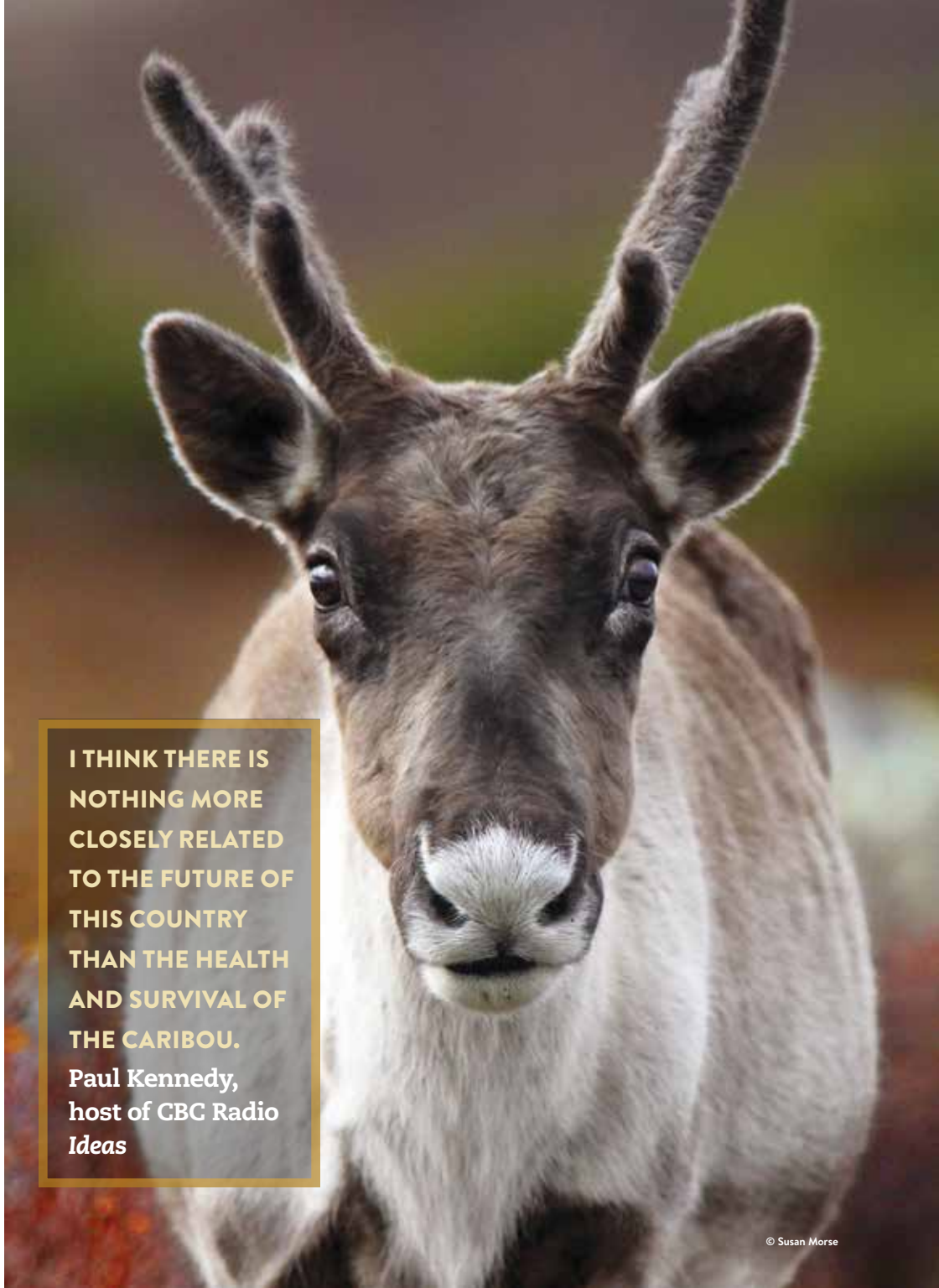
Because boreal caribou need very large areas of undisturbed old forest for their survival, their presence can tell us that the natural ecosystem in these places is still largely healthy and intact. Meanwhile, on the tundra, vast herds of caribou represent the kind of almost unimaginable natural abundance that was once a far more common phenomenon on our planet, but one that has been increasingly slipping away – whether it is the disappearance of oceans filled with cod or skies filled with passenger pigeons.

That's why WCS Canada pays a lot of attention to caribou and to finding ways to reverse their ongoing decline across Canada. A big part of the answer, we believe, lies in looking at landscapes at a caribou scale – understanding the impact of our actions over thousands of square kilometres or across whole watersheds instead of just looking at individual roads, mines, forestry operations or other development projects.

That represents a major change from our current piecemeal planning approaches, but if we adopt "caribou-centric" planning, we have a far greater chance of ensuring healthy wild landscapes where biodiversity is protected and where resource development can be brought into better balance with ecosystems and biodiversity protection.

WCS Canada President and Senior Scientist Dr. Justina Ray has helped develop recovery plans for threatened caribou and has done years of important field research on caribou and their habitat, particularly in Ontario's globally important Far North. Dr. Cheryl Chetkiewicz, meanwhile, is looking at how we can develop better environmental assessment approaches that properly weigh cumulative impacts to avoid the "death by a thousand cuts" outcome facing species like caribou today.

Together, our science is drawing a picture of what it is caribou need to survive – and how their survival affects entire ecosystems. This is critical work for ensuring these iconic animals continue to slip quietly through our northern forests or thunder across our barren grounds for generations to come.



I THINK THERE IS NOTHING MORE CLOSELY RELATED TO THE FUTURE OF THIS COUNTRY THAN THE HEALTH AND SURVIVAL OF THE CARIBOU.
Paul Kennedy, host of CBC Radio *Ideas*

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SCIENCE IN ACTION

Bats in British Columbia and Alberta are on the cusp of a major crisis. In 2016, a bat infected with a disease known as white-nose syndrome (WNS) was found just over the Canadian border in Washington State. WNS has devastated bat populations in eastern North America and now it is on Western Canada's doorstep.

WCS Canada scientist Dr. Cori Lausen is passionate about bats as well as about the need to take action to protect their key habitats and to better understand which bats can be found where across Western Canada before WNS crosses the border. She spends many of her days and nights crawling through caves or netting bats in often remote places to gather valuable knowledge about the wide diversity of bats found in Western Canada.

But Dr. Lausen also spends time talking to citizen groups and government leaders about the need to take action now to prepare for the almost inevitable arrival of WNS. For example, she has succeeded in getting the B.C. government to allocate increased resources to bat science and her work has led to increased awareness of the potential economic impact of a major decline in bat populations for agriculture, forestry and human health.

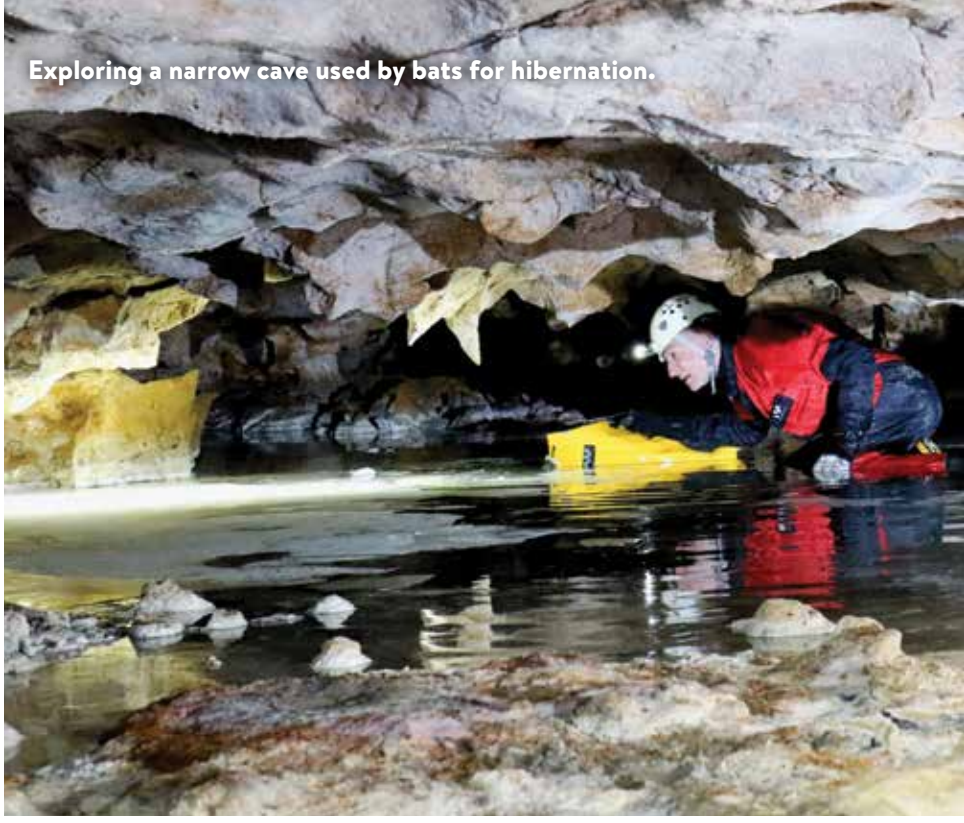
As the No. 1 nighttime consumers of insects, bats play a critical role in keeping insect populations in check — everything from spruce budworm caterpillars to the unwelcome biting guests at your summer barbecue.

That's why Dr. Lausen has also spearheaded an effort by bat scientists and conservation organizations to draft a comprehensive Bat Action Plan for B.C. that she is now encouraging the provincial government to adopt. She is also working with everyone from cavers — through the innovative BatCaver program — to the mining industry to improve bat monitoring efforts, take steps to educate cave visitors on how to avoid spreading the disease, and to keep old mines bat-friendly.

Bats with WNS are infected with a fungus that eats at their wings and forces them to burn through their precious stored winter fat long before the return of insect season. It spreads throughout hibernation sites and can kill up to 90 per cent of resident bats.

Bouncing back from the devastating impact of WNS is not going to be easy for bats. While to some, bats seem like mice with wings, our only flying mammal actually has more in common with grizzly bears, bearing only one young each year and living 20 to 40 years.

To Dr. Lausen, bats are fascinating creatures that deserve greater respect, but she'll settle for recognition that helping bats survive is vital to our own interests and something that requires urgent action.



Exploring a narrow cave used by bats for hibernation.

Bats suffering from white-nose syndrome, such as the one pictured here, burn up fat reserves during hibernation. The fungus also eats away at the bat's wings.

Photo, top: Dave Critchley; bottom, Greg Turner / Pennsylvania Game Commission

WE STAND FOR WILDLIFE

At WCS Canada, we pride ourselves on our muddy boots. We get our feet and hands dirty by doing field science that gives us firsthand insights into what is happening with wildlife and ecosystems, where conservation action is needed, and how we can reduce our footprint on the natural systems that provide us with the necessities of life, including clean water and air.

We use the insights and information gained from this work to help craft plans and policies that can help protect wildlife and wild places, and then we engage with everyone from government to industry to put these plans into action.

Our research focuses on a few specific wildlife species and wild areas, but we use it to drive broader conservation achievements by applying the lessons learned about species needs, good conservation practices and good policies to the challenge of conserving Canada's natural areas. We work on a vast canvass, but by honing in on important indicators — such as keystone species or intact areas — and applying rigorous science, we believe we can draw a picture of what needs to be done to create a more sustainable Canada.

Our supporters – large and small – make this work possible and we thank you for being a part of our work to save wildlife and wild places. Together, we stand for wildlife.

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