

# BIODIVERSITY

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## It's All About Big

In the U.S. Agency for International Development's Guide for Biodiversity Conservation, they state that conservation groups now know that "the most effective scale for planning conservation activities is **large**—at the scale of entire ecosystems, ecoregions, or ecologically functioning landscapes or seascapes."

PBI's **South America Wildlands Project** certainly fits that bill. We are assessing the current status of wildlands on the entire South American continent.

South America's immense wildlands are the heart and lungs of the planet. No continent holds more conservation potential than South America. To help prioritize the conservation opportunities that exist, PBI has been mapping wildlands and evaluating their biodiversity values, landscape context, irreplaceability and vulnerability.

We are working hand-in-hand with partners in South America. They are bringing our maps to top government ministers and councils. Awareness is growing. We have years of hard work ahead, but it is encouraging to see such early progress.

Marine ecosystems are equally important. PBI's **Harbor Porpoise Project** looks at one species, *Phocoena phocoena*, as a sentinel species, to help us understand the health of the entire Salish Sea.

This is what it takes to conserve biodiversity: powerful visions, cutting edge science, large-scale evaluation, inclusive partnerships and international cooperation. Nature knows no boundaries. Neither should we.

## Our Work Takes Us to Amazing Places

Pacific Biodiversity Institute's headquarters are in Winthrop, Washington and our research regularly takes us out into our backyard and well beyond. Here's a look at a few of our signature projects in the past few years.

**We found new rare plants in state parks.** PBI completed rare plant and vegetation surveys for more than 50 state parks in Washington and Oregon. One plant had never been seen before in the Pacific Northwest.

**PBI studied the desert.** We completed a multi-year ecological condition assessment in the Sonoran Desert for the Nature Conservancy, Bureau of Land Management and the U.S. Air Force.

**We supported salmon recovery.** PBI classified and mapped the watersheds, streams and riparian areas in the Upper Columbia River Basin to allow for effective monitoring.

**PBI helped forests and wildlife to thrive.** We charted roadless areas in the Great Lakes region, assessed habitat for the northern spotted owl in Washington State and developed a forest plan for Mount Spokane State Park. Working with citizens' groups, we improved wildfire and forest health plans on the Mount Hood National Forest.

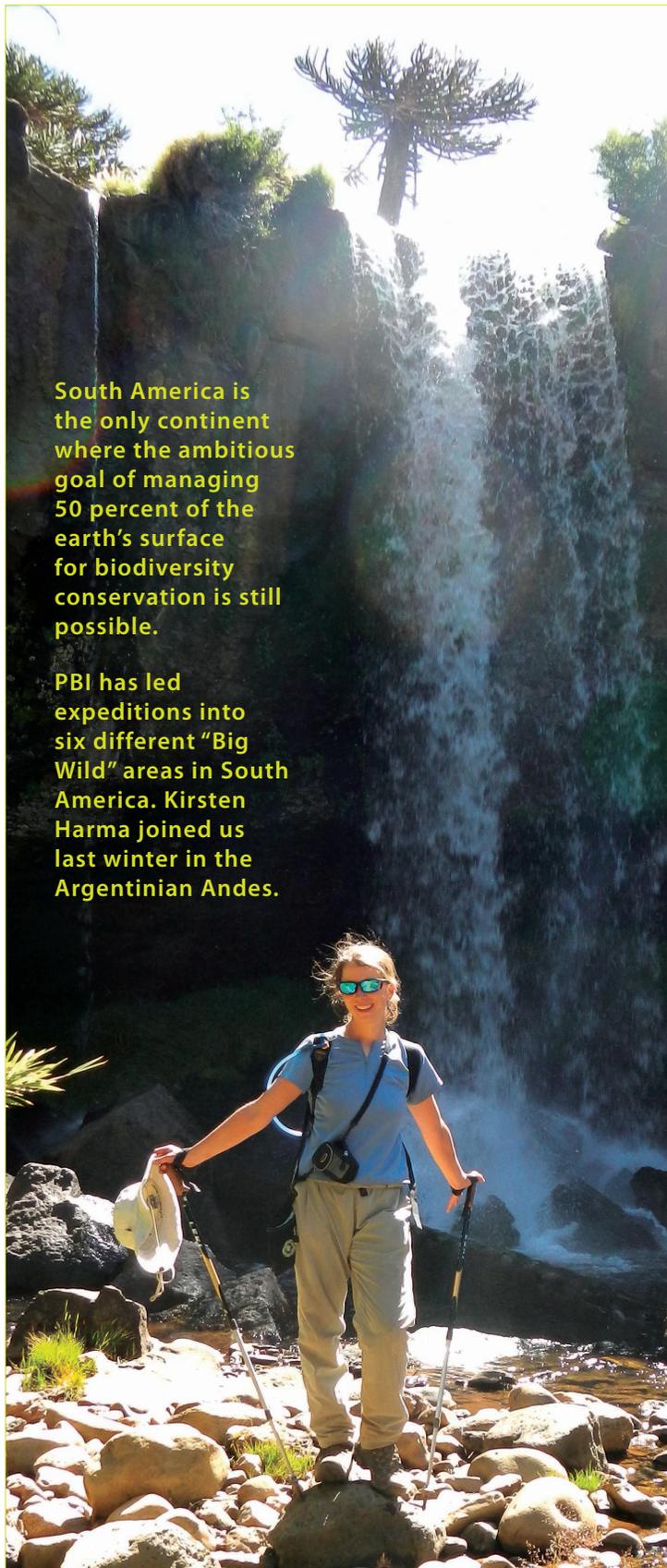
**We helped to design a UNESCO Biosphere Reserve in the Andes.** PBI provided conservation science assistance to Parques Para Chile, training staff members in habitat modeling and conservation prioritization techniques.

And **so, so much more!** For the full report, please check PBI's website.

[www.pacificbio.org](http://www.pacificbio.org)

# Exploring Biodiversity in Argentina's Big Wilds

Biologist Kirsten Harma joined PBI for the adventure of a lifetime



South America is the only continent where the ambitious goal of managing 50 percent of the earth's surface for biodiversity conservation is still possible.

PBI has led expeditions into six different "Big Wild" areas in South America. Kirsten Harma joined us last winter in the Argentinian Andes.

When PBI's Executive Director Peter Morrison first invited young biologist Kirsten Harma to join PBI on an expedition to Argentina, he described it as a chance to explore an expanse of little-known, but exceedingly beautiful terrain. She would see deserts that were surprisingly lush, ancient Araucaria forests, gentle vicuña grazing on grasses and flamingos sipping from ephemeral pools of water.

But, Peter added, this would not be merely a trek. As a participant, she would be contributing to an ambitious research effort. Their goal would be to produce a rich source of information about these unprotected wildlands and the biodiversity values that they contained. Their findings would help inform conservation initiatives at the local, national and international levels.

And, he warned, there would certainly be physical challenges. Water would be scarce in the desert; the weather could be unpredictable. Exploring "white spaces on the map" meant there would be surprises every single day. The schedule would have to be flexible.

Kirsten's reaction to all of this was, "I'm the perfect person for the job!"

Kirsten had interned with PBI in 2000, during her junior year in college, then served on the staff for a year. Peter knew her to be a solid scientist, an avid adventurer, a cheerful soul and a fluent Spanish speaker. She'd had lived and worked in Mexico, Costa Rica and Venezuela, but had never yet been to southern South America. As Kirsten says of the opportunity, "What better way to combine my two passions: Latin America and environmental conservation!"

From the very beginning, the experience lived up to Kirsten's enthusiastic hopes. "I'd just come from the Canadian Rockies and my first day was the opposite of a Canadian winter—sunny and warm and full of all the wonderful smells of a foreign land. We wandered down to a river and saw stork-like birds and ibis, and local families relaxing on the river's shoreline. I felt like this place had just been waiting for me."

After two weeks in Argentina's Neuquén Province, Peter and Kirsten met up with Canadian biologist and photographer Nick Englemann, and the trio traveled through the Sierra de Famatina. They took thousands of photographs. They collected information about the ecosystems present in each area, noting the main plant species, birds and other wildlife they encountered. They ate simple meals of sautéed vegetables and



**CAMELIDS and CACTI** PBI has collected thousands of geotagged photographs documenting the flora and fauna of South America's wildlands.

The vicuña (*Vicugna vicugna*) is one of two wild South American camelids that lives in the high alpine areas of the Andes. This relative of the llama is protected by law, just as it was under the rule of the Inca. *Photo by Sebastián Restrepo-Calle.*

Northern Argentina is a hotspot for cacti diversity. The yellow- and red-flowered cactus pictured above is *Echinopsis huascha*. This species is just a few inches tall, while another species within the *Echinopsis* genus, the cardon cacti, can reach a height of 50 feet.

bread cooked over wood fires and slept under a vast, star-filled sky. And, yes, they saw herds of vicuña and flocks of flamingos.

Two faculty members from the Universidad Nacional de Chilecito's biology department joined the team in the Famatina Valley. These biologists introduced PBI to activists looking to stop mineral exploration. The PBI team also met with the park guards responsible for protecting Laguna Brava Provincial Park and discussed mining and other threats to this area of local and global significance.

Now, PBI is hard at work translating the data collected during this trip and others into detailed scientific reports, as well as creating presentations and videos that will introduce this area to the rest of the world.

When asked what the high point of her trip was, Kirsten quipped, "I think about 15,000 feet," adding, "Wandering along the side of a nearly barren volcano and looking out at a lagoon full of pink flamingos put my head more than a little bit in the clouds."○

## CONNECT WITH PBI

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## Joining PBI's Expeditions

If you think that Kirsten's trip sounds amazing and you're ready to pack and go now ... well, you're in luck!

PBI welcomes citizen scientists to join us on these trips. Here are the expeditions we have planned for 2012 and 2013:

- **Sierra de Famatina to Ojos del Salado, mid-February to early March 2013**
- **Nevado de Cachi to Laguna Blanca, mid-March 2013**
- **Valle de Fiambala to Volcan Llullaillaco, late March to early April 2013**
- **Sierra de Zenta, mid-April 2013**

For participation details, maps and the exact dates for each expedition, please visit the PBI website, [www.pacificbio.org](http://www.pacificbio.org).

If you're not up for a 14-day expedition this year, there are other ways that you can help PBI with this study. You can:

- **Donate frequent flier miles to PBI.** We're most interested in miles on United or American. Please call us at 509.996.2490 if you have miles to share.
- **Donate to our research fund.** Perhaps the simplest, but most helpful way to support this project is to make a contribution. Find the "Support a Project" page on our website ([www.pacificbio.org](http://www.pacificbio.org)), or mail a check to Pacific Biodiversity Institute, PO Box 298, Winthrop, WA 98862.
- **Follow our progress.** Become our friend on Facebook and subscribe to our monthly e-newsletter, *PacificBio*. You can bet we'll have great photos and stories to share after each trip.

Only through the assistance of concerned individuals like you will PBI realize our end goal of helping our international conservation partners to secure long-term protection for these high value wildlands.○

*The mountain featured on page one is Nevado de Incahuasi, a 21,722-foot peak between the Argentine province of Catamarca and the Atacama Region of Chile. Unless otherwise noted, all photos by Peter Morrison.*

# Where Do Porpoises Summer?

PBI's investigative research points to seasonal trends in the harbor porpoises' range

If you've ever thought that life is full of trade-offs, here's proof.

In May, June and July, PBI's citizen scientists enjoyed balmy weather and plenty of sunshine as they scanned Burrows Pass from their bluff in Washington Park in Anacortes, but they didn't see many porpoises. In May, harbor porpoises were only spotted five percent of the time. Compare that to February, when our observers (bundled up in layers of fleece and down) spotted porpoises around 80 percent of the time.

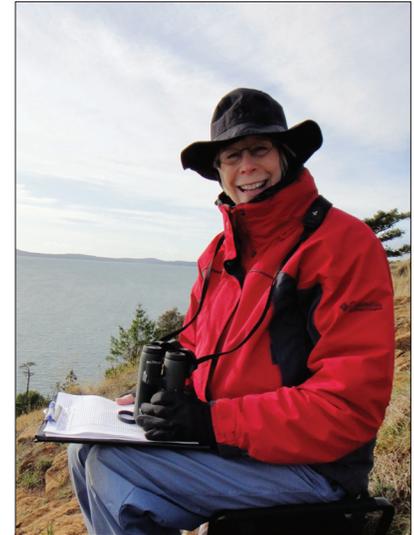
harbor porpoises as they traveled out from Fidalgo Island.

And, why do most of the porpoises leave Burrows Pass? Many possible factors are under investigation.

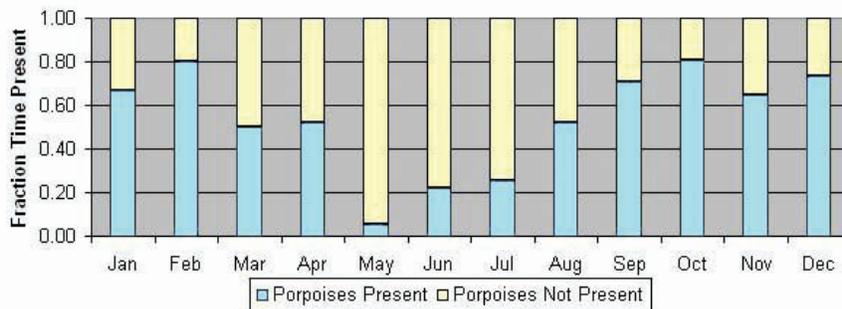
First, during summer, forage fish are thought to move through Rosario Strait, Haro Strait and other more central areas of Puget Sound. Certainly, porpoise follow the fish.

The porpoises' reduced abundance from the Burrows Pass area also

**TRADE-OFFS** Citizen scientists like Jan Hersey, below, may wear more layers when they are out in the fall and winter, but they also see more porpoises!



Fraction of Time Porpoises are Present in Burrows Pass



**Harbor porpoise sightings in Burrows Pass fell sharply in May, then began to pick up again in August.**

Thanks to having observers out for a full year, we've been able to pick out a clear seasonal trend. Now, you might be wondering, where do the porpoises go in summer? Well, that's just what we hope to find out.

This past summer, our observers undertook informal surveys to figure out where the porpoises "hang out" from May through July. PBI's citizen scientists walked along shoreline paths from Deception Pass to the north end of Guemes Island, jotting down observations that will help us learn how often harbor porpoises frequent different areas during the summer months.

We also connected with boaters and kayakers who kept an eye out for

corresponds with the months when mother harbor porpoises are thought to calve. This is a particularly vulnerable time for a porpoise. If the weather or outside activities churn up the water and separate a mother from her calf, the consequences can be serious. The agency officials charged with protecting this species would certainly benefit from knowing where the harbor porpoises go to calve.

Just as the Harbor Porpoise Project is beginning to yield answers, it keeps pointing out that there are more questions to ask. It's an exciting exploration and PBI is thrilled to have the help of dozens of citizen scientists in the Anacortes area as we dive deeper into this topic.○

## SUPPORT PBI's CITIZEN SCIENCE

For the Harbor Porpoise Project, we correlate the visual observations of our citizen scientists with data recorded by acoustic monitors underwater.

You can support our efforts to engage the community of Anacortes in our porpoise monitoring project by making a year-end gift to Pacific Biodiversity Institute.

You can donate online at [www.pacificbio.org](http://www.pacificbio.org) or mail a check to Pacific Biodiversity Institute, PO Box 298, Winthrop, WA 98862.