

# Pacific Biodiversity Institute

## Project Highlights for 2011



The Pacific Biodiversity Institute (PBI) combines innovative scientific research, educational opportunities and technical support to inform conservation efforts and ensure that our rich biological heritage endures through the next century.

PBI's scientists and volunteers focus on biodiversity hot spots, critical wildland areas and protection of imperiled species. Our approach integrates research, support for conservation organizations, education and outreach efforts that are related to these focus areas. Biodiversity and ecology are – by definition – the study and understanding of the complexity and the vast interconnectedness of nature. The best solutions to maintaining our rich biological heritage will mirror this complexity and PBI is working to bring these solutions to the forefront of the conversation.

## Wildlands and Biodiversity

Wildlands are places where ecosystems are still characterized by natural processes and where native biodiversity finds its fullest expression.

**South America is Biota Maxima!** The wildlands of South America contain the most important reservoir of biodiversity on the Earth. In 2010, PBI began a multi-year initiative to systematically map and describe the biodiversity of the wildlands of this continent. PBI scientists, volunteers and local conservation partners are engaged in wildland research expeditions and use advanced spatial analysis techniques, high resolution satellite imagery, and massive amounts of data that build on two decades of expertise that PBI gained in North America.

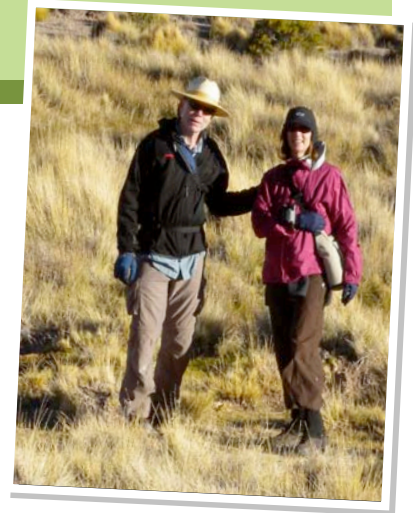


PBI's work in South America concentrates on providing the information and tools necessary for our partner organizations to be most effective in their local conservation efforts. The first step is creating a continental baseline to describe the wildland areas and assess their contribution to regional and global biodiversity. PBI's initial mapping has identified many spectacular gems that are unmatched in the world. Despite what you hear on the news about deforestation and habitat loss, **South America still contains mind-bogglingly vast wild areas brimming with life.** We have just identified and mapped one area in western

Amazon - Amazona Muchisimo Grande. This one vast block of intact tropical forest, mountains, rivers and wetlands spans parts of 5 countries. **Can you imagine a wild area of 330 million hectares?** That's about the size of the western USA. And that is not all; we have identified over 150 other BIG WILD areas throughout South America covering over 1 million hectares each. There are only 3 areas that large remaining in the USA's lower 48 states. Immense conservation opportunities still abound in South America, yet they are vanishing quickly. PBI has joined the urgent fight to protect as much as possible before it is gone forever.



We are providing information and inspiration to local, national and international partners. With these partners and your help we can insure that this most important biodiversity reservoir endures. The truth is that the future of mankind depends on recognizing this need and acting quickly. If these BIG WILD areas disappear, our future and the future of the many other beings that share this beautiful planet with us will be very bleak. For more information about this project, please go to our website: [http://www.pacificbio.org/initiatives/wildlands\\_south\\_america.html](http://www.pacificbio.org/initiatives/wildlands_south_america.html) And consider joining our scientists and local conservation partners on one of our expeditions into the BIG WILD of South America this next year.



**Washington Wildlands, Our Beautiful Home:** Our diverse wildlands are one of the most precious dimensions of life here in the Pacific Northwest. PBI is working on a major update of our previous research, which maps, describes and evaluates biodiversity values and conservation opportunities of the diverse wildlands that still exist. We include the entire landscape: forests, mountains, shrub-steppe, wetlands, rivers, coastal areas, deserts, etc. and all ownerships: federal, tribal, state, county, city, and private lands. We must remember that **nature has no borders.**

This comprehensive reassessment benefits from our many years of intimate experience studying this region's landscape and biodiversity. New data, advanced technology, accuracy assessment, status checking and intensive review by experts assures that conservationists and resource managers have **the most complete and current data** on the remaining wildlands and their biodiversity. Help us protect these **remaining wild biodiversity gems.** For more information visit: [http://www.pacificbio.org/initiatives/wildlands\\_washington\\_state.htm](http://www.pacificbio.org/initiatives/wildlands_washington_state.htm)

## Imperiled Species

Throughout the world, many animal and plant populations are declining at unusually high rates. There is a global call to action to protect both threatened and healthy populations. Species decline and extinction is not only a concern in far-off lands. Many once-plentiful species from our own backyard are impacted by a degraded environment and loss of habitat. Many species in Washington State that once symbolized this region are now at the brink of extinction. Just as the web of life is interconnected, our own quality of life is also connected by how we care for the myriad species that share this place we call home. As a fundamental part of our mission, PBI is deeply involved in research, conservation and education tied to imperiled species.

In the last two years, PBI has continued to make significant contributions to the conservation of rare plant and animal species. We are engaged in two projects that are providing critical information on the population and distribution of imperiled wildlife species in Washington State.





These projects are largely powered by citizen science volunteers, who learn about ecology and conservation biology and are trained in the techniques of field observation, map reading, GPS technology and data collection. They also learn the rigorous scientific standards applied to all of PBI's work.

**Harbor Porpoises in the Puget Sound:** The harbor porpoise was once very abundant. In the 1990's, the local newspapers reported the porpoise was largely gone. To aid in its conservation and recovery, PBI is using its scientific expertise

to test and deploy the latest technology, underwater passive acoustic monitors, to study the population trends of this shy marine mammal. Dedicated citizen scientists, working with PBI in the Anacortes area, have supported this effort with many hours of land-based observations from the bluffs overlooking Burrows Pass to help us gather information that will lead to better protection of the porpoise. These observations add another important dimension to the porpoise acoustic data. The involvement of citizen scientists has created a core of knowledgeable lay people, who are enthusiastic about collecting critical information about the presence, abundance and behavior of this marine mammal. As a result, they are now able to provide input to government programs geared toward management of this porpoise. More information about this project and volunteer opportunities is on PBI's website:

[http://www.pacificbio.org/initiatives/harbor\\_porpoise.html](http://www.pacificbio.org/initiatives/harbor_porpoise.html)

**Western Gray Squirrels in the Methow Valley:** The western gray squirrel was also once abundant in Washington. Now it is a state listed threatened species. PBI has been conducting a multi-year research and education effort focused on the western gray squirrel population in the North Cascades Ecosystem. The Methow Valley is one of the last strongholds for this imperiled species and better knowledge about its distribution and abundance is needed to help insure its survival. Our citizen science research effort has been powered by over 40 volunteers and two dedicated conservation science interns over the last two years. Their fieldwork and PBI's analysis helps the Washington Department of Fish and Wildlife, the US Forest Service and other conservation organizations better protect this state threatened species. More information about this project and volunteer and internship opportunities is on our website: [www.pacificbio.org/initiatives/wgs/gray\\_squirrel.html](http://www.pacificbio.org/initiatives/wgs/gray_squirrel.html)



## Education Programs

### Conservation Science Internships

PBI continues a **highly successful** Conservation Science Internship Program, where young scientists have an opportunity to work with our staff and volunteers on projects that make a significant difference in the world of conservation. Now in its 13<sup>th</sup> year, we have contributed to the training of **51 conservation science leaders**. For more information about our internships visit our website: [http://www.pacificbio.org/jobs\\_interns/interns\\_about.html](http://www.pacificbio.org/jobs_interns/interns_about.html)

**Dissemination of reports, public presentations, the media and the internet.**

PBI scientists continue to give public presentations of our work on various initiatives at a variety of forums. This included several public presentations and workshops on the western gray squirrel and the harbor porpoise. We gave a presentation about wildlands and biodiversity at the Instituto Ecologia Regional, Argentina. Lastly, but perhaps most importantly, PBI continues to freely provide all our research publications via our website.

**Many people around the world rely on this information resource.** For more information visit our website:

<http://www.pacificbio.org/publications.html>



## Science and Technical Support of Conservation

PBI provides scientific and technical support to other non-profit conservation organizations and governmental agencies in the USA and abroad. PBI provided Oregon State Parks with advanced spatial analysis, GIS modeling and mapping expertise in an area with complex vegetation patterns and land use history in eastern Oregon. We conducted botanical and habitat surveys (and related analysis and reporting) for a portion of Mt. Spokane State Park. Our scientists provided expertise to Western Watershed Project's efforts to protect the very significant biodiversity resources of Arizona's Sonoran Desert from excessive livestock grazing. We provided assistance to conservation efforts engaged in protection of the North Cascades through production of a series of exhibit quality maps and development of a state-of-the-art interactive web map that allows people to explore the North Cascades, view georeferenced photographs and obtain information about special conservation opportunities. We helped ProYungas, one the best conservation organizations in Argentina, gain advanced GIS mapping capabilities that greatly aid their efforts to protect the incredible biodiversity resources of northern Argentina.



The Pacific Biodiversity Institute  
517 Lufkin Lane  
Winthrop, WA98862  
509-996-2490  
[www.pacificbio.org](http://www.pacificbio.org)