

prbo

PRBO Conservation Science



2010–11 Annual Report



Securing Our Future

From the original PRBO brochure, 1965: *“A full-time, professional non-game bird banding station, the first of its kind in North America, is now operating.... A resident biologist, assisted by qualified volunteers, is carrying out a continuous banding and trapping program.... [We depend] on memberships and private contributions for support. Membership \$5 annually.”*

Forty-six years ago, a flock of dedicated volunteers and a single staff biologist launched PRBO. Today, with 140 staff and seasonal scientists, PRBO is better positioned than ever to tackle the urgent environmental challenges of our time.

Changes in climate, land use and the ocean continue to accelerate, demanding new approaches to conservation. Building on more than four decades of bird ecology expertise and accomplishments, PRBO is a recognized leader at the forefront of applied science. We are catalyzing effective responses to the uncertainties and stresses facing wildlife and human communities.

PRBO continues to play leadership roles in a wide range of partnerships—

regional to international—addressing environmental change.

This past year, we regrouped our staff to make the most of our capacity, infusing our strategic efforts with greater focus, efficiencies and vitality. Deploying PRBO’s greatest assets—our acclaimed scientific capacity and hands-on engagement—we have grown priority programs and launched new ones to achieve our vital goals.

In 2010, PRBO’s 20,000-square-foot Petaluma headquarters was completely paid off, ahead of schedule. We are tremendously grateful to our supporters and, in particular, an anonymous donor whose vision and dedication made this possible.

PRBO’s Board of Directors continued to provide inspirational guidance and support. We offer our gratitude to retiring members Lang Stevenson and Mark Reynolds, PhD, for their outstanding service and passion for conservation. We are thrilled to welcome new board members Ana Galutera, Megan Colwell, Rob Shwartz and Jeffrey Kimball. We are also deeply appreciative of Immediate Past Chair Carolyn Johnson for her remarkable leadership.

Today, 46 years after PRBO’s founding, we are leveraging our extraordinary scientific expertise to improve conservation outcomes in ways we never imagined would be needed or possible in 1965.

So much has changed, yet one thing has not: we still rely on the support of our members and partners! Thanks to you, PRBO scientists continue to advance our ability to protect species as well as the basic processes of nature that provide fresh air, clean water, food and much more to us all. We are deeply grateful for your continued generosity that makes our invaluable work possible.

Ellie M. Cohen
President and Chief Executive Officer

Ed Sarti
Chair, Board of Directors

2010–11 Findings and Accomplishments



Changing sea levels and tidal marsh habitats. PRBO completed a state-of-the-art online mapping tool, showing how San Francisco Bay tidal marshes and birds may respond to up to five feet of sea level rise as well as changes in sedimentation and salinity under a range of future scenarios. As much as 92% of current marshlands could be lost by 2110. Tidal marsh bird populations are also projected to decline due to the conversion of high- and mid-marsh habitat to low-marsh and mudflats. PRBO’s Sea Level Rise (SLR) Tool (www.prbo.org/sfbayslr), developed with numerous partners, makes this complex information readily accessible for wetland managers, restoration planners, policymakers, and the public.

The promise of grazed lands.

PRBO launched a new initiative targeting grazing lands to restore watersheds and reduce impacts of drought on birds, other wildlife, and human communities in the West. Grazing cattle in grasslands, when appropriately managed, can significantly enhance biodiversity, water storage, and carbon sequestration. To lead this effort, Wendell Gilgert joined PRBO’s staff after more than

three decades of distinguished service at the Natural Resources Conservation Service. Our goal: to optimize the benefits of working grasslands to ecosystems and human communities.

Ocean in flux. In the rich upwelling zone off the Central California coast, new knowledge about the ever-changing marine ecosystem is emerging from almost eight continuous years of collaborative research by PRBO, Cordell Bank National Marine Sanctuary (NMS), and the Gulf of the Farallones NMS—the “ACCESS” program (www.accessoceans.org). Findings in 2010 included near-record abundance of shrimp-like krill and animals that feed on krill, such as

continued on page 3



Above: Tidal marshland in San Francisco Bay. Beth Huning/www.bethhuning.com

Right: Cattle graze in the coastal hills of TomKat Ranch (see page 4). William Milliot

PRBO is actively addressing accelerating changes in our climate, land use, and oceans. PRBO's foresight and leadership set a standard for how conservation science, and ultimately society, should begin adapting to a future with unprecedented ecosystem change.

Terry Root, PhD, Stanford University; Intergovernmental Panel on Climate Change; PRBO Board of Directors and Science Advisory Committee



ACCESS team members on a research cruise near the Farallon Islands.

Dru Devlin/NOAA National Marine Sanctuaries.

massive blue whales. At the Farallon National Wildlife Refuge, krill-dependent Cassin's Auklets experienced the highest reproductive success ever recorded, in contrast to breeding failures in 2005–06. With extreme short-term swings in ocean productivity expected to increase in a rapidly changing climate, PRBO and partners are now identifying indicators for monitoring change, including tracking ocean acidification. Signaling the value of our science, Dr. Jane Lubchenco, the head of NOAA (National Oceanic and

Atmospheric Administration), was a special guest aboard a June 2010 cruise.

Early warning: science for adaptation to change. PRBO initiated a multi-agency monitoring network, from the Sierras to the sea, to identify the effects of changes in land use, climate, and the ocean on wildlife and ecosystems and to guide adaptation. We identified locations where the greatest changes in climate and bird communities are predicted to occur. We are now selecting monitoring sites, identifying protocols, and designing an online data management system. The Environmental Change Network (ECN) will ultimately be a multi-disciplinary network of long-term, standardized monitoring stations that gather and share information and solutions.

Expanding across the Sierras. In 2010, 22 PRBO field biologists monitored birds and habitat across three million acres of U.S. Forest Service land in the Sierra Nevada. We completed an interactive on-line tool, the Sierra Nevada Avian Monitoring Information Network, making a decade of bird and ecosystem data easily accessible to our land management partners. PRBO expanded collaborations across the northern

Sierra to guide meadow acquisition and restoration—including our first 300-acre private meadow restoration. Also in 2010, a PRBO post-fire habitat study provided the Forest Service and private timber companies with recommendations to improve the management of this often underappreciated but bird-rich habitat.

Synergies for shorebirds. PRBO scientists are guiding conservation across the agricultural landscape in California's Central Valley. Working with The Nature Conservancy and Audubon California, through our Migratory Bird Conservation Partnership, we engaged eight rice growers who, together, own more than 35,000 acres. We tested practices that enhance rice farms for Pacific Flyway migratory shorebirds and waterfowl in fall and winter. We found that even simple, well-timed practices to create more shallow-water habitats produce significant benefits to waterbirds. In the San Joaquin Valley, we began work with nine landowners to design and implement habitat restoration and wildlife-friendly agriculture projects.

Reducing threats to ocean food webs. PRBO identified marine wildlife foraging "hotspots" throughout the vast California



Brandt's Cormorants.
Annie Schmidt

In our cooperative work to survey the California Current ecosystem, PRBO's data analysis and interpretation translates scientific information for management, supporting decisions that protect the sanctuary and ocean wildlife.

Dan Howard, Manager, Cordell Bank National Marine Sanctuary

Current, from Canada to Mexico. We found that most hotspots occur within National Marine Sanctuary boundaries, but some remain unprotected—around the southern Channel Islands and from northern California to central Oregon. Next steps include integrating these food-web hotspots with major human threats to ocean health, as identified by our partners, to reduce these negative pressures and provide greater ability for marine wildlife to adapt to climate change.

Assessing marine reserves. PRBO seabird monitoring is in demand to help assess the effectiveness of a new state network of marine protected areas (MPA) off California's coast. Using protocols from our long-term study of the Vandenberg State Marine Reserve, we have initiated baseline monitoring programs at five newly established MPAs from Shell Beach in central California to Bodega Bay in the north. Focusing on the use of nearshore habitats by breeding and nonbreeding seabirds, and on human disturbance, we will help managers determine if existing MPAs adequately protect these populations and, if not, where additional protection can be provided.



Adélie Penguin on an ice floe. Viola Toniolo

Earth's last sea-ice ecosystem. Antarctica's Ross Sea, home to PRBO's ongoing Adélie Penguin research since 1972, is the last near-pristine marine ecosystem on Earth. Our recent collaborative findings revealed a new threat facing Adélies, which require both sea ice and daylight for finding food and avoiding predators. Climate change is causing pack ice to retreat poleward where darkness in winter may hinder the penguins' survival. To reduce other pressures on this vital ecosystem, PRBO also helped assess the impacts of the "Chilean sea bass" (Antarctic toothfish) fishery, and we are part of a broad international collaboration working to establish marine protected status for the Ross Sea.

Ranching for our future. The TomKat Ranch Field Station, at a 2,000-acre grass-fed beef ranch in coastal San Mateo County, is up and running—with bird and other ecological monitoring and educational outreach—in partnership with the TomKat Ranch Educational Foundation and CuriOdyssey Museum. At the 5,630-acre Jenner Headlands preserve, we are gathering data on grassland birds to assist the Sonoma Land Trust in shaping sound management that includes grazing cattle.

Conservation science across borders. PRBO led workshops on analyzing monitoring data for biologists in the Middle East in early 2011, in Israel and Jordan, sponsored by the U.S. Forest Service International Program. PRBO's Palomarin Field Station hosted interns from El Salvador and Bhutan.



Rinchen Singye, from Bhutan. Renée Corner

PRBO is making remarkable, positive impacts on major conservation initiatives through innovative science.

Faucett Catalyst Fund

Siting solar installations. PRBO participated on the Independent Science Advisory group to California's Desert Renewable Energy Conservation Plan. Recommendations prioritized siting renewable energy in already disturbed desert lands.

STRAW nests at PRBO. The award-winning Students and Teachers Restoring a Watershed (STRAW) program moved its home to PRBO this spring. STRAW engages more than 3,000 K–12 students to complete over 30 restorations each year. Since its inception in the 1990s, the program has restored more than 20 miles of riparian habitat. STRAW restoration experts and other PRBO scientists recently began testing climate-smart riparian restoration designs that might enhance resilience to extreme events such as floods, droughts, and heat waves.



Restoring riparian. PRBO's recommendations from our 12-year study of bird response to riparian restoration along Clear Creek in Shasta County, where over six miles of this salmon stream have been restored, continue to guide creation of high-quality riparian bird habitat.

Tracking songbird migration. Two species that faithfully return to our Palomarin Field Station—Golden-crowned Sparrows in winter and Swainson's Thrushes in summer—were fitted with tiny devices that record their routes and destinations, to improve conservation of migratory songbirds. Data recovered from returning sparrows revealed that they nested along the coast, not interior, of Alaska.

Citizen science. PRBO's new Pacific Flyway Shorebird Survey trained citizen scientists with Audubon California. They have collected data on shorebird use of wetlands and flooded fallow fields to aid our understanding of the Central Valley's importance to wintering shorebird populations.

Left: School children help create riparian habitat.

STRAW staff



Yellow Warbler in riparian habitat.

Tom Grey/www.tgreybirds.com

Educating the next generation. PRBO's Seabird Education Awareness (SEA) program with NOAA National Marine Sanctuaries introduced elementary school students to seabird biology with a focus on the Farallon Islands. With Cornell Laboratory of Ornithology and other partners, we are helping develop a successful sixth-grade curriculum, Bird Sleuth, for high-school students. We continued working with bilingual students in the Canal neighborhood of San Rafael, and we hosted many young ornithologists at the Palomarin Field Station and at PRBO's headquarters on Shollenberger Marsh.

21st-century partnerships. PRBO increased its active engagement in partnerships addressing wildlife, ecosystems, and climate change in 2010—including the Landscape Conservation Cooperatives (LCC) formed by the U.S. Department of the Interior; the Bay Area Ecosystems Climate Change Consortium (www.BAECCLC.org) co-founded by PRBO; and the Climate-Smart Conservation Expert Workgroup convened by the National Wildlife Federation.

Find more information
on all of PRBO's work at
www.prbo.org.

In my 17 years of teaching, I have never been to a more valuable and meaningful training. • Thank you for a professional development model that sees us as a community of intelligent, curious, compassionate professionals.

Two middle-school teachers evaluating their training with STRAW (Students and Teachers Restoring a Watershed)

Invaluable Long-Term Data Sets.

PRBO's ongoing data collection encompasses uncommon time spans and provides the foundation for our innovative conservation efforts. We are grateful to our partners who make this possible (see back page). Some 2010–11 landmarks:

- Farallon Islands – 41 years
- Bolinas Lagoon – 40 years
- Palomarin Field Station – 39 years
- Coastal Snowy Plovers – 33 years
- Ross Island, Antarctica – 28 years
- Central Valley riparian – 18 years
- Alcatraz Island – 18 years
- Sierra Nevada – 15 years
- San Francisco Bay tidal marsh – 15 years
- Northern Spotted Owls – 13 years
- Vandenberg A.F.B. – 12 years
- Alameda Least Terns – 12 years
- California/Arizona deserts – 9 years
- Gulf of the Farallones – 7 years

Species of concern. Yellow-billed

Cuckoos remained elusive and in very low numbers in year one of Sacramento Valley riparian surveys. We identified



crucial habitats used by the Long-billed Curlew across the West, while finding that

A Snowy Plover male broods its chick. Jenny Erbes

Willow Flycatchers nested successfully where habitat impacts have been limited. The outlook for the world's largest Ashy Storm-petrel population on the Farallones brightened when the U.S. Fish and Wildlife Service took another step toward eradicating introduced mice and thus reducing numbers of predatory owls on the island. Snowy Plovers continue to respond to the recovery program PRBO co-leads, especially in the Monterey Bay area, where numerous chicks fledge each summer despite losses to predators. We assessed the status of Northern Spotted Owls in forested canyons of western Marin County and of endangered California Clapper Rails and threatened Black Rails in San Francisco Bay marshes.

Awards and appointments. Geoffrey Geupel's lifetime achievements were recognized with the national Bird Conservation Award from Partners In Flight. Ellie M. Cohen was invited to the National Wildlife Federation Climate-Smart Conservation Experts Workgroup. John Wiens, PhD, was appointed to the



TomKat Ranch, site of PRBO's new field station (see page 4).

William Milliot

Delta Stewardship Council's Independent Science Board to advise on California's Sacramento-San Joaquin Delta Plan, which will guide the management of its water and environment. Matt Reiter, PhD, became the U.S. co-chair of the Program for Regional and International Shorebird Monitoring. Jaime Jahncke, PhD, was invited to the Gulf of the Farallones National Marine Sanctuary Advisory Council. Leo Salas, PhD, won a Wings Across The Americas award for international cooperation from the U.S. Forest Service. Gary Page and Lynne Stenzel were honored by the Friends of PRBO for 40 years of exceptional shorebird research and conservation. Farallon biologists Russ Bradley and Pete Warzybok won the 2011 Outstanding Staff Award from PRBO.



Yellow-billed Cuckoo.

Larry Meade/Creative Commons

Affiliations

Organizations in which PRBO is an invited or elected member

include: Almanor Basin Watershed Advisory Committee, American Bird Conservancy, Avian Knowledge Alliance, Avian Knowledge Network, Bank Swallow Technical Advisory Committee, Bay Area Ecosystems Climate Change Consortium, Bay Area Watershed Network, Bay Delta Conservation Plan Science Advisory Panel, Bay-Delta Science Consortium, Bird Conservation Alliance, Bird Conservation Funding Coalition, Bird Education Alliance for Conservation, Bolinas Lagoon Technical Advisory Committee, California Association of Winegrape Growers, California Landscape Conservation Cooperative, California Partners in Flight, California State Parks Vehicular Recreation Areas (OHV) Review Panel, California Rangeland Coalition Research Committee, Canada-U.S. Shorebird Monitoring and Assessment Committee, Central Valley Bird Club, Central Valley Flood Management Program, Central Valley Joint Venture, Cordell Bank Sanctuary Advisory Council, Cosumnes Research Group, County of Marin Wind Energy Advisory Group, Environmental Education Council of Marin, Information Center for the Environment (U.C. Davis), Intermountain West Joint Venture-California Steering Committee, Laguna de Santa Rosa Biodiversity Advisory Committee, Landbird Monitoring Network of the Americas, Migratory Bird Conservation Partnership, Mono Basin Science Council, Mono Lake Outdoor Education Center Advisory Board, North American Banding Council, North American Bird Conservation Initiative—U.S. Committee, Oiled Wildlife Care Network, Pacific Coast Ocean Observing System (NOAA), Pacific Coast Joint Venture, Partners in Flight Research and Implementation committees, Petaluma Wetlands Alliance, Riparian Habitat Joint Venture, Sacramento River Riparian Sanctuary Technical Advisory Committee, San Francisco Bay Bird Observatory – Science Advisory Committee, San Francisco Bay Joint Venture, San Francisco Bay Upland Habitat Goals Steering Committee, San Francisco Bay Wetlands Regional Monitoring Program, San Francisco Science Collaborative, San Joaquin River Partnership, Shorebird Research Group of the Americas, Sierra Nevada Willow Flycatcher Working Group, Society for Northwest Vertebrate Biology, Sonoran Joint Venture, Swainson's Hawk Technical Advisory Committee, Thank You Ocean, Tomales Bay Watershed Council, Tricolored Blackbird Working Group, USFWS Birder's Team, U.S. Shorebird Conservation Council, Waterbirds of the Americas, Western Bird Banding Association, Western Hemisphere Shorebird Group, Western Snowy Plover Working Groups—Regions 4 and 5, Yellow-billed Cuckoo Working Group.

PRBO is deeply grateful to our individual, foundation and corporate donors.

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Tern Society members are individuals who have notified us that PRBO is included in their estates.



Khara Strum scans a rice field in the Sacramento Valley in PRBO's Pacific Flyway Shorebird Survey. Ryan DiGaudio

PRBO reached a major milestone this past year—we own our Petaluma headquarters outright! Thanks so very much to all of our generous supporters and especially to an anonymous donor who paid off the balance of our building loan in November 2010!



Ellie Cohen, PRBO President and CEO.

2010–11 Friends of PRBO

Gifts received between April 1, 2010, and March 31, 2011.

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Margaret Van Camp and Carol Patterson
Craig and Connie Weatherup

Farallon Patrol

The volunteer skippers of the Farallon Patrol provide year-round boat transportation for PRBO and U.S. Fish and Wildlife Service to our field station on Southeast Farallon Island. We thank all Patrol members, including the following skippers who served actively this past year.

Keith Sedwick, *Commodore*
Laurie Chaikin
Henry Corning
Paul Dines
Al diVittorio
Jim Ellis
James Fryer
Jody Harris
Rob MacFarlane
Bernard Quante
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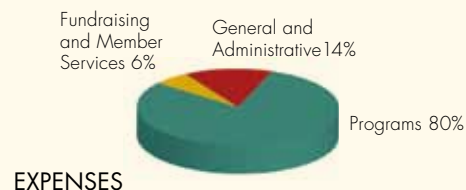
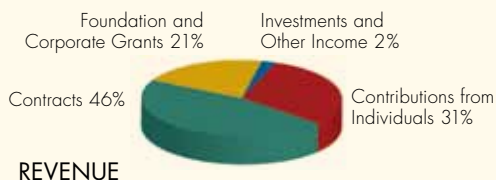
Long-billed Curlews. Tom Grey

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2010-11 Financials

Statement of Financial Position as of March 31, 2011 and 2010

	2011	2010
Assets		
Current assets:		
Cash and cash equivalents	\$ 1,383,735	\$ 1,736,612
Certificates of deposit	862,818	1,431,444
Contracts receivable	1,847,928	1,308,975
Contributions, grants and bequest receivable	361,500	216,500
Prepaid expenses and other current assets	86,506	82,234
Total current assets	<u>4,542,487</u>	<u>4,775,765</u>
Non-current assets:		
Endowment fund	134,609	120,815
Property, net of accumulated depreciation	<u>5,606,006</u>	<u>5,775,926</u>
Total non-current assets	5,740,615	5,896,741
Total Assets	<u>10,283,102</u>	<u>10,672,506</u>
Liabilities and Net Assets		
Current liabilities:		
Accounts payable	360,346	239,530
Accrued vacation	219,474	204,424
Deferred revenue	358,953	381,156
Current portion of note payable*	—	471,553
Total current liabilities	<u>938,773</u>	<u>1,296,663</u>
Note payable*	—	485,426
Total liabilities	<u>938,773</u>	<u>1,782,089</u>
Net assets:		
Unrestricted		
Board-designated funds	2,066,276	2,218,069
Building and other	5,787,133	4,882,424
Total unrestricted	<u>7,853,409</u>	<u>7,100,493</u>
Temporarily restricted	1,490,920	1,789,924
Total Net Assets	<u>9,344,329</u>	<u>8,890,417</u>
Total Liabilities and Net Assets	<u>\$10,283,102</u>	<u>\$10,672,506</u>

Statement of Activities for the Years Ended March 31, 2011 and 2010

	2011	2010
Changes in unrestricted net assets:		
Revenue and Support:		
Government and other contracts	\$ 3,671,753	\$ 2,839,447
Contributions from individuals	468,039	418,670
Foundation and corporate grants	27,235	7,708
Investment and other income	133,962	151,125
Net assets released from restrictions:		
Contributions from individuals	1,952,665	1,429,201
Foundation and corporate grants	<u>1,662,614</u>	<u>1,334,794</u>
Total revenue and support	<u>7,916,268</u>	<u>6,180,945</u>
Expenses:		
Program services	5,676,029	4,983,605
General and administrative	1,037,146	1,021,204
Fundraising and member services	<u>450,177</u>	<u>430,128</u>
Total expenses	<u>7,163,352</u>	<u>6,434,937</u>
Unrestricted revenue & support over expenses*	752,916	(253,992)
Changes in net assets restricted for a future period:		
Contracts and other income	2,775	17,818
Contributions from individuals	1,810,723	1,186,293
Foundation and corporate grants	1,502,777	948,297
Net assets released from restrictions	<u>(3,615,279)</u>	<u>(2,763,995)</u>
Increase in temporarily restricted net assets	(299,044)	(611,587)
Change in net assets	453,912	(865,579)
Net assets at beginning of year	<u>8,890,417</u>	<u>9,755,996</u>
Net assets at end of year	<u>\$ 9,344,329</u>	<u>\$ 8,890,417</u>

*NOTE: PRBO was fortunate to receive a major gift in 2011 that paid off the remaining note payable for PRBO's headquarters building.

The condensed financial statements presented above reflect PRBO's complete set of financial statements for 2010 and 2011 which have been audited by Perotti &

Carrade, Certified Public Accountants, and on which they have rendered an unqualified opinion dated July 5, 2011. The organization's complete audited financial statements

and the independent auditor's report can be found at www.prbo.org/2010auditreport.

Laurie Talcott
Chief Financial Officer



PRBO Conservation Science



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American Bird Conservancy

American Valley Environmental

Ardea Consulting

Association of Bay Area

Governments

AT&T Labs- Research

Audubon California

Audubon Canyon Ranch

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California Academy of Sciences

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Recreation

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Resources

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California State Universities

Canal Family Support Program

Center for Ecosystem

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Central Valley Joint Venture

Central Valley private

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CH2M Hill, Inc.

Cordell Bank National Marine

Sanctuary

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Conservation District

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Las Cruces Biological Station

Literacy for Environmental

Justice

Los Angeles Department of

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Marin County Dept. of Parks &

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Marine Fish Conservation

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Conservation

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USDA Natural Resource

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Districts

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campuses

University of Illinois

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Wak Ka Koneke Indigenous

Association

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Vancouver

Western Shasta Resource

Conservation District

Wetlands & Water Resources

World Wildlife Fund

Front cover photo: Willow Flycatcher chick. This species is a sensitive indicator of meadow and streamside habitat quality for PRBO's Sierra Nevada work (see page 3). The bird in this photo was banded by scientists at the Southern Sierra Research Station. Bob Steele/WIREO