

prbo

PRBO Conservation Science



Black-tailed Gnatcatcher adult and hungry young—Sonoran Desert birds impacted by climate extremes.

2006–07 Annual Report

Ellie M. Cohen and Stefan Williams in the foyer of PRBO's San Francisco Bay Research Center and headquarters.

PRBO photo



Building the Foundation for the Next Decade

Pressures on our natural world are greater now than ever before in modern human history. Rapidly changing climate, disappearing habitats, and collapsing food webs threaten wildlife and ecosystems that we all rely on. In fact, about one-quarter of all known species are predicted to become extinct by 2050. These profound threats require a profound response from PRBO.

With the expert consulting services of the Stanford Alumni Consulting Team, over the past year we developed a blueprint for the next decade—to be a world leader in providing bird and ecological data, analyses, and applications, addressing the urgent issues of our time.

Birds are excellent indicators of environmental health, and through our studies PRBO is uniquely positioned to continue bringing the highest quality science to guide conservation efforts, helping wildlife and human life adapt to rapid global changes.

This year's annual report highlights our findings. Foremost among them: seabirds and songbirds are warning us about the impacts of global warming as we observe reduced breeding success and, in some cases, no attempts to breed at all.

Our bird studies are also guiding very significant successes, as evidenced by

increases in bird diversity and abundance at riparian sites, restored according to PRBO's recommendations, in California's Great Central Valley.

This past year we initiated a new international partnership, funded by the David and Lucile Packard Foundation, to study shorebird migration across the globe using satellite telemetry. We have gained new insights into shorebird use of stopover habitats, potential impacts of changing wind patterns due to global warming, and approaches to prioritizing wetland restoration.

As the planet warms, predictions are that we will see more forest fires in California and the West. PRBO expanded its partnership with the USDA Forest Service to understand how best to manage forests for fires, for birds, and for other wildlife.

Working with private landowners, PRBO biologists implemented win-win solutions, including the use of new web-based tools, to maintain our agricultural economy while also sustaining migratory waterbirds.

In May 2006, we moved into our new 20,000-square-foot, state-of-the-art hub—PRBO's San Francisco Bay Research Center. Over the past year we invested in our organizational infrastructure,

installing a new financial management system to support our growth over the years ahead. You will notice that we have also changed from a calendar fiscal year to one that aligns more closely with our field season and staff needs—April 1st through March 31st the following year. This annual report includes the entire 15-month period of that shift (January 2006–March 2007).

The next ten years may be the most critical humanity has ever faced. Bringing sound science to practitioners and policy makers is essential to ensure effective conservation.

As we embark on the next stage of our journey, we are ever grateful to you—PRBO's generous members and funders, dedicated volunteers, hundreds of partners, and exceptional staff and Board of Directors—for making our urgently needed work possible.

Ellie M. Cohen
President and CEO

Stefan Williams
Chair, Board of Directors

PRBO is on the front lines of practicality and innovation when it comes to national priorities for bird conservation. If it's important, PRBO is doing it.

Paul Bacich, Coordinator, National Wildlife Refuge System Birding Team

2006–07 Findings and Accomplishments

Southeast Farallon Island (right)—U.S. Fish and Wildlife Service refuge and site of PRBO research and stewardship spanning four decades.

Cassin's Auklet (chick below). Breeding failures in 2005 and 2006 were unprecedented.

PRBO photos



Seabirds falter due to changing climate patterns. Cassin's Auklets' reproductive failure of 2005 on Southeast Farallon Island was echoed in 2006. Common Murres and other species also suffered reproductive declines. Unprecedented in our four decades of data, these changes have been linked to the absence of shrimp-like krill, a driver of the marine food web, as ocean warming and atmospheric patterns never before recorded in the North Pacific occurred at the height of the breeding season.

Data sharing for information power. Responding to the urgent need for scientific information in the face of current ecological challenges, in early 2007 PRBO formed a new division called Informatics. This is

part of collaborative work to provide researchers, conservationists and citizen scientists with online access to a wealth of resources. The new division will also generate ways for PRBO to gather and archive ecological data, making vast libraries of information useful in answering questions about a changing environment.

Riparian conservation success. In “one of the nation's greatest conservation success stories” (*San Francisco Chronicle* 11/27/06), nesting songbirds returned to recently restored riparian habitat in the Sacramento Valley—thanks to a powerful partnership between PRBO, U.S. Fish and Wildlife Service and The Nature Conservancy. We found that native breeding bird populations recover quickly after former agricultural tracts are revegetated with plants native to the lush thickets once so extensive here.

Penguins adapt to catastrophic environmental change. From giant icebergs that block access to breeding grounds to untimely blizzards that bury a whole generation of chicks, environmental extremes in Antarctica pose challenges for Adélie Penguin colonies. Long-term research on penguin ecology, co-led by

PRBO is a very unusual organization that has for decades produced science of high quality... PRBO's scientific mission is more important now than ever.

— Carl Safina, PhD, author and Director, Blue Ocean Institute



Western Tanager—among the bird species that serve as Sierran forest indicators. G. Bartley / VIREO



Adélie Penguins utilize the ice. Monitoring the colony: Viola Toniolo with large chicks.

Viola Toniolo • Grant Ballard

PRBO, has shown that Adélie's are able to forge new access routes and relocate their breeding colonies from long-held traditional sites. As Antarctica's ice conditions and weather rapidly change, this remarkable flexibility will likely sustain Adélie populations—as long as the ice and their food webs remain intact.

Desert birds in severe drought. PRBO documented drastic breeding failure, related to climate, for Sonoran Desert birds in 2006. The longest-term drought on record caused complete nest loss for Crissal Thrashers and Black-throated Sparrows in PRBO study areas. Logger-

head Shrike clutch sizes dropped by half. Black-tailed Gnatcatchers delayed nest initiation, fell victim to nest parasitism by later-arriving Brown-headed Cowbirds, and their nest success dropped from 55% in 2005 to 7% in 2006. High temperatures caused other species to abandon eggs or nestlings. The same patterns were repeated in early 2007.

Snowy Plover wins a round. Protection and restoration efforts will continue for the threatened Pacific Coast population of western Snowy Plovers. PRBO's findings on this small resident of beaches and salt flats were instrumental

in the U.S. Fish and Wildlife Service's decision to maintain the population's distinct status as federally threatened. ♦ At Owens Lake, east of the Sierra Nevada, PRBO monitoring has revealed a recent three-fold increase in Snowy Plover numbers since the 1970s. Shallow flooding for an ongoing dust control project begun in 2002 has significantly benefited the plovers—which are now more dependent on man-made habitat.

High award for river restoration. PRBO monitored bird populations as part of an ambitious team effort to repair severe damage to a stream ecosystem, caused by 100 years of past mining activity. From salmon to songbirds, the entire system in Lower Clear Creek, flowing into the northern Sacramento River, recovered so thoroughly that the project won a Governor's Environmental and Economic Leadership Award in 2006.

Seabird diets and fisheries management. With expertise in the California Current marine ecosystem, drawn from seabird studies at Farallon, Año Nuevo and Alcatraz islands, PRBO has begun work on a Marine Food Web Conservation Initiative. Adding studies of fishes' diets (with the help of sport and commercial

PRBO has done an excellent job of monitoring the ecological importance of private lands in the Central Valley... critical to supporting continued funding for private lands conservation and documenting the biological importance of restoration and management of habitats for at-risk birds.

Dean Kwasny, California Department of Fish and Game

fishers), we aim to understand how fishing and climate change interact to affect the nearshore ecosystem in central and northern California. Results will support better forecasts of fisheries and wildlife changes from the perspective of fluctuations in their food base.

Tern colony in jeopardy? In ongoing studies of endangered California Least Terns nesting on the coast at Vandenberg Air Force Base, PRBO has discovered a positive correlation between the percentage of anchovy in these birds' diet and their overall reproductive success. During the recent warm-water anomaly off Central California, in 2004–2006, there were no anchovies in the tern diet: in one year the birds failed to produce fledglings; in the other two they failed



Least Terns. S.Greer / VIREO

to even attempt breeding. The result: a drastic decrease in this breeding population. We aim to further understand how environmental processes on varying scales affect recovery of this endangered species.

Trans-Pacific shorebird trails. The Bar-tailed Godwit's long-distance migration has been plotted for the first time by an international research team in which PRBO plays a lead role. Using satellite radio tags, biologists recorded flight routes and stop-over sites between New Zealand wintering grounds and western Alaska breeding areas. Obtaining the first such information for this and other large shorebird species will be key to protecting their populations.

Central Valley songbirds and El Niño. In 11 years of study on the Cosumnes River in California's Sacramento Valley, PRBO has discovered regional effects of large-scale climate patterns on breeding songbirds. Song Sparrows' nest survival is lower in years when El Niño warms the Pacific Ocean, affecting rainfall. Global warming models predict more



Bar-tailed Godwits. Jan Van de Kam

El Niño-like climate patterns, with potentially negative impacts on Central Valley songbirds.

Charting a course for restoration. With one of North America's most ambitious restoration projects under way—conversion of altered portions of San Francisco Bay shoreline to a mosaic of wildlife habitats—PRBO has produced a powerful computer model for predicting future change scenarios. The newest phase of our Habitat Conversion Model for the South Bay Salt Pond Restoration Project quantifies the trade-offs for an array of species and bayshore habitats, highlighting advantages of combining various strategies.

The information we receive from PRBO Conservation Science is critical to the management of the Farallon National Wildlife Refuge. Long-term data on seabirds' reproduction, for example, provides significant insight into the impacts of global warming.

Mendel Stewart, US Fish and Wildlife Service, San Francisco Bay National Wildlife Refuge



Jaime Jahncke, PhD, leads surveys for ocean life including humpback whale and Black-footed Albatross.

(biologist portrait) Jan Roletto / NOAA • (wildlife photos) Sophie Webb

Surveying ocean life. To examine relationships between marine birds and mammals, their prey, and oceanographic processes, PRBO has partnered with NOAA Marine Sanctuaries on research cruises transecting the Gulf of the Farallones and Cordell Bank National Marine Sanctuaries. In 2006, bird and mammal abundance were the lowest we have recorded. In contrast to past years, fewer Cassin's Auklets and no blue whales were recorded, evidence of dramatic variability in the region's climate.

Blueprint for California's at-risk birds. PRBO helped produce a much-needed revision to California Department of Fish and Game's (CDFG) catalogue of Bird Species of Special Concern. To help enhance populations of vulnerable birds

statewide, CDFG and PRBO partnered with many other contributors and produced a thorough reassessment of current status and conservation needs.

Reaching new constituents. Expanded PRBO outreach with the National Park Service on Alcatraz Island provided new opportunities for 1.4 million yearly visitors to appreciate nesting seabirds and learn how to minimize disturbance. ♦ Naturalist Rich Stallcup taught the first ten-week Bird School at PRBO. ♦ To reach school communities near our new headquarters, we partnered with local conservation groups like the Petaluma Wetlands Alliance to offer bird science programs at Shollenberger Park. ♦ Ongoing K-12 programs reached 2,500 students in Marin and Sonoma counties.

Joint Ventures spread to the sea. Building on the success of public-private coalitions on land, PRBO initiated work to form a California Current Joint Venture. We added a coordinator to PRBO's staff and met one-on-one with 60-plus stakeholders in California, Oregon and Washington to begin establishing a working coalition. The aim is to develop ecosystem-based management for fisheries and ocean wildlife in the critically important California Current marine ecosystem.

Birds as indicators of forest health. PRBO monitors pine-oak and aspen forest projects in the Northern Sierra, in collaboration with the U.S. Forest Service. Innovative management recommendations from our research have now been folded into planning for second-generation projects, ensuring the greatest benefit to birds while also managing for fire risk to local communities.

Monitoring marsh restoration. As part of the Integrated Regional Wetland Monitoring Program, we have completed intensive studies of two restored marshes in northern San Francisco Bay. Among the findings (and never before demonstrated): recently restored



Tidal marsh Song Sparrow, an indicator of habitat restoration success. PRBO photo

The rich history of PRBO maintains it as one of the most important centers for avian studies in the western U.S.

— anonymous National Science Foundation reviewer

tidal marsh habitat supports birds' reproductive success as well as or better than mature tidal marsh.

Will the vireo return? The Least Bell's Vireo, an endangered species, was extirpated from the Central Valley decades ago but returned in 2005 and 2006 to breed in a riparian restoration area in the San Joaquin Valley. In partnership with the San Joaquin River National Wildlife Refuge, PRBO is developing a monitoring plan for the vireo to begin implementing in 2007.

Palomarin Field Station renovation.

Funding from the National Science Foundation enabled PRBO to improve our research and intern training facilities at the Palomarin Field Station, occupied by PRBO since 1966 in a cooperative agreement with Point Reyes National Seashore. Palomarin holds great value in the fields of ornithology and conservation biology in North America.

Leadership and appointments. PRBO co-hosted an October 2006 workshop in Japan to increase understanding of climate change impacts throughout the North Pacific. ♦ Grant Ballard serves as coordinator for the Avian Knowledge

Alliance, an international group of organizations dedicated to collecting, caretaking and communicating knowledge gained from the study of birds. ♦ Nat Seavy, PhD, joined our staff in early 2007, the recipient of a prestigious post-doctoral fellowship from CalFED to focus on riparian systems in the Central Valley, working with Dr. Jim Quinn of U.C. Davis.

Affiliations. Organizations in which PRBO is an invited member include: American Bird Conservancy, Avian Knowledge Network, Bay-Delta Science Consortium, Bolinas Lagoon Technical Advisory Committee, California Association of Winegrape Growers, Canada–U.S. Shorebird Monitoring and Assessment Committee, Central Valley Bird Club, Central Valley Joint Venture, Cosumnes Research Group, County of Marin Wind Energy Advisory Group, Environmental Education Council of Marin, Intermountain West Joint Venture–California Steering Committee, Laguna de Santa Rosa Biodiversity Advisory Committee, Mono Basin Science Council, Mono Lake Outdoor Education Center Advisory Board, North American Banding Council, North American Bird



Geoff Geupel visits a riparian restoration area in the San Joaquin River National Wildlife Refuge. PRBO photo

Conservation Initiative—U.S. Committee, Oiled Wildlife Care Network, Pacific Coast Ocean Observing System (NOAA), Pacific Coast Joint Venture, Partners in Flight, Riparian Habitat Joint Venture, Sacramento River Riparian Sanctuary Technical Advisory Committee, San Francisco Bay Joint Venture, San Francisco Bay Upland Habitat Goals Steering Committee, San Francisco Bay Wetlands Regional Monitoring Program, Shorebird Research Group of the Americas, Sierra Nevada Willow Flycatcher Working Group, 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 Snowy Plover Working Groups—Regions 4 and 5.

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

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The Green Heron is one of many wetland bird species found near PRBO's new headquarters in Petaluma, California.

Peter LaTourrette



San Francisco Bay Research Center

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PRBO's new San Francisco Bay Research Center and Headquarters. PRBO photo

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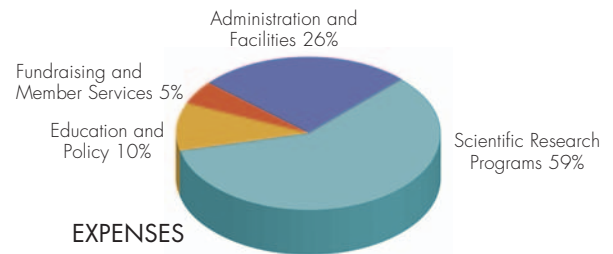
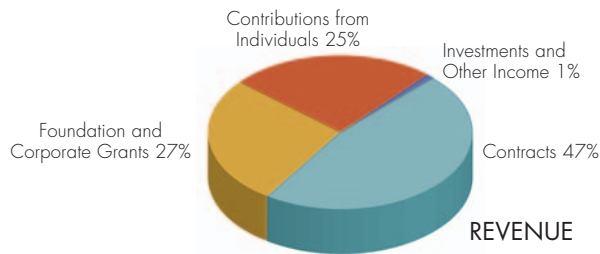


At work in western Alaska during peak shorebird migration.

Jan Van de Kam

2006–07 Selected Publications

- Abraham, C. L. and W.J. Sydeman. Prey switching by Cassin's auklet *Ptychoramphus aleuticus* reveals seasonal climate-related cycles of *Euphausia pacifica* and *Thysanoessa spinifera*. *Marine Ecology Progress Series* 313:271–283.
- Ainley, D. G., G. Ballard, and K. M. Dugger. Competition among penguins and cetaceans reveals trophic cascades in the western Ross Sea, Antarctica. *Ecology* 87:2080–2093.
- Batten, S. D., K. D. Hyrenbach, W. J. Sydeman, M. Henry, K. H. Morgan, and D. Welch. Characterizing meso-marine ecosystems of the North Pacific. *Deep Sea Research II* 53: 270–290.
- Bishop, M. A., N. Warnock, and J. Y. Takekawa. Spring migration patterns in Western Sandpiper *Calidris mauri*. In G.C. Boerne, C.A. Galbraith, and D.A. Stroud (eds.). *Waterbirds around the world*. The Stationery Office, Edinburgh, U.K.
- Dugger, K. M., G. Ballard, D. G. Ainley, and K. J. Barton. Flipper-band effects on the foraging behavior and survival of Adélie Penguins. *Auk* 123: 858–869.
- Gardali, T. People management: Suggestions for the inexperienced field supervisor. *The Wildlife Society Bulletin* 34:247–249.
- Gardali, T., A. L. Holmes, S. L. Small, N. Nur, G. R. Geupel, and G. H. Golet. Abundance patterns of landbirds in restored and remnant riparian forests on the Sacramento River, California, U.S.A. *Restoration Ecology* 14: 391–403.
- Gardali, T. and J. D. Lowe. Reviving resident bird counts: The 2001 and 2002 Breeding Bird Census. *Bird Populations* 7: 90–95.
- Gardali, T. and N. Nur. Site-specific survival of Black-headed Grosbeaks and Spotted Towhees at four sites within the Sacramento Valley, California. *The Wilson Journal of Ornithology* 118: 178–186.
- Howell, C. A., W. Dijk, and F. R. Thompson. Landscape context and selection for forest edge by breeding Brown-headed Cowbirds. *Landscape Ecology* 22: 273–284.
- Howell, S. N. G. and J. Dunn. *Gulls of the Americas*. Peterson Reference Guides. Houghton Mifflin Co., Boston and New York.
- Humple, D. and A. Holmes. Effects of a fire on a breeding population of Loggerhead Shrikes in sagebrush steppe habitat. *Journal of Field Ornithology* 77: 21–28.
- Kooyman, G. L., D. G. Ainley, G. Ballard, and P. J. Ponganis. Effects of giant icebergs on two emperor penguin colonies in the Ross Sea, Antarctica. *Antarctic Science* 19: 31–38.
- Latif, Q., J. L. Grenier, S. K. Heath, G. Ballard, and M. D. Hauber. First evidence of conspecific brood parasitism and egg ejection in Song Sparrows, with comments on methods sufficient to document these behaviors. *Condor* 108: 452–458.
- Lee, D. E., N. Nur, and W. J. Sydeman. Climate and demography of the planktivorous Cassin's auklet *Ptychoramphus aleuticus* off northern California: implications for population change. *Journal of Animal Ecology* 76: 337–347.
- Mills, K. L., S. Ralston, T. Laidig, and W. J. Sydeman. Diets of top predators indicate pelagic juvenile rockfish (*Sebastes* spp.) abundance in the California Current System. *Fisheries Oceanography* 16: 273–283.
- O'Hara, P., K. H. Morgan, and W. J. Sydeman. Primary production and seabird associations with AVHRR-derived surface sea temperature and gradients in the southeastern Gulf of Alaska. *Deep Sea Research II* 53:359–369.
- Pandolfino, E. J. Kwolek, and K. Kreitinger. Expansion of the breeding range of the Hooded Merganser within California. *Western Birds* 37:228–236.
- Pitkin, M. Mist-netting with the public: A guide for communicating science through bird banding. *PRBO Conservation Science*.
- Roth, J. E., W. J. Sydeman, and P. Martin. Xantus' Murrelet breeding relative to prey abundance and oceanographic conditions in the Southern California Bight. *Marine Ornithology* 33:115–121.
- Ruhlen T. D., G. W. Page, and L. E. Stenzel. Effect of a changing environment on nesting Snowy Plovers at Owens Lake, California. *Western Birds* 37:126–138.
- Saenz, B. L., J. A. Thayer, W. J. Sydeman, and D. Hatch. An urban success story: breeding seabirds on Alcatraz Island, 1990-2002. *Marine Ornithology* 34: 43–49.
- Shuford, W. D., J. M. Humphrey, R. B. Hansen, G. W. Page, L. E. Stenzel, and C. M. Hickey. Summer distribution, abundance, and habitat use of Black-necked Stilts and American Avocets in California's Central Valley. *Western Birds* 38:11–28.
- Spautz, H., N. Nur, D. Stralberg, and Y. Chan. Multiple-scale habitat relationships of tidal marsh breeding birds in the San Francisco Bay estuary. *Studies in Avian Biology* 32: 247–269.
- Stallcup, R. and E. W. Preston. First record of Parkinson's Petrel (*Procellaria parkinsoni*) for the continental United States. *North American Birds* 60: 166–169.
- Sydeman, W. J., R. W. Bradley, P. Warzybok, C. L. Abraham, J. Jahncke, K. D. Hyrenbach, V. Kousky, J. M. Hipfner, and M. D. Ohman. Planktivorous auklet *Ptychoramphus aleuticus* responses to ocean climate, 2005: Unusual atmospheric blocking? *Geophysical Research Letter* 33.
- Sydeman, W. J., R. D. Brodeur, A. Bychkov, C. Grimes, and S. McKinnell. Marine habitat "hotspots" and their use by migratory species and top predators in the North Pacific Ocean: Introduction. *Deep Sea Research II* 53: 247–249.
- Thayer, J. A. and W. J. Sydeman. Spatio-temporal variability in prey harvest and reproductive ecology of a piscivorous seabird, *Cerorhinca monocerata*, in an upwelling system. *Marine Ecology Progress Series* 329: 253–265.
- Yen, P. W., W. J. Sydeman, S. J. Bograd and K. D. Hyrenbach. Spring-time distributions of migratory birds in the southern California Current: Oceanic eddy associations and coastal habitat hotspots over 17 years. *Deep Sea Research II* 53:399–418.



2006-07 Financials

Statement of Financial Position as of March 31, 2007 With Comparative Totals for the Year Ended December 31, 2005

	2007	2005
Assets		
Current assets:		
Cash and cash equivalents	\$1,090,772	\$ 1,035,652
Marketable securities		1,734
Accounts receivable	942,987	1,178,204
Unconditional promises to give	27,000	35,906
Prepaid expenses and other current assets	45,534	41,775
Total current assets	<u>2,106,293</u>	<u>2,293,271</u>
Non-current assets:		
Marketable securities – restricted	117,802	110,663
Long-term conditional promises to give	–	21,938
Fixed assets, net of accumulated depreciation	<u>6,262,425</u>	<u>4,713,043</u>
Total non-current assets	<u>6,380,227</u>	<u>4,845,644</u>
Total assets	<u>\$8,486,520</u>	<u>\$7,138,915</u>
Liabilities and Net Assets		
Current liabilities:		
Accounts payable	\$74,855	\$71,111
Accrued vacation	173,017	175,286
Current portion of capital lease payable	–	9,588
Current portion of note payable	–	1,344,850
Total current liabilities	<u>247,872</u>	<u>1,600,835</u>
Long term portion of capital lease payable	–	1,994
Note payable	<u>2,000,000</u>	–
Total liabilities	<u>2,247,872</u>	<u>1,602,829</u>
Net assets		
Unrestricted	4,038,887	3,169,505
Temporarily restricted	2,081,959	2,255,918
Permanently restricted	<u>117,802</u>	<u>110,663</u>
Total net assets	<u>6,238,648</u>	<u>5,536,086</u>
Total liabilities and net assets	<u>\$8,486,520</u>	<u>\$ 7,138,915</u>

Statement of Activities for the 15 Month Period* Ended March 31, 2007 With Comparative Totals for the Year Ended December 31, 2005

	Unrestricted	Temporarily Restricted	Permanently Restricted	Jan.06-Mar.07 15 mo. Total	Jan.-Dec. 2005 Total
Revenue:					
Contracts	\$3,949,350	\$28,658	–	\$3,978,008	\$4,067,599
Foundation and corporate grants	317,375	1,863,019	–	2,180,394	2,206,109
Contributions from individuals	173,767	2,171,257	–	2,345,024	1,949,276
Investment income	20,615	–	14,505	35,120	6,989
Other income	52,582	135	–	52,717	45,355
Net assets released from restrictions	<u>4,244,394</u>	<u>(4,237,028)</u>	<u>(7,366)</u>	–	–
Total revenue	<u>8,758,083</u>	<u>(173,959)</u>	<u>7,139</u>	<u>8,591,263</u>	<u>8,275,328</u>
Expenses:					
Program services:					
Wetlands research	1,627,497	–	–	1,627,497	1,346,112
Terrestrial research	1,757,396	–	–	1,757,396	1,551,458
Marine research	1,267,496	–	–	1,267,496	1,170,253
Population ecology research	14,659	–	–	14,659	21,318
Education and outreach	242,945	–	–	242,945	166,727
Science policy	530,216	–	–	530,216	355,439
Total program services	<u>5,440,209</u>	<u>–</u>	<u>–</u>	<u>5,440,209</u>	<u>4,611,307</u>
Supporting services:					
Development	388,336	–	–	388,336	296,446
Management and general	<u>2,060,156</u>	<u>–</u>	<u>–</u>	<u>2,060,156</u>	<u>1,216,860</u>
Total supporting services	<u>2,448,492</u>	<u>–</u>	<u>–</u>	<u>2,448,492</u>	<u>1,513,306</u>
Total expenses	<u>7,888,701</u>	<u>–</u>	<u>–</u>	<u>7,888,701</u>	<u>6,124,613</u>
Change in net assets	869,382	(173,959)	7,139	702,562	2,150,715
Net assets, beginning of period	<u>3,169,505</u>	<u>2,255,918</u>	<u>110,663</u>	<u>5,536,086</u>	<u>3,385,371</u>
Net assets, end of period	<u>\$4,038,887</u>	<u>\$2,081,959</u>	<u>\$117,802</u>	<u>\$6,238,648</u>	<u>\$5,536,086</u>

* Note: PRBO previously prepared its financial statements on a calendar year. As of January 1, 2006, PRBO changed its fiscal year to end March 31st. The financial statements presented here are for the 15-month period from January 1, 2006 through March 31, 2007.

Board of Directors Point Reyes Bird Observatory dba PRBO Conservation Science

We have audited, in accordance with U.S. generally accepted auditing standards, the statement of financial position of Point Reyes Bird Observatory as of March 31, 2007 and March 31, 2006, and the related statements of activities, statements of functional expenses (not presented herein), and statements of cash flows (not presented herein) for the fifteen-month period then ended; and in our report

dated July 11, 2007, we expressed an unqualified opinion on those financial statements. Condensed financial statements include only summarized statements of financial position and activities, but omit substantially all of the disclosures required by U.S. generally accepted accounting principles. Users of condensed financial statements should read the separately issued and available financial statements of Point Reyes Bird Observatory to obtain a complete understanding of such disclosures. (For complete financial statements contact Point Reyes Bird Observatory directly.) In our opinion, the information set forth in the accompanying condensed financial statements is fairly presented

in all material respects in relation to the financial statements from which it has been derived.

R.J. Ricciardi, Inc.

R. J. Ricciardi, Inc.
Certified Public Accountants
San Rafael, California
July 11, 2007



PRBO Conservation Science



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Marin County Dept. of Parks & Open Space
Marin Municipal Water District
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Mono Lake Committee

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National Fish & Wildlife Foundation
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Front cover photo: A Black-tailed Gnatcatcher fledgling (R) begs from its parent. R. and N. Bowers VIREO