

prbo

PRBO Conservation Science



2003 Annual Report

Ellie Cohen and Steve Thal.  
Claire Peaslee



## Achievement and Promise

This past year saw, once again, increased growth and recognition for PRBO, as demand for top-quality conservation science continues to grow.

A sampling of PRBO's 2003 achievements and honors, highlighted in this report, reflect recent advances in our work to conserve birds and biodiversity.

We are happy to report that PRBO continued on a sound fiscal course in 2003, with \$5 million in expenditures supporting more than 130 staff and seasonal biologists.

This past year also saw many organizational advances at PRBO, laying the foundation for anticipated growth in the years ahead. We established a new Science Advisory Committee to maximize the quality of science at PRBO. In addition, we upgraded our computer networks and backup systems, launched our new website, and initiated efforts to secure a new PRBO San Francisco Bay Research Center and Headquarters.

Thanks to your generous support and continued partnership, we are now poised to contribute even more effectively to regional, national, and international conservation for years to come.

We are sincerely grateful to each of you—the individuals, volunteers, agencies, foundations, corporations, and outstanding PRBO staff—whose efforts make our conservation science accomplishments possible!

Ellie M. Cohen, Executive Director

Stephen A. Thal, Chair, Board of Directors

## 2003 Accomplishments



Gulls on a San Francisco Bay tidal flat.  
©David Sanger/www.sfbayphotos.com

**Conserving San Francisco Bay.** As plans moved into high gear for converting thousands of acres of artificial salt ponds in the South Bay to tidal marsh, PRBO's Habitat Conversion Model found that, while marsh birds will gain, migratory shorebirds and waterfowl will likely decline. Our results showed that retaining a *mosaic* of salt pond and tidal marsh habitats, including large channels and ponded areas in restored marshes, can offset negative impacts. • A separate decision tool produced by PRBO described potential impacts of non-native *Spartina* (cordgrass) on tidal flats: between 10% and 80% of this shorebird habitat could be lost within the next century; PRBO shorebird surveys highlighted areas of

particular concern. • In North Bay tidal marshes, we began work on a large, multi-disciplinary pilot study to evaluate restoration success and help shape the design of marsh restoration projects.

**Tools for Effective Conservation.** From restoring wetlands to managing fisheries, bird science helps resource managers learn from previous experience and improve their conservation effectiveness—"adaptive management." PRBO produced several new tools for our conservation partners in 2003 (all available at [www.prbo.org](http://www.prbo.org)):

- **Guide to Adaptive Conservation Strategies**, with case studies drawn from our terrestrial, wetland and marine projects and over 30 specific recommendations for practitioners.



Western Bluebird.  
Arthur Morris/VIREO

“PRBO brings leadership, vision, and strong science to each of the many conservation projects and programs it’s involved with in the San Francisco Bay area.”

Nadine Hitchcock, San Francisco Bay Area Conservancy Program, California Coastal Conservancy



Lazuli Buntings.  
Helen Cruikshank/VIREO

- Version 1.0 of the Southern Pacific Shorebird Conservation Plan, encompassing California’s Central Valley and coastal habitats.
- All-new landbird conservation plans for Coniferous Forest and Coastal Scrub habitats; a revised Oak Woodland plan; and a new edition of the Riparian Plan, field-tested and in use by most major habitat management agencies in the West.
- The first-ever California Current System Marine Bird Conservation Plan, with dozens of science-based recommendations for ocean managers from British Columbia to Baja California, Mexico, and out 200 miles.

**Seabirds as Indicators.** PRBO developed new tools to help ocean managers more accurately predict commercially valuable fish population numbers off Central California. Our cutting-edge models use non-traditional information—PRBO’s seabird diet and breeding data collected at the Farallones—to understand how changes in ocean ecology affect survival and body condition of herring and Chinook salmon during their time at sea. With overfishing among several major threats to marine ecosystem health, these analyses could significantly increase the effectiveness of fisheries management. • PRBO also initiated at-sea surveys of marine birds and mammals, to



Black-footed Albatross.  
©Eric Preston/www.ericwpreston.com



Preparing to mist-net sandpipers in Mexico.  
Nils Warnock

guide the establishment of a Farallones Archipelago Marine Reserve.

**Birds Across Borders.** PRBO initiated a new Bird Conservation Network in Mexico and Central America; led 7 trainings with over 70 biologists from 7 countries and 22 partners; supported 12 local intern biologists; and leveraged an additional 2 dollars for local conservation projects for every dollar we spent. As a result, the government of Mexico has committed to establishing long-term bird monitoring at 5 national parks.

**Win-Win Partnerships.** California’s Central Valley in winter and spring supports the

“Our relationship with PRBO has led to an exponential increase in knowledge about birds and bird habitat throughout our region.”

Joy Fatooh, Bishop Field Office, U.S. Bureau of Land Management



Monitoring seabird colonies on Alcatraz Island.  
Ben Saenz

greatest number of migratory shorebirds in the interior West—as well as extensive agriculture. PRBO, working in partnership with the California Rice Commission, Ducks Unlimited and others, played a lead role in establishing 500,000 acres of Valley ricelands as an area of hemispheric importance for shorebirds. Rice growers are now following PRBO’s recommendations, to benefit migrating waterbirds while also meeting their crop needs.

**Valuable Long-Term Data Sets.** PRBO continued collection of long-term data, the basis for understanding natural and human-caused change over time and its effects on

wildlife and ecosystems. A number of our ongoing, standardized research projects on bird populations encompass uncommon time spans. They form a critical benchmark against which other studies can be measured, and they provide the basis for PRBO Conservation Plans. PRBO’s 2003 annual science retreat focused on “unlocking the data” and methods for web-based data management and sharing. 2003 marked the following anniversaries:

- Farallones — 34 years
- Palomarin — 31 years
- Bolinas Lagoon — 33 years
- Snowy Plover — 26 years
- Mono Lake — 21 years
- Central Valley — Sacramento River, 11 years; Cosumnes River, 8 years; Clear Creek, 5 years
- Año Nuevo and Alcatraz Islands — 11 years
- San Francisco Bay Tidal Marsh — 8 years
- San Clemente Loggerhead Shrike — 6 years

**Species of Concern.** Focusing on common as well as threatened species, PRBO works to understand why certain bird populations are declining and how to support their recovery. Helping California set statewide conservation priorities, PRBO played a lead role in producing an up-to-date “Bird Species of Special Concern” listing, last completed in



San Clemente Loggerhead Shrike.  
Brian Sullivan

1978. • In the Monterey Bay area, threatened Snowy Plovers continued to respond to management efforts: the number of breeding adults reached the draft recovery plan target, and 374 chicks fledged, 100 more than the previous high for the area. • Our collaborative study of San Clemente Island Loggerhead Shrikes, the most endangered songbird in the U.S., documented another increase in 2003: 85 young fledged from 47 nests. • PRBO’s work on Xantus’ Murrelets in Channel Islands National Park provided the scientific basis for listing this small diving seabird as a threatened species in California, leading to additional protective measures. • PRBO continued studying the California Least Tern, Black Rail, Northern Spotted Owl, Tidal Marsh Song Sparrows, and Steller Sea Lion.

“PRBO... stands firmly on the cusp between investigation and conservation, with each of the disciplines informing and strengthening the other.”

David Pashley, American Bird Conservancy

**Restoring the Flow.** Water diversions to Los Angeles for much of the 20th century caused severe threats to Mono Lake’s unique ecosystem. PRBO’s ongoing research on breeding California Gulls, which depend on islands in Mono Lake, furnished key scientific evidence for returning Sierran stream water to the Mono Basin. Monitoring riparian habitat throughout the Eastern Sierra region, PRBO documented the return of Willow Flycatchers in 2000, after an absence of ten years, to rapidly recovering streamside habitat near Mono Lake. In 2003, this State Endangered Species fledged 12 chicks there.

**Range Expansion.** Providing bird research findings to conservation efforts throughout



Recording field data in Eastern Oregon’s shrub-steppe habitat. Aaron Holmes



First-winter California Gull.  
Brian Sullivan

the West, PRBO’s geographic scope increased in 2003. A sampling:

- In the Great Basin, we launched the Sagebrush Bird Conservation Network—researchers collaborating to address critical issues—and initiated studies in northwestern Nevada (on fire ecology) and southeastern Oregon (impacts of fuel treatments on sagebrush and juniper-woodland birds).
- In the Klamath Basin of Oregon and California, PRBO completed the first-ever comprehensive surveys of non-game waterbirds, for use in setting population and wetland habitat goals in this area of overallocated water resources.

- In the northern Sierra Nevada, we began work on a 20-year project to evaluate effects of new forest management practices on birds.
- In the fragile Sonoran Desert region of Mexico, Nevada and Arizona, we initiated the cross-border Desert Bird Conservation Plan.
- In the San Joaquin Valley, 2003 was the first full year of work in an unprecedented, year-round bird inventory and monitoring study of restored riparian habitat.
- In Antarctica, PRBO helped successfully track Adélie Penguins through their complete winter, a step toward understanding whether changes in their populations are natural or human-caused.



Black-necked Stilt in California’s Central Valley.  
Stuart MacKay

“PRBO has proven expertise and commitment to bird conservation... A natural partnership has developed.”

Joe Silveira, U.S. Fish and Wildlife Service



Western Sandpipers.  
Stuart MacKay

**Appointments and Awards.** U.S. Fish and Wildlife Service honored PRBO with the 2003 national Partners in Flight Leadership Award, recognizing the achievements of Geoff Geupel and Terrestrial Ecology Division staff. • PRBO was invited on to the board and technical committee of the ground-breaking Pacific Coastal Observing Systems (PaCOS), a major new marine ecosystem monitoring effort for the California Current under NOAA Fisheries. • Nils Warnock, PhD, was invited to participate on the Canada-U.S. Shorebird Monitoring and Assessment Committee • Executive Director Ellie Cohen was

appointed to the U.S. Committee of the North American Bird Conservation Initiative (NABCI), working to integrate bird and habitat conservation programs continent-wide. • Bill Sydeman, PhD, became co-chair of the Marine Birds and Mammals Advisory Panel for PICES (Pacific International Council for the Exploration of the Sea). • Geoff Geupel joined the Sonoran Joint Venture board. • Terrestrial Division biologist Diana Humple was elected to the board of Western Bird Banding Association.

**Affiliations.** Organizations in which PRBO is an invited member include: American Bird Conservancy, Bay-Delta Science Consortium, California Association of Winegrape Growers, Canada-U.S. Shorebird Monitoring & Assessment Committee, Central Valley Habitat Joint Venture, Cosumnes Research Group, Intermountain West Joint Venture—California Steering Committee, North American Bird Conservation Initiative, North American Waterbird Conservation Plan, Oiled Wildlife Care Network, Pacific Coast Joint Venture, Partners in Flight, Riparian Habitat Joint Venture, San Francisco Bay Joint Venture, San Francisco Bay Wetlands Regional Monitoring Program, Sierra Nevada Willow Flycatcher Working Group, Sonoran Joint Venture, U.S. Shorebird Conservation Plan.



**Innovative Outreach.** PRBO began promoting public awareness of sensitive birds through new online and print products. Our website—www.prbo.org—now offers innovative bird curricula for teachers and, for students, interactive materials such as the Snowy Plover Soap Opera. Also online: PRBO project descriptions, conservation plans, and data sharing to maximize the value of our long-term data sets.



Allen's Hummingbird.  
Brian Sullivan

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extension 324, or  
shuard@prbo.org.*

\* Deceased



Western Grebe.

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## Tern Society

*Tern Society members are individuals who have notified us that PRBO is included in their estates. If you would like information about including PRBO in your estate planning, please contact Sarah Huard, Director of Individual Giving, at 415.868.1221, extension 324 or shuard@prbo.org.*

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“PRBO provides sensible recommendations for management of wildland habitats based on rigorous data collection and analysis.”

Woody Elliott, California Department of Parks and Recreation

## 2003 Selected Publications

- Ainley, D. G., G. Ballard, K. J. Barton, B. J. Karl, G. H. Rau, C. A. Ribic & P. R. Wilson. Spatial and temporal variation of diet within a presumed metapopulation of Adelie penguins. *Condor* 105:95-106
- Ballard, G., G.R. Geupel, N. Nur & T. Gardali. Long-term declines and decadal patterns in population trends of songbirds in western North America, 1979-1999. *The Condor* 103:737-755
- Brown, A., N. Collier, D. Robinette & W.J. Sydeman. A potential new colony of ashy storm-petrels on the mainland coast of California, USA. *Waterbirds* 26:385-388
- Carter, H.R., V.A. Lee, G.W. Page, M.W. Parker, R.G. Ford, G. Swartzman, S.W. Kress, B.R. Siskin, S.W. Singer & D.M. Fry. The 1986 *Apex Houston* oil spill in Central California: seabird injury assessments and litigation process. *Marine Ornithology* 31:9-19
- Cohen, E.M. Birds and conservation accounting. *In: Transactions of the 68th North American Wildlife and Natural Resources Conference, 2003, Winston-Salem, North Carolina. 325-334*
- In* Faber, P.M., ed., *California Riparian Systems: Processes and Floodplain Management, Ecology, and Restoration. 2001 Riparian Habitat and Floodplains Conference Proceedings, Riparian Habitat Joint Venture:*  
DiGaudio, R. T. Songbird richness, diversity and abundance in mature and early successional stage riparian habitat along the Cosumnes River  
Gardali, T., G.R. Geupel, A.L. Holmes & D.L. Humple. Landbird response to wildfire in a coastal riparian system  
Golet, G. H., D.L. Brown, E.E. Crone, G.R. Geupel, et al. Using science to evaluate restoration efforts and ecosystem health on the Sacramento River Project, California  
Haff, T. M. Riparian restoration and nest success: what can we learn from the Modesto Song Sparrow?  
Heath, S. K. & G. Ballard. Patterns of breeding songbird diversity and occurrence in riparian habitats of the Eastern Sierra Nevada  
Holmes, A. L., M. E. Flannery & G. R. Geupel. The effects of saltcedar (*Tamarix* spp.) on resident songbirds in riparian habitats of the Salton Sea  
Silveira, J. G., F. T. Griggs, D. W. Burkett, K. Y. Buer, D.S. Elseaff, G. H. Golet, S. L. Small, R. Vega & J. E. Isola. An ecological approach to restoring riparian habitats at the Llano Seco Unit, Sacramento River National Wildlife Refuge
- Fernandez, G., H. de la Cueva, N. Warnock & D.B. Lank. Apparent survival rates of western sandpiper (*Calidris mauri*) wintering in northwest Baja California, Mexico. *The Auk* 120:55-61
- Gardali, T., D.C. Barton, J.D. White & G.R. Geupel. Juvenile and adult survival of Swainson's thrush (*Catharus ustulatus*) in coastal California: annual estimates using capture-recapture analyses. *The Auk* 120:1188-1194
- Hampton, S., R. G. Ford, H. R. Carter, C. Abraham & D. Humple. Chronic oiling and seabird mortality from the sunken vessel *S.S. Luckenbach* in central California. *Marine Ornithology* 31:35-41
- Howell, S. N. G., C. Corben, P. Pyle & D. I. Rogers. The first basic problem: a review of molt and plumage homologies: *Condor* 105: 635-653
- Keith, A., J. Wiley, S. Latta & J. Ottenwalder. The Birds of Hispaniola: Haiti and the Dominican Republic. British Ornithologists' Union, Tring, UK. 293 pp
- Latta, S. C., A. Tossas, A. Sutton, H. Gonzalez, P. B. Hamel & D. DeSante. Research, monitoring, and conservation of neotropical migratory land birds in the West Indies: a report to the Society for the Conservation and Study of Caribbean Birds by the Neotropical Migratory Bird Working Group of the SCSCB. *J. Caribbean Ornithology* 16:1-19
- In* Marshall et al., eds., *Birds of Oregon: A General Reference*. Oregon State University Press:  
Holmes, A.L. Loggerhead shrike (*Lanius ludovicianus*)  
Warnock, N. Dunlin (*Calidris alpina*)  
Warnock, N. Western sandpiper (*Calidris mauri*)
- Rintoul, C., N. Warnock & G.W. Page. Breeding status and habitat use of black-necked stilts and American avocets in South San Francisco Bay. *Western Birds* 34:2-14
- Ruhlen, T.D., S. Abbott, L.E. Stenzel & G.W. Page. Evidence that human disturbance reduces snowy plover chick survival. *Journal of Field Ornithology* 74:300-304
- Warnock, N. & J.Y. Takekawa. Use of radio telemetry in studies of shorebirds: past contributions and future directions. *Wader Study Group Bulletin* 100:138-150

For a complete list of PRBO publications, see [www.prbo.org](http://www.prbo.org).



Brandt's Cormorant.  
Ben Saenz

## 2003 Financials

Statement of Activities for the Year  
Ended December 31, 2003

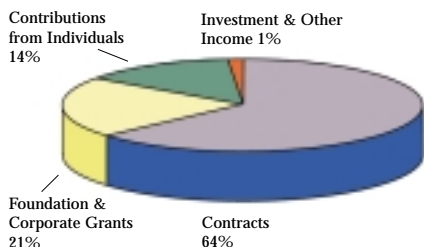
<i>Revenue</i>	
Contracts	\$3,333,690
Foundation & Corporate Grants	1,113,424
Contributions from Individuals	725,873
Investment Income	19,846
Other Income	53,124
<b>Total Revenue</b>	<b>\$5,245,957</b>

<i>Expenses</i>	
Program Services:	
Wetlands Division	\$1,274,501
Terrestrial Division	1,361,576
Marine Division	994,421
Population Ecology	94,662
Education/Outreach	147,739
Conservation Policy	357,127
<b>Total Program Expense</b>	<b>\$4,230,026</b>
Supporting Services:	
Development	316,614
Management and General	349,219
<b>Total Expense – Supporting Services</b>	<b>665,833</b>
<b>Total Expenses</b>	<b>\$4,895,859</b>
<b>Net Activity</b>	<b>\$ 350,098</b>

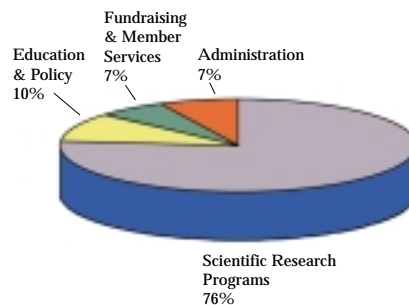
Statement of Financial Position as of  
December 31, 2003

<i>Assets</i>	
Cash & Marketable Securities	\$1,220,940
Receivables	1,249,864
Prepaid Expenses	6,173
Fixed Assets	650,652
<b>Total Assets</b>	<b>\$3,127,629</b>
<i>Liabilities &amp; Fund Balance</i>	
Liabilities:	
Accounts Payable	40,573
Accrued Vacation	104,220
Leases Payable	15,423
<b>Total Liabilities</b>	<b>160,216</b>
<b>Net Assets</b>	<b>\$2,967,413</b>
<b>Total Liabilities &amp; Fund Balance</b>	<b>\$3,127,629</b>

### Revenues



### Expenses



This Financial Statement shows totals only. For a full audited Financial Statement, please call PRBO at 415.868.1221.

Cover photo: Long-billed Curlew.

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PRBO Conservation Science



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American Bird Conservancy  
Audubon Canyon Ranch  
The Bay Institute of San Francisco  
CALFED Bay-Delta Program  
California Coastal Conservancy  
California Dept. of Fish & Game  
California Dept. of Parks and Recreation  
California Dept. of Water Resources  
California Rice Commission  
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