



Observer

NOTES FROM THE FIELD 2002

▼ Wyoming's altered shrub-steppe habitat Of Birds and Gas Wells



Shrub-steppe meets natural gas development in Wyoming.

Roy Churchwell

Quietly crouched behind a sagebrush half my size, I try to hide. At the ends of the mist-net, Alison and Taza, interns in prbo's shrub-steppe bird conservation project, also wait. We watch, hoping that the approaching Sage Thrasher will not see the net. In response to my taped recording of a thrasher song, the elusive bird belts out its bubbling warble.

Suddenly the surrounding silence is shattered by a howl of pressurized gas, a sound that takes me back to childhood rides on my great-grandfather's steam engine tractor. It's a natural gas well, one of many that I see scattered across this sagebrush-covered plain in western Wyoming, venting pressure.

As I gather my wits, I focus on the thrasher, now making sidewise glances at the gas well. The bird sings on as if he and my tape were the only two

birds for miles. Then, a light flight, and he lands in the net. I bolt to the spot—just in time to watch him escape. Sigh. He flies to the other side of his territory where he sits upon a sagebrush singing as if with a mocking tone. The gas well gives another hiss, sending a jolt down my spine, and I wonder if I will get used to the sound as the thrasher has.

We gather up the mist-net while listening for the songs of our study species—the thrasher, Sage Sparrow, and Brewer's Sparrow. In the distance another well gives a gaseous blast.

Wyoming has become the site of the most extensive natural gas development in the country, as pressures for an increased domestic energy supply mount. Tens of thousands of permit

applications are being processed for natural gas and coal-bed-methane wells. Yet, little information is available on long-term impacts to ecosystem health and, in particular, to bird populations.

The development we are studying, on publicly owned lands managed by the Bureau of Land Management, has up to 16 wells per square mile. Each installation consists of a well head and two or three storage tanks that sit on a bare pad with a small tin building, all within a footprint of about four hectares (10 acres), with a well-maintained dirt road leading to it.

As we reach our next mist-net site, a semi pulls up to a nearby well to collect the gas. If it weren't for the back-

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Sage Thrasher

PRBO is providing key information for conservation planning and to land managers in sagebrush habitats throughout the Intermountain West. Our initial efforts to document species distribution and habitat associations have led to new projects, such as this one, that seek to identify how bird populations are responding to land-use and management activities. In California, Nevada, Oregon, and Washington, we are investigating impacts of agricultural conversion, bird response to juniper encroachment, and the effects of exotic plant invasion and altered fire regimes (see *Observer* 121, Summer 2000). — **Aaron Holmes**, PRBO Shrub-steppe Project Manager

“PRBO is a major regional force for ornithology and conservation.”

▼ *More biodiversity bang for every conservation buck invested!*

Recognition for Results

Ellie M. Cohen

Frank Gill, Science Director of the National Audubon Society recently noted that “Prbo is a major regional force for ornithology and conservation.” Our work is increasingly recognized and in demand, as shown by recent acknowledgements highlighted below. Many thanks to our hardworking staff and interns, as well as our members, funders, and partners, who make these successes possible!

◆ Prbo was honored with the national *2002 Conservation Partner Award* by the usda Forest Service (usfs) and the Bureau of Land Management (blm). Diana Craig, usfs biologist and Riparian Habitat Joint Venture member, wrote the following to announce the award:

“[Prbo] has provided critical, sustained dedication and leadership for landbird and riparian conservation in California for the last decade. The efforts of prbo have improved conservation, and monitoring of conservation, on usfs, blm, and other public lands in the state. Prbo’s strong inter-



Ellie M. Cohen

est in partnerships and in linking monitoring to adaptive management is an extremely valuable asset to California’s public lands and wildlife resources.”

The award was presented on April 4, 2002, at the 67th North American Wildlife and Natural Resources Conference in Dallas, to Geoff Geupel, prbo’s Terrestrial Program Director.

◆ In March 2002, prbo was the local host for the Third International Partners in Flight *Workshop on Bird Conservation, Implementation and Integration*, held at Asilomar in Monterey, California. The conference brought together over 700 scientists, habitat and wildlife managers, and policy makers from the United States, Canada, Mexico, Central America, the Caribbean, and beyond.

New ideas were hatched, and new initiatives incubated, to further advance conservation. Special thanks to conference co-chairs and long-time prbo partners Terry Rich and C.J. Ralph, and to Logistics Chair and Co-Chair, prbo staff biologists Sandy Scoggin and Missy Wipf.

◆ Recently awarded the national *Taking Wing Award* from the usda Forest Service was Nils Warnock, PhD, Co-director of prbo’s Wetlands Program, along with our several partners and Dr. John Takekawa (usgs San Francisco Bay), for the collaborative nature of their innovative research on shorebird migration (see story on page 3).

Focusing on spring migration of radio-marked shorebirds from Mexico to Alaska, their research aims to discover the importance of each wetland stopover site and how to best conserve these migratory, far-ranging species.

◆ The American Birding Association gave prbo Naturalist and co-founder Rich Stallcup its most prestigious prize, the *Ludlow Griscom Award*, named for a giant of modern field ornithology. At its June convention, aba secretary and past prbo board president Ann Stone presented the award. Among the many accomplishments honored is Rich’s contribution to educating and “inspir(ing) thousands of people to appreciate and conserve nature.”

Congratulations to all! Prbo is truly a catalyst for science-based, effective conservation thanks to your leadership and support.



Ellie M. Cohen is PRBO’s Executive Director.

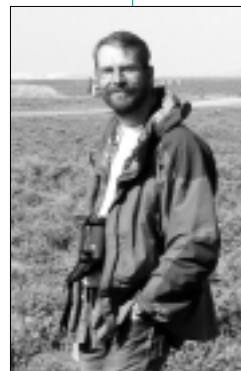
Wyoming, *from page 1*

drop of snow-capped peaks, this could pass for a scene on the moon.

Prbo’s goal with this new five-year project, funded by the U.S. Fish and Wildlife Service (Region 6 Office), is to determine if natural gas development in sagebrush habitats has an impact on the density and productivity of songbird populations. Perhaps the many artificial perches created by the gas tanks will facilitate predation by ravens or parasitism by cowbirds. Will birds avoid the noise and gas fumes of the gas pads? Do the pads create habi-

tat for Horned Larks or other species that prefer open habitat? How can we manage gas development for birds and people?

Back on the study plot, we gather up our materials for the last time today, having caught a male Sage Sparrow. He flies from Alison’s hands and joins his mate, who is working on building a nest in a patch of dead sagebrush and grass.



Another “Hiissss” emanates from the nearby well. I am eager for our next day’s work on the reference plots—undisturbed sagebrush habitat that we monitor for comparison to the gas well areas—a welcomed respite from the shrub-steppe industrial sprawl.



Roy Churchwell (pictured at left) is a staff biologist in PRBO’s Terrestrial Program.

Northwestern mainland Mexico is a premier site for millions of shorebirds.

▼ Radio-tagging shorebirds in Sinaloa, Mexico

Herding Dowitchers

Sarah Warnock

Slick black mud coats my hip waders, no-see-um bites cover my forearms, watery heat blisters are emerging on my shoulders—and I can't stop grinning. After what seems an eternity of diapers and desk jobs, I am once again surrounded by shorebirds, this time at one of the most important migratory and wintering sites on the Pacific Flyway, Bahia Santa Maria (just north of Mazatlan on the coast of Sinaloa, Mexico). Magnificent Frigatebirds, Wood Storks, and Crested Caracaras circle overhead; Mangrove Swallows perch on our banding poles; there's a Northern Jacana in the net: I'm savoring every second of this.

I'm here to help put radio-transmitters on Western Sandpipers and Long-billed Dowitchers, as part of a migration study by Nils Warnock of prbo, Mary Anne Bishop of Prince William Sound Science Center in Alaska, and John Takekawa of usgs. This is the group's fifth telemetry project on sandpiper migration (see *Observer* 127, Fall 2001) and the first ever to track shorebirds from Mexico. Our study site is in a privately owned duck club called Patolandia; fed by runoff from nearby cornfields, the wetland is managed primarily for waterfowl but also provides excellent shorebird habitat.

Northwestern mainland Mexico is a premier site for millions of wintering and migratory shorebirds along the Pacific Flyway. The coastal bays of Sinaloa meet the criteria for Hemispheric Reserve, the highest status of wetland designated by the Western Hemisphere Shorebird Reserve



From left to right: Sarah Warnock, Stuart MacKay, Guillermo Fernandez, and Miguel Guevara, rest in the mud of Bahia Santa Maria, Mexico.

Network. Little of the area is protected, though, and environmental pressures are mounting. Water diversion, fertilizers in irrigation runoff, and a growing commercial shrimp industry threaten critical shorebird habitat.

After years of arctic summers and windy California winters, sultry is not a word I've come to associate with shorebird study, and I think the heat is getting to me. Curious pink mounds are shimmering at the marsh edge. A shrill whistle brings me (and the distant flock of Roseate Spoonbills) quickly into focus. I remember my job: to herd 3,000 dowitchers, a few at a time, towards Guillermo and Stuart, who are hiding in the cattails ready to intercept birds with a swing of a huge 40-foot net.

I slosh slowly through the shallow water and cut in. A dozen dowitchers peel off and head up the channel, low over the water. I watch through my

binoculars as all 12 deftly skim the net to land gently upstream—beyond it. This capture method (Stuart's idea) is the only way we seem able to catch dowitchers—slowly, a few birds a day, until all 30 radios are on. I turn to wrest another dozen from the flock.

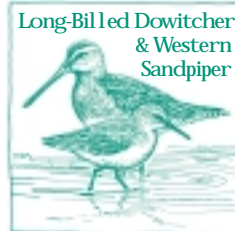
Early morning is our time for radio-tagging Western Sandpipers, which are much easier to capture than dowitchers. On the outer flats, a flashing flock of perhaps 80,000 Westerns wheels overhead; we await with stationary nets and

a tape deck playing sandpiper distress calls. The calls trigger a "mobbing" reaction, an instinct that, unfortunately, enabled market hunters a century ago to kill thousands of shorebirds in the space of a few hours. After a few beautiful sunrises of work, 59 radio-tagged Western Sandpipers hit the airwaves.

Once the radios are out, the many cooperators on the project kick into action (there were 50-plus at 14 locations in 2001, and more this year). Over wetlands large and small, all the way to Alaska, biologists in specially outfitted

planes will listen for the telltale beep that signals a Sinaloan sandpiper, and soon the data will start rolling in. I can't wait to find out what's in store for these birds as we bid them farewell from the wetlands of Sinaloa.

Sarah Warnock is a staff biologist in PRBO's Wetlands Program.



Long-Billed Dowitcher & Western Sandpiper

It takes an international effort to track birds that migrate across national borders. In Mexico, we worked closely with Guillermo Fernandez, a PhD student at Simon Fraser University in British Columbia who is conducting ecological studies of shorebirds in Sinaloa, and Miguel Guevara of the University of Culiacan, who is beginning a study of Snowy Plovers. Xico Vega, ecology professor at Culiacan and biologist with PRONATURA, provided tremendous logistical support. All three are part of a new generation of Mexican biologists playing a key role in international efforts to ensure shorebird conservation. Gilberto Salomon Sainz, owner of Patolandia, generously provided access to the duck club wetlands and resources; Hugo Medina Cazares, our airboat operator, and his family opened their home to us; we were fortunate to work with master bander Stuart MacKay, a Scottish computer programmer from Seattle; and, pilot Sandy Lanham, a recent MacArthur Fellow, donated her skills as she does to conservation groups all over Mexico and Central America.

— **Nils Warnock**, PRBO Wetlands Program Co-Director

Some of the concepts I am learning here have not yet taken root in Kenya.

▼ *The Song Sparrows of Grid 5*

Intern-ational

Henry Ndithia

Welcome to grid 5, the largest of four landbird study grids at Palomarin Field Station. Here there is grassland, bushed grassland, riparian vegetation along three small streams, and a thick, impenetrable, poison oak scrub area.

It is almost two months since I started work here, mapping territories, banding nestlings, measuring vegetation, and searching for and monitoring nests. At first it was very difficult for me to find nests, particularly for the Song Sparrow. I knew little about its breeding behavior; there was already a lot of singing going on, and I feared the birds were building nests behind my back.

On May 3, at 7:30 am, I saw a female Song Sparrow wagging its tail fast and hopping nervously from bush to bush. I had seen a couple of other female Song Sparrows behave in this manner before I located their nests, but I knew that finding this nest would be an uphill task. The female of this species is very secretive and tries as much as possible to conceal the fact that she is breeding. I would have to be patient, keen, and observant; otherwise, she would be too smart for me.

I was already too close, as I had not expected to find her in a bush I had almost bypassed. Slowly I backed up and knelt behind a small bush. Shortly after, she came with a billful of nesting material and perched on a blackberry bush 25 meters from me. I put her quickly in my binoculars' view to not miss any of her moves. Then she turned to look at me, suddenly dropped the nest material into the



Song Sparrow

bush, and went into it. "Is this meant to fool me?" I asked myself.

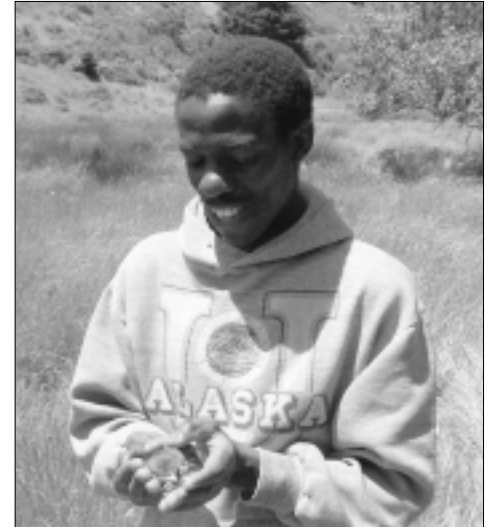
Twenty minutes later she next appeared, coming up from a big bunch of rush grass about 10 meters from the bush I first saw her enter, again with nest material. How she went there I could not tell, as I hadn't seen her fly or skulk to the grass. This time round, she did not go into the blackberry bush but into some grass just next to it, confusing me the more.

After observing her for an hour, I realized that she was arriving with material, going into some grass, then skulking through the grass into a tiny blackberry bush about five meters away from the one where I first saw her. I watched her go into this small bush and saw leaves and twigs move above her as she put material together to knit the nest. I had located it!

This day I returned to Palomarin Field Station late but with lots of cheer in my heart. My long hours in the field had paid dividends—I had found two Song Sparrow nests!

The training at prbo has been so rewarding to me. It is my good fortune this year to be part of the Palomarin crew, the first Kenyan, and probably the first African, to have ever come to prbo for an internship. Historic, isn't it? The training interns receive here is one-of-a-kind. We get hands-on experience that would normally never be received in a classroom—preparation for scientific research and more competitive job opportunities.

The internship has given me scientific skills and ideas about conservation through science. This will be particularly



Henry Ndithia holds a newly banded Scrub Jay chick in his study area.

useful, as it has laid a solid background for graduate studies I wish to pursue in the near future, with an aim of establishing a research career.

Some of the concepts I am learning here have not yet taken root in Kenya, a bird-rich country with, at present, 1,086 bird species. Many of these are threatened due to habitat loss and fragmentation: there is a lot of forest clearing at the moment in Kenya, and we are losing endemic species of forest birds all too fast. My hope is that some day such species may benefit from the skills my training will offer.

It takes heart and courage to be away from home, especially for the first time. But if it is for a worthy cause, as it has turned out to be at prbo, one will never regret having made the decision to come and have this awesome, lifetime experience. The time seems to run out so fast before one has had enough.



Henry Ndithia is an intern at Palomarin Field Station, in PRBO's Terrestrial Program.

A component vital to our long-term studies at Palomarin is the PRBO intern training program. We have the pleasure of teaching interns the fundamental skills of field ornithology while they collect data that contribute invaluable to our long-term research. We are particularly proud of our success in training interns in conservation biology—and the fact that many interns have gone on to use the skills learned at PRBO in their professional careers. PRBO's reputation is far-reaching: we welcomed Henry Ndithia from Kenya as a 2002 intern biologist. — **Tom Gardali**, Staff Biologist, PRBO Terrestrial Program

The birds are so at home in the cold ocean waters, foraging, preening, and diving.

▼ *Tracking Cassin's Auklets and their ocean prey*

To See a Seabird



At left, Meredith Elliott on the bridge of the research vessel *John Martin*.

Meredith Elliott

It's 7:30 am, just over an hour since we left the dock at Sausalito, inside San Francisco Bay. After battling the turbid waters and choppy waves common to the Golden Gate, we are in the Gulf of the Farallones. Several of us have made our way up to the flying bridge, prepared the computer, and taken up positions. Now, as the boat rocks this way and that, we watch for birds and marine mammals.

This is all new to me, as I am accustomed to observing Least Terns in their breeding habitat—on dry land—inside the Bay in Alameda. Although conditions are good today (no rain, little wind, small swells), I am beginning to realize that I'm on a moving vessel and that seasickness may be impending.

Nonetheless, I look forward to the day's work. PRBO's Marine Sciences Division has obtained access to the research vessel *John Martin*, a Moss Landing Marine Laboratory boat designed and equipped for oceano-

graphic research. Our objectives are to locate Cassin's Auklets foraging at sea and document which species of zooplankton they are feeding upon at various locations. Cassin's Auklets on the Farallon Islands began their breeding season exceptionally early this year, and data obtained at sea may help us understand why. Scientists from the National Oceanographic and Atmospheric Services, Moss Landing Marine Laboratory, and the National Park Service are also on board the *John Martin* today.

Up on the flying bridge, there are three elevated chairs bolted to the deck. The left and right chairs are reserved for observers, one scanning the 180-degree area in front of us in search of marine mammals, the other looking for birds up to 300 meters distant within an arc spanning 90 degrees from the front of the bow. The middle chair is reserved for the recorder, who enters data on a small laptop computer—numbers, identities, and behaviors of all the birds and mammals observed.

Piece of cake, right? Well, perhaps for people blessed with extraordinary eyesight. For somewhat myopic people like me, spotting small, dark birds (such as Cassin's Auklets) on the dark waters of the Pacific is challenging at best. If I'm lucky enough to spot a bird, getting my binoculars focused on it while the boat tacks and pulls is difficult. I soon learn that I need to be quick in spotting the birds, as some react to the approaching vessel and quickly fly away or dive into the

water. To top it all off, I'm growing seasick and wonder if I'll live to see the end of the day.

But I not only survive, I actually adjust, refining my search technique, and birds become visible. A flash of white here and a glimpse of gray there indicate the presence of small seabirds on the ocean. Other observers and I begin shouting out data—"One Common Murre on the water!" "One Western Gull flying northwest!" "Three Brandt's Cormorants on the water!"—and the recorder frantically enters it all.

Being accustomed to seeing seabirds in their breeding environment on land, I find it invigorating to see these birds in the pelagic environment where they spend so much of their lives. They seem so at home in the cold ocean waters, foraging, preening, and diving. I'm also gaining new appreciation for scientists who brave sometimes fierce conditions on the ocean, often for weeks at a time, to collect the data essential to understanding seabird abundance and distribution at sea.

Today after 14 hours at sea we finally head for home. Everyone involved, though looking forward to a warm meal and some rest, is excited about the day's work and eager to return the following day to begin another cruise. I haven't expired from seasickness after all and, in fact, feel successful! As we speed back into the Bay, I watch the orange rays from the setting sun dance on the water and relish my first day as an at-sea seabird observer.

Meredith Elliott is a Staff Biologist in PRBO's Marine Sciences Division.



Cassin's Auklet

In the Gulf of the Farallones, Cassin's Auklets are reproducing earlier in 2002 than ever recorded before in our 33 years of study. To investigate one of the possible causes of this unusual timing, PRBO, in collaboration with the Cordell Bank and Gulf of the Farallones National Marine Sanctuaries, chartered a research vessel for three days to study the main food of auklets—krill (also the primary prey of baleen whales)—on the outer continental shelf and shelf break regions. This project will help us understand how variability in prey populations affects the timing of auklet breeding seasons. — *Bill Sydeman, Marine Sciences Division Director*

Our ability to fulfill our mission depends upon our ability to secure our future.

▼ Creating a bright future for biodiversity and PRBO

A Time of Opportunity



An avocet family portrait (left) speaks of the promising future for ecosystem management integrating conservation science.

Sarah Huard

“Conservation science is what prbo does and does very well. We are right where things are happening and we are perfectly positioned to capitalize on the growing support for our science. Such opportunities do not often present themselves: it is time to seize the moment!

“The transformation of prbo in the last few years has been extraordinary, whether measured by the growth of our budget, the partners with whom we are working, or the scope and quality of the research we do.

“Not long ago prbo adopted a vision that within five years its bird conservation science would be an integral part of ecosystem management in the West. There can be no doubt that this vision will become reality—and it will not take five years.”

These were among the remarks by Bill Foss, Chair of prbo’s Board of Directors, at our 2002 annual meeting. The record-breaking attendance and words of praise and support voiced throughout that day highlighted two important aspects of prbo’s future:

- 1) Prbo plays a very special role not only for conservation science in the West but also in the lives of our members and neighbors.
- 2) Prbo’s ability to continue to fulfill our mission depends upon our ability to secure our future, most immediately through establishing an endowment and meeting our facilities needs.

Ways You Can Support PRBO

- Leave a legacy. Join the Tern Society by including prbo in your will or estate plan. To learn more about the tax advantages your beneficiaries may receive as a result of a charitable bequest, please consult with your financial planner or attorney.
- Consider gifts of appreciated securities or mutual fund shares. Avoid capital gains tax while deducting the full fair market value by making a gift of appreciated securities or mutual fund shares.
- Make an outright gift today. A donation envelope is included in the *Observer* for your convenience. Donations to prbo are tax deductible to the fullest extent of the law under irs guidelines.

If you would like more information about partnering with and supporting prbo through making an outright or planned gift, please contact Sarah Huard at (415) 868-1221, extension 324, or via email at, shuard@prbo.org.

Sarah Huard is PRBO’s Manager of Individual Giving.



At PRBO’s annual meeting (left to right): a member, featured speaker Graham Chisholm, executive director Ellie Cohen, guest Ellie Jacobson, and board member Stuart Jacobson.

Annual Meeting 2002

More than 200 prbo members and partners attended our 37th annual meeting on May 18th, at the lovely property of Susie Thompkins Buell, who graciously invited us for the day. The featured speaker—Graham Chisholm, Executive Director of The Nature Conservancy (tnc) in California—discussed the value of prbo’s bird conservation science to tnc’s work on the Cosumnes and Sacramento Rivers, saying, “Prbo is a mentor and a leader around the West; prbo’s science is vital to enhancing conservation efforts.”

Awards were given to: **Janet Wessel** for her extraordinary volunteerism; the **Elinor Patterson Baker Trust** for commitment to protecting animals and wildlife, including the marine life of the Farallon Islands; Finance Director **Bob Hunter** and Education Director **Melissa Pitkin** for leadership in dramatically improving prbo facilities (Palomarin Visitor Center and our staff offices); outgoing Board members **Totton Heffelfinger**, **Mike Parmeter**, and **Tom Smith** for outstanding service to prbo; the **Point Reyes National Seashore** for being a great neighbor and partner; and **Dr. John Takekawa**, usgs, for his long-term partnership with our Wetlands Program to conserve San Francisco Bay and reverse the decline in migratory shorebirds.

Executive Director Ellie Cohen and Board Chair Bill Foss spoke of the importance of partnerships, especially between prbo and our members, to the long-term success and growth of the organization.

As the day drew to a close, the sounds of bluegrass music from the Keystone Station band mixed with the calls of Caspian Terns over the lagoon and Red-winged Blackbirds nesting in the nearby wetland. This auditory collage reinforced the central message of the day: protection of biodiversity through prbo conservation science.

Learn more about PRBO's research on shorebird migration at www.prbo.org.

▼ Little known feats of some familiar birds

Avian Insights

bird bio

SPOTTED TOWHEE (*Pipilo maculatus*)



Characteristics: 18–21cm. Stocky and long-tailed. Black upperparts and hood contrast with rufous sides and white underparts, white patches at base of primaries, and white spots on the black wing. Most have red eyes. In females, black areas are replaced with dark brown.

Distribution: Fairly common resident (nonmigratory). Southern British Columbia south to Guatemala, east to the Great Plains.

Habitat: Dense brush and understory, thickets, forest edges, chaparral, shrub-steppe, shrubby suburban areas, and city parks.

Feeding: Feeds vigorously on ground among litter. Diet includes terrestrial invertebrates, grass seeds, acorns (especially in winter), and berries. Nestlings are fed insects and some fruit.

Song: Varies geographically. Eight identical introductory notes followed by a harsh or buzzy, rapid trill. Call is an upslurred, questioning *queee*.

Life Span: Longest age recorded—12 years.

Behavior Notes: Monogamous. Female constructs nest, usually on ground under a bush, sometimes 3–4 feet above the ground in a low bush or brush pile. Female broods nestlings while male does most of the feeding. A regular cowbird host (cowbirds lay eggs in other species' nests, a strategy called *brood parasitism*). Produce 1–2 broods per year. Family groups remain together through summer.

—Melissa Pitkin, PRBO Education Director

Did You Know?

Shorebirds: Migratory Superheroes

◆ The oldest Western Sandpiper (*Calidris mauri*) ever recorded was a whopping 27 years old! In sheer distance logged on the many migrations between its arctic breeding grounds and its Peruvian winter grounds, that little shorebird traveled the equivalent of about 50 trips around the world.

◆ During spring migration there is little time for dawdling. Arctic-nesting shorebirds have about a two-month window in the summer to find a mate, establish a territory, lay eggs, and raise chicks. As these birds hurry to reach their northern destination, some will fly up to 80 kilometers per hour.

◆ You can learn more about prbo's research on shorebird migration and the lives of shorebirds in this *Observer* (see page 3) and on prbo's website at www.prbo.org/education/sinaloa.html.

by Sue Abbott, who is a biologist and educator in PRBO's Education Program.

The Grand List

The Grand List highlights prbo priority projects in need of funds. If you can help in any way to support these projects, please contact Sarah Huard at (415) 868-1221, extension 324. We are, of course, always appreciative of general operational support that allows us to fund priorities as needed. Thanks very much!

◆ **Brandt's Cormorants of Alcatraz Island:** Provide scientific supplies needed for the 2002 field work of a multiyear study on the foraging habits of Brandt's Cormorants that breed on Alcatraz, to understand the implications for conserving biodiversity in San Francisco Bay's open waters. Cost: \$3,000

◆ **San Francisco Bay Tidal Marsh:** Develop science-based guidelines for tidal marsh restoration in the San Francisco Bay Estuary. Work in 2002 includes identifying marsh features and landscape-scale influences that make for a fully functioning tidal marsh. 2002 Data Analysis Cost: \$5,000

◆ **Palomarin Field Station:** Three Interns and one Station Manager, to expand our pioneering, multidecadal breeding songbird research to include habitat succession and climate change studies. Cost: \$3,000 per intern, \$12,000 for Station Manager

◆ **Website Enhancement:** Modernize the prbo website to reach new audiences and provide real-time data exchange between staff, partners, and volunteers. Seed Funds Cost: \$10,000

◆ **Volunteer Coordinator:** Coordinate training of "citizen scientists" who will assist prbo biologists in data collection throughout California. Seed Funds Cost: \$18,000

F O C U S



60

Fall Treasure Hunt on the O.P.

Rich Stallcup

It's 4:30 am and dark. September 23rd. Can't sleep. I stumble from bed to the kitchen window. No fog... but no stars! Yessss!

Last night the wind went around from 20 wnw to dead calm ese, and now, with the high ceiling, it's classic Vagrant Weather. I call a couple of (slightly deranged) friends, and by sunrise we are hurtling past the Holsteins towards outer Point Reyes—the O.P. A treasure hunt is on.

At each grove of wind-battered conifers, each willow clump, and even through the bush lupine, migrants abound—many, coveted gems from far, far away. They are nocturnal migrants, many on their first journey, and some carry faulty compasses that cause mirror-image travel routes. Some came down during the night. Others are still arriving—we can hear, then see them dropping from the sky, returning to the mainland after overshooting the coast.

The O.P. and the Farallones

In many ways, outer Point Reyes is like an offshore island—a lot like the Farallones. Because they are way out in the ocean (the O.P. is 13 miles west of the mainland), both places attract large numbers of migrant landbirds during Vagrant Weather. For the same reason, both places totally lack many sedentary coastal birds.

Each of these tiny geographical entities has a bird species list of just over 400—the Farallones with more outrageous rarities (Golden-cheeked Warbler, Red-flanked Bluetail) and the O.P. with more of the sedentary birds like Wrentit and Bewick's Wren. One fact that stands out while analyzing these avifauna, especially for the O.P., are those birds absent: California Towhee, Steller's Jay, and Oak Titmouse have never been recorded! Hairy Woodpecker, Pygmy and White-breasted Nuthatches, and Chestnut-backed Chickadee have fewer than three records each. There are more



The promontory southwest of the dotted line—Outer Point Reyes (the O.P.)—often holds avian treasure in “Vagrant Weather.” Birds of the larger Point Reyes peninsula, represented above, include both rare species and sedentary ones that have seldom or never been recorded on the O.P.

examples. All of these species have huge resident populations in Marin County—five of them within ten flight-line miles of outer Point Reyes. They are unwilling to cross the open ground, the scrub savannah, between trees.

Defining the O.P.

On Sir Francis Drake Boulevard one enters the O.P. at mile marker 37.44. It is the line where Barrie's Bay (in Drake's Estero) comes within one mile of biting through to the Great Beach. The line extends to mid-estero then south into Drake's Bay. Watery habitats include tidal flow over mud and rocks, the Bay, the open ocean, and farm ponds. Most of the land is grazed or shrouded with heavy scrub dominated by bush lupine. Swales contain willows and, in some autumns, surface water. Most of the migrants on the O.P. are found in five scattered stands of Monterey cypress (and a few Monterey pines, at the Fish Docks).

Some of us have been seeking the traveling treasures on the O.P. for 40

years now, since we discovered the vagrant phenomenon on 16 October 1961 at the “B” Ranch, and it *never* gets old. It's never the same!

Over time: 300 Blackpolls, 150 American Redstarts, 80 Magnolias, 50 Black-throated Blues, 35 Lark Buntings, 30 Orchard Orioles, 30 Prairie Warblers, 15 Philadelphia Vireos, 20 Bobolinks, 15 Summer Tanagers, 10 Connecticut Warblers, 3 Yellow-green Vireos, 3 Scarlet Tanagers, 1 Painted Redstart, and thousands more... each as wonderful as the first!

The anticipation caused by the weather giving assurance that “tomorrow there will be a migratory wave...” the fire of excitement at the instant of connection with some wild-eyed, far-flung wanderer... these are emotions from nature that cannot be explained. Only shared. Treasure!

So watch the sky, sense the wind, and we'll see you on the O.P.



Rich Stallcup is PRBO's Naturalist, in our Education Program.

Findings: scientific questions, methods, results.

▼ Probing a population-wide shift in feeding behavior

Disappearing Cormorant Flocks

Benjamin Saenz

During the springtime in central San Francisco Bay, huge flocks of foraging cormorants can be seen daily. Appearing as a churning, recirculating black mass up to a half-mile long, birds numbering into the thousands dive through schooling forage fish. Brandt's Cormorants, which breed on Alcatraz Island, are the predominant species involved.

In 2000, prbo initiated a study of these foraging flocks in order to learn more about the role of seabirds in the estuarine ecosystem of San Francisco Bay. From a vantage point on Alcatraz Island, we recorded when the flocks appeared, where they were located, and the numbers of individuals participating by species. These observations show many patterns in cormorant flocking behavior, but the most striking result was what we *didn't* observe.

Cormorant flocks almost completely disappeared by the start of June in 2000 and 2001. The number of minutes we observed cormorants feeding in flocks

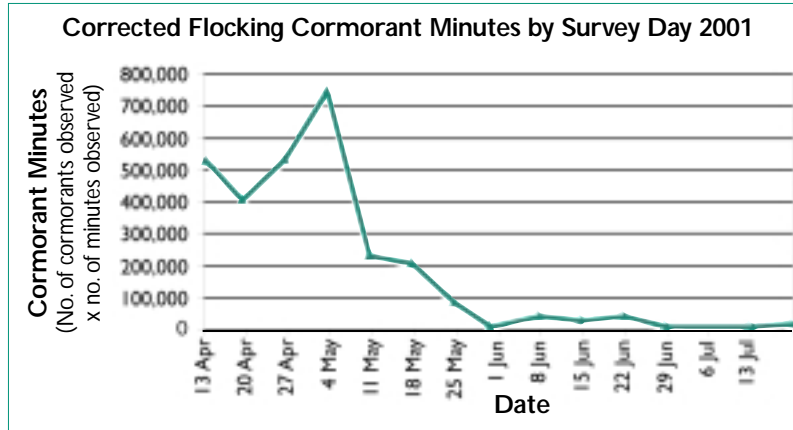


Figure 1. Field observation during 2001, from Alcatraz Island, of Brandt's Cormorants foraging on San Francisco Bay were analyzed for the total numbers of birds seen times numbers of minutes observed, or "cormorant minutes." The data show a dramatic shift midway through the breeding season, similar to the pattern we found in 2000.

each day dropped several orders of magnitude between early May and early June (Figure 1). Preliminary radio telemetry results indicate that breeding birds remain within the estuary to feed but do so singly. This disappearance of flocks signifies a large-scale change in foraging behavior of Brandt's Cormorants, right in the middle of their breeding season.

What could cause a population-wide shift in feeding behavior? The jury is still out, but we are currently investi-



Brandt's Cormorant

gating changing concentrations of prey fish—anchovies, midshipman, and others—in relation to the spring freshwater outflow from the Sacramento River Delta. Other factors that may influence foraging behavior include the changing energy needs of parents when they are feeding chicks, and changing seasonal oceanographic conditions.

Answering the questions regarding the "disappearing cormorant flocks" is a

focus of the Marine Sciences Division's growing Alcatraz/San Francisco Bay project. With new studies such as expanded radio telemetry and also diet analysis of Brandt's Cormorants, we will be able to answer many questions concerning seabird ecology in the estuary. Through these detailed analyses, prbo can better contribute to the conservation of the San Francisco Bay ecosystem.

Ben Saenz is a staff biologist in PRBO's Marine Sciences Division. His field note about Alcatraz Island seabird studies appeared in *Observer* 121, Summer 2000.

Science Achievements (a sampling)

► Recent scientific publications include: Nest site selection and nest success in a Song Sparrow population—The significance of spatial variation, by Mary Chase (*Condor* 104: 103-116); Oceanographic habitats of two sympatric North Pacific albatrosses during the breeding season, by David Hyrenbach, P. Fernández, and D. J. Anderson (*Marine Ecology Progress Series* 233:283-301); and Further evidence for a population decline in the western Warbling Vireo, by Tom Gardali and A. Jaramillo (*Western Birds* 32:173-176).

► Nils Warnock was asked to serve on the Program for Regional and International Shorebird Monitoring

(prism) technical committee. Prism's goals for North America include: estimate trends in shorebird populations; estimate sizes of breeding shorebird populations; monitor shorebird numbers at stopover sites as an indication of habitat suitability; and use monitoring information to meet shorebird conservation goals.

► At the Third International Partners In Flight Conference, hosted by prbo at Asilomar (Monterey, California) in March 2002, more than 20 of prbo's staff biologists gave spoken and poster presentations covering the breadth of our work. A sampling: ■ Building a habitat conversion model for San Francisco Bay

wetlands—A multi-species approach for integrating gis and field data, by Diana Stralberg, Nils Warnock, Nadav Nur, Hildie Spautz, and Gary Page. ■ Birds in the agricultural landscape—Restoring riparian habitat in coastal California, by Viola Toniolo and N. Scolari (Marin County Resource Conservation District). ■ The use of avian focal species for conservation planning in California, by Mary Chase, Geoff Geupel, and Nadav Nur. ■ Spatial and temporal heterogeneity in reproductive success of tidal marsh Song Sparrows, by Yvonne Chan, Nadav Nur, Diana Stralberg, Hildie Spautz, and Julian Wood. ■ Seabird conservation planning for the California Current

System, by Kyra Mills, Maura Naughton (usfws), and Gregg Elliott. To view the conference program and abstracts, visit www.prbo.org/pif/npif2002htm.

► New web-based data entry and query tools are available on prbo's website, www.prbo.org, for anyone collecting terrestrial bird data. Also, linked to our main page are numerous updates to the California Partners In Flight web pages hosted by prbo; these include new versions of the Oak Woodlands and Coniferous Forests bird conservation plans. Thanks to the generosity of the David and Lucile Packard Foundation.

Congratulations, welcome, and thanks!

▼ *The people of PRBO*

Staff and Board Migrations

Board of Directors

Three outstanding individuals have stepped down from prbo's Board of Directors having served full terms. **Tot Heffelfinger** chaired the Facilities Committee and added expertise about environmental policy concerning wetlands. **Mike Parmeter** co-chaired our Bird-A-Thon Committee, developing its county team competition. He is also a regular mist-netting volunteer beloved by our staff and interns. **Tom Smith, PhD**, has helped strengthen prbo's research directions and remains a valued scientific colleague. All three have contributed immeasurably to prbo, and we thank them.

Newly elected to the Board are three people who bring many new talents to prbo. **Lokelani Devone**, an attorney, is currently Senior Vice President and Senior Counsel for Visa International in Foster City, California. She has served on boards of several agencies, including ones providing hiv and aids resources. Lokelani also served on the board of Citizens Trust, a socially responsible investment fund.

Mark Reynolds is our newest science board member. He holds a PhD in zoology from U.C. Berkeley and currently works for both The Nature Conservancy, as Senior Project Ecologist, and San Francisco State University, as Adjunct Professor of Biology. Mark's own landbird studies parallel prbo's, and he is active with California Partners In Flight.

Matt Stone has an international consulting and commodity trading firm based in Sausalito, California. He is also the son of Ann Stone, prbo's Board Chair from 1994 to 1997. Says Matt, "Having watched from the outside as prbo grew over the past 15 years, I am delighted and honored to be a part of the organization."

We are equally delighted to welcome all three—and grateful for the skills and energy that all prbo Board members bring.



At PRBO's annual meeting, in Susie Thompkins Buell's charming barn, are Board members Lokelani Devone (left), who is newly elected, and Ewan Macdonald (right), along with Manager of Individual Giving Sarah Huard (center).

PRBO Staff

In prbo's Marine Sciences Division, **Pete Warzybok** is now in his second season as a prbo Farallon Biologist and a co-leader of our island-based seabird studies, along with **Russ Bradley**. A past Farallon intern, Russ holds a Master's degree from Simon Fraser University in British Columbia, where he studied Marbled Murrelets and radio telemetry. **Peggy Yen**, also from Simon Fraser University, is a new Seabird Biologist/gis Specialist for our California Current Marine Protected Area project. **Kaya Pederson**, after working as an intern for prbo and noaa's Institute for Marine Protected Area Science (see her story in *Observer* 127, Winter 2002), recently joined our staff as a Marine Policy Specialist.

Derek Lee, a quantitative ecologist from Humboldt State University, begins work at prbo in August 2002 on analysis of long-term banding and survival data of Farallon seabirds.

We bid farewell to **Moe Flannery**, who departed in March 2002, from her post of over two years as Manager of our Palomarin Field Station. Fortunately, Moe remains connected with prbo through her new position as Curatorial

Assistant in the Department of Ornithology and Mammalogy at the California Academy of Sciences. Staff Biologist **Missy Wipf** has taken on the new post of Terrestrial Program Manager.

Catherine Hickey, a Biologist in our Wetlands Program, completed her Master's thesis at U.C. Davis on the Black-necked Stilt space use and site fidelity in the San Francisco Bay Estuary (toward predicting shorebird response to salt pond conversions).

Former Office Manager **Melissa Frakes** has relocated to New York State, and we wish her the best.

Congratulations, welcome, thanks!



Farallon Patrol Log

Many thanks to the Farallon Patrol skippers for volunteering their vessels and nautical expertise in support of prbo's Farallon research. The following made runs during the early part of this year's seabird breeding season. In addition, Roger Thomas and *Salty Lady* carried staff and Friends of the Farallones to the islands on May 5th.

| | | |
|---------|---------------------------|----------------------|
| Feb 23 | John Gratton & Linda Hill | <i>Nakia</i> |
| Mar 10 | Mick Meningoz | <i>New Superfish</i> |
| Mar 28 | Tom Baty | <i>Rampage</i> |
| Mar 30 | Alex Pop-Lazic | <i>Tamo Daleko</i> |
| Apr 13 | Al DiVittorio | <i>Solbritt</i> |
| Apr 27 | Sam Lavanaway | <i>La Adriana</i> |
| May 11 | Burt McChesney | <i>La Storia</i> |
| May 26 | Dick Honey & Joanne Kipp | <i>La Baleine</i> |
| June 9 | John Wade | <i>Starbuck</i> |
| June 22 | Dale Head | <i>Magic</i> |

Donations

Prbo is grateful to the following contributors of gifts of \$250 or more (January through May 2002):

Louise Abbott & David Earp, Susan Ackerman, Rev. Bruce Bayne, Robert Boehm, Robert & Jeanne Bradford, Dr. & Mrs. Robert I. Branick, Mr. & Mrs. Terry Coddington, Henry Corning & Glenda Griffith, Rigdon Currie & Trish Johnson, Thomas R. Davis & Ellyn Bush, Martha Day, Eastern Sierra Audubon Society, Mr. & Mrs. Russell B. Faucett, Lawson & Christine Fisher, GMAC Home Services, Inc., Fred Grafton, Marcia, Richard & Cindy Grand, Mr. & Mrs. Richard M. Griffith, Jr., Nancy & Dean Hanson, Surani Hayre-Landry & Leonard P. Landry, Doris B. Hughes, Dorothy B. Hunt, Vladimir Jacimovic, Fledgling Fund – Carolyn Johnson & Richard Theis, Dwight L. Johnson, Katharine H. Johnson, Sarah Jones, Seymour F. Kaufman, Mr. & Mrs. Harvey King, Mr. & Mrs. Robert Knox, Philip A. Lathrap, Mr. & Mrs. Douglas Leach, Robin L. C. Leong, W. James & Pamela Lloyd, Charles & Mimi Lowrey, Andrew K. Marckwald, Jr., Gloria P. Newhouse, Mark Panitch, Dr. & Mrs. Benjamin D. Parmeter, Mr. & Mrs. William J. Patterson, Mr. & Mrs. Wilson Pendery, Dr. & Mrs. Lawrence Petz, Mr. & Mrs. Robert K. Rains, Mr. & Mrs. John Rathkey, Toni Rembe, Jon C. Richards, Dr. & Mrs. Stuart Stephens, Ann Stone, Dr. Robert W. Storer, Marilyn M. Strand, Mr. & Mrs. Stephen A. Thal, Richard & Martha Thayer, Mr. & Mrs. Alan A. Tobey, Mrs. Robert Weinstock, Rev. Jan Hickmann West, Mr. & Mrs. James Wintersteen, Leah Wolf.

In-Kind Donations

We are grateful to the following individuals for recent donations to prbo:

Lynton Auld for a Palm III, Mr. & Mrs. James Finnegan for a 1982 Jeep Cherokee, Burr Heneman for office chairs, file cabinets and kitchenware, Ruth Lundquist for a Tyoda microscope, Janet Visick for kitchen and dinnerware, a food processor, Sony television, vcr, fax machine, and many furnishings.

Wish List

Prbo seeks donations of equipment including the following. For more information, please call (415) 868-1221.

Dissecting microscope, color TV, twin mattresses, refrigerator, satellite Internet/email connection.

Memberships

Our thanks to the following new members who have joined prbo (January through May 2002):

Paul & Marlene Grunow, Sterling T. Hada, Echo Hall, Mary Daniel Hobson, Linda D. Kilb, Paula Kiyabu, Sylvia Kuras, Maria Yolanda Garcia Malavear, Daly Merrill, Cynthia Morris, Elliot Norwood, John & Karen Nygren, Ginny & Web Otis, Elizabeth Palmer, Niels C. Rattenborg, Jennifer Rycenga, Wendy Schelsky, Melissa Shelton, Janice L. Stafford & Max Kincora, Jo & Jack Sudall, Joel C. Suty, Mr. & Mrs. Bill Talmage, Ian Taylor, Stella Taylor, Anne Whaling & Christopher James, Barbara Wheat, James & Kay Wilson.

Gifts Honoring

Prbo is grateful for the following memorial gifts (January through May 2002):

In Memory of Jean Puffer: Marilyn & Gene Capener; Marie E. Forster; Stanley Kwan

In Memory of Peggy Wayburn: Marianne R. Shepard

PRBO Field Biologists

Spring-Summer 2002

Tia Adams, Jessica Beaubier, Erin Belmont, Gerick Bergsma, Christopher Berner, Brenda Blinn, Julie Burinkerhoff, J. Brian Burns, Sarah Campbell, Andy Campomizzi, Renee Cormier, Jill Coumoutso, Ted Corriel, Leah Culp, Jeff Davis, Thomas Dodsworth, Steve Dumdei, Kristen Dybala, Aaron Englander, Shannon Farrell, David Figueroa, Katie Fisk, Jen Foster, Sarah Foster, Sarah French, River Gates, Meghan Gilbert, Jessica Griffiths, Aaron Haiman, Joshua Haiman, Noah Hamm, A. Hannuksela, Jolie Henricks, Sanja Hinic, Robin Hirsch-Jacobson, Gernot Huber, Else Jensen, Dennis Jongsomjit, Katie Kauffman, Alison King, Queresh Latif, Kirsten Lindquist, Yen Luc, Blaine MacDonald, William Marrs, Hugh McGee, Frasier Metcham, Jennifer Millard, Aileen Miller, Ladne Miller, Emily Morrison, Henry Ndithia, Allison Nelson, Kristi Nelson, Catherine Peterlein, Andy Pfeffer, Mike Polito, Lars Pomara, Jenny Raum, Chris Rintoul, Cesar Rodriguez, Daniela Roemer, Alexander Rosenthal, David Roth, Taza Schaming, Justin Shew, Mark Sloan, Todd Thompson, Viola Toniolo, Chris Tonra, Fields Trimble, Bob Wilkerson, Aja Woodrow

Institutional Giving

We deeply appreciate the corporate and foundation grants that support prbo's increasingly successful programs and projects in conservation through science.

The **National Fish and Wildlife Foundation** has provided matching grants for sagebrush-steppe habitat conservation, protection of cavity-nesting seabirds, implementation of bird conservation plans, and renovation of our Palomarin Field Station Visitor Center and Banding Lab.

The **Bernard A. Osher Foundation** sponsors a dozen of the nearly 60 interns now working on prbo field projects. Interns help assemble much of the long-term data that prbo uses to understand and protect biodiversity.

The **San Francisco Foundation** has provided support for a major upgrade, now under way, of prbo's communications, including our website.

The **Elinor Patterson Baker Trust** renewed support for our Farallon Islands Conservation and Research Program, including seabird nesting habitat restoration, intern training, and dissemination of findings to guide marine resources management.

The **Richard Grand Foundation** has made another grant to support interns in our San Francisco Bay Tidal Marsh Project and assessment of the effects of converting Bay salt ponds to tidal marsh on birds that use these habitats.

The **Fledgling Fund of the Tides Foundation** renewed its general support for prbo, allowing for application of funds to the highest priority projects.

The **JiJi Foundation** has given prbo support for Birds Across Borders, to conserve migratory bird species and their habitats through cooperative, locally based, scientific training and research in Mexico and Central America.

We also thank **ChevronTexaco** for supporting our Snowy Plover project, **LVMH Selective Distribution Group, LLC** for a gift in honor of our Board Chair, Bill Foss; the **Richard and Rhoda Goldman Fund** for renewing their annual general support grant; **The Bay Institute** for our ongoing straw (Students and Teachers Restoring a Watershed) partnership; as well as **Swarovski Optik** and **Leica Camera** for their annual prbo Bird-a-Thon donations.



As always, PRBO is deeply grateful to Audubon Canyon Ranch, Point Reyes National Seashore, and the U.S. Fish & Wildlife Service for providing facilities and field stations where we work.



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Point Reyes Bird Observatory
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PLEASE MARK YOUR CALENDAR

PRBO BIRD-A-THON

September 21 to October 5, 2002

Join us for a great day of birding, and raise money for PRBO's bird and ecosystem conservation!

For information, contact Matt Leffert at (415) 868-1221, ext. 310, or e-mail us at birdathon@prbo.org. ● Also visit www.prbo.org.



CALENDAR OF EVENTS

PRBO BIRD WALKS Morning outings in or near Point Reyes National Seashore; \$5 donation, free to PRBO members. For more information, call Melissa Pitkin at (415) 868-1221, extension 307.

Sunday, September 1 ■ **Snowy Plovers and the Conservation of Coastal Habitats** Accompany prbo biologists into the realm of a threatened shorebird.

Sunday, October 6 ■ **Birds of No Fixed Address** Learn about bird migration while searching for migrants and vagrants at outermost Point Reyes.

Saturday, November 2 ■ **Winter Birds of Bear Valley** Walk in a lush wooded valley to encounter Ruby- and Golden-crowned Kinglet, Varied Thrush, and more.

Sunday, December 1 ■ **Waterbirds on Bolinas Lagoon** Join us as to welcome back the wintering avian populations on this beautiful wetland. Wear rubber boots!

2002 Osher Symposium ■ Showcasing PRBO's training program for interns in conservation science. Free of charge and open to everyone!

Thursday, October 10th, from 5:00 to 7:00 PM
Location (at San Francisco's Presidio) to be announced

Guest Speaker Terry Root, Ph.D., of the Center for Environmental Science and Policy at Stanford University's Institute for International Studies, will discuss climate change and wildlife populations, focusing on birds.

Invitations with complete information will be mailed. ■ Please join us!

PRBO online :: WEB SITE www.prbo.org :: E-MAIL prbo@prbo.org

PRBO Conservation Science — working to conserve birds, other wildlife and their ecosystems through objective, innovative scientific research and outreach.

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Benefactor: \$1,000 & more
Sponsor: \$500
Sustaining: \$250
Contributing: \$100
Family: \$50
Regular: \$35
Student & Senior: \$20

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