

# Observer

## 2001 notes from the field

### ▼ Avocet studies on South San Francisco Bay

## Salt Pond Saga

Chris Rintoul

This may be the 22nd American Avocet that we have trapped this week, but my heart is still in my throat. We paddle out to a small island in San Francisco Bay, offshore of "salt evaporation pond 6b," and carefully lay the spring-triggered bow trap. Strangely, little alarm or mobbing behavior occurs at first. Then, there they go: a chorus of adults is attempting to drive us away, swooping, circling, and otherwise encouraging our speedy exit.

We cast off from the island and return to the truck. Hastily, we reverse down the dirt levee and secure a van-tape point far enough away that one of the adult pair will feel comfortable returning to his/her genetic potential.

Now we wait: binoculars pressed against our eye sockets, small beads of sweat building on the eyecups, fingers and palms becoming just a little bit slippery. An adult finally approaches the sacred cache of four eggs. He paces warily back and forth around the metal and netting crescent shape of the unsprung trap. We silently pray that he will not take notice of the taut monofilament

that spans the top of the nest, secured to a thin pliable stake at the opposite end. This fishing line acts as a kind of trip wire. When the bird sits, the trigger releases, and voila, you have yourself a bird.

This fellow is a little too uncertain about the new adornments encircling his nest, and he disappears to the other side of the island. Ten more minutes pass, and my heart rate finally slows to a less frantic pace. But wait! Instantly, my pulse quickens anew while I watch a female avocet fly in from a neighboring levee. Gracefully landing a few feet from her clutch, she, too, is confounded by our unsightly additions to the nest's décor. Eventually, after a couple of laps around the nest, her parental instincts take over

and the bird determines that it is safe enough to resume incubation.

Seen through binoculars, the culmination of our efforts now seems to unfold so silently: the invisible fishing line is tripped, and the restrained end of the trap springs up and over the bird, sealing itself flush against the ground on the opposite side of the nest.

*continued on page 2*



An adult American Avocet, held by Chris Rintoul, wears a new leg band with a miniature radio transmitter.

An important part of PRBO's cross-programmatic San Francisco Bay Project is the investigation of birds' use of bay habitats. To document the ways that breeding and post-breeding American Avocets use salt ponds (especially artificial ponds constructed for salt production) and other habitats, PRBO wetlands biologist, Chris Rintoul, in collaboration with the United States Geological Survey (USGS), is tracking radio-tagged avocets throughout South San Francisco Bay. This telemetry research augments our work in past years on other shorebird species, and it complements current PRBO studies of tidal marsh birds (see page 4). The results will increase understanding of how habitat conversion in the bay (especially the conversion of salt ponds to tidal marsh) will affect bird populations, enabling PRBO to guide restoration projects that benefit the greatest numbers and diversity of bird species.—Nils Warnock, Ph.D., Co-Director of PRBO Wetlands Studies

PRBO biologists truly are pioneers in a modern era, forging new ground every day.

▼ Grant from Packard Foundation for PRBO "Adaptive Conservation"

## Forging New Ground

Ellie M. Cohen

This issue of the *Observer* highlights the work of our staff in the field—from San Francisco Bay, to California's great Central Valley, to the Farallones. Our biologists and interns not only are bright and dedicated; they also work very hard collecting multitudes of data for long hours outdoors under often arduous conditions.

Their efforts produce impressive results. I recently had the honor of visiting Aaron Holmes, prbo's Great Basin Shrubsteppe project leader, and his dedicated team in eastern Oregon. From May to July, at 77 high desert sites from the California border to the Canadian border, they will have recorded 60 miles worth of bird and vegetation data!

Prbo biologists truly are pioneers in a modern era, forging new ground every day. In partnership with government agencies, nonprofits, and private interests, they are using science to understand birds and ecosystems and to provide recommendations for conserving wildlife and critical habitat across the West.

The David and Lucile Packard Foundation (Packard) recently recognized prbo's hard-earned contributions to effective conservation with a \$1 mil-

lion grant that covers a significant portion of costs over the next two years for our major initiative, "Adaptive Conservation for Birds in California and the West."

We are very grateful to the Packard Foundation for its visionary leadership at a time when biodiversity is severely threatened, on land and at sea, owing to habitat fragmentation, pollution, overfishing, and development. Like the canary in the coal mine, birds are wonderful indicators of ecosystem health. The Packard grant will enable prbo, working with numerous public and private partners, to expand our use of bird conservation science to help ensure more effective habitat restoration and ecosystem management efforts. This scientific foundation is now more vital than ever in preventing species extinction and supporting stable, healthy bird populations.

With Packard funds, we will be able to expand our songbird research for riparian, shrubland (coastal sage scrub and chaparral), oak woodland, grassland, and sagebrush (shrubsteppe) habitats, and also develop web-based predictive models to guide habitat managers in restoring and managing for songbirds and biodiversity.

The grant provides funding for prbo Wetlands biologists to complete

and facilitate implementation of the U.S. Shorebird Conservation Plan for the Southern Pacific region

(much of California), and to develop two major restoration projects in collaboration with the regional wetlands joint ventures.

Prbo will also apply Packard grant funds to produce a first-of-its-kind seabird conservation plan for the California Current (from southern California to southern Canada) and to initiate a California Current Joint Venture that will engage a wide range of public and private interests.

Of course, we rely on the ongoing support of our members and the dedication of our staff biologists and interns. Thanks to all of you, we really are making a difference!



**PRBO Executive Director Ellie M. Cohen** was awarded a fellowship to attend a two-week intensive program for nonprofit executives at Stanford University's Graduate School of Business. Along with 49 others, from around the nation, Ellie participated in this select program during summer, 2001.



Ellie Cohen

## Avocets, from page 1

Quickly, we drive back down the levee to the kayak's hideaway. As we exit the truck, the silence is once again pierced by the shrill alarms of a colony of adult avocets come to ponder the dome that holds their fellow captive. Some flee with their precocial broods to deeper waters away from the shoreline; other adults attempt to distract us with broken-wing displays and near-miss, low-flying acrobatics.

Fortunately, American Avocets are quite calm when you handle them. The female avocet in the trap, although active during our approach, remains

still the far end once we near. Ahh, the beauty of the bow trap: once sprung, it is tall enough that even a leggy avocet can stand and walk about comfortably within its confines; the elliptical chamber of netting with its thin metal supports prevents entanglement—in every aspect a safe, effective design.

I kneel, bird in hands, at the stern of the boat while Dan Battaglia of usgs paddles the short distance back to the shore. There, while I support her body and neck, Dan affixes the specially designed usfws band outfitted with a soft, rubber-coated radio transmitter

around her leg. Just a few measurements now—of the beak, leg, wing, and weight—and she's free.

Excellent! The entire exercise, from capture to release, has taken only five minutes. As we drive off in pursuit of eight more adults on known nest sites, we are pleased to see our just-released bird returning to her nest, adjusting some nest material, and sitting down to resume incubating.

**Chris Rintoul** is a PRBO staff biologist in our Wetlands Research Program.

In 15 years or so, this will be a lush riparian oasis teeming with songbird species...

▼ *Riparian restoration projects in the San Joaquin Valley*

## Quest for Healthy Habitat

**Jeanne Hammond**

It's 7:30 am on a sunny May morning and already hot enough to shed my sweatshirt during a day of nest searching at the Hospital Creek nest plot. Until the flood of 1998, this was an agricultural field, and though the trees (cottonwoods and willows) are growing rapidly, they still don't provide much cover. I am hiding beneath the low branches of a black willow sapling, watching a Song Sparrow carry nesting material, when... I hear that elusive female Blue Grosbeak! And I can hear her mate singing behind me.

I've been trying to follow this pair, which I've glimpsed flying back and forth, for some time. The female now calls again, moving in my direction, and sure enough, after a couple more minutes... silence. I am guardedly ecstatic, since this would be my first ever nest for this species (but one should not count chickens—or, in this case, grosbeaks—before they are hatched).

I pretend that the Song Sparrow is my sole focus and, stepping forward, see its partially built nest just where I thought it would be. Then I take a casual saunter toward the spot where the grosbeak female suddenly went silent. About 15 meters away from my hiding place, I flush the female off her nest! Elation... then misgivings. I soon realize that these are not Blue Grosbeak eggs and that the nest has already been visited by a Brown-headed Cowbird, or two or three. All three eggs in the nest were laid by the infamous recent colonist that makes its living parasitizing other songbirds in this manner.



Jeanne Hammond anticipates the return of jungle-like riparian habitat (as pictured here at Cosumnes River Preserve) on lands the USFWS will restore on San Joaquin River

I could be doing songbird research almost anywhere these days, since cowbirds occur virtually everywhere, but the Central Valley has hordes of them. Here at the San Joaquin River National Wildlife Refuge, we are surrounded by cattle ranches, dairies, and other agricultural lands in which the Brown-headed Cowbird now makes its home.

Although it is easy to blame the cowbird for songbird declines, prbo's research in the Central Valley has shown that what really affects produc-

tivity is predation. While nests may be parasitized, many end up depredated by predators of all sorts, including black rats and other rodents, jays, raccoons, and snakes.

In 2000, prbo and the U.S. Fish and Wildlife Service (usfws) began collaborating on a new project—to monitor songbird response over the next few years to ambitious restoration efforts within the Refuge's large patch of Valley riparian habitat. The restoration has two main goals: to reconnect the river to its floodplain by breaching the existing levee in several places; and to restore 1,300 acres of adjacent former agricultural fields within the floodplain to riparian habitat.

Songbirds that prefer early-successional and herbaceous vegetation for nesting, like the Blue Grosbeak and Song Sparrow, are already using the fallow fields. The two nests I found this morning are in a study plot where riparian vegetation began to regrow after the levee breached during the 1998 floods. Fremont's cottonwood and black willow saplings are already over my head. As this plot continues to regenerate naturally, results of monitoring songbird response will provide a base for comparison with areas to be restored using cultivated plantings.

I am already planning a return visit, in 15 years or so, to what will be a lush riparian oasis in an agricultural and rapidly urbanizing region on the San Joaquin River. By then, the areas we are studying should be teeming with riparian obligate songbird species, including (dare I hope?) the now rare Yellow-billed Cuckoo.



**Jeanne Hammond** is a biologist and project leader in PRBO's Terrestrial Research Program

**PRBO's dedicated project leaders** are invaluable on-site links for our efforts to conserve songbirds and restore habitat throughout the West. They provide crucial scientific know-how to our many local land management partners working to enhance depleted bird populations. Jeanne Hammond is one of seven current Terrestrial Program project leaders in regions across California and Oregon. With a degree from U.C. San Diego in Urban Studies and Environmental Planning, she began as intern banded at the Palomarin Field Station in March 1996. After working in the field on PRBO projects from Montana to San Francisco Bay, she accepted a position heading up our riparian conservation efforts in the southern half of California's Central Valley, which includes the the Cosumnes, Mokelumne, Tuolumne, and San Joaquin river watersheds. Jeanne supervises a team of PRBO field biologists and interns collecting biological data, and she maintains constant contact with numerous agencies and collaborators on these rivers.—**Geoff Geupel**, Director of PRBO Terrestrial Research

I will check this nest every two to three days, hoping to see the nestlings fledge.

▼ *Monitoring nest success in San Francisco Bay's remaining marshlands*

## Tidal Marsh Tour

**Julian Wood**

**W**elcome to today's field trip to the marsh, where you will witness firsthand the adventures and misadventures of a field biologist for the day. You will be assisting in my research on the breeding biology of songbirds in the tidal marsh habitat of San Francisco Bay. This entails finding and monitoring nests and mapping territories in the broad, wet landscape known as Black John Slough, five kilometers up the Petaluma River from the northern part of San Francisco Bay.

It's 6:00 AM. Equipment check: rubber boots (essential); field notebook (with pen attached); binoculars; flagging (for marking nests); compass; water and a snack. We set out along the levee and hear the repeated *kek-kek-kek* clatter call of Clapper Rails (at least five individuals!) coming from the nearby "lagoon," created years ago to provide homeowners with waterfront property and now, due to sedimentation, filled with tall alkali bulrush.

We arrive at my study site and step down into the marsh, recently inundated by extreme high tides brought on by the full moon. (One person has forgotten rubber boots and must turn back.) I am asked, what is that song that says *which-which-you, which-which-you, which-which?* It is a Common Yellowthroat, a songbird that has a distinctive race adapted to salt and brackish marshes. The same is true of the Song Sparrows nesting here, our quarry for the morning. We walk on, hopping across a small channel hidden by pickleweed. Two people slip and fall in, but the tide is lower now and they are spared having to empty their boots and

wring out their socks.

We are now heading for a "barking" Song Sparrow. When they have nearby nests with eggs, females often give this distinctive call that sounds like a miniature lap dog. I make a motion, and we form a phalanx some distance from the bird, hoping to follow her to the nest.

Instead we watch her dive into a channel and disappear, presumably to forage on the plentiful invertebrates found there. Then I see the vegetation move in a spot near the gumplant lining the channel, a preferred nesting spot for Song Sparrows. Of course, I have seen vegetation moving elsewhere, in perfectly suitable nesting substrates, but the spot along the channel seems the best. As I approach, I step over a garter snake about two feet long. The female sparrow suddenly appears, looks at me sideways, and begins preening. She seems to know exactly what I am proposing and is visibly nervous about it. I poke around carefully with my "nest stick" (used to probe and search vegetation from a few feet away), and... yes! It's a nest with three perfect eggs. I quickly record the information in my field notebook and retreat, covering my



At Black John Slough, the self-described Walter Mitty of field biologists, Julian Wood, loses his cool (exhibited above) when probing the gumplant (inset, left) to discover a Tidal Marsh Song Sparrow's nest.

tracks and leaving false trails to confuse predators interested in a meal. (Predation is, after all, the most common cause of failure here.) I tie a piece of flagging 10 meters and 320 degrees away to mark the nest. Every two to three days I will check this nest to monitor its progress, hoping to band the nestlings and watch them fledge.

*The crowd cheers and lifts me, the Walter Mitty of field biologists, up on to their shoulders...* that's how great you feel when you find a songbird's nest in the marsh.

Well, my friends, the sun is now blazing down and the tide quickly rising, forcing us to beat a hasty retreat and call it a day in the field.



**Julian Wood** is a staff biologist in PRBO's Population Ecology Program.

**PRBO's Tidal Marsh Bird Project** aims to better understand the conservation biology of bird species that are dependent upon tidally-influenced saline marshes in the San Francisco Estuary. This critical habitat—for birds and other wildlife—has been degraded and reduced in extent by 80% or more in the Bay, as a result of human activities in the past century and a half. Our tidal marsh work (a major component of PRBO's San Francisco Bay Habitat Project) includes the study of birds' reproductive success, especially Song Sparrows, Common Yellowthroats, and Black Rails—all California threatened or species of special concern. By determining whether their populations are self-sustaining and identifying factors that increase or decrease their reproductive success—e.g., are nests nearer to the marsh edge more susceptible to predation than those in the interior? (see page 11 of this *Observer*)—PRBO will be able to guide conservation and management practices for San Francisco Bay shore habitats.—**Nadav Nur, Ph.D., PRBO Population Ecology Director**

I open the window and am instantly transported into the wonderful world of murre.

▼ Documenting a year of rockfish abundance at the Farallones

## Vantage on a Seabird Colony

It's the early-morning commute hour, and I am on my way to work. My commute takes only about ten minutes, and although I don't have to deal with traffic on the freeway, I have to run the "gull gauntlet," dodging the dive-bombing Western Gulls that are protecting their eggs and chicks. By the time I arrive at the Murre Blind, I've been hit three times in the head and my jacket sports a new brown patch of gull food that passed quickly through the excited bird's digestive system.

This is going to be a grand day, I can already tell. The weather is clear, sunny, and *windy*, so I am armed with several extra layers of clothes and a thermos of hot coffee. I arrive at the blind where I spend between two and eight hours every day. PRBO has studied Common Murre chick diet and productivity for more than 30 years on the Farallon Islands. Learning what chicks eat and how many young each breeding pair raises per year gives us a better understanding of ocean ecosystem dynamics and the effects on seabird populations in central California.

I open the blind's window and am instantly transported into the wonderful world of murre: 10,000 small black-and-white birds below me, leading murre lives—of which we can only catch a small glimpse by studying them in their colonies. Above the howl of the wind, I hear the familiar murre cacophony... as if an opera singer with a cold were gargling salt water.



I raise my binoculars and focus on one particular murre that has been incubating an egg for about 30 days and may have a newly hatched chick. Though my nose is running, my eyes watering, and my hands starting to cramp up, I continue to stare at this bird, because Murphy's Law of Murre says that as soon as I look away it will stand up for the split second I need to confirm that it has a chick. It takes me 30 minutes to see under this one bird, but when I do, I catch a quick glimpse of a small gray fuzzball and I quietly say a little cheer.

As I record this in my data book and pour myself a cup of hot coffee, I spot a murre flying in with a fish in its bill. Before it quickly disappears into the mouth of a hungry chick, I look at the fish with my binoculars and identify it as a rockfish. This is the first year in a decade that we have recorded so many rockfish, which, prior to 1989, made up most of the chick diet of Common Murres, Rhinoceros Auklets, and Pigeon Guillemots. Beginning in the early 1990s, the overall chick diet changed: rockfish became a very small percentage, replaced by



Farallon biologist Kyra Mills, wearing her summer work outfit, spends up to eight hours a day inside the Murre Blind (left) observing the murre and cormorant colonies below.

anchovies, sardines, smelt, salmon, and other species.

At this point it is still too early to offer a concrete explanation for this sudden abundance of rockfish in the diet of murre, but in combination with oceanographic data such as sea-surface temperatures, upwelling indices, and ocean juvenile rockfish abundance, we hope to have a more definite answer in the near future.

As I hike down from the Murre Blind later on that day, I pause for a moment and look out to sea. Although we will never fully understand the complexities of the ocean, by studying seabirds we at least have one more piece to contribute to the enormous puzzle. With this thought in mind, I begin my adventurous commute back home.

 **Kyra Mills** is the lead PRBO Farallon biologist in our Marine Sciences Program.

**PRBO's climate science research** includes assessing how interannual (between-year) and lower-frequency (between decades) changes in ocean conditions affect seabird and marine mammal populations on the Farallon Islands and elsewhere in the California Current. Recently we have witnessed a major shift in the Gulf of the Farallones marine ecosystem: starting in late 1998–early 1999, the ocean became much colder than it had been for at least 25 years! Intense upwelling of cold, nutrient-rich waters and a strengthening of the California Current (the dominant spring/summer current off the California coast) undoubtedly contributed to this remarkable change. Seabirds of the Farallon Islands reproduced exceptionally well in 1999 and 2000, and in 2001 we see additional evidence of this shift—in dramatic increases in numbers of breeding Brandt's Cormorants and Common Murres on the island. Also after three years of favorable oceanographic conditions, juvenile rockfish are being produced in sufficient numbers for seabirds to target them as prey. Establishing the links among environmental conditions, prey populations, and predator populations is key to understanding how climate change (natural or driven by human-induced global warming) will influence birds and their ecosystems. Time lags involved are often substantial, so we will continue to monitor Farallon species to deepen our understanding of their population dynamics.—**Bill Sydeman, Ph.D., Director of PRBO Marine Sciences**

# F O C U S

## The Three Amigos



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WANTED in the California Current marine ecosystem: Heermann's Gull (left), Elegant Tern (above), and Brown Pelican (right).



### Rich Stallcup

Each summer and fall, many thousands of large, colonial seabirds immigrate from insular nesting sites in Mexico to the cool, nutrient-rich waters of the California Pacific to forage. Three bird species are involved: Brown Pelican, Heermann's Gull, and Elegant Tern—"the three amigos."

While they may not actually be friends, they do have a lot in common. Most individuals that we see use islands inside the Sea of Cortez for nesting. The bulk of the world population of Heermann's Gulls, and many Elegant Terns, nest on Isla Raza offshore of Hermosillo, Sonora. There are pelican and tern colonies in southern California, as well, and Heermann's Gulls have recently tried to colonize Monterey and San Mateo Counties, producing eight young at Robert's Lake, Monterey County, in 2000.

Heermann's Gulls derive much of their forage by picking up scraps from plunge-diving pelicans. They grab sardines or anchovies that spill from the pelican's bill, as well as "floaters"—fish stunned by the concussion of the peli-

can's dive. Elegant Terns plunge-dive (like Brown Pelicans but more daintily) and catch their own fish, one at a time. All three species often participate in nearshore "feeding frenzies" when small schooling fish come to the surface or are forced upward by bigger fish below them.

The pelicans and gulls come north together, beginning with mostly sub-adults and adults in May followed by juveniles by late June. Elegant Terns begin to appear in late August and are virtually gone by mid-October: back to Mexico.

In recent years, all three species have been abundant along the California coast in September. Their northward progression depends upon the season's incursion of warm water, which carries with it the obligate schooling fish and many other comrades, such as pinnipeds and white sharks. When El Niño surges up the coast of North America, so do the three amigos—to Oregon, Washington, and even southern British Columbia. During one of the major Niños in the

early 1980s, we found Elegants at Vancouver during a birding tour; they were the first ever for Canada.

It wasn't always this way. Elegant Terns were absent from California before the 1960s (they have been expanding their range), and Brown Pelicans were very close to extinction in the 1950s and '60s due to toxins in the marine food chain—pesticides used on crops that were rain-washed into the sea.

In the mid-1960s, we sometimes sat on beaches or cliffs watching northbound "pellies" in the sunset. Within a few short years, people noticed fewer and fewer young birds in the flocks, and flocks that were drastically smaller and scarcer. Birders and activists raised a hue and cry, playing a pivotal role in the consequent banning of ddt and its chemical relatives.

Now, in the early 2000s, things seem to be going well for the three amigos, but we must be ever vigilant to ensure these marine birds safe passage over the waters between northern California and Mexico.



## Farallon Patrol Log

Through winter storms, spring winds, and the seabird breeding season, the volunteer skippers of the Farallon Patrol have transported prbo personnel and supplies to our field station on Southeast Farallon Island. Their expert support is vital to our Farallon research: thanks!

Jan 20	Burt McChesney	<i>La Storia</i>
Feb 3	Doug Engelke	<i>Its a Wonderful Life</i>
Feb 17	Al DiVittorio	<i>Solbritt</i>
Mar 3	Alex Pop-Lazic	<i>Tamo Daleko</i>
Mar 24	Fred Babian	<i>Temerity</i>
Apr 3	Peter Ross	<i>Kidaly</i>

Apr 15	Ed Kelly	<i>Desperado</i>
Apr 28	John Gratton	<i>Nakia</i>
May 13	Tom Charkins	<i>Kumbaya</i>
May 26	Burt McChesney	<i>La Storia</i>
June 9	Al DiVittorio	<i>Solbritt</i>
June 23	Greg Stach	<i>Lebenstraum</i>
July 7	Dale Head	<i>Magic</i>

“Quilting together a statewide approach to conservation...”

## Staff Migrations

# Meet Ann Chrisney

*A new position at PRBO fits the person who fills it to perfection. Since March 2001, Ann Chrisney has been the coordinator of the California Riparian Habitat Joint Venture (RHJV). Nine of the RHJV partners fund the position through PRBO. Ann brings talents that will doubtless enhance—and also enlarge—the job! To get acquainted with our new colleague and her new role, the Observer recently spoke with Ann Chrisney.—Editor*

**Observer:** To start with, along with extending prbo’s warmest welcome to you, Ann, tell us a bit about the purpose and make-up of the rhjv.

**Ann Chrisney:** It formed back in 1994 as a component of Partners in Flight, and as the first-ever *habitat-based* joint venture—addressing the critical habitat for neotropical migratory bird populations in this state. All the key institutions in California belong to the rhjv, from the U.S. Fish and Wildlife Service and California Department of Fish and Game to prbo, The Nature Conservancy and Ducks Unlimited. The interests of the rhjv finger into the realms of the other joint ventures, which may have formed for waterfowl or a particular geographic region. Because they are now adopting an “all-bird” approach, we can clearly help. The rhjv could ultimately expand to include other bird habitats, but first things first—implementing the rhjv strategy.

**Observer:** What will that look like? Is there already a strategy in place?

**Ann:** Essentially, the strategy consists of the recommendations contained in the Riparian Bird Conservation Plan, developed under the strong leadership of prbo.<sup>1</sup> The implementation phase will stem from this and includes gathering much more data about the state’s remaining riparian habitat and its condition. Nobody knows exactly how much is left, or where! We can use this

information to help prioritize on-the-ground projects and also to measure the Plan’s effectiveness, as carried out by land owners and agencies.

Over the first year, I will be developing workshops in each of California’s ten bioregions. We want to link up with many different groups and local interests to quilt together a statewide approach to conservation and build collaborative work communities in each bioregion to help meet our mission. In addition, I will be developing a relational database to track all the projects, partners and funding sources, as well as a gis<sup>2</sup> layer for riparian habitat in the state.

**Observer:** This would seem the way toward true effectiveness for the rhjv—but a rather large job for one person!

**Ann:** That’s right, but I’m very excited about the prospects. Prbo staff have been tremendously helpful—Geoff Geupel (Director of Terrestrial Research) and his entire team, (Executive Director) Ellie Cohen, of course, and especially Gregg Elliott (prbo Policy Coordinator), with whom I work very closely—we’re based together in Sacramento. I’m so proud to be on the staff of prbo. This is very dynamic organization, and I feel strongly aligned with its core values. I am very pleased to be working for the rhjv Management Board (consisting of representatives from all 18 partner organizations), which is a very high caliber team and has been very supportive of me.

I also love working with lots of different people, to link up all their interests and facilitate the necessary collaborations to meet our common goals. I’m



Ann Chrisney (center), attending a PRBO landbird monitoring workshop, learns about aging a Purple Finch from staff biologist Peter Pyle.

a big-picture person, but I also am good at specific details. This job has just what I want: an opportunity to contribute to the conservation of California’s precious natural resources and to use my creativity and technical skills to their full potential.

**Observer:** And you migrated to PRBO from...?

**Ann:** From 15 years in the federal government, most recently the U.S. Fish and Wildlife Service where I was a wildlife biologist working on forest ecosystem and Central Valley issues in California. I continue to live on the banks of the American River, just outside Sacramento, with my husband Peter Stine, who’s a landscape ecologist and the Sierra Nevada science team leader for the U.S. Forest Service, and our nine-year-old son Gavin, whose many interests include the native frogs in our backyard!

**Observer:** Ann, it sounds like you and prbo and the rhjv all have very exciting prospects together.

**Ann:** I look forward to being part of the prbo work community and growing the rhjv program to its full potential.



<sup>1</sup> See PRBO’s website at [www.prbo.org](http://www.prbo.org).

<sup>2</sup> Geographic Information Systems, explained in Observer 122, Fall 2000, and further exemplified in this issue on page 10.

## People meet birds and support conservation through science.

▼ *Thanking our volunteers & your invitation to Bird-A-Thon*

# Becoming Involved at PRBO

### bird bio

### BLACK PHOEBE (*Sayornis nigricans*)



**Characteristics:** Flycatcher, 16–18 cm. Entirely black above and on throat, breast and flanks. Rest of underparts white. Eyes, bill, legs and feet black.

**Distribution:** Resident (non-migratory) from southwestern U.S. to northern Argentina.

**Habitat:** Riparian areas, ponds and marshes; shaded, brushy canyons, farmlands, urban and suburban areas. Prefers to nest near water.

**Feeding:** Almost exclusively on insects, occasionally small fish and berries. Often feeds just above water surface. In winter, gleans insects from the ground.

**Song:** A four-syllable song, a rising *pee-wee* followed by a descending *pee-wee*. Call is a constantly repeated loud *tsee*, and a sharper *tsip* accompanied by a flick of the tail while the bird is perching. ■ **Life Span:** 8 years

**Behavior Notes:** Usually seen in the open “flycatching” for insects. Typical of phoebes, bobs tail while perched. Builds a cup-shaped nest made of mud pellets, grasses, plant fibers and hair and lined with grasses hair and bark. The nest is usually stuck to a rough vertical surface of a building, canyon wall, or under a bridge. Females incubate their eggs; both sexes tend to young and feed them by regurgitating pellets. —Melissa Pitkin, Education Coordinator

### PRBO BIRD-A-THON 2001

Join us for a great day of birding that supports research, conservation and education. Participants who enlist the ten highest pledge totals will have the chance to bird with Rich Stallcup (which means you'll see more than 100 different species). Help us to surpass last year's Bird-A-Thon record of \$104,000!

For more information, contact Matt Leffert at (415) 868-1221, ext. 10, or e-mail us at [birdathon@prbo.org](mailto:birdathon@prbo.org). Also see our website—[www.prbo.org](http://www.prbo.org).

Please Mark Your Calendar!

Bird-A-Thon 2001 kicks-off  
September 15, 2001

## 2000 Volunteers

*A key to PRBO's success are the many skilled, dedicated volunteers who receive training and assist in our projects. Here we thank all those who were active during the calendar year 2000. In case of oversight or error, our apologies; please contact Matt Leffert at (415) 868-1221, ext. 10.*

**Landbird Area Searches—East Bay:** Cindy Bossi, Marianne Constable, Lewis Cooper, Denise Defreese, Pam Drake, Peter Dramer, Judith Dunham, Anthony Fisher, Lillian Fujii and Steve Hayashi Dorothy Gregor, Susan Hampton, Anne Hoff, Mark Lamoureaux, Kay Loughman, Martha Lowe, Melanie Lutz, Bruce Mast, Sara Mathews, Jocelyn McFaul, Jill McIntire and Pat Kline, Marty Morrow, Sue Moyles, Collin Murphy, Marilyn Nasitir, Charlotte Nolan, Kathy Robertson, Karen Rosenbaum and Ben McClinton, Karen Peterson, Dolores Siegenthaler, Sylvia Sykora, Inge Svoboda, Larry Tunstall, Lisa Viani. **Putah Creek:** John Wagonitz. **Sea Ranch:** Judy Butts, Ken Holmes, Rae Hudspeth, Rich Kuehn, Dean Schuler, Evelyn Wadsworth. **Lake Almanor:** S. McDonald, M. Smith, Wilma Taddei, M. Taddei. **East Park Reservoir:** Brian Williams.

**Central Coast Project—**Gary Allen, Jim Banks, Helen Banks, Eli Bernstein, Laura Carter, Walter Cocking, Maya Conrad, Barbara Costa, Toni Danzig, Jim Davis, Kevin DiNoto, Judy Donaldson, David Ekdahl, Julie Engell, Rob Fowler, Winifred Frick, Garth Harwood, Mary Beth Manning, Peter Metropulos, Carol Miller, David Powell, Karen Ritchie, Nicole Salgado, Patty Scollan, Robin Smith, Judy Spittler, Dave Werner, Linda Willis.

**Eastern Sierra Riparian Project—**Joel Ellis, Bob Toth, Barbara Toth, Bob Hudson, Jim Parker, Debbie Parker, Jeannie Sassin, Dave Marquart  
**Palomarin Banding—**Anastasia BlahaErath,

Regan Brooks, Christopher Haugh, Luanna Helfman, James Langan, Jill Marten, Linda O'Connell, Mike Parmeter, Kathryn Poetter, Andrew Rush, Walter Sakai, Cyndy Shafer, Will Wade.

**San Clemente Island Shrike Project—**Paul Aigner, Allison Alvarado, Tim Anderson, Deena Arnold, Fred Beaudry, Deborah Bieber, Ashleigh Blackford, Kelly Brock, John Brollini, Don Brukaker, Kathleen Brubaker, Chris Burney, Larry Butcher, Heather Carlisle, Kevin Clark, Tammy Conkle, Dan Cooper, Doug Cooper, Christina Couroux, Jonathan Dunn, Bridget Fahey, Catherine Fields, Mike Gellerman, Ian Gillespie, David Guttoff, Amy Hammond, Robb Hirsch, Todd Hunter, Michelle Johnson, Ian Kaplan, Suellen Lynn, Tracey Mader, Bill Markle, Philip Markle, John Martin, Robert McMorrin, Melissa Mersey, Karly Moore, Tawna Morgan, Eric Mruz, Chris Mullen, Ted Mullen, Tom Mulroy, Nicole Munkwitz, Chris Murphy, Samantha Musgrave, Bill Osteimer, Bruno Peeters, Jon Plissner, Ingrid Quon, Dan Rabosky, Ryan Rumelhart, Gary Santolo, Tara Schoenwetter, Tom Scott, Les Stone, Diana Stralberg, Eric Stromberg, Jennifer Turner, Mark Van Scoy, Sandy Vissman, Dustin Volmuth, Nils Warnock, Mike Wellik, Adrian Wolf, Cabot Wolford, Tracy Wurth, Julie Yamamoto, James Zimmer.

**Snowy Plover Project—**Jean Adams, Barbara & Wade Akle, Joy Alberson, Chuck & Lillian Almdale, Mary Ann & Jerry Ambrose, Tom Applegate, Danielle Beaharnois, Marj Bourret,

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**Farallon Patrol—**Mike Alfred, Fred Babian, Seth Bailey, Tom Baty, David Benjamin, Rick Boyce, Tom Camp, Lou Campbell, Tom Charkins, Tom Charron, Oscar Cook, Henry Corning, Paul Dines, Al DiVittorio, Doug Engelke, Bill English, Bill Foss, Bill Fraser, John Gratton (Farallon Patrol Chief), Frank Hall, Dale Head, Dick Honey, Ed Kelly, Burt McChesney, Rod McInnis, Mick Meningoz, Alex Pop-Lazic, Jim and Petra Reed, Peter Ross, Greg Stach, Peter Schultz, Richard Sponholz.

**Library—**Janet Wessel

“Now, prbo is at the right place at the right time.”

▼ *Ann Stone lets bequest to PRBO speak for itself*

## Eloquent Legacy

**A**nn Stone, with typical concision, says she put prbo in her will “because I felt I had to.” Urged to elaborate she adds: “I was on the board at the time, and one of our major goals was establishing an endowment fund to give prbo some financial security. If we were going to ask others to remember prbo in their estates, we needed to sign up first.”

Encouraging others to support prbo is not new to Ann. The plain-speaking, former board president talks of prbo’s difficulty, years ago, appealing to a number of traditional funding sources. Prbo was doing field research in the 1960s, when very few understood the need, Ann recalls.

With the public growing more sensitive to environmental threats, she feels, “Now, prbo is at the right place at the right time.” She adds that the growth of the environmental movement, along with increased awareness

that changes in bird populations can signal serious ecological problems, has made foundations far more responsive. She hopes that a rising public understanding of how vital prbo’s work is will cause individuals who are environmentally-minded to become bequest-minded, as well.

Ann disclaims any elaborate theory on the rewards of birdwatching, much less on why people should put prbo in their estate plan. “I got into birdwatching because I liked it,” she says. “Then I learned the importance of field research. Later I made my bequest.”

Widely traveled, with a curiosity and love for birds, Ann recalls her first



Ann Stone, birding to the far north.

birding trip to southeastern Arizona—with prbo, years ago—saying, with feeling, “That trip was very important.”

Prbo research, conservation, and public outreach hold importance for increasing numbers of our valued friends and supporters. Prbo is honored to have Ann Stone as a member of its **Tern Society**.



*For information on the Legacy Circle, bequests, and charitable trusts, please call Ellie M. Cohen at (415) 868-1221 extension 18.*

## Grand List

The Grand List highlights some prbo priority projects that are in need of funds. If you can help in any way to support these projects, please contact Ellie M. Cohen at (415) 868-1221, extension 18. Thanks!

- ◆ **Effects of Converting Salt Ponds to Tidal Marsh:** Funds a computer-based model to assist San Francisco Bay habitat managers evaluate different restoration alternatives to support the greatest diversity and abundance of birds. *Cost:* \$30,000
- ◆ **Farallon Island Conservation Interns:** Funds six graduate level biologists for three months each to assist in prbo’s research on seabirds, marine mammals, and the white shark. *Cost:* \$15,000 or \$3,000 each
- ◆ **Songbirds and Vineyards:** Seed money to initiate a new project evaluating how vintners can develop bird-friendly practices. *Cost:* \$10,000
- ◆ **Palomarin Visitor Center Renovation:** Construction has begun but we are still \$28,000 or 15% short of the goal. Naming opportunities for gifts of \$2,500 or more are still available. All gifts are welcome.

### Please Save this Date

- ◆ October 15, 2001
- ◆ **OSHER SYMPOSIUM**
- ◆ 5:00 to 7:00 pm at the Golden Club at the Presidio in San Francisco
- ◆ Recognizing the Bernard Osher Foundation for its support of prbo’s internship program. Special guest speaker Joelle Buffa, Farallones Refuge Manager & Chief Biologist, U.S. Fish and Wildlife Service.

**Bay Nature Website** The new natural history magazine for the San Francisco Bay Area, *Bay Nature*, has launched an excellent website worth visiting: [www.baynature.com](http://www.baynature.com).

**Photo Puzzler** The South Farallon Island photo in our 2000 annual report was accidentally reversed NW to SE! Two expert readers reported the strange geography—Dr. Howard Cogswell and former Farallon biologist Bob Boekelheide.

### Partners in Flight Workshop 2002

- ◆ The third international pif conference and workshop ◆ On implementation of landbird conservation using Bird Conservation Plans.
- ◆ March 20–24, 2002, at Asilomar Center near Monterey, California.
- ◆ See [www.prbo.org/pif/npif2002.html](http://www.prbo.org/pif/npif2002.html).
- ◆ Contact Sandy Scoggin at (415) 868-1221, ext. 16; [sscoggin@prbo.org](mailto:sscoggin@prbo.org) or Terry Rich at [terry\\_rich@r1.fws.gov](mailto:terry_rich@r1.fws.gov)

## Findings: scientific questions, methods, results.

### ▼ Quantifying the urban-wildland interface in San Francisco Bay

# Landscape Effects on Tidal Marsh Birds

**Diana Stralberg**

Tidal marshes on San Francisco Bay exist in a very different landscape context today than that of even 150 years ago. Reduced to 15% of their historic extent, marshes that remain are often reduced in size and isolated from others. Many are also surrounded by urban development or agriculture—a dramatic change in the marsh-upland ecotone (transition). Now that a number of restoration projects are working to increase the amount of marsh habitat in the San Francisco Estuary, the greatest threats to tidal marsh species may be related to changes in surrounding uplands. Lands bordering marshes may be exposed to urban runoff, contaminants, invasive plants, and introduced predators.

Prbo has been studying songbirds and rails in marshes throughout the San Francisco Estuary since 1996, in our Tidal Marsh Project. We collect data on species' habitat preferences and population status that will inform restoration and management activities. In 2000, we added a landscape ecology focus. Integrating regional Geographic Information System (gis) data with field-collected bird and vegetation data, we can test certain restoration recommendations.<sup>1</sup> For example, should large areas of interconnected tidal marsh be maintained, and the interface between marsh and urban upland be minimized? These principles, while well accepted tenets of conservation biology and reserve design, have not yet been tested in San Francisco Bay tidal marsh—an inherently fragmented system with many unique qualities.

<sup>1</sup> We are examining various recommendations contained in the Baylands Ecosystem Habitat Goals Report, 1999.

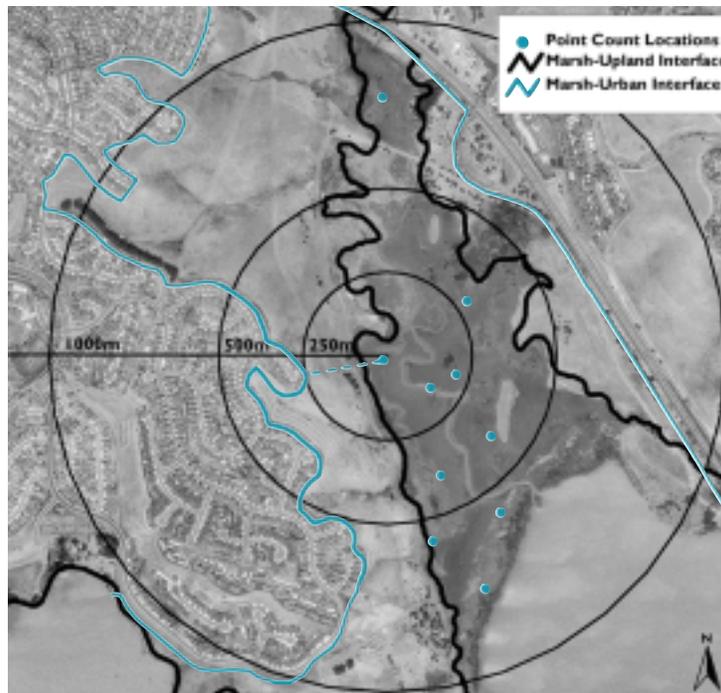


Figure 1: Sample Calculation of Landscape Metrics for Benicia State Park (Photo: USGS 1993). Landscape composition for center point was calculated based on concentric circles shown. Distance from point to urban edge indicated with dashed red line.

Using simple gis tools, each marsh and each point sampled within a marsh can be characterized in terms of surrounding landscape pattern and composition at multiple scales. For each survey point, we calculated the proximity to various types of upland edges and quantified the composition of the surround-

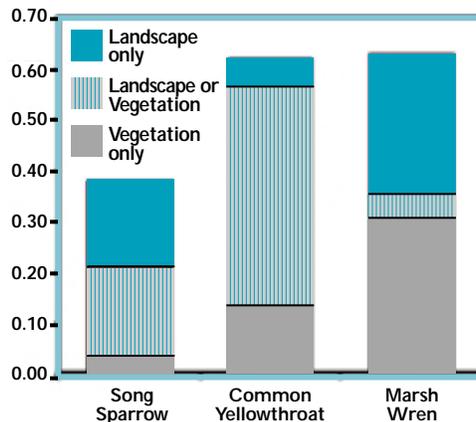


Figure 2: Model explanatory power for distribution or abundance of three species, comparing vegetation and landscape factors on a scale of 1 to 10.

ing landscape within circles of increasing size (Figure 1). We also calculated various metrics of size, shape and isolation for each tidal marsh surveyed.

Recognizing that landscape pattern and composition are interrelated with marsh vegetation, we compared the relative influence of marsh vegetation and landscape factors for each of three species examined (Song Sparrow, Saltmarsh Common Yellowthroat and Marsh Wren). Results vary by species (Figure 2), but in each case landscape factors explain significant additional variation above and beyond what can be explained by differences in vegetation features alone. All three species responded positively to the proportion of tidal marsh remaining within the surrounding landscape (at several scales), and the Song

Sparrow showed an additional negative response to the proportion of urbanization. These findings suggest that landscape characteristics may be highly important to tidal marsh birds and should be considered in the conservation and restoration of marsh lands.

In addition to continuing work on these analyses, we are beginning to look at the influence of the surrounding landscape on shorebirds and waterfowl that use salt ponds and tidal flats in the San Francisco Estuary. We plan to further explore the wetland-upland interface by monitoring birds that move between tidal marsh and riparian habitats. Details on methods and results to date can be found on the web at [www.prbo.org/tm/landscape.html](http://www.prbo.org/tm/landscape.html).

*The Gabilan Fund and Crocker Trust have provided financial support for this project.*

**Diana Stralberg**, PRBO's GIS specialist, is part of the Population Ecology Program and assists in a variety of research projects.

## Memberships

Our thanks to the following new members who have joined prbo (January–15 June 2001):

Jim Alford, David Saxe Ambuster & Judy Kahn, Elaine Anderson & Peter Thorne, Dr. Wylie C. Barrow, Mr. & Mrs. Bruce D. Bajema Jr., David Beaudette, Stewart Bolinger, John Borg, Lynda Brothers, Leslie Browne, Maryann Danielson, Donald R. Dann, Denise M. Defreese, L.B. & Connie Fodor, Mr. & Mrs. William Fontana, Rick Fournier, David Froba, Elizabeth Garsonnin, Holly Goodale, David Greenwood & Mary Doyle, George Griffeth, Meredith Hamilton, Jeff Hill, Mr. & Mrs. Robert Hirt, Patrick Laherty, Joan Lamphier, Jane Matthewman & Kevin Barrett, Lydia Mendoza, Margery & Iain Nicolson, Sally Peck, Paul J. Revier, Deanna Scoggin Torra, Mr. & Mrs. Robert Shaw, Sheila Byrne Sousa, Lucile Taber, Stephen Walker, K.C. Wylie.

## Contributions

We are grateful to the following contributors of gifts of \$250 or more (January–15 June 2001):

Gayle A. Anderson, Mr. & Mrs. Peter Avenali, Mr. & Mrs. Gerson Bakar, Janice D. Barry, M.D., Thomas C. Benet, Robert Boehm, Linda Brownrigg, Roy Churchwell, Mary Ann Cobb & Peter Wilson, Dr. Howard Cogswell, Dr. Jean W. Cohn, Preston & Donna Cook, Thomas R. Davis & Ellyn Bush, Phyllis & William Draper, Sharon B. Duvall, Joelle Fournier, Mr. & Mrs. Robert Friend, Alexander Gaguine, Fred Grafton, Richard Grand Foundation, Mr. & Mrs. Scott Hein, Doris B. Hughes, Dorothy B. Hunt, Robert E. Hunter, Jr., Sue Johnson, Sarah Jones, Nancy Kittle, Mr. & Mrs. Robert Knox, Philip A. Lathrap, Anadel Law, Ginny Loeb, Park Loughlin, Charles & Mimi Lowrey, Mr. & Mrs. Robert L. Mayer, Kate Merriman, Dr. & Mrs. Benjamin D. Parmeter, Dr. & Mrs. Oliver Pearson, Dr. & Mrs. Lawrence Petz, Helen Pratt, Mr. & Mrs. Willis J. Price, Mr. & Mrs. Robert K. Rains, Mr. & Mrs. John Rathkey, Mrs. Elliott Snyder, Dr. & Mrs. Stuart Stephens, Langdon Stevenson, Marilyn M. Strand, Adolph Suehsdorf, Peter J. Watkins, Mrs. Robert Weinstock, David Whitridge.

## In-Kind Donations

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

For our annual meeting silent auction: Bill Foss for a San Francisco Bay boating trip; Solipaso of Alamos, Mexico, for a week-long birding excursion. And: Anna Hamilton for a tripod; Anthony Hill for books for Palomarin Field Station; Maria Kaymen for a Compaq Presario keyboard; Jack & Adrienne Ladd for lunch for the Stanford Alumni Consulting team; Bucky Mace for a large framed map for our Wetlands Program; Terri & Caleb Miller for a coffee-maker; Ben Saenz for a computer hard drive.

## Gifts Honoring

Prbo is grateful for the following memorial gifts (January–15 June 2001):

In memory of John Carson: American Providers, Mr. & Mrs. Lyle Byers, Mr. & Mrs. Alexander J. Glass, John L. Lineweaver, Elizabeth Ortega.

In memory of David Johnson: Anonymous.

In memory of Doug Ellis: Dr. & Mrs. Benjamin D. Parmeter.

In memory of Lyman Lacy: Mr. & Mrs. William Hosken, Mr. & Mrs. Richard Buckley, Sally D. Durrie, Mary Franck, Theo Dapp Samuels, Mr. & Mrs. Edovard C. Thys, Mr. & Mrs. H. S. Briggan, George Hall, Mr. & Mrs. Gordon Jack, Mr. & Mrs. Dean G. Jacobs, Lusia W. Ries, Thomas C. Benet, Marilyn Cooper, Daniel G. Volkman Jr., Shirley Cahill, Mr. & Mrs. R. James Diepenbrock, Jean Harrold.

In memory of John Ladd: Stephen & Britt Thal.

In memory of Martha Wolfskill: Friends at Champion Expo.

## Wish List

Prbo seeks donations of equipment including the following. For more information, please call Melissa Frakes at (415) 868-1221, ext. 11.

Satellite internet access! office needs: picnic tables & benches; desks & office chairs; bookcases; radiant heaters; 250-mb Iomega Zip drives; laser printer; flatbed scanner; laptop computers (minimum 500 mhz with 128 mb ram); teleconference phone units; fireproof four-drawer file cabinets. for data collection: two-way radios, at least two-mile range; 10-12' stepladders; barometer; MrSID Image Compression Software; differential GPS unit; roll-up digitizing tablet. For Field Stations: 8' sofas & living room chairs; refrigerator; stove; kitchen tables & chairs; toaster ovens, coffeemakers, etc.; twin beds & sheets; dressers; 8x10' or larger storage shed.

## PRBO Field Biologists

January–June, 2001: Rafael Pesantes Aguirre, Kenda Anderson, Dan Barton, Jill Bluso, Paola Bouley, Andrew Campomizzi, Sean Casto, Roy Churchwell, Capucine Deltour, David Dixon, Anthony Dotolo, Jennifer Durbin, Robert Todd Eggert, Pete Erwin, Sharon Farrell, Dale Fiess, David Figueroa, Michael Freiberg, David Gardner, Matt Genova, Pierre Geoffrey, Eric Grant, Manuel Grosselet, Noah Hamm, Jill Harley, Robert Haupt, Michael Hayden, Jodi Hilty, Robin Hirsch-Jacobson, Rickey Holt, Russell Japuntich, Else Jensen, Eric Holt, Kim Hruska, Mary Huang, Andrew Jobs, Dennis Jongsomjit, Heidi Kirk, Quresh Latif, Kirsten Lindquist, Yen Luc, Chris McCreedy, Anthony McGuire, Michael Palladini, Catherine Peterlein, Peter Pintz, Mark Pollock, Alex Port, Mike Prather, Mai Yasue, Sue Prentice, Trina Schneider, Geoff Schwilk, Jennifer Wang, Missy Wipf, Eliza Woo, Nolan Zeide, Douglas

## Institutional Giving

We deeply appreciate the corporate and foundation grants that support prbo's increasingly successful conservation-through-science efforts. For gifts over the past six months, special thanks to:

**The David and Lucile Packard Foundation** made a significant grant to expand our flagship project, "Adaptive Conservation Planning for Birds and Habitat in the West" (also see page 2).

**National Fish and Wildlife Foundation** contributed matching funds in support of prbo's research and conservation partnerships for our California Current Marine Protected Areas, Great Basin Shrubsteppe (sagebrush) Conservation, and Inland Breeding Seabird projects.

**The Bernard A. Osher Foundation** renewed support for our internationally acclaimed Conservation Intern Program, in which more than 500 interns have received training in bird and ecosystem conservation biology.

**The Elinor Patterson Baker Trust** gave generous support for prbo's work—on the Farallon Islands and at sea—on marine wildlife and the complex ecosystems they depend upon.

**The Mary A. Crocker Trust** made a major gift in support of prbo's population ecology studies and gis project to guide major restoration efforts on San Francisco Bay (see page 10).

We greatly appreciate funding recently received for our Great Basin Shrubsteppe conservation studies from the **Bullitt Foundation**, as well as support for critical capital projects from the **Bothin Foundation**. Foundations and corporations that have generously supported prbo year to date also include: lvmh, Richard and Rhoda Goldman Fund, Rose Foundation (through The Bay Institute and Center for Ecoliteracy), padi Foundation, Pentax Corporation, Fair Isaac Fund (Marin Community Foundation), March Foundation, Project Aware Foundation and Shark Trust. Many thanks.



*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.*

YOU ARE INVITED TO PRBO'S

**Palomarin Visitor Center Grand Re-Opening  
Saturday, October 27 • 10:00 AM–12:00 noon**

EXPLORE OUR RENOVATED EXHIBITS  
OBSERVE MIST-NETTING OUTDOORS  
AND BIRD-BANDING IN OUR NEW BANDING LAB

*Please Join us for a Celebration!*

**PRBO MEMBERS' EVENTS**

**PRBO BIRD WALKS** are morning outings, in or near Point Reyes National Seashore, free to PRBO members or \$5 donation for non-members • Call 415/868-0655.

September 9 ■ **Snowy Plovers.** On-site with a prbo plover biologist, learn about work under way to protect this threatened shorebird and preserve its habitat.

October 7 ■ **Birds of No Fixed Address.** Investigate bird migration and search for vagrants at a world-renowned birding hotspot, outer Point Reyes.

November 4 ■ **Winter Birds of Bear Valley.** Walk a wooded valley where the Varied Thrush, Golden-crowned Kinglet, Red-breasted Sapsucker and others winter.

**OF SPECIAL INTEREST** Please mark your calendar!

October 15 ■ **2001 Osher Symposium.** Highlighting the achievements of prbo's outstanding intern biologists and honoring The Bernard Osher Foundation for its support of our intern training program. Keynote speaker Joelle Buffa, usfws Farallones Refuge Manager & Chief Biologist, will provide an inside view of "Seasons and Seabirds of the Farallon Islands."

September 15–October 15 ■ **Bird-A-Thon 2001.** In any 24-hour period between these dates, your quest for birds helps support prbo conservation through science! Watch for details in the mail. Also see page 8 of this *Observer*.

December 1 ■ **Bird-A-Thon Awards Dinner.** Our annual classic: a gathering of prbo friends for food, music, laughter, and tales of Bird-A-Thon prowess. All are welcome.

PRBO online :: WEB SITE [www.prbo.org](http://www.prbo.org) :: E-MAIL [prbo@prbo.org](mailto:prbo@prbo.org)

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

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

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