

BAY BIRD REVIEW

A QUARTERLY PUBLICATION ON THE SCIENCE AND CONSERVATION OF BIRDS AND THEIR HABITATS



SAN FRANCISCO BAY
BIRD OBSERVATORY

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Director's Message

In thinking back on my first year at SFBBO (incredible to believe it has been a year already!), I realize that the common theme occurring in all my reflections is the enthusiastic people who make it all happen at SFBBO—the staff, Board, volunteers and members. I continue to be inspired by the energy and commitment of those who are part of the SFBBO family, and will take a few lines here to share some of the recent accomplishments of our dedicated team.

Over the past year, SFBBO has successfully met each of our three fundraising goals, including our 2012 Year End Appeal (\$15,000), 2013 Spring Appeal (\$10,000), and 2013 California Fall Challenge (\$25,000). This is a remarkable achievement for SFBBO and is a wonderful show of support from our donors that has allowed us to strengthen our Science and Outreach Programs this past year. Thanks to each of the many people and organizations who contributed to

DIRECTOR'S MESSAGE *continued on page 2*



SFBBO BIOLOGIST *Josh Scullen surveys Russian Ridge for an SFBBO study.*

PHOTO BY CAT BURNS

Science Report

Science to Manage California's Grasslands for Avian and Botanical Diversity

California grasslands are crucial for maintaining biodiversity, and as approximately 11% of the land area in California, provide habitat for many threatened and endangered plant and wildlife species. Once covering about 20 million acres, it is estimated that only 36% of California grasslands remain today. As a result, there is considerable interest in exploring management strategies that most effectively preserve grassland biodiversity in the face of these pressures.

Prescribed burning is one important management strategy for many California grasslands. Burning improves growing conditions for native grasses and herbaceous wildflowers, reduces grass thatch that can smother growth, and reduces encroaching woody species. However, the impact of prescribed fires on wildlife such as birds is highly variable. Bird response to fire can vary according to the timing of the burn, burn intensity, and vegetation type. A positive response by birds to fire can be

immediate, through increased availability of seeds, insects, and nesting habitat, can occur over several years following the fire due to increased vegetation. Negative responses of birds to fire have also been observed. Thus, monitoring bird response to prescribed fires in California grasslands is critical to efforts to protect these species.

The Midpeninsula Regional Open Space District (MROSD) has a long-term plan to promote grassland-dependent wildlife by managing grassland vegetation with prescribed fire in conjunction with other methods such as mowing, grazing, and seeding of native grasses. From 2010–2013, SFBBO partnered with MROSD to study how prescribed fire affects the grassland bird community in preserves on the Peninsula, and to provide information to aid in future efforts to manage California's grasslands for birds. We set out to determine whether recent prescribed burning efforts had increased breeding pair numbers of

SCIENCE REPORT *continued on page 8*



FLEDGLINGS Family Program participants *Anaya and Mitali Khanzode and Maya Zolotar.*

PHOTO BY PATTY MCGANN

these campaigns and who supported our fundraising efforts in other ways.

With this strong backing from our supporters, we've been working steadily to grow our Outreach Program. Over the past few months, we've launched our new Family Outreach Program, including a new Family Membership, and our Corporate Outreach Program, both designed to broaden our reach into the community and to more widely share information about bird and habitat conservation. Both of these new initiatives have been led by SFBBO's Outreach and Communications Director, Kristin Butler (also celebrating a year with SFBBO), and bolstered by substantial support from SFBBO volunteers and our science staff. We are excited to continue to build on these new programs in 2014!

As we ring in 2014, we do so with the benefit of a devoted membership and Board of Directors, and a team of staff members who are seasoned and ready to take the New Year by storm. In 2014, we will be initiating new research projects, including studies to evaluate the reproductive success of plovers in the Bay Area and beyond (among others), and continuing to leverage our long-term research. I hope you'll join us in celebrating birds and their habitats during 2014 by volunteering with us, joining us for a bird walk or workshop, or in any way that you like. Thanks again for making my first year at SFBBO an exciting and memorable one—I'm thrilled with what we've accomplished together.

By Cat Burns, SFBBO Executive Director



PHOTO BY PATTY MCGANN
MATIALI KHANZODE learns about Lincoln Sparrows from SFBBO volunteer Gerry Ellis.

Staff Migrations



Christina Donehower

At the Annual Meeting, we bid farewell to our **Science Programs Director Christina Donehower**, who is moving on to work as an Environmental Scientist for the Natural Resources Division, California Department of Parks and Recreation, at Headquarters in Sacramento. Her position will support restoration project planning and implementation efforts and natural resource inventory, monitoring, and assessment. It will also include oversight of the Western Snowy Plover program and review of Scientific Collecting permits, among other duties. Christina provided wonderful support for all of our science staff and programs, and she will be missed.



Christina Donehower

SFBBO Program Updates

Corporate Outreach Program Update

Last month, SFBBO Executive Director Cat Burns gave a Lunch 'N Learn presentation to employees at the biotechnology company Codexis, Inc., to talk about our science and ways people can get involved in our mission to conserve birds and their habitats. The event was organized by Codexis employee Roberta Kendall, an SFBBO citizen scientist who monitors herons and egrets for our Colonial Waterbird Program that nest near the company's headquarters in Redwood City. If you would like to invite Cat to give a Lunch N' Learn presentation at your company, or if you would like to learn more about our corporate matching gift program, please contact outreach@sfbbo.org or 408.946.6548.

Family Outreach Program Update

This new program is going strong, with a banding demonstration for kids last August, several family-oriented events during our California Fall Challenge (see pages 4–5), and an opportunity next spring for families to participate in our citizen science Colonial Waterbird Program! In addition, each month SFBBO member Dudley Carlson will spotlight a different book for kids interested in birds in our e-newsletter, *Wingbeat*. All of these opportunities and more are available through our new **Family Membership**. Contact us at outreach@sfbbo.org or 408.946.6548 for information.



PHOTO BY KRISTIN BUTLER
SFBBO Biologist Josh Scullen gives a banding demonstration to some youthful birders at SFBBO's Coyote Creek Field Station.

Holiday Gift in Honor—A Great Gift for the Birds

Give a Gift in Honor for the holidays to recognize a special person or family! For each \$25 Gift in Honor donation, we'll send this beautiful California Quail card to the person or family you indicate, to notify them of your thoughtful donation, which will support research to conserve birds and their habitats. Learn more at www.sfbbo.org, outreach@sfbbo.org or 408.946.6548.

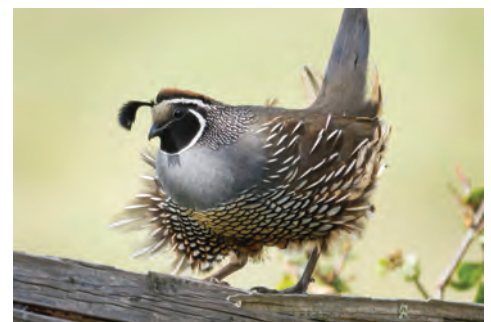


PHOTO BY CATHERINE D'ALESSIO

Monitoring Snowy Plovers in the San Francisco Bay

Western Snowy Plovers are small, ground-nesting shorebirds of beaches, dunes, and salt flats. Females typically lay 2-3 buffy, speckled eggs in a simple scrape in the substrate. Chicks are precocious, capable of running and foraging within hours of hatching. Eggs, chicks, and adults are cryptically colored and difficult to detect by even the keenest human observers. Plovers follow an unusual polygamous breeding system in which females abandon their first brood soon after hatching to re-nest with a new mate. Plovers can often raise two or three broods in a season.

The Pacific Coast population of the Western Snowy Plover breeds along or near tidal waters from Washington State to Baja California. This population has declined as a result of habitat loss, habitat alteration, human disturbance, and increasing predation pressure, particularly in nesting areas. The U.S. Fish and Wildlife Service listed the Pacific Coast population as federally threatened in 1993.

While most coastal-breeding plovers nest on beaches, those in the San Francisco Bay nest primarily on dry salt panne habitat of former salt evaporation ponds. The South Bay Salt Pond Restoration Project (SBSPRP) stands to benefit many species by restoring designated salt ponds to tidal marsh or other managed wetland types. However, one result will be less dry panne habitat available to nesting plovers as the project advances. Understanding current limiting factors and developing effective management strategies to retain and increase plover numbers and breeding success with reduced dry panne acreage is of great interest to SBSPRP stakeholders and conservationists.

Since 2003, the San Francisco Bay Bird Observatory has been monitoring plover breeding ecology in close collaboration with the Don Edwards San Francisco Bay National Wildlife Refuge. The goal of this collaboration, which has now expanded to include the California Department of Fish and Wildlife, Hayward Area Recreation and Park District,

and the East Bay Regional Park District, is to survey managed ponds and other habitats for plovers, track breeding success, and contribute to the management and recovery of this species in the San Francisco Bay (designated as federal Recovery Unit 3).

To date, our nest-monitoring results indicate that predation is the leading cause of nest failure (accounting for 31-55% of apparent losses from 2009-2013), and that nest survival can be affected by many factors, with considerable year and site variation. Nest predators documented by remote cameras in past years include California Gulls, Northern Harriers, Red-tailed Hawks, Common Ravens, Gray Foxes, and Ruddy Turnstones. There is also some preliminary evidence that experimental oyster shell enhancements employed at Eden Landing Ecological Reserve provided some benefit to plover hatching success from 2009-2012, perhaps because of the improved camouflage they offered; however, many uncertainties remain, and further study is needed.

Low numbers of banded birds and challenging re-sighting conditions make meaningful estimates of fledging success and dispersal difficult, and we are working with other plover researchers to explore improved observational methods



Newly-hatched Western Snowy Plover chick.

PHOTO BY KARINE TOKATLIAN

and perhaps telemetry to help address this knowledge gap. In addition, SFBBO recently contributed some long-term data to a Rangewide plover population viability analysis led by the U.S. Fish and Wildlife Service and Institute for Wildlife Studies. While this analysis is only in its early stages, the eventual outcome will be a better understanding of how the San Francisco Bay subpopulation fits into the broader Pacific Coast population. Improved and expanded monitoring will be critical as the SBSPRP moves forward to ensure that plovers retain adequate nesting habitat and are protected from disturbance associated with trail use and restoration-related construction activities.

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By Christina Donehower, former SFBBO Science Programs Director

2013 Nesting Season Highlights

Counted 202 Snowy Plovers in San Francisco Bay during annual breeding window survey

Documented nesting in 17 South Bay salt ponds and monitored 174 nests

Color-banded 14 newly-hatched chicks

Contributed multi-year dataset to Rangewide plover population viability analysis

Provided plover-construction monitoring services for the South Bay Salt Pond Restoration Project at Eden Landing Ecological Reserve

Shared updates on plover activity with agencies and researchers to support management efforts and to reduce human disturbance impacts to this sensitive species

CALIFORNIA FALL CHALLENGE 2013

Thank you to our Sponsors and Donors!

The 2013 California Fall Challenge has come to a close, and we thank all who participated for making it a huge success! We raised more than \$25,000, meeting our campaign goal, and engaged hundreds of people as volunteers, participants, marketers, and donors in our mission to conserve birds and their habitats through science and outreach.

MEWALDT CUP

Four teams competed in our Mewaldt Cup Bird-a-Thon this year, and the winning team was the Refugees (Richard Jeffers, Mike Mammoser, Mike Rogers, and Francis Toldi), who won with 162 species seen in Santa Clara and San Mateo Counties.

In addition, there were a couple of unique features in our Bird-a-Thon. One team, Rob Farrow and Josiah Clark's Team Manimal, participated by bike and spotted 147 species in Marin County. This "fossil fuel free" style of birding, Green Birding, is popular in Europe and is catching on in the states. In addition to lowering one's "carbon footprint," Rob said it gives him a chance to find more birds within an area, a different interface with the animals, and allows him to hear and see things at any point to more directly connect habitat changes with bird observations.

Also, this year nine kids, ages 7 to 13, birded in Santa Clara County for a full day in their team, The Fledglings, led by Pati Rouzer. They identified 80 species, posted their sitings on eBird, and raised hundreds of dollars for SFBBO. They also spent three hours at the Coyote Creek Field Station with banding volunteer Gerry Ellis, who showed them bird specimens, eggs, nests, and the tools used to measure and band birds.

FAMILY BIRD ADVENTURE

To launch our new Family Outreach Program, we hosted our First Annual Family Bird Adventure to kick off our California Fall Challenge. Environmental Volunteers hosted the event at their EcoCenter at the Palo Alto Baylands Nature Preserve and volunteered alongside SFBBO staff and volunteers. Participants



Mewaldt Cup winning team, The Refugees, (L to R) Mike Mammoser, Richard Jeffers, Mike Rogers, and Francis Toldi (not pictured) pose with SFBBO Executive Director Cat Burns (far left) and Board President Troy Rahmig (far right).



CFC Fundraising Competition Winners, from left: First Place: Gina Barton; Second Place: Mike Mammoser; Third Place: Karen DeMello.



PHOTO BY PATTY MCGANN

GINA BARTON PHOTO COURTESY GINA BARTON;
OTHER PHOTOS BY PATTY MCGANN

enjoyed a variety of activities, including making birdhouses and bird band bracelets, taking bird walks, and playing interactive games, and each family made a pledge to do something to conserve birds and their habitats after the event.

FUNDRAISING COMPETITION

Twenty-one individual and group teams competed in our Fundraising Competition this year, raising more than \$10,000, not including the money we

raised through the Band-a-Thon! Teams included: Gina Barton, Cat Burns, Kristin Butler, Charles Coston, Karen DeMello, Christina Donehower, Rob Farrow, Jan Hintermeister, Robin Leong, Mike Mammoser, Emily Moffitt, Lisa Myers, Caitlin Robinson-Nilsen, Mike Rogers, Pati Rouzer and the Fledglings, Josh Scullen, Tom Stewart, Dick Stovel, Scott Terrill, Karine Tokatlian, and Natalie Washburn. Top Fundraisers: First Place: Gina Barton; Second Place: Mike Mammoser; Third Place: Karen DeMello.

GUIDED TRIPS

More than 100 people attended 18 guided birding trips, led by some of the best birders and conservation scientists in our region. Trip Leaders included: Lee Aurich, Gina Barton, Cat Burns, Rich Cimino, Karen DeMello, Alvaro Jaramillo, Greg Kerekes, Lisa Myers, Kay Partelow, Ryan Phillips, Bob Power, Caitlin Robinson-Nilsen, Mike Rogers, Bill Rose, Pati Rouzer, Josh Scullen, Dick Stovel, Cheryl Strong, Scott Terrill, David Thomson, Lynne Trulio, and Denise Wight. The trips took place all over the Bay Area (including a university campus), ranged in length, and focused on a variety of topics, including migrants, plovers, raptors, photography, habitat restoration, waterbirds, and birding by kayak.

BAND-A-THON

Our second Coyote Creek Field Station Band-a-Thon was a big success! We kicked it off with a banding demonstration at our Coyote Creek Field Station on Sept. 14th, and during the following month banded 717 birds. This—combined with the \$2,000 matching gift we received from an anonymous donor—raised more than \$5,000 to support our year-round bird banding station!

CLICK OFF

More than 30 people competed in our Click Off photo contest this year, submitting more than 200 images and raising more than \$1,000! Category winners were: Beth Hamel (Bird Behavior); Sue Petterson (Birds and Their Habitats); Catherine D'Alessio (Bird Portrait); and Susan Teefy (Birds and Humans). Participants in our Annual Meeting chose Catherine D'Alessio's "California Quail Caught by a Spring Breeze While Standing on a Fence Rail at Point Reyes" as the People's Choice award winner. These and our 16 Merit Award winning photos can be viewed on SFBBO's Facebook page.

VOLUNTEERS

Special thanks to key volunteers who helped us with the CFC this year: Allison Connor, Kathi Kendrick, Lisa Myers, Pati Rouzer, and Ken Shirley, and thank you to Nat Seavy for being the guest speaker at our Annual Meeting.



"CALIFORNIA QUAIL Caught by a Spring Breeze While Standing on a Fence Rail at Point Reyes" by Catherine D'Alessio, this year's Click Off People's Choice winner.



"FOOD FIGHT," by Beth Hamel, winner of the Bird Behavior Category.



"NORTHERN HARRIER, Hunting for Dinner," winner of the Birds and Their Habitats Category, by Sue Petterson.



"HIDING IN THE SAND," by Susan Teefy, winner of the Birds and Humans Category.

Thank you to our CFC Sponsors!

Thank you to the following California Fall Challenge sponsors and prize and gift donors: Anne Hepburn; Annette Jung; Becky Jafee Fine Art Photography; Borrow Lenses; Cat Burns; Cave Creek Ranch; Cheesemans' Ecology Safaris; Classic Car Wash; Cornell Lab of Ornithology; David Thomson; Dean and Lisa Bickford; George Walker House; Gerry Ellis; Larry Spivak; Los Gatos Bird Watcher; Marilyn's Creations; Martha Castillo; Patagonia Palo Alto; Princeton University Press; Ramrod Ranch; REI-San Francisco; Sorensen's Resort; Steve Dakin; Tom Stewart; Troy Rahmig; Wild Side Nature Tours; and Zanker Road Resource Management LTD.



Linking the Migratory Geography of the Hermit Thrush and Parasite Transmission Sites with the Aid of Geolocator Technology

Returning from their long journey to and from northern breeding grounds, Hermit Thrushes have now arrived at SFBBO's Coyote Creek Field Station (CCFS) for the winter. This year, staff and volunteers are especially excited to have them back in the hand. In the winter of 2012-2013, SFBBO joined with Point Blue Conservation Science (formerly PRBO) and San Francisco State University in a study of the migratory geography of Bay Area Hermit Thrush populations and the blood parasites that these birds carry. By pairing DNA analysis of the parasites with migration data obtained using geolocators, tiny devices that allow us to determine migration patterns, we can estimate locations of parasite transmission.

The San Francisco Bay Area's wintering Hermit Thrushes may breed in Oregon, Washington, British Columbia, Alaska, or the Yukon territories. Geolocators are currently the most accurate means of obtaining continuous location data for a long-distance migratory songbird, allowing us to estimate their annual migratory geography. Weighing less than one gram, these battery-powered devices are attached to the bird like a backpack. Throughout the year, they record light level data which can later be translated into latitude and longitude coordinates. Because the tags record data but do not actively transmit it, birds must be recaptured the following year so that the devices can be retrieved and data downloaded.

Hermit Thrushes exhibit philopatry on both wintering and breeding grounds, meaning that they return to the same site year after year. This quality makes CCFS's Hermit Thrushes ideal subjects for a geolocator study. One tagged individual originally captured at Coyote Creek Field Station in 2006 has since been recaptured a total of 15 times in the same three nets. In winter of 2012-2013, 15 geolocators were applied to Hermit Thrushes at CCFS and 17 were applied at Point Blue's banding stations

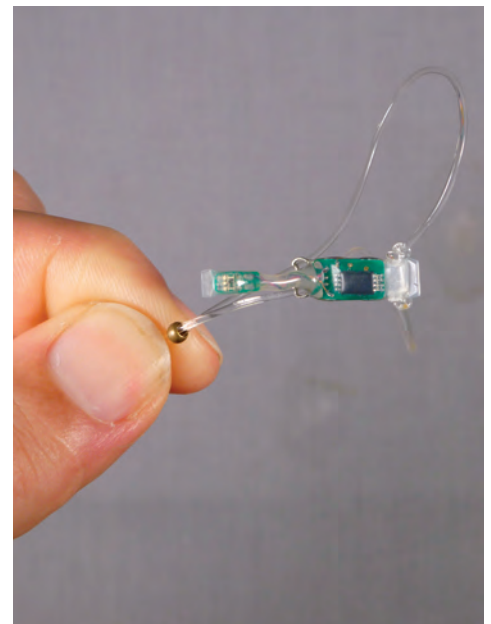
in the Point Reyes area.

This winter and last, we have been taking blood samples of tagged and non-tagged Hermit Thrushes for use in DNA analysis. Because male and female Hermit Thrushes are monomorphic, sex cannot be determined in the field. Molecular techniques allow us to determine the sex of the birds; we can then learn if tagged males and females follow different migratory routes, winter in differing locations, or arrive on wintering and breeding grounds at different times. Last winter, we obtained blood samples from 10 tagged individuals prior to their spring departure. Analysis of these samples allowed us to determine that five of these individuals are male and five are female.

Blood sampling also permits us to identify vector-borne blood parasites that have infected these birds. These parasites can cause avian malaria or similar pathologies of the liver, kidney or spleen. If birds do not die of acute infection soon after contracting the parasite, they can develop a chronic infection, thereby serving as a reservoir for future transmission by the insect vectors. By sequencing parasite genes present in the bird's blood, we can identify the varied parasite lineages with which the bird has been infected. Parasite data acquired from blood samples of tagged and non-tagged Bay Area Hermit Thrushes will be combined with data from thrushes sampled at known breeding or wintering locations elsewhere in the western United States. By comparing the spatial structure of bird populations with the genetic structure of the parasites that they carry, we can estimate potential locations of parasite transmission. Preliminary data indicates that over 50% of wintering Hermit Thrushes sampled in the SF Bay were infected with a *Leucocytozoon* sp. parasite (n=94), while 0% of breeding Hermit Thrushes sampled in the nearby Santa Cruz Mountains were infected with *Leucocytozoon* parasites (n=21).

Though we don't expect all 37 tagged Hermit Thrushes to return this winter, we hope to recapture approximately 25% when they return to the Bay Area. Those individuals will provide us with precious, unequaled data for analysis, and we look forward to sharing our results!

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By Allison Nelson, Graduate Researcher,
San Francisco State University



Top: A Hermit Thrush tagged with a geolocator. Above: A geolocator used in the Hermit Thrush study at SFBBO's Coyote Creek Field Station

Our thanks to these supporters of the San Francisco Bay Bird Observatory!



Thank you new and returning members, and generous donors. July – September, 2013

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And thank you to the 11 people who gave up to \$39 each.

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The 2013 Annual Membership Meeting

The 32nd Annual Membership Meeting was held at Stanford University's Jasper Ridge in Woodside. Caroline Lambert, Phil Leighton, and Richard Jeffers led the morning bird walks at the preserve, and afterwards the membership enjoyed brunch at the Field Station. Board Chair Troy Rahmig called the meeting to order, gave a general overview of the day's events, and presented the membership business. New Board Director Dr. Lynne Trulio was formally voted onto the Board by the membership. Troy then turned it over to SFBBO Executive Director Cat Burns and Point Blue Conservation Science Research Director Dr. Nat Seavy, who gave presentations highlighting the latest in SFBBO's work toward advancing bird and habitat conservation. The membership also participated in a Silent Auction, handed out awards for our Mewaldt Cup Bird-a-Thon and Fundraising Contest, and voted for SFBBO's California Fall Challenge Click Off photo contest "People's Choice Award" (see winners on page 5).



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SCIENCE REPORT *from cover*

grassland-obligate species (those that rely on grassland habitat for breeding).

What We Did

From 2010-2013, SFBBO biologists conducted point count surveys for grassland birds at Russian Ridge and Monte Bello Open Space Preserves in the Santa Cruz Mountains. These preserves are made up of forest and open grassland habitats. In 2007, approximately 100 acres of Russian Ridge grassland habitat were burned in a prescribed fire, and in 2009, an additional 144 acres were burned. We compared numbers and types of birds found in these burned areas with those found in unburned grassland habitat at both preserves. Using area searches, we also identified key periods of reproduction for each grassland bird species, to determine periods during which prescribed burning should take extra precautions to minimize negative impacts to breeding birds.

What We Discovered

We observed 409 individuals of 38 different bird species in grassland habitat within 100m of one of our observation points. We detected several species present only (or primarily) in areas that had been burned, including species that are known to prefer open to moderately open grasslands. These

grassland-obligate species included the Bryant's Savannah Sparrow, Western Meadowlark and Grasshopper Sparrow. The Grasshopper Sparrow and the Bryant's Savannah Sparrow are listed as a Bird Species of Special Concern in this region during the breeding season. We also identified a number of species that primarily used unburned areas.

What it All Means

The prescribed burning appears to be working to maintain relatively open grassland habitat that supports grassland-obligate birds. While these species tended to avoid areas with extensive shrub and/or tree cover, many of these species were observed using shrubs as singing/territorial perches. This indicates that a low abundance of grassland shrubs can be beneficial.

We found that prescribed burning likely helped to sustain a mosaic of grassland habitats, some of which were very recently burned and had low woody shrub cover, and others that had not been burned for quite some time and consequently had a higher abundance of woody shrubs. The more recently burned sites supported a suite of grassland-obligate bird species, while unburned areas supported a different set of species that preferred denser woody vegetation structure.

Given MROSD's interest in managing these areas for a diverse set of species,

and for grassland birds in particular, we recommended that they continue the use of prescribed fire, and that burning be conducted in ways that maintain a degree of shrub structure for use as perches within the grassland. Our study indicated that frequent burning (e.g. every year) is probably not necessary to maintain the types of habitat preferred by grassland-obligate species. However, further monitoring would be required to determine the point at which, *without additional burning*, the grassland habitat at these locations would become unsuitable for grassland-obligate species.

Although the unburned areas that we surveyed supported a variety of species that were not found in burned areas, they did not support abundant grassland-obligate species. Therefore, if maintaining these preserves to support grassland-obligate species is a management priority, continued prescribed burning is a necessity. A combination of burned and unburned areas should function to sustain the existing mosaic of habitats, and provide for the needs of many different species.

This work was funded by the MROSD, and was carried out by current and former SFBBO staff members, including Josh Scullen, Karine Tokatlian and Gina Barton, in collaboration with MROSD's Joel Silverman.

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By Cat Burns, SFBBO Executive Director