

33rd Annual Meeting of the Western Field Ornithologists
San Mateo, California • 9–12 October 2008

Scientific Presentations Program

10 and 11 October 2008 • San Mateo Marriott Inspire Ballroom

Schedule of Scientific Presentations

Friday, 10 October 2008

Afternoon Presentations

- 12:30–12:36. Introduction and Announcements, Debbie Van Dooremolen and Dave Krueper.
- 12:36–12:48. KELSEY, T. RODD and JON FEENSTRA. **Recent population trends in the Tricolored Blackbird: Results of the 2008 California survey.**
- 12:48–1:00. LEE, JAMES J., DAVID L. WOODWARD, FLOYD E. HAYES, and BRIAN D. WOODWARD. **Behavioral studies of Purple Martins nesting in utility poles in Lake County, California.**
- 1:00–1:12. STRUSIS-TIMMER, MATTHEW. **Habitat associations and nesting success of Yellow Warblers in Central California.**
- 1:12–1:24. JONES, ANDREA, BILL MONAHAN, MIKE PERLMUTTER, KAREN VELAS, GARY LANGHAM, and GRAHAM CHISHOLM. **Mapping and conservation of California's Important Bird Areas.**
- 1:24–1:36. FISH, ALLEN M., RALPH V. PERICOLI, and AARON HAIMAN. **The new urban raptor: An overview of Cooper's Hawk nesting ecology in Berkeley.**
- 1:36–1:48. JONES, RYAN, BUZZ C. HULL, and ALLEN M. FISH. **The future of field guides: The first showing of the 3D Bird Guide, a work in progress.**
- 1:48–2:00. **Break.**
- 2:00–2:12. MEYER, GREG. **Notes on the resident and migratory birds of Bahia de los Angeles, Baja California.**
- 2:12–2:24. LANGHAM, GARY and BILL MONAHAN. **Reconstructing past and ensemble forecasting future distributional responses of California's birds to climate change.**
- 2:24–2:36. CASAZZA, MICHAEL and CORY OVERTON. **Tracking Band-tailed Pigeon migration using solar powered satellite transmitters.**
- 2:36–2:48. OVERTON, CORY, MICHAEL CASAZZA, JOHN TAKEKAWA, and TOBIAS ROHMER. **Tidal influence on the home range of an endangered salt marsh bird: The California Clapper Rail.**
- 2:48–3:00. BARTON, GINA and SHERRY HUDSON. **Twenty years of breeding bird population trends at an urban riparian restoration site.**
- 3:00–3:12. MELCER JR., RONALD E. **Riparian landbird monitoring in San Luis Obispo County: An ongoing effort.**

- 3:12–3:24. **Break.**
- 3:24–3:36. LICHTWARDT, ERIC and MATT RICKETTS. **Birds of the San Francisco-Oakland Bay Bridge.**
- 3:36–3:48. STRONG, CHERYL. **The South Bay Salt Ponds Restoration Project: Challenges and opportunities for managing waterbirds in the San Francisco Bay.**
- 3:48–4:00. ROBINSON, CAITLIN and CHERYL STRONG. **Western Snowy Plover nest success and use of managed salt ponds in the South San Francisco Bay.**
- 4:00–4:12. DEMERS, SCOTT A., JOHN Y. TAKEKAWA, JOSHUA T. ACKERMAN, NILS WARNOCK, and NICOLE D. ATHEARN. **Differences in the spatial ecology of migrant and resident American Avocets in San Francisco Bay.**
- 4:12–4:24. SCHACTER, CARLEY and HUDSON, SHERRY. **Landfill use by rising population of California Gulls.**

Saturday, 11 October 2008

Afternoon Presentations

- 12:30–12:36. Introduction and Announcements, Debbie Van Dooremolen and Dave Krueper.
- 12:36–12:48. CARMONA-FREEMAN, MARY and NICHOLAS FREEMAN. **Northern Saw-whet Owls in Los Angeles County, California.**
- 12:48–1:00. SMITH, ZACH and EDWARD R. PANDOLFINO. **Winter roadside raptor surveys in the Central Valley of California, 2007-2008.**
- 1:00–1:12. PANDOLFINO, EDWARD R. and KIMBERLY SUEDEKAMP WELLS. **Changes in winter distribution of the Rough-legged Hawk in North America.**
- 1:12–1:24. SNYDER, HELEN A. **World's densest raptor population: A comparison of Cave Creek Canyon on the Coronado National Forest in Arizona and the BLM's Snake River National Conservation Area in Idaho.**
- 1:24–1:36. GILL, JR., ROBERT, COLLEEN HANDEL, NILS WARNOCK, LEE TIBBITTS, DAN RUTHRAUFF, and GARY HUFFORD. **From Dunlin to Marbled Godwits: Thirty years of study and associated technologies to assess autumn migration from Alaska.**
- 1:36–1:48. **Break.**
- 1:48–2:00. BEASON, JASON. **Western Yellow-billed Cuckoos in Colorado.**
- 2:00–2:12. FLOYD, TED. **Mid-summer dispersal, nocturnal movements, and apparent molt-migration by Chipping Sparrows in Colorado: Implications for the validity of *Spizella passerina boreophila* Oberholser, 1955.**
- 2:12–2:24. BOONE, JOHN, ELISABETH AMMON, and JOHN B. WOODYARD. **Pinyon Jay (*Gymnorhinus cyanocephalus*) activity patterns and habitat use in eastern Nevada using radio telemetry.**

- 2:24–2:36. LEIST, AMY, ELISABETH AMMON, JONATHAN BART, BETH SABIN, and JOHN SWETT. **Status of riparian birds of the Lower Colorado River: Implications for riparian habitat restoration.**
- 2:36–2:48. HINOJOSA-HUERTA, OSVEL, FERNANDO VILLASEÑOR-GÓMEZ, DAVID KRUEPER, EDUARDO GÓMEZ-LIMÓN, AARON D. FLESCHE. **The birds of Sonora, Mexico: A review and update.**
- 2:48–3:00. **Break.**
- 3:00–3:20. BEARDMORE, CAROL and DAVE KRUEPER. **Western Field Ornithologists/Sonoran Joint Venture field expedition to Sierra de La Laguna Biosphere Reserve, Baja California Sur.**
- 3:20–3:40. ERICKSON, RICHARD. **Avifauna of the Sierra de La Laguna Biosphere Reserve.**
- 3:40–4:00. PIEPLOW, NATHAN. **Bird sounds of the Sierra de La Laguna, Baja California Sur.**

Abstracts of Scientific Presentations

BARTON, GINA and SHERRY HUDSON. **Twenty years of breeding bird population trends at an urban riparian restoration site.** *San Francisco Bay Bird Observatory, 524 Valley Way, Milpitas, CA 95035; gbarton@sfbbo.org.*

Riparian vegetation makes up less than 1% of California's land cover, yet is one of the most important habitats for our landbird species. Our long-term bird survey site, the Coyote Creek Field Station, is located within a larger riparian restoration mitigation area at the south end of the San Francisco Bay and in the heart of the urbanized Silicon Valley. Habitat restoration at this site began in 1987 and includes forested riparian areas in addition to an open flood control channel. We examined long-term trends (1987-2007) in number of birds, productivity, brood patch frequency, and survival of four year-round residents in relation to habitat variables. Our focal species were Bushtit (*Psaltriparus minimus*), Chestnut-backed Chickadee (*Poecile rufescens*), Song Sparrow (*Melospiza melodia*), and Common Yellowthroat (*Geothlypis trichas*). Our methods included year-round standardized mist net operations and vegetation surveys around mist nets in select years. Bird capture rates (number of birds per net hour) for all four species increased over the 20 years. Productivity indices increased for Bushtit and Chestnut-backed Chickadee, but not for Song Sparrow and Common Yellowthroat. Brood patch frequency increased for all four species. Population trends, productivity indices, and brood patch frequency varied considerably among years, and did not necessarily mirror each other among species. For Bushtit and Chestnut-backed Chickadee, changes in productivity and brood-patch frequency over time corresponded to increases in canopy cover and percent understory cover. Examining population trends, productivity, and survival of these species allows us to evaluate how they respond to an urban riparian restoration site over time. We plan to use our correlations between bird population trends, productivity, survival, and vegetation variables to inform land managers on how to create, improve, and maintain riparian habitat that is beneficial to breeding birds.

BEARDMORE, CAROL¹ and DAVE KRUEPER². **Western Field Ornithologists/Sonoran Joint Venture field expedition to Sierra de La Laguna Biosphere Reserve, Baja California Sur.** ¹*Sonoran Joint Venture, U.S. Fish and Wildlife Service, 2321 W. Royal Palm Rd. Suite 103, Phoenix, AZ 85021; carol_beardmore@fws.gov.* ²*Migratory Bird Office, U.S. Fish and Wildlife Service, P.O. Box 1306, Albuquerque, NM 88710; dave_krueper@fws.gov.*

Western Field Ornithologists and the Sonoran Joint Venture jointly sponsored and led a research expedition to the Sierra de La Laguna Biosphere Reserve in Baja California Sur, July 13-19, 2008. The purpose of the expedition was to collect data on the endemic bird species and subspecies of this isolated mountain range. This was the first of what we hope will be a continuing WFO research expedition program that uses the expertise of WFO members to contribute to the avian knowledge of a particular area. The Sierra de La Laguna Biosphere Reserve is part of the Natural Protected Areas Commission of the Mexican government. It is recognized and protected because of its many endemic taxa including birds. The SJV organized a brief trip into the core area of the Biosphere Reserve in 2006 with partners Victor Anguiano, Reserve Biologist, and Eduardo Palacios, Pronatura ornithologist. We realized

that more time and more people were needed to properly document breeding birds, thus we partnered with WFO and launched the expedition that we report on here. This series of presentations will discuss the 2008 expedition's goals, methodologies, discoveries, and results. Expedition participants, Carol Beardmore, Dave Krueper, Dick Erickson, and Nathan Pieplow, will each give a portion of this unique presentation.

BEASON, JASON. Western Yellow-billed Cuckoos in Colorado. *Rocky Mountain Bird Observatory, 14500 Lark Bunting Lane, Brighton, CO 80603; jason.beason@rmbo.org.*

Breeding by Yellow-billed Cuckoos (*Coccyzus americanus*) in western Colorado had not been documented since 1988, during the first Colorado Breeding Bird Atlas. However, Yellow-billed Cuckoos were observed in Delta County, Colorado every summer from 2003 to 2007. Rocky Mountain Bird Observatory conducted occupancy surveys for Yellow-billed Cuckoos in the North Fork of the Gunnison River Valley during the summer of 2008. We used call-playback surveys during multiple visits to 80 points at 28 sites containing potentially suitable cuckoo habitat. We were successful at documenting Yellow-billed Cuckoos in five locations during call-playback surveys, and recorded several incidental sightings during the breeding season. In addition, we confirmed breeding of Yellow-billed Cuckoos by finding a nest with two nestlings during nest-searching efforts. All Yellow-billed Cuckoos detected were found at higher elevations than recorded in any other portion of the species' range. Given the rarity of this species in its western range, this is of considerable interest to ornithologists and others working towards conservation of Yellow-billed Cuckoos in western North America.

BOONE, JOHN, ELISABETH AMMON, and JOHN B. WOODYARD. Pinyon Jay (*Gymnorhinus cyanocephalus*) activity patterns and habitat use in eastern Nevada using radio telemetry. *Great Basin Bird Observatory, 1755 E. Plumb Lane # 256, Reno, NV 89502; boone@gbbo.org.*

Singleleaf pinyon pine (*Pinus monophylla*) and juniper (*Juniperus* spp.) woodlands in the Great Basin have been encroaching over the last century into lower-altitude sagebrush shrublands. Altered fire regimes and grazing pressures are the most commonly invoked explanations for this phenomenon. Land management agencies have opted to remove or thin these woodlands in many locations by hand-cutting, mastication, and prescribed fire. In 2007, the Great Basin Bird Observatory, in cooperation with the Nevada Department of Wildlife, began a project designed to characterize the effects of pinyon-juniper removal on native birds. One focus of our study is the Pinyon Jay, a declining species for which Nevada bears substantial management responsibility. We initiated Nevada's first radio-telemetry study of Pinyon Jays in late February 2008, when we captured the first cohort of 4 jays near Baker, White Pine County, and attached glue-on transmitters to the interscapular area. This technique proved successful, and we collected daily data from 3 of these 4 birds over the entire 3-month life of the transmitters (the fourth transmitter was lost in week seven). Pinyon Jays from this population had a home range of approximately 2,800 ha. No large-scale movements between disjunct woodland patches were observed, but jays traveled up to 400 m away from the nearest pinyon-juniper trees on many occasions to forage in sagebrush. Jays selected more open woodland areas for foraging, while denser stands were selected for roosting and nesting. As the breeding season began in late March, flocks lost some of their cohesion and home ranges constricted. We will monitor additional jay cohorts in the fall and winter seasons to better characterize jay habitat use and movement patterns throughout the year. These studies should eventually allow us to better understand effects of pinyon-juniper management on this species.

CARMONA-FREEMAN, MARY and NICHOLAS FREEMAN. Northern Saw-whet Owls in Los Angeles County, California. *811 N. Columbus Avenue #22, Glendale, CA 91203; mnfreeman@earthlink.net.*

Due to the nocturnal habits of the Northern Saw-whet Owl (NSWO; *Aegolius acadicus*), an infrequency of spontaneous vocalizations, and inaccessibility of its haunts during winter, an incomplete understanding exists of the status and distribution of NSWO in Los Angeles County, California. We conducted 98 nocturnal surveys along the Angeles Crest Highway from May 2000 to Oct 2006, spending 98.8 hours actively listening for spontaneous or solicited calling, and found that NSWO responds to taped calls year round. Most spontaneous calls were detected in the spring (Mar-May), and less often in the summer (Jun-Sep), when calls were sporadic, and usually solicited by recordings. During fall and winter (Oct-Feb), up to seven NSWOs per night were solicited to call, although no spontaneous calls were detected for Dec-Feb (a period during which our data are limited). We found NSWO from 4,300' to about 7,000' elevation in densely forested north-facing slopes dominated by interior live-oak with some combination of big-cone Douglas fir, Jeffrey and sugar pines, and incense cedar; running water was often nearby. *Ceanothus* spp. is a common groundcover type. Known dates for sightings of broods of recently fledged NSWO in the southern California mountains are mostly in late June and July, including the southern Sierra Nevada (4 broods), San Bernardino Mtns. (2 broods), and San Gabriel Mtns. (4 broods, including 3 located during our surveys). One outlying date in the San Gabriels in mid-April suggests we may be missing early clutches, and finding only second

or late clutches. We also discovered that NSWOs call during all phases of the lunar cycle, with somewhat greater frequency toward the new moon.

CASAZZA, MICHAEL and CORY OVERTON. **Tracking Band-tailed Pigeon migration using solar powered satellite transmitters.** *U.S. Geological Survey, Western Ecological Research Center, Dixon Field Station, 6924 Tremont Road, Dixon, CA 95620; Mike_Casazza@usgs.gov.*

During the winter of 2006 we initiated a project using solar-powered satellite transmitters to document Pacific Coast Band-tailed Pigeon (*Patagioenas fasciata monilis*) migration and space use. We marked 4 individuals in central and southern California in the winter of 2006, 2 individuals in central California during the winter of 2007, and 14 individuals in northwestern California (2), northwestern Oregon (5), north-central Washington (6), and western Nevada (1) in the summer of 2007. Migration, during either fall or spring, was initiated by 16 of the 20 marked individuals. Two individuals remained localized between breeding and winter periods while one individual died and one individual's radio stopped transmitting prior to fall migration. Average distance moved between breeding and winter territories was 752 km ($n=14$; $SD=275$). The average duration of migration was 33 days but was highly variable ($n=13$; $SD=21$ days; range 3-89). The overall average migration rate was 39 km/day, but the maximum rate of migration (greatest rate of movement between successive locations for each individual) averaged 93 km/day ($n=15$; $SD=60$). One individual migrating from southern California to northern Washington traveled 1,119 km during a 109-hour period (10.3 kph). We were able to document migratory movement within a single 10-hour duty cycle on 8 occasions (active migration). Average flight speed during active migration was 40 kph. Active migration typically occurred at night (6 of 8 occasions) and possibly associated with a full moon (5 days prior to through 2 days after a full moon). Satellite telemetry locations allow for the documentation of important seasonal use areas and stopover locations, as well as providing information to managers about population distribution.

DEMERS, SCOTT A.^{1,4}, JOHN Y. TAKEKAWA¹, JOSHUA T. ACKERMAN², NILS WARNOCK³, and NICOLE D. ATHEARN¹. **Differences in the spatial ecology of migrant and resident American Avocets in San Francisco Bay.** ¹*U.S. Geological Survey, Western Ecological Research Center, San Francisco Bay Estuary Field Station, 505 Azuar Drive, Vallejo, CA 94592.* ²*U.S. Geological Survey, Western Ecological Research Center, Davis Field Station, 1 Shields Avenue, University of California, Davis, CA 95616.* ³*PRBO Conservation Sciences 3820 Cypress Drive #11 Petaluma, CA 94954.* ⁴*Current address: H. T. Harvey & Associates, 983 University Ave., Bldg D, Los Gatos, CA 95032; sdemers@harveyecology.com.*

San Francisco Bay is well known as a migration and wintering area of international importance for shorebirds. However, in the past century, a breeding population of American Avocets (*Recurvirostra americana*) has become established in the estuary. These breeders overlap during parts of the year with a migratory population of avocets, presenting a unique opportunity to compare the spatial ecology of coexisting migrant and resident shorebirds. We captured and radio-marked pre-breeding migrant and resident avocets at two capture sites (salt pond and tidal flat) to examine their space use and habitat selection. Migrants showed larger linear movements and traveled farther than residents captured at the salt pond. Conversely, migrants had smaller home ranges and remained closer to their capture sites than residents captured on the tidal flat. We detected significant differences in habitat selection at multiple spatial scales between birds captured from the two habitats, but minimal differences between migrants and residents within those capture sites. Generally, avocets selected habitats that were similar to their capture locations, regardless of their migratory status. We suggest that site differences in habitat selection indicate they have adaptable pre-breeding strategies, while differences in space use between migrants and residents reflect their dissimilar phenology.

ERICKSON, RICHARD. **Avifauna of the Sierra de La Laguna Biosphere Reserve.** *LSA Associates, 20 Executive Park, Suite 200, Irvine, CA 92614; richard.erickson@LSA-assoc.com.*

The endemic-rich Sierra de La Laguna has long been of interest to ornithologists. John Xantus apparently first visited the mountains in 1859, but if so his corresponding specimens and notes were lost. A northern Californian, Lyman Belding, visited the mountains in 1883 and published an initial list of 41 species. In 1902, William Brewster's summary of Cape District birds included the first observations from low elevation sites now within the reserve. In 1967, Richard Banks published a thorough account of 69 species at La Laguna, the high elevation meadow and basin at the core of the reserve. La Paz biologist Ricardo Rodríguez Estrella reported quantitative information on the reserve's birds in 1988, and added many foothill species. Philip Unitt visited the sierra with Rodríguez Estrella and others in 1990 and published three notes. Carol Beardmore and others affiliated with Sonora Joint Venture organized expeditions to La Laguna in 2006 and 2008, the latter sponsored jointly by Western Field Ornithologists. Since 2000, numerous observations reported to *North American Birds* have come primarily from

lowland areas. The reserve's bird list has grown to 146, La Laguna's to 89. The 36 nesting species at La Laguna have remained unchanged for 40+ years, although Whip-poor-will confirmation was first obtained this year. In general clutch sizes appear to be reduced compared to related northern taxa.

FISH, ALLEN M., RALPH V. PERICOLI, and AARON HAIMAN. **The new urban raptor: An overview of Cooper's Hawk nesting ecology in Berkeley.** *Golden Gate Raptor Observatory, Bldg. 1064, Ft. Cronkhite, Sausalito, CA 94965; afish@parksconservancy.org.*

In 2002, we trained 24 volunteers to thoroughly search a 2,782-ha area of Berkeley and Albany, California, for Cooper's Hawk (*Accipiter cooperii*) nest sites. Through 2008, our search effort has averaged 570 hrs/season searching for new sites and monitoring known territories. During the seven-year study, we located 80 active nests, of which 77 were successful, i.e., fledged at least one young. Oregon ash, American elm, Monterey pine, blue gum eucalyptus, coast live oak, and blackwood acacia accounted for 91% of 78 nest trees. Forty (50%) nest sites were along streets or in private yards, 22 were in parks, and 18 were on school campuses. Annual nest fidelity averaged 44% for 2002 through 2007. The annual nesting density ranged from 198 to 309 ha/nest, comparable to the densest published values for the species, measured in Wisconsin in the 1990s. Adult pairs were on territories as early as mid-January, and as late as late September. Nest building was observed from late February to late March, incubation from late March to mid May, hatching from early May to early June, and branching from early June to mid July. By mid August no young hawks were found on natal territories. Annual productivity ranged from 3.3 to 4.1 branchers per successful nest. Total annual productivity for the entire study area ranged from 32 to 53 juvenile hawks. We collected and identified 1,058 prey remains found near the nest sites during the 2002 and 2003 breeding seasons, including 25 bird and 3 mammal species. Of these, Rock Pigeon, Mourning Dove, and American Robin comprised about 80% of the biomass of the hawks' diet. The percentage of non-native biomass in the diet was ~40%.

FLOYD, TED. **Mid-summer dispersal, nocturnal movements, and apparent molt-migration by Chipping Sparrows in Colorado: Implications for the validity of *Spizella passerina boreophila* Oberholser, 1955.** *American Birding Association, P.O. Box 7974, Boulder, CO 80306-7974; tfloyd@aba.org.*

Chipping Sparrows begin to disperse to the eastern plains of Colorado by early July, and in 2007 and 2008 I quantitatively documented the extent of this dispersal. There is some movement of Chipping Sparrows by day, but there appears to be a stronger nocturnal component, with steady nocturnal migration of this species as early as late July. As early as the first week of July, some Chipping Sparrows have dispersed more than 100 miles from their presumed breeding grounds in the mountains. Although early postbreeding dispersal in eastern Chipping Sparrows (*S. p. passerina*) is also noted by July, it is erratic, apparently short-distance, and apparently lacking a sustained nocturnal component. Nearly all Colorado Chipping Sparrows observed away from the breeding grounds in July and August are adults in worn alternate plumage. They are secretive, and they appear to form cohesive flocks that remain for weeks in small patches of dense vegetation. I hypothesize that Colorado Chipping Sparrows are "molt-migrants" that complete their prebasic molt away from the breeding grounds, which by mid-summer are hot, dry, and unproductive. Peter Pyle and colleagues, working independently of me, reached a similar conclusion in a 2007 study in Arizona. Interestingly, Chipping Sparrows farther north in the Rocky Mountain region do not appear to exhibit sustained mid-summer dispersal. All Chipping Sparrows breeding in the Interior West are assigned by most authorities to the subspecies *S. p. arizonae*, but H. C. Oberholser recognized the northern population as *S. p. boreophila*. Because morphological differences between northern *boreophila* and southern *arizonae* (*sensu stricto*) are weak and clinal, Oberholser's distinction has not been widely accepted. My observations introduce a behavioral angle on the problem, however, and suggest that population differentiation between northern and southern Interior West Chipping Sparrows may be greater than is generally thought to be the case.

GILL, JR., ROBERT¹, COLLEEN HANDEL¹, NILS WARNOCK², LEE TIBBITTS¹, DAN RUTHRAUFF¹, and GARY HUFFORD³. **From Dunlin to Marbled Godwits: Thirty years of study and associated technologies to assess autumn migration from Alaska.** ¹USGS Alaska Science Center, 4210 University Drive, Anchorage, AK 99508; robert_gill@usgs.gov. ²PRBO Conservation Science, Petaluma, CA 94954. ³NOAA, National Weather Service, Anchorage, AK 99501.

In January 1977, at the now-historic Shorebird Symposium in Asilomar, California, Dr. Frank Pitelka queried a relatively neophyte shorebird biologist, asking if Dunlin (*Calidris alpina*) might be flying nonstop across the Northeast Pacific from Alaska to California. From that question evolved a project and staff that have now devoted over 30 years of study to shorebird migration. The initial project relied on many years of conventional banding and marking, augmented by a healthy dose of environmental detective work, to show that Dunlin indeed flew nonstop between the Alaska Peninsula and their nonbreeding grounds along the coast of the Pacific Northwest. Most

recently, the same results have been shown for Marbled Godwits (*Limosa fedoa*). These birds, like Dunlin, carried individual markers on their legs, but unlike Dunlin they also carried the latest satellite telemetry technology that revealed for each bird not only the beginning and end of its migration but also the route taken. Between these two watershed events came insights suggesting that several other species of shorebirds (and waterfowl) routinely embark in autumn on a 2,500–4,500-km-long crossing of the northeastern Pacific. And while such distances may seem inconsequential compared to what we are finding in species such as Bar-tailed Godwit (*L. lapponica*) and Bristle-thighed Curlew (*Numenius tahitiensis*), the phenomenon of long-haul migration is expressed across wide arrays of species and distances. Understanding the breadth and depth of the phenomenon is crucial for understanding components of bird migration theory and for implementing effective conservation strategies for shorebirds.

HINOJOSA-HUERTA, OSVEL¹, FERNANDO VILLASEÑOR-GÓMEZ², DAVID KRUEPER³, EDUARDO GÓMEZ-LIMÓN⁴, and AARON D. FLESCHE⁵. **The birds of Sonora, Mexico: A review and update.** ¹*Pronatura Noroeste, Avenida Jalisco 903, San Luis Río Colorado, Sonora, México, 83440; osvelhh@gmail.com.* ²*Laboratorio de Ornitología, Facultad de Biología, Universidad Michoacana de San Nicolás de Hidalgo, Morelia, Michoacán, México.* ³*U.S. Fish and Wildlife Service, Region 2, P.O. Box 1306, Albuquerque, NM.* ⁴*Monte Sonorense, Ángela Peralta No. 61, Colonia Periodista, Hermosillo, Sonora, México.* ⁵*School of Natural Resources, University of Arizona, 104 Biological Sciences East, Tucson, AZ.*

We reviewed and updated the list of bird species known to occur in the state of Sonora, Mexico. We based our review on records published in 89 papers and 16,008 museum specimens obtained between 1849 and 2008 and on >278,000 field observations and banding records obtained by the authors between 2000 and 2008. Museum specimens that were not considered previously, combined with sight records, added 23 species to the state list reported by Russell and Monson (1998), and allowed us to evaluate the status of other species in Sonora. Based on these data, the avifauna of Sonora includes 548 species of 72 families and 20 orders and is the fourth richest avifauna in Mexico. Sonora supports 226 species of permanent residents, 46 summer residents, 226 long-distance migrants, and 50 partial migrants. Species that had not been previously observed included Ross's Goose, which is a regular winter visitor in NW Sonora, and Black Rail, which has resident populations in the Colorado River Delta, as well as 15 vagrant species (<3 records), including Swallow-tailed Kite, Red-breasted Sapsucker, and Canada Warbler. We also observed that species that were considered rare actually occur in Sonora fairly regularly (e.g. Pale-billed Woodpecker and Ivory-billed Woodcreeper) or are widespread (e.g. Colima Pygmy-Owl), and we documented the presence and expansion of the Eurasian Collared-Dove throughout much of lowland Sonora. Twenty-nine bird species in the state are of global conservation concern, according to the Red List of Threatened Species of the IUCN and 63 are federally protected in Mexico. Ornithological studies have increased in Sonora over the last decade, as has activity by ecotourists and birdwatchers. These efforts are generating valuable information that necessitates a system to review records, track the status of rare and sensitive species, and maintain an updated registry of the avifauna of Sonora.

JONES, ANDREA, BILL MONAHAN, MIKE PERLMUTTER, KAREN VELAS, GARY LANGHAM, and GRAHAM CHISHOLM. **Mapping and conservation of California's Important Bird Areas.** *Audubon California, 601 Embarcadero, Suite 14, Morro Bay, CA 93405; ajones@audubon.org.*

The Important Bird Areas Program is a global effort to identify and conserve habitat vital to birds and other biodiversity. This program identifies critical sites that provide essential habitat for one or more species of bird. Since 1985 over 7,500 places have been recognized as Important Bird Areas (IBAs) throughout 6 continents and 170 countries. Audubon California has recognized 148 IBAs throughout the state. These 148 sites reflect the tremendous diversity of California's landscapes and biological communities. Although incredibly varied across sites, each one ties into the statewide, regional, and global conservation network. While conferring no regulatory authority, a site's designation as an Important Bird Area is a powerful distinction that can be utilized to leverage conservation efforts. Important Bird Area status increases opportunities for land acquisition, restoration, conservation planning, public outreach, advocacy, and environmental education. In 2007, Audubon California began the process of identifying approximate boundaries and maps for IBAs, with the assistance of the environmental studies program at California Polytechnic University, San Luis Obispo. With the assistance of 8 students and a GIS professor, David Yun, a standardized methodology was developed that could apply to mapping boundaries for all IBAs across California using GIS ArcMap software. Students then focused on the process of digitizing the boundaries based on descriptions of each IBA as provided in the Important Bird Areas of California (Cooper, 2004). A draft map of 148 IBAs was completed in October 2007. For the past year, Audubon has focused on reviewing, editing, and refining the draft maps and in October, 2008, Audubon California will release for the first time GIS maps of all California Important Bird Areas. Tools and techniques to develop these maps and results will be shared, as will application of the Important Bird Areas program to local and regional conservation efforts.

JONES, RYAN, BUZZ C. HULL, and ALLEN M. FISH. **The future of field guides: The first showing of the 3D Bird Guide, a work in progress.** *Golden Gate Raptor Observatory, Golden Gate National Parks Conservancy, Bldg 1064 Ft Cronkhite, Sausalito, CA 94965; rjones@parksconservancy.org.*

Inspired by the interactive features of many modern commercial websites, we've created an early version of a 3D Bird Guide (3DBG), a new tool that combines computer modeling, the internet, and traditional scientific illustration to display three-dimensional full-color bird models that can be controlled by the user. Organized by species and taxonomic group just as in a traditional field guide, the 3DBG allows the user to manipulate the bird image in a variety of ways, among them, to turn the bird a full 360 degrees, to change between adult and juvenile plumages, and to make the bird flap its wings. These cyber birds are a generational leap beyond traditional, static, ornithological illustrations, and may be accessed and operated through the internet on any computer or WiFi mobile device. The current 3DBG version uses the Falconiformes as a model group; however, we plan to expand to all North American bird orders. We are seeking ideas on how to improve the utility and impact of the guide, as well as strategies for future funding and development. We believe that this new form of dynamic, interactive identification guide can pave the way to a widely expanded future audience for birding. For example, the 3DBG has the potential to reach a generation of young people who have a decade of experience in three-dimensional computer gaming, but for whom the idea of opening a bird book has not been within their scope of interest or experience.

KELSEY, T. RODD and JON FEENSTRA. **Recent population trends in the Tricolored Blackbird: Results of the 2008 California survey.** *Audubon California, 5265 Putah Creek Road, Winters, CA. 95694; rkelsey@audubon.org.*

Restricted distribution and extreme coloniality of Tricolored Blackbirds (*Agelaius tricolor*) make this species particularly susceptible to disturbance and habitat loss, resulting in dramatic population declines over the last 70 years. Since 1994, agencies and partners have implemented volunteer-based surveys to track population trends and habitat use of tricolors. The survey in April 2008 continued this long-term effort, while also increasing the geographic coverage of the survey. Coverage was particularly enhanced in southern California out of concern for this sub-population. In 35 counties across California, 160 volunteers conducted untimed surveys at 378 historic and newly discovered colony sites. The total population estimate was 401,000 birds, 144,000 more than during the last survey in 2005; this includes 5,987 birds counted in southern California. The increase in number of tricolors counted compared to 2005 is at least partially due to increased geographic coverage; however, it remains unclear how much can also be attributed to conservation efforts between 2005 and 2008. As previously reported, 80% of the population occurs in the San Joaquin Valley, where tricolors form large colonies in grain fields that are vulnerable to reproductive failure when the field is harvested before birds fledge. Successful efforts to protect these "mega-colonies" between 2005 and 2008 may have contributed to the overall increase in number. The southern California count in 2008 represents a 70% decline since 2005. The future of Tricolored Blackbirds in southern California (an isolated and potentially genetically distinct subgroup) is particularly troubling because of the small number, steeply negative population trend, and continuing degradation or loss of colony sites. Volunteer-based surveys such as this provide valuable, range-wide information that is rare for many species. The Tricolored Blackbird Working Group will continue conservation efforts across the species' range, using the data collected from these surveys and the Tricolored Blackbird Conservation Plan as guides.

LANGHAM, GARY and BILL MONAHAN. **Reconstructing past and ensemble forecasting future distributional responses of California's birds to climate change.** *Science Department, Audubon California, 4225 Hollis St., Emeryville, CA 94608; glangham@audubon.org.*

We are using georeferenced specimen and observation data from ORNIS, the Audubon Christmas Bird Count, and the North American Breeding Bird Survey to develop climate-based predictive distribution models for California's coastal and terrestrial avifauna. In phase I, we build and validate historic (1966-2006) time series models using the observed climatic associations of each species. In phase II, we project the species models using multiple climate change models and scenarios for the 21st century. Results are in the form of predictive distribution maps that can be used to help prioritize areas for bird conservation in the face of a changing climate and model uncertainty. We center our discussion on a series of key examples highlighting sensitive bird species preservation at Tejon Ranch, oak woodland restoration and generation in northern portions of the Great Central Valley, and Tricolored Blackbird habitat restoration at Bobcat Ranch and the Kern River Preserve.

LEE, JAMES J.¹, DAVID L. WOODWARD², FLOYD E. HAYES¹, and BRIAN D. WOODWARD². **Behavioral studies of Purple Martins nesting in utility poles in Lake County, California.** ¹*Department of Biology, Pacific Union College, 1 Angwin Ave., Angwin, CA 94508; jajlee@puc.edu.* ²*457 Woodward Way, Lakeport, CA 95453.*

From 2003 to 2007, we documented the presence of 103 Purple Martin (*Progne subis*) nests in hollow extension arms mounted near the tops of 30 utility poles used for high-voltage electrical transmission. The poles were located along 3.5 km of Red Hills Road in Lake County, California. Each pole had two identical, metal extension arms mounted at a 180° angle to one another, both with downward-facing openings that allowed access to cavity-nesting birds. Other cavity-nesting species that successfully nested in the extension arms were Western Bluebird (*Sialia mexicana*; $n = 10$), European Starling (*Sturnus vulgaris*; $n = 14$), and House Sparrow (*Passer domesticus*; $n = 4$). Seasonality and nesting success of all species were assessed with point counts at each pole on 14-25 dates per yr. The arrival of Purple Martins began in mid-March of each year. Nest-building activity occurred from late April until mid-June. Observations of ambulatory nestlings begging for food at nest-cavity entrances occurred primarily during the first three wk of July. All adult martins and fledglings had departed Red Hills Road by late July. There was no evidence that any nest cavities were used to rear two broods of martins in one year. However, martins were capable of successfully rearing young in extension arms that had already been used by starlings or bluebirds to fledge young during the month of May. The presence of 60 identical cavities at the site provided the unique opportunity to analyze the importance of other factors associated with nest-site selection by Purple Martins that had no history of manipulation by humans. The martin population avoided use of nest cavities on poles with flight paths highly encroached upon by nearby trees. Among the remaining poles, statistical analyses showed a positive correlation between the number of nests per pole and the height of the extension arms above ground. There was a negative correlation between number of nests per pole and the height of plant growth surrounding the base of the pole. Among 18 poles with one extension arm facing southeast and one facing northwest, 44 of 65 successful nests occurred in the extension arm facing southeast, away from the afternoon sun.

LEIST, AMY¹, ELISABETH AMMON¹, JONATHAN BART², BETH SABIN³, and JOHN SWETT³.

Status of riparian birds of the Lower Colorado River: Implications for riparian habitat restoration.

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The Lower Colorado River, extending from above Lake Mead to the Southerly International Border with Mexico, is home to a wide range of desert and riparian habitats and more than 26 species of breeding passerines. As part of the Lower Colorado River Multi-Species Conservation Plan (LCR MSCP), data was collected on eight reaches of the Lower Colorado River, and on the Bill Williams River, from mid-April through the end of June 2008. The purpose of our work is to estimate current population density as a baseline for long-term population monitoring of riparian birds throughout the Lower Colorado River system, and to identify critical habitat requirements that can serve as guidelines for restoration of riparian habitats, focusing on six species covered by the LCR MSCP: Gilded Flicker (*Colaptes chrysoides*), Gila Woodpecker (*Melanerpes uropygialis*), Vermilion Flycatcher (*Pyrocephalus rubinus*), Arizona Bell's Vireo (*Vireo bellii arizonae*), Sonoran Yellow Warbler (*Dendroica petechia sonorana*), and Summer Tanager (*Piranga rubra*). Ninety plots, both randomly selected and at non-random restoration sites, were surveyed twice during the breeding season using rapid area searches. A sub-sample of these plots was surveyed intensively to determine actual numbers of breeding birds present in each plot and to be used as a double-sampling approach to determine detection ratios. For this, we use the ratio of detections from the rapid surveys and actual numbers of birds from intensive surveys to calculate a detection ratio in order to remove possible biases from the rapid survey results. With two visits to each rapid survey plot that were spaced out by one month, we will also discuss the effects of seasonality on bird populations under different habitat conditions.

LICHTWARDT, ERIC and MATT RICKETTS. Birds of the San Francisco-Oakland Bay Bridge.

LSA Associates, Inc., 157 Park Place, Point Richmond, CA 94801; eric.lichtwardt@lsa-assoc.com.

The San Francisco-Oakland Bay Bridge East Span Seismic Safety Project is one of the largest construction projects currently underway in the United States. This multi-year effort to construct a new East Span of the bridge involves a number of construction activities on land as well as in the bay. Some of these activities could potentially affect federally endangered or threatened bird species and other bird species of special concern, including the Least Tern and Brown Pelican. One of the largest nesting colonies of Double-crested Cormorants in California is also located on the existing bridge. In addition, Peregrine Falcons and Western Gulls use the bridge for nesting, and a variety of water birds winter on the bay around the bridge. Due to the presence of special-status birds in the project area, the United States Fish and Wildlife Service and the California Department of Fish and Game have required monitoring of Least Terns and Brown Pelicans, as well as nesting Peregrine Falcons, Double-crested Cormorants, and Western Gulls, during construction of the new bridge. To assist the California Department of Transportation to comply with this requirement, we have monitored birds around the bridge since 2002. The focus of our surveys has been to assess the impacts of noise and other construction-related disturbance on the target species, but we have also

monitored the occurrence of all bird species in the project area, resulting in a long-term data set of bird observations in an area of the bay seldom visited by field ornithologists. During our surveys we have documented the first breeding record of Brandt's Cormorant in Alameda County, and have observed a number of unusual or uncommon species for this area of the bay, including Harlequin Duck, Long-tailed Duck, summering White-winged Scoter, Pacific Loon, Northern Fulmar, and Parasitic Jaeger.

MELCER JR., RONALD E. **Riparian landbird monitoring in San Luis Obispo County: An ongoing effort.** *Biological Sciences Department, California Polytechnic State University, San Luis Obispo, CA 93407; rmelcer@calpoly.edu.*

Riparian habitats have suffered great losses in California; only 2 to 15 percent of historic range remains. San Luis Obispo (SLO) County's coastal watersheds contain high-quality, relatively intact riparian corridors, despite surrounding land use and water management practices. These corridors provide critically important habitat for neotropical and neotemperate breeding birds, as well as for migrant and winter resident species. Despite their high quality and diverse avian communities, SLO County's riparian habitats have received little attention from conservation directives such as the California Partners In Flight Riparian Bird Conservation Plan. Also, few, if any, studies have been published addressing local population trends and demographics. Land use change and habitat fragmentation, non-native species invasions, and increased groundwater and surface water use all threaten to degrade these high-quality habitats, and may lead to the loss of native flora and fauna that reside within the corridors. In an effort to fill information gaps, inform future monitoring efforts, and provide guidance for land managers and planners, we initiated an ongoing breeding season census using variable-distance point count surveys ($n=115$) in 8 coastal watersheds and a segment of the Salinas River in May 2006. Objectives of this effort include estimating species distributions, estimating richness and diversity, tracking long-term population trends, and investigating regionally specific habitat requirements. We detected 118 bird species during 2006-2008 census surveys, including 24 riparian obligate or dependent species. Sites varied in species richness and diversity, with the Salinas River significantly lower, and Arroyo Grande Creek significantly higher, in both estimates. In addition to these non-demographic measures of community structure and population trends, we plan to investigate the relationship between vital rates and bird abundance in our ongoing research.

MEYER, GREG. **Notes on the resident and migratory birds of Bahia de los Angeles, Baja California.** *California State University Monterey Bay, Campus Center Bld 82D, Seaside, CA 93955; greg_meyer@csumb.edu.*

Bahia de los Angeles is a large embayment along the western shore of the Gulf of California, situated on the Baja Peninsula approximately 400 miles south of the U.S.-Mexico border. This study reports on sighting data and field observations of the avifauna of this relatively unvisited area collected between 1985 and 2007, and documents the presence of 220 species of birds. Included in this record are 30 breeding residents, 14 vagrant species, and a number of range extensions. Bahia is located near the junction of three subdivisions of the Sonoran Desert, and holds a diverse array of terrestrial habitats, including dense cactus forests with numerous endemic species; hot, arid creosote flats; and rocky mountainous peaks over 1,000 meters in elevation. The presence of springs and anthropogenic water sources makes the town a migratory and resident bird hotspot. Directly offshore in the Gulf, numerous uninhabited islands provide roosting, migrating, and nesting sites for over 75 species of marine birds. Strong tidal currents around the islands produce mixing and increased primary productivity, resulting in a dynamic marine community and high densities of pelagic and coastal bird species. Bahia de los Angeles is undergoing significant development at present, and this talk will also discuss some of the present conservation issues, briefly summarize notable population trends, and provide information regarding visiting this diverse and biologically significant place.

OVERTON, CORY¹, MICHAEL CASAZZA¹, JOHN TAKEKAWA², and TOBIAS ROHMER³. **Tidal influence on the home range of an endangered salt marsh bird: The California Clapper Rail.** ¹*U.S. Geological Survey, Western Ecological Research Center, Dixon Field Station, 6924 Tremont Road, Dixon, CA 95620; Covert@usgs.gov.* ²*U.S. Geological Survey, Western Ecological Research Center, San Francisco Bay Estuary Field Station, 505 Azuar Drive, Vallejo, CA 94592.* ³*University of California – Davis, 1 Shields Avenue, Davis, CA 95616.*

Home range and utilization distributions are common products of wildlife telemetry studies and are often vital components for management of endangered species and development of resource selection models. Home ranges and utilization distributions are often generated from animal locations and analyzed for seasonal changes in space use corresponding to changes in animal behavior or environmental conditions. We used nine months of intensive radio-telemetry data to investigate the role of tidal influx, a repeated and short-term environmental change, on space

use by the endangered California Clapper Rail (*Rallus longirostris obsoletus*). Home range utilization distributions were calculated using fixed kernel methods with the smoothing parameter selected using likelihood cross-validation criterion. Annual home ranges of California Clapper Rails are small; preliminary estimates of home range average 2.1 ha. Low-tide home ranges are slightly larger than high-tide home ranges (1.8 ha vs. 1.5 ha), possibly reflecting lower availability of vegetative cover during high tides. Differences in high-tide and low-tide utilization distributions show areas used primarily during respective tide cycles. Nearly 7% of the annual home range is used predominantly during high tide. Fourteen percent of the annual home range is used predominantly during low tide. Both vegetative cover and foraging behavior are likely mechanisms producing these differences. These techniques require intensive data collection, but will provide endangered species recovery teams with previously unknown information on resource needs. Conservation and management of salt marsh species are likely to be enhanced by better understanding of resource selection relative to tidal inundation.

PANDOLFINO, EDWARD R.¹ and KIMBERLY SUEDEKAMP WELLS². **Changes in winter distribution of the Rough-legged Hawk in North America.** ¹5530 Delrose Court, Carmichael, CA 95608; erpfomca@aol.com.

²ENVIRON, 6001 Shellmound Street, Suite 700, Emeryville, CA 94608.

We used Christmas Bird Count (CBC) data to demonstrate a shift in the winter distribution of the Rough-legged Hawk (*Buteo lagopus*) in North America from the late 1970s to the early 2000s. Data from nearly 300 CBC circles reveal significant decreases in Rough-legged Hawk abundance on the east and west coasts, and throughout the southern extent of this species' winter range. Abundance increased significantly in the northern portions of the Great Plains. This distribution shift is associated with a decrease in the number of December days with substantial snow cover in the north-central portions of the continent and with increased winter abundance of the Red-tailed Hawk (*Buteo jamaicensis*) throughout the range of the Rough-legged Hawk. In addition, increased human populations and associated loss of open-country habitat may have influenced this shift.

PIELOW, NATHAN. **Bird sounds of the Sierra de La Laguna, Baja California Sur.** 4745-B White Rock Circle, Boulder, CO 80301; npieplow@indra.com.

During the July 2008 WFO/SJV expedition to the Sierra La Laguna, Baja California Sur, Mexico, more than 15 hours of sounds of many types were recorded from most of the endemic avian taxa. Analysis of these songs and calls provides useful clues to the evolutionary history and level of differentiation of many of these taxa. Some are vocally quite distinct from their closest relatives outside the region (e.g., Baird's Junco, *Junco [phaeonotus] bairdii*), while others show no vocal differences (e.g., California Towhee, *Pipilo crissalis albigula*). Vocal data support a West Mexican rather than Californian origin for certain taxa (e.g., White-breasted Nuthatch, *Sitta carolinensis lagunae*). We will listen to the bird sounds of the region, comparing the Laguna endemics to their North American relatives and discussing potential implications for species limits and phylogeography.

ROBINSON, CAITLIN¹ and CHERYL STRONG². **Western Snowy Plover nest success and use of managed salt ponds in the South San Francisco Bay.** ¹San Francisco Bay Bird Observatory 524 Valley Way, Milpitas, CA 95035; crobinson@sfbbo.org. ²United States Fish and Wildlife Service, Don Edwards San Francisco Bay National Wildlife Refuge.

The Western Snowy Plover (*Charadrius alexandrinus nivosus*) is a threatened species that nests on dry salt ponds in the San Francisco Bay. The number of Snowy Plovers in the Bay area has decreased over the past 30 years. The majority of plover habitat in the Bay is within the South Bay Salt Pond Restoration Project area, which will impact the amount of nesting habitat available. We estimated nest success at Eden Landing Ecological Reserve in Hayward and the Don Edwards San Francisco Bay National Wildlife Refuge in Alviso, Fremont, and Menlo Park from 2004 through 2007. We followed 59 nests in 2004, 20 in 2005, 81 in 2006, and 89 in 2007. Hatching success for all sites combined decreased from 83.6% in 2004 and 85% in 2005 to 58% in 2006 and 49% in 2007. The decrease in nest success in 2006 and 2007 was due to high predation rates. In 2007, 42.6% of the nests were depredated ($n=89$), compared to 10% of the nests in 2005 ($n=20$), and 4.9% in 2004 ($n=59$). Nest predation was attributed mostly to Common Ravens (*Corvus corax*), Northern Harriers (*Circus cyaneus*), and California Gulls (*Larus californicus*). Starting in 2006, the California Department of Fish and Game managed wildlife ponds for breeding plovers. Managed and seasonal control ponds were monitored for plover use, nest abundance, and nest success. The mean number of nests per hectare on managed ponds was higher (0.122 ± 0.044 SE, $n=7$) than on control ponds (0.082 ± 0.026 SE, $n=13$). We recommend that in the future, the South Bay Salt Pond Restoration Project manage ponds for plovers in several complexes so predation does not affect all sites equally.

SCHACTER, CARLEY and SHERRY HUDSON. **Landfill use by rising population of California Gulls.** *San Francisco Bay Bird Observatory, 524 Valley Way, Milpitas, CA 95035; cschacter@sfbbo.org.*

The California Gull (*Larus californicus*) population has increased dramatically in the South Bay area of San Francisco Bay, from less than 200 breeding birds in 1982 to over 30,000 in 2008. This increase may have negative effects on other ground-nesting birds through harassment, encroachment on nesting sites, and predation on eggs and chicks. The exponential increase in California Gull populations may be related to use of landfills and other human sources of food. However, we do not have much information on how much feeding time the gulls spend on landfills, and on whether trash actually plays an important role in their ability to successfully reproduce. In April 2006, the San Francisco Bay Bird Observatory began conducting a study to identify how many gulls are using local landfills: the Newby Island landfill in Milpitas, the Tri-Cities landfill in Fremont, and the Palo Alto landfill. Gull counts and behavior surveys were performed at least once a month at each site. We also did walkthroughs of all known California Gull colonies in the South Bay to obtain a peak nest count from which to estimate total numbers of breeding gulls. The greatest numbers of gulls were counted at the Tri-Cities and Newby Island landfills, which are very close to several large California Gull colonies. Monthly counts at the Palo Alto landfill (which does not take in much food refuse) were consistently low. Behavior surveys also confirmed that over 75% of gulls in the exposed refuse areas (and over 65% in the partially exposed areas) were actively foraging. The influx of gulls feeding at the landfills may be displacing other species, including the threatened Western Snowy Plover, especially when the largest colony is flooded for salt pond restoration. Efforts will need to be made to reduce gull impacts on other breeding birds if the diversity of the watershed's ecosystem is to be maintained.

SMITH, ZACH¹ and EDWARD R. PANDOLFINO². **Winter roadside raptor surveys in the Central Valley of California, 2007-2008.** ¹*Central Valley Bird Club, 830 Donovan Court, Davis, CA 95618; zsgavilan@gmail.com.* ²*5530 Delrose Court, Carmichael, CA 95608.*

During the winter of 2007-2008, monthly roadside raptor surveys were conducted at 19 sites throughout California's Central Valley to determine open-country raptor diversity, abundance, and habitat associations. Average diversity across all routes was 9 species/survey (range 5–15), while the average abundance across all routes, expressed as birds per kilometer, was 1.93 (range 0.3–4.7). Uncommon species encountered in the Central Valley only during winter (Rough-legged Hawk, Ferruginous Hawk, Prairie Falcon, Golden Eagle) showed a significant affinity for grassland habitats, while resident species (i.e., Red-tailed Hawk, American Kestrel, Northern Harrier, White-tailed Kite) were distributed more evenly across the sampled habitat types. Coordinated monitoring of winter raptor populations in the Central Valley will hopefully provide indices of raptor density and diversity, as well as highlight preferred raptor habitat in this landscape that is rapidly changing due to agricultural intensification and urban growth. Winter surveys can supplement established breeding bird survey and migration hawkwatch data for a more complete picture of raptor population status across North America. These data were collected entirely by volunteers, and the project is currently being sponsored by Central Valley Bird Club.

SNYDER, HELEN A. **World's densest raptor population: A comparison of Cave Creek Canyon on the Coronado National Forest in Arizona and the BLM's Snake River National Conservation Area in Idaho.** *P.O. Box 16426, Portal, AZ 85632; noelsnyder@vtc.net.*

Idaho's Morley Nelson Snake River Birds of Prey National Conservation Area, managed by the BLM, reportedly has one of the world's densest nesting populations of raptors. I compared the density and species diversity of nesting raptors reported for the Snake River NCA with the density and diversity found in a 50-km² montane canyon study area in the Chiricahua Mountains, Arizona, most of which is on U.S. Forest Service land (Coronado National Forest). The Snake River NCA has an average nesting density of 1.09 pairs per square km, whereas the Cave Creek study area has over 5 pairs per square km. Five species of small owls account for over 70% of the nesting raptors. The two most abundant raptors are Whiskered Screech Owl (*Megascops trichopsis*) and Elf Owl (*Micrathene whitneyi*). The Snake River NCA is used by 24 species, of which 16 nest and eight are wintering/migratory, whereas Cave Creek Canyon has 29 species, of which 24 nest and five are migratory or wintering-only. An additional five species nest within 40 km of the study area, for a total of 34 that utilize this corner of southeast Arizona. Cave Creek Canyon is currently a world-class birding destination as well as an increasingly popular recreation area, and future U.S. Forest Service management policies should take the area's remarkable raptor concentrations into account.

STRONG, CHERYL. **The South Bay Salt Ponds Restoration Project: Challenges and opportunities for managing waterbirds in the San Francisco Bay.** *San Francisco Bay National Wildlife Refuge Complex, USFWS, 9500 Thornton Avenue, Newark, CA 94560; Cheryl_strong@fws.gov.*

The San Francisco Bay is the most heavily urbanized estuary on the Pacific Coast, surrounded by more than seven million people. More than 95% of the historic wetlands in the Bay area have been developed over the past 100 years. The restoration for 16,500 acres of former salt evaporator ponds is currently in the design and construction phase. Much of this land will be returned to tidal action for the benefit of endangered marsh plants and wildlife as the largest tidal wetland restoration project on the west coast of the United States. Restoration of tidal marsh will create habitat for endangered species such as the Clapper Rail. However, the Bay contains the most important salt pond complexes for waterbirds in the U.S., supporting more than a million shorebirds and waterfowl through the year. Our current understanding of the use of salt ponds by waterbirds indicates that specific foraging guilds require specific ranges of water salinity and depth. In addition, islands in ponds are used as high-tide refugia by roosting waterbirds and as nesting sites by colonial waterbirds. Salt pond islands and surrounding levees are used for nesting by approximately 80% of the Forster's Terns, 20% of Caspian Terns, and 96% of California Gulls in the Bay. Nearly all of the American Avocets and endangered Western Snowy Plovers also nest on dry ponds and islands. While it is apparent that ponds managed for wildlife will need to be retained in the landscape, management of these ponds will require monitoring and adaptive management on the part of the South Bay Salt Pond Restoration Project in order to meet the project goal of maintaining current numbers of waterbirds breeding, wintering, and migrating at the salt ponds.

STRUSIS-TIMMER, MATTHEW. Habitat associations and nesting success of Yellow Warblers in Central California. *San Jose State University, 1210 Lockhart Gulch Rd., Scotts Valley, CA 95066; thedutchguy@hotmail.com.*

The Yellow Warbler (*Dendroica petechia*) has experienced both local and regional population declines, earning it Species of Special Concern status in California. These declines are often attributed to habitat loss, predation, and cowbird parasitism. Therefore, it is imperative to understand the specific habitat requirements of this declining species, as well as predation and parasitism pressures, in order to effectively conserve its remaining populations. I investigated which ecological factors best explain the presence and variation in abundance of Yellow Warblers by conducting point counts and recording stream and vegetation characteristics at 176 stations randomly placed along streams in Santa Cruz County, California. In addition, I examined predation and parasitism pressures by finding and monitoring nests at the site of highest density. Nesting success was low, with only 2 nests (8%, $n=26$) fledging young. Seventy-seven percent of nests were depredated, and 61% that reached the egg-laying stage were parasitized by Brown-headed Cowbirds. A notably large portion of the Yellow Warblers breeding in the study area were found along the Pajaro River, a stream that is leveed and managed for flood control through annual vegetation reduction regimes. This ongoing maintenance, coupled with flood disturbance, is attractive to this species because of the creation of large areas of patchy willow thickets. However, the Yellow Warbler's partiality to this heavily disturbed system is met with low nesting success due to high predation rates.

Presenter Biographies

Gina Barton manages the San Francisco Bay Bird Observatory's Coyote Creek Field Station, a long-term banding station monitoring the effects of revegetation on bird populations. She is also in charge of database management for the Bird Observatory's Landbird Program. Gina has a B.S. in Biology from Berry College in Rome, GA.

Carol Beardmore is the Science Coordinator for the Sonoran Joint Venture, a bird conservation program of the Fish and Wildlife Service. She works with partners in northwest Mexico and the southwest U.S. monitoring bird populations, planning conservation projects, and assessing the status of the area's 750 bird species. Carol is on the board of WFO and works with its Field Trips Committee.

Jason Beason is Special Monitoring Projects Coordinator at the Rocky Mountain Bird Observatory. He has worked on a wide variety of projects involving birds in eight western states. He and his wife also run a small farm (Rain Crow Farm) on the North Fork of the Gunnison River near Paonia, Colorado.

John D. Boone is currently the Research Coordinator for the Great Basin Bird Observatory. He attended graduate school at Idaho State University (M.S.) and the University of Colorado at Boulder (Ph.D.), where he studied applied wildlife habitat relationships. Before joining GBBO, John was an Assistant Professor at the University of Nevada-Reno, studying the environmental aspects of zoonotic diseases.

Mary Carmona-Freeman is President and Programs Chair for the Los Angeles Audubon Society, and has led trips for the chapter and festivals since the 1970s. During Los Angeles County Breeding Bird Atlas surveys, she developed a passion for Northern Saw-whet Owls and other small owls of the San Gabriel Mountains. Mary has a B.A. in art design, and illustrates birds.

Michael Casazza is a Research Wildlife Biologist with the Western Ecological Research Center of the U.S. Geological Survey. His research interests include the biology of migratory and upland birds, primarily waterfowl, Band-tailed Pigeons, and Sage-Grouse, as well as the ecology of threatened and endangered species.

Scott Demers's recent training and research has focused on avian and wetland ecology in the San Francisco Bay estuary. Scott has worked for the U.S. Geological Survey on research and wetland restoration projects in the estuary, and for the Platte River Whooping Crane Maintenance Trust in Nebraska. Currently, Scott works at H. T. Harvey & Associates as an ecologist.

Richard Erickson was born, raised, and primarily educated in northern California. He was long associated with the California Bird Records Committee, and in the last century was a northern California Regional Editor for *North American Birds*. After moving to southern California in 1990, the subject of his ornithological passion became the birds of the Baja California Peninsula.

Allen Fish has directed the Golden Gate Raptor Observatory, a project of the Golden Gate National Parks Conservancy and the National Park Service, since 1985. He graduated from UC Davis, specializing in avian ecology, and now lectures there in the Animal Sciences Department. Allen is also the Scientific Liaison to the UC Reserve System for the Chickering American River Reserve.

Ted Floyd is Editor of *Birding*, senior author of the *Atlas of the Breeding Birds of Nevada* (University of Nevada Press, 2007), and author of the *Smithsonian Field Guide to the Birds of North America* (HarperCollins, 2008). Ted recently completed two terms on the WFO board of directors, and he is an instructor with the ABA's Institute for Field Ornithology.

Robert Gill is project leader for shorebird research with the U.S. Geological Survey's Alaska Science Center, and has been leading a research team using satellite telemetry to track long-distance movements of Pacific Basin shorebirds. To date, the team has followed populations of Bristle-thighed Curlews, Long-billed Curlews, Bar-tailed Godwits, and Marbled Godwits.

Osvel Hinojosa-Huerta is the Director of the Water and Wetlands Program for Pronatura Noroeste. He obtained his Ph.D. in Wildlife Ecology from the University of Arizona, and has been working in conservation and research projects in Mexico since 1997. Recently, he has been leading the restoration of the Colorado River delta, including the implementation of strategies to re-establish river flows.

Andrea Jones is Director of the Important Bird Areas Program at Audubon California. Previously, she directed the Coastal Waterbird and Important Bird Areas programs at Mass Audubon for 13 years. Andrea received her M.S. in Wildlife Conservation from University of Massachusetts; her thesis focused on island populations of Grasshopper Sparrows. Andrea is also Conservation Chair for Morro Coast Audubon chapter.

Ryan Jones was Program Coordinator for Site Stewardship for the Golden Gate National Parks Conservancy, a partner with the Golden Gate National Recreation Area, where he worked for over a decade. He had a degree in Parks, Recreation, and Tourism from San Francisco State University. Illustrating since age 14, Ryan was published by *Bay Nature* magazine, California Academy of Sciences, and the National Park Service. *Tragically, Ryan Jones was killed in a traffic accident on July 19, 2008. Although he was just 30 years old, he had already touched so many lives, sharing his love of nature and art through his work with the Golden Gate National Parks Conservancy and the Golden Gate National Recreation Area. WFO extends its deepest sympathies to his family, friends, and coworkers. Ryan had been very excited to be able to present, to WFO members, his innovative new approach to bird guides, the 3D Bird Guide, for which he was the primary creative force. Ryan was inspired to create the 3D Bird Guide as a way of reaching millions of young people for whom the interactive computer screen and not the written page would be the primary mode of learning. To ensure that Ryan's revolutionary effort lives on and continues to come to fruition, Allen Fish will be presenting in his stead.*

Rodd Kelsey received his M.S. at CSU Long Beach and is completing his Ph.D. at UC Davis on the foraging ecology and population dynamics of Red Crossbills. Rodd has over 12 years' experience in wildlife research,

conservation, and management, including bird research in many regions across the western U.S., Venezuela, and Costa Rica. Rodd is an ecologist with Audubon California.

Dave Krueper is the Assistant Nongame Bird Coordinator for Region 2 of the U.S. Fish & Wildlife Service. He has been an avian biologist for 28 years, having also worked for the U.S. Forest Service in Alaska and the Bureau of Land Management in Arizona. He has birded extensively in the New World tropics and has a particular interest in the avifauna of northwestern Mexico.

Gary Langham is Director of Bird Conservation for Audubon California. He recently completed an NSF postdoctoral fellowship in Australia. Gary received his Ph.D. in 2003 from Cornell University, having completed a dissertation under Drs. John Fitzpatrick and David Winkler on the role that avian foraging behavior played in the maintenance and evolution of *Heliconius* butterfly mimicry in South America.

James Lee is from Portland, Oregon. He is an undergraduate student majoring in Biology at Pacific Union College, and aspires to study medicine. His interests in the outdoors and in all aspects of biology led him to this project on Purple Martins.

Amy Leist has been a biologist with Great Basin Bird Observatory since January 2008. Before moving to Reno, NV, Amy received a B.A. in Biology from Colorado College and a M.S. in Wildlife Management from Humboldt State University. In the last eight years, she has worked on research and conservation projects in Hawaii, Alaska, California, South Carolina, Idaho, and Chile.

Eric Lichtwardt is a Senior Biologist with LSA Associates, Inc., an environmental consulting firm with offices throughout California. He conducts field surveys for endangered, threatened, and special-status vertebrates, and prepares various types of environmental documents. He has a broad interest in vertebrate zoology, ranging from freshwater fishes to amphibians to reptiles (including birds) to mammals.

Ronald E. Melcer Jr. completed his B.S. in Wildlife Biology at UC Davis in 2004. His research interests are focused on avian conservation and landbird monitoring in western North America. Currently he is an M.S. candidate in the Biological Sciences Department at California Polytechnic State University, investigating landbird status in riparian habitats of the central coast region of California.

Greg Meyer has a Masters degree in Environmental Studies from Prescott College, and has worked in Bahia de los Angeles for over 20 years. He is a faculty member at California State University Monterey Bay, and as a naturalist guide has traveled to all seven continents and seen nearly 2,500 species of birds.

Cory Overton is a Wildlife Biologist with the U.S. Geological Survey. He earned his B.S. at Colorado State University and M.S. at Oregon State University. His primary research interests include the ecology and management of birds, including spatial and temporal habitat use, survival estimation, and survey design.

Edward Pandolfino has devoted his post-retirement years to conservation, birding, and research that connects the two. He is a Regional Editor for northern California for *North American Birds*. He has served on the board of San Francisco Bay Bird Observatory, and is currently on the boards of Sierra Foothills Audubon Society and Western Field Ornithologists.

Nathan Pieplow is the Editor of the quarterly journal *Colorado Birds*, and is an author of the *Colorado Birding Trail*. He has recorded bird sounds in 15 American and 12 Mexican states. He teaches writing at the University of Colorado in Boulder.

Caitlin Robinson is the waterbird program supervisor at the San Francisco Bay Bird Observatory. She has done extensive research on Western Snowy Plovers nesting in the South San Francisco Bay salt evaporation ponds. She currently oversees research on waterbirds in the South Bay, including projects on bird occurrence in active salt evaporation ponds and California Gull use of landfills.

Carley Schacter received her Master's degree in Marine Science from the Boston University Marine Program in Woods Hole, MA, and her B.S. in Ecology, Behavior, and Evolution from the University of California, San Diego. She currently works at the San Francisco Bay Bird Observatory as a field biologist in the waterbird program.

Zach Smith graduated from UC Davis in 1994 with a B.S. in Zoology. He has worked at hawk migration sites in the U.S. and Mexico, and has participated in Peregrine Falcon research expeditions to Cape Verde, the Canary Islands, and Chile. He is currently assisting with fatality monitoring at the Montezuma Hills Wind Resource Area and monitoring Burrowing Owls around Davis, California.

Helen Snyder is a retired wildlife biologist who has worked on endangered birds, including the Puerto Rican Parrot, Thick-billed Parrot, and California Condor. She has studied raptors on the Coronado National Forest in southeast Arizona since 1986.

Cheryl Strong is a wildlife biologist with the Don Edwards San Francisco Bay National Wildlife Refuge, where she focuses on managed ponds and tidal marsh restoration with an emphasis on waterfowl and shorebird management and conservation, endangered species, nuisance species, and wetlands.

Matthew Strusis-Timmer is a M.S. Biology candidate at San Jose State University. He is currently the Conservation Officer of the Santa Cruz Bird Club, and has volunteered for many other organizations and events over the years, including: Quail Hollow Nest Box Project, Monterey Bay Birding Festival, the Santa Cruz County Forest Bird Monitoring Study, and Audubon Christmas Bird Counts.