The human population continues to grow in Santa Clara County, and likewise the energy demands of its citizens grow. By the late 1990s, model projections indicated that the energy demands for the greater San Jose area would exceed Pacific Gas Electric Company’s (PG&E) capacity. PG&E responded by developing the Northeast San Jose (NESJ) 230 kV Transmission Line project, completed in 2003. The NESJ Transmission Line is sited adjacent to the San Francisco Bay Bird Observatory’s Coyote Creek Field Station (CCFS), which is one of the largest riparian tracts with the highest documented bird diversity in Santa Clara County. Sections of the transmission line also cross the sewage treatment ponds owned and managed by the City of San Jose’s Water Pollution Control Plant and the Santa Clara Valley Water District’s Waterbird Pond.

Study Methods
As part of a PG&E mitigation study, Bird Observatory staff and volunteers conducted surveys to (1) quantify the number of bird collisions with the transmission line, (2) assess bird use and movements across the transmission line corridor, and (3) test the effectiveness of bird flight diverters placed on the grounding wire (the highest wire) of the NESJ line for three years (April 2004 – April 2007) at the NESJ Transmission Line. Surveys involved searching for carcasses below and adjacent to transmission line segments and determining the number and flight patterns of birds crossing the NESJ line. Bird flight diverters (Performed Line Product, Inc., Cleaveland, OH) were placed on the NESJ Transmission Line.
**Staff Migrations**

**Farewell to Sherry Hudson…**

“As some of you might already know, I left my position as Landbird Program Director in September to start my new career as a stay-at-home mom. I gave birth to our son Austin Skye Hudson Johnston at home in Saratoga on October 8th. Parenthood has been hard, fun, and rewarding! However, I miss my work at the Bird Observatory and I hope to visit often and volunteer some, so that I can catch up with staff and volunteers, and keep my birding skills up!”

“I worked as the Bird Observatory’s Landbird Program Director from 2000 – 2005, and I returned as a Biologist and Landbird Program Director again from 2007 until September 2008. One thing I loved about working there was that every day brought new activities and challenges, so I never got bored of doing the same old thing. Also, it’s true that field work is often equal parts fun and work. And finally, I loved the variety of people I worked with, and hope to keep in touch. Thanks everyone!!”

**Sherry Hudson**

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**Board Migrations**

We would like to say welcome (and farewell!) to the following members of our Board of Directors.

**Welcome Michael Kern** — Michael officially joined the Board of Directors this past June. Michael brings several critical skills to the table. As a Partner at Accenture, Michael spent 25 years consulting with the world’s top enterprises on business, technology, and infrastructure consulting. Since retiring from Accenture, Michael has been working as a nature photographer and conservationist. He is currently the COO of the International Reptile Conservation Foundation (www.IRCF.org) and heads up his own nature photography business called The Gardens of Eden (www.thegardensofeden.org). Michael has already begun working in the field with SFBBO staff creating spectacular imagery and documentation of several of SFBBO’s key programs. Michael lives in Palo Alto with his wife Yukie, and two sons Josh and Alex.

**Welcome Troy Rahmig** — Troy moved to the San Francisco Bay Area three years ago when he joined the conservation planning group at ICF Jones & Stokes. In that role he works as an advocate for responsible environmental policy and regional conservation planning in California and throughout the west. Troy joins the SFBBO Board of Directors after gaining an interest in bird conservation in the Bay Area while volunteering for several SFBBO monitoring projects in the landbird and water bird programs. Troy states, “SFBBO has built a solid reputation in the past and I have great hopes for the future. I am excited to be on the Board and look forward to meeting many SFBBO members.” Troy has devoted a large part of his professional and personal life to understanding the conservation needs of birds and finding ways to educate the public about those needs. Troy says, “I believe that organizations like SFBBO, which is able to mix scientific research with public involvement and education, are our best opportunity to promote bird conservation.”

**Farewell James Norman, Ph.D.** has been on the Board of Directors since summer 08 and is currently the board treasurer. James is a postdoctoral researcher at Stanford University with a joint appointment in Pediatric Cardiology and Mechanical Engineering. A native of Massachusetts, he moved to the Bay Area in 2007 after receiving his Ph.D. from Boston University in Biomedical Engineering.
diverters consisted of yellow spirals, placed at 9 meter intervals on every other transmission line segment by PG&E staff. Mid-way through the study, the bird diverters were switched and placed on the lines that did not previously have diverters in order for us to analyze the data independent of the effects of bird flight patterns.

Carcass Searching
Volunteers searched the study site to retrieve any carcasses found. During these carcass searches, we found 558 dead or injured birds, and sent 81 of the carcasses to California Animal Health and Food Safety Laboratory in Davis for necropsy. Of those necropsied, 85% died as a result of trauma which may have been a result of a transmission line collision. The majority of the bird species found dead were fast-flying birds with high wing-loading, which included doves and pigeons, waterfowl, and shorebirds (Table 1). To most accurately estimate mortality rate from birds found during carcass searching, we included the rate at which observers detected carcasses (search bias), and the rate at which scavengers removed carcasses into our model. By placing Coturnix Quail carcasses, supplied by a farm, throughout the study site. Observers found 17 – 41% of all placed quail carcasses, and their detection rate varied considerably depending on the habitat being searched. Scavengers removed 32 – 91% of all placed quail carcasses from the study area. Incorporating these and other biases into the estimates, we estimated 1,159 dead birds (range: 10,470 – 12,713) within the 4 kilometer NESJ Transmission Line study area between April 2004 and April 2007. If we considered only 85% of those birds found to have died as a result of a powerline collision, as suggested by the necropsy results, our model predicted 9,485 birds may have died as a result of collisions with the NESJ line over the 3 year span of the project.

Behavioral Surveys
During the behavior surveys, we observed 190,493 birds flying across the NESJ Transmission Line during 1,320 hours of surveys. On average, we observed 3.65 birds per meter of line per hour fly across the line during the day and 0.10 birds at night. Ninety-two species crossed the transmission lines during surveys, but most of the individuals observed were blackbirds or gulls (Table 2). We only observed one bird, a Killdeer, strike during the behavior surveys. Most birds (50%) crossed the transmission lines at heights where they were at high risk of colliding with the conductors or grounding wire. Also, most birds (93%) did not react to the transmission line when crossing the NESJ Transmission Line, although reaction rate was variable among species guilds, with 22% of waterfowl displaying an “up and over” reaction. However, bird diverters did not influence bird movements over segments, the height at which birds crossed the lines, or the behaviors birds displayed when crossing the lines.

Results
We found that bird flight diverters did not reduce avian mortality or flight risk at the NESJ 230 kV Transmission Line. The number of dead birds we estimated at the NESJ Transmission Line is comparable to rates estimated from another bird strike study at Mare Island in Solano County, California, where powerlines were also sited near wetland habitats. The proximity of the NESJ Transmission Line to wetland habitats may increase collisions by waterfowl, shorebirds, gulls, herons, and other waterbirds using those habitats, some of which are more susceptible to collisions. We found that waterfowl may be particularly susceptible to collisions, especially considering waterfowl species accounted for 19% of all dead birds we found, but only 2% of the birds we observed crossing the transmission line. We also found that mortality rates were highest during fall and lowest during winter and spring, which may be a result of a higher prevalence or movement of birds or susceptible species during fall and lowest during spring and winter. These results demonstrate that species guild susceptibility, which often is a function of transmission line location, can influence bird mortality rates from powerline collisions, and as a consequence may need to be considered when energy demands precipitate the construction of more powerlines.

By Jill Demers. Jill is the Science Programs Director for SFBBO. The Birds and Powerlines Project was generously funded by Pacific Gas & Electric. We would like to thank the volunteers who contributed a combined total of 1,300 hours toward this project.

Table 1. Bird guilds found dead at the Northeast San Jose 230 kV Transmission Line, Santa Clara County, CA, 2004-2007.

<table>
<thead>
<tr>
<th>Species guild</th>
<th>Number found dead</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doves &amp; Pigeons</td>
<td>170</td>
</tr>
<tr>
<td>Waterfowl &amp; Grebes</td>
<td>109</td>
</tr>
<tr>
<td>Passerines</td>
<td>88</td>
</tr>
<tr>
<td>Blackbirds</td>
<td>59</td>
</tr>
<tr>
<td>Shorebirds, Gulls, &amp; Terns</td>
<td>46</td>
</tr>
<tr>
<td>Other</td>
<td>32</td>
</tr>
<tr>
<td>Rails &amp; Coots</td>
<td>22</td>
</tr>
<tr>
<td>Swallows &amp; Swifts</td>
<td>20</td>
</tr>
<tr>
<td>Raptors</td>
<td>13</td>
</tr>
<tr>
<td>Herons &amp; Egrets</td>
<td>6</td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Species guild</th>
<th>Number crossing line</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blackbirds</td>
<td>70745</td>
</tr>
<tr>
<td>Shorebirds, Gulls, &amp; Terns</td>
<td>64616</td>
</tr>
<tr>
<td>Swallows &amp; Swifts</td>
<td>20601</td>
</tr>
<tr>
<td>Passerines</td>
<td>18373</td>
</tr>
<tr>
<td>Doves &amp; Pigeons</td>
<td>8183</td>
</tr>
<tr>
<td>Waterfowl &amp; Grebes</td>
<td>4167</td>
</tr>
<tr>
<td>Raptors</td>
<td>1862</td>
</tr>
<tr>
<td>Other</td>
<td>1246</td>
</tr>
<tr>
<td>Herons &amp; Egrets</td>
<td>700</td>
</tr>
<tr>
<td>Rails &amp; Coots</td>
<td>0</td>
</tr>
</tbody>
</table>
Dear Friends, Supporters, Members and Volunteers: Thanks to you the California Fall Challenge raised over $20,000 this year! The annual Fall Challenge is our fun way of providing people with several different opportunities to show their support for SFBBIO. Held from mid-September to mid-October people were encouraged to fundraise or to sponsor a friend’s SFBBIO fundraising efforts. Every weekend during the Fall Challenge period, guided trips were organized and led by some of the Bay Area’s most knowledgeable birding folks. This year, over one hundred participants attended these guided trips or participated in their own Big Day!

The Observatory also collaborated with the Golden Gate Raptor Observatory (GGRO) for a “Special Day with Raptors”. This event was scheduled during the peak of raptor migration and began with a presentation of raptor ID and behavior by Lisa Myers of Let’s Go Birding. Next, Valerie Baldwin, volunteer for the Wildlife Center of Silicon Valley brought a Red-shouldered Hawk named “Jet” to our office to discuss the natural history of these beautiful raptors. Then it was off to Hawk Hill in Marin with Bob Power, the Executive Director of the Santa Clara Valley Audubon Society and GGRO volunteer. Bob spent the day with our raptor participants focusing on raptor ID. At the end of our Fall Challenge period we held our 27th Annual Meeting on October 26th. At this meeting our fundraisers were congratulated and awarded prizes. This was a spectacular day that began with birding walks at the Jasper Ridge Biological Preserve (JRPB) led by Jasper Ridge docents.

Special thanks are in order for Larry Spivak of Emilio Guglielmo Winery Inc. for generously providing a wine table for our event and Karen Bevels Custom Catering for delivering a scrumptious buffet. We would also like to thank Philippe Cohen, the Administrative Director of JRPB for inviting us back to the ridge for our 27th Annual Meeting. And finally thank YOU for supporting the Bird Observatory in this year’s event.

Stephanie Ellis
Outreach and Programs Coordinator
Thank you to our 12th Annual Fall Challenge Sponsors & Donors!

TOP 10 FUNDRAISERS
Lisa Myers $6,397
Michael Mammoser $1,926
Jane Jordan $1,500
Stephanie Ellis $1,325
Jill Demers $1,115
Gina Barton $1,070
Tom Stewart $888
Caitlin Robinson $820
Karen DeMello $785
Jan Hintermeister $780

PEREGRINE LEVEL PRIZE SPONSORS ($500 AND UP)
Rockjumpers Birding Tours
Reyla Graber - La Quinta Resort
Nikon
Body Works Personal Training
David Presotto - Aerial Bay Tour

OSPREY LEVEL PRIZE SPONSORS ($100-$499)
Wild Bird Center of Los Gatos
Cheeseeseen’s Ecology Safari
Bruce Finocchio – Nature Photographer
Alvaro Jaramillo
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MERLIN LEVEL ($25-$99)
Let’s Go Birding – Lisa Myers, Kim Wells, Debbie Wu, Thayer Birding Software, Vortex, Traillogger’s Outdoor Gear, Rene Reyes, Erica Fielder, Camera Cinemas, Pati Rouzer, Allison Connor, Bill Walker, Grant Hoyt, Gerry Ellis, Martha Castillo

FALL CHALLENGE GUIDED TRIPS AND LEADERS:
Cliffsweepers (Phil Gordon), Intrepid A to Zers (Karen DeMello and Kay Partelow), Varied Twitchers (Mike Rogers), Wandering Vagrants (Scott Terrill), Super S.m.E.w.s (Mary Wisnewski and Stephanie Ellis), Zugunruhe (Scott Smithson), Gallinago Go Go’s (Lisa Myers), Jay-Walkers (Jill Demers)

CALIFORNIA FALL CHALLENGE DONORS
In 2002 the Hummingbird Monitoring Network (HMN) was established to monitor hummingbird populations. The need to collect information on ecology, breeding, migration, abundance, and population trends was apparent because there is no other ongoing hummingbird monitoring effort. In a recent report, the National Research Council stated that long-term population trends for some North American pollinators (including hummingbirds) are “demonstrably downward.” The report urges increasing monitoring efforts to determine population and ecology data.

Five species of North American hummingbirds are on the American Bird Conservancy’s (ABC) list of high priority birds for conservation efforts.

HMN utilizes bird-banding techniques to track individuals and assess sex, age, and physical conditions. Standardized monitoring started in 2002 with nine sites in Arizona and two in California, and by 2007 had expanded to 32 stations, with 12 in British Columbia, 7 in California, 11 in Arizona, and one each in Texas and Colorado. The organization’s goals are: 1) to determine the best long-term monitoring sites; 2) to estimate hummingbird population sizes so trends can be detected; and 3) to use the information to preserve and protect hummingbird populations. Community involvement is encouraged by partnering with land managers of federal, state, and local agencies and private landowners and disseminating information on where hummingbirds show high site fidelity. The organization trains citizen scientists to manage monitoring sites and, at public sites, to increase public awareness through outreach.

Locally, a monitoring site was established in 2007 on private property near Scotts Valley specifically to collect information on breeding Allen’s Hummingbirds. This species, on the ABC’s species of concern list, has both a restricted breeding and wintering range making it more susceptible to environmental changes. Last year thirty-five individuals were banded, 25 were adult females. Eleven females returned from 2007 – a 44% return rate for breeding females, and an indication of high breeding site fidelity. It remains to be seen if these high numbers will persist, but knowing that individuals return to successful areas to breed, over-winter or migrate will be vital to the future of the species.

For more information visit www.hummonnet.org

By Rita Colwell. Rita has been banding birds at SFBBO’s Coyote Creek Field Station since 1989. Rita has also been involved with the Hummingbird Network since 2004.
Our thanks to these supporters of the San Francisco Bay Bird Observatory!

Thank you new and returning members, July — September 2008

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$101–$249
Ann Chiller

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Please visit the Bird Observatory wishlist at www.sfbbo.org/support/wishlist.php

Our Thanks to the Following Donors…

The following members have made in–kind donations to help the Bird Observatory staff continue their research.

• Shannon McMahon and NetApp: IBM ThinkPad T42 laptop
• Nancy Teater: Kowa TSN-822M Spotting Scope and tripod
• Pat Bacchetti: 2 laptop cases, 3 backpacks and Ornithology textbooks/field guides.

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The San Francisco Bay Bird Observatory is a 501(c)(3) nonprofit corporation dedicated to the conservation of birds and their habitats through science and outreach, and to contributing to informed resource management decisions in the Bay Area. Annual membership is $40; donations are appreciated. Renewals and donations should be sent to the office.

Bay Bird Review is published quarterly by the San Francisco Bay Bird Observatory. Deadline for submissions is five weeks prior to the start of the quarter. Contact the editor at outreach@sfbbo.org for submission guidelines. Please send address changes to the office.

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San Francisco Bay Bird Observatory
Saturday, January 10, 8:30 am-10:30 am
Saturday, February 14, 8:30 am-10:30 am
RSVP
A BIRD IN THE HAND
SITE: COYOTE CREEK FIELD STATION (MILPITAS)
Visit the Bird Observatory’s field station and experience conservation science in action. Tour mist nets, watch a bird banding demonstration, and explore a restored riparian habitat. We are likely to capture Song Sparrows, Hermit Thrushes, Bush tits and more. Meet at the Borders bookstore parking lot in McCarthy Ranch, Milpitas. Please include a phone number in your RSVP. In the event of rain, the tour is cancelled.

Saturday, February 21, 9:00 am – 12:00 am
RSVP
GULLS AND LANDFILLS
SITE: DON EDWARDS NATIONAL WILDLIFE REFUGE ENVIRONMENTAL EDUCATION CENTER (EEC), (ALVISO)
Join Bird Observatory staff Michael Mammoser and Stephanie Ellis in search of “white-winged” gulls, Glaucous, Thayer’s gull and other winter oddities. Take this opportunity to learn how the Bird Observatory is tracking gull populations at local landfills and how this research plays a crucial role in future wetland restoration efforts. We will also touch upon the biology and behavior of our common gull species. We will meet at the EEC at 9:00 am.

WORKSHOPS FOR BIRDERS AND NATURALISTS
With Alvaro Jaramillo
SITE: SOBRATO CENTER FOR NONPROFITS IN MILPITAS
GULLS: JANUARY 6TH & 8TH (INSTRUCTION);
JANUARY 11TH (FIELD TRIP)
DIURNAL RAPTORS: MARCH 3RD & 5TH (INSTRUCTION);
MARCH 8TH (FIELD TRIP)
These workshops incorporate ecology, evolutionary biology, behavioral ecology, and natural history to complement bird identification information taught in class. There are two evenings of instruction and a weekend all-day fieldtrip. Put your birding into an ecological context!
Cost per workshop is $150 and space is limited. For workshop descriptions and registration forms please visit www.sfbbo.org/activities/workshops.php or call Stephanie Ellis at 408 946 6548 to RSVP. Times: Instruction evenings will go from 6:30 - 9:00 p.m. on Tuesday and Thursday evenings; field trip times and location TBA.

THIS YELLOW-BREASTED CHAT was captured and banded at the Coyote Creek Field Station (CCFS) on September 7th. This was a new species at CCFS for 2008.