VICKI JENNINGS

The Stilt

Spring 2005

San Francisco Bay Bird Observatory Newsletter

In this issue:

MONICA LUNDY

The San Francisco Bay Bird Observatory is a not-for-profit organization dedicated to the conservation of birds and their habitats through research, monitoring and educational activities.

SFBBO
San Francisco Bay Bird Observatory
P.O. Box 247 1290 Hope Street Alviso, CA 95002

DIRECTOR'S CORNER

What SFBBO Does

Just like individuals, organizations benefit from an annual exam. Here at SFBBO, we recently reviewed our nearly 20 current science projects, all undertaken to conserve our local bird populations. In the past, we have viewed our work as either waterbird or landbird-related. Now we see our scientific work in terms of three specific study areas: **the baylands, urban impacts and migration.**

Under **SFBBO's Birds of the Baylands Program** reside those projects that began long before salt ponds were acquired for restoration and those initiated since that event in 2001. SFBBO participates on the restoration project's science panel and has been monitoring birds on changing ponds in cooperation with U.S.G.S scientists. Another recent project is SFBBO's *Bair Island Restoration Project* in partnership with the California Wildlife Foundation: in 2001, salt pans created on outer Bair Island were the first attempts at re-creating this upper marsh habitat, which was largely lost during diking and development around the Bay. SFBBO has monitored bird use of the site since its creation in 2002 and makes management recommendations to increase habitat use by shorebirds and ducks.

*We see our scientific work in terms of three specific study areas: **the baylands, urban impacts and migration.***

Recovery of the Bay's population of Western Snowy Plover is another project of the Baylands Program. South San Francisco Bay's salt pond environment plays host to approximately 100 breeding pairs, or 15% of the entire population. Employing concepts of "citizen science", SFBBO partners with the U.S. Fish and Wildlife Service and Oracle USA, Inc. to train volunteers and interns to track plover distribution, nesting areas, and avian predators; and provide timely information to land managers to help increase the numbers of successful nests of Western Snowy Plovers.

SFBBO continues its long-term projects of preventing outbreaks of avian botulism and assessing breeding success in our colonial waterbirds. We continue to train, field and support a volunteer team to locate old and new colonies of herons, egrets, terns and gulls, to monitor presence/absence and success of colonies in the four south bay counties: San Francisco, San Mateo, Santa Clara and Alameda. In 2005, SFBBO will co-publish an atlas of heron colonies in partnership with Audubon Canyon Ranch. Our numerous other partners include the San Francisco Estuary Project (2005), Don Edwards San Francisco Bay National Wildlife Refuge and the California Dept. of Fish and Game, Audubon Canyon Ranch, the cities of San Jose and Sunnyvale and many other landowners and managers around the bay.

Under **SFBBO's Urban Impacts Program** are studies focused on the effects of development on habitat. This year, SFBBO will continue the study begun in 2001 of contaminant accumu-

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workshop

ADVANCED AGEING AND SEXING OF PASSERINES

with Peter Pyle

April 18 - 22, 2005

(Monday-Friday)

Please join the San Francisco Bay Bird Observatory (SFBBO) and Ventana Wilderness Society's Big Sur Ornithology Lab (BSOL) for an advanced ageing and sexing of passerines workshop. Peter Pyle, Institute for Bird Populations (I.B.P.) Biologist, and author of The Identification Guide to North American Birds, Part I, will be the primary instructor. The action-packed week will consist of presentations, study of specimens, field mist-netting, banding, and processing at three locations on the central coast of California, field trips to renowned birding locations, and a social on Thursday evening. Participants will be trained in a synthesis of methods pertaining to identification, ageing, and sexing of landbirds in the hand and in the field.

Cost is $650 *($550 early registration, by March 18th).*

Breakfasts, lunches, and one dinner are included; lodging not provided.

For more information and a registration form please see our website at http://www.ventanaws.org/PeterPyleWorkshop.htm or contact Jessica Griffiths at the Big Sur Ornithology Lab (831-624-1202 or jessicagriffiths@ventanaws.org).

What SFBBO Does

Continued from page 1

lation and breeding success in terns in San Francisco Bay through a partnership with U.S.F.W.S., and funded by Calfed. SFBBO also continues its study of bird strikes on power lines along lower Coyote Creek. Utility lines are frequently routed along creek corridors that bisect urban development, with unknown levels of impact on the birds utilizing these habitats. With numerous existing lines crossing wetland areas all around the bay, it's important to measure the effects these lines may be having on particular species of birds and the effectiveness of line markers in reducing mortality.

The third part of our overall science program is **SFBBO's Migration Program**. This program naturally includes our long-term avian population monitoring on lower Coyote Creek. The Santa Clara Valley Water District first undertook restoration of native habitat along the creek in 1987. Bird use and vegetation changes in the riparian corridor and the adjacent overflow channel have been monitored year-round through the dedication of highly trained bird-banding volunteers, creating the longest continuous study of avian use of an inland riparian site in the Western U.S. We gratefully acknowledge the support the project receives from the District and from neighboring Calpine Corporation.

In 2004, the Santa Clara County Open Space Authority enlisted SFBBO's help in the development of a management plan for the area surrounding upper Coyote Creek. As part of *The Avifauna of Palassou Ridge*, SFBBO staff is conducting seasonal surveys to provide baseline data on the migratory and resident bird species this important upper riparian zone habitat.

The fourth and final part of our overall program is **SFBBO's Education and Outreach Program** consists of three important projects, all designed to increase public appreciation of our native birds and the habitats they call home. We recently completed *Birds and Bioaccumulation in the Bay*, a project funded by the San Francisco Estuary Project. It includes a lesson plan for 7th-12th grade students utilizing SFBBO's recent work on contaminants in our breeding waterbirds. The project underscores the need for great care in how we treat our estuary today, since the repercussions will be felt for generations of both human and wild inhabitants.

Water is the most important component of our riparian and wetland habitats. The public needs to understand the importance of water quality and a healthy watershed for ourselves and also as important habitat for resident and migratory birds who depend on these dwindling habitats around the Bay. SFBBO staff treats visitors to our Coyote Creek Field Station to bird banding demonstrations and interpretation of the rich riparian habitat in which it is located. This project is supported by the Santa Clara Valley Water District's Grant Program

SFBBO's *Birding the Bay Trail Project* will identify a series of excellent birding sites along the Trail. The Bay Trail itself is a project of the Association of Bay Area Governments (ABAG) whose goal is to create a continuous trail around the entire edge of the Bay. By calling out locations of spectacular birding along the Trail, our partnership's goal is to increase public awareness of the sensitivity of these important habitats along the Trail, and thus encourage appreciation, stewardship and protection of the same.

~Janet Hanson
Executive Director

International Migratory Bird Day

International Migratory Bird Day is coming soon to a Bird Observatory near you! SFBBO is happy to be partnering with the Don Edwards San Francisco Bay National Wildlife Refuge to bring you IMBD 2005. This year's events will be throughout May, though the main event will take place on May 14th.

IMBD celebrates birds that have two homes. It is an event celebrated in North and South America, in a wide variety of locations. Each year, IMBD has a theme to raise awareness about bird conservation. Themes have ranged from shade-grown coffee to last year's colonial birds. This year's the theme is bird strikes. That's right. Bird strikes.

You're thinking, "this doesn't uplifting." However, most of us have made the choice to live in the urban Bay Area which also happens to be a major stop along the Pacific Flyway. What would happen if researchers could find a balance between urban life and wildlife, or at least a way to mitigate the impact to migratory birds? And what can you do as a resident along a major migratory corridor? These are just a few of the exciting questions that will be explored during IMBD festivities. And of course, just come out to enjoy the birds!

SFBBO is happy to be offering the following activities in honor of IMBD. Some require reservations. Please take note of where to call to make reservations.

May 7th, 9-11am
BEGINNING BIRDWATCHING FOR ADULTS led by Lisa Myers

Don Edwards SF Bay National Wildlife Refuge Environmental Education Center, Alviso

SFBBO board member Lisa Myers is well known for her beginning birding classes which she leads throughout the Bay Area. The San Francisco Bay Area is a fantastic place for birds. The wild places that have been preserved create wonderful habitat for incredible bird life. Come see some of these beautiful birds on this 2 hour walk. No previous birding experience necessary. All you need is a curious mind and a pair of binoculars! RESERVATIONS REQUIRED BY CALLING 408-262-5513 EXT 102.

SFFBO young volunteer Naomi Shepherd and her Girl Scout troop introducing visitors to bird banding at IMBD 2004.

May 7th, 7-8pm
BIRDS AND POWERLINES: A HISTORY OF RESEARCH

Don Edwards SF Bay National Wildlife Refuge Environmental Education Center, Alviso

How do powerlines impact bird flight? Do powerline markers really work? And what are powerline markers? Find out the answers to these questions and more as an SFBBO biologist takes a look at past research done in the Bay Area examining the interactions between birds and powerlines. Former SFBBO President Jan Hintermeister will also briefly share his success in mobilizing his office to prevent bird strikes, and how you too can get your coworkers involved and interested in the bird world. RESERVATIONS REQUIRED BY CALLING 408-262-5513 EXT 102.

May 14th MAIN EVENT DATE
MAY BIRD BANDING DEMONSTRATIONS, 45 MINUTES IN LENGTH

Meeting times 7:30, 8:30, 9:30am

See conservation science in action at SFBBO's Coyote Creek Field Station. If all goes as planned, you'll see a live bird after it's been banded. This is geared for ages 7 and up. This is a great way to introduce friends and family to SFBBO. RESERVATIONS REQUIRED BY CALLING 408-946-6548 OR EMAILING SMIYAKO@SFBBO.ORG

Al Jaramillo in action at last year's IMBD walk.

May 14th, 8:30am
BIRDING WITH AL JARAMILLO

Directions provided upon RSVP.

Al Jaramillo is a world class bird trip leader who has guided in countries around the world. He also happens to be SFBBO's interim science director! Al is a terrific teacher and has extensive knowledge about the birding world. Join him on a walk around Coyote Creek Field Station and the waterbird pond. Space is limited, and RESERVATIONS ARE REQUIRED BY CALLING 408-946-6548 OR EMAILING smiyako@sfbbo.org

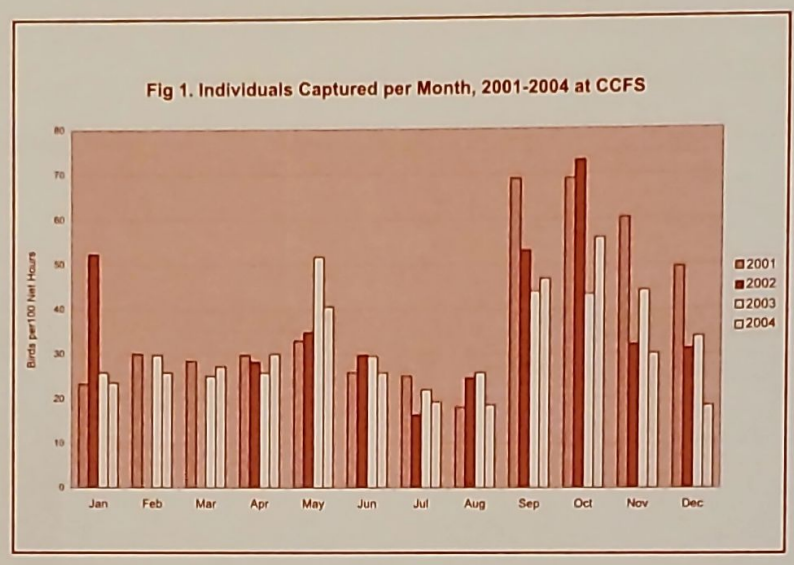
May 14th, 11am – 4pm
FAMILY ACTIVTIES.

Children's activities and more activities for adults will be taking place throughout the day at the National Wildlife Refuge's Environmental Education Center in Alviso. Resource tables from around the Bay Area will also be available. See http://desfbay.fws.gov for a complete schedule.

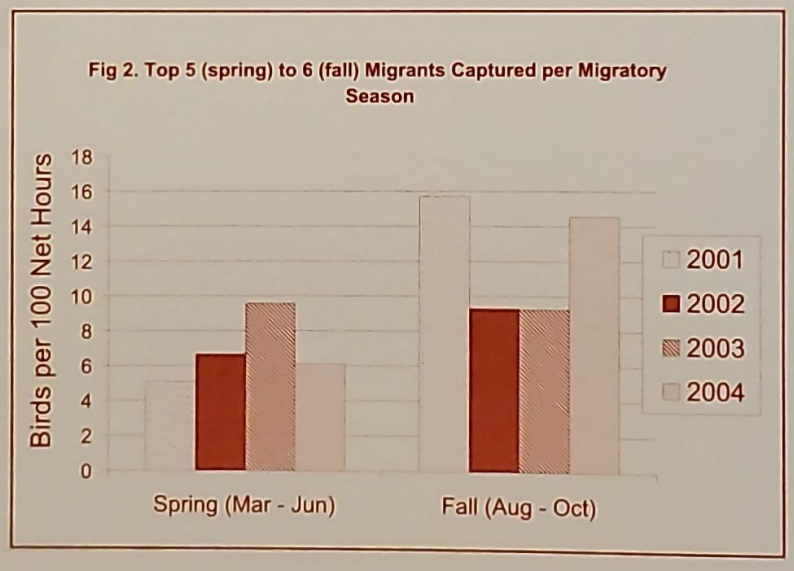
Coyote Creek Field Station Update

How do you define extraordinary? *What makes an event different from all the others? Can you prove that something is extraordinary? These are some of the questions that SFBBO biologists face on a regular basis. Something that might initially stand out as unusual, may turn out to be part of the regular ups and downs in a bigger picture. With the start of 2005, biologist Gina Barton summarized and examined 2004 bird banding data from the Coyote Creek Field Station. She's looking for the extraordinary; or something that may become extraordinary as time goes on. Come along on the search with her as she wanders the halls of 2004 data. See the indoor part of what a conservation biologist does, and get an in depth look at what SFBBO is finding in its research.*

2003 spring migration was extraordinary. The number of birds captured at the field station was more than any year in recent memory (Figure 1). Is this the beginning of a trend that will continue in 2004? The May 2004 rate is indeed higher than 2001 and 2002, but not quite as high as 2003. This could lead us to believe the 2004 spring migration, though not as busy as 2003, was still an extraordinary year.



However, upon closer examination it seems this event may be simply part of a typical trend. Let's exclude resident and wintering species and take a look at the top CCFS migrants: Swainson's Thrush, Wilson's Warbler, Orange-crowned Warbler, Yellow Warble, and Western Flycatcher. Further examination of capture rates of our top five spring migrants, shows an average spring migration in 2004 compared to 2001 and 2002 (Figure 2). Examining our top 5 spring migrants, higher capture rates of Swainson's Thrush and Orange-crowned Warbler, combined with a lower capture rate of Wilson's Warbler accounts for the overall similarity among capture rates in 2001, 2002, and 2004 (Figure 3). The higher and lower capture rates balanced each other out to create a spring migration on par with 2001 and 2002.*



Now let's look at 2004 fall migration, targeting the months of August-October. Capture rates were down in 2004 compared to previous years, though 2004 at first glance seems slightly higher than 2003 (Figure 1). If we look at the top six fall migrants, we see that 2004 fall migration was in fact busier than both 2002 and 2003, even coming close to rivaling 2001 (Fig 2). We see this was thanks to the particularly high capture rate of Western

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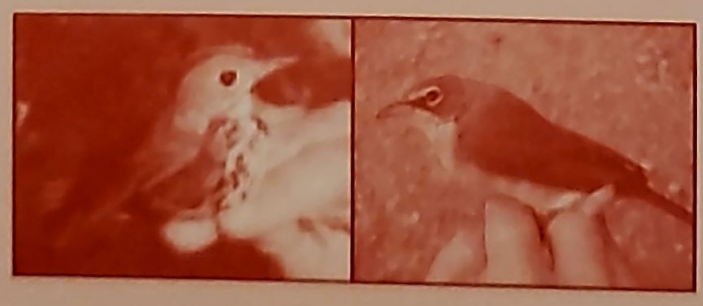


We had quite a few birds of special note this year. Some surprise captures were an **Ovenbird,** captured on June 16, two **Yellow-breasted Chats,** captured on September 4 and 12, and a **Swamp Sparrow,** captured on December 11. This is the 5th record of a Swamp Sparrow at CCFS, the last time we captured one was in 1998. The **Blue-gray Gnatcatcher** that was captured four times throughout the winter of 2003-04, has been captured four times over this winter so far. Is it becoming a regular wintering bird at CCFS? Perhaps. It also appears that we had a wintering **Hutton's Vireo** during the winter of 2003-04, capturing it four times. Four seems to be the magic number! Other interesting birds were a **Dusky** and **Hammond's Flycatcher,** captured on May 1 and Jan 7, respectively. The Hammond's Flycatcher was subsequently recaptured five times within the span of one month! We also banded three **Ash-throated Flycatchers,** one on May 23 and two on June 20. We banded two **Lazuli Buntings** on May 11 and July 10, a **Nashville Warbler** on Oct 24, and two **Marsh Wrens** on September 4 and October 27. We recaptured a **Tree Swallow** on May 30. This bird was banded in 2003 on June 1, only 2 days difference in its capture date between years! We banded a **White-throated Sparrow** on November 14 and recaptured a different one twice (banded on December 17, 2003) on March 6 and April 14.

Coyote Creek Field Station Update

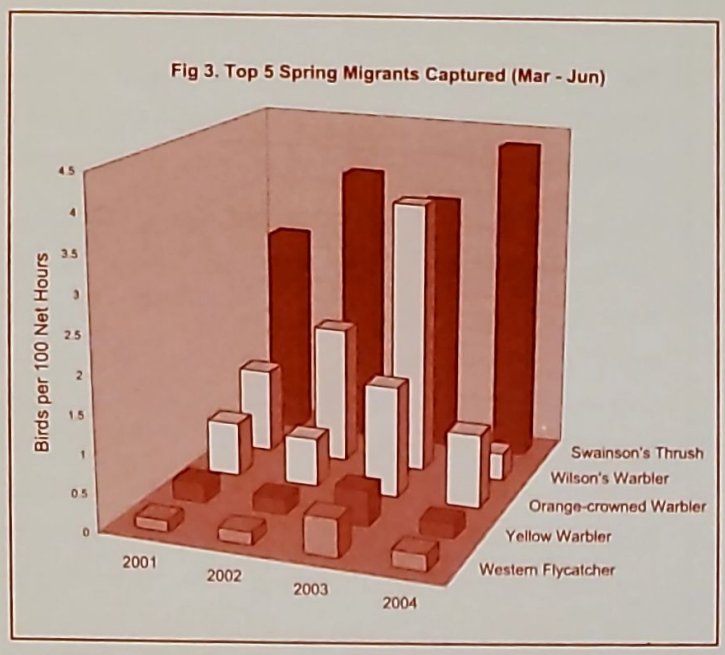
Continued from page 4

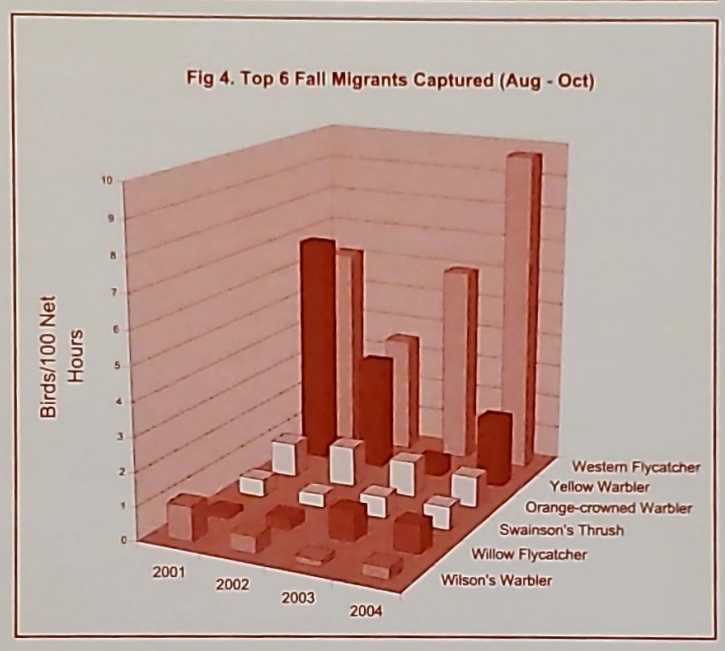
(Pacific-slope) Flycatchers (Figure 4). Additionally, 2004 Yellow Warbler numbers rebounded from their lows in 2003 (Fig. 4).

The Legacy of 2003

In last year's banding data summary, we saw a "Spring High" and a "Fall Low" in terms of migration*. While examining the "Fall Low" further, we've come across a few interesting facts. It turns out that 2002 migrant capture rates were similar to 2003. What might be causing the decline in capture rates from 2001 to 2002 and 2003? One possible explanation is that we are still seeing a sharp drop in capture rates for Audubon's (Yellow-rumped) Warbler from 7.82 in 2001 to 0.36 in 2004. We did, however, see an elevated capture rate for Golden-crowned Sparrow in 2002. The high capture rates in the fall for both of these species during 2001 and/or 2002 help explain why we see elevated capture rates for 2001 and 2002 (Figure 1), but not when looking only at the top fall migrants (Figure 2).

Why are we capturing less Audubon's Warblers? Are they on the decline? Why were there elevated capture rates for Golden-crowned Sparrows in 2002? Why did the Yellow Warblers take a dip in the fall of 2003? We hope to look more closely at these trends in the years previous to 2001 and find out if this is just a regular fluctuation in migration or can it be attributed to weather, breeding success or other factors.





2004 data does what most data does. It presents more exciting questions and possibilities. The data hints at possible trends and goings ons in the bird world. Did Gina find the extraordinary? We don't know yet. Only time will tell. SFBBO looks forward to pursuing more funding opportunities to continue puzzling out what's going on in the restored habitats at Coyote Creek Field Station, and the Bay Area songbird population at large.

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* Refer to Spring 2004's edition of the Stilt for possible explanations of the 2003 spring migration and a description of 2003 bird banding trends.

At the Coyote Creek Field Station (CCFS), we finished 2004 having captured 3653 birds, banding 2172 and recapturing 1746 with a total of 66 species. Our volunteer banders and field station assistants dedicated a total of 3173 hours to the operations at CCFS. We operated nets for 146 days.

SAVE THE DATE

September 17th-October 16th 2005

The CALIFORNIA FALL CHALLENGE
is coming soon to a SFBBO near you!

Get ready to Bird, Win, and Support SFBBO in its annual fundraiser! We need you to help us reach this year's goal of $50,000. An exclusive Alaska Cruise with Discovery Voyages is up for grabs again.

workshop

Bonnie Bedford-White's Fundraising Workshop

To get a head start on fundraising, come out to CFC winner *Bonnie Bedford-White's Fundraising Workshop*. She'll give all the how to's of fundraising, and allay any concerns you might have. Those who attended her workshop last year saw a significant increase in their CFC fundraising. The first opportunity to attend her workshop will be **Thursday May 26th at 7:30pm.** RSVP with outreach@sfbbo.org or call the office by May 23rd.

Thank You

Thank you to Camera Cinemas for donating 4 movie passes for our Volunteer Recognition Awards at the February 16th volunteer appreciation dinner.

FREE BUS MONEY!
for Santa Clara County Students

SFBBO is offering transportation stipends for 7th-12th grade students in Santa Clara County to visit the Coyote Creek Field Station. If you are interested in the stipends, or know someone that is, please contact Education Specialist Laura Weiss at lweiss@sfbbo.org and see our webpage for more details www.sfbbo.org/Education.html

PHOTO BY JULIE KITZENBERGER

Sharon Miyako introducing bird banding to the public

Terns As Indicators of Mercury Levels

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impact the brain, spinal cord, kidneys and liver in people, fetuses are especially susceptible to mercury poisoning: affected children suffer brain and nerve problems. However, health warnings on fish consumption and a varied diet for people limit the potential problems associated with mercury contaminants.

Unfortunately, this is not true for terns and other aquatic species dependent on clean water and healthy prey for survival. Both Caspian and Forster's terns in the South Bay have breeding success rates under 40%. All except one of the six populations (being studied in the south bay) had success rates under 20%. Compared to other parts of the Bay, these are very low breeding success rates and tern numbers have shown very little increase since data were first collected in 1980. Caspian terns in the South Bay had the lowest success rates in the Bay; with only 12.4% of their nests producing chicks in 2000, whereas populations in the Central Bay were higher at 19.1%. The North Bay the success rate was significantly higher at 34%. However, Forster's terns did better in the South Bay than in the North and Central Bay. Still, their success rate was quite low.

Low nest rates in the South Bay could be linked to high mercury concentrations. Mercury concentrations in the South Bay were much higher compared to the Central and North regions of the Bay, which may be affecting Caspian tern breeding success. The following table shows the levels of mercury in parts per million (ppm) for both species of terns found in the three regions of the Bay. Levels of mercury above 0.5 ppm are known to reduce hatch success as well as impair bird development in some species. There is a significantly higher level of mercury levels for both tern species for the South Bay as opposed to other regions.

Average mercury (Hg) measurements for both tern species throughout the bay.

Region	Caspian Terns	Forster's Terns
NORTH BAY	0.9 ppm Hg	0.638 ppm Hg
CENTRAL BAY	0.716 ppm Hg	0.503 ppm Hg
SOUTH BAY	1.183 ppm Hg	1.173 ppm Hg

Fortunately, the mercury issue is now clearly on the radar screen of researchers and regulatory agencies. The USGS is conducting research in the South Bay to understand how mercury affects the food chain. The San Francisco Bay Regional Water Quality Control Board is planning a clean-up process to reduce or remove the source of the mercury contamination along the creeks of the Guadalupe Watershed. However, this process is a long -term endeavor and it may take over a hundred years before a positive impact can be made to the health of the Bays waters.

During this clean up process it will be all the more important to monitor the mercury levels in the two species of terns. Lower levels of mercury contamination in the terns will be an indication of lower levels of mercury in the entire Bay, thus demonstrating whether the clean-up process is succeeding or not. As the Bay's water become less contaminated, Cheryl Strong and other biologists at SFBBO will look for an increase in the breeding success rates of both Caspian and Forster's terns to ensure their long term survival as part of the intricate web of life they form in this aquatic ecosystem.

Phil Higgins is a grad student at SJSU in the Environmental Studies Department who examined a portion of SFBBO's data. He is focusing on wildlife conservation and restoration. He is a SFBBO Research Associate.

Our thanks to these supporters of the Observatory. . .

MEMBERSHIP

We wish to recognize these generous contributions to SFBBO during the fourth quarter of 2004. Our sincere thanks!

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From the Executive Director

If you wish to discuss any aspect of the Observatory's work, please write to me at jthanson@sfbbo.org or at P.O. Box 247, Alviso CA 95002, or call me at 408-946-6548. I am always pleased to talk with any of our wonderful supporters.

The San Francisco Bay Bird Observatory is a 501(c)(3) non-profit corporation. All memberships, contributions and gifts are tax deductible to the extent allowed by law.

SFBBO
Telephone: 408/946-6548
Fax: 408/946-9279
Email: sfbbo@sfbbo.org
Web site www.sfbbo.org

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The Bird Observatory is located at 1290 Hope Street in Alviso, behind the historic Bayside Canning Co. building. If you would like to visit the office or our Coyote Creek Field Station, please call in advance.

Board meetings are held monthly and are open to the Membership. Call the Observatory for dates and times.

Terns As Indicators of Mercury Levels in the San Francisco Bay

Phil Higgins

Roger Tory Peterson once noted that "birds are an 'ecological litmus paper.' Because of their rapid metabolism and wide geographic range, they reflect changes in the environment quickly, they warn us of things out of balance, sending out signals whenever there is deterioration in the ecosystem." Peterson points out why birds are popular indicators, regularly used in environmental reports as gauges of ecosystem and resource area health. Using birds as indicators is not a new concept; birds have been regularly used throughout history to monitor the environment. As early as 342 BC, Aristotle reported that crane behavior could indicate weather patterns. During the 17th century, fishermen used flocks of seabirds to indicate reliable fish concentrations. And of course, we are all familiar with the "canary in the coal mine".

ARTWORK BY LELAND SOLOMON

However, using birds as indicators of contaminant levels for resource areas such as water is a relatively new concept. Cheryl Strong, Program Director for the Birds of the Baylands Program for SFBBO has been monitoring mercury contaminant levels in the body tissues of terns at Caspian tern and Forster's tern breeding colonies in the San Francisco Bay since 2000. SFBBO's data on tern population numbers goes back to the 1980s. Monitoring the level of contaminants such as mercury in birds provides an indication of the health of the entire aquatic ecosystem.

Mercury is a naturally occurring metal. However, due to human activities, the South Bay is receiving more than its fair share of this heavy metal. During the 19th century, San Jose's New Almaden Mines were the largest mercury mines in North America. As part of the mining process tailings were left exposed along creek beds around the mines. To this day, rains continue washing mercury from these tailings into the Guadalupe watershed of Santa Clara Valley, bringing the mercury to the South Bay. Mercury is extremely harmful to wildlife and people in high concentrations. Plankton absorb the mercury as it enters the bay. Small fish feeding on plankton bio-accumulate the mercury toxins in their body tissues. Larger fish then eat the contaminated smaller fish. The concentrated mercury toxins eventually end up in the top predators of the food chain such as terns. This accumulated mercury in the terns is known as bio-magnification. If mercury bio-accumulates through trophic levels in the food chain for terns it also moves through the same food chain impacting people who eat large amounts of fish caught in the Bay. Mercury is known to

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SFBBO
San Francisco Bay Bird Observatory
P.O. Box 247 1290 Hope Street Alviso, CA 95002
phone 408 946-6548 fax 408 946-9279 admin@sfbbo.com

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