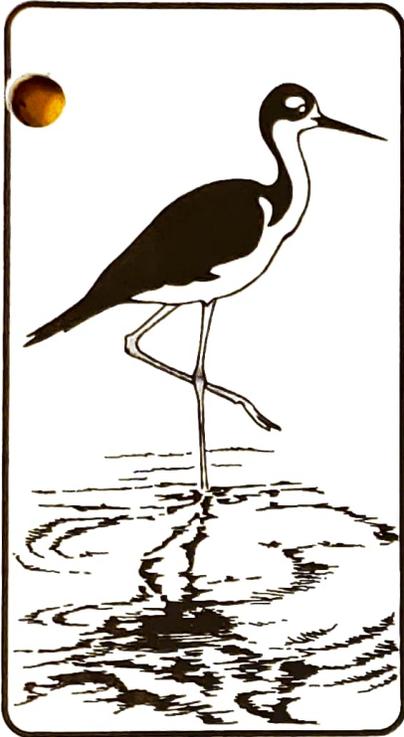


The Stilt

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SFBBO Shorebird Study *Shoreline Habitat Use By Migrating And* *Wintering Shorebirds*

Janet Tashjian Hanson and Dianne Kopec

The Pacific Flyway is one of four great freeways of avian migration that flow north-south on the North American continent. Twenty million shorebirds fly these routes to their summer breeding grounds in the north and then return south for the other three seasons of the year. Since different species travel varying distances, many need to stop for refueling along the way, while others stop entirely to overwinter. The three major "offramps" of the Pacific Flyway are the Copper River Delta in Alaska, Gray's Bay in Washington and our own San Francisco Bay.

These reststops, known as staging areas, host millions of birds during the nonbreeding seasons, giving the observer an impression of infallible abundancy. While one may indeed be looking at thousands of individuals of a particular species all in one spot, findings reported by Myers, et al (1987), reveal that this local concentration may be more than 80% of the entire population of some North American species. Habitat destruction at a single staging area, particularly by a catastrophic occurrence, could precipitate the demise of an entire species. This discovery elevated habitat preservation for shorebirds to a higher level of importance than held previously.

In 1990, San Francisco Bay was designated a Hemispheric Site by the Western Hemisphere Shorebird Reserve Network. Volunteer surveys coordinated by the California Department of Fish and Game 1969-1974 and by Point Reyes Bird Observatory 1988-present revealed that hundreds of thousands of shorebirds utilize the bay over the fall and winter months, increasing to nearly a million birds during spring migration. They are most commonly observed feeding or roosting on tidal mudflats but must take refuge elsewhere during high tides.

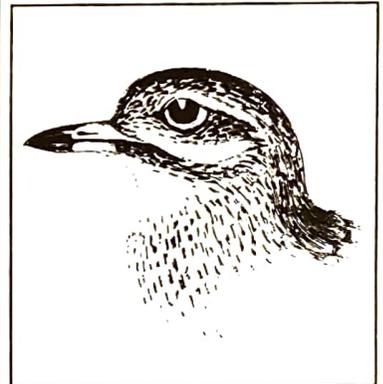
The importance of available high tide habitat is reflected in a study reported by Kelly and Cogswell (1979) in which overwintering Willets and Marbled Godwits were observed to have very localized movements between foraging and roosting habitats. Clearly, development around the Bay has already destroyed many former roosting areas. Protection of what is left of this critical habitat depends upon scientific documentation of shorebird use.

Past Research

In the South Bay, salt ponds constitute the largest habitat category available to shorebirds during high tide inundation of mud flats. In the last 30 years several studies have examined the value of salt ponds to both shorebirds and waterbirds in general. Carpelan (1957) offered a brief

discussion of shorebirds observed on the salt ponds between Alviso and Guadalupe Sloughs (including the Refuge's Knapp property). He reported common sightings of roosting Willets and Long-billed and Hudsonian Curlews along the levees separating the ponds. Foraging by small numbers of sandpipers and American Avocet on *Artemia* sp. (brine shrimp) along the ponds' shallow edges was also noted.

In the late 1960s a two year examination of the habitat value of salt ponds focused on the relationship between salinity, invertebrate density and bird use in the salt ponds south of Mowry Slough. Anderson (1970) found water depth to be the key factor influencing shorebird use of salt ponds. He could discern no relationship between tidal height and pond use, but speculated that migratory fluxes of shorebirds



masked diurnal patterns related to tide.

In 1982 Swarth et al. reported a study of waterbird use of the salt ponds west of Coyote Hills, again assessing salinity and invertebrate biomass in relation to waterbird abundance. A limited discussion of shorebird occurrence supported the importance of shallow water to shorebird foraging activity and, contrary to Anderson, found a positive relationship between shorebird

Continued on Page 2

Shorebird Study cont.

density on the ponds and tidal height.

The most recent study of waterbird abundance in salt ponds was a joint project of Calif. Dept. of Fish and Game and the U.S. Fish and Wildlife Service, reported by Harvey et al. (1988). Low altitude aerial surveys were used to assess waterbird abundance in relation to pond salinity in the South Bay. Phalarope and Black-necked Stilt densities were greater in ponds with elevated salinities, reflecting increased levels of invertebrate prey.

The studies reviewed above all aimed to define the value of salt pond habitat and comprise the majority of work on high tide habitat use by waterbirds in the South Bay. Assessment of shorebird presence was somewhat limited in scope or area while few formal studies of shorebird use of other high tide habitats have occurred.

SFBBO Shorebird Study

Earlier this fall SFBBO received a grant from the San Francisco Estuary Project to examine high tide habitat use by migrating and wintering shorebirds. This ambitious study seeks to define the relative importance to shorebirds of specific parcels of shoreline habitat as ranked by species abundance, composition and activity and to identify habitat parameters which influence high tide site selection by shorebirds.

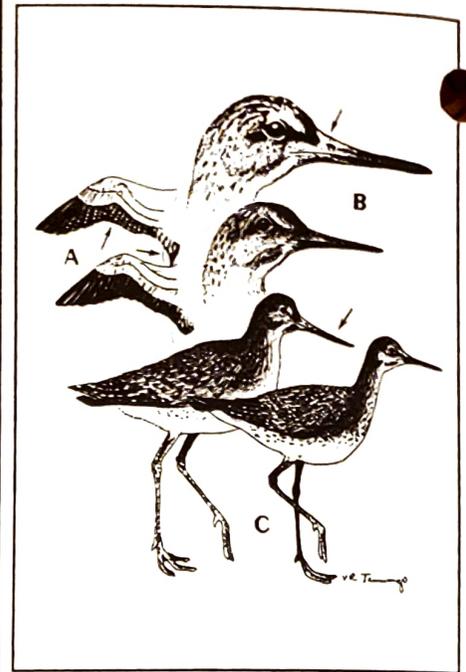
The study area encompasses virtually the entire South Bay shoreline (40+ miles) extending from the Hayward Regional Shoreline on the east, south to Alviso, then north to Seal Slough on the west side of the bay. This area has been divided into 23 survey sites which extend, from the bay's edge, inland to developed areas unsuitable for shorebirds. Access has been granted by the Cargill Salt Company and the San Francisco Bay National Wildlife Refuge, as well as several municipal landowners. Habitat types include tidal marsh and diked wetlands in addition to the ubiquitous salt ponds.

Biweekly field surveys began in October and will continue through May 1993. Survey periods coincide with morning high tides which allow an entire survey to occur above mean high water. Each survey period is four days long and includes a weekend to accommodate volunteer schedules; sites are surveyed ONCE during each period. As with most SFBBO studies, we are depending

on skilled volunteer field observers to collect the bulk of the data - detailed ground observations of species location, abundance and activity. Habitat selection will be examined using data collected by staff at randomly selected quadrats throughout the study area. Finally, monthly aerial overflights will be used to affirm ground observations of large shorebird aggregations, locate previously unidentified high tide habitat areas and to replace ground observations when winter rains make certain sites inaccessible.

Approximately 40 volunteers are already in the field, and we are continuing to add additional volunteers to supplement observer teams at some of the larger sites with higher shorebird densities. Most sites are surveyed within a few hours by car, a few are covered on foot or mountain bike. Volunteers familiar with shorebird identification are encouraged to call the observatory to volunteer for this study. A short training session with an SFBBO staff member will get you started.

If you get any mail at all, you are aware of how often we are asked to support the field work of conservation with dollars; this is a rare opportunity to actually take part in the field research. ■



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Colonial Breeders In the South Bay

1992 Summary

by Dianne Kopec

Twelve colonial waterbird species breed along the edge of the South Bay, all in human-altered environments which retain key elements of their natural breeding habitats. Suitable breeding sites are limited and often tenuous, yet over 50 colony sites are known to exist south of the San Mateo Bridge, providing habitat to more than 5,500 breeding pairs. Terns and gulls are found almost exclusively on dredge spoil islands or abandoned levees in the extensive salt pond network ringing the bay. Herons and egrets are concentrated in two areas, altered environments ringing Bair Island and along Mallard Slough, a brackish marsh bordering a major sewage outfall in the extreme South Bay.

Colony site tenacity is strongly influenced by reproductive success. A study of Caspian Terns reported that 75% of successful nesters returned to the same colony the next year, while following a failed nesting attempt only 6% of the original colony members re-nested at the site (Auk 105:339-344). Within our study

area, habitat destruction vies with predation as the lead cause of reproductive failure. Levee maintenance operations within the salt ponds can bury established colonies under mounds of dredged mud (spoils) laced with holes and fissures unsuitable for breeding. Fluctuating water levels in salt ponds can inundate islands or at the opposite extreme, create land bridges opening colonies up to predation.

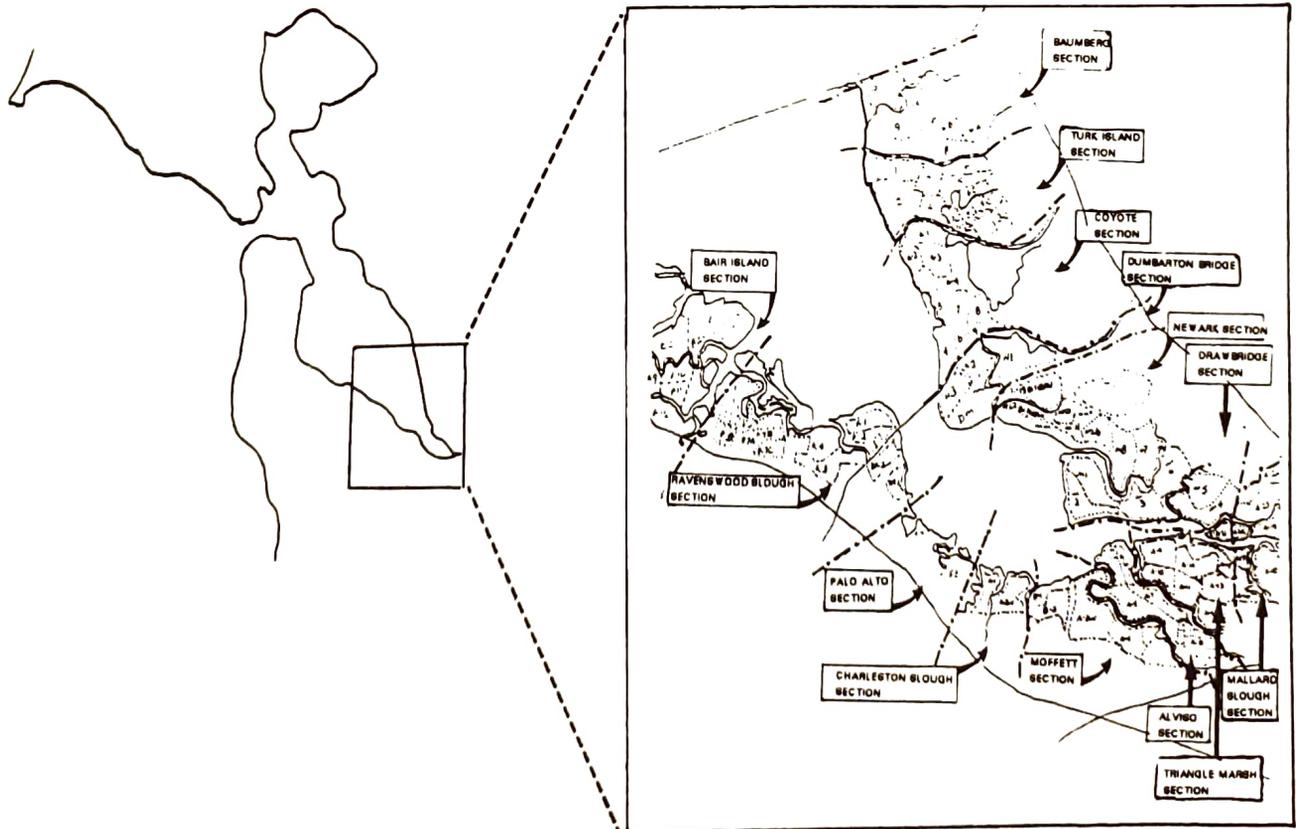
Predation, here in the Bay Area that word should be synonymous with the Red Fox. This introduced species has devastated colony sites in the South Bay in its effort to survive in our urbanized environment. The fox has been very democratic, impacting a wide range of species from gulls to egrets and other ground-nesters such as Clapper Rails and Snowy Plovers, significantly altering breeding activity along some parts of the bay shoreline.

Since 1981 SFFBO volunteers and staff have surveyed the South Bay for new and established colony sites,

recording size, location, nesting activity and breeding density at diverse habitats along the shore. Most of the South Bay shoreline is included in our 16 survey areas, with borders defined primarily by a common access point (see map below). Results from the 1992 Colonial Breeding survey showed increased breeding in certain species while declines were found for others contending with predation at traditional nesting sites.

Forster's Terns are ubiquitous in the South Bay, reflecting the widespread presence of their adopted breeding habitat - primarily levees and islands within salt ponds. Close to thirty distinct colony sites were observed during 1992 ranging in size from the newly established Belmont Slough colony with five breeding pairs to upwards of 340 pairs on a single salt pond island in the Baumberg section. While the number of breeding Forster's Terns has declined since the middle 1980's, in recent years there has been an upward trend to over 2,700 individuals, up 15% since 1990.

Continued on Page 4



Colonial Breeders Cont.

Caspian Terns began colonies at two new sites within the study area, outer Bair Island and pond levees near Triangle Marsh, north of Alviso. Predation was severe at both sites, with all nests destroyed at the Triangle colony. At the Bair Island site only 15 chicks survived just prior to fledging, after an initial count of 64 eggs.

Low survival for Caspian Terns at Bair is significant given the breeding association found between Least Terns and Caspians. Many of you will recall that during the early 1980's Least Terns nested at Bair Island on a barren pan left when a salt pond was drained; their nest site was adjacent to a colony of Caspian Terns, whose aggressive defense of the area may have contributed to the Least Tern's choice of the area. The site was abandoned after several alterations to the habitat not only destroyed the nearby Caspian Tern nesting site, but also permitted vegetation to cover a portion of the salt pan. Least Terns have not bred on the island since and Caspians have repeatedly failed to establish another successful colony site, even abandoning the area for several years. Continued recolonization of the area by Caspians could favor the return of Least Terns, though their poor success this past year may reduce Caspian breeding activity in 1993.

California Gulls have bred on islands at the Knapp property, between Alviso and Guadalupe Sloughs, since 1980. This successful colony has steadily expanded, recently fostering several satellite colonies at other sites in the South Bay. The latest colony, stretching along an isolated levee road in the salt ponds south of Mowry Slough, had a count of 650 breeding pairs, though the site was less than optimal, given the well-worn fox trail leading to the colony. Throughout our survey area, gull breeding activity increased almost 50% in the last three years. If this trend continues it may limit future nesting sites available to other colonial breeders.

Hérons and egrets continue to breed in large numbers in the South Bay despite the total destruction of the Bair Island colony site in 1991. As many of you will recall, in the early stages of the 1991 breeding season predation by a den of Red Fox incited the complete abandonment of the colony, which had been used by over 400 birds the previous year (only half of the site's breeding population in the middle 1980's). Following the debacle, Great Egrets left the area entirely and did not return for the 1992 breeding

season. Great Blue Herons soon re-nested in the PG&E transmission towers along Redwood Creek and Steinberger Slough. Fifteen breeding pairs were active in 1992, up from 13 in 1991, but still lower than previously recorded at Bair prior to the fox invasion.

Snowy Egrets and Black-crowned Night Herons also re-nested in the area, flying north across Steinberger Slough to Redwood Shores. The colony, in a small grove of eucalyptus at the southeast corner of the point, adjacent to the Redwood City sewage treatment plant, remains far smaller than the original colony. Less than 65 breeding pairs were recorded for the two species, an 80% decline from the 1990 breeding census. No breeding occurred at the original Bair Island colony site in 1992, despite an aggressive and reportedly successful fox removal program.

Breeding activity along Mallard Slough has remained relatively constant in recent years, with the notable exception of the Great Egrets whose breeding population has declined 50% since 1990. Snowy Egret numbers show a small increase while the 1992 breeding population of Black-crowned Night Herons returned to 1990 levels after a brief decline in 1991.

In 1992 Mallard's isolated habitat attracted some less common species including Little Blue Herons and a new species for this site, White-faced Ibis. Though actual nests were not visible through the dense tules, both species were present throughout the breeding season and were repeatedly observed carrying nesting material as they circled down into interior portions of the colony. At least fourteen ibis were sighted during one evening count.

Mallard Slough (called Artesian Slough by the sewage treatment plant) has always been amazing to me. An unnatural, brackish water tule marsh created by the freshwater discharge of sewage effluent, surrounded by mounds of landfills and diked salt ponds, and home to over 700 breeding herons and egrets. An untimely failure at the sewage treatment plant could devastate the colony, yet the birds will continue to breed there, never aware of the potential danger. As with the other wildlife breeding in the South Bay, any site with a remnant of the required habitat features will be tried, until breeding failure compels a shift to a new colony site. Whether the bay shoreline will continue to offer alternate sites for reproduction remains to be answered. ■

A SPECIAL THANKS

The Colonial Breeding Survey, like all projects here at the Observatory, depends heavily upon a strong volunteer commitment. The 1992 survey was only possible through the dedicated efforts of the following volunteers; Edith Black, Mary Brezner, Tom Espersen, Arlene Feng, Susie Formenti, Darrell Gray, Robert Kos, Valerie Layne, and Lisa Stahr. Many thanks!

YES! Volunteers will be needed for the 1993 Colonial Breeding Survey, a four month project with field surveys beginning in March. If interested, call SFBBO today to put your name on the crew list and we will contact you in late winter to assign field sites and set up orientations. Remember - knowledge of the natural world is the first step towards protection, come do your part and have a great time experiencing this rare world of the bay.

From the President's Desk - Ginny Becchine

It is going to be a full and exciting year at SFBBO. As the current President of the Board of Directors I'm looking forward to working with the 1992-1993 board and our highly qualified staff. The bird observatory has a long standing commitment to the San Francisco Bay biological community and to the involvement of the public in this commitment. There is a lot of work to be done. We pledge our continued commitment and encourage you to become more actively involved. Now I would like to introduce you to the current Board of Directors and the observatory staff.

The members of our board bring an enormous amount of experience and expertise to the job of running a bird observatory. **Dr. Howard Cogswell**, Professor Emeritus from Hayward State, has just recently accepted a 2 year position on the board. Dr Cogswell, author of *Waterbirds of California*, is on the Western Field Ornithologist's Board of Directors and has been a past board member for SFBBO. Dr Cogswell is a long standing member of our Research Advisory Board and his input has been invaluable. If you ever visit the Cogswell Marsh at the Hayward Regional Shoreline you will know who it is named for.

Lou Young has also accepted a two year position on the board and holds the office of Treasurer. Lou was a former board member and has experience as a Treasurer. He has his B.S. in Physics and is a manager at Lockheed. We value his input in the areas of finance and management. Last year, though not a member of the board, he participated on our financial committee. Lou has worked on many SFBBO studies and is currently involved in the Shorebird Study. I want to thank Lou for his continued support.

One incumbent and two new members were recently voted into the board. Our re-elected member is **Jan Dierks**. Jan has her Bachelor's in Biology and her Master's in Marine Science. She did her Master's thesis on the California Gull colony at the Knapp studying the diet of the chicks. One of our new directors is **Paul Jones** who has his M.S. in Marine Biology and his M.A. in Biology. His Master's thesis was entitled the "Aspects of the Reproduction Biology of the California Gull at Alviso California." Jan and Paul will be heading the board's research committee.

Our other new director, **Terry Hart Lee**, is our Secretary. Before

becoming a board member she took on the job of "banding coordinator" and will continue in this capacity. Terry has her B.A. from San Jose State in Biology. She has previously served on our board and has been a volunteer on many of our projects. Terry returns to the observatory after some time away to start a family. Welcome back, Terry.

Continuing directors are Susie Formenti, Carole Hutchinson, Tom Espersen and myself. **Susie Formenti** has contributed to the organization since before we incorporated, she is one of our founding "mothers." Susie has been the editor of the newsletter for as long as I can remember and has done an outstanding job. She also serves on the membership committee. And, as if all this isn't enough, she is participating in the Shorebird Study and helping organize the Knapp data. What would we do without you?

Carole Hutchinson is a registered nurse and works at Stanford University Medical Center. She is an avid birdwatcher and environmentalist. Carole is our "recycle coordinator", as she helps recycle the bird observatory waste. After all, we should set a good example for the public. Carole was a member of our ad hoc goals prep committee and works on the personnel committee. **Tom Espersen**, Vice-President of the board is a man of many hats. A long standing environmentalist, Tom has worked with many groups. He has his J.D. from the University of Santa Clara and works as a contract lawyer for a local electronics firm. He has worked on the Knapp project and is now collecting data for the new Shorebird Study. He is also the head of SFBBO's personal committee.

Our excellent staff is headed by **Dianne Kopec**. Dianne worked for the observatory as our staff biologist before becoming our executive director. Dianne has done extensive research on the harbor seals in the bay and brings her valuable research expertise to her job with us. Dianne has her B.A. in Zoology from the University of Iowa and her M.S. in Environmental Science from the University of San Francisco. I enjoyed working with Dianne this summer as we cleaned house and reorganized. Many people are responsible for the improvements in the office and downstairs areas but Dianne was the inspiration. Thank you Dianne.

Currently, we have two part-time biologists **Valerie Layne** and **Janet**

Hanson. We soon hope to increase Valerie to a full-time position. On Dec 23, Valerie will have completed her Master's in Biology from San Jose State. Since joining us this summer Valerie has been staking shorebird study sites, analyzing data on the Knapp project and patrolling the south Bay for outbreaks of avian botulism. Our other biologist, **Janet**, has her Master's in Ornithology from California State, Riverside. She had been a Board of Directors member until September when she moved to the position of part-time biologist. Janet deserves enormous credit for organizing the very successful September Western Field Ornithologist's Conference that SFBBO hosted. I would like to thank everyone who helped in the organizing and running of the conference; but Janet was at the helm and did a fantastic job. Many thanks.

Ann Witman is a life-time birder and was a professional gardener until she returned to school recently for a second Bachelor's, this time in Environmental Studies. She is our part-time volunteer coordinator and is very busy keeping the Shorebird Study manned. Then there is our volunteer staff person, **Peg Wooden**. Peg has given an enormous amount of her time, money and talents to SFBBO. How can we ever thank Peg for all she has done over the years for the bird observatory?

Finally, who am I? Well, I've taught Respiratory Therapy at Foothill College for the past 15 years. I began my bird watching career in 1981 by taking a Foothill class in Ornithology. I became associated with SFBBO in 1982. I managed the Palo Alto Airport Study and I've worked on many other observatory studies. I've been a board member since 1982, taking a few years off for my graduate work at the University of Santa Clara. I finally earned a Master's in Counseling and then came back to work at SFBBO. As a board member I've served as Vice-President several times, but this is my first year as President. I'm very pleased to be the President of the Board of Directors, and I hope I can serve the observatory well.

I know the board and staff at SFBBO are dedicated to the job at hand. Our goal is to study the south bay and make data available to the public and various agencies so wise decisions can be made. With your continued support, we'll have a very successful year. ■

Does the extra food we provide help some species to increase in numbers - at the expense of others?

Bird Feeding: Boon or Bane?

Are people who feed birds unwittingly causing the decline of migratory bird populations? According to Project FeederWatch, a winter bird feeding survey sponsored by the Cornell Laboratory of Ornithology, the answer seems to be no.

Concern for migratory birds has been mounting in recent years. Surveys suggest that many populations have declined seriously over the past decade. In his recent book, *Where Have All the Birds Gone?*, ornithologist John Terborgh discusses the possible causes.

He mentions deforestation on the neotropical wintering grounds and fragmentation of breeding habitat in North America, which most biologists agree are the main problems. But he suggests that bird feeding may be a worry as well. He wonders whether feeders may be causing increases in birds such as Brown-headed Cowbirds, which are nest parasites, or Blue Jays, which are notable nest robbers. If so, he reasons, then bird feeding may be inadvertently contributing to the declines of many forest-dwelling species, such as warblers and vireos, that never even visit feeders.

To examine this possibility, Cornell ornithologist Erica H. Dunn turned to information from Project FeederWatch as well as data from the Breeding Bird Survey (BBS), a continentwide survey of bird numbers in spring. She used the FeederWatch data to determine which feeder species are most widespread in North America, and the BBS data to learn which of them had been increasing and which had been decreasing during the past 25 years.

Surprisingly, she discovered that 70 percent of the most widespread feeder birds showed significantly declining populations. These included not only the nest-robbing Blue Jay, but also nest-site competitors such as the European Starling and House Sparrow, as well as several other species often considered "pests." The Brown-headed Cowbird also declined, although not as much as many others. These findings don't mean these species are not hurting migratory birds through their predatory or parasitizing actions, but it does suggest that feeding

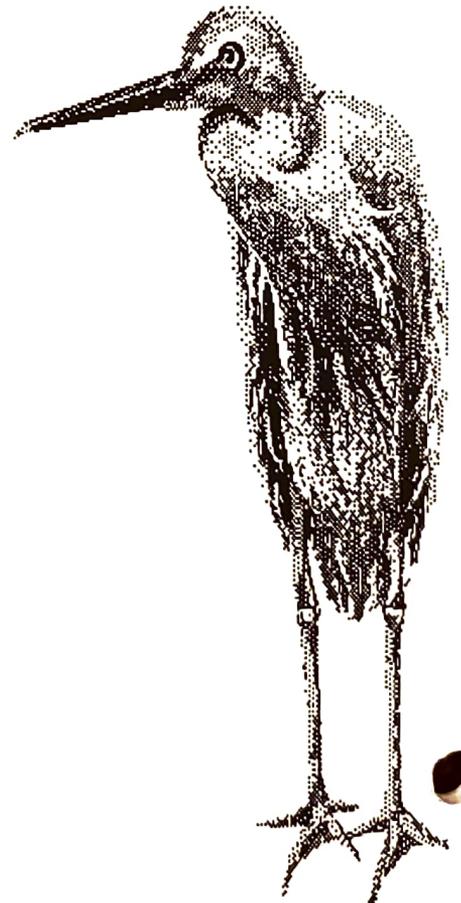
them is not increasing their populations. These observations raise another question—is bird feeding bad for bird populations? Are species such as the Blue Jay being hurt by the practice?

Probably not. Most of the declining feeder species belong to groups that are declining as a whole—even though some species in those groups don't visit feeders. These include mimids (thrashers and mockingbirds), towhees, certain blackbirds, and sparrows—birds that nest primarily in grassland or shrub habitats, which are also declining.

Bird feeding may harm some species, however. One study in England showed that regular feeding induced some Blue Tits and Great Tits to nest in suburban areas rather than their natural habitat, deciduous woodland. The suburban nesters showed very poor reproductive success because natural foods, especially the insects needed to feed nestling, were in short supply. We don't know whether Blue Jays are responding to feeding by nesting in suburbia, only to suffer unsupportable predation by cats and raccoons. We do know that American Robins, which often nest in suburbia, are showing population increases nationwide.

Conclusive evidence for the effects of bird feeding on bird populations awaits more detailed studies of each species. Meanwhile, bird feeding does not seem to cause increases in most of the species that frequent feeders, including "pest" species.

If you feed birds in your backyard and you'd like to contribute to an international effort to monitor bird populations, now is the time to sign up for the 1992-93 Feeder Watch season. Participants receive a complete instruction packet, data forms, and a subscription to FeederWatch News, a biannual newsletter that covers not only FeederWatch results but bird feeding tips, notes on feeder bird behavior, and more. For information on how to join, write to: Project FeederWatch, Cornell Lab of Ornithology, 159 Sapsucker Woods Road, Ithaca, New York 14850, or call (607) 254-2414. ■



SFBBO Hosts Annual Meeting of the Western Field Ornithologists

Paul Jones and Janet Tashjian Hanson

Over the weekend of September 18-20, SFBBO played host to the 17th Annual Meeting of the Western Field Ornithologists (WFO), publishers of the journal, *Western Birds*. The conference was held at the Holiday Inn in Sunnyvale and featured presentations of technical papers, field trips, a barbecue and a banquet. Total attendance was approximately 150.

Attendees visited Hawk Hill in Marin County, a trip led by Carter Faust and Allen Fish, both of Golden Gate Raptor Observatory. Other groups went to Coyote Creek Riparian Station to observe their banding operation on trips led by CCRS Executive Director, Mike Rigney, and our own Paul Noble, followed by birding on the salt ponds adjacent to the Observatory. We offered two pelagic trips on Monterey Bay, arranged by Shearwater Journeys in hopes of (re) sighting the seldom seen Streaked Shearwater and other unusual birds and mammals brought northward by El Nino. Groups led by Dan Keller scoured the San Mateo Coast for rare migrants and trips on the Baylands led by Bill Bousman and Peter Metropoulos yielded at least one Clapper Rail.

Friday night's barbecue was held at the Observatory and enjoyed by around 75 people. It was produced by many SFBBO volunteers - you know who you are - thanks again! The Breeding Bird Atlas Committee met after dinner, coordinated by Bill Bousman, and contributions were made from 7 different "atlasers" from around Northern California.

The papers presented on Saturday covered a wide variety of subjects and were quite interesting. For example, SFBBO Board member Jan Dierks presented a talk on the breeding colonies of California Gulls at both Mono Lake and Alviso. Paul Noble reported on his effort to band and study a population of Rufous-crowned Sparrows at his Santa Clara County site.

We had the pleasure of hearing from Dr. Jim Harvey of Moss Landing Marine Laboratory on the possible effects of the El Nino (a widespread oceanic disturbance that affects the marine food web) on pelagic birds of Monterey Bay. Closer to home, Elaine Harding-Smith of the U.S. Fish and Wildlife Service (SF Bay National Wildlife Refuge) presented a

review of the status of the endangered California Clapper Rail. One memorable photograph (originally printed in a local newspaper on November 23, 1878) Ms. Harding-Smith's slide presentation showed hunters standing next to 500 rails that had been shot for the market in San Francisco. That's a number now roughly equal to the entire Bay-wide population!

Allen Fish gave us an entertaining 20-year retrospective on hawk migration over the Golden Gate. Stephen Suddjian and co-workers did an excellent talk on efforts to study and monitor the breeding activities of the Marbled Murrelets that nest in the old-growth redwoods near Butano and Big Basin parks. He showed photographs of one of only six nests ever located in California and the only fledgling ever recorded for this secretive, elusive (and now listed) seabird.

Late in the afternoon, Dr. Michael Wallace (of the Los Angeles Zoo, not 60 minutes) presented an outstanding lecture on the effort to reintroduce the California Condor into the Sespe Wildlife Refuge near Ventura. This was a probing and thought provoking discussion that revealed how difficult it is to manage a captive breeding program for this species and "hack" individuals back into the wild.

Dr. Stephen Bailey, now of the Pacific Grove Natural History Museum, moderated the "identification panel" that featured Don Roberson, Guy McCaskie, Joe Morlan and Scott Terrill. While an honor to be chosen for the panel, it is also the "hotseat" for the birding experts. It was both fascinating and amusing entertainment as they attempted to identify rare or unusual species, from the slides presented, sometimes of just the backend of a bird!

The evening guest speaker at the banquet was none other than the colorful Dr. Luis Baptista of the California Academy of Sciences. Dr. Baptista's hour-long lecture on song dialects in White-crowned Sparrows was spiced with humor and memorable imitations of his study subjects. The entire conference was a real success. WFO's 1993 meeting will be held in Tuscon, Arizona. We wish the next host group "Good Luck" and have fun! ■



Memberships

We welcome the many people who have joined or renewed their membership to SFBBO since June 1992. We extend our deep appreciation to the many members and groups who have given financial support this past six months.

Ellen Albee, Jean Alexander, Kelli Allison, Sally Arney, John & Diana Asmus, Douglas & Nancy Bartman, Anne Baxter, Ginny Becchine, Robert Berndt, Richard Brannon, Mary Brezner, Doris & John Brown, Juliette Bryson, Joseph & Marcus Capser, Robert Card, William & Jean Clark, Thomas & Christine Clough, Howard Cogswell, Nicholas & Evelyn Coiro, Michael & Diane Corker, Charles & Joan Coston, Rigdon Currie, Jay Davis, Alan De Martini, Thomas Dick, Winston Dines, Cliff Drowley, Donald Dvorak, Michael & Jeanne Egan, Nancy Elders, Lorrie & Ron Emery, John & Cheri Erman, John Feneron, Arleen Feng, Dr. William & Stephanie Ferguson, Susie & Dave Formenti, Harriet Gerson, Zelda Glaze, Shirley Gordon, Jesse Grantham, Darrell Gray, Sean Griffin, B. Hand, Jay & Janet Hanson, Brian Harrington, David & Muriel Haupt, Carl & Marguerite Heintze, Lillian Henningsen, Jan Hintermeister, Amy Hiss, Grant & Karen Hoyt, Caralisa Hughes, Joan Humphrey, Carole Hutchinson, Kumi Ishida, Deborah Jamison, James Jeffers, David Johnson, Frank Johnson, Dorothy Johnson, Paul Jones, James & Sonya Kieran, Mona Knight, Kathryn Knight, Michael Kraus, Patricia Kucker, G. Kulhman, Edwin Laak, Marjorie Landberg, Peter Latourrette, Jessie Lawson, Valerie Layne, Nick Lethaby, Pamela Lewis, Gloria Linder, Dr. William Lofthouse, Calvin Lou, Kent Lou, Sue Macias, Nadine Malcolm, Lester & Mary Manson, Gerald & Linds Marshall, Ray Martin, Diana Matthiesen, Donald Mayall, Jim & Lynne McCammon, Mel & Patricia McKean, Bob Merrill, Richard & Holly Mignone, Evelyn & Henry Miller, Martha Miller, Emery Mitchell, Tim Molter, Sylvia Moore, Mary Murphy, Fran & Leroy Nelson, Kristie

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Biologist

Janet Hanson

Researchers

Jan Dierks

Peg Woodin

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Regular: \$15
Family: \$20
Associate: \$50
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Corporate: \$500+
Life Member: \$400*
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* Single payment becomes part of an endowment fund.

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The Bird Observatory is located at 1290 Hope St. in Alviso. The office is open from 1-5 pm weekdays and some weekends. But before stopping in, call (408) 946-6548 and check the schedule.

The Board meetings are open to the membership and are held monthly. Call the Observatory office for dates and times.

The newsletter is a quarterly publication. Send contributions to the editor: Susie Formenti, 16675 Buckskin Ct., Morgan Hill, CA., 95037. Call 408-779-8694 for deadline dates

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