



The Kite Call

Ohlone Audubon Society, Inc.

*A chapter of the National Audubon Society
Serving Southern & Eastern Alameda County CA
Our Mission: To celebrate and protect birds and their habitats in
Southern and Eastern Alameda County
www.ohloneaudubon.org*

Calendar

- Jan 5 **FIELD TRIP**
No. Livermore
- Jan 7 **GENERAL MEETING**
Fremont
- Jan 10 **FIELD TRIP**
Arrowhead Marsh
- Jan 18 **FIELD TRIP**
La Gallinas
- Jan 25 **FIELD TRIP**
Shadow Cliffs
- Feb 1-2 **FIELD TRIP**
No. Sac Refuges
- Feb 4 **GENERAL MEETING**
Fremont
- Feb 12 **FIELD TRIP**
Lake Elizabeth
- Feb 22 **FIELD TRIP**
Redwood Reg Pk



**Remember to bring
your own cup to
meetings!**

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See updates and photos from our activities that you can share with your friends! Find us by doing a Facebook search for Ohlone Audubon Society



Membership Meeting

Mimicry in Raptors by Hans Peeters

Date: Tuesday, January 7, 2020
Time: 7:30 PM
Location: Carlton Plaza
3800 Walnut Avenue, Fremont 94538



Do you ever struggle to identify raptors? Don't feel bad – it happens in the best of families.

But have you ever wondered

WHY so many raptors look like others? Why does a Sharp-shinned Hawk HAVE to look so confusingly similar to a Cooper's Hawk? It is not just to baffle birders -- humans aren't the only ones being fooled!

Mention of mimicry in nature instantly brings to mind butterflies and orchids, but who would ever think of one kind of HAWK pretending to be another species? Few people realize how common the phenomenon is in birds of prey. The raptor world around the globe, and especially in the tropics, abounds with often colorful impostors of dangerous and more potent models – that might eat them! *(cont'd on pg 2)*

Birding Wine Regions of the World - California, Chile, South Africa and Beyond

by Alvaro Jaramillo

Date: Tuesday, February 4, 2020
Time: 7:30 PM
Location: Niles Discovery Church
36600 Niles Blvd, Fremont, 94536

Join us for a fun talk by one of our favorite speakers, Alvaro Jaramillo , about how climate affects the environment, as well as the birding!

The Mediterranean climate zone has dry summers and wet winters – sound familiar? We live in a Mediterranean-type climate, and this happens to be the type of region where people produce the finest wines. But similar climates don't always have similar avifauna. In some cases, there are clear-cut differences, while in other situations we have very different birds that fit a similar niche in separate Mediterranean parts of the world. Come see a view of what makes Mediterranean regions tick, the great birding to be enjoyed, and maybe we will even talk a bit about the wine! *(cont'd on pg 2)*

January Program (continued)

Come and be dazzled by a sampling of these doppelgangers, and be prepared to see some examples that will blow you away.

Hans Peeters has entertained Ohlone Audubon members over the years mostly with talks about the avifauna in exotic lands, but he is first and foremost a raptor biologist. His insights on mimicry in raptors were published in a German journal in 2017. Hans taught biology, zoology, and ecology for 37 years and is an

award-winning painter of wildlife and author of books including ***Raptors of California, Owls of California and the West***, and ***Mammals of California***, all published by University of California Press.

Directions: From I-880: In Fremont, take the Mowry Ave exit, then Mowry east (inland) to Fremont Blvd. Turn right on Fremont Blvd., then left on Walnut Avenue. Carlton Plaza is on Walnut between Fremont Blvd. and Paseo Padre Pkwy. **From Mission Blvd.,** turn onto Walnut Avenue and Carlton Plaza will be on the left, between Paso Padre and Fremont Blvd.

February Program (continued)

Alvaro Jaramillo is a biologist, author, and a birding guide. Alvaro was born in Chile, but began birding in Toronto, Canada, where he lived as a youth. He was trained in ecology and evolution with a particular interest in bird behavior. An expert on the birds of California and North America, he is the author of two books: ***The Birds of Chile*** and the ABA Field Guides to ***The Birds of California***. A contributor to numerous field guides and popular publications, including the "Identify Yourself" column in ***Bird Watcher's Digest***. Recently, he received the Eisenmann Medal of the Linnean Society of New York, established to honor those who excel in ornithology and encourage the amateur. Alvaro runs a birding and nature tour company, Alvaro's Adventures, where the focus is to have fun, learn a thing or two and just enjoy birds and nature. Alvaro lives with his family in Half Moon Bay, California.

Directions: From the South or West via I-880, Take Mowry Avenue exit. Follow Mowry across Fremont (toward the hills) to Mission Boulevard, turn left. You will pass Niles Blvd and the Sullivan Underpass. Turn left at Nursery Ave. Turn left on Niles Blvd. You will see the church just on the left after the turn. **From the North via I-880 :** Take Alvarado Niles Boulevard (east): From the freeway exit, turn left to go over the overpass, then in approximately four miles (through Union City and into the Fremont city limits), you will see the church on your left (just after Nursery Ave.). **From Pleasanton or Livermore,** or other points to the east of the hills, you can take I-680 to the first Mission Boulevard exit, and turn right onto Mission. Stay on Mission until you get to Nursery Avenue, and turn left. Turn left on Niles Blvd. You will see the church just on the left after the turn. **From the North via Mission Boulevard** Turn right on Nursery, and left on Niles Boulevard. You will see the church just on the left after the turn.



Field Trips

More Field Trips pages 3 -4!



(By M. Christopherson)

North Livermore/Springtown
January 5, Sunday 8:30 AM - 11:30 AM
Leaders: Steve Huckabone & Kathy Robertson
fieldtrips@ohloneaudubon.org

We will walk along the Arroyo where we can expect many wading birds such as stilts, avocets, herons, ducks, and many songbirds. Raptors are around- a Golden Eagle was observed a few years ago. Wide, level trails make walking easy. Pre-registration is not required. Beginners are welcome and encouraged. Bring your scope if you have one.

Directions: Take I-580 east to exit 54 for First Street/ Springtown Blvd, turn left onto First St and continue onto Springtown Blvd. Turn right (east) on Bluebell Dr. & continue about a 1-1/2 miles to Marlin A. Pound Park (North Livermore Neighborhood Park). We will meet at the bridge crossing the Arroyo. Park on either side of the road. Heavy rain cancels. No restrooms are on our route, so you may wish to make a pit stop before arriving at the meeting point.

Field Trips (continued)

Arrowhead Marsh: Martin Luther King Regional Shoreline
January 10, Friday 9:45 AM- 12:00 PM
Leaders: Stephanie Floyd & Mona Brauer
fieldtrips@ohloneaudubon.org

A 7.9' high tide will hit Arrowhead Marsh at 11:08 AM, creating an opportunity to see Ridgway's Rails, Virginia Rails, and Soras. Wintering ducks and shorebirds will be plentiful. The area is completely paved, so if it's raining, we'll still go as rain and high tide are optimum conditions for seeing rails. One year a very rare Yellow Rail was seen here in cold, driving rain! Dress in layers and raingear may be needed. This is a wheelchair-accessible bird walk. Pre-registration is not required, and all are welcome.

Directions: From I-880, go west on Hegenberger towards the airport and turn right on Pardee. Make a left at Swan and turn right into the entrance to Martin Luther King Regional Shoreline. Follow the entrance road all the way to the end. On the way to the parking lot, drive slowly and keep an eye out for Burrowing Owls on the berms to the right.

Las Gallinas Storage Ponds, San Rafael
Saturday, January 18 9AM-2PM
Leaders: Phil and Pat Gordon
pagpegATAOL.com, 510.538.3550

The Las Gallinas Valley Sanitary District's Wastewater Treatment Reclamation Project provides several miles of even-ground hiking trails, unobstructed views of San Pablo Bay, Mt. Tamalpais, sitting and picnic benches and the opportunity to enjoy dozens of bird species in and around the ponds in the reclamation area, as well as other creatures that call the reclamation area "home". The multi-faceted reclamation project includes a freshwater marsh, irrigated pastures, storage ponds, a saltwater marsh and is a great place for watching ducks and other waterfowl, raptors, and occasional rarities. Dress in layers and plan on a 2 mile walk. Bring your lunch to enjoy after the walk. Rain cancels.

Directions: From Highway 101 North take the Smith Ranch Road exit, then go east on Smith Ranch toward the McInnis Park entrance. Turn left immediately after crossing the railroad tracks, staying on Smith Ranch and go about 1/2 mile to the end of the road to the Las Gallinas Ponds parking lot. Meet the group by the bridge just past the parking lot.

Shadow Cliffs Reg. Rec Area, Pleasanton
Saturday, January 25 8:30 AM-11:30 AM
Leaders: Steve Huckabone &
Kathy Robertson
fieldtrips@ohloneaudubon.org

Join us at Shadow Cliffs Regional Recreation Area to explore the lake, levees, and marsh for wintering waterfowl, Common Gallinules, egrets, herons, and grebes. Osprey are found around the lake and ponds, while the trees hold woodpeckers and nuthatches. Notable sightings in past years included Bald Eagle, Golden Eagle, Great-tailed Grackle, California Thrasher, Common Loon, Common Gallinule, and Hooded Merganser, Wilson's Snipe and Peregrine Falcon. Wide, level trails make walking fairly easily except for one short, steep uphill section to get onto the levee. Scopes are helpful.

Directions: From I-580 eastbound, take the Santa Rita Road exit, keep right and follow signs for Downtown to merge onto Santa Rita Road. Turn left on Valley Avenue and left on Stanley Boulevard. Turn right in to the park. Meet in the first parking lot by the swimming beach. \$6 parking fee./park pass

Sacramento Valley Wildlife Refuges
Saturday & Sunday, February 1-2
9AM Saturday at Sacramento NWR
9AM Sunday - Colusa-Sac River SWA
Leaders: Pat & Phil Gordon
pagpegATAOL.com, 510.538.3550

This year we are refuge birding to the north. Saturday will be spent birding the Sacramento National Wildlife Refuge, and ending the day at Colusa NWR. Meet **Saturday** morning at the Sacramento National Wildlife Refuge Kiosk parking area. **Sunday**, we will begin the day at the Colusa-Sacramento River State Wildlife Area, on the Sacramento River, in Colusa, then travel to the Llano Seco unit of the Sacramento NWR.

Directions: The Sacramento NWR is located north of Williams off of I-5. Use the Norman Road exit and follow the signs. Driving time is about 2 hours from the Bay Area. There is an entrance fee (Duck stamp/hunting license/day pass.) The Colusa Wildlife Area is located right in the town of Colusa, along the Sacramento River. Take Hwy 20 east from Williams, and in the town of Colusa, continue straight across Market and Main Street, and up the levee to the park entrance. This is a fee area also.



Sacramento NWR Snow Geese 12/16/19 (S. Ferreira)

Lodging is suggested in Williams, where several hotel/motels are available: Ramada Inn, Granzellas's Inn, Traveler's Inn, Motel 6, Econo Lodge. Those who wish can camp at the Colusa Wildlife Area in Colusa. Trip will go rain or shine with only heavy flooding cancelling.

More Field Trips

Lake Elizabeth & Gomes Park - Fremont
Wednesday, February 12 9:00 AM - noon
Leaders: Stephanie Floyd & Park Ranger
Sandy Ferreira
fieldtripsATohloneaudubon.

On this annual field trip to Lake Elizabeth in Fremont's Central Park we often find newly-arrived selasphorous hummingbirds by the palm trees and winter geese on the soccer fields. Ranger Sandy will update us on the successful tree swallow nest box program. We'll visit Gomes Park if time allows where we may find rare sparrows. Plan to walk about 2.5 miles mostly on paved paths. Heavy rain cancels.

Directions: From I-880, exit at Stevenson and go east (towards the hills). Turn right at Paseo Padre Parkway and follow the signs for the Aqua Adventure Waterpark. The parking lot for the Waterpark dead ends at the south end of the lake. Meet at the five tall palm trees at the lake end of the parking lot.

Redwood Regional Park, Oakland
Saturday, February 22 8:15-11:15 AM
Leaders: Jerry Ting & Elizabeth Olin
fieldtrips@ohloneaudubon.org

We are going to bird around the meadow area and along the stream on both sides. Pacific Wren, Golden-crowned Kinglet, Varied Thrush, Hairy Woodpecker and Brown Creeper are species on the watch list.

Directions: From I-580 W, follow signs for Oakland/San Francisco. Keep right at the fork to continue on CA-13N/Warren Fwy., following signs for Berkley. Take exit 1 for Carson St. toward Redwood Rd. Follow Redwood Rd. for about 3.2 miles. Turn left at the sign for the Park. Meet at the Canyon Meadow Staging Area parking lot (end of park entrance road) at 8:15am. A \$5 entrance fee will be collected at the kiosk if you are not an EBRPD member.

IT'S NOT TOO LATE TO DONATE!
 Send your donation to Treasurer, OAS,
 3067 Montevideo Drive, San Ramon,
 CA 94583

BIRDING OBSERVATIONS

December 2019

By Stephanie Floyd

In early December birders found **Red Crossbills** at Berkeley Marina and Cesar Chavez park, and **Pine Siskins** are back at Gomes Park in Fremont. A young male **Tufted Duck** floats among the scaups near Emeryville marina where a rare immature **Bar-Tailed Godwit** continues to hang out with the flock of Marbled Godwits and Willets. **Red-Naped Sapsuckers** are making their annual visit to Mirabeau Park in Newark. **Hooded Mergansers** and **Varied Thrushes** are being seen. Not rare, but wonderful to watch, are **Short-Eared Owls** at Hayward shoreline. This is a great time of year to see raptors! Adults are paired up and immatures are finding their feet (so to speak). The Hayward-Fremont Christmas Bird Count produced many memorable sightings, including a **Red-Necked Grebe** at Quarry Lakes and two **Bald Eagles** at Ardenwood Farm with an indignant Osprey urging them to get lost!



Red-necked Grebe, found on CBC 12/15/19 by Jason Tanner; Horseshoe Lake, Fremont photo Jerry Ting

LET IT SNOW

SNOW GOOSE FESTIVAL
 OF THE PACIFIC FLYWAY
 CHICO, CA
 January 22-26, 2020
 snowgoosefestival.org
PHOTO BY STEVE McDONALD

Registration is open. Snowgoosefestival.org

Conservation



Lawsuit filed! Newark's proposal to fill wetlands for Sanctuary West Development



In the last edition of the Kite Call, we reported that the City of Newark was poised to make a decision regarding the Sanctuary West development proposed on lands of the former Whistling Wings and Pintail duck clubs. On Thursday, November 14th, the Newark City Council, in a 4:1 vote, approved the project.

The Citizens Committee to Complete the Refuge and the Center for Biological Diversity filed a lawsuit on Monday, December 16th against the City of Newark for approving a destructive plan to pave over a historic wetlands to build hundreds of luxury housing units along South San Francisco Bay. The Sanctuary West residential project is planned for Newark "Area 4," which has long been prioritized by the environmental community for conservation. The development has been widely criticized by environmentalists, housing advocates and climate experts. It is entirely within a FEMA flood zone, pumped annually to avoid flooding and anticipated to be completely inundated by sea level rise.

The lawsuit, filed in Alameda County Superior Court, says Newark violated the California Environmental Quality Act by failing to prepare a comprehensive study and mitigate for impacts from the luxury housing development proposed on historic wetlands. The suit faults the City for not properly analyzing the development's potential to worsen the impacts of sea level rise on the public and San Francisco Bay wildlife species, including the endangered salt marsh harvest mouse. The lawsuit seeks to overturn the City's November approval of Sanctuary West.

The Project would require importing and placing 1.67 million cubic yards of fill (more than 100,000 dump truck loads) directly adjacent to the wetlands to elevate areas identified as "uplands" by approximately 5 to 15 feet to

raise the building sites out of the FEMA 100-year floodplain. The elevated fill pads are proposed to be "armored" with riprap protection to prevent erosion from wave action in the event of flooding. The five development areas connected by four bridges will fragment the wetlands and consume all the higher elevation lands where wetlands and wildlife could migrate when sea level rise eventually floods the lower lying marshes.

The site is located at the head of Mowry Slough and is a mosaic of uplands, fresh, brackish and muted tidal marsh, seasonal wetlands and areas of ponding. It has long been identified by Bay Area scientists and regulatory and resource agencies as an ideal site for preservation and restoration/enhancement of a continuum of tidal marsh habitats from the waters edge into upland habitat. This area has been identified as one of the few locations in the South Bay where this could easily be accomplished because of the existing ground elevations. These lands would aid in the recovery of listed species (2015 Goals Project, 2013 Tidal Marsh Recovery Plan, 2019 Adaptation Atlas). The site was identified by the U.S. Fish and Wildlife Service as a priority potential addition to the Don Edwards San Francisco Bay National Wildlife Refuge.

We want to extend our thanks to everyone who submitted comments and to those who attended the two public hearings. The City Council Chambers were filled to capacity on November 14th with Newark residents and environmental organizations from across the region as the project will have regional impacts. One of the City Councilmembers mentioned they had received 3,000 messages in response to environmental group action alerts.

- C. High



Almond Ranch Is Saved!

Thanks to generous donors like you, the \$4 million needed to save Almond Ranch was successful! The stunning 281 acres along the Franklin Ridge south of downtown Martinez will be permanently protected for wildlife habitat and as public open space for passive recreation.

The goal was reached weeks ahead of deadline thanks to an extraordinary \$1 million in donations large and small from individuals across the Bay Area. State agencies and large funders consider the depth of community support when they
(continued on page 6)

Almond Ranch continued

decide how to allocate scarce funds to conservation projects, and the JMLT community delivered spectacularly. The residents of the nearby neighborhood of Stonehurst contributed \$250,000. Readers of the popular wildlife newspaper column written by Joan Morris sent a flood of donations and letters. A generous anonymous donor made a \$100,000 challenge match that closed the gap.

Saving Almond Ranch preserves a significant habitat corridor for wildlife, protects three tributaries to the Alhambra Creek watershed, expands the Bay Area Ridge Trail Corridor and connects other major trails, links large conserved landscapes, and opens the property's beautiful rolling hills to hikers, dog walkers, cyclists, bird watchers, equestrians, and nature lovers of all ages.

The Campaign To Save Almond Ranch was launched with a first commitment of \$1 million from the East Bay Regional Park District using funds made available by voters' approval of Measure WW in 2008 for high priority community park projects. In August, JMLT received a major grant of \$2 million from the California Wildlife Conservation Board. Donations from thousands of individuals provided the final \$1 million.

Alameda County Board of Supervisors move proposal to amend Measure D

The Alameda County Board of Supervisors on Tuesday put into motion a proposal that could place amendments to Measure D before voters as soon as November 2020. Measure D, also known as the **Save Agriculture and Open Space Lands Initiative**, imposes strict rules for development of agricultural land in Eastern Alameda County outside an urban growth boundary. Changes to the law require a public vote, although it leaves room for supervisors to make "technical or non-substantive" changes considered to be consistent with the purposes of the ordinance. Members of the agricultural community have long proposed changes in Measure D to allow more flexibility to approve new projects. For the past two years, member of the environmental and agricultural community have met monthly to discuss possible changes in Measure D, but no consensus could be reached. County Supervisors could be within their authority under the law to make the changes being sought through "technical amendments" to Measure D. Earlier attempts to do so failed to gain traction and also carried a risk of unnecessary legal challenges. Putting the decision to a public vote would solve those challenges. Before an initiative can be placed on the ballot, the county must hold public hearings and take public testimony. To qualify for the November 2020 ballot, the board of supervisors must present a draft in public meetings in each of the affected communities, and perform the required environmental review by July 2020.

A WARM WELCOME TO OUR NEW AND RENEWING OHLONE MEMBERS!

Ohlone sends a warm welcome and thank you to the following new and renewing chapter members:

Rick Arellano, Ken and Linda Back, Liz & Bob Bathgate, Juan Benjumea, Peter Beiersdorfer, Allen & Jackie Bertillion, Forrest Bottomley, John & Becky Bradley, Mona Brauer, Marie Brower, Thomas Browne, John Cant, Denise Dugas, Malca Chall, Maggie Clark, LaVonne Coleman, Marilyn Davis, Bill Delameter, Don & Margaret Emery, Beth Farmer, Ray Fontaine, Gatty Gatty, Anne Marie Gonsalves, Gerald Green, Georgeann Hardy, Jim Hargrove, Philip Hirschberg, Steve Huckabone, Joyce Hurt, Irene Jones, Joanna Koch, Karen Kramer, Craig Lanway, Jaan Lepson, Sherman & Allison Lewis, Joan Lewis, David Lovejoy, Douglas Lowder, Carol & Ned Lyke, Eva Gayle Marion, Sherry Mattson, Susan Mayfield, Marty Morrow, Ethel Murphy, Michael Murphy, Wendy Naruo, Julie O'Brien, Hans Peeters, Ana Penny, Stefanie Pruegel, Don & Judy Person, Rosemarie Richardson, Kathy Robertson, Steven Rothi, Laura Jo Ruffin, Marilyn Russell, Marguerite Ryan, Nancie Ryan, Barbara Sacks, James Scofield, William Scoggins, Sara Shadle, Steve Shay, Joanie Smith, Mr. & Mrs. Gail Stanton, Susan Stanton, Stephen Taylor, Larry Thompson, Marilyn Trabert, Martin Vitz, Holly Walter, Ken Walters, Steve Wiley, Chris & Teri Wills, Stanley Winterman, Marge Wood, Stephanie Woods, Francisco & Elisabeth Zermano



PLEASE CONSIDER AN ELECTRONIC KITE CALL!



We are urging members to switch over to an electronically issued Kite Call (but you don't have to!)

The benefits are a cost savings to our chapter, in both printing costs and postage. Other benefits include getting it quicker and it is **much more colorful!!!!!! GO GREEN!**

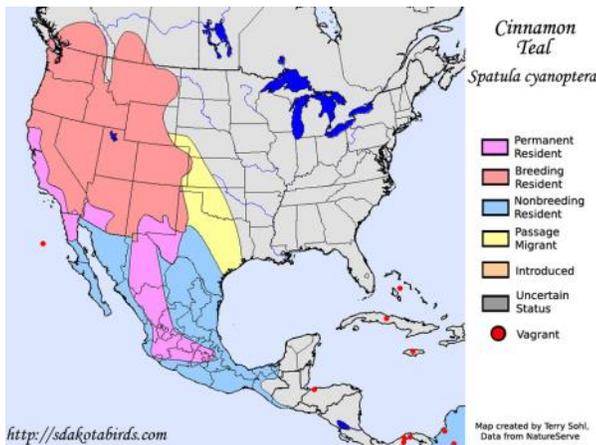
Send your request to pagepeg@aol.com

Is it time to renew? Look at your mailing label - it will tell you. For example: "Pd Thru 1/20" indicates that you are paid thru January 2020. A **"RENEW?"** indicates that this is your last Kite Call! A **cmp** means you are chapter membership paid; a **nnmp** means you are a national member only and a **"JOIN LOCAL?"** on your label indicates that you have joined the National Audubon Society, but alas, **not** your local **Ohlone chapter. We would love to have you join us. If you receive your Kite Call electronically, look for a reminder in your email box.**

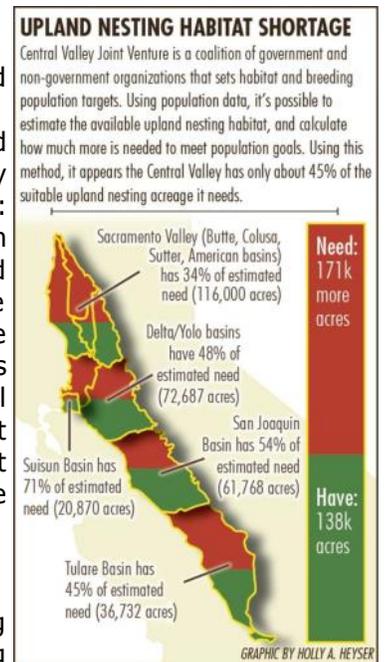
To renew or join us please send a \$25 check to Pat Gordon, Membership Chair, 1922 Hillsdale Street, Hayward, CA 94541 Or thru PayPal on our website (www.ohloneaudubon.org) Thanks!

President's Corner

While attending the Lodi Sandhill Crane Festival in November, I attended a talk by a biologist from the Suisun Bay National Wildlife Refuge. He was talking about a program they had where they radio track ducks and geese from the refuge. He had all kinds of great maps that showed how Pintails and Snow Geese which wintered in the refuge flew to Alberta, Alaska and even Siberia to breed. That was all really neat to see, but what interested me was when he talked about Mallards. Usually when we talk about waterfowl, we are thinking about the huge flocks that visit the bay and the central valley refuges during winter. When summer comes, waterfowl are few and far between and usually a few Mallards and Canada Geese that have lost their urge to migrate remain. However some of our favorite species live out the entire year in California. Up to 80 percent of our Mallards, Cinnamon Teal and Gadwall spend the entire year in California. They move from wintering to breeding sites, but don't leave the state. It seems there has been great emphasis on establishing and protecting wintering sites for these waterfowl, but not as much emphasis on protecting the sites they need for breeding. If you look at this range map for Cinnamon Teal, you can see that in most of coastal California, the teal is listed a permanent resident.



Development has greatly reduced the breeding habitat needed for species. To nest, ducks need sufficient upland habitat, ideally within a mile of a water source: wetlands, rice fields or irrigation ditches/sloughs. Sloughs and ditches are least desirable because they're filled with predators. The more breeding habitat there is near water, the more hens will attempt to nest, and when habitat is good, California has higher nest densities than the Prairie Pot hole Region.



The graphic to the shows how bad this deficit of breeding habitat is. The Central Valley alone has a 55% deficit is habitat needed to meet population goals for breeding waterfowl. So be aware how many of our favorite waterfowl not only need wintering sites and breeding sites in the State. Always query wildlife managers on what they are doing to support our breeding waterfowl.



Sara Mathews 1938-2019

Born in Minnesota, Sara graduated from Washburn High School, receiving an academic scholarship to Smith College, then completed a Masters in social work from UC Berkeley. Post- graduation found Sara working with East Bay area children on the Autism Spectrum and helping families bring teaching and learning tools home after school. Her passion to help all these people leaves a legacy of success for Autistic kids throughout San Francisco. She also worked also to help underserved women.

Sara was an avid birder and world traveler. Her love of culture and community made her many lifelong friends. She was the original foodie, cooking for camping trips and friends at home. Immersed in culture, Sara danced her way throughout the years with Berkeley Folk Dancers. Outspoken politically, Sara marched for peace and change throughout her life.

Sara was an Ohlone member, participating in many of our activities. She has left a sizeable bequest to Ohlone and a subcommittee has been formed to decide how best to honor Sara. Contact our treasurer Gail Ryujin with any ideas you might have to best remember her.



2019-2020 Appeal

We thank the following for their continued and much appreciated support

*Ken & Linda Back
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Marge Wood
Stephanie Woods
Martin Vitz*



Murmurations in Birds

By Bill Hoppes

Last Fall, I was out watching Sandhill Cranes near Lodi. In the evening a group of us spotted a large flock of Starlings and blackbirds. At one point the flock coalesced into the pulsating flock birders call a murmuration. It was hypnotic, watching the birds come together, split apart, and fly back in forth in unison as if they were a single organic thing. I have always been intrigued by these events. I have seen them in person and on videos and always wonder how on earth the birds do it without crashing into each other. In 2009 Audubon Magazine and in 2016 Forbes Magazine had excellent reviews of this phenomenon. It seems as long as people have looked at these events, they have wondered how birds manage this. The Romans believed the gods were revealing omens in the patterns of the bird's flight. They called it Augury. Augury was the practice from ancient Roman religion of interpreting omens from the observed flight of birds (aves). When the individual, known as the augur, interpreted these signs, it is referred to as "taking the auspices". 'Auspices' is from the Latin *auspicium* and *auspex*, literally "one who looks at birds." Depending upon the birds, the auspices from the gods could be favorable or unfavorable (auspicious or inauspicious). Earlier this century, scientists having no better ideas than the Romans, proposed mysterious concepts such as "natural telepathy" or "thought transference" for the mechanism by which birds maintained these pulsating shapes.

Many birds flock, but only a handful really fly together, creating highly organized lines or clusters. Pelicans, geese, and other waterfowl form lines and Vs, presumably to take advantage of aerodynamic factors that save energy. But the most impressive are those (starlings, shorebirds and blackbirds) that form these large, irregularly shaped murmurations. These birds often fly at speeds of 40 miles or more per hour, in a dense group with only a bodies length of space between them, yet they can make astonishingly sharp turns that appear conducted entirely in unison. Many animals synchronize their movements-ducks, wildebeest, herring, or social insects. The most common explanations for this include more eyes and ears mean increased opportunities to find food and improved chances of detecting a predator in time.

Numerous studies have shown that individuals traveling in groups are safer from predators than when they are alone. That's due in no small part to the bewildering things that an assemblage can do. By turning rapidly or simply tilting a bit on their axis, Dunlins shift the appearance of their plumage from dark (their upperparts) to light (their underparts), creating a swift flashing effect that might startle or confuse predators. Studies have shown that merlins hunting shorebirds are, in fact, most successful when pursuing individuals. Falcons attack tightly packed crowds of shorebirds, but are most likely to succeed when the attack causes a solo bird to stray.

(continued on page 9)

(continued from pg 9)

Such self-interest may explain many of the observed dynamics of flock motion, such as density. But it can't explain how the birds get the information they need to move in synchrony. There's no way every member of the group can see a fast-flying falcon at the same time. How, then, can they possibly know what direction to move in to avoid it?

One clue came from studies of fish. Many schooling species maneuver as intricately as the most cohesive bird flocks—and they're much easier to study, because they can be watched and photographed from above in open tanks. In the 1960s a Russian biologist, Dmitrii Radakov, tested schools of fish and found that they can successfully avoid predators, as a whole, if each fish simply coordinates its movements with those of its neighbors. Even if only a handful of individuals know where a predator is coming from they can guide a huge school by initiating a turn that their neighbors emulate—and their neighbors' neighbors, and so on.



See the predator in the upper right?

Figuring out how this applied to birds had to await high speed photography and computers. Computer programmers began to create models that show how simulated animal groups can respond to the movements of individuals within them. Three rules suffice to form tightly cohesive groups. Each animal:

1. Needs to avoid colliding with its immediate neighbors,
2. Be generally attracted to others of its kind, and
3. Must move in the same direction as the rest of the group

With these three rules, a computer model, can create "virtual swarms" that change density, alter shape, and turn on a dime—just as real-world birds do. The makers of movies, from "The Lion King" to "Finding Nemo", have used similar software to depict realistic-looking movements in stampeding wildebeest and drifting jellyfish.



One problem with these computer simulations is that they don't adequately explain how bird flocks react as quickly as they do. Scientists taking high speed film of Dunlins on Puget Sound found that by analyzing the film frame by frame they found that a turn ripples through a flock just as the "Wave" (ugh!) passes around a football stadium. A Dunlin watches, not just its nearest neighbor, but a number of birds around it, for cues. Figuring out how many neighbors took new work from scientists studying the famous starling murmurations that take place over the skies of Rome.

Researchers from a collaborative, pan-European project named StarFLAG placed a pair of aligned high speed cameras on the roof of the Palazzo Massimo in Rome filming flocks of many thousands of starlings performing nightly murmurations. By using software from the field of statistical mechanics, researchers matched up 2,600 starlings in different photographs with one another. That allowed them to map the three dimensional structure of flocks much more precisely than possible before. Onscreen, they can take what appears to the human eye as a solid, rounded mass of birds and learn whether it is in fact a ball or rather some other more complicated shape. By zooming in on the three-dimensional reconstructions, the researchers can begin to understand the spatial relationships individual starlings within it have with one another. They've found that however dense a flock appears from the outside, its members are not evenly distributed like points on a grid. Rather, each member has a good deal of space behind and in front. Starlings don't appear to mind having neighbors nearby on their sides—or above and below, for that matter—as long as they have open space ahead. However the main advance in using this technology is that researchers have been able to calculate the number of neighbors to which each starling pays close attention. Although Starlings in these flocks can see many neighboring birds, they pay attention to the seven nearest neighbors. This number may be closely tied to birds' cognitive ability. Laboratory tests have shown that pigeons can discriminate between up to six different objects, but not more. That seems to be enough. Focusing on more than one or two neighbors enables a starling to maneuver quickly when needed. But by limiting to six or seven the number of neighbors it pays attention to, it may avoid cluttering its brain with less reliable, or simply overwhelming, information from birds farther away.

This doesn't tell the whole story as it can't account for the speed with which birds in these flock make their turns. It is always good to know there are things in nature that we have yet to figure out. Next time you are watching a huge flock of shorebirds or starlings, I hope you are lucky enough to spot one of these great images from nature.

If you would like to see some incredible video of murmurations, visit: <https://www.youtube.com/watch?v=34jaUM6eqb4> <https://www.youtube.com/watch?v=AYXktkfMnSI> <https://www.youtube.com/watch?v=5J3FXhX9io8> Or just search YouTube for starling murmuration.

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