

Mountain Lions in California – The Last Two Decades of Research

UC Davis Wildlife Health Center
Mountain Lion Project
With T. Winston Vickers, DVM, MPVM



T. Winston Vickers

Mountain Lion

Since 2001 the UC Davis Wildlife Health Center, a division of the School of Veterinary Medicine, has been conducting research into mountain lions (*Puma concolor*): their prey choices, habitat needs, interactions with humans and domestic animals, use of and travel patterns on the landscape, the effects of fire, survival rates and mortality sources, disease and toxin exposure and effects, and genetic connectivity.

Dr. Vickers has been Co-Principal Investigator and field lead for the UC Davis study since 2003. He is now involved in collaborative studies in Sonoma County and northern California. In this talk, Dr. Vickers will detail his study's findings, and those of other researchers, relating to how a wide array of factors affect the expectations for long term health of mountain lion populations in different regions of California. The news for puma conservation in some rapidly growing regions is not good—low annual survival rates, low genetic diversity, and worsening habitat loss and fragmentation all threaten specific populations with possible extirpation. Other populations appear to be generally healthy, and understanding the factors dividing the two is important. Specific measures to mitigate some of the threats will be discussed.



The Rail

MARIN AUDUBON SOCIETY

MAS Annual Meeting, May 11

Join us for Marin Audubon's Annual Meeting on Thursday evening, May 11 to elect members of our Board of Directors for the coming three years. Our annual meeting is always at our May speaker program meeting and takes place just before the speaker presentation. This year we have the unique experience of having as our speaker, Winston Vickers, DVM, the husband of one of our Board members, Susan Winston, who is being elected for a second term (see adjacent column for specifics on the speaker presentation).

As a 501(c)(3) non-profit membership organization, members of Marin Audubon elect its Board members. Directors serve a three-year term. We will also have a brief overview of our accomplishments for the past year.

Nominees this year are Susan Kelly, who has been active leading field trips and resurrecting and compiling the Cheep Thrills Christmas Bird Count. Susan will be assuming responsibility for our Speaker Series programs and she has some ideas for expanding our educational offerings to provide more workshops and classes. Board

members returning are Lowell Sykes, Susan Winston, and Bob Hinz. Lowell, long-time dedicated member of our Board, serves as Vice President, is a diligent worker for habitats on our properties, and has graciously stepped in to chair our Speaker series for most of this past year. Bob Hinz is editor of *The Rail* and also maintains Triangle Marsh. Susan Winston, wife of the aforementioned Winston Vickers, joined our board mid-term last year as Treasurer. Susan has served us well during the past year and we look forward to her returning. Our special thanks to nominating committee members Phil Peterson and Jude Stalker.

We urge you to exercise your right to vote for Board members who manage our organization by joining us on May 11 and to hear what we expect will be an impressive program.

Remember to sign up for the Mother's Day Picnic at www.marinaudubon.org.

Regulatory Reform Looms – Comments Needed

A press release from the administration and published in the Federal Register on April 11 announced the Implementation of President Trump's Executive Order 13771 soliciting comments on EPA regulations. EPA Administrator Scott Pruitt is quoted saying "We are supporting the restoration of America's economy through extensive review of the misaligned regulatory actions from the past administration. The previous administration abused the regulatory process to advance an ideological agenda that expanded the reach of the federal government. [...] Moving forward EPA will be listening to those directly impacted by the regulations and learning ways we can work together with our state and local partners to ensure clean air, land, and water ..." A Regulatory Reform Task Force has been appointed to gather recommendations for

specific rules that should be considered for repeal, replacement or modification.

The focus of the Executive Order is reducing regulation and controlling costs. It directs that for each new regulation issued, at least two prior regulations be identified for elimination. The Task Force is charged with making recommendations on regulations that can be "repealed, replaced or modified to make them less burdensome." It seeks input and assistance from entities, specifically governments, non-governmental organizations, consumers, and businesses, significantly affected by Federal regulations. They want comments on specific regulations and suggestions regarding repeal, replacement or modifications.

The notice is clearly aimed at generating comments from individuals opposed to
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BOARD OF DIRECTORS

All phone numbers are in the 415 area code unless otherwise noted. Questions? Please contact the appropriate Board member.

President	Barbara Salzman 924-6057
Vice President	Lowell Sykes 388-2821
Secretary	Everett Clark 789-9224
Treasurer	Susan Winston 949/632-0908
Finance Chair	Greg Block 717-6453
Conservation	Phil Peterson 828-4780 Barbara Salzman 924-6057
Field Trips	Jane Medley 559/760-1551
Membership	William Legge 388-7883
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Speaker Series/Programs	Lowell Sykes 388-2821
Special Projects	Jude Stalker 680-6291
Nominating	Phil Peterson 828-4780
Editor, <i>The Rail</i>	Bob Hinz, 383-8688
Volunteer Coordinator	Vacant
Property Management	Ed Nute 669-7710
Publicity	Barbara Demeter
BAAC Reps	Lowell Sykes 388-2821 Barbara Salzman 924-6057

DIRECTORS MEETINGS

Meetings open to members. If you wish to attend please call 924-6057.

6:30 PM, First Tuesday of the month
Richardson Bay Audubon Center
376 Greenwood Beach Road
Tiburon, California 94920

MAS telephone: 721-4271 (for messages only)

Marin Audubon Society is a nonprofit 501(c)(3) organization. All memberships and contributions are tax-deductible to the extent allowed by law.

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Website: www.marinaudubon.org
Northern Calif. Bird Box: 681-7422
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Members can receive *The Rail* electronically instead of a hard copy by emailing membershipsecretary@marinaudubon.org

DONATIONS APPRECIATED!

Marin Audubon Society welcomes gifts of funds, stock, or property, and bequests in general, or in honor or memory of someone. Gifts may be directed to any MAS project. Unspecified gifts of more than \$100 will be placed in the Endowment Fund for conservation, the protection of wildlife species, and the preservation and enhancement of wildlife habitats. Since MAS is an all-volunteer organization, 100% of your donation goes to its projects. All gifts are tax-deductible and will be acknowledged in *The Rail*, as well as personally on behalf of the Society. Checks should be made out and mailed to: Marin Audubon Society, P.O. Box 599, Mill Valley, CA 94942.

MISSION STATEMENT

To conserve and restore natural ecosystems, focusing on birds and other wildlife and their habitats, for the benefit of humanity and the earth's biological diversity.

PRESIDENT'S MESSAGE

By Barbara Salzman

The long-awaited BayWAVE vulnerability assessment was released this month and meetings are planned for the end of April to inform the public about the findings. This impressive document analyzes the potential impacts of sea level rise for the bay edge. It may be difficult to get your hands around the potential impacts of a gradual ongoing sea level rise that is moving so slowly that you can barely detect it. But it will certainly mean a change in the lives of Marin residents, if not in our own lives, certainly in those of our children and grandchildren. Do inform yourselves and become involved. See article on page 5.

I can't believe the year is going by so quickly. Our fiscal year runs from July 1 through June 30. Look for our spring appeal letter for our properties. We have lots on our plate, with our legal efforts for the Northern Spotted Owl, many development projects being proposed (many more than we have space to report in *The Rail*) that would impact habitat, and increased trail designations being planned. We must keep the habitats on MAS's properties in the forefront of our efforts. Our Spring appeal is always dedicated to protecting, maintaining, and enhancing habitats on our properties.

You may have noticed a new author for our

Birdlog. We welcome Noah Arthur who has done just a great job on his first two columns. We appreciate Noah's joining our newsletter team and look forward to his continued interesting and informative reports on birds visiting Marin.

We're thrilled to be releasing our new Bird Checklist complete with new listings and terminology updates over the last 10 years. Our thanks to Board Member William Legge who has diligently shepherded this along to completion. See page 7 for the announcement of our updated checklist and for how to order. The checklists also will be available for purchase at our programs and field trips.

Coming right up is our **Mother's Day Picnic**, presented every year by Marin Audubon volunteers as a benefit for Audubon Canyon Ranch and Marin Audubon Society. Should your flyer get lost, you can make reservations by going to our website. The menu includes both chicken and vegetarian options, activities will be available for children, and Volunteer Canyon and Griffin Canyon are there for you to enjoy.

And don't forget—save your tree and brush removal until mid-July after nesting season.

FIELD TRIPS FOR JUNE

iNATURALIST WORKSHOP Richardson Bay Audubon Center, Tiburon

Saturday, June 10, 2017
10 AM to noon
With Todd Plummer

You are invited to learn about iNaturalist—a species identification system and tool to record when and where you observe living things. You can use it to record your own observations, get help with identifications, collaborate with others, or access the observational data collected by other users. Naturalist Todd Plummer (username: WildMarin) will lead the workshop. He has been using and teaching workshops on iNaturalist since 2013. By using iNaturalist, you may find yourself paying more attention to biodiversity all around you while contributing to a global, open-source database of species distributions. Read more at www.inaturalist.org/pages/what-is-it.

This workshop is limited to 20 people. Contact Jane Medley at janermedley@gmail.com to register. Please include your name and phone number. Create your own iNaturalist account at www.inaturalist.org, and download the app on your mobile device (if you wish to use it) before arriving for the workshop.

The fee is \$5 for Marin Audubon members and \$10 for non-members, payable at the door. If you are not a MAS member, we invite you to join at this event.

BIRDING ON ALCATRAZ, Alcatraz Island

Wednesday, June 14, 2017
Boat leaves 8:45 AM – Trip ends early PM
With Waterbirds Docent Karen Vandergrift

On this trip, Alcatraz Waterbirds Docent Karen Vandergrift will focus on the natural history of the island and the variety of birds and their life histories. We'll see the birds up close on their nests, parents feeding chicks, territorial displays, and discuss the general ecology of the region's waterbird populations. This is an excellent opportunity for photographers with many birds only a few feet away. And we'll have access to parts of the gardens not generally open to the public.

Dress in layers and comfortable walking shoes (pavement is uneven). Bring binoculars and water; snacks are allowed only on the dock area of the island.

The trip is limited to 25 participants with a cost of \$25.25 per person. We will depart from Pier 33 on the 8:45 AM boat. The tour ends in the early afternoon, however, participants may continue to explore the island and the prison and return on a later boat. Register online at www.marinaudubon.org starting on May 15.

Book your space on May 15 or soon after as these trips frequently sell out on the first day! Include the name, email address, and phone number of each participant. Those confirmed will be sent additional information before the trip. For more information or to be wait-listed, contact Jane Medley at janermedley@gmail.com.

MAS FIELD TRIPS

Open to the public

No need to sign up for one-day trips, just join us. Bring lunch, snacks, water, field guide, and binoculars. For information, accessibility, and weather check: Jane Medley, 559/760-1551, janermedley@gmail.com.

CHECK OUR WEBSITE FOR THE MOST RECENT UPDATES.

THE PONDS AT THE LAS GALLINAS VALLEY SANITARY DISTRICT (LGVSD)

San Rafael

Thursday, May 4, 2017

9 AM to noon

Susan Kelly, David Sexton & Greg Haskins

Beginning birders are especially welcome on the first Thursday of each month for a leisurely walk around the Las Gallinas ponds. The area includes two treated wastewater storage ponds, a freshwater pond with islands for nesting habitat, and several miles of flat levee trails. It attracts thousands of birds, including waterfowl such as ducks and geese; waders such as herons and egrets; songbirds; and varied raptors. Birders were fewer than usual on our April walk (probably the rain), but our group enjoyed good views of a Virginia Rail and Sora along with numerous singing Marsh Wrens. Even our group's youngest birder, two-year old Sada, spotted birds—a large overhead flock of what were probably crows. Each month seems to yield an interesting, and often unexpected, species, so come assist us in our search.

We welcome bird enthusiasts of all levels. We all help each other to find and identify the birds, and there are usually several experienced birders to assist. You don't even have to arrive on time because we spend the first 30-60 minutes studying the birds around the first pond and the group is easy to find. Heavy rain cancels.

DIRECTIONS: From Hwy 101, exit at Smith Ranch Rd. Drive east on Smith Ranch Rd. toward McInnis Park. Turn left immediately after crossing the railroad tracks and drive about .5 mile through the LGVSD gates and into the parking lot at the end of the road. Meet the group by the bridge just past the parking lot. There is an outhouse in the parking area for public use or you can use the bathrooms at nearby McInnis Park.

MIWOK MEADOWS

China Camp State Park, San Rafael

Wednesday, May 10, 2017

8:30 AM to 11:30 AM

With Matt Perry and Susan Kelly

Miwok Meadows, on the east side of China Camp State Park, is somewhat off the beaten path and under-birded, but it is one of Matt Perry's favorite regular birding spots. Consisting of a relatively short, easily hiked loop, it offers a range of habitats, including the bay, marsh, oak savannah, and denser woods. Frequent highlights include Osprey, many woodpeckers, turkeys, many swallow and swift species, and usual woodland birds. Less common finds include Pileated Woodpecker, and Blue-gray Gnatcatcher. Rarer birds, but not unheard of, include both Ridgway's Rail and Black Rail. In spring the trail should be filled with lovely birdsong and bustling activity—and great views of yet another beautiful Marin landscape.

Following our walk at Miwok Meadows, we will cross the street and hike the bay and marsh loop around Turtle Back Hill (.75 mile easy) with Susan Kelly. We'll watch for wildlife along this trail, which juts out into the salt marsh habitat along San Pablo Bay. This trail meets criteria for

wheelchair access under the Americans with Disabilities Act.

DIRECTIONS: Take the North San Pedro Rd. exit from Hwy 101. Follow N. San Pedro Rd. approximately 2 miles to the Back Ranch Meadows Campground. There are two possible places to pay entrance fees depending on whether you want to park near the start or the end of our trip. To park near the starting location, turn right at the entrance to the Back Ranch Meadows Campground. Just past the campground kiosk, an Electronic Pay Station is located from which you can purchase a Parking + Trail Pass for \$5 per vehicle (credit card or exact change), which includes trail access for all people in the vehicle. Continue 1.1 mile up the road to meet our group. If you wish to park near the ending location of our trip, continue on San Pedro Road approximately 0.5 mile past the campground and park adjacent to the road-side near Turtle Back Hill. On the right side of the road adjacent to the trailhead, there is a self-pay kiosk where you may purchase a Trail Only Pass for \$3 per person. Exact change is needed at this "iron ranger" pay station. Walk approximately .2 miles to our meeting place at the Miwok Meadows Day-Use Area.

THURSDAY MORNING BIRD SONGS FIVE BROOKS

Point Reyes National Seashore

Thursday, May 11, 2017

7:30 AM to noon

With Lisa Hug and Susan Kelly

Spring is the best time of year to hear and learn bird songs. Males are full of hormones and bursting with song. Many neo-tropical migrants are returning and vying for mates and territories. It is a very exciting time of year. This walk will require participants to stay quiet to enable us to listen to the myriad of bird sounds. Bring comfortable walking shoes, layered clothing, water, binoculars, field guides, and snacks.

This trip is limited to 15 participants. To sign up, email Jane Medley at janermedley@gmail.com. Please include the trip name and your phone number. Participants will be contacted prior to the trip to confirm registration. A wait list will be created if registration exceeds available space.

DIRECTIONS: From Fairfax, take Sir Francis Drake Blvd. approximately 15 miles. Turn left on Hwy 1. After 3.5 miles turn right at Five Brooks. We will meet at the Five Brooks parking area.

MOUNT BURDELL

No. 5, Birding in Marin (BIM) Series

Saturday, May 13, 2017

(BIM for May only is the second Saturday.)

8:00 AM to mid-afternoon (early start)

With Jim White and Bob Battagin

Celebrate *Global Big Day* with Jim White and Bob Battagin as we visit Muir Woods, Redwood Creek, and Muir Beach at the height of breeding season in Marin.

Starting the morning in Muir Woods, we will bird along Redwood Creek and hear the beautiful songs of Swainson's Thrushes, Black-headed Grosbeaks, and Pacific Wrens, along with Warbling Vireos, Wilson's and Orange-crowned (perhaps

MacGillivray's) Warblers. We will then check out the restored riparian area at Muir Beach and picnic there. Scanning the ocean, we usually find Pigeon Guillemots, Common Murres, Pelagic and Brandt's Cormorants, grebes, loons, and Black Oystercatchers. We plan to walk three miles. Bring bins, scopes, lunch, dress in layers, and carpool if possible.

DIRECTIONS: Meet in the lower parking lot (sign says "Additional Parking") at Muir Woods. We are meeting 1/2 hour earlier than usual so that we can all find places to park. From Hwy 101 take the Mill Valley/Hwy 1/Stinson Beach Exit. Follow the signs to Hwy 1 and then to Muir Woods. The address is 1 Muir Woods Rd., Mill Valley.

TENNESSEE VALLEY/BAY MODEL ART EXHIBIT

Marin Headlands & Sausalito

Tuesday, May 16, 2017

8:30 AM to noon

With Jim White and Rita Sklar

Discover spring birds in the Tennessee Valley on this two-hour walk with Jim White. Help us look for breeding resident birds and possible migrants passing through the area as we walk through both riparian and chaparral habitats. A variety of passerines and raptors are possible. At approximately 10:30 AM we'll head to the Bay Model in Sausalito where we'll meet with artist Rita Sklar and view her watermedia paintings featured as part of the current "Vanishing Species" exhibit. Rita's work highlights the vanishing birds and other wildlife of the San Francisco Bay Area and beyond. Her paintings depict the variation in shapes, colors, and patterns that birds present and are a reminder that, like the proverbial canaries in the coal mine, the decline of wildlife is a wake-up call to take better care of our planet.

Bring water, snacks, and binoculars. Restrooms are available.

DIRECTIONS: From Hwy 101, take the Stinson Beach exit. Turn left on Shoreline Hwy in 0.1 miles. Turn left onto Tennessee Valley Rd. in 0.3 miles. We will meet at the parking lot at the end of the road (1.4 miles) for the hike. Picnic tables are available at the Bay Model for those who might like to picnic after our tour of Rita's exhibit.

THURSDAY MORNING BIRD SONGS BIG ROCK TRAILHEAD TO LOMA ALTA TRAIL

Thursday, May 18, 2017

7:30 AM to noon

With Lisa Hug and Susan Kelly

For a trip description, see the write-up above for Thursday Morning Bird Songs at Five Brooks scheduled for May 11, 2017.

This outing is also limited to 15 people. Email Jane Medley, janermedley@gmail.com to sign up. Please include the trip name and your phone number. Participants will be contacted prior to the trip to confirm registration. A wait list will be created if registration exceeds available spaces.

DIRECTIONS: From Hwy 101 in San Rafael, exit onto Lucas Valley Rd. and go west approximately 5.5 miles (look for the big rock). The trailhead is on the south side of Lucas Valley Rd.

REGULATORY REFORM LOOMS

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regulation. The Task Force needs to hear that regulations protecting environmental resources not only generate jobs, but that having clean air and water, protecting wetlands and waterways, and controlling pollutants all support thriving fish populations which feed people and promote healthy citizens and so save on health costs. How many times have we heard reports of polluted drinking water and waterways making people sick and needing exorbitantly expensive clean-up? While there may be some regulations that could be modified, the ones we know of, particularly those to protect our wetlands, oceans, waterways, and air quality, must stay in place.

WHAT YOU CAN DO:

Submit comments in writing, using email, docket, or mail. Submit comments to:

Email: Laws-Regs@epa.gov

Docket: www.regulations.gov/docket?D=EPA-HQ-OA-2017-0190

Mail: Office of Policy Regulatory Reform, Mail Code 1803A, 1200 Pennsylvania Ave NW, Washington, DC 20460

BRIDGE DISTRICT UNVEILS PLAN FOR CORTE MADERA BAYFRONT

At a Corte Madera Town Council meeting in mid-March the Golden Gate Bridge Highway and Transportation District unveiled its marsh restoration plan for the 72 acres it owns on the Corte Madera bayfront. MAS and Marin Baylands Advocates, organizations that have advocated for the implementation of this tidal marsh restoration for years, spoke in support.

This project, adjacent to the Corte Madera Ecological Reserve, has been a long time coming. When the District expanded its ferry fleet, regulatory agencies required them to provide mitigation to compensate for loss of tidal marsh due to erosion caused by the ferry wake. That was almost 20 years ago. Several years ago, representatives of MAS and MBA began to pressure the District and regulatory agencies to move forward with the long-overdue mitigation by restoring the 72 acres. Our organizations offered to partner with the District, and seek grants to implement a larger project, but they chose to

move forward alone.

The District's intent is to restore the acreage necessary to meet their current mitigation requirements (four acres) and to use the additional acres to mitigate for impacts of their future projects. Although the District has not divulged those future projects, we can think of one impact: the Ferry Terminal Marsh on the north side at the mouth of Corte Madera Creek adjacent to the ferry terminal. This patch of marsh is gradually being eroded away by the ferry waves and is predicted to be completely gone in the not too distant future. This marsh should not be lost. The endangered Ridgway's Rails are known inhabitants as they were of the marshes that have already been lost to erosion along the bayfront.

The District's restoration plan shows 25 acres restored to tidal marsh through breaches in the existing levees, one from the East Side Outfall Channel on the north and another breach on the south. Tidal waters will inundate the new marsh plain through the breaches and the current perimeter levee and path will be converted to habitat. Restoration of tidal marsh will be a significant benefit for the endangered Ridgway's Rail. When the levees around the Muzzi Marsh, to the east and south, were breached, rails re-inhabited this former tidal marsh as soon as native marsh vegetation recolonized. We expect they will do the same here.

In designing the project, the District kept in mind the public's interest in access. They intend to provide a new 4,020-foot loop access path that is just about the same length as the path on the perimeter levee that now separates the 72 acres from the Reserve Marsh and the Bay. They are offering to dedicate the northwest corner of the property, including the path and 8.5 acres of natural land, to the Town of Corte Madera. Approximately 6 acres will be retained as seasonal wetland in this area.

Even though the access will be in a slightly different location, it will still be a loop of about the same length as it is now, with a view of the same Bay and even more marsh. There will be more opportunity to see Ridgway's Rails and the many other species that depend on the Reserve marshes.

We have some issues with specific elements of the design, but overall the restoration should have significant benefits for the

Ridgway's Rails. Rails and wildlife benefit most from large expanses of undisturbed habitat that provide more opportunity to establish territories for foraging and nesting, and provide greater protection from predators and from disturbance by dogs and people. Retaining the outer levee, as has been advocated by some residents, would mean a path would go right through the middle of the tidal marsh. It would be a path not only for people and dogs but for predators to attack nests and Ridgway Rail chicks. Predation from crows accessing nests from the PG&E walkways has been a problem on the Reserve.

Also, leaving the existing outboard levee trail in place would be like restoring only half as much habitat because the birds would not be able to use the area immediately adjacent to the path without risk. Birds foraging or nesting there would be vulnerable to disturbance and predation.

We are fortunate in Marin to have so much access to our tidal marshes all along the Bay. Most of the large expanses of tidal marsh are surrounded by levees that provide access for the public. This is the last unprotected piece along the Corte Madera bayfront and the last opportunity (other than the new Marin Audubon property which will add 6 acres of tidal marsh) to return an area of former tidal marsh back to tidal marsh. Surely we can enjoy the public access trail in a new location and support the long-awaited restoration of this marsh just for the birds and other wildlife that depend on the habitat.

MARIN COUNTY RELEASES BayWAVE – A Shoreline Sea Level Rise Vulnerability Assessment

After several years of study, Marin County has released for public review BayWAVE, a vulnerability assessment that catalogues the impacts of six different sea level rise scenarios along Marin's Bay shoreline. What can we expect as climate change progresses? The report is intended to be a starting point for understanding the risks of sea level rise along the shoreline of eastern Marin County and to set the stage for communities to plan for adaptation.

"The Third National Climate Assessment cites strong evidence that the cost of doing nothing exceeds the cost associated with adapting to sea level rise by 4 to 10 times." The Vulnerability Assessment is part of an ongoing scientific and public process to understand and prepare for sea level rise

along the Bay shoreline. The 500+ page document is the first step in the County's preparing for sea level rise. The data highlight the complexity of the potential impacts and the need for concerted action in the face of rising tides.

The analysis is based on the range of sea level rise projections for California adopted by the National Research Council in 2012. The BayWAVE has selected six scenarios:

Scenario 1 By 2030 – Rise of 10 inches (total projected range of 1.6–11.8 inches)

Scenario 2 10 inches + 100-year storm surge

Scenario 3 By 2050 – 20 inches (total projected range of 4.7–24 inches)

Scenario 4 20 inches + 100-year storm surge

Scenario 5 By 2100 – 60 inches (total projected range of 16.6–65.8 inches)

Scenario 6 60 inches + 100-year storm surge

Vulnerability is based on an asset's exposure, sensitivity, and adaptive capacity to rising bay waters.

Sea level rise could damage living space, roads, other transportation and public utility systems, and natural resources. It will affect not just the folks who live along the shoreline. During near term Scenarios 1 and 2, roads will be flooded so that people cannot get to work; ambulances and fire trucks will be unable to travel some roads. In the near-term, 5,000 acres, 1,300 parcels, and 700 buildings could be affected. San Rafael east of Highway 101, the Greenbrae Boardwalk, bayfront Belvedere, and bayfront Tiburon will be affected. An additional 100-year storm surge would increase the impacts to an additional 3,000 acres, 2,500 parcels, and 3,800 buildings. The Gness Field and San Rafael Airports would be affected, as would bayfront Corte Madera, bayfront Mill Valley, parts of Sausalito and Almonte, Highway 37, roads in Santa Venetia, and all previously impacted acres, parcels, and buildings.

In addition, the marshes, that are habitat for many migratory species and that buffer the shoreline communities from high tides and storm surges, will be gradually drowned by increasingly frequent storms and rising tidal waters. Habitat for the endangered Ridgway's Rails and Salt Marsh Harvest Mouse will be lost as will nursery habitat for salmon and steelhead.

In the mid-term (Scenarios 3 and 4), the same locations that tidally flooded in earlier scenarios could face additional tidal and storm surge flooding, and an additional 7,000 acres

and 3,600 buildings would flood. Forty more miles of roadways could expect flooding and the same roadways flooded in scenarios 1 and 2 would experience much greater lengths and depths of flooding. Levees south of Hamilton are not designed to withstand the projected level of flooding. Electrical transmission lines, and natural gas pipelines could be bent or broken by flooding and storm surge could reach an additional 44 miles of roadways. Southern Marin marshes would continue to shrink as would wildlife populations that depend on them.

By the end of the century (Scenarios 5 and 6), 16,300 acres could be flooded, rising to 18,600 with storm surge. Flood waters could reach 8,000 parcels and 9,000 buildings. Additional areas that could be impacted with 60 inches of sea level rise include North Novato and Binford Road, Bel Marin Keys, Hamilton, Rowland Blvd.; Santa Venetia north of North Pedro Road; Marin Lagoon, Las Gallinas and Peacock Gap; Interstate 580 and west towards Andersen Drive, Cal Park neighborhood in San Rafael; Kentfield; Mariner Cove, Marina Village, and Madera Gardens in Corte Madera; Riviera Circle, Creekside and Heatherwood in Larkspur; Paradise Cay; Mill Valley east of East Blithedale Avenue. In the long-term more than 4,000 acres of agricultural land could be vulnerable to storm surge. Southern Marin marshes may no longer exist.

While there is significant uncertainty as to how soon these increases could occur, even if future carbon emissions stabilize, sea level rise would likely continue. It has already risen eight inches in the last century. One thing is certain, now is the time to begin to plan and work together to address this inevitable calamity that faces us all.

Next steps will consider prioritizing vulnerable areas and adaptation measures to address the impending problems. Fortunately there is time to plan and act.

WHAT YOU CAN DO:

Inform yourself. Attend public meetings that are planned. Read the Vulnerability Assessment (www.marincounty.org/main/baywave/vulnerability-assessment).

Provide written comments to Chris Choo at cchoo@marincounty.org or Marin County Department of The Public Works, P.O. Box 4186, San Rafael, CA 94903.

Unfortunately the schedule for the meetings was out of sync with *The Rail* production.

CORTE MADERA INN REBUILD

The Corte Madera Planning Commission held yet another hearing on the Corte Madera Inn rebuild project on April 11.

The Town hired an independent consultant, LSA, to evaluate the presence of the new biological information: the presence of the aquatic plant, widgeon grass, as well as the significance of the Black-crowned Night-Heron roost. The consultants acknowledged that the loss of widgeon grass would constitute a significant impact while mentioning its degraded condition thereby minimizing its significance, and stated that loss of the heron roost would not be a significant impact.

There was a decided shift in the approach of the Town staff and Planning Commission. At this meeting, there was increased focus on compliance with Town General Plan policies that protect natural resources and an interest in alternatives that protect the pond. Two-thirds of the approximately 25 speakers supported keeping the pond and many of them expressed certainty that a design could be developed that would save the pond and address other constraints including the wall effect along Tamal Vista. Regional Water Quality Control Board staffer, Xavier Fernandez, attended and explained his agency's and the Corps' regulatory authority and procedures highlighting the differences between them and CEQA. After public testimony the Commission asked the developer to return with a different alternative design that would save the pond or report why this is not possible.

MAS's comments addressed the presence of birds on the site, the inadequacy of the proposed wetland mitigation, and the applicant's reduction of the project by 13 rooms at the Commission's request. This could indicate that even more rooms could be removed since the applicant has stated for years that he needed 187 rooms. If he can reduce the rooms to 174, why can't he reduce them further? We pointed out that this is an opportunity to redesign the project, avoid visual constraints (mentioned above) and keep the pond.

The applicant is now proposing to compensate for the loss of widgeon grass by using widgeon grass in ditches at the Burdell Mitigation Bank. The Burdell Bank, however, is not authorized to sell such credits so this should not be acceptable to the agencies that approved the bank.

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HABITAT STEWARDSHIP PROGRAM

It's the Goldilocks season—not too cold, not too hot; not too wet, not too dry; a good time to volunteer. As the daylight gets longer, many plants 'know' that soon it will be hot and dry so now is their time to flower and produce seeds. We know that it's a good time to stop them, particularly Italian thistle and radish.

Do you know anyone who needs to earn community service hours? Our restoration projects would fit the bill. Act locally and join us on a workday. Witness restoration first-hand and be a part of it.

We have the tools, gloves and snacks. We generally work until about 1 PM, but even an hour is valuable help. Everyone is welcome. Bring a friend.

VOLUNTEER WORK DAYS

Triangle Marsh, Corte Madera:

First Saturdays: May 6, June 3

Meet at 10 AM on Paradise Drive directly across from the main Ring Mountain trailhead.

Bahia, Novato:

Second Saturdays: May 13, June 10

Meet at 10 AM at the end of Topaz Drive near Bolero Court and the tennis courts.

If you would like to help, please contact Jude, volunteercoordinator@marinaudubon.org or 415/680-6291 for more information.

THANK YOU TO OUR STEWARDSHIP VOLUNTEERS

Deborah Ablin, Bob Bundy, Katherine Cagney, Dave Chenoweth, Bob Hinz, Sharon McCloskey, Lucas Metzger, Flinn Moore Rauck, Bob Revel, Jude Stalker, Lowell Sykes

THANK YOU FOR YOUR DONATIONS

Linda Allison, American Express Company, Karen Arnold, Robert L. Belichick, CARS Inc. (donated vehicle), Normand & Michelle Groleau, A.P. Hettich, Ervin & Denise Jindrich MD, William & Katherine Jones, Janet Kerby, Achilles W. Malet III, PG&E Corporation Foundation (matching donations), Richard Jennings, Robert & Susan Rosenberg, United Way California Capital Region

WELCOME NEW MEMBERS

Benjamin R. Aune, Serena F. Dugan, Violet Finch, Pauline Grant, Greg Haskins, Stephanie Hausle, Susan Helfrey, Cynthia Holden, Roger Johnson, Mary Anne & Donald Kimble, Jordan Kinkead, Mark A. McLaughlin, Charles Muller, James Petray, S.C. Reinertson, Cheryl L. Riggins, Jeanne Rowe, Maxine Schur, Ieneke Wassenaar

HABITAT STEWARDSHIP

BAHIA PROBLEMS CONTINUE

Our March and April volunteer crews led by Jude Stalker had great successful work days, both with five volunteers. In March the group pulled a lot of radish and dug up Harding grass. In April, after morning rain, the crew dug up more Harding grass.

The seasonal pond on the central peninsula looks great. The plants that we have planted there are really doing well and the central part of the pond is full of native semaphore grass. The rains this year have really brought all of the plants out and they are spreading quickly.

We continue to work on the damaged fence

and unauthorized access issues. We are designing new signs in order to provide improved direction, and we are pleased the police are becoming involved.

TRIANGLE MARSH

On the first Saturday of April seven volunteers pulled Italian thistle and radish. Radish is much less abundant than a few years ago, but the flowers in a patch near the bay continue to stand out even though they are fewer. The thistles had not yet bloomed. Lowell Sykes mowed the path to the overlook and, as usual, we picked up trash along busy Paradise Drive.

CONSERVATION

continued from page 5

WHAT YOU CAN DO:

Unfortunately the scheduling of this meeting did not allow time for it to be included in our newsletter, but all is not lost. You will still have opportunity to express your views when the applicant presents the requested information, at which time another meeting will be scheduled.

HUNT CAMP TRAIL PROJECT REVIEW

The Marin County Open Space District has announced a comment period ending on May 15 and released a Project Description for the Hunt Camp Trail (includes the former Juniper Trail) in the Giacomini Preserve. We have no problem with the original Hunt Camp Trail which is an old fire road, but the new segment which is the former Juniper Trail is narrow and steep and goes through environmentally sensitive habitat.

The District is now describing the project objectives as restoring habitat, reducing fragmentation, reducing sedimentation, and improving sustainability of the visitor experience. The environmental benefits could and should be achieved without improving the trail and many would not even be needed if the trail were not being planned for becoming a system trail.

The trail is within Northern Spotted Owl (NSO) critical habitat with an area used for nesting nearby. The construction work would take place during NSO nesting season. They excuse this with the explanation that the work during this period would be handwork that presumably would not generate much noise. Portions of the trail go through a Legacy Zone

(the county's most protective of Vegetation Management Categories) where there are special status plants present. More than nine streams and an unidentified number of ephemeral streams would have to be crossed with bridges or other types of stream crossings. The project description claims that there would be no increase in bike use because no more parking is planned. This approach, which they have taken with other projects, ignores the fact that some users, bikers particularly, do not need parking. They are able to travel long distances.

There is basically no environmental analysis of impacts or how they could be avoided, nor is there any indication of how the District plans to use the comments on the Project Description for their CEQA compliance. At minimum an Initial Study should be prepared to address why this trail is needed in the first place, how they plan to protect the special status species, and what are alternatives to the project.

WHAT YOU CAN DO:

Read the *Hunt Camp Improvement Project* description on the Open Space District's website and submit comments and questions before the comment deadline of May 15 to: Jon Campo, jcampo@marincounty.org.

eBIRD.ORG

Do you or did you record bird observations in a series of notebooks? Can you find all those notebooks? Make it easy on yourself and at the same time share your sightings with science. Submit observations to www.eBird.org.

MARIN BIRDLOG: JANUARY 2017

By Noah Arthur

Here on the California Coast we get our migrants several weeks earlier than much of the continent, and March is the month for spring arrivals in Marin County. By the beginning of the month wildflowers and butterflies have emerged, the leaves are back on the riparian trees, and the landscape is ready for the warblers, tanagers, grosbeaks, and hummingbirds that are on their way back from the tropics.



Cheep Shot, Wikimedia

Blue-gray Gnatcatcher

(DS). These kittiwakes represent part of a dramatic coastal invasion by this usually pelagic species during the latter half of winter 2017, with multiple kittiwakes showing up regularly at creek mouths, beaches, and rock stacks all along the central and southern California coast.

Spring put in an appearance at Las Gallinas on the 4th in the form of a **Barn Swallow** (DE).

Gulls stole the show again on Pt. Reyes on the 7th, with a **Black-legged Kittiwake** at the Lighthouse and a **Glaucous Gull** near South Beach (JW). This has also been an excellent season for Glaucous Gulls on the California coast, which combined with the kittiwake invasion and an unusually generous scattering of very rare vagrant gulls, made this perhaps the best gull season in recent memory.

With **Warbling Vireos** already showing up to our north in Sonoma, it was high time for some migrants by mid-month, and an early **Hooded Oriole** visited a feeder in San Rafael on the 13th (RA) for some much-needed fuel after its long northward flight. In Inverness the spring chorus began on the 15th with a singing **Wilson's Warbler** and **Pacific-slope Flycatcher** (DW).

A much rarer warbler and one of the best birds of the month was a **Black-and-white Warbler** found at Five Brooks on the 17th (KS). This is likely a locally-wintering bird, as our eastern migrants generally don't arrive until much later in the spring, with March being perhaps the least-likely month for any of these colorful wanderers to show up.

Another superlative rarity was found at Las Gallinas on the 21st, a high-breeding-plumaged **Least Bittern** (KF).

By the end of the month more migrants were arriving, with **Warbling Vireo** and **Blue-gray Gnatcatcher** reported on the 30th at Mt. Burdell (DS).

And a final rarity was spotted near North Beach on Pt. Reyes, a fly-over **Sandhill Crane** heading in the direction of Abbott's Lagoon (ML).

However, many wintering birds, including some nice rarities, stick around well into March. Continuing birds included the long-staying **Harris's Sparrow** and **Red-necked Grebe**, both of which remained at Las Gallinas throughout March and into early April, both last reported on April 4th (RR). At least one **Nelson's Sparrow** remained at Corte Madera Marsh into mid-March, last reported on the 10th (CW).

More nice winter birds were found on the Outer Point on the 3rd, including more than 40 **White-winged Scoters** at South Beach and two **Black-legged Kittiwakes**

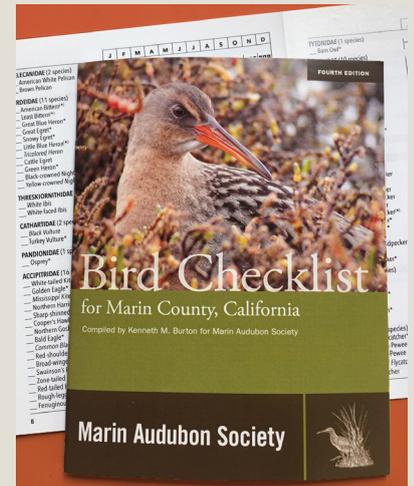


Steve Arena, USFWS

Least Bittern, male

Observers and Acronyms **CW**: Charley Walker, **DE**: Daniel Edelstein, **DS**: Dan Singer, **DW**: David Wimpfheimer, **JW**: Jim White, **KF**: Kathy Francone, **KS**: Kim Savides, **ML**: Matt Lau, **NW**: Nick Whelan, **RA**: Richard Ackley, **RR**: Ruthie Rudesill

New Bird Checklist for Marin County is Available!



Hot off the press, we are pleased to announce the publication of the updated "Bird Checklist for Marin County, California," authored by Kenneth M. Burton. Redesigned to a smaller booklet for ease of use in the field, this 4th Edition is an essential reference for conservationists and any serious birder who lives in or visits Marin, and is packed with a wealth of knowledge on the current status and abundance of birdlife in Marin County.

This 4th Edition of MAS's bird checklist officially recognizes 502 species recorded in Marin County, an increase of 17 species over the 3rd Edition published in 2009. The total list is impressive and exceeds the official bird checklists of many a US state, a reflection of Marin County's unique mix of diverse habitat, climate, geographic location, and extensive birding coverage. New to many will be the new order of bird families and species within the checklist to align with American Ornithological Society's new taxonomic sequencing announced in 2016.

Copies of this 4th Edition of the Bird Checklist of Marin, California are available for purchase at \$5 each for MAS members and \$8 each for non-members, and all profits from the sale of this checklist will benefit the Marin Audubon Society. To order your copy, please visit MAS's website at www.marinaudubon.org or send a check payable to Marin Audubon Society at P.O. Box 599, Mill Valley, CA 94942-0599, and be one of the first to enjoy this important new reference tool to Marin County's birdlife.



The Rail

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- May 17–21 **Great Basin Bird Conference**
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- June 1 **Field Trip: Las Gallinas**
Susan Kelly & Bob Atwood
- June 10 **Workshop: iNaturalist**
Todd Plummer
- June 14 **Boat Trip: Birds of Alcatraz**
With Karen Vandergrift
- June 17 **Field Trip: Five Brooks and Bear Valley**
With Jim White & Bob Battagin
- June 16–18 **Mono Basin Bird Chautauqua**
Lee Vining, www.birdchautauqua.org

Check website for updates and details

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SUPPORT MARIN AUDUBON SOCIETY — BECOME A CHAPTER-SUPPORTING MEMBER

The success of Marin Audubon Society's (MAS) work depends greatly on its chapter-supporting members. We work collaboratively with the National Audubon Society (NAS) on issues of mutual concern, but very little of our funding comes from NAS. We receive a fixed amount based on our 2001 membership. MAS relies on local support for our habitat protection efforts, conservation advocacy, birding field trips, educational speakers series, and publication of *The Rail*. To better ensure we can continue our programs on the local level, MAS offers a separate chapter membership. Your membership in MAS will help us protect local habitats, resident and migratory birds, and provide you with educational and enjoyable programs because all of your chapter-supporting dues stay with MAS.

If you're not already a chapter-supporting member, we urge you to join MAS and urge your friends, neighbors, relatives to join us, too.

You can also join or make a donation on our website using your credit card or PayPal. Please go to www.marinaudubon.org.

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A National Audubon Society Membership is a joint membership with National and chapters. With this joint membership, you receive our newsletter and other chapter benefits. However, MAS receives no portion of your National Audubon Membership dues.

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