The Amazing World of Bats
with Don Endicott

Befitting our “Happy New Year” edition, Buena Vista Audubon is featuring San Diego County’s premier (mammalian) flyer, hosted by its champion, Don Endicott. Bats! Those strange, mysterious creatures of the night. Sporting skills of flight and acoustic navigation, bats contribute to our environment in many ways—devouring insects, pollinating wild fruits, and helping reforest disturbed lands.

Of the 47 species in the United States, nearly half reside in San Diego County and make up 20% of local mammals. We have the largest (western mastiff) with its two-foot wingspan and the fastest (Mexican free-tailed) at up to 100 mph in level flight! Many are urban adapters and most are insatiable insectivores.

Poorly understood and frequently feared, bats are under threat worldwide. As a result, bats need our protection as much as we need them. Fortunately, Don Endicott is with us to make clear the wonders of, perils to, and possibilities for our non-feathered friends.

A retired research engineer and executive in Navy Communications and Network Technologies, Don discovered a second career as a volunteer naturalist. He is an interpretive guide at Mission Trails Regional Park, a public educator for the San Diego Natural History Museum, and a member of the San Diego Humane Society’s “Bat Team.” As a co-author of 50 Best Short Hikes San Diego with the late Jerry Schad, he is no stranger to our backyards.

Join him, and us, and the bats…after dark.

See blue box above for date and time of this Zoom lecture.
The Cuckoo in the Coal Mine

A large, slender, tube-shaped, brown-backed, white-bellied bird, a Yellow-billed Cuckoo features an eponymous down-curved, thrasher-like bill that is yellow on the bottom. In western North America, the Yellow-billed Cuckoo lives only in extensive stands of mature riparian woodlands. The cuckoo requires the largest intact stands of any of California’s riparian birds: at least 100 acres (preferably 200 acres). That’s a lot of land—land that humans also covet. Danger, Will Robinson—danger!

Danger indeed. Yellow-billed Cuckoos have already been extirpated from British Columbia, Washington, and Oregon. Statewide breeding populations in Idaho, Wyoming, Colorado, Utah, and Nevada number only 5–20 breeding pairs. New Mexico currently hosts 100-155 breeding pairs; and Arizona boasts the largest breeding population, although still only 170-250 pairs.

Locally? California’s Yellow-billed Cuckoo population has dropped to 40–50 pairs. In San Diego County over the last 10 years, eBird shows only 15 unique sightings and no confirmed breeding pairs. The most recent sighting was noteworthy. The bird appeared last October on a patio in the Del Mar area. Under a window. Dead.

Why write about such an infrequently seen bird? Because perhaps the only thing rarer than a sighting of this species here is a supportive ruling from the U.S. Fish and Wildlife Service (USFWS) on behalf of a dangerously threatened species. And therein lies the tale.

The collapse of the western Yellow-billed Cuckoo population segment has resulted primarily from the wholesale destruction of riparian woodlands. Although the species was listed as Critically Imperiled, Endangered by the California Department of Fish and Wildlife in 1971, the USFWS designated the western Yellow-billed Cuckoo “threatened” under the federal Endangered Species Act (ESA) only in October, 2014—after 30 years of petitioning.

Yet in 2017, a coalition of mining and ranching industries and other business interests favoring private property rights petitioned the USFWS to remove ESA protections from the western Yellow-billed Cuckoo as part of their coordinated attempt to chip away at the ESA, species by species. However, in October, 2020, the USFWS decision stated, “After a thorough review of the best available scientific and commercial information, we find that it is not warranted at this time to delist the Distinct Population Segment of the western Yellow-billed cuckoo.” A tiny bullet dodged.

To learn more about this threatened species, visit www.BVAudubon.org/news.
Since the situation with COVID-19 is ongoing and uncertain, we are canceling all birding opportunities for January. Please enjoy the birds and nature on your own, whenever possible. The places where our guided tours are normally held are generally open to visitors.

BIRDING LEO CARRILLO (Carlsbad)
Leo Carrillo Ranch Historic Park is now open every day. In addition, the 4-mile Rancho Carrillo Loop Trail that encircles Leo Carrillo Ranch Historic Park has at least six trailheads that provide access to the trail. Google for the trailhead nearest you.

WHelan lake bird sanctuary
(Oceanside) 3850 N. River Road
For access, contact
Greg Kackstetter (760) 722-4887

El corazon garrison creek
(Oceanside)
From the intersection of El Camino Real and Oceanside Blvd., go east on Oceanside Blvd., turn left (north) into the first gate. Park to the left.

Coastal 101 birding (Oceanside)
2202 S Coast Highway
Take a stroll around the Buena Vista Lagoon’s 0.25-mile loop trail at the Nature Center, then go south along the 101 to look for waterfowl.

San dieguito river park (Del Mar)
Directions for San Andres Drive— From I-5, take Via de la Valle east; go right on San Andres Drive to end of road.

Adaptations— Anatomy of the Legs and Feet
Birds come in a spectacular variety of shapes and sizes. Previously, we looked at the modified forelimb (wing) anatomy. In this issue we consider the basic anatomy of the hindlimb. Feet play a critical role in the survival of birds. Depending on the species, birds use their feet to walk, hop, run, cling, and climb on branches; capture prey; preen; and carry food and nesting material. Aquatic birds use their feet to swim and dive. Although the leg bones are the same among bird groups, the proportions are highly variable, and much variation occurs in the toes.

The hindlimb consists of three long bones— the femur, tibiotarsus, and the tarsometatarsus (Figure 1). The femur is one of the largest, most robust bones of the skeleton. Deeply buried in muscles and obscured by feathers, the femur usually is not a visible part of the leg. The tibiotarsus is a result of a fusion of the tibia, a much reduced fibula, and a fused collection of small ankle bones (tarsals). The tibiotarsus is surrounded by muscles (the “drumstick”), but it too is often obscured by feathers. Below the tibiotarsus is the tarsometatarsus, a collection of fused ankle bones (tarsals) and foot bones (metatarsals). Most often this is the only visible portion of the hind limb.

Two major joints occur between the hip and the toes— the knee and the ankle. The knee is usually hidden close to the bird’s body. What we think of as the backward oriented “knee” is actually the ankle.

Birds walk on very long toes (metatarsus, plural metatarsi). Most birds have four toes or digits. The digits are numbered I to IV and can be arranged in various ways. Toe number I is the hind toe or hallux. Digits II, III, and IV are the front toes (arranged from inner to outer). Most birds have three toes in front and one in back— anisodactyly (Figure 2). Woodpeckers and some raptors have zygodactyly, where digit IV has shifted to the back for a two-in-front two-in-back arrangement (Figure 3). Many other toe arrangements occur in birds. In the next issue, we will look more closely at some of the various foot modifications that provide clues to the lifestyles of birds.

Figure 1. en.wikipedia.org

Figure 2. Anisodactyl arrangement. Photo: 2020 Gilligallou Bird Inc.

Figure 3. Zygodactyl arrangement. Photo: 2020 Gilligallou Bird Inc.
A NOTE FROM THE EXECUTIVE DIRECTOR

Buena Vista Audubon wishes you all a happy and healthy new year, with the hope that you are managing to weather these difficult times. Recognizing that you—our members and community—need nature more than ever now, we are moving full steam ahead on new projects to upgrade our gardens and trail.

As you may know, our grounds are managed completely by volunteers, who stay busy keeping the grounds maintained, plants watered, and fencing repaired. To give a boost to this hard-working group (run by Board member Joan Bockman), we are raising funds for our Garden Project—an irrigation system and other enhancements to some of the outside areas. In addition, we plan to continue raising the nature trail to reduce the effects of flooding and make the trail accessible throughout the year. Can you help bring these projects to fruition? Our new "Adopt-a-Project" Program allows you to choose the project you would like to support. Please see our website for details: https://bvaudubon.org/donate/.

And finally, have you checked out our trail lately? Our volunteer crew is creating a new path, part of which is already open. It loops through the beautiful oak grove and comes back to the main trail. Please enjoy this lovely addition.

—Natalie Shapiro

MIGRATING BIRDERS

Buena Vista Audubon and Holbrook Travel have teamed up to offer an extraordinary travel opportunity, Birding the Ruins of the Yucatán, from October 5-15, 2021.

Pack your binoculars and embark on an intense birding adventure to the environmentally diverse Yucatán Peninsula. Witness native birds soar above the stunning ruins of Hochob, Becán, Chacchoben, Uxmal, and other archaeological sites on this journey through the Mayan world.

Heads will turn at every point of this expedition as you look for a rainbow array of birds including hummingbirds, parrots, flamingos, raptors, and many more. From trail hikes to boat rides, birding enthusiasts will have an opportunity to participate in a variety of outdoor activities while learning about the history of the Maya and the birds that call the Yucatán Peninsula home.

For more information or to enroll, visit holbrook.travel/bvas-mx21 or contact Debbie Jordan at debbie@holbrooktravel.com or call 866-748-6146.
KID’S CORNER (Activities for Kids)

Start a rock collection. Observe the properties of each rock. Perform the following tests to determine which kind of rocks you have. (Have the child record their findings if age-appropriate.)

Go to the following website to find a recording sheet and learn more about how to test rocks.
https://rainydaymum.co.uk/testing-of-rocks/

Begin by drawing a detailed picture of one rock. Use a magnifier to really study it. Using the website as a guide to follow these steps.

1. Examine the rock’s colors and luster. Check to see if it is magnetic. If so, your rock probably has some magnetite in it.
2. Perform a streak test.
3. Record the texture of the rock. Is it smooth, rough, bumpy, point, or rounded?
4. Add a few drops of vinegar to your rock and watch for a fizzy reaction. Use your magnifying glass to look for small bubbles. This test will tell you if carbonate is present in your rock.
5. Determine the hardness of the rock. This is also called a scratch test. The Mohs Hardness Test looks at whether or not a mineral can be scratched by another mineral. The Mohs Hardness Scale has ten minerals of known hardness. You scratch your rock with each of these minerals to determine where your rock falls on the scale. If your rock can be scratched with a mineral, your rock’s hardness is less than that mineral’s. For example, a rock that is considered soft can be scratched by a fingernail. (Mohs’ 1-2) A medium rock can be scratched by a knife or nail. (Mohs’ 3-5) A hard rock cannot be scratched by a knife but can scratch glass. (Mohs’ 6-9) A diamond is the hardest known mineral. (Mohs’ 10)

THANK YOU to all our volunteers who have worked during these months of COVID-19 to keep our outdoor space available to the public. The Monday Garden Crew has expanded. (Please feel free to join them on Mondays at 10:00 a.m.) Nature Guides and Hosts have been on the trail and in the parking lot to welcome guests and answer questions. Trail and bird guides have been created and are available both online and at the kiosk. Videos of many plants and animals are on our website.

New and improved kiosk exhibits are coming soon! The center may be closed for now, but we are still a wonderful place to visit. Come on over!

Don’t forget your binoculars and mask.
As of the December 8 CA Stay-at-home order, all BVAS activities have been canceled. Resumption of the Monday Garden Crew and Trail Ambassador Program will depend on the easing of state guidelines.

However, the trail is still open. Printed trail guides are available at the kiosk and on the website.

Learn about the Yellow-billed Cuckoo on page 2. Image by John James Audubon.

Thanks for voting.