



Roxie Laybourne, the Feather Detective

By Patrick Gavit

On October 4, 1960, Eastern Air Lines Flight 375 crashed shortly after takeoff from Boston's Logan International Airport, killing 62 people. Investigators initially concluded that a bird strike had damaged the aircraft's engines, leading to the crash.

Investigators wanted to know what species of bird was responsible because that would help inform airport authorities on how to modify the surrounding habitat, so the identified species would not congregate around runways. This was decades before DNA analysis was available, so investigators turned to the Smithsonian's National Museum of Natural History.

There, the shredded and greasy samples of the birds salvaged from the plane's engines were given to ornithologist Roxie Laybourne. She had been working on techniques to identify minute structural features of bird feathers that are unique to each species. Using these techniques, she determined that the culprits were European Starlings.

When the Flight 375 investigation concluded, the Federal Aviation Administration encouraged Laybourne to refine and improve her methods and even gave her a microscope. The agency started a program where plane mechanics would recover feathers from jet engines during routine maintenance and send them to Laybourne for analysis. Over time she perfected her method to distinguish different species using the microstructures known as plumaceous barbs at the base of the feathers.

Laybourne is considered the world's first forensic ornithologist and was a pioneer in establishing methods for species identification based on feather characteristics. Her story is presented in the book *The Feather Detective* by Chris Sweeney.

Laybourne's work has made flying safer. Airport biologists used her identifications to modify airport habitats to discourage birds from congregating near runways. By understanding what birds were involved, engine manufacturers were able to improve their engine designs to make them more bird-proof. Her work was even helpful in the design of cockpit windows to make them immune from bird strike damage.



Roxie Laybourne

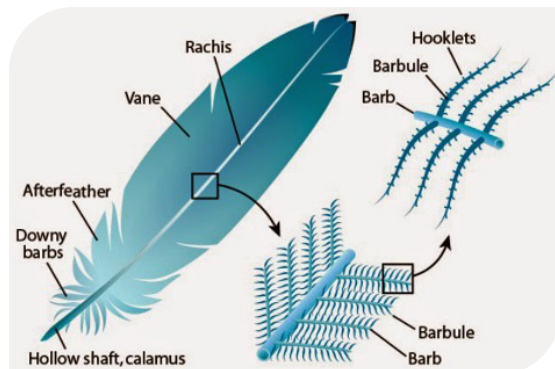
PHOTO CREDIT: AUDUBON MAGAZINE

In addition to working with the FAA, she collaborated with law enforcement agencies including the FBI to solve crimes. Roxie once helped solve a murder case by showing that a feather fragment found on a bullet came from a pillow that a woman placed over her husband's head to muffle the sound of the gunshot blast as she shot him. Most crimes she worked on were related to poaching and the environment.

Growing up as a child, Roxie had a profound love of nature. During the Great Depression she learned taxidermy while volunteering at a museum in her native North Carolina. Eventually she was given a \$100 monthly salary. In 1944, she accepted a job as a museum aide in the Smithsonian Division of Birds that started her career at that institution and spanned many years. She died in 2003.

Even today when most bird strike identifications are done by DNA sequencing, about 15 percent of the time investigators are unable to get a sequence and must rely on the techniques developed by Laybourne.

The next time you get on a plane, you can thank Laybourne for her pioneering work on feather identification, which has made flying safer for everyone.



Anatomy of a feather (Wikipedia)

Meetings

PVBA meetings take place at 7 p.m. in the Padua Room of the Alexander Hughes Center at 1700 Danbury Dr. in Claremont, generally on the first Thursday of each month from September through June.



Thursday, September 3 at 7 p.m.

Cindy Shannon, Ph.D. - The Influence of Food Abundance and Nest Location on Behavior and Nest Success of Bald Eagles

Cindy's talk will include natural history, ecological relationships and the effect of landscape on nest location and nest success. In addition, it will look at nest location and the prey type fed at the nest and parental behavior. She will also report on the effect of food abundance on parental behavior with a food supplementation experiment. All 72 nests that were watched over a three-year period were located on the southeastern side of Vancouver Island, British Columbia, Canada.

Cindy earned her Ph.D. in Biology in 2008 from the University of California, Riverside.



Thursday, October 1 at 7 p.m.

Janel Ortiz, Ph.D. - Under the Radar: How Remote Monitoring is Reshaping Wildlife Planning

Technology has allowed us to gather information on wildlife without having to capture and handle them. We use remote camera traps or trail cameras and drones to study various aspects of wildlife of the San Gabriel Valley. Janel will review findings from three completed projects: (1) how landscape influences urban wildlife and the implications for urban planning; (2) coexistence of coyotes and bobcats; and (3) parrot roost size using drones, and roost selection.

Janel Ortiz, Ph.D., (she/her) is an Associate Professor at Cal Poly Pomona (CPP) in the Center for Excellence in Math and Science Teaching and the Department of Biological Sciences.



Thursday, November 5 at 7 p.m.

Nathan Nunez - Tribal Heritage of the San Gabriel Mountains and the Xaapchivitam Clan

Everything has a story and those stories help us learn and understand our relationship with the natural environment for its long-term sustainability. Through his tribal work, Nathan has advanced San Gabriel Mountains stewardship, outdoor education opportunities, and watershed conservation efforts. These shared efforts are vital for the future of the San Gabriel Mountains and the San Gabriel River watershed.

A recognized leader in outdoor education, San Gabriel Mountains advocacy, and a professional speaker, Nathan Nunez is a descendant of the Xaapchivitam Clan of the Eastern San Gabriel Mountains.

See www.pomonavalleybirdalliance.org for full details of presentations and presenter bios.

NATIONAL AUDUBON SOCIETY (NAS) AND POMONA VALLEY BIRD ALLIANCE (PVBA) MEMBERSHIP

We invite you to become a member of both NAS and PVBA. You also have the option of joining just PVBA. For either option, a yearly individual or family membership is \$20.

Check one:

- | | | |
|-------|--|---|
| JOIN | ☐ Join both NAS and PVBA ONLINE. | On the PVBA website, click on "Membership" and then on link to NAS. Make a \$20 donation to NAS. Check Chapter Code: C08 |
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PVBA mailing address: **PVBA, 2058 N. Mills, PMB 426, Claremont, CA 91711**

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Field Trips

Saturday, September 19

Field Trip to Bolsa Chica Ecological Preserve and Harriett Weider Park

18000 CA-1, Huntington Beach and 19251 Seapoint Street, Huntington Beach

Difficulty: Easy (up to 3 miles)

Meet at 7:00 a.m. at Memorial Park in Claremont or meet at Bolsa Chica about 8 a.m. Bring snacks, water and lunch for a full day trip. (Est. driving 100 miles.)

Please RSVP with Trip Leader: Dan Gregory (909) 456-4994 or DanRCRenee@verizon.net

Friday, October 9

Field Trip and Survey of North Etiwanda Preserve

4890 Etiwanda Ave, Rancho Cucamonga

Difficulty: Strenuous (rocky, uneven terrain, 3.5 miles with 800+ ft elevation gain)

There is a moderate option to survey the southern edge of the park.

Twice a year we survey the preserve's birds for the County of San Bernardino. Specialties include Bell's Sparrow, Loggerhead Shrike, and other open-country species. Join us for all or part of the day. Meet at Beryl Park at the West Parking Lot, 6501 Carnelian St, Rancho Cucamonga, for a 7 a.m. departure to the preserve. This is a hike and not a walk, please bring sturdy footwear, a lunch, water, snacks, and layered clothing for about 6 hours in the field. Please RSVP with Trip Leader: Dan Gregory (909) 456-4994 or DanRCRenee@verizon.net

Saturday & Sunday, November 7–8

Morro Bay & the Central Coast Weekend Trip – Multiple Locations

Difficulty: Moderate

Join us for a weekend of birding along the Central Coast in search of Peregrine Falcons, coastal specialties, and open-country birds. We'll meet Saturday at 8:00 a.m. at Morro Rock and bird several

coastal locations, including the Morro Bay Marina, Sweet Springs, and Montana de Oro State Park, before returning via Turri Road for inland species. On Sunday, we'll bird our way south toward home with stops such as Oceano Campground and Oso Flaco Lake. The final itinerary will depend on weather and bird activity. Lodging is on your own in Morro Bay or nearby. (Estimated driving: 465 miles round trip to Morro Bay, plus approximately 135 touring miles.) Trip Leaders: Eric Smith and Tina Stoner. RSVP to Eric Smith at (661) 372-8946 or bird4life28@gmail.com.

Saturday, November 14

Field Trip to San Joaquin Marsh

Parking Lot, 5 Riparian View, Irvine

Difficulty: Easy (up to 2.5 miles)

An Orange County gem consisting of a series of freshwater ponds. Species may include herons, rails, ducks, raptors and even Roadrunners. Meet at 7:00 a.m. at Memorial Park in Claremont. If you plan to meet at the preserve, approach from the south on Campus Drive and enter on Riparian Drive. Bring snacks, water and lunch for a half-day trip. Please RSVP with Trip Leader: Dan Gregory (909) 456-4994 or DanRCRenee@verizon.net

Field Trip Basics

Pomona Valley Audubon Field Trips are offered at no cost (unless otherwise specified) and are open to all. ALWAYS call the trip leader if you plan to attend and to verify time, location and trip status. In case of rain, call the trip leader the night before. Driving mileage estimates are round-trip from Memorial Park in Claremont. For your comfort and enjoyment, participants should plan to bring the following suggested items:

- **Binoculars/spotting scope/** camera (as desired)
- **Water**
- **Snacks/Lunch**
- **Walking/Hiking shoes**
- **Sunscreen/Repellant**
- **Appropriate clothing** (Dress in layers and be ready for unexpected weather changes.)
- **Hat**
- **Full tank of gas**

Bird Walks

First Sunday of the Month Family-Friendly Bird Walks at the California Botanic Garden

1500 N. College Ave., Claremont

Meet at the entrance at 8:00 a.m. for free admission. This bird outing is approximately 2 hours long and is perfect for beginners and experienced birders alike. Loaner binoculars are available (limited number, so first-come, first-served.) You will receive instructions on their use as well. PVAS volunteer Ken Burgdorff (gwrencaps@gmail.com) and others will lead the walks. Note: CALBG now requires ALL participants to preregister using the links below to the Botanic Garden's reservation site.

A tram is available for those with difficulty walking. Reserve the tram at registrar@calbg.org

Sunday, September 6 <https://tinyurl.com/Sept-Walk>

Sunday, October 4 <https://tinyurl.com/Octo-Walk>

Sunday, November 1 <https://tinyurl.com/Novo-Walk>

Fourth Sunday of the Month Bonelli Bird Walks

Frank G. Bonelli Regional Park, San Dimas

Difficulty: Moderate

Enjoy one of the richest birding sites in Southern California on our monthly Bonelli Bird Walk. We meet in the parking lot of Brackett Field (airport) at 1615 McKinley Ave., La Verne (better known as the Norm's Hanger Coffee Shop parking lot.) To reach the parking lot, take McKinley Ave. west from Fairplex Drive to the parking area at the end of the road on the right. Meet at 7:45 a.m. to caravan into the park for free entrance. 2-3 hours. Don't forget your binoculars and comfortable shoes. Please RSVP with the leaders listed below.

Sunday, September 27 - Patty Thorne: pattythorne99@gmail.com

Sunday, October 25 - Kris Janicki: starlite07kmj@yahoo.com

Sunday, November 22 - Patrick Gavit: ebiner.gavit@gmail.com or (626) 214-6905

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Rattlesnake Encounters on the Rise This Year

In late July, a 22-year-old college athlete was bitten by a rattlesnake while running on a trail in the Claremont Hills Wilderness Park. He was airlifted to a nearby hospital and ultimately required 34 doses of antivenom to recover, according to KTLA News.

The incident was the latest in a series of rattlesnake bites reported in the media this year. Although experts do not believe the rattlesnake population has increased, the number of bite incidents has risen, with three fatalities reported statewide. Wildlife experts attribute the increase largely to an unusually warm March that brought snakes out of winter dormancy earlier than usual, extending the active season.

Birders should remain alert for Southern Pacific rattlesnakes (*Crotalus helleri*), especially in rocky or brushy areas during snake season, which typically runs from March through October. While

rattlesnakes often rattle before striking, the warning may be too faint or too brief to hear, particularly in windy conditions or if the snake is concealed.



To protect yourself from rattlesnakes, wear loose-fitting long pants and thick hiking boots; stay on trails where it is easy to see where you are stepping, use a walking stick and tap the ground ahead of you, and don't wear headphones when walking.

If you are bitten, call 911 immediately and get to the nearest emergency department as quickly as possible. Just as important is avoiding ill-advised first-aid measures. According to the California Poison Control System, do not apply ice or heat to the wound, attempt to cut or suck out the venom, or apply a tourniquet to the affected limb.

If a pet is bitten, seek veterinary care immediately. Many veterinary emergency hospitals and some general veterinary practices stock antivenom and can begin treatment promptly.

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Fall Volunteer Opportunities

Contact Tina Stoner at tinastoner@earthlink.net to help staff any of these events.



- Friday, October 2 and Saturday, October 3 – Things That Go Bump in the Night at California Botanic Garden
- Saturday, October 24 – Halloween Nature Crawl at the San Dimas Canyon Nature Center
- Saturday, November 21 -- Fall in the Farm at the Fairplex