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The Nuns Fire, Bouverie Preserve
As this edition of the Bulletin went to print, 50 mile-per-hour Foehn winds swept through the North Bay and triggered a series of catastrophic fires, leaving behind human losses unparalleled in our lifetime. In the Sonoma Valley, the Nuns Fire burned through ACR’s Bouverie Preserve, taking with it beloved gathering spaces, offices for a dozen staff members and most tragically, the homes of our two resident staff members, Jeanne Wirka and Jennifer Potts, and their families.

Nearly a month later, our staff is slowly becoming resettled, and we are thankful for your many offers of assistance. We are hearing from our docents, friends, and donors who also lost so much, and we remain dedicated to helping them in any way we can.

Through everything, I am struck by the confluence of events that occurred at Bouverie. Just last spring, Dr. Sasha Berleman, director of ACR’s Fire Ecology Program, partnered with CAL FIRE, the National Parks Service and nine local agencies to conduct cooperative prescribed burns within the preserve to promote ecological benefits and reduce the ability for grassland to carry fire. Despite the widespread impact of the Nuns Fire, the efficacy of these controlled burns offered us powerful imagery in the days following. Illustrated by the photo below, those sites showed significantly less fire intensity than the surrounding landscape and helped moderate the fire’s progression as it crossed Bouverie Preserve.

Now, as the region rebuilds, we are more determined than ever to conduct our work in the spirit of collaboration. Working with state and local agencies, landowners and conservation organizations, ACR is spearheading an ‘all hands, all lands’ revolution in the North Bay’s land management techniques and cultural relationship to fire so that we can learn to live with fire rather than suffer catastrophic losses.

We are all in this journey for a better life together, and by joining hands we can only become stronger. We hope that you too will join us in this partnership.

“Unity is strength... when there is teamwork and collaboration, wonderful things can be achieved.”

–Mattie Stepanek, poet and peace activist
HERON AND EGRET TELEMETRY PROJECT

ACR Launches First GPS-tracking Study of Ardeids in Western U.S.

Herons and egrets are generalist top predators. That means they’re integral to the structure and function of healthy ecosystems, as well as indicators of habitat quality for a range of other species.

Audubon Canyon Ranch has spent more than 50 years monitoring heron and egret nesting abundance and reproductive performance trends and informing local and regional wetland conservation. Now, for the first time in the Western U.S., our research team is able to follow these iconic birds beyond the nest. By attaching tiny, lightweight, solar-powered GPS tags to individual birds, we record more daily details about their movement than biologists with binoculars can possibly collect.

A wealth of data
The tags collect location and behavior data every five minutes, and they attempt to transmit the data back to us once per day. The data show us how long our bird subjects spend in each type of habitat and how far they travel to reach their preferred habitats. We also follow their journey back to the colony to see how these behaviors influence their survival and ability to raise young.

As we gather and analyze this unique information, we’ll also gain a greater understanding of how habitat availability drives population changes.

All of this knowledge will help us make better recommendations to land managers about the best conservation actions to protect entire ecosystems and benefit these birds.

Our first tracked birds
We tagged three Great Egrets in June 2017, and plan to tag 11 more by fall. Preliminary data from these tags reveal fascinating patterns of behavior. Already we see differences in how individual egrets move and select habitats over short and large distances. We’ve also observed the ways changes in their feeding habitats relate to weekly tidal cycles.

The incredibly detailed GPS data allow for more complex analyses and modeling, to better understand how multiple environmental conditions interact to influence heron and egret movement and behaviors.

Our new direction in research, which includes collaborating with investigators in other parts of the U.S., is expanding ACR’s role as a regional and national leader in conservation science. The Heron and Egret Telemetry Project is generating a huge body of fresh information on the movement patterns and habitat use of these birds.

We are excited about uncovering important insights for protecting herons and egrets and the lands they rely on, as climate and human land use patterns shift.

Follow project developments at https://egret.org/heron-egret-telemetry-project
In mid-June near Tomales Bay we tagged one male and two female Great Egrets with GPS tracking devices. Once outfitted, they remained in northern Marin and southern Sonoma counties—until August 14.

That evening, the female we call GREG 3 lifted off from Chileno Valley and flew east. She made a half-hour stop in cypress trees southeast of Petaluma, then, just as darkness fell, she took flight again.

She continued through pre-moon darkness, skirting the San Pablo Bay, then crossing the Sacramento-San Joaquin Delta and the Central Valley. Shortly before midnight she landed along Dry Creek, between the towns of Galt and Ione.

This flight of roughly 98 miles took a bit over 3 ½ hours, for an average speed of around 28 miles per hour. It’s fascinating that she flew at night and took such a direct route. Her path suggests very intentional use of a large landscape, indicating she may have made this trip before.

As of press time, GREG 3 has been recorded foraging along the Dry Creek, near the shores of Rancho Seco Recreational Park and also visiting nearby agricultural fields.

Follow GREG 3’s real-time movements at Movebank.org: http://bit.ly/2xYX4xe
For the past several months, ACR’s Quinton Martins and Keysight Technology’s Neil Martin have been developing a new safe-capture animal trap. The walk-through cage uses sophisticated ultrasonic electronic sensors and it has become ACR’s main method for trapping mountain lions. Benefits of the tech-enhanced device include:

- baitless, so researchers can trap year-round with no seasonal limitations from bait degradation
- triggered by electronic timer to activate the cage only when capture teams are on standby
- a sensor to target size-specific animals and avoid non-target species like bobcat or raccoon

Beyond mechanical walk-through traps

Walk-through cage traps have been used in Africa for safely trapping leopards and cheetahs. However, these mechanical traps often capture other species. The ACR team got permission from California Fish and Wildlife to test the innovative electronic cage. The trial run would reveal whether mountain lions, like their African counterparts, would walk through these unbaited cages set on trails.

The team was excited that within a week the new trap captured an adult male and an adult female. No false triggers occurred, and several foxes and opossums walked through the trap without setting it off.

After the test run, the inventors enlisted the help of Tom Fetter, a retired engineer now volunteering at 180 Studios and Kim Bishop, a Keysight Technology R&D engineer, to build seven traps at Santa Rosa’s new makerspace, 180 Studios.

New cage provides scientists more flexibility

This cage design meets trapping restrictions in California, and should be very useful as an additional tool for biologists in other states or around the world.

Project suffers set back after Nuns Fire

The fire that swept the Bouverie Preserve destroyed five of seven completed traps, delaying the trapping schedule for this fall; however, the team has already begun work to rebuild the actuator mechanisms.

Follow new developments of the walk-through cage in our blog at https://egret.org/blog
**P1, Sonoma’s Engaging Supermom**

It’s been one year since ACR fitted our first Sonoma County mountain lion with a GPS collar. P1, our 10- to 11-year-old grande dame, has already provided us with reams of data as well as a window into the lives of these compelling cats. A stealthy supermom, she is also wowing us with her parenting skills.

When we first began tracking her, P1 was traveling with two nearly grown offspring. We collared the female (P2) of the sibling duo in November 2016.

**Off to new territories**

Then, in late December, P1 sent both of her young adults packing right on schedule. Young mountain lions typically disperse from their mother at 12 to 18 months to establish their own territories.

ACR’s research team eagerly tracked P2’s dispersal. Where would she go? Who would she meet? Will she be a skilled hunter?

Meanwhile, P1 was quietly gestating her next litter. Although we expected as much, we were still as thrilled as new parents when P1 gave birth to three more kittens in late March 2017. In the days prior to the Nuns Fire, two surviving six-month old kittens were spotted on our field cameras with mom, providing a sneak peek into family life.

**Captivating in the classroom**

P1 and her kin are also padding their way into the hearts of local youth, through a new experiential classroom visit developed and pioneered last spring by Bouverie docents Elizabeth Martins and Sarah Zainfield.

Focused on understanding our wild neighbors, the school visits combine storytelling, science and creative expression. Students get to explore the special adaptations of local mammals and gain greater appreciation, identification skills and connection with them.

Follow the Mountain Lion Project at [https://egret.org/acr-mountain-lion-project](https://egret.org/acr-mountain-lion-project)

“Finally [P1] came into view and my heart just about leaped out of my chest, I was so excited!”

-Suzy Fridell, Glen Ellen vineyard owner, interviewed by ABC7News
In 1860, Captain Peter Bourne gave up the sea and bought more than 700 acres in Bolinas on which to build a home and start a family. Within the decade, Peter and his young bride Mary had completed the handsome two-story house and were well on their way to welcoming six children, all born at home.

One hundred years later, a chance meeting with ACR founder Marty Griffin would reconnect Jerry Bourne to his great-grandparents’ legacy. Ultimately, it would inspire him to leave his own legacy to ACR.

**A happy discovery**

“I first met Marty when I came to work at Sonoma State Hospital as a psych tech in 1978,” Jerry says. “Later, when he made the connection, Marty told me about ACR and that I should go see the Bourne ranch, in what is now Martin Griffin Preserve.”

Growing up in San Luis Obispo, Jerry remembers many childhood trips in the back of the family station wagon with his three brothers to visit relatives in Bolinas. “West Marin is a very special place for our family. We loved seeing our grandparents and always hated to leave,” he says. “My great-grandparents’ house was boarded up for years and would have been lost to development. It’s because of ACR that we can go back.”

**From volunteers to donors**

In reconnecting with the Bourne House over the past several years, Jerry and his wife Lynnette have become advocates for ACR’s conservation efforts. Both have served as preserve hosts during the public season, where they welcomed and introduced many visitors to the Martin Griffin Preserve.

“When we first started to volunteer, we didn’t know anything about birds,” Jerry says, “but now we’ve seen what ACR does, especially the education programs for kids.”

In deciding to include a gift to ACR in their trust, Jerry and Lynnette became members of the Clerin Zumwalt Legacy Circle. “We’re attached to the house and hope it can be opened to the public. But ACR is what’s most important. We feel like we’re giving back and carrying history full circle.”

ACR is grateful to Jerry and Lynnette Bourne for their legacy gift. We thank all the forward-thinking members of the Clerin Zumwalt Legacy Circle.

**HIGHLIGHTS OF THE BOURNE HOUSE - MARTIN GRIFFIN PRESERVE**

- **1860s**
  - Peter and Mary Bourne complete the two-story house along the east shore of Bolinas Lagoon in 1865. For several years, Peter pilots his schooner over the Bolinas sandbar to transport loads of lumber to San Francisco.

- **1940s**
  - The Galloway family operates the ranch as a dairy, and later sells roughly 2/3 of their ranch to William Tevis.

- **1960s**
  - From 1961 to 1971, Audubon Canyon Ranch buys 503 acres from Tevis, 278 acres from the Galloways and 234 acres from the Thompsons.

- **1970s-1980s**
  - The ranch house becomes a residence for Skip Schwartz, ACR’s first executive director.

- **2013**
  - ACR chooses architect Charles Miller to design the restoration of Bourne House. Structural improvements have been made and new paint, a metal roof and solar panels have been added.

For Clerin Zumwalt Legacy Circle information, contact Director of Philanthropy Naomi Sultana Young at naomi.young@egret.org or 707.938.4554 ext. 311.
**WOMEN IN SCIENCE**

**Lucia Garay, a Young Innovator**

A 2013 graduate of our Juniper training, Lucia Garay has distinguished herself in her short tenure at ACR. She has been a junior naturalist, youth leader, peer mentor and a participant in our Conservation Science Intensive summer program.

Now, at age 15, Lucia is a contributing member of our stewardship team. In the fall of 2016, she redesigned the traps ACR uses to capture signal crayfish (*Pacifastacus leniusculus*), an invasive riparian crustacean found in Bouverie Preserve’s Stuart Creek.

**Meeting the signal crayfish threat**

Introduced as a game species in the early 1900s, signal crayfish decimate amphibians, aquatic insects, young steelhead and native crayfish. Unprompted, Lucia asked if she could redesign our traps to better capture immature crayfish.

Over several months, she re-engineered more than 20 traps. In June 2017, while participating in ACR’s Conservation Science Intensive, Lucia helped initiate the first field testing of the redesigned traps.

**A field test bounty**

Trapping signal crayfish in Stuart Creek was a highlight of the Intensive. After receiving some background and field training, each participant chose a location to set her own trap. Twenty-four hours later we had 25 captive invasive crayfish.

After each girl took a turn extricating crayfish from the traps—a tricky operation—we made a collective decision to eat them at the evening feast during our overnight at Martin Griffin Preserve. We kept them in ice water until the kitchen crew cooked them in butter and garlic.

After gobbling every single crayfish, the girls took out their hand-lenses and examined the shells, identifying body parts and appendages. What else would you expect?

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**ACR Membership**

Audubon Canyon Ranch (ACR) members, supporters and corporate sponsors **think globally and act locally** through ACR’s land preservation, nature education and conservation science programs. **Thank you!** Together we protect wildlands in Marin, Sonoma and Lake counties and inspire the next generation of nature lovers.

**Membership benefits:**

- you make immediate and enduring impact on regional conservation initiatives
- bi-annual editions of the ACR Bulletin
- complimentary copy of *The Ardeid*, ACR’s journal of conservation science and stewardship
- invitations to exclusive members-only events
- member’s discount on ACR public programs
- 10% discount in the ACR bookstore and more

For more information, contact Development Manager Jen Newman at 415.868.9244 ext. 119. Not a member? Become one today at [www.egret.org/membership](http://www.egret.org/membership).

**Stay in the Loop**

Published every month, our eNews brings you updates from the preserves, latest findings from science staff, volunteer opportunities and ways to explore ACR’s nature sanctuaries. Visit [www.egret.org](http://www.egret.org) to opt in.

**Find Us On Social Media**

[Facebook](https://www.facebook.com)  [Twitter](https://twitter.com)  [Vimeo](https://vimeo.com)  [Myspace](https://myspace.com)  [Instagram](https://instagram.com)
Bioblitz Creates Modini Mayacamas Buzz

This May a group of 16 entomology enthusiasts spent a day documenting insects. The event was part of our iNaturalist project, Biodiversity of the Modini Mayacamas.

This insect Bioblitz was led by ACR’s former Bouverie Preserve juniper and recent SSU graduate Elliott Smeds, Bouverie Preserve docent Richard Wasson and founder and president of Insect Sciences Museum of California, Eddie Dunbar.

We snapped photos of butterflies, day-flying moths, scorpions, spiders, beetles, flower flies, dragonflies, a pond turtle, native bees, wildflowers and more.

The format was a hit so we’ve added it as a regular program. Mark your calendar for first Fridays of the month and bring your enthusiasm, expertise and camera to the Modini Mayacamas Preserves for the Biodiversity Bioblitz.

Browse and contribute to ACR’s flora and fauna catalogs of each of the preserves at iNaturalist.org. Enter the preserve name in the search bar under the ‘Projects’ tab.

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Martin Griffin Preserve (MGP)
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Cypress Grove Research Center (CGRC)
Modini Mayacamas Preserves (MMP)
**ACR Programs, Events & Expert Lectures, Fall 2017 – Winter 2018**

**Modini Mayacamas Preserves**

Join us for a range of natural history and ethnobotany guided hikes.

- **Biodiversity Bioblitz**
  - Friday – December 1
  - Friday – January 5, 2018
  - Friday – February 2

- **Documenting Wildlife**
  - *No fee. Suggested donation: $20 per person*
  - Sunday – January 14, 2018

- **Fern Friday**
  - Friday – January 12, 2018

- **Field Botany Friday**
  - Friday – December 15
  - Friday – January 19, 2018
  - Friday – February 16, 2018

- **Fire on the Mountain**
  - Saturday – January 27, 2018

- **History and Habitat in Pine Flat**
  - Saturday – February 17, 2018

- **Learning to Read (the Landscape)**
  - Saturday – November 18, 2017
  - Saturday – January 20, 2018

- **Native Uses and Management of Plants & Habitat**
  - Saturday – February 24, 2018

- **Nature Photography Friday**
  - Friday – December 22, 2017
  - Friday – January 26, 2018
  - Friday – February 16, 2018

- **Tracking with Meghan Walla Murphy**
  - Saturday – December 16, 2017

- **Orientation to Modini Mayacamas Preserves + Optional Hike**
  - *Required for independent hiking access. Suggested donation: $20 per person*
  - Saturday – December 9
  - Saturday – January 13, 2018
  - Saturday – February 10

**Martin Griffin Preserve**

- **Nature Photographs by Jocelyn Knight**
  - On display through spring 2018
  - Tuesday – Friday, 2:00 – 4:00 p.m. by appointment
  - Please call ahead: 415-868-9244, ext. 110.

  Bring the best of the Preserve home with you by purchasing one of Jocelyn Knight's stunning photographs, now on view in the Display Hall at Martin Griffin Preserve. Knight, an accomplished photographer and an ACR docent offers 95 of her favorite images to benefit ACR education programs. Prints are 8”x12”, float mounted on masonite. She will donate 25% of sales to ACR.

**Modini Mayacamas Preserves**

- **Habitat Protection & Restoration Stewards**
  - 2nd and 4th Thursdays – 9:00 a.m. – 1:00 p.m.
  - The Modini Mayacamas Preserves Stewards provide essential hands-on assistance to our land management team, including trail maintenance, invasive plant removal, native plant propagation and other special projects. Come learn more about the Preserves by getting your hands dirty!
  - Contact Resource Ecologist Julianne Bradbury at julianne.bradbury@egret.org or 707.433.1217

**Laguna de Santa Rosa Foundation**

- **Fire and the Lands We Call Home: A Renewed Approach for a Brighter Future**
  - Thursday – November 30, 2017
  - 7:00 – 8:30 p.m.

  Laguna de Santa Rosa Foundation
  - Heron Hall
  - 900 Sanford Rd, Santa Rosa

  The Laguna de Santa Rosa Foundation welcomes ACR Fire Ecologist Sasha Berleman. This past October the North Bay area experienced one of its most destructive and tragic human disasters in recorded history due to fire. Over the past hundred years the human-fire relationship has been one riddled with animosity, at great cost to people and ecosystems alike. Yet it hasn’t always been this way. Attend this talk to learn about fire’s long-standing and critical role in our ecosystems, and the ways our plant communities have come to depend on fire as an ecosystem process. Register at [http://www.lagunadesantarosa.org/laguna_walks_classes.shtml](http://www.lagunadesantarosa.org/laguna_walks_classes.shtml).

**Bay Area Climate Literacy Impact Collaborative**

- **Dig Deep into Extreme Events Workshop**
  - Thursday – December 7, 2017
  - 9:30 a.m. – 1:30 p.m.

  Bay Area Climate Literacy Impact Collaborative
  - Temescal Beach House
  - 6500 Broadway, Oakland

  Join ACR's Fire Ecologist Dr. Sasha Berleman at the Bay Area Climate Literacy Impact Collaborative's Local Climate Science & Education Series, where Dr. Berleman will be a panelist. The workshop series convenes the Bay Area's science and education communities to explore current research on extreme climate and weather events in the region like droughts, wildfires, and flooding. For more information and to register, visit bayclic.org.

**GET OUTDOORS!**

**GET INVOLVED!**

**APPRECIATE!**

Programs and events are open to the public unless otherwise noted. More detail and full calendar listing online [www.egret.org/calendar](http://www.egret.org/calendar).
NEW!

ACR Docents Can Earn UC’s Naturalist Certification

Our current Bouverie docent training class is the first to take advantage of ACR’s new partnership with the UC Extension California Naturalist certification program. Twenty-six trainees and mentors enrolled and will earn their certification by February 2018.

During their 22 weeks of docent education, trainees may opt for additional reading and a capstone project to become certified and eligible for four units of general science credit through UC Davis.

CalNat certification will connect Bouverie docent trainees with a statewide community of naturalists who convene regularly for advanced training, citizen science projects, conferences and other events. The certification will also be offered to the next class of Martin Griffin Preserve docent trainees.

Our Mission

ACR protects our natural and human communities through land preservation, nature education and conservation science.