

AUDUBON CANYON RANCH



acr

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# Conservation in Action

The Bulletin | Number 61 | Fall 2017



## In This Issue

Nuns Fire Portfolio

First Results From Egret  
GPS Tracking

ACR Collaborates on  
Innovative Trap Designs

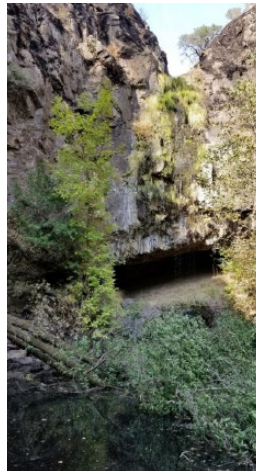
Sonoma's Super Cat

Bioblitz Creates Buzz

Member Events,  
Hikes & Volunteering

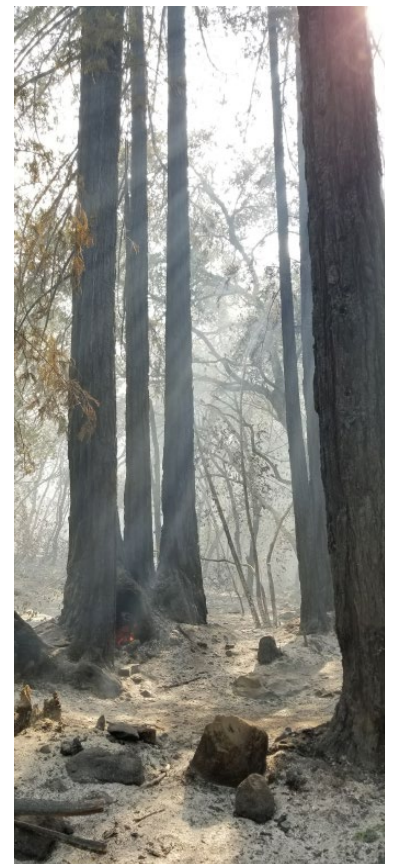
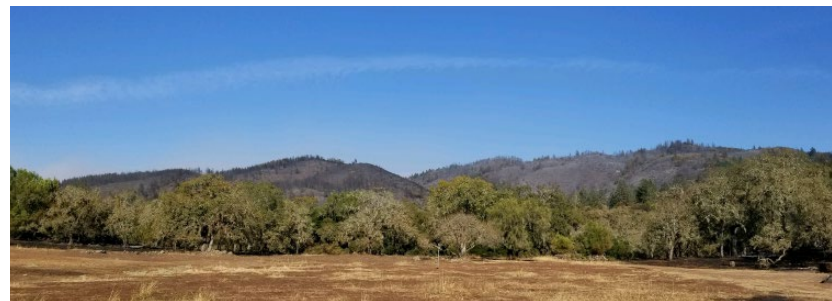






PORTFOLIO, OCTOBER 9 - 13, 2017

## The Nuns Fire, Bouverie Preserve





FALL 2017

## The Journey Together for a Better Life



John Petersen,  
Executive Director

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 NorthBay'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.

A handwritten signature in dark ink, appearing to read 'John'.

*"Unity is strength... when there is teamwork and collaboration, wonderful things can be achieved."*

—Mattie Stepanek,  
poet and peace activist

**Read about how these young conservationists helped their peer test a better crayfish trap, page 9.**



**Collaboration with our partners in the tech sector leads to better conditions for researchers in the field, page 6.**







## HERON AND EGRET TELEMETRY PROJECT

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



*Scott Jennings,  
Avian Ecologist and  
project lead investigator*

Heron 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.

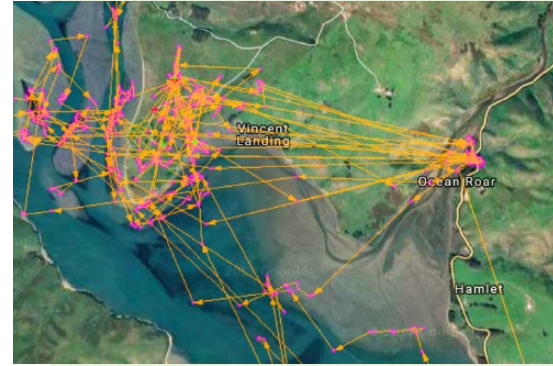
### Our first tracked birds

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.

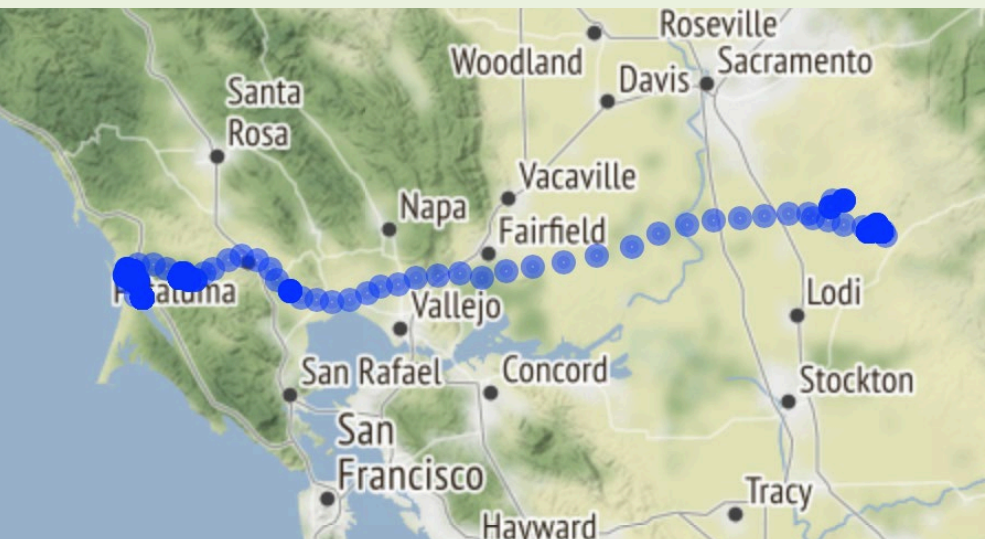
We are excited about uncovering important insights for protecting herons and egrets and the lands they rely on, as climate and human land use patterns shift. ■



Clockwise from top left: GPS data points and flight direction recorded for one of the Great Egrets foraging near Toms Point, Tamales Bay; nesting activity, from ACR photo archives; Director of Conservation Science Dr. John Kelly and Dr. Alan Maccarone hold a Great Egret while Avian Ecologist Scott Jennings and Dr. John Brzorad record the length of the bird's upper mandible, or culmen; movement recorded from GREG 3, one of our tagged Great Egrets, during a single overnight flight from Tamales Bay to the Sierra Nevada foothills; a Great Egret carries nesting material; view of the solar-powered GPS backpack worn by a Great Egret; several herons and egrets attracted to the decoys and live-bait basin of our trapping setup.

Follow project developments at <https://egret.org/heron-egret-telemetry-project>





## A Mysterious 98-mile Night Flight

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 Lodi.

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>

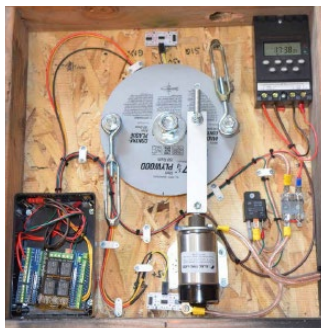


*“One of the most unusual projects currently being undertaken.”*

*- David Farish, manager, 180 Studios, in interview with North Bay Business Journal*



*Top: Neil Martin and Quinton Martins (in the cage) make adjustments to the sensor panel. Clockwise below: an early version of the actuator mechanism; mountain lion P1 successfully captured in new cage; Kim Bishop, a mechanical R&D engineer at Keysight Technologies, contributed to the design of the doors and then fabricated them at 180 Studios.*



## INNOVATIONS IN CONSERVATION SCIENCE

### Tech & Maker Communities Partner on New Traps

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>



## MOUNTAIN LION PROJECT

# P1, Sonoma's Engaging Supermom



Jeanne Wirka,  
Director of Stewardship

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

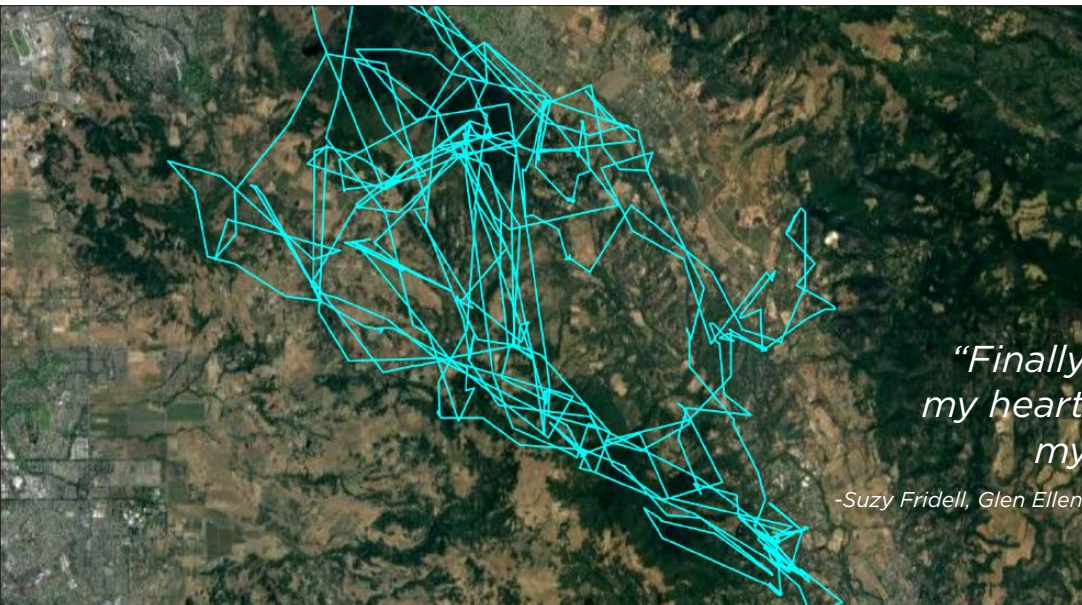
P1 and her kin are also padding their way into the hearts of local youth, through a new experiential classroom visit developed and pioneered last spring by Bouverie docents Elizabeth Martins and Sarah Zainfield.

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. ■

Clockwise from below left: P1's latest brood of kittens, April 2017 (photo: Jim Codington); One of the two surviving kittens, July 2017; Quinton Martins releases P2, the adult female offspring of P1, after her collaring, November 2016 (photo: Jim Codington). At bottom: P1's movements as recorded over a four-month period in early 2017. Inset photo: P1 captured by our wildlife camera, March 2016.



Follow the Mountain Lion Project at <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*





*"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."*

*- Jerry Bourne*

## CLERIN ZUMWALT LEGACY CIRCLE

# Bourne Legacy Comes Full Circle at ACR

*By Jeff Woods, ACR legacy giving expert*

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."



*Forward-thinking donors Jerry and Lynnette Bourne*

### 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](mailto: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.



© David Pérez (DPC)

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

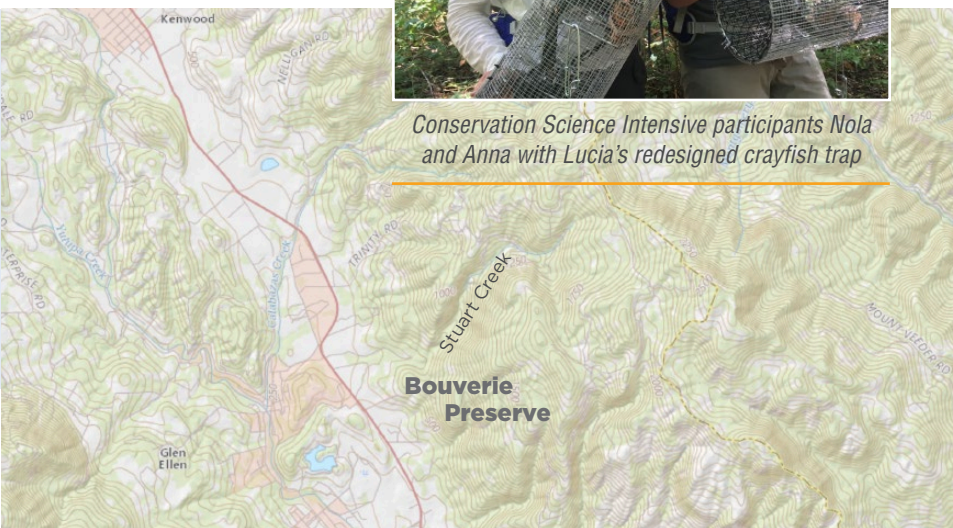
Trapping signal crayfish in Stuart Creek was a highlight of the Intensive. After receiving some background and field training, each participant chose a location to set her own trap. Twenty-four hours later we had 25 captive invasive crayfish.

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? ■



Conservation Science Intensive participants Nola and Anna with Lucia's redesigned crayfish trap



## Women in Science

### American women in science & engineering

- earn 50% of degrees
- hold 28% of jobs

### American women in conservation science

- hold 20% of jobs

### Women at Audubon Canyon Ranch

- hold 8 of 12 conservation science jobs!

## 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







## VOLUNTEER SPOTLIGHT

# Bioblitz Creates Modini Mayacamas Buzz



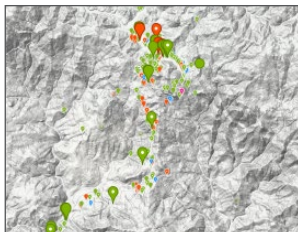
This May a group of 16 entomology enthusiasts spent a day documenting insects. The event was part of our iNaturalist project, Biodiversity of the Modini Mayacamas.

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.

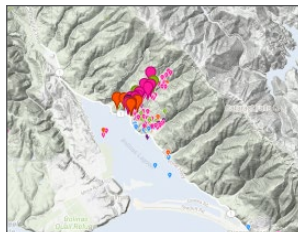
We snapped photos of butterflies, day-flying moths, scorpions, spiders, beetles, flower flies, dragonflies, a pond turtle, native bees, wildflowers and more.

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. ■

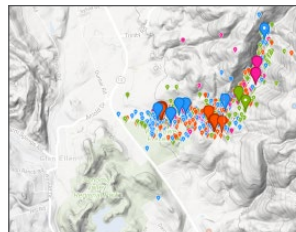
Browse and contribute to ACR's flora and fauna catalogs of each of the preserves at iNaturalist.org. Enter the preserve name in the search bar under the 'Projects' tab.



Modini Mayacamas Preserves



Martin Griffin Preserve



Bouverie Preserve

*A variety of species have been observed on ACR preserves and logged by iNaturalist app users.*

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*Martin Griffin Preserve (MGP)  
Bouverie Preserve (BP)  
Cypress Grove Research Center (CGRC)  
Modini Mayacamas Preserves (MMP)*



GET OUTDOORS!

## Modini Mayacamas Preserves

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

Registration required for all events: [www.egret.org/calendar](http://www.egret.org/calendar)

Member / Student: \$15, Non-member: \$20, Free for children under age 18



### 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 ~ 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 23



### 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



APPRECIATE!

## 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.

GET INVOLVED!

## Modini Mayacamas Preserves

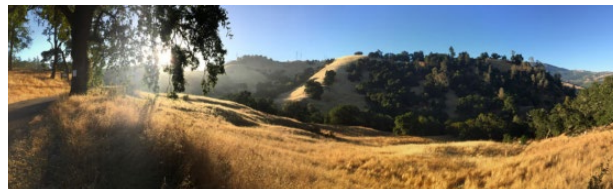


### Habitat Protection & Restoration Stewards

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](mailto:julianne.bradbury@egret.org) or 707.433.1217



GUEST LECTURES BY ACR STAFF

## 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)

## 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

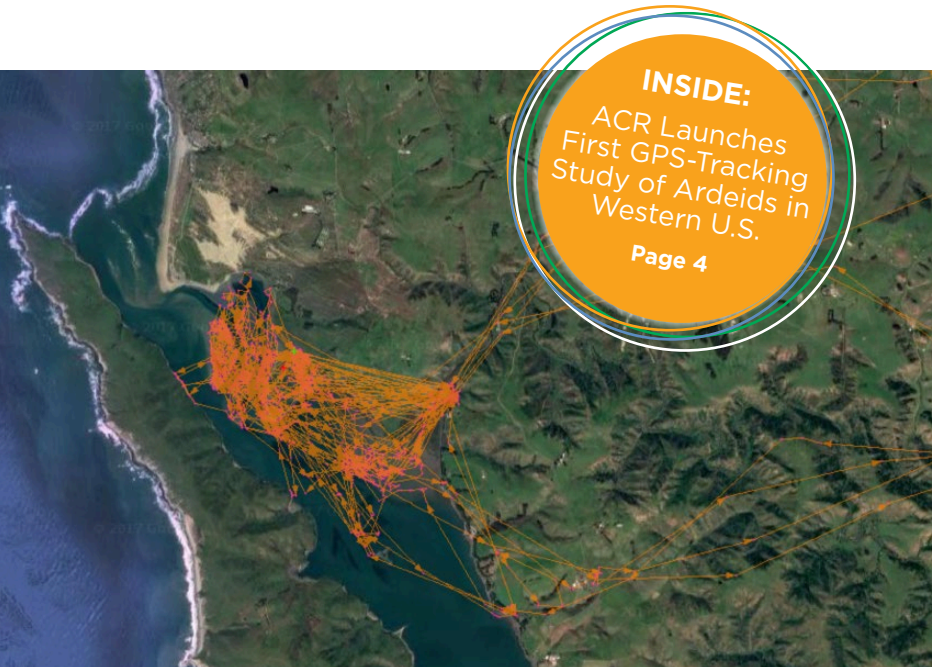
Join ACR's Fire Ecologist Dr. Sasha Berleman at the Bay Area Climate Literacy Impact Collaborative's Local Climate Science & Education Series, where Dr. Berleman will be a panelist. The workshop series convenes the Bay Area's science and education communities to explore current research on extreme climate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





## Our Mission

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



## Visit Us

Martin Griffin Preserve  
Sweeping coastal views in West Marin

Bouverie Preserve  
Woodlands in the Valley of the Moon

Modini Mayacamas Preserves  
Wilderness in the Mayacamas Mountains

ACR Conservation Center  
Garden and gallery near the Healdsburg Plaza

### By appointment only

Cypress Grove Research Center  
Call 415.663.8203 to schedule

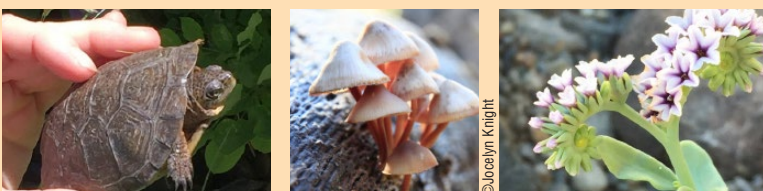
## NEW!

## 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.



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