

Conservation in Action

Spring 2024



A Great Egret (*Ardea alba*) and chicks. Photo: Mike Baird

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herons and egrets launch
the next generation



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crucial to watershed health

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Lifelong love of the outdoors
motivates a couple in their
estate planning

Why we believe in “forever stewardship”

Humans are the single most influential agent of change on Earth, causing substantial impacts on climate, geology, and ecosystems. Indeed, there is not a place on our planet that has not been touched by climate change. The consequences of this are a planet with imperiled species and ecosystems and the need for humans to be careful stewards.

Conservation reliance is a term that acknowledges that many species and ecosystems will need help indefinitely to continue to persist. In fact, most federally threatened and endangered species (fully 84%) are conservation-reliant because they will require some ongoing human intervention to survive and even non-listed species have a high degree of conservation reliance. These interventions are variable in type and intensity but include, for example, invasive species control, prescribed fire, and water management.

While this fact may be disheartening, it is reality, and society needs to embrace conservation reliance now. Doing so can help us move beyond the false hope that land and water protection alone is enough and onto dedicating time, talent, and funding to ongoing stewardship. Conservation without stewardship is an incomplete investment.

At Audubon Canyon Ranch, we are embracing “forever stewardship” and we see it not as a burden but as an honor, privilege, and our responsibility. How fortunate are we to get to care for streams, soils, sagebrush, snails, spiders, snakes, salamanders, and so much more?

We are working every day with our partners to care for a world that sorely needs our help. Thank you for your support and for all you do.



Tom Gardali, CEO

egret.org

Join us for hikes,
tours, and volunteer
opportunities!

egret.org/event-calendar →

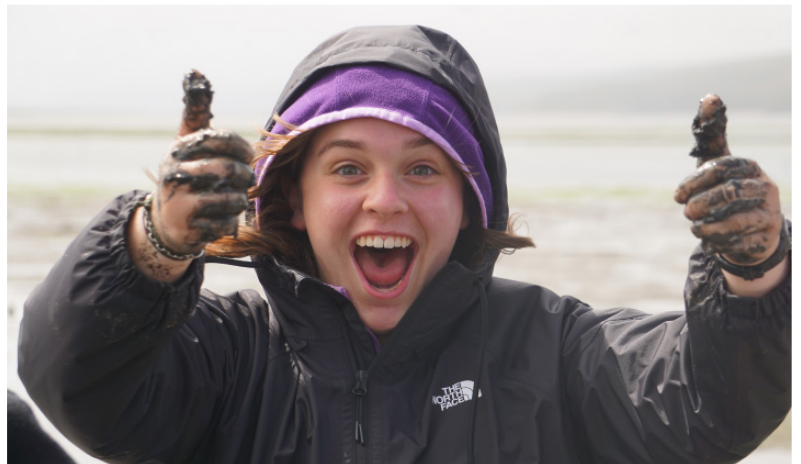


Photo: Paige Green



Local populations of White-crowned Sparrows have declined as much as 85% in areas of coastal prairie and scrubland overtaken by Douglas fir. Will we see the return of this species and others as coastal prairie gains ground at Martin Griffin Preserve? Photo: Nils Warnock

Artificial intelligence in action: Unveiling Sonoma's wildlife

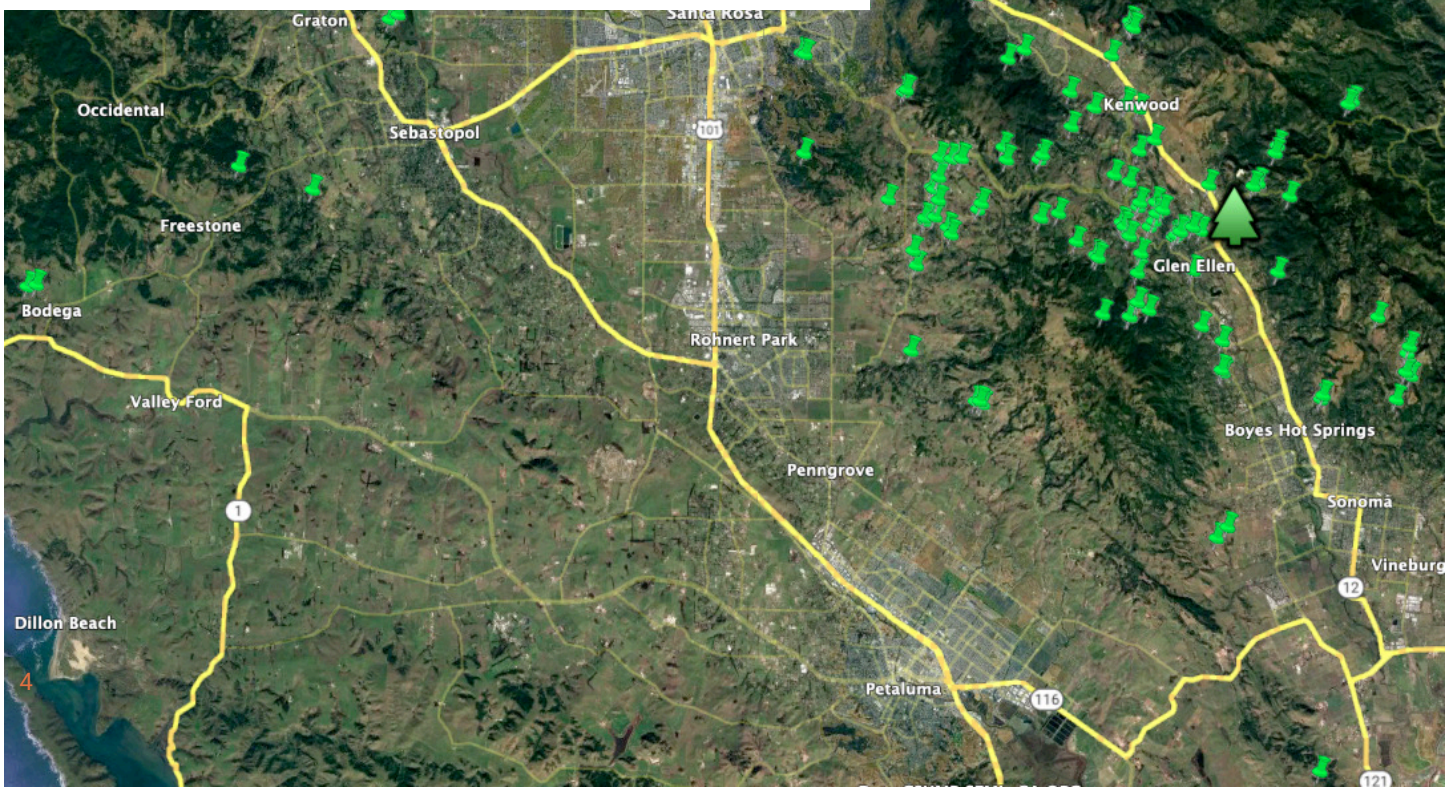
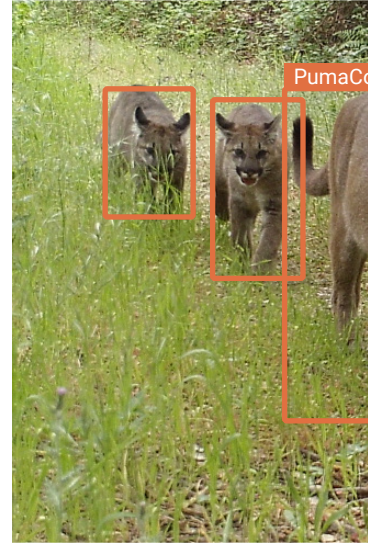
by Katie Rogers, Communications Specialist

Sonoma County is home to a rich tapestry of wildlife amidst its human-dominated landscape. Since 2018, Audubon Canyon Ranch has been on a mission to better understand this ecosystem via the Living with Lions Trail Camera Project.

With over four million clicks of trail cameras, capturing critters ranging from black bears to quail families to mountain lions, the project has amassed an extensive visual catalog of the region's fauna.

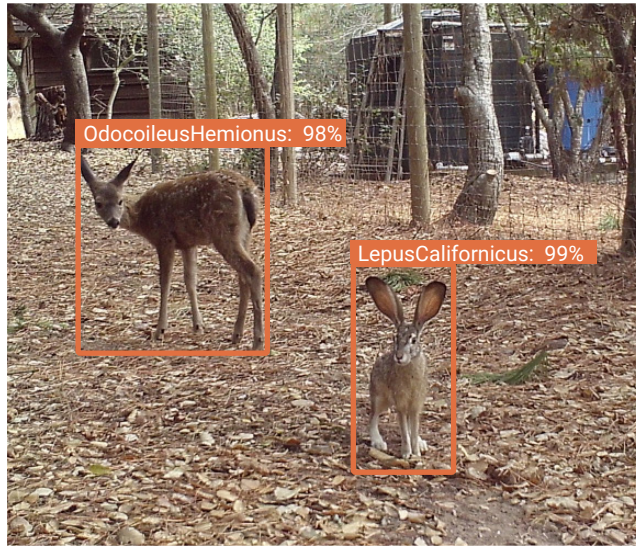
Too much of a good thing?

Yet, amidst this trove of images is a challenge: analyzing and categorizing such a vast dataset. Initially launched with a handful of cameras, the Trail Camera Project rapidly expanded to over 140 cameras across Sonoma County by the end of 2023. The number of images quickly became a project management nightmare, requiring enormous amounts of time and costly storage space to record and classify each species from the collection of images. "The lack of analysis means that we're potentially missing something



Map showing trail camera placements in Sonoma County by Kate Remsen.

Hundreds of trail cameras placed in backyards and back country areas of Sonoma County have documented a range of oft-seen and elusive wildlife. An AI program rapidly identifies animals, helping to build a dataset.



important and simply sitting on this valuable mountain of data,” said Project Coordinator Kate Remsen, highlighting the common challenge in conservation science termed “data deluge.”

New AI tools for identification and analysis

Conservation AI, an effort spearheaded by experts from Liverpool John Moores University, came to the rescue. Leveraging machine learning, Conservation AI offers automatic classification of images collected from various sources, including camera traps and drones. For our Trail Camera Project, this partnership is a game-changer.

“Conservation AI is helping us in two big ways,” says Nils Warnock, director of conservation science at Audubon Canyon Ranch. “It’s compressing file size without losing resolution to save valuable hard drive space and using computer learning to identify the animals in the images with 90% accuracy. Combined with Microsoft’s Power BI, we are aiming to cohesively analyze the data collected over the past five years and provide detailed reports.”

3.5 million images and counting

So far, the Trail Camera Project team has uploaded 3.5 million images to Conservation AI and 1.98 million objects have been detected. A mutually beneficial relationship has emerged: data from the Sonoma trail cameras are helping to train the Conservation AI program to identify North American mammals, and as the AI gets better at recognizing the animals of this region, the Trail Camera Project scientists get more accurate data. Carl Chalmers, lead researcher at Conservation AI, describes the partnership as “a great example of how two disciplines can work together to help save biodiversity.”

Revealing cues to ecosystem health

“Zooming out, these new data will help us understand patterns of biodiversity across the whole landscape,” says Scott Jennings, an Audubon Canyon Ranch ecologist, “so that we can better understand what contributes to healthy ecosystems.”

Read the full story at egret.org/unveiling-wildlife →

Entangled coastal grassland

by Erika Lutz, Prescribed Fire Information Coordinator

Stewardship activities since 2019 at Martin Griffin Preserve aim to restore dwindling grasslands crucial to watershed health and fire resilience.

“The landscape around us is telling us a story — what species are there, how old they are, and the composition of the community. It tells a story of thousands of years of Indigenous burning and a century-long absence of burning; of logging and grazing; and of a conservation group that bought the land and then left it alone, believing it would heal itself.

“The coastal prairie at Martin Griffin Preserve is a result of what’s happened. We’re seeing elements of the past in the composition of plants that are there now that’s different from before. Even when they’re California native trees and shrubs, they’re competing with each other in a way that displaces an entire grassland ecosystem and everything that depends on it. There

are shadows of these things across the landscape, and now they’re growing together in a confusing tangle.

“As an ecologist you look at the tangle and see the mess of past and present. Contained in that tangle is the future — a future that depends on a mosaic of highly adaptive biodiversity and heterogeneity that leads to resilience in plants, animals, and humans. We’re spotting these parts that are still there, buried in the tangle, that we can nurture. We’re starting with these parts first and revitalizing the processes that offer the best chance of survival. The way I see it, that begins with fire.”

— Brian Peterson, Fire Ecologist

Read the full story at egret.org/coastal-prairie →



Left: Death camas, a prolific bloomer after fire, appears in newly opened areas of the Bourne Ridge in early 2024. Below, a controlled burn at the edges of Douglas fir forest helps make room for coastal grasslands. Photo at left: Erika Lutz, below: Sashwa Burrous



“As an ecologist you look at the tangle and see the mess of past and present. Contained in that tangle is the future.”

— Brian Peterson, Fire Ecologist



Photo: Sasha Berelman

Coastal prairie restoration: A timeline

1952–2018

Coastal grasslands cede to Douglas fir forest on Martin Griffin Preserve near Stinson Beach, with Garden Club Ridge and Bourne Ridge losing an estimated 91.5% of coastal grassland since 1952.

2019

Audubon Canyon Ranch staff, local fire agencies, and Good Fire Alliance volunteers conduct a prescribed burn within stands of Douglas fir on the Bourne Ridge, the first burn at Martin Griffin Preserve in over 100 years.

2022

The Forestry and Fire Recruitment Program, an organization that supports formerly incarcerated wildland firefighters in transitioning professionally to the fire labor force, assist with coastal grassland restoration.

2023

Restoration continued to revitalize coastal prairie, making ample sunlight available to grasses and wildflowers. Pile burns returned nutrients to the soil to prepare the ground for native grass seeding.

2024

Grasses and wildflowers return to Bourne Ridge. Seen at right, teens in our Conservation Science Intensive meet in restored grassland to discuss youth leadership on environmental issues.



Photo: Erika Lutz



Photo: Paige Green



90,290 volunteer hours, 73,250 active nests monitored, 33 years of the Heron and Egret Project

by Emiko Condeso, Ecologist / GIS Specialist

“It takes a community,” is a phrase so often heard in the nonprofit world, that it starts to lose its meaning. But when the task was monitoring every known heron and egret nesting attempt in five counties for over thirty years, the job literally couldn’t get done without the help of a large and dedicated community of volunteers and partners like those who were at the heart of the Heron and Egret Project.

Observing and learning together

The Project was started in 1991 to gather, analyze, and share data on the status of nesting herons and egrets in the Bay Area as a means to protect them and their habitats. Also significant was the goal to increase scientific literacy and connection to the natural world by engaging volunteers in making observations that contributed directly to conservation.

North Bay populations remain stable with a few exceptions

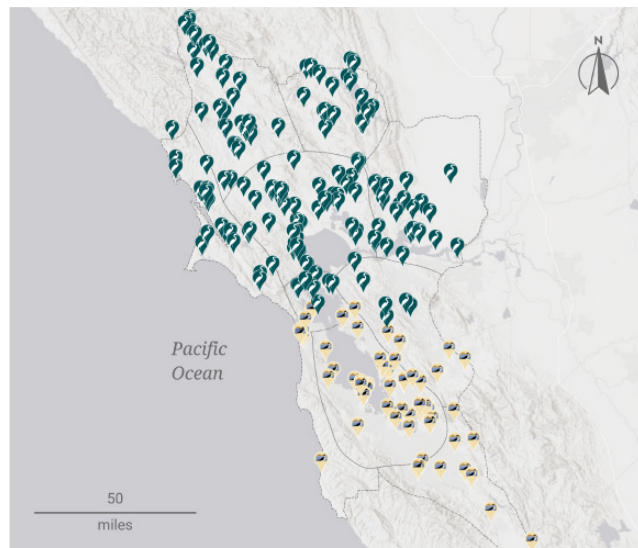
The North Bay, where the Heron and Egret Project was focused, is home to extensive freshwater and tidal wetlands that support around 50 active nesting sites a year.

We found that over the time span of the project, the number of Great Blue Heron and Great Egret nests in this region was relatively stable, which is encouraging given the increase in human population growth and the birds’ sensitivity to human disturbance.

However, Black-crowned Night-Heron and Snowy Egret trends were less clear, with declines suggesting that further study and conservation efforts may be needed to protect these species.



Photo: Kate Remsen



Map: Emiko Condeso



Left: Volunteers are critical to the success of the nest monitoring project. Center: a map of egret and heron nesting sites historically monitored by Audubon Canyon Ranch (dark teal pins) and San Francisco Bay Bird Observatory (yellow pins). Right: Black-crowned Night-Herons have seen some decline in nest abundance over the course of the study, while Great Egrets (opposite) have remained relatively stable.



Project continues under management of San Francisco Bay Bird Observatory

In this time of ever-increasing conservation challenges, it has never been more important to engage in new partnerships and strengthen existing ones. In that spirit, we invited our long-time collaborator, the San Francisco Bay Bird Observatory (SFBBO) to lead the project beginning with the 2024 nesting season. SFBBO, with their long history of monitoring colonial waterbirds in the South Bay, was well suited to take the helm.

While it was a difficult decision to let go of managing a project that was so deeply connected to Audubon Canyon Ranch's lands and history, this change was both strategic and energizing. The impact of the Heron and Egret Project will continue, with the added benefit of all San Francisco Bay Area heronry monitoring now under one organizational roof. Many Audubon Canyon Ranch volunteers and staff continue to make observations under the direction of SFBBO.

Added capacity to support regional conservation goals

Most importantly, a new home for the project frees up our capacity to meet new challenges, including the Science for Stewardship goals defined in our strategic plan — supporting resilient ecosystems while deepening our relationship to the lands we steward.

Explore the interactive map at egret.org/HEP-capstone →



Photo: Len Blumin

Supporting the Mission

Phil and Kathy Carlsen: Giving to ensure a sustainable and resilient future

by Jeff Woods, Planned Giving Coach Consulting

Motivated by a lifelong love of the outdoors, Phil and Kathy Carlsen are deeply invested in environmental conservation. When they were introduced to Audubon Canyon Ranch in the mid-90s by a friend who was volunteering for the organization, they wanted to learn more. Their involvement began, simply, with outings to preserves in West Marin and Sonoma Valley.

Service and science motivate the Carlsens

Phil remembers, “It’s not a very complicated story,” yet their path from casual involvement to dedicated volunteering reflects a shared desire to help others foster meaningful connections to nature. “Audubon Canyon Ranch makes the world a better place by helping people understand how humankind fits into the big scientific puzzle,” he says.

Phil’s experience as an education docent and his service as president and treasurer of the Board of Directors has given them a deep understanding of the challenges — and opportunities — in the conservation realm.

A diversity of solutions for now and the future

The Fire Forward program especially resonates with Phil and Kathy. Through this program, the organization trains and supports property owners, land managers, and others to safely use ‘good fire’ to restore the health of the land and buffer neighborhoods against the effects of wildfire.

“We live in Santa Rosa, so we really know what wildfires are,” they share.

Increasingly, good fire also means good jobs that sustain North Bay families —



Having experienced recent wildfires, the Fire Forward program especially resonates with Phil and Kathy Carlsen. Photo: Sasha Berleman

Maidenhair fern photo by Phil.



something equally important to the Carlsens. “The work Audubon Canyon Ranch is doing with fire is one of our best hopes to get a handle on Northern California’s wildfire challenges,” Phil says.

Encouraging others to make a personal stake in conservation work

Phil and Kathryn’s decision to include Audubon Canyon Ranch in their estate planning – by naming the organization as a beneficiary of Phil’s IRA – stems from their belief in its mission and desire to support its future.

“I want this organization to be around in fifty years,” Phil explains. Kathy emphasizes the personal significance of its work. “Both my parents were educated in the sciences, and I grew up outdoors. It has always been important to me that our children and grandchildren have an appreciation for that, too,” she says.



Photo: Michelle Cooper

Estate gifts to Audubon Canyon Ranch are directed to the organization’s endowment. “The funds are designed to operate in perpetuity, so future generations benefit from the resources,” explains Todd Au of Graystone Consulting, institutional consultants specializing in helping nonprofits incorporate impact investment strategies aligned with mission.

Estate planning is easier than you think

For Phil and Kathy Carlsen, giving to Audubon Canyon Ranch through the Clerin Zumwalt Legacy Circle is an investment in realizing a sustainable and resilient future. “It’s really no more complicated than filling out a form.”

Naming a charity as the beneficiary of your IRA is one of the easiest ways to support a favorite charity through your estate plan. For more information, contact Director of Philanthropy Jen Newman at jen.newman@egret.org or 415-868-9244 ext.119.

Learn more about the Clerin Zumwalt Legacy Circle at egret.org/legacy-giving →



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Trail Camera Project

Eager to play a role in conservation science and protect biodiversity? *Consider sponsoring a trail camera.*

The Living with Lions Trail Camera Project collects visual data of mountain lions and other wildlife from trail cameras placed on properties throughout the North Bay, aiding in our understanding of overall wildlife densities and distribution in the region.

Details at egret.org/trail-camera-network →

INSIDE: See how AI learning is helping us identify wildlife among the more than 4 million photos received so far!

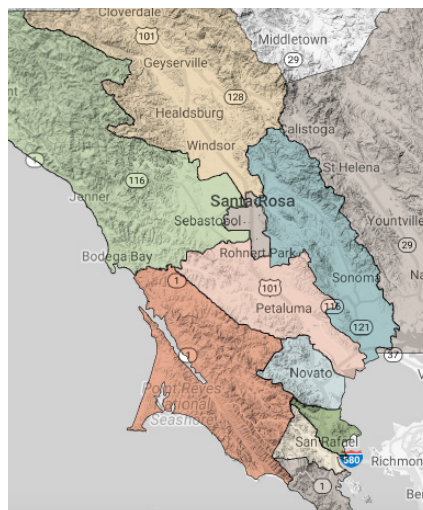
New Resource

Prescribed fire notifications

Sharing information with you about our prescribed fire activities and smoke is important to us. While some smoke is released from prescribed burning, the burns we conduct have many measures in place to minimize exposure to our surrounding communities.

We offer several ways to stay informed about prescribed burning happening near you.

Learn more at egret.org/smoke-alert →



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