

Biodiversity: The Laguna's Great Gift

By Kevin Munroe, Executive Director

We're living in a time when biodiversity, "the variability and variety of living organisms" is threatened on a global scale. Due to habitat destruction, invasive exotics, and climate change, the Earth's magical parade of life is under threat just about everywhere. But there is inspiring and real cause for hope; life-changing and life-affirming hope, something we could all use!

Although species extinctions are occurring at an accelerated rate and ecosystem functions are under multiple stressors, there are also many success stories, both near and far: the once extirpated California wolverine has re-appeared at several sites in our high Sierras, the California condor is

breeding again in Big Sur, and an elementary school class in Arlington, Virginia re-discovered a ladybeetle species thought extinct. Right here in our backyards, the Laguna Foundation is working with private and public landowners to restore state-endangered wildflowers to our vernal pools. Our riparian restoration projects provide increased habitat for endemic species like the California newt, habitat specialists like the Nuttall's woodpecker, and locally rare species like the red-legged frog. The water-quality improvements we've spent thirty years bringing

to fruition bring more otters, more kingfishers and even uncommon dragonfly species like the Walker's darner back to our Laguna watershed.

Perhaps the most life-filled, resilient chunk of earth on the planet is a handful of wetland mud. Freshwater marshes are often described as the most biodiverse habitat in existence and the fecund mud they spring from is second

only to the ocean as a nursery of life. There's a reason the Laguna de Santa Rosa's 254-square-mile watershed and its winter wetlands of over 30,000 acres have been designated a Wetland of International Importance; we're living in a biodiversity reservoir.



Please work with us for another thirty years to conserve and restore our Laguna de Santa Rosa's internationally recognized biodiversity!

Image: "Laguna Wildlife" by Molly Eckler can be purchased from our gift shop online or in person. Funds from the sale of the poster go directly to our mission to restore, conserve, and inspire public appreciation for the Laguna - a biological hotspot!



Banded Alder Borer Beetle. Photo by Sherburn Sanborn.

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Message from the ED

By Kevin Munroe, *Executive Director*



Why does biodiversity matter to us? Although we can all agree that a healthy environment is important, it's sometimes a challenge to explain *why*. Especially when it comes to a concept like biodiversity; how does it actually affect our lives, and why does it matter? The answer is actually quite simple at its core: ecosystems are more resilient and better able to respond to stressors if they hold a diversity of organisms, i.e. a larger palette of organisms is more adaptable than a smaller, more rigid palette. And, since humans depend on healthy ecosystems for our food, economy, and general health, biodiversity is essential to human society.

Think of how important pollinators are to our food crops, fish to our economy, and forests to healthy air and soil. If the ecosystems that support pollinators, fish, and trees maintain high levels of biodiversity, they are better able to adapt to extreme weather like fires and floods, or human-caused stressors such as habitat destruction and invasive exotics. This means they're more likely to continue providing us with what we need: food, economy, etc. I believe that Nature is valuable and worthy of conservation simply because it exists; but, we should also remember that it also allows us to breathe, eat, drink, and live.



Brodiaea elegans. Photo by Reny Parker. www.renyswildflowers.com.

Nature's Corner: Layers of Biodiversity

By Sarah Gordon

Conservation Science Program Manager

What do serpentine chaparral, redwood groves, cattail marshes, blue oak woodland, and willow copses all have in common? These diverse habitats, and many others, all occur within the Laguna watershed. From the windy peaks of the Mayacamas mountains to the mucky bottom of vernal pools on the Santa Rosa Plain, the watershed supports astonishing plant biodiversity. Nearly 1,200 California native plants make their home here – and 460 non-native plants really like it, too! The watershed hosts 100's of grass species, 20 species of ferns, but only a single member of the Laurel family: the California bay tree.

The iconic oak represents diversity from many angles: ten different native oaks (*Quercus sp.*) occur within the watershed (can you name them all?) A single oak itself is an ambassador of biodiversity by providing habitat on it's own form for an astonishing number of different species.

As a botanist, this level of diversity can actually be intimidating! Last spring, my mission was to see all the different *Brodiaea* species, this year I'd like to find the elusive *Legenere limosa*. I invite you to explore the diversity within the Laguna watershed, and tell us what you find.

Spring 2019 Walks, Talks, and Classes!

The Laguna Community Education Program brings regional specialists and experts to Heron Hall and watershed trails to spark our enthusiasm, caring, creativity, and curious mind. We invite you to attend an upcoming art workshop, nature talk or trail excursion to broaden your appreciation for our home environment and for the joy of the experience.

UPCOMING EVENTS

Pre-registration is required for all events unless otherwise noted.

Events take place, or begin at the Laguna Environmental Center, 900 Sanford Road, Santa Rosa, CA 95401.

Birds of the Laguna de Santa Rosa

Presentation by Denise Cadman

Tuesday, April 9, 6:00-8:30 pm. \$14

Side by Side with Wild Neighbors: The *Living with Mountain Lions* Project

Presentation by Audubon Canyon Ranch Wildlife Ecologist, Dr. Quinton Martins

Thursday, April 11, 7:00-8:30pm. \$14

Big Brush Watercolor Painting

Workshop with Donna DeLaBriandais

Saturday, April 27, 9:30am-3:00pm. \$90

Getting to Know Wetland Birds

Presentation and Walk with Lisa Hug

Sunday, April 28, 8:30am-1:00pm. \$55

Eco-Friendly Garden Tour: Open House & Plant Sale

Saturday, May 4, 10:00am-4:00pm. Plant sale ends at 2:00pm.

Registration required through SavingWaterPartnership.org

Sunset Vernal Pools Botanical Field Trip

Presentation and Walk with Sarah Gordon

Thursday, May 9, 5:30pm-8:30pm. \$35

Motherhood and Nesting Exploration

Bird Walk with Lisa Hug

Saturday, May 11, 8:30am-1:00pm. \$55

Taking Great Photos with Your iPhone/Smartphone

Workshop with Susan and Neil Silverman

Saturday, May 18, 9:00am-4:00pm. \$105

Coloring the Summer Garden

Colored Pencil Techniques Workshop with Nina Antze

Saturday, June 29, 10:00am-3:00pm. \$95

For information on these or any of our events, contact:

Allison Titus, Community Education Program Manager

(707) 527-9277 xt. 110 or allison@lagunafoundation.org

HERON HALL ART GALLERY



CURRENT EXHIBIT:

"California's Wild Gold"

Mixed Media Nature Tapestries by Faith Rumm

On display through April 29, 2019

Artist Faith Rumm specializes in interpretive exhibits for parks and protected areas. These large collaged tapestries are a joyful celebration of the abundance of life and biodiversity found in California. They invite the viewer to enjoy the proliferation of life and also to reflect upon the true nature and meaning of 'wealth.'

Visit her online at: FaithRumm.com

UPCOMING EXHIBIT:

"Into The Fold" Oil and Acrylic Paintings by Angela Zocco Sturr

May 4 – August 27, 2019

Opening reception: Sunday, May 19, 2019, 3:00–5:00pm

The Heron Hall Art Gallery is open to the public Monday through Friday, 9am – 5pm. Because of the various uses of the hall, **please call in advance** to ensure the exhibit is available for public viewing of the art, 707-527-9277, ext. 107. The Heron Hall Art Gallery exhibits multiple shows per year of nature-themed art. Art sales support conservation and education in the Laguna watershed.

Hessel Creek Restoration: The Return of Native Diversity

By Wendy Trowbridge, Director of Restoration and Conservation Science Programs



Before



After

(Left) Riparian forests along the Laguna are losing their diverse native understory to Himalayan blackberry. Our work at Hessel Creek will help reverse this process. (Right) After removing the blackberry, we planted over nine thousand native plants to help reestablish native plant and animal biodiversity. We will continue to monitor this site over the next 9 years.

The restoration department is working on a new project on Hessel Creek near the intersection of Llano Road and Highway 116. This project is different from our recent projects in that it focuses on a riparian corridor that already had mature trees. It is a beautiful site near the Laguna surrounded by vernal pools, but Himalayan blackberry (*Rubus armeniacus*) had completely taken over the understory.

This is a common situation in the Laguna Watershed. The last remaining riparian forests are losing their diverse native understory to an impenetrable thicket of blackberry. You can see this in Sebastopol's Laguna Wetlands Preserve where the remnant riparian forest along the Joe Rodota trail, is buried under blackberry brambles. While blackberries do provide food and cover for wildlife the uniformity of this habitat limits its usefulness.

At Hessel Creek, we have reversed this process by removing 5 acres of blackberry and planting a diverse mix of native shrubs, grasses, rushes, and sedges. We replaced one dominant species with 20 native species, increasing not only the species diversity but also the structural diversity by mixing large shrubs and low growing grasses. This approach provides a variety of different habitat types to bring back a diverse mix of wildlife.

Blackberry can be aggressive so at Hessel Creek we got a head start cutting down the tops in the fall of 2017 and then removing the resprouts so that by the fall of 2018 we had a relatively "clean slate." We planted 1,528 trees and shrubs, 8,000 small grasses, sedges, and rushes, and seeded native grass. For the next 9 years we will carefully monitor the site to make sure that the native plants are established and able to resist reinvasion.

GET INVOLVED! VOLUNTEER OPPORTUNITIES



Native Plant Garden Volunteer Days

First Friday of the month, 9am – Noon

Upcoming Dates: (Break July – August) April 5, May 3, June 7, 2019

Location: Laguna Environmental Center, 900 Sanford Road, Santa Rosa, CA

Laguna Stewardship Days

Once a month on a Saturday, 9am – Noon

Upcoming Dates: (Break June – August) April 6, May 11, 2019

Details and location announced 1-2 weeks in advance of the workday.

All ages and abilities welcome. No experience necessary. Training and tools provided, plus abundant and hearty snacks! Wear clothes and shoes that can get dirty. RSVP only if you are planning on bringing a group of 5+ people. Only heavy rain cancels.



"Wetlands" by Faith Rumm.

Every Picture Tells a Story

By Christine Fontaine, Director of Education Programs

Hundreds of second, third, and fourth graders get to interact with the above image each school year. This enchanting representation of Laguna biodiversity awakens their curiosity toward our *Wetlands!* activity, one of the key components of the *Learning Laguna* classroom visit. Docents ask students to look closely and describe what they see. "Lots of life!" Right away students make the connection between the natural resources of the Laguna and their importance in supporting wildlife. The activity progresses as students pass around examples of shelter and food available at the wetland like plants, cattail fluff, seeds, and insects. Students then get to squirt water on two landform models, one with an example of a wetland and one without, to see for themselves how wetland plants filter run-off and trap sediment from the land.

The in-class learning at the *Wetlands!* activity continues on the Learning Laguna field trip. Docents draw water from the Laguna and set-up the Aquatic Station. The children use magnifiers to examine tiny aquatic critters while docents pose meaningful questions that prompt

students to think about adaptations that are needed to live in the water, along with a series of "Who might eat *that?*" food web questions that spark discussion. Then, docents roll out the big question: "What would happen if there was no life in the water?" "No food for *any* wildlife!" Through this learning process the students quickly see that nature and all its creatures create a complex, interrelated system, and biodiversity is needed for the system to survive and thrive.

The *Learning Laguna Wetlands!* and *Aquatic* activities work together to illustrate complex ideas including some of the top reasons for caring about biodiversity, and the importance of healthy creeks and a healthy Laguna. Our discussions about adaptations, plants, and animal behavior that spring from the *Aquatics* station and all our other *Learning Laguna* activities are mind-expanding and interesting, sparking appreciation for Laguna ecosystem. Eye-opening discoveries like these can occur every time we step outside. And, they can start simply through gazing at a thrilling picture that provokes a closer look.



Laguna Explorers: Camp Tule is the perfect camp to encourage children to explore, make new friends, while having a bit of special summer fun and taking delight in the wonders of the natural world!

The Laguna Environmental Center (LEC) is a magical place for fun, exploring, and learning about our local environment. Children ages 6-9 are welcome to join us in a week at Camp Tule, where days are filled with nature hikes, art, stewardship, and lots of joy!

Session 1: July 8–12 | Session 2: July 22–26 | Session 3: August 5–9

\$250 per camper. Scholarships Available!

Questions? Contact Camp Director, Christine Fontaine
at christine@lagunafoundation.org or (707) 527-9277 ext. 102

**Register
Today!**



Groups Making a Difference in Their Own Watershed

By Maggie Hart, Outreach Manager

Throughout the year, the Laguna Foundation hosts a variety of service projects for corporate groups, community organizations, youth groups, and schools. We've got something for everyone—from Laguna cleanups, to habitat restoration, native plant nursery, landscaping, trail work and event support. Volunteers take a break from their routine, get outside, and make a difference in their own watershed!



We had the pleasure of working with these diverse groups in the past year: Boy Scouts, California Native Plant Society, Cardinal Newman High School, Drew School, Exchange Bank, Guayakí, Jackson Family Wines, KFGY "Froggy 92.9", Newell Brands (Marmot and ExOfficio), Rotary Club of Sebastopol Noon, Rotary Club of Santa Rosa, Rotary Interact Clubs from Brook Haven Middle School and Twin Hills Middle School, Sonic Internet and Phone Service Provider, Santa Rosa Junior College, Sonoma County Youth Ecology Corps, Sonoma State University, Traditional Medicinals Tea Company, and WorldMark Windsor.

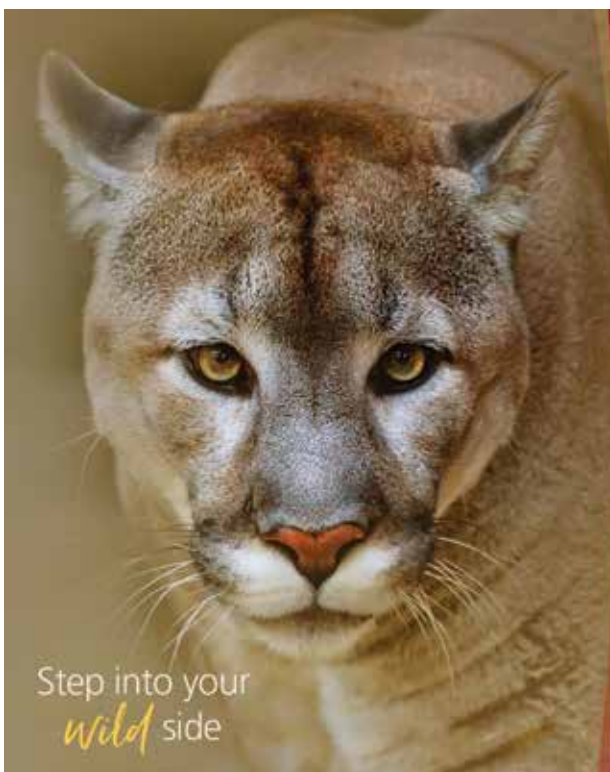
How Group Programs Work

No experience or commitment necessary. We provide all

Thanks to all the employees from Sonic and KFGY "Froggy 92.9" who joined us last September, we were able to collect more than 2,600 lbs of trash, and more than 80 lbs of recycling! This amounted to 5 pickup truck loads of trash. That is a lot of trash that will not be getting into the Laguna this year!

of the tools, training, and leadership. In return, groups get a great team-building experience, enjoy an energizing activity, and develop hands-on learning. Volunteering with the Laguna Foundation is the perfect way for your group to bond and enjoy a fun, active day outdoors with purpose!

Please email us at volunteer@lagunafoundation.org with the size of your group plus the dates you would like to volunteer. We will respond to you right away to let you know some suitable options. We look forward to working with your group!



Step into your
wild side

Wings, Wine & Wetlands

Sunday, June 9, 2019, 2pm

Celebrate what's *wild* in the Laguna! Meet Picasso the conservation goat, hop on a hayride to one of our largest conservation sites, and feast on local food, wines, and brews.

We hope you'll join us for a special presentation of our *Watershed Hero Award* to Vic and Karen Trione.

This is the Foundation's most important fundraiser and vital to the success of our mission to restore the Laguna. Become a sponsor and receive complimentary tickets.

Tickets: \$125 on sale now at LagunaFoundation.org.

For general information or to learn about sponsorship opportunities, contact us at (707) 527-9277 xt 106 or benefit@lagunafoundation.org.

Notes From the Field: The Benefits of Biodiversity

By Brent Reed, Ecological Program Manager

We often hear the question, how does the habitat restoration work of the Laguna de Santa Rosa Foundation benefit biodiversity? Simply, habitat restoration in the Laguna benefits biodiversity in two ways:

- **Species Diversity:** the number of different species in an area. Habitat restoration encourages the growth and repopulation of a greater number of different species of plants, animals, insects, reptiles, fungi, etc.
- **Genetic Diversity:** the diversity of genes with any given species. A larger pool of individuals within a given species in a given area means more chances to exchange genes through reproduction.

With habitat restoration our work begins at a location where biodiversity has been reduced as a result of land use changes that may have disrupted and diminished populations of native species. Many of the changes in the Laguna's watershed happened generations ago, with some of the most rapid changes occurring during the Gold Rush era as people settled into Sonoma County and began to clear the land to make way for crops and homesteads. Trees were also cut down for lumber and as a fuel source to heat homes, cook, and run industry.

The Laguna's watershed was once dominated by oak woodlands; where oaks are considered a 'keystone species' - a species on which other species in an ecosystem largely depend. Studies have shown how a single oak can provide food and shelter for a multitude

of insects, spiders, birds, mammals, reptiles, fungi, and other plant associates. Oak trees provide structure for perching, nesting, hiding and hunting. The leaves, wood, and acorns serve as food supplies for birds, insects, deer, and humans alike. There are other species of plants that need the shade that the oak provides to survive or lichens, mosses, and mistletoe that needs the structure of the branches upon which to grow. Then there are the other critters in the surrounding area that eat the critters that eat, nest, perch or hide in that oak tree!

The modern era of Habitat Restoration in the Laguna: In the last 30 years, the Laguna Foundation's habitat restoration program staff and volunteers have planted thousands of native oak trees, as well as other species of trees, shrubs and herbaceous plants on hundreds of acres. We did not just plant any oak seedlings that we could find. We collected seeds from a wide number of individual plants in the various microclimates and physical settings that we wished to begin restoration. We purposely grew plants that would not only survive but also thrive in different locations. Think of those oak trees down by the Laguna's channel that may be flooded for weeks on end in the winter versus oaks of the same species that are growing on a hillside that will never experience flooding. They may be the same species but they live under a completely different set of conditions. Each carries a slightly different set of genes that allow each to survive and further support biodiversity.



Mid 1990s



Today

(Left) Irwin Creek - At the start of restoration activities. The first steps included creating a fenced habitat buffer from the cows and start planting native species, such as Valley oaks. (Right) 20 years into restoration activities! The cows still graze in adjacent fields and provide dairy products, but a more diverse habitat now exists along the creek corridor.



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Find us on social media and stay connected with daily photos and announcements!

Founded in 1989, the Laguna Foundation is a place-based organization focused on the Laguna de Santa Rosa. We are a 501(c)3 non-profit organization with the mission to restore and conserve the Laguna de Santa Rosa, and to inspire public appreciation of this Wetland of International Importance. The Foundation conducts educational programs, implements conservation science and restoration projects, works with landowners and public agencies to protect and improve Laguna resources, and advocates for appropriately managed opportunities for the public to enjoy the Laguna.

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Juvenile Green heron (Butorides virescens). Photo courtesy of Steve Gibbs.

