

Brought to you by  
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# Grapevine



March, 2025

over 1000 subscribers

## ***What is the Grapevine?***

The *Grapevine* is a free monthly e-newsletter intended to help inform North Bay Area educators about science and environmental education resources, events, opportunities, etc. To receive the *Grapevine*, just send an email asking to be added to [mroa@sonic.net](mailto:mroa@sonic.net)

***Please share this information with whomever might be interested, and if you find out about something that should be shared among science and environmental educators, please let me know.***

***If you would like to have your event or other science or environmental education opportunity included in the Grapevine, send me an email with a short announcement that I can cut and paste. Send to: [mroa@sonic.net](mailto:mroa@sonic.net) Submissions are usually due on the 25th of the month. I plan to send the Grapevine the around the first of each month. (See Submission Due Date below.)***

**\*If you represent an organization and would like to write your own (short) description, that would be GREAT. If you offer opportunities for volunteering or citizen science, please be sure to note that.**

*To unsubscribe, just send me an e-mail asking to be dropped from the Grapevine list.*

***Past issues of the Grapevine are being archived at the North Bay Science Discovery website at:***

<https://www.northbayscience.org/grapevine>

## **Submissions Due:**

Submissions for the next *Grapevine* are due **March 27**. The next issue will include events through approximately **April 16**.

**Interested in a JOB? Have an opening to advertise?** See the JOBS section following the articles.

## **Other science and environmental education newsletters:**

**A great free science newsletter and calendar is “SciSchmooze.” Contact Kishore Hari at:**

[bayareascience@substack.com](mailto:bayareascience@substack.com)

## **National Environmental Education Foundation (NEEF)**

As its name implies, the National Environmental Education Foundation supports E.E. providers. They have a monthly newsletter in which they share information of interest to environmental educators. Sections include:

- **Educator Resources**
- **Grant Opportunities**: info on grants ranging from \$500 to \$50,000
- **Professional Development**:

You can sign up to receive the monthly NEEF newsletters at: <https://www.neefusa.org/ee-focus-newsletter-sign>

## **The North American Association for Environmental Education (NAAEE)**

also has a newsletter : eeNEWS. In addition to promoting NAAEE conferences and other things, it includes information on:

- **Learning** (Professional Development)
- **Opportunities** (Grants, Contests, Publishing)
- **Resources** (For Students and Educators)

They also have an “eePRO” program to help e.e. professionals network

For information or to subscribe, contact NAAEE at: [info@naaee.org](mailto:info@naaee.org)

**For other opportunities, check out: [sciencenearme.org](http://sciencenearme.org)**

## **Sharing...resources, information, opportunities**

### **STAND UP FOR SCIENCE**

There are a number of groups and organizations that are organizing to protest the anti-science steps being taken by the current administration in Washington. The ones that I've heard about generally use the name Stand Up for Science.

The actions are just getting planned and scheduled, so I won't try to tell you about them here. Many are planned for Friday, March 7, including one at the West Capitol Mall in Sacramento at noon.

I suggest that you periodically check Stand Up for Science to see what, if anything, is happening locally.

If I find out about any local actions, I'll send out an email to Grapevine subscribers. SO...

**IF YOU FIND OUT ABOUT ANY LOCAL ACTIONS, PLEASE LET ME KNOW SO THAT I CAN PASS THE INFORMATION ON.**

### **CLASSROOM TEACHER APPRECIATION at DISCOVERY DAY!**

I, and the others who organize the North Bay Science Discovery Day, appreciate all of you who help others learn about science and the environment. This year we will be showing our appreciation for classroom teachers by giving “goodie bags” to the first 25 classroom teachers to stop in at our new Classroom Teacher Appreciation booth in the Kraft building. The Goodie bags will contain gift certificates for classroom materials, passes for the Schulz and Children's museum, books, classroom STEM supplies and more.

## The 2025 North Bay Science Discovery Day is coming!

The 2025 Discovery Day is scheduled for March 8. As of today we have over 100 exhibitors signed up to provide well over 100 activities!

Please help spread the word. You can download flyers at:

<https://www.northbayscience.org/flyers>

We need **volunteers**. There are a variety of volunteer positions for adults, and high school students can help with setup, takedown, and can also work with exhibitors at their booths. I coordinate the **high school volunteers** and will be contacting high schools in the next couple of weeks, but feel free to contact me beforehand.

Hope to see you at the Fairgrounds on March 8!

**Note: parking for Discovery Day is FREE. But there's a dinosaur event at the Grace Pavilion, and people going to that are supposed to pay. So, if you go to Discovery Day, tell the parking attendant that you are there for Discovery Day and they should let you park for free.**

Contact me if you have any questions. Or check out the NBSDD website at

[www.northbayscience.org](http://www.northbayscience.org)

## Discovery Day on KOWS Radio!

Dr. Steven Worker is the chair of the Discovery Day organizing committee. On Friday, February 28, he was interviewed on the Laura's Living Room radio program on KOWS Radio, 92.5 FM. You can listen to his interview at the link below. His interview starts about 35 minutes in, but is preceded by several science-themed songs. Check out the audio, about 35-minutes in at:

<https://kows92-5.org/kows-shows/show/lauras-living-room/>

## Stewards of the Coast and Redwoods...

### Upcoming classes and more:

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#### Seal Watch Volunteer Training

Saturday, March 1, 2025

10:00 am - 12:00 pm

Learn how to support the safe viewing of harbor seals at the mouth of the Russian River

[More Info](#)

**Become a Volunteer Seabird Monitor**

Monday, March 3, 2025

6:00 pm - 7:30 pm

Learn how to become a Seabird Monitor. No experience necessary.

**More Info**

**Learn to read animal tracks and signs in beautiful Willow Creek**

Saturday, March 15, 2025

8:30 am - 12:30 pm

learn how to observe animals tracks and sign

**More Info**

**Nature Walk and Photography with Austin Parnow**

Sunday, March 16, 2025

9:00 am - 11:00 am

Learn light, shadow, and composition for photography in the beautiful redwood forest!

**More Info**

**Night Forest Immersion Walk with UV lights**

Saturday, March 22, 2025

6:45 pm - 8:45 pm

Sorry, sold out!

**More Info**

**Birding for Beginners**

Monday, April 21, 2025

8:30 am - 10:30 am

Learn to identify birds by sound in Armstrong!

**More Info**

**Birding for Beginners**

Saturday, May 10, 2025

8:30 am - 10:30 am

Learn to identify birds by sound in Armstrong!

**More Info**

## **Birding at Bodega Dunes**

Monday, May 19, 2025

8:30 am - 11:30 am

New to birding, a seasoned birder, or just curious to try it out?

[More Info](#)

## **Planning for Earth Day in San Anselmo**

San Domenico School in San Anselmo will be celebrating Earth Day with all K-12 students on Friday April 18 from 1-3. The Lower School Science Teacher is looking for fun and educational opportunities that celebrate the earth for K-5 students during that time frame. Anyone with experience seeing the earth from space, working on a NASA project, ecologists, animal welfare/scientists, artists, (other ideas!?) please reach out to Ms. Trapanese at [ctrapanese@sandomenico.org](mailto:ctrapanese@sandomenico.org).

## **Summer Institute for Elementary Teachers: Teaching NGSS-Aligned Climate Change Science (July 28-31 at Sonoma State University)**

Did you know that California's Assembly Bill 285 will ensure that elementary schools have a course of study that includes the causes and effects of climate change and methods to mitigate and adapt to its effects?

This is the perfect time for elementary teachers to deepen their own understanding of climate change and learn how to teach Next Generation Science Standards through phenomena and storylines connected to climate change.

Participants will receive either 3 Continuing Education Units (CEUs) or a \$800 stipend (**limited availability**). You will also get free resources and activity ideas for teaching NGSS through climate change science, and work with others to outline a science unit connected to your district's adopted science curriculum. We encourage teams of 2-4 teachers at the same school site to apply together.

**Apply at this link by May 31, 2025.** <https://forms.gle/P8vYi1wTW5xh6w5S9>

For questions, email [step@sonoma.edu](mailto:step@sonoma.edu)

## **Climate Rapid Response Network**

Climate Crisis is here. What now?

In Sonoma county, just 46 percent of us discuss climate change even occasionally.

(<https://climatecommunication.yale.edu/visualizations-data/ycom-us/> Yale Climate Opinion maps,

2021) Isn't it time to normalize and mobilize this discussion to help junior high and high school students help the planet?

Retired educators working with the Climate Rapid Response Network engage on climate topics with you and your students. We have science teachers, social science teachers, service learning and project-based learning experts, and a lot of experience bringing hope and understanding to re-setting global priorities on a more sustainable track. What could working with us look like?

We could :

--come to a class or classes to work interactively on a climate-safe plan

—work with an after-school group or club

--help with resources or curriculum

--help with student projects

--invite your students to table with us, learning and teaching others about a climate-safe plan and current legislation to address the issues

--work on extreme heat resilience and tree-enabled carbon sequestration exercises

Please contact Leah at [lhalper@garlic.com](mailto:lhalper@garlic.com) and/or Paula [admin@speakeasies.biz](mailto:admin@speakeasies.biz) if you want some support talking about climate change!

## **From the Sonoma Co. Office of Education *et al.*:**

### **Science Teacher Leader Collaborative**

An informal group designed to bring science educators from around the county together to share ideas and resources, ask questions and get feedback, receive updates on district, county and statewide NGSS news and explore how to be leaders and change agents in science education. All TK - 12 science educators are welcome! **Upcoming Meetings - 2/25/25 (Virtual), 4/2/25 (Windsor Middle School), 5/14/25 (Virtual) 4:00pm - 5:30pm.** Contact Kelly Mackura at [kmackura@scoe.org](mailto:kmackura@scoe.org) for more information.

### **SSU/SCOE Science Summer Institute Planning Relevant and NGSS-Aligned Phenomena and Storylines (July 28 - 31, 2025) Grade K-5**

In this hands-on and minds-on institute for elementary teachers (K-5), educators will enhance their understanding of targeted NGSS disciplinary core ideas, science and engineering practices, and crosscutting concepts that relate to climate change science. They will also have time and support to plan a science unit "storyline" that you can apply to your respective district adopted science curriculum. 3 CEUs or \$800 Stipend available. (3 CEU or \$800.00 stipend) Register [HERE](#).

### **Sonoma Water/SCOE Climate Change and Resilience in the North Bay Teacher Workshop (June 16 - 20, 2025) Grades K-6**

The Water and Energy Education Program at Sonoma Water in partnership with SCOE is inviting K-6 teachers to participate in a paid, 5-day workshop with local organizations working to address climate change in Sonoma County. Field trips will explore topics ranging from grassland restoration and land stewardship informed with Traditional Ecological Knowledge, to water

resource security, changing ocean conditions, renewable energy and electrification, solutions-focused projects at school, and how to talk about climate change with students. Each day includes an afternoon work block with support from certified teachers to develop lessons and curriculum informed with NGSS. Participants will receive a \$700.00 stipend. More Information and registration [HERE](#).

### **Exploratorium Science Summer Institute for Teachers (June 16 to July 3, 2025) Middle and High School Teachers DUE MARCH 3rd**

Join the Exploratorium for a transformative three-week Summer Institute designed for middle and high school science teachers. Immerse yourself in hands-on, inquiry-based explorations, collaborate with a supportive community of educators, and deepen your practice in creating equitable science classrooms. (\$2,500 stipend available.) More information and registration [HERE](#).

## **Sonoma Environmental Education Collaborative (SEEC)**

### **Career Expo: Dig Into Environmental Futures**

**Saturday, March 15 10:00 a.m. – 2:00 p.m.**

**Chop's Teen Club**

**509 Adams Street, Santa Rosa**

Join us for our free annual Career Expo to explore opportunities for your future in the environmental movement! Designed for high school age and older. What to expect:

- Job Fair
- Expert Panelists, with Q&A
- Resume and Interview Workshops
- Professional Headshots

Raffle Prizes

Registration required: <https://bit.ly/CareerExpoSEEC2025>

## **CA Native Plant Society:**

Speaker Series

Third Tuesday of the Month at 7:30pm

March 18, 2025 (*In-person and on Zoom*)

Luther Burbank Art and Garden Center

2050 Yulupa Ave, Santa Rosa, CA 95405

Zoom link: <https://us02web.zoom.us/j/81066682128>

Discovering Mono County Plants  
With Ann Howald

## Abstract:

Ann Howald, a retired botanist, will take us on a visual field trip through many of Mono County's most interesting locales for plants, including: the Bodie Hills, the Dana Plateau, the Mono Lake Basin, the White Mountains, and more. These areas have spectacular landscapes as well as rare and interesting plants. Ann will show us the alpine flora of the Dana Plateau, bristlecone pines on the dolomite barrens of the White Mountains, "Mojave" wildflowers of remote Fish Lake Valley, and much more.

## **Good News from the Lake Sonoma Fish Hatchery!**

Compared to recent years, the counts of steelhead trout and salmon are looking good this year.

So far 863 steelhead trout have returned which is exciting, as only 514 returned all of last year!!

**School tours have been scheduled with many slots still available.**

This link for school tours is to the Sonoma Water Newsletter called *The Current*.

**<https://www.sonomawater.org/e-news>**

In this link you will find information on scheduling school tours and public tours.

## **Sonoma Co. Radio Amateurs:**

The Sonoma County Radio Amateurs is offering an amateur radio licensing class on May 30, 31, and June 1. The class will be held at the Graton Fire Station.

Our weekend Technician License courses have been very successful! Since 2007, when SCRA started the weekend course format, over 250 people have obtained their amateur radio licenses.

Unlike cell phones and family radio service (FRS) walkie-talkies, the amateur radio service is available only to *qualified* applicants we are licensed by the FCC, so you need to prepare ahead of the examination.

Our course will give you the background to understand and enjoy amateur radio!

The Technician License exam covers basic rules, operating practices and radio theory and must be passed in order to obtain your amateur radio license. You should expect to be successful with this entry level test if you prepare in the weeks before the course. The study material is not difficult but needs to be studied before you attend our course and take the test.

(We will be at the North Bay Science Discovery Day on March 8...Stop in and talk to us!)

Contact: Darryl M Paule: [ki6msp@gmail.com](mailto:ki6msp@gmail.com)



## Forestry Institute for Teachers (FIT)

The Forestry Institute for Teachers is one of the best professional development experiences that I've ever had. Not only is it educational, it is fun. Check out the website below.

Registration is \$125. That may sound like a lot but remember...for that you get a week's worth of education and food and lodging in a beautiful setting. AND, **if you do a simple project you can receive a stipend of \$300.**

FIT website:

[https://webmail.sonic.net/?\\_task=mail&\\_caps=pdf%3D1%2Cflash%3D0%2Ctiff%3D0%2Cwebp%3D1&\\_uid=82706&\\_mbox=INBOX&\\_safe=1&\\_action=show](https://webmail.sonic.net/?_task=mail&_caps=pdf%3D1%2Cflash%3D0%2Ctiff%3D0%2Cwebp%3D1&_uid=82706&_mbox=INBOX&_safe=1&_action=show)

## Love the Outdoors? Join Coastwalk California as a Volunteer!

Do you dream of sharing your passion for nature while making a difference in your community? Coastwalk California is looking for enthusiastic hike leaders and volunteers to join our team!

- Lead Hikes: Share your favorite trails with others, inspire adventure, and help connect people to the natural beauty of California's coastline.
- Support Our Mission: Join a dedicated community working to protect and preserve the California Coast and the California Coastal Trail while fostering meaningful outdoor experiences.

Whether you're a seasoned trailblazer or just love spending time outdoors, we'll provide the training and support you need to make an impact. Get started today! Email us at [lindsey@coastwalk.org](mailto:lindsey@coastwalk.org), or give us a call or text at (707) 829-6689 or visit our website at [coastwalk.org](http://coastwalk.org).

Visit our Facebook or Instagram pages to get a closer look at what we do! @Coastwalkcalifornia

*Together, we can create unforgettable experiences while stewarding our beautiful coastline. Join the adventure today!*

## Science Uncorked

**Science Uncorked** is an outreach seminar series for the public, hosted at the wine and food bar Gourmet au Bay in Bodega Bay. Since 2013 Science Uncorked has hosted over 100 public lectures featuring scientists from Bodega Marine Laboratory (BML), from UC Davis main campus, and from the greater North Bay Area science community, including non-profits and government agencies. Come for the science, stay for the wine. Or vice versa!

Happy Hour starts at 4pm, food is served until 6pm.

Admission is free.

Brought to you by Bodega Marine Laboratory and Gourmet au Bay

Find us on Facebook for regular updates: [www.facebook.com/ScienceUncorked](http://www.facebook.com/ScienceUncorked), or email us at [ScienceUncorked@gmail.com](mailto:ScienceUncorked@gmail.com)

Gourmet au Bay: 1412 Bay Flat Rd. Bodega Bay, CA 94923

### Schedule:

**March 13, 6pm - Anya Brown** - Tropical coral reefs: past, present, and future?

**March 27, 6pm - Rachel Carlson** - From satellites to shells: tracking ocean acidification in the coastal zone

**April 24, 6pm - Peter Connors, Jackie Sones, Suzanne Olyarnik** - Preserving the local flora of Bodega Head: The Peter G. Connors Herbarium at Bodega Marine Reserve

**May 8, 6pm - Katie Woolery** - One With The Wild: Sonoma County Wildlife Rescue and its Support Programs

**May 22, 6pm - Karolina Zabinski** - Mama didn't raise no guppy! Transgenerational effects of seagrasses under ocean warming

**June 5, 6pm - Zeke Spooner** - Learning about microplastics in the local marine environment as a community

## **From Marin Water:**

### **Turtle Observer Training**

Saturday, March 1

9-10:30 a.m. on Zoom and 1-3 p.m. field visit

Western pond turtles are the only freshwater species of turtle in California, and they tell us important things about the health of our lakes. By becoming a Turtle Observer, you can turn your interest into action by contributing to conservation efforts through data collection, observation and using cool tools like spotting scopes.

Once you have completed the two-part training with Marin Water on Mar. 1, you have the choice to visit several locations at any time you want during the spring to participate. This is a family-friendly project!

The online meeting from 9 to 10:30 a.m. will cover the importance of wildlife conservation, how to identify the various turtle species in Marin, monitoring protocols and the benefits of becoming a community scientist. In the afternoon, we will gather from 1 to 3 p.m. at Lake Lagunitas to meet other volunteers in person, practice using spotting scopes and binoculars, and put identification skills into practice. The season runs through the end of May.

*In the event of heavy rain, the outdoor portion of the activity will be postponed.*

[Register](#)

### **TRAIL STEWARDSHIP**

**Third party website title: Mt. Tamalpais Trail Stewardship Day With Marin Water**

Saturday, March 1st, 9:30 a.m. - 2 p.m

Trail stewardship is an excellent way to leave your mark and make a beneficial change on the watershed for future generations of hikers, bikers, and all nature lovers. Volunteer today and help preserve our watershed for decades to come!

This trail crew day will primarily involve pruning of vegetation along trails and storm debris removal. The day will start with a safety talk & project overview at 9:30 a.m. and then we will hike to the site. Our route for the day could be up to 5 miles round trip carrying equipment and personal packs so please be prepared for a hike. All experience levels are welcome, whether you are a complete beginner to trail work or a professional. With that said trail events are suitable for ages 13 and up. Parental supervision is required for volunteers under age 16.

**[RSVP IS REQUIRED!](#)** All first-time volunteers must also sign our [Volunteer Service Agreement](#), and all volunteers under 18 must have the form signed by a parent or guardian. This event is limited to 15 people. Further details will be shared closer to the date over email to volunteers that have RSVPed. Parking passes, tools, gloves, snacks and water are provided to volunteers. Lunch is NOT provided. Please dress for variable weather and bring a water bottle and lunch.

Sign up [HERE](#).

## **Frog Docent Training**

Saturday, March 8

9-11 a.m. on Zoom and 1-4 p.m. field visit

Foothill yellow-legged frogs (*Rana boylei*) are special because they are only found in isolated ranges in California and nowhere else in the world and are a federal and state listed species. They also tell us important things about the health of fast-flowing streams where they live. Join ecologists at Marin Water, Marin County Parks and Kleinfelder to learn about these amphibians and the volunteer program that protects them.

The morning session of this docent training will be held on Zoom and cover this species' natural history, ecology, threats, local conservation work being done to support their survival, and ways you can protect these frogs through volunteerism. In the afternoon, join us on a 3-mile round trip hike to Little Carson Falls to meet other volunteers in person, practice using spotting scopes and binoculars, and put your identification skills into practice.

Once you have completed this training, we ask that you shadow a seasoned docent or staff member a couple times before signing up for your own shift. Volunteers must be 18 or older. The docent season runs through the end of May.

[Register](#)

## **LiMPETS at Greater Farallones Association**

### **Attention Teachers!**

The LiMPETS Teacher Workshop for Rocky Intertidal Monitoring is being offered **Saturday, January 11th** on the Sonoma Coast. Teachers who are interested in participating in LiMPETS Programming are encouraged to attend one training workshop. [Click Here](#) for more information.

### [Registration for LiMPETS field trips is open for Spring 2025!](#)

LiMPETS (Long Term Monitoring and Experiential Training for Students) is a community science program which provides immersive, science-based environmental education that empowers students to become informed and engaged ocean stewards. Field trips include protocol training and a data collection field trip to the coast! Payment assistance is available for schools with 40% of the student body or more on free or reduced lunch programs. Contact [limpets@farallones.org](mailto:limpets@farallones.org) for details.

The **National Science Teachers Association** has a series of webinars planned for the spring. Some are free; others have a fee. Check them out at:

[https://webmail.sonic.net/?\\_task=mail&\\_caps=pdf%3D1%2Cflash%3D0%2Ctiff%3D0%2Cwebp%3D1&\\_uid=86185&\\_mbox=INBOX&\\_safe=1&\\_action=show](https://webmail.sonic.net/?_task=mail&_caps=pdf%3D1%2Cflash%3D0%2Ctiff%3D0%2Cwebp%3D1&_uid=86185&_mbox=INBOX&_safe=1&_action=show)

## **FREE stuff from Project WET**

Project WET (Water Education Today, a.k.a. Water Education for Teachers) is having a year-end sale, including some items offered for free. Check it out at: <https://www.projectwet.org/>

## **Forestry Challenge:**

[High Schools: Announcing pre-registration for Forestry Challenge - Fall 2025](#)

Pre-registration is open for five 2025 Forestry Challenge events this fall:

Shasta - September 24 to 27

Santa Cruz - October 8 to 11

El Dorado - October 22 to 25

San Bernardino session 1 - November 5 to 8

San Bernardino session 2 - November 12 to 15

Pre-registering does not financially obligate you or your school in any way. We would simply like to have an estimate of interested participants in order to plan for the fall. Those who pre-register before June 30, 2025, will guarantee space for at least one team at the event of your choice. You are welcome to attend any event that suits your location, school schedule, and interest.

Here is a link to the [pre-registration form](#) on the [website](#).

Watch a one-minute [introductory video](#)!

The Forestry Challenge is an academic event for high school students in technical forestry and current forestry topics. Participants spend four days in the forest learning about the ecology and management of the forested landscapes that provide communities with water, recreational opportunities, wood products, and wildlife habitat. You can now complete [pre-registration](#) for any fall event in less than 5 minutes with our online form. For more about the program, visit the [Home](#) page of the Forestry Challenge website. There is no registration fee and substitute teacher and transportation assistance are available on an as-needed basis. School groups (typically 4 to 10 students and a teacher chaperone) are welcome to attend any event that is the best fit for location, school schedule, and interest.

## **SSU Summer Math Teaching Institute:**

### **HOW NUMBERS DANCE: HARMONIZING MATHEMATICS, DATA CONTEXTS, & THE CA MATHEMATICS FRAMEWORK SUMMER INSTITUTE FOR TK - 5TH GRADE TEACHERS**

Swing into Summer Learning with Sonoma State University (SSU), the Sonoma County Office of Education (SCOE), and the California Math Project: North Coast (CMP:NC)! Dive into a dynamic summer institute July 28–July 31st. Explore where math meets data science, enhancing relevance and authenticity for students in today's data-driven world. Our focus aligns with the CA Mathematics Framework, emphasizing justice-oriented teaching to foster cultural relevance and belonging.

Let's revolutionize math and data science teaching together! Participating teachers receive an \$800 stipend. Institute held at Sonoma County Office of Education.

To register, or for information, go to: <https://bit.ly/MATHSCIENCEINSTITUTE>

# From the Forestry Challenge Newsletter

## Come on a Journey from Seed to Tree

Join us on the adventure of a tiny seed as it, with a little help from CAL FIRE's Reforestation Services Program, transforms into a towering tree! From high up in a tree, seeds are carefully collected by CAL FIRE and contract climbers, tested for quality, and nurtured in our greenhouses. It's all part of a mission to help California's forests regrow after wildfires, providing oxygen, shade, and homes for wildlife. Learn more about this cycle below.

[Learn more about the Reforestation Cycle](#)

## California Environmental Literacy Initiative

The [CAELI Partner Portal](#) makes transformative nature experiences possible for students across California by linking educators with hundreds of community-based partners offering environmental programs statewide. From outdoor education adventures to on-campus initiatives, the portal ensures equitable access to quality environmental literacy resources for all TK–12 students and educators.

## Spanish-English Bilingual STEM camp for high school students

The Berkeley Lab K-12 STEM & Outreach team is hosting our fourth annual Spanish-English Bilingual STEM camp for high school students over spring break 2025; called *Science en Acción (SeA) @ Berkeley Lab*. This program is free and we are looking for Spanish and Spanish-English speakers who are interested in learning more about STEM (Science, Technology, Engineering, Mathematics) careers at Berkeley Lab. Applications are now open!

We would love it if you could let high school students know about this FREE opportunity. They can find more information at our SeA webpage ([bit.ly/sea-stem](http://bit.ly/sea-stem)) and our fliers are attached.

Please let me know if you have any questions. Feel free to pass this email along and spread the word. We are currently targeting Berkeley, Oakland and West Contra Costa communities.

If you are interested in learning more about our other Berkeley Lab K-12 programs [please visit our website](#). Our high school programs are found [here](#).

## Sonoma State Historic Park

### **Nature Hike. Saturday, March 22nd Noon-1:30pm**

Experience history, nature, and community lead by a Park Interpretive Specialist. This slow-paced hike is a little over one mile in length with minor elevation changes. Sturdy shoes and water recommended). Meet at the Vallejo Home parking lot at the end of 3<sup>rd</sup> Street West. All ages welcome. Free of charge, no reservation needed.

### **Bat Night at the Barracks, Saturday March 29<sup>th</sup> 5PM-7:30pm**

Come out and learn about and explore bats in the area. Our special guest: *Nor Cal Bats* will lead a program featuring [live bats](#)! Learn about these animals and their importance as insect control. Inform others and help

protect our natural world. Dispel misconceptions and save these highly valuable mammals with education and rescue. All ages, free of charge, no reservation needed.

## **BODEGA MARINE LABORATORY**

### **invites you to join us for public tours on Friday afternoons!**

#### **IMPORTANT:**

Due to limited capacity, you must reserve a date and time to take part in a tour. Additional dates will be added soon. To reserve your spot visit:

<https://www.eventbrite.com/e/public-tours-of-bodega-marine-laboratory-registration-622690533147>

#### **About the Event:**

When: Fridays, starting at 2pm

Where: 2099 Westshore Rd. Bodega Bay, CA 94923

#### **What will I see?**

These tours are led by our wonderful crew of ocean-loving docents, and visitors will learn about ongoing marine and coastal science research at Bodega Marine Laboratory and its history on the Sonoma Coast. Plus, you'll get to meet a variety of colorful and diverse ocean creatures.

#### **Who's invited?**

Although we welcome all ages, these tours are best for people who are school-aged and above. Dogs and other pets are not allowed, with the exception of service animals.

Public tours are only available by reservation. If your preferred tour time is already full, you can place your name on a waitlist through Eventbrite to claim a spot if one becomes available.

If you are interested in arranging a tour for a school or other group of 10 or more people, please contact [alcarranza@ucdavis.edu](mailto:alcarranza@ucdavis.edu) instead of booking through the public tour reservation system.

#### **What else should I know?**

As you drive up to the lab, please be mindful that we are on the Bodega Marine Reserve, a protected home for many marine and terrestrial creatures. We ask that you reduce your speed to the posted limits and watch out for wildlife.

While on the tour, please stay with your group and do not explore on your own, as parts of the laboratory and reserve contain sensitive organisms and research data that are easily damaged.

#### **Does the tour cost money?**

We provide our public tours free of charge, but donations are encouraged and appreciated. Donations are critical to supporting the care and maintenance of the aquaria and animals you will see during your tour.

If you would like to make a gift, you can do so by selecting the donation option when you reserve your tour spot or visit our website to learn about more ways to give: [marinescience.ucdavis.edu/give](http://marinescience.ucdavis.edu/give)

## **Some interesting reading:**

The March issue of **Smithsonian** magazine includes articles on:

- Alice Hamilton, a physician who, in the early 1900s, sounded the alarm about the dangers of lead
- The above article includes a side bar about the (often dangerous) uses of lead
- The design of a box used to bring back samples from the moon
- A whale species identified in 2021 (who knew?)...and only about 50 are left

- The deciphering of cuneiform writing

**National Geographic** magazine now opens with a series of outstanding photographs called “In Focus.” The photos typically include images from the oceans, wildlife, culture, and nature. They would be great to share with students by posting or possibly removing the captions and then passing them around the class asking the students to try to figure out what they show.

The March **National Geographic** magazine has articles on:

- “The Vanishing Beauty of Brazil’s Cerrado”
- “The Long Journey of Canada’s Last Reindeer”
- “Where Space and Time Merge” (a project merging photos of land and stars)
- “The Truth About the World’s Biggest Eggs” (which aren’t dinosaur eggs)
- “New York’s Lost Fleet of Electric Taxis” and what happened to them
- “Hunting for My Father’s Butterfly”
- “The Fight to Save the Desert’s Most Tenacious Bird” (the Western Burrowing Owl)

## Science in the News from Sigma Xi

Sigma Xi is a science honor society. You can sign up to receive their **bi-weekly** science e-newsletter at: <https://www.sigmaxi.org/news/newsletters>

Some recent stories:

- Sea turtles are changing nesting habits due to climate change
- Distinct dinosaur ecosystem in ancient Australia
- Research uncovers brain’s rewarding response to sugar
- CRISPR may have potential for Down syndrome

## Sci Tech Daily

Sci Tech Daily is a (you guessed it...) **daily** brief summary of current events in a variety of science fields, including general science, health, space, technology and others.

**Among many others, the March 1 edition included:**

- Aging brains have a sugar problem, and Stanford scientists may have found a fix.
- New study uncovers dangerous secret of “green” refrigerants
- Extreme heat might be aging you 14 months faster, USC scientists warn
- The hidden material breakthrough that could supercharge AI and save energy
- Scientists have just uncovered a major challenge for fusion power – and it’s not what you’d expect
- Concerning new study reveals that we are no longer living longer
- Challenging Peto’s Paradox: New research overturns 45-year-old cancer theory

### • **TED Talks: Science Worth Knowing:**

- New science-related talks are frequently posted.
- check it out at <https://www.ted.com/topics/science>

## Science Humor:

How do you put a baby astronaut to sleep?

You rocket.

## Hot (Cool?) Links:

With the current administration's disdain for science, I'm concerned about lots of things, including the anti-vax movement. If you're concerned too, or, especially if you aren't concerned, take a look at this article:

<https://paulkrugman.substack.com/p/making-microbes-great-again>

and if you are a scientist employed by a governmental agency, you might be interested in this Tip Line for Scientists working in government related jobs.

<https://heated.world/p/a-tipline-to-protect-the-planet>

One of my favorite organizations is the Shape of Life. This month's info, lesson plans, and videos are on worms. Check out the beautiful pix at:

[https://webmail.sonic.net/?\\_task=mail&\\_caps=pdf%3D1%2Cflash%3D0%2Ctiff%3D0%2Cwebp%3D1&\\_uid=86142&\\_mbox=INBOX&\\_safe=1&\\_action=show](https://webmail.sonic.net/?_task=mail&_caps=pdf%3D1%2Cflash%3D0%2Ctiff%3D0%2Cwebp%3D1&_uid=86142&_mbox=INBOX&_safe=1&_action=show)

## *Live and Learn*

*( in which Mike shares something that he's recently learned. )*

A short article in the February 7 *The Week* magazine caught my eye with the headline "The snake that becomes a bowl." It includes a photo of a prairie rattlesnake that has coiled itself into a bowl shape to collect water to drink. The article was based on an article in the *New York Times* about some studies by Dr. Scott Boback, who is a herpetologist at Dickinson College in Pennsylvania.

His studies show that prairie rattlesnakes have several behaviors that help them capture and drink rain water, including forming shallow dishes to collect water, cantilevering their coiled bodies out over ledges to collect rain, drinking water collected on other snakes' bodies, and tipping their bodies to pour water into their mouths.

After reading the short article in *The Week*, I Googled Scott Boback and found a couple of interesting links, including:

<https://www.nytimes.com/2025/01/17/science/rattlesnakes-water-drinking.html?auth=linked-google1tap#>

and

<https://www.dickinson.edu/news/20098/>

And another short article, this one in the February 14 issue of *The Week* told about a kind of coral called a "mushroom coral." Apparently, the inch-long corals actually move along the ocean floor. They moved 8 inches in a 24 hour period! The article was about a study in Australia. The lead author is Brett Lewis.



## **Jobs:**

# **COMMUNITY SOIL FOUNDATION IS HIRING**

If you love regenerative agriculture, outdoor education, ecology, food equity, and community engagement then we want to hear from you! We are hiring a school garden educator and a community garden manager. These positions offer an opportunity to join our grassroots organization which is changing the landscape of outdoor education and food access in Sonoma County.

Visit [communitysoil.org/careers](https://communitysoil.org/careers) to learn more about the roles and to apply.

## **Science and Environmental Education Organizations**

These organizations offer science or environmental education opportunities and/or **volunteer** or **citizen/community science** opportunities.

If I know of **volunteer** or **citizen/community science opportunities**, I've indicated that, but some may have opportunities about which I don't know.

Check their web sites for more information.

### **American Cetacean Society**

**Description:** As the name implies, the ACS works to protect cetaceans (whales, dolphins, porpoises), and also supports research.

**Web site:** The San Francisco Bay chapter's website is: <https://www.acs-sfbay.org/>

### **Aquarium of the Bay:**

Aquarium of the Bay has opened their programming for the 2023-2024 school year. K-12 schools can book either Aquarium-Teacher lead classroom programs (fee-based) or Self-Guided Tours (free, extra chaperones are not included).

**Available Programs:**

**Kinder** – Between the Tides: Learn about the animals that live in the tidepool and the adaptations they have to survive their changing world.

**1-3<sup>rd</sup>** – Salmon!: Follow the salmon lifecycle from egg to the end and discover how human impacts affect its life journey.

**3-5<sup>th</sup>** -Sensational Sea Lions: This outdoor, sense-based program guides students on the scientific journey of wildlife observation. Learn about and observe the World-Famous Pier 39 sea lions. How did they get here, why they stay here, and above all, what makes them such amazing animals.

**6-8<sup>th</sup>** – Kraken Lab: Our newest program is quickly becoming very popular with Middle Schools. Come and participate in a squid dissection and learn the ins and outs of this unique animal.

**9-12<sup>th</sup>** – 3D Printing Lab: This brief introduction to 3D printing enables your students to learn a little history on 3D printing as well as help print plates that will be used to aid the non-visual community. Note: This program is limited to a maximum of 28 students (2-Sessions of 14 students each, on the same day)

**K-12<sup>th</sup>** – VIP School Group Tour: This special tour of the building is held before the Aquarium opens and enables students to see the work that is often not seen by the public. This tour is limited to 25 participants and is not bookable on the website. Please email us for more information

**K-12<sup>th</sup>** – Self-Guided Tour: While this tour is booked on 20-minute intervals, the tour length is 1 hour. Your class will be able to go as fast or as slow as you would like which makes it perfect if you only have a limited amount of time.

Email [education@bay.org](mailto:education@bay.org) for more information on any of these programs

Visit <https://www.aquariumofthebay.org/> and under the Education tab, find K-12 programs, teacher resources, eLearning modules, Plastic Free Campus, and Professional Learning Courses.

Aquarium Education Programs Webpage: <https://www.aquariumofthebay.org/teachers/k-12-programs/>

## Audubon Canyon Ranch

### Our Mission

*Connecting nature, people and science in a rapidly changing world*

### Our Vision

*Inspired and informed communities use scientific knowledge to build a resilient, sustainable society that respects the intrinsic value of our natural world.*

They have several sites:

- Bouverie Preserve, Glen Ellen
- Cypress Grove Preserve, Marshall
- Martin Griffin Preserve, Stinson Beach
- Modini Preserve, Healdsburg

**Volunteer Opportunities:** <http://www.egret.org>

## Audubon Society

(Madrone Audubon Society Chapter)

We promote public education, enjoyment, study and protection of the natural world, especially birds.

Check out the Madrone Audubon Society's schedule of walks and other events at: [www.madroneaudubon.org](http://www.madroneaudubon.org)

The *Madrone Leaves* newsletter has information about coming events and a variety of conservation issues.

## Citizen Science Opportunities

### Volunteer Opportunities

## Bay Area Teen Science

This site posts opportunities for teens to get involved in science in a variety of ways. Although many of the postings are now outdated, they can still provide ideas and sites for teens to check back with later.

<http://bayareateenscience.org/>

## Bay Nature

This locally produced (Berkeley) magazine has many interesting articles, great illustrations, and an event calendar. Check it out at: <https://baynature.org/>

## Bird Rescue Center of Sonoma County

The center usually has an open house the first Saturday of the month.

They have an education program...You can arrange a visit to the Bird Rescue Center, or they can come to your school. Request by their online program request form

**The Web site has added a “Virtual Resources” section. In it you can find links to many resources on birds, bird identification, and other interesting resources.**

### Volunteer Opportunities

Check out their web site at: <https://www.birdrescuecenter.org/>

## Bodega Marine Lab

### invites you to join us for public tours on Friday afternoons!

IMPORTANT:

Due to limited capacity, you must reserve a date and time to take part in a tour.

<https://www.eventbrite.com/e/public-tours-of-bodega-marine-laboratory-registration-622690533147>

#### About the Event:

When: Fridays, starting at 2pm

Where: 2099 Westshore Rd. Bodega Bay, CA 94923

They also have a **webcam** focused on Horseshoe Cove

Web site: <http://bml.ucdavis.edu/>

## Cal Academy NightLife lectures

The California Academy of Sciences is now open daily. They require times reservations.  
Website: <https://www.calacademy.org>

## California Coastal Commission

### **Mission: Protecting & Enhancing California's Coast**

The Commission is committed to protecting and enhancing California's coast and ocean for present and future generations. It does so through careful planning and regulation of environmentally-sustainable development, rigorous use of science, strong public participation, education, and effective intergovernmental coordination.

### ***Check out these resources from the California Coastal Commission:***

#### **Environmental Education Events Calendar**

The California Environmental Education Interagency Network maintains a calendar of events and opportunities relating to environmental education. Find an event or submit yours to the calendar.

#### **California Coastal Voices**

A project-based learning guide and online toolkit for middle and high school teachers. Consisting of six units (or "projects") that introduce students to coastal conflicts, challenges, and scientific and policy issues, the emphasis is on problem solving and communication. This learning guide was designed to address California's Next Generation Science, Common Core, and History-Social Science standards. Download teacher resources and student activities and access slideshows, videos, articles, and much more.

Find Lots More [Educator Resources](#) online.

website: <https://www.coastal.ca.gov/publiced/pendx.html>

## CA. Native Plant Society

The Milo Baker Chapter of the California Native Plant Society (CNPS), named after the famous Santa Rosa Botanist, is located in Northern California's beautiful Sonoma County. CNPS is a statewide organization whose goals are to increase understanding and appreciation of California's native plants, and to preserve them and their natural habitats for future generations. Membership is open to all.

### **Citizen Science Opportunities**

### **Volunteer Opportunities**

For information go to: <https://milobaker.cnps.org/>

## California Naturalist Program

The UC California Naturalist Program is designed to introduce Californians to the wonders of our unique ecology and engage the public in study and stewardship of California's natural communities. The California Naturalist program uses a science curriculum, hands-on learning, problem-solving, [citizen science](#), and community service to instill a deep appreciation for the natural communities of the state and to inspire individuals to become stewards of their local resources.

The mission of the California Naturalist Program is to foster a diverse community of naturalists and promote stewardship of California's natural resources through education and service.

The California Naturalist Program promotes environmental literacy and [stewardship](#) through [discovery](#) and [action](#). Many other states have similar naturalist programs, but this is the first statewide program in California. To [become a certified California Naturalist](#), participants need to enroll in a 40+ hour course with one of [our partner organizations](#).

We work with over 45 partner organizations that deliver the course and have certified a community of over 2800 Naturalists around the state who have, in turn, volunteered over 175,000 hours in service to nature in the areas of education and interpretation, stewardship, citizen science, and environmental program support. Courses combine classroom and field experience in science, problem-solving, communication training and community service. Students are taught by an instructor and team of experts who are affiliated with a local nature-based center or natural resource focused agency. Upon completing certification requirements, participants are eligible for four academic credits through [UC Davis Extension](#) for an additional nominal fee.

Some CalNat programs are offering online or hybrid programs. See below.

### Citizen Science Opportunities

Visit the Web site at: <http://calnat.ucanr.edu>

## Center for Climate Protection

has a high school program called eco2school. Check it out at: <http://www.eco2school.org>

## Children's Museum of Sonoma County

<http://www.cmosc.org/>

### Mission

The Children's Museum of Sonoma County inspires curiosity and creativity through joyful, transformative experiences.

### About Us

The Children's Museum of Sonoma County (CMOSC) was founded in 2005. Rooted in current early childhood research, CMOSC engages children in joyful discovery experiences that develop foundational skills, create lasting memories, and spark a lifelong love of learning.

Designed for children and their caregivers, the Children’s Museum’s experiential exhibits emphasize hands-on engagement and learning through play with a focus on art, nature, and science.

The Children’s Museum proudly supports the work of parents, caregivers, and educators in raising happy, healthy, and strong children. Since opening its doors in 2014, it has become a valuable cultural resource and destination for Sonoma County.

website: <https://www.cmosc.org/>

## Clean River Alliance

The mission of the Clean River Alliance is to remove trash from the Russian River watershed and to educate citizens about the problem of trash in our waters by creating more public clean-up events.

### Volunteer Opportunities

<https://russianriver.com/business-directory/clean-river-alliance/#:~:text=The%20mission%20of%20the%20Clean,more%20public%20clean%20Dup%20events.>

## The Climate Center

The Climate Center’s work is guided by 3 core principles. All of our climate-safe policies and programs must be based on the latest science, help secure a [Just Transition](#) for fossil fuel workers, and prioritize [Climate Justice](#) for frontline communities. These principles inform our [Climate-Safe California campaign](#).

[www.theclimatecenter.org](http://www.theclimatecenter.org)

## Coastside Land Trust

THE COASTSIDE LAND TRUST IS DEDICATED TO THE PRESERVATION, PROTECTION AND ENHANCEMENT OF THE OPEN SPACE ENVIRONMENT, INCLUDING THE NATURAL, SCENIC, RECREATIONAL, CULTURAL, HISTORICAL, AND AGRICULTURAL RESOURCES OF HALF MOON BAY AND THE SAN MATEO COUNTY COAST FOR PRESENT AND FUTURE GENERATIONS

The Coastside Land Trust, in Halfmoon Bay, sponsors webinars that may be of interest to you.

Their Web site is [www.coastsidelandtrust.org](http://www.coastsidelandtrust.org)

## Coastwalk California

## Mission

To ensure the right of all people to reach and responsibly enjoy the California coast. We are a California-wide non-profit volunteer driven organization that advocates for public access to our coast via the California Coastal Trail and offers educational & fun Coastal Trail guided hiking and camping adventures.

## Vision

A well-stewarded California coast, highly prized as an irreplaceable commons, open for responsible use to all.

[www.coastwalk.org](http://www.coastwalk.org) phone: 707-829-6689

## Community Resources for Science

CRS helps teachers build on that enthusiasm and bring meaningful science learning experiences to life in their classrooms. Children have a natural curiosity and a craving to learn. CRS works to nurture that learning by connecting classroom teachers with scientists, museums, enrichment providers, and professional development programs in order to bring more science learning experiences to students. CRS also helps individuals and organizations involved in science education to work together and become stronger partners for teachers and schools.

We have compiled some resources for teachers that we thought might be useful as we face school closures and move to more online learning opportunities while we practice "social distancing" in the wake of the spread of COVID-19.

<https://www.crscience.org/>

## Community Soil Foundation

### Student-Grown Farm Stand

Community Soil Foundation's mission is to cultivate the wellness of Sonoma County communities by offering land-based education, creating access to organic produce, and regenerating habitat and natural resources. We invite you to come to the Larkfield Community Garden & Learning Center every Wednesday afternoon for your weekly supply of nutritious, organic produce. All fruits, veggies, and flowers are grown by Mark West students and community volunteers using biodynamic and sustainable methods, with proceeds helping fund the garden. All sales are by donation. Look for our Farm Stand at 450 Noonan Ranch Lane and check out other happenings at [www.communitysoil.org](http://www.communitysoil.org).

## Volunteer Opportunities

### CREEC

**The California Regional Environmental Education Community (CREEC) Network** is a program of the California Department of Education. The CREEC Network fosters regional partnerships throughout the state of California to promote environmental education and environmental literacy by providing teachers with access to high quality professional learning opportunities and education resources.

Along with statewide sponsors and partners, each of the 11 California CREEC Regions provides professional learning opportunities and resources to educators as well as foster communications among schools and organizations interested in supporting the environmental literacy of California's teachers and students. More information on the CDE's CREEC Network program is posted on the [CDE website](#).

**Different areas of the state have different CREEC Regions. For information about events in your region, go to: [www.creec.org](http://www.creec.org), and select "regions" at the top**

## Daily Acts

### Who We Are

We are a holistic education nonprofit that takes a heart-centered approach to inspiring transformative actions that create connected, equitable, and climate resilient communities. We believe in the power of our daily actions to reconnect people to self, community, and place, which helps to heal our society and planet.

**Our Mission** is to inspire transformative action that creates connected, equitable climate resilient communities.

**Our Vision** is to create healthy, just and sustainable communities built upon the daily actions of many people.

### Volunteer Opportunities

<https://dailyacts.org/>

## East Bay Regional Park District

The East Bay Regional Park District is a system of beautiful parklands and trails in Alameda and Contra Costa counties to the east of San Francisco. The system comprises nearly 125,000 acres in 73 parks, including over 1,250 miles of trails and 55 miles of shoreline. We acquire, manage, and preserve natural and cultural resources for all to enjoy now and into the future. Our parks are ideal for healthful recreation and environmental education. We invite you to enjoy hiking, biking, picnicking, horseback riding, camping, fishing, boating, golfing, and nature study in our parks. General Brochure [PDF]

<https://www.ebparks.org/>

## Education and the Environment Initiative

### Who We Are

The California Education and the Environment Initiative is a program of CalRecycle's Office of Education and the Environment (OEE). Our mission is to foster environmental literacy among all California students as part of a high-quality K-12 education. Environmental literacy builds critical thinking and analytic skills that prepare students to make informed decisions about issues affecting our world, and readies them for college and career success.

Our key environmental literacy implementation partners include the California Department of Education's California Regional Environmental Education Community Network and Ten Strands, a nonprofit organization that supports environment-based learning



<https://www.californiaeei.org/>

## Environmental Forum of Marin

At Environmental Forum of Marin (EFM), we're all about education for action. Our founders started by protecting Marin's natural beauty and wild shorelines.

Web Site: <https://marinefm.org/>

## Exploratorium

The Exploratorium isn't just a museum; it's an ongoing exploration of science, art, and human perception. Explore our vast [collection of online experiences](#) to feed your curiosity and [education resources](#) supporting online teaching and learning. [Subscribe to our weekly newsletter](#) and get fresh learning resources and virtual programming delivered to your inbox.

<https://www.exploratorium.edu/>

## Forestry Challenge

The Forestry Challenge is an academic event for high school students in technical forestry and current forestry topics. Since its inception in 2003, the program has grown from one event to five, a complete buildout of the program in California.

Participants spend four days in the forest learning about the ecology and management of the forested landscapes that provide communities with water, recreational opportunities, wood products, and wildlife habitat. Youth benefit by better understanding the relationship of the forested environment to their community, by exposure to natural resource management as a potential career option, and by undertaking a rigorous critical thinking exercise which is timely and addresses current forestry topics such as wildfire, insects, and forest health.

Watch a one-minute [introductory video!](#)

<http://forestrychallenge.org>

## Friends of Five Creeks

All-volunteer Friends of Five Creeks works hands-on for clean water, healthy watersheds, and natural areas that welcome both wildlife and people, from Berkeley to Richmond on the urbanized east side of San Francisco Bay.

**Volunteer Opportunities**

<http://www.fivecreeks.org/>

## Friends of the Petaluma River

### WHO WE ARE

In 2005 Friends of the Petaluma River was formed to connect our community with the wonders of the Petaluma Watershed. While much of our work is focused on conservation and education surrounding this sensitive habitat, we also believe that celebration plays a large role in our mission. Through events at the River Heritage Center, family programming around the Watershed and access opportunities for the public we bring our Watershed to life.

### Our Mission

Our mission is to celebrate the Petaluma Watershed through education and stewardship; because every great River needs a true Friend.

Our Goals: Access, Education, and Conservation

- To pursue outreach and educational activities that will nurture enthusiasm and commitment in the watershed for long term sustainable stewardship.
- To monitor conditions and engage in activities that will reduce or prevent pollution and lessen other harmful impacts on the River and its wetlands.
- To foster a River Heritage Center as a community resource. A place to archive information, host events, administer programs, and coordinate river related activities.
- To promote access to the Petaluma River and Marsh for all community members to experience the beauty of this resource for themselves

*Are you incorporating environmental education into your classroom?  
Or would you like help developing and implementing a project about the Petaluma Watershed?  
Let the Watershed Classroom support you!*

### Volunteer Opportunities

For more information visit us at [www.watershedclassroom.org](http://www.watershedclassroom.org)

For information about Watershed Classroom or Friends of the Petaluma River, go to: <http://friendsofthepetalumariver.org/>

## Green Schoolyards America

Green Schoolyards America seeks to transform asphalt-covered school grounds into park-like green spaces that improve children's well-being, learning, and play while contributing to the ecological health and resilience of our cities. We are working to change the norm for school ground design, use, and management so that all children will have access to the natural world in the places they already visit on a daily basis.

Our programs support the living school ground movement, build relationships that help it succeed, and work to embed this perspective in our existing institutions and policy and regulatory frameworks.

<http://www.greenschoolyards.org/>

## Headwaters Science Institute

The Headwaters Science Institute provides science and environmental education through student-driven research. It is headquartered in Soda Springs. They offer some high school programs for which they charge, butr also provide some free online learning opportunities.

<https://headwatersscienceinstitute.org/>

## IGNITE (Inspiring Girls Now In Technology Education)

IGNITE is an organization focusing on achieving gender equity in STEM fields.

[www.igniteworldwide.org](http://www.igniteworldwide.org)

## iNaturalist :

iNaturalist is a citizen science project and online social network of naturalists, citizen scientists, and biologists built on the concept of mapping and sharing observations of biodiversity across the globe.

No matter where in the world you are, **iNaturalist** brings people together. Whether you have a PhD or just love the outdoors, **iNaturalist** will bring you closer to nature and many fellow naturalists.

<https://www.inaturalist.org/>

## Laguna De Santa Rosa Foundation

Founded in 1989, the Laguna Foundation is a place-based organization focused on the Laguna de Santa Rosa and the surrounding wetland communities. **We are a 501(c)3 non-profit with the mission to restore and conserve the Laguna de Santa Rosa, and to inspire public appreciation of this Wetland of International Importance.**

For details on Laguna Environmental Center events, go to their Web site and check out the Public Education section.

**Volunteer Opportunities**

!

<http://www.lagunadesantarosa.org>

## LandPaths Outings and Events

LandPath's mission is to foster a love of the land in Sonoma County by creating ways for people to experience the beauty, understand the value, and assist in healing the land in their local communities.

### Volunteer Opportunities

## Lawrence (Hall of Science) at Home:

Welcome to The Lawrence at Home! On this site we will be sharing fun things for you to do at home or outdoors. Kids and families can look forward to exploring, investigating, discovering and inventing through DIY projects, meeting animal friends, science demonstrations and shows, astronomy and nature walks - PLUS, ways for parents to connect with each other and us.

(Includes live streaming programs (schedule posted), videos, science apps and activities, and a section on the science of COVID-19.)

<https://www.lawrencehallofscience.org/lawrence-at-home>

## Marin County Parks Department

The Marin County Parks Department offers a variety of opportunities, including volunteer days and naturalist outings. They often partner with the nonprofit One Tam.

### Volunteer Opportunities

Check them out at: <http://www.marincountyparks.org/depts/pk/calendar>.

## Marin Municipal Water District

The Marin Municipal Water District sometimes has volunteer and citizen science opportunities.

### Citizen Science Opportunities

### Volunteer Opportunities

[volunteerprogram@marinwater.org](mailto:volunteerprogram@marinwater.org).

## Marin Treks

Marin Treks Natural History Museum offers after school science classes, field trips, and classroom visits to elementary schools and preschools, as well as full and half-day camps during school vacation periods.

<http://www.marintreks.com/index.html>

## **Marine Mammal Center (Marin County)**

The Marine Mammal Center is a wonderful field trip destination for schools and organized community groups such as scouts, camps, and after-school programs. They have a variety of classes available in their lab, have a “Sea to School” program with programs for all grade levels available to come to your school or site, an “Ocean Ambassadors” program for middle schoolers, information on marine mammals, and a variety of other resources.

Join them on the 2nd and 4th Sundays of each month for Marine Science Sunday - a FREE engaging ocean-inspired classroom series from our education experts. These interactive classroom programs are great for all!

### **Volunteer Opportunities**

Go to <http://www.marinmammalcenter.org/> or phone 415-289-7325

## **NAAEE**

### **(North American Association for Environmental Education):**

NAAEE works to accelerate environmental literacy and civic engagement through the power of education.

<https://naee.org/our-work/programs/covid-19-resources-tips-and-support>

## **EE News:**

The NAAEE’s monthly EE News includes articles or links to articles on environmental education topics. It also includes listings of Professional Development opportunities, Grants and Contests, and Resources for Students and Educators

<https://webmail.sonic.net/? task=mail& caps=pdf%3D1%2Cflash%3D0%2Ctiff%3D0%2Cwebp%3D1& uid=23501& mbox=INBOX& safe=1& action=show>

## **NOAA**

### **What can NOAA do for you? NOAA Needs Your Input!**

NOAA wants to know what type of STEM multimedia and distance learning educators would like to use with students, and for their own professional development.

### **National Marine Sanctuaries Webinar Series**

The National Marine Sanctuary Webinar Series provides educators with educational and scientific expertise, resources and training to support ocean and climate literacy in the classroom. This series targets formal and informal educators that are engaging students (elementary through college) in formal classroom settings, as well as members of the community in informal educational venues (e.g. after school programs, science centers, aquariums, etc.).

Past Webinars are archived and can be accessed from the site.

<https://sanctuaries.noaa.gov/education/teachers/webinar-series.html>

## **Novato Space Station Museum**

Prior to COVID-19, the museum was open most Thursdays-Sundays, and often offered “telescope nights” and daytime solar telescope viewing.

### **Volunteer Opportunities**

Go to <http://www.thespacestationca.org/> to find out about the Novato Space Station Museum and the events that they offer, including:

## **Occidental Arts and Ecology Center**

Sometimes offers courses and events, especially in gardening and permaculture

Go to <https://oaec.org/events/>

## **OneTam**

One Tam is a group that works to protect and enhance the Mount Tamalpias area. See also [Marin County Parks Department](#).

### **Citizen Science Opportunities**

### **Volunteer Opportunities**

For more information, go to: <http://www.onetam.org/>

## **The Petaluma Wetlands Alliance**

### **OUR MISSION**

In addition to preserving habitats, with particular emphasis on birds and overall biodiversity, the Petaluma Wetlands Alliance also works with the schools, governments, environmental organizations, and our community. We educate the public about the ecology, wildlife, and the value of wetlands. The PWA is dedicated to the stewardship, restoration, and expansion of publicly accessible wetlands and associated wildlife habitats. We are active in Shollenberger Park, Alman Marsh, and the Ellis Creek Wetlands.

### **Citizen Science Opportunities**

### **Volunteer Opportunities**

Find out more about PWA at <https://petalumawetlands.org/>

## Pepperwood Preserve

Pepperwood's mission is to inspire conservation through science.

Pepperwood's 3,200 acre preserve serves as a refuge for over 900 species of plants and animals. We are leaders in ecosystem-climate research, producing critical science to help guide our region's natural resource management and conservation planning. Pepperwood also offers environmental education opportunities for all ages to cultivate an ethic of conservation in our North Bay region.

### Citizen Science Opportunities

### Volunteer Opportunities

<https://www.pepperwoodpreserve.org/>

## Planet Bee Foundation

Planet Bee Foundation is a 501(c)(3) environmental education nonprofit currently offering [virtual E-STEM lessons](#) centered around bees at **NO OR VERY LOW COST** in response to the pandemic. We have virtual live lessons with certified teachers or interactive asynchronous video lessons. We served over **20,000 students** around the country in 2020. [Watch our trailer on YouTube.](#)

Our comprehensive distance-learning program can be tailored to the needs of your classroom curriculum with differentiated activities that align with the **NGSS and the Common Core**.

99% of our virtual lessons have been provided at no cost in our dedication to social justice. Our pricing (if any) and sliding scale are listed [here](#).

### Volunteer Opportunities

Please feel free to reach out with questions to [programs@planetbee.org](mailto:programs@planetbee.org).

## Point Reyes National Seashore

Point Reyes National Seashore Association's [Science at the Seashore](#) field trip program for school groups.

Join Us for Hands-On Discovery in Point Reyes!

Students have the opportunity to experience the excitement of discovery in natural habitat, improve science skills, increase awareness and inspire stewardship of our environment. Field trips are held in the restored Giacomini Wetlands, surrounding watershed creeks, or Point Reyes bays and beaches. Study equipment and waterproof footwear are provided; Minimum group size is 10 students; Some activities are season, tide, and group-size dependent; A fee is requested, but scholarships are available!

Hands-on activities include: Aquatic macroinvertebrate sampling, Wildlife tracking, Terrestrial invertebrate sampling, Water quality testing, Fish sampling, Bird surveys, Wetland plant studies, Soil and sediment studies, Habitat

restoration, Creek profiling and hydrology, Sandy Beach Mole Crab Monitoring (LiMPETS), Marine debris surveys, Drakes Estero paleo geology and biology.

For information: [www.ptreyes.org](http://www.ptreyes.org)

## Project Learning Tree

Project Learning Tree has developed some new curriculum resources that are available online. Check out the Winter Newsletter at: [http://ucanr.edu/sites/PLT\\_UCCE/](http://ucanr.edu/sites/PLT_UCCE/)

**The Branch** is Project Learning Tree's e-newsletter. The March issue includes an article on "10 hands-on Science Projects to Teach About Pollution." Check it out at:

[https://www.plt.org/educator-tips/science-projects-pollution/?utm\\_medium=email&utm\\_source=sharpspring&sslid=MzU2MbE0NrK0MLM0BAA&sseid=M7QwNbUwNzc0MgYA&jobid=d392442b-e64c-44f0-bdc5-cd1ea040889c](https://www.plt.org/educator-tips/science-projects-pollution/?utm_medium=email&utm_source=sharpspring&sslid=MzU2MbE0NrK0MLM0BAA&sseid=M7QwNbUwNzc0MgYA&jobid=d392442b-e64c-44f0-bdc5-cd1ea040889c)

## Project WET

(Water Education for Teachers)

The Winter California Project WET Gazette is 'live' on the [Water Education Foundation website](http://www.watereducation.org). Go to:

<https://www.watereducation.org/california-project-wet-gazette>

## Redwood Region Ornithological Society

Redwood Region Ornithological Society was organized in 1962 to encourage the study and conservation of birds, other wildlife, and their natural habitat.

<http://www.rros.org/>

## (Russian) Riverkeepers

**Our Mission:** to Inspire the Community to Protect the Russian River Forever.

Russian Riverkeeper has been fighting since 1993 to ensure a thriving river system and your rights to fishable, swimmable and drinkable waters.

Unfortunately, clean water is under new attacks from a rapidly warming climate, big agriculture and our government. Now, more than ever, your river needs vigilant enforcement of environmental laws and the care and commitment of people like you.

## Volunteer Opportunities



<https://russianriverkeeper.org/>

## Russian River Watershed Association

The Russian River Watershed Association (RRWA) is a coalition of eleven cities, counties and special districts in the Russian River watershed that have come together to coordinate regional programs for clean water, habitat restoration, and watershed enhancement. RRWA was formed in 2003 to create opportunities for our member agencies to expand their stewardship role in the watershed.

Download an [RRWA Brochure](#)

### Volunteer Opportunities

Please visit [www.rrwatershed.org](http://www.rrwatershed.org) to stay up-to-date on any upcoming environmentally friendly events and workshops around the watershed during the year.

## San Francisco Bay Model Events:

For information on opportunities available at the Bay Model in Sausalito, including an events calendar, go to:

<http://www.spn.usace.army.mil/Missions/Recreation/BayModelVisitorCenter/StudentExploration.aspx>

## City of Santa Rosa

The Park-A-Month Volunteer Program gives people the opportunity to help improve and clean parks in Santa Rosa.

### Volunteer Opportunities

<https://srcity.org/1028/Park-A-Month-Program>

## Science Buzz Café

The Science Buzz Café is dedicated to the night science tradition. It is for professional scientists who do it for the money and for the amateurs who do it for love. for info: <http://www.sciencebuzzcafe.org/>

***BRINGING SCIENCE & CURIOSITY BACK INTO CULTURE ...***

[www.sciencebuzzcafe.org](http://www.sciencebuzzcafe.org) (707) 292-5281 [daniel@sciencebuzzcafe.org](mailto:daniel@sciencebuzzcafe.org)

## School Garden Network

### MISSION

School Garden Network grows healthy students, families, schools, and communities through garden-based education.

<https://www.schoolgardens.org>

## Shape of Life

Shape of Life offers classroom media and resources depicting the evolution of the animal kingdom on planet earth. Explore animal adaptation, animations, and behaviors along with the amazing scientists who bring their stories to life. Discover a rich selection of NGSS materials including lesson plans, readings, illustrations and activities that inspire a deeper dive into animal phyla. Shape of Life content is FREE to students and educators all over the world.

<https://www.shapeoflife.org/>

## Sierra Club

The Sonoma Group of the Sierra Club meets Monday evenings at the Environmental Center, 55A Ridgway, Santa Rosa. The Conservation Committee meets at 5:30; the Executive Committee meets at 6:30. The public is welcome to attend. The chapter is also looking for volunteers, including outings leaders to lead hikes on a regular basis around the area. We are looking for volunteers throughout the chapter, including outings leaders.

<http://www.sierraclub.org/redwood/get-involved>

### Volunteer Opportunities

**Also see the Sierra Club's Green Life:**

<https://www.sierraclub.org/sierra/green-life>

## Slide Ranch (Marin County)

The mission of Slide Ranch (on the Marin Coast in Muir Beach) is to connect children to nature. We cultivate healthy bodies and minds and foster future generations of environmental stewards. By farming, cooking, caring for animals and exploring wilderness and the coast, we teach people of all ages to see the connection between their own health, a healthy food system and a healthy environment.

Go to: <http://slideranch.org/>

## Sonoma Birding

**Mission Statement** – Sonoma Birding ∞ Sonoma Nature was founded in 2004 in Sonoma Valley, CA. as a volunteer “citizen science” based conservation organization that establishes sustainable bird

and nature related festivals, activities, and programs for all ages, through a variety of partnerships in Northern California and throughout the United States and Canada.

## Citizen Science Opportunities

## Volunteer Opportunities

For information, go to [www.sonomabirding.com](http://www.sonomabirding.com)

## Sonoma Co. Agriculture & Open Space Preservation District

The District partners with several environmental and outdoor education organizations. For more information, go to the District Web site ( <https://www.sonomaopenspace.org/> ) and select Education and Outreach in the Get Involved tab.

### Some of the programs are:

- FARMS Leadership (with Sonoma Resource Conservation District)
- Learning Laguna (with the Laguna Foundation)
- In Our Own Back Yard (with LandPaths)
- Teaching Environmental and Agricultural Memories (with Gold Ridge Resource Conservatin District)
- Wildlife Defenders (with Sonoma Ecology Center)

## Sonoma County Astronomical Society

The Sonoma County Astronomical Society is an amateur astronomy club. They have telescope viewing programs and a variety of public outreach programs.

<https://www.go-astronomy.com/astronomy-club.php?ID=479>

## Sonoma County Library

The Sonoma County Library often has programs that are science related. Select the Events tab at:

<https://sonomalibrary.org/>

Under that tab they have a “calendar” and a “list” choice. I find the list easier to use.

Note that you can also search by **location** or by the *title* of the program.

Upcoming events include such things as the following, most of which occur at different branches throughout the month.

- presentations by Sonoma County Master Gardeners
- Lego Club
- Hour of Code (Maker Studio)
- Build Club

- gardening for kids

## Sonoma County Office of Education Science Ed. Offerings

SCOE occasionally science-related classes for teachers on their Web site ([www.scoe.org](http://www.scoe.org)):

## Sonoma County Regional Parks

The Sonoma County Regional Parks offer a wide variety of activities, many of which are science or nature-related. Go to: <http://parks.sonomacounty.ca.gov> and scroll down to “Upcoming Events”. Some activities are purely recreational, some provide opportunities for community service, and all are educational!

Environmental Discovery Center Drop-in: Every Wednesday-Sunday

### Volunteer Opportunities

## Sonoma County Water Agency

They have a redesigned Web site and increased resource listings. go to:

<https://www.sonomawater.org/education>

## Sonoma Ecology Center and Sugarloaf Ridge State Park’s Team Sugarloaf

Sonoma Ecology Center works to address challenges related to water supply and quality, open space, rural character, biodiversity, energy, climate change, and a better quality of life for all residents. Since 1990, we’ve worked to increase appreciation and stewardship of Sonoma Valley’s natural heritage and create measurable benefits in areas of land, water, climate change and biodiversity.

### **Vision**

We envision a future where people, land, water, and wildlife thrive.

### **Mission**

Our mission is to work with our community to identify and lead actions that achieve and sustain ecological health in Sonoma Valley.

### **Robert Ferguson Observatory:**

Robert Ferguson Observatory is continually looking for new docents and volunteers of all ages to help bring the universe to the public. The Observatory is run by the Valley of the Moon Observatory Association, a 501(3)(c) non-profit, and has offered outreach-based astronomy and science programs to the public for almost 25 years. RFO is almost all-volunteer run and typically serves about 9,000 visitors annually. The observatory is located in Sugarloaf Ridge State Park and

houses a 40-inch reflector telescope, the largest telescope in Northern California that is accessible to the public; a robotic 20-inch research-grade, "CCD" telescope; and an 8", two-meter long refractor telescope. Prior experience or knowledge in astronomy is not necessary. Please go to [rfo.org](http://rfo.org), click on "Volunteer" and fill out the volunteer application form online to get on the list for our next docent orientation and training! Questions? Contact Stephanie Derammelaere at 707-333-1331 or at [sd@rfo.org](mailto:sd@rfo.org).

## Volunteer Opportunities

### Sonoma Land Trust

The Sonoma Land Trust offers a variety of educational outings and volunteer opportunities for the public on protected lands. Check them out at: <https://sonomalandtrust.org> (select the "Explore" tab for the calendar)

## Volunteer Opportunities

## Citizen Science Opportunities

### Sonoma/Petaluma State Historic Parks

While the Sonoma/Petaluma area state Parks primarily focus on history, they do have some science/environmental events and offerings such as twilight nature hikes.

For info, go to [www.sonomaparks.org](http://www.sonomaparks.org)

### Sonoma State University:

**The Sonoma State University School of Science and Technology** has a periodic online newsletter that gives news about the school and includes a link to the various department public speakers and events.

The link for the **speakers/colloquia** is: <http://www.sonoma.edu/scitech/pls/>.

### SSU Center for Environmental Inquiry:

The Center's mission is to create an engaged and environmentally ready society, one where everyone has the skills to find solutions to the challenges facing the earth.

With the complex issues before us, such as climate change, overuse of resources, and declining biodiversity, we need to be awake, prepared and engaged. We need to know how to work across sectors and find innovative ways forward.

There is good evidence that we are not ready. Intuitive understanding of ecosystem processes is at an all-time low, and many professionals entering the workforce are not prepared to problem-solve or aware of the impact of ecosystems on economy and culture.

## Citizen Science Opportunities

### Volunteer Opportunities

<https://cei.sonoma.edu/>

- Full calendar of events: [cei.sonoma.edu/calendar](https://cei.sonoma.edu/calendar)
- Recordings of past events: [cei.sonoma.edu/calendar/past](https://cei.sonoma.edu/calendar/past)

## *Stewards of the Coast and Redwoods*

### Docent and Community Education Program

The Stewards of the Coast and Redwoods is the “Cooperating Association” that provides interpretive services for Armstrong Redwoods State Reserve and the Sonoma Coast State Park. Check their website for more information about these great opportunities for you and your students, **or call 707-869-9177**

## Citizen Science Opportunities

### Volunteer Opportunities

### General Volunteers in Parks Orientation: August 28

[www.stewardscr.org](http://www.stewardscr.org)

## Teen Tech San Francisco

Our mission is to inspire and empower the next generation of tech innovators. TeenTechSF is an interactive tech community for teens to innovate, collaborate, and create. Run by and for teens, all our events are free.

Since launching, TeenTechSF has connected 1,600+ teens on five continents with more than 100 tech leaders from Apple to Zynga offering presentations and workshops on design thinking, coding, app creation, robotics, 3-D printing, entrepreneurship, professional networking, tech careers, and global tech trends.

Like the [TeenTechSF Facebook page](#) for the latest news & events.

See the [TeenTechSF@MarchFor Science video](#) and [TeenTechSF March For Science Facebook recap/photos](#).

website: <https://teentechsf.org/#teentechsf>

## **Water Education Foundation**

<https://www.watereducation.org/>

## **Wildcare**

Wildcare is a (primarily) Marin County organization dedicated to the care and protection of wildlife. They have a variety of programs for teachers and volunteers.

### **Volunteer Opportunities**

Check out Wildcare at: [www.discoverwildcare.org](http://www.discoverwildcare.org)

## **Wildlands Conservancy/Jenner Headlands Preserve Events**

Relatively few people know about the Jenner Headlands Reserve on the Sonoma Coast. It is a beautiful place, and they provide some great opportunities.

### **Volunteer Opportunities**

[http://www.wildlandsconservancy.org/preserve\\_jenner.html](http://www.wildlandsconservancy.org/preserve_jenner.html)

## **RESOURCES:**

### **Bay Area Teen Science**

this site posts opportunities for teens to get involved in science in a variety of ways. Although many of the postings are now outdated, they can still provide ideas and sites for teens to check back with later.

<http://bayareateenscience.org/>

### **Bay Model Visitor Center**

The San Francisco Bay Model, in Sausalito, is a scale model of the San Francisco Bay. It is used for scientific research and modeling, and is also available for school tours. They also offer a variety of events and programs. Go to:

<http://www.spn.usace.army.mil/Missions/Recreation/BayModelVisitorCenter.aspx>

## Brain Pop

Subscription based lessons on a wide variety of topics. <https://www.brainpop.com/>

## California Academy of Sciences

The CalAcademy has a variety of programs that would be of interest to youth who are interested in science. They include

- Teen Science Night                      Digital Learning Tech Teens
- Careers in Science Intern Program
- Teen Advocates for Science Communication (volunteer program)
- Teen Think Tank                          Science Action Club

Find out more at: <https://www.calacademy.org/youth-programs>

## CA Department of Fish and Wildlife Hatchery Education Program

The Hatchery Education Program offered by California Department of Fish and Wildlife's has opened their Fall enrollment period. Apply now for a free one hour session of multimedia learning about fish, watersheds & more! Dynamic activities illustrate key concepts and encourage critical thinking with subject matter aligned with learning standards specific to grade level. The application for Fish Academy, a guided activity based learning day at Don Clausen Fish Hatchery at Warm Springs Dam in early 2017, is also available now. Contact Sastra McGinley at [sastra.mcginley@wildlife.ca.gov](mailto:sastra.mcginley@wildlife.ca.gov) or (707) 280-3084 or visit [www.wildlife.ca.gov/Regions/3/HEP](http://www.wildlife.ca.gov/Regions/3/HEP)

## CA. Department of Parks and Recreation

The California Department of Parks and Recreation has several “Guides for Educators” available that may be of interest to *Grapevine* subscribers. These include resources for teaching about both historic parks and natural parks. Some are available for downloading, including some that I (Mike Roa) wrote. I can provide workshops/staff development on those that I wrote. You might be interested in taking a look at:

[The Conifer Connection: A Resource for Learning and Teaching about Coniferous Forests and Watersheds](#)

[A Guide to the Side of the Sea: A Teacher's Guide for Field Trips to Rocky Intertidal Areas](#)

[Redwood Ed: A Guide to the Coast Redwoods for Teachers and Learners](#)

[A Teacher's Guide to Sonoma State Historic Park](#)

[Allensworth: A Piece of the World, A Teacher's Guide with Student Lessons and Resources](#)

[California State Capitol Museum School Packet \(Teacher Version\) \(Student Version\)](#)

[Governor's Mansion State Historic Park Teacher's Guide](#)

} I wrote these three.



Indian Grinding Rock State Historic Park and Chaw'se Regional Indian Museum School Tour Information

Tijuana Estuary High School Teacher's Guide

**Check them out at:** [https://www.parks.ca.gov/?page\\_id=25535](https://www.parks.ca.gov/?page_id=25535)

## **Climate Change Educational Materials from the U.S. E.P.A.**

Find [climate education teaching tools](http://go.usa.gov/3AVx9) (<http://go.usa.gov/3AVx9>) and introduce your class to a [Student's Guide to Climate Change](http://go.usa.gov/3AV3G). (<http://go.usa.gov/3AV3G>)

## ***Environmental Protection Agency Resources***

**The U.S. E.P.A. has a variety of resources that you may find useful. Check them out at:**  
[usaepa@service.govdelivery.com](mailto:usaepa@service.govdelivery.com)

## **U.S. E.P.A.**

### **Activity Book for Elementary Age Students**

How do you describe to students what the EPA does?

Use our newest activity book for elementary age students to help introduce them to EPA. Kids can learn about the different ways the EPA works to protect our environment and our health. It's a simple, straightforward guide suitable for children of all ages.

**Download the PDF.** (<https://go.usa.gov/xn946>)

Find more downloadable and hardcopy resources at the [National Service Center for Environmental Publications](https://www.epa.gov/nscep). (<https://www.epa.gov/nscep>)

## **Evolution Videos**

Shape of Life offers FREE classroom videos depicting the evolution of the animal kingdom on planet earth. Students and educators from all over the world explore animal adaptation, animations, and behaviors along with the amazing scientists who bring their stories to life. We also offer a rich selection of NGSS materials including lesson plans, readings, illustrations and activities that inspire a deeper dive into the phyla that explain so much of our existence.

<http://www.shapeoflife.org/>

## **Geothermal Education Resources**

The Geothermal Education Office, in Tiburon, has a wealth of teacher resources on geothermal energy, including slide shows, videos, classroom materials, maps, lists of web sites, and more. go to: <http://geothermaleducation.org/> or contact them at: [24hrcleanpower@gmail.com](mailto:24hrcleanpower@gmail.com)

## Headlands Institute/Naturebridge...Sausalito

A variety of environmental science opportunities for grades K-12 are available at the Headlands Institute. They also have professional development workshops for teachers (formal and non-formal), and a variety of classroom resources. Go to: <http://www.naturebridge.org/golden-gate>

## iNaturalist

iNaturalist is a Web site that allows **citizen scientists (like you and your students!)** to post pictures and information about plants, animals, and other science that they see in their yards and travels. It is a GREAT site for your students to not only explore but to contribute to. Go to: [www.iNaturalist.org](http://www.iNaturalist.org)

An example of the use of iNaturalist at the Jenner Wildlands Preserve can be seen at:

[http://www.inaturalist.org/projects/jenner-headlands-preserve-inaturalist-notebook?utm\\_source=Jenner+Headlands+Community+Meeting+2015&utm\\_campaign=JHP+Analytics&utm\\_medium=email](http://www.inaturalist.org/projects/jenner-headlands-preserve-inaturalist-notebook?utm_source=Jenner+Headlands+Community+Meeting+2015&utm_campaign=JHP+Analytics&utm_medium=email)

and another example can be found at: [www.protecthabitat.com](http://www.protecthabitat.com)

## Resources from the Marin Co U.C. Cooperative Extension Service

The Marin County U.C. Cooperative Extension Service has teaching materials on a variety of topics, including sudden oak death, trees/forestry, stewardship, agriculture, and more.. Go to:

[http://cemarlin.ucanr.edu/Programs/Custom\\_Program816/Environmental\\_education\\_resources/](http://cemarlin.ucanr.edu/Programs/Custom_Program816/Environmental_education_resources/)

## Marin Co. Resource Links:

The County of Marin has compiled a list of environmental education resource links for adults and for kids. Go to: <http://www.marincounty.org/depts/pw/divisions/mcstoppp/archive/resources-for-schools>

## Marin Master Gardeners Dig It. Grow it. Eat it. A workshop

A one-day workshop on edible plants and nutrition for third and fourth graders, led by UC Marin Master Gardeners and held at the Marin Art and Garden Center. Students will learn to identify edible plant parts and about how plants grow, including the science of pollination and propagation.

- **Station 1 - Edible Plant Parts**
- **Station 2 - How Plants Grow**
- **Station 3 - Plant Seed Science**
- **Station 4 - Plant Propagation**
- **Station 5 - Get in the Dirt**
- **Station 6 - Plant Pollination**

If you are interested in this program, please contact UC Marin Master Gardeners Help Desk.

Email: [HelpDesk@MarinMG.org](mailto:HelpDesk@MarinMG.org), or call: (415) 473 – 4204

## **Marin – Sonoma Mosquito Abatement District**

### **Free Science Presentations**

The Marin/Sonoma Mosquito & Vector Control District offers free presentations about vectors (mosquitoes, yellowjackets and ticks) to any school in Marin and Sonoma Counties. The presentations focus on the biology of vectors and how students can protect themselves from these critters. Visit <http://bitly.com/educationdept> for more information, or contact Eric Engh at [erice@msmosquito.com](mailto:erice@msmosquito.com) to be added to our scheduling list.

## **Mystery Science (a.k.a. Mystery Doug)**

Lessons based on searching for answers to questions on a variety of topics. Schools or teachers can try out some of these lessons for free. Fee for unlimited access.

[www.mysteryscience.com](http://www.mysteryscience.com)

## **Ocean Currents Radio Program**

The first Monday of every month Cordell Bank National Marine Sanctuary produces a live radio program on Community Radio for West Marin called Ocean Currents. Hear from ocean experts as you learn about the importance of a healthy ocean.

Broadcast live in the West Marin listening radius and live online at [www.kwmmr.org](http://www.kwmmr.org), 1-2 pm. The shows are all archived on the Cordell Bank sanctuary [website here](#), or you can subscribe to the podcast.

## **Looking for a good resource online to get ocean wildlife photos for educational use?**

Check out the [National Marine Sanctuaries online media library](#)

Download photos and video footage for free for educational use and check out the marine sanctuaries online encyclopedia. There are 4 National Marine Sanctuaries in CA. Do you know which ones are closest to you?

## **NOAA Resources for you**

The folks at the Cordell Bank National Marine Sanctuary and the National Oceanographic and Atmospheric Administration (NOAA) have a variety of resources and opportunities available. Check the opportunities out at <http://cordellbank.noaa.gov>

## **Planet Bee Foundation**

[Planet Bee Foundation](#) is a Bay Area nonprofit dedicated to creating a green-minded generation through environmental stewardship, using the lens of the struggling honey bee to teach the power of individual action. We have expanded our offering of hands-on educational programs, each of which can be individually tailored to fit a school's needs, wants, and location. Every lesson is in line with Next Generation Science Standards and grounded in the philosophy of E-STEM learning. We are now taking sign-ups for the 2018-19 school year! Our calendar fills up quickly, so check out our website at [planetbee.org](http://planetbee.org) and sign up now!

Planet Bee now offers one-day and year-long programs. The [school program overview page](#) on our website lays out each program offering, their alignment with E-STEM and NGSS, and our updated pricing structure. Need-based discounts and sponsorships are available.

All of our programs are developmentally appropriate and designed to address all learning styles. Most programs involve observation of (contained) live bees, games, hands-on activities, and plenty of room for inquiry, creativity, exploration, and discussion. We focus on conservation techniques and environmentalism in every program.

One-day workshops include: [Humble Honey Bee](#), [Bee-ometry](#), [Native Bees of California](#), [Wanna-Bee an Engineer?](#), [Hive Dive Live](#)

Year-long programs include: [ZomBee Watch](#), [Adopt-A-Hive](#), [Wanna-Bee an Engineer?](#), [Honey Bee Series](#), [Native Bee Series](#), [All Bees Series](#)

We have also added a new format for [High School Programs!](#)

Please email our Program Director, Sarah Thorson, at [programs@planetbee.org](mailto:programs@planetbee.org) if you have any questions, or sign up for programs via the online registration forms on our website, [www.planetbee.org](http://www.planetbee.org). Together we can change the world - one bee and one student at a time!

## **Point Blue (Point Reyes Bird Observatory)**

At Point Blue, our mission is to advance the conservation of birds, other wildlife, and ecosystems through science, partnerships, and outreach. Our 140 scientists work to reduce the impacts of habitat loss, climate change, and other environmental threats while promoting nature-based solutions for wildlife and people, on land and at sea.

In addition to the scientific work done by the folks at Point Blue, they have a variety of educational programs. Go to: <http://www.pointblue.org/>

## **Sonoma County Wildlife Rescue**

### **Presentations**

We love to give educational presentations to groups of all ages! We make each presentation to match your group's unique needs. We can talk on a variety of subjects, including ecology, wildlife rehabilitation, and cohabiting peacefully with wildlife. Presentations may include Powerpoint, skits, games, or specimens.

### **Tours**

Each presentation at SCWR includes a tour of our Educational Wildlife Community. Our community is comprised of non-releasable wildlife in natural enclosures. Animals include mountain lions, coyotes, raccoons, and many more!

If you would like to sign up for one of our presentations, please call (707) 992-0274 or email us at [education@scwildliferescue.org](mailto:education@scwildliferescue.org).

Web site: <http://www.scwildliferescue.org/presentation-at-scwr.html>

For information, contact Linnaea Furling at: [education@scwildliferescue.org](mailto:education@scwildliferescue.org) or 707-992-0274

## **Sonoma Resource Conservation District:**

### **Education**

LandSmart Education® creates connections and inspires conservation through a series of engaging educational opportunities for community members of all ages. Youth programs offer innovative hands on learning experiences at local farms. A distinctive public outings series highlights local protected agricultural properties and the importance of conservation as a tool in working landscapes in partnership with local landowners. Our annual workshops are designed to deliver cutting edge information and resources about land management techniques available through RCD and partner programs with topics including water management and conservation, fish and wildlife habitat enhancement, erosion control, soil health, and carbon sequestration.

Education programming includes:

- FARMS Leadership Program- high school youth
- TEAM Program field trips- elementary school students

- Agricultural Heritage Series- for members of the public
- LandSmart Workshops- designed for landowners and managers

The California Academy of Sciences, the Exploratorium, and other organizations periodically offer free “Teen Science Night” events. Partners include Space and Science Museum, de Young Museum, Oakland Zoo, San Francisco Zoo, Marine Mammal Center, NASA and others. Do (or have your students do) an Internet search for “Teen Science Night” for upcoming events.

## Teen Tech San Francisco

Our mission is to inspire and empower the next generation of tech innovators. TeenTechSF is an interactive tech community for teens to innovate, collaborate, and create. Run by and for teens, all our events are free.

Since launching, TeenTechSF has connected 1,600+ teens on five continents with more than 100 tech leaders from Apple to Zynga offering presentations and workshops on design thinking, coding, app creation, robotics, 3-D printing, entrepreneurship, professional networking, tech careers, and global tech trends.

Like the [TeenTechSF Facebook page](#) for the latest news & events.

See the [TeenTechSF@MarchFor Science video](#) and [TeenTechSF March For Science Facebook recap/photos](#).

## This Week in California History...

is a new site for learning about California history, including California’s science and environmental history. ThisWeekinCaliforniaHistory.com is a digital playground for California history and geography. It posts what happened in California over 500 years a week at a time; from natural history to LGBT milestones and including science events like 19th century patents by women in California. The site is free, non-commercial and full of interesting content.

## U.S. Forest Service:

You may now order FREE sets of scientist cards from our web site! The cards feature Forest Service scientists and are a great way to introduce students to different science careers. To view the variety of cards we have, please visit <http://www.naturalinquirer.org/scientists-v-92.html>. We also have 2 lesson plans to accompany the cards. These lesson plans are available as pdf files on the web page listed above and the direct links are: <http://www.naturalinquirer.org/UserFiles/File/FinalScientistsCardSeriesLessonPlan.pdf> and [http://www.naturalinquirer.org/UserFiles/File/CardLessonPlans\\_StealingBundles\(1\).pdf](http://www.naturalinquirer.org/UserFiles/File/CardLessonPlans_StealingBundles(1).pdf).

To order your free sets of cards today, please visit <http://www.naturalinquirer.org/Scientist-Card-Ordering-Page-v-155.html>.

## **Wet Gazette**

The Water Education Foundation and California Project WET have changed the format for their Web site for water education resources. This excellent source for water education resources includes:

- Trending: What's Happening Now in California Water
- Water Topics: News, Events, and Information by Topic
- Aquaforia: What News You Need to Know
- Aquapedia: An Online Water Encyclopedia
- A Quicklink section giving upcoming events, and resources for purchase

For the spring issue of the Project WET Gazette, go to:

[http://www.watereducation.org/publication/spring-2018-california-project-wet-gazette?utm\\_campaign=Welcome%20to%20Spring%2C%20California%20Project%20WET%20Alumni%21&utm\\_medium=email&utm\\_source=bundle\\_and\\_blast](http://www.watereducation.org/publication/spring-2018-california-project-wet-gazette?utm_campaign=Welcome%20to%20Spring%2C%20California%20Project%20WET%20Alumni%21&utm_medium=email&utm_source=bundle_and_blast)

For everyone seeking workshops, we have a variety for you to choose from this summer and a few already posted for the fall at the Foundation's website at [workshops](#) and [Special Workshops and Events](#). We also have lots of non-school related 'Events' for those who just want to get away!

## **Wildcare/Terwilliger Nature Education Programs**

The Wildcare's Terwilliger Nature Education Programs offer a wide range of environmental education opportunities for K-12 classrooms, including:

**-Live Wildlife Ambassador Program:** Three wildlife ambassadors will visit your classroom for an unforgettable presentation. Possible wildlife visitors include a Northern Spotted Owl, Virginia Opossum, California Desert Tortoise, Red Tailed Hawk, Gopher Snake and many more!

**-Nature Hikes: Guided discovery hikes are offered at four locations (Spring Lake, Miwok Meadows, Ring Mountain, Muir Woods)**

**-Nature Van:** Students will explore touchable taxidermy, bones and biofacts in this interactive presentation at your site. Choose from a variety of topics including California Wildlife, Birds of a Feather, Marvelous Mammals, Redwood Giants, Wild Wetlands, Ocean Adventures and Going Green.

**-Center Tours:** Meet our non-releasable rescued wildlife ambassadors in a guided tour around our outdoor courtyard and museum. Each tour includes a special animal encounter with one of our wildlife ambassadors.

**Each classroom automatically qualifies for a scholarship that matches the percentage of the student body enrolled in the Free and Reduced Meal Program.**

For more information or for additional teacher resources, visit <http://www.wildcarebayarea.org/education> or email [tory@wildcarebayarea.org](mailto:tory@wildcarebayarea.org)

## **WATER WEBSITES OF INTEREST**

### [Visit the USA](#)

Here you will find lots of great information and tips on visiting and traveling in the USA. No two trips are alike, so you will find information in this section for a variety of trip types. Whether you prefer staying in a resort or camping under the stars, the

site includes details travelers need to be safe and happy a trip. Being prepared early and knowing what to expect will help reduce traveler stress and be more able to enjoy the unexpected events of travel. This website has done a lot of the ‘Wet Vacation’ research on states for students – and each state description often includes links to state travel sites that highlight regions within the state, such as the California travel website below.

### [Visit California](#)

If you know which part of California is of interest but you still need some guidance, click on “Map,” and then explore one of the 12 geographical regions of the state. We’ve organized our content—including videos, a printed visitor’s guide and even [travel tips](#)—with an eye toward helping find what you want quickly and easily. Searching this site is simple: If you already know what you’re looking for, type the keywords into our search bar at the top of the page. The “hamburger” menu in the top right corner of the page is another great resource—it has links to articles and other content organized around interests.

### **National Park Service: [Plan Your Visit](#)**

Are you ready? Whether you want to explore local places or plan a vacation, you’ll [find a park](#) to suit your interests! The National Park Service preserves unimpaired the natural and cultural resources and values of the National Park System for the enjoyment, education, and inspiration of this and future generations. This is a wonderful website to pair with or expand on ‘*Discover the Waters of Our National Parks*’ (p: 495) or [the California version of the activity!](#)

### **U.S.G.S. – [The National Map](#)**

As one of the cornerstones of the [U.S. Geological Survey’s National Geospatial Program](#), The National Map is a collaborative effort among the USGS and other Federal, State, and local partners to improve and deliver topographic information for the Nation. It has uses ranging from recreation to scientific analysis to emergency response. The National Map Viewer is the one-stop destination for downloading map data and products. It uses easy to navigate foundational base maps and makes it simple to download products such as the US Topo.

### **[U.S. Climate Data](#)**

The purpose of the U.S. Climate Data is to inform people about the climate in the United States. This website was developed by Your Weather Service. The website includes monthly and daily data for temperature, precipitation, snowfall and sunshine for multiple locations in every state. The monthly data also includes a climograph of the average precipitation, maximum and minimum temperature by month for each location that can be opened separately in its own page to copy. Each location also includes Google map link to see where it is located and a link to the current weather forecast at that location. The page also links to [climate.eu](#) where one can find monthly data for countries in Europe and Africa.

### **NOAA: [U.S. Climate Atlas](#)**

These maps use daily observations of temperature and precipitation from over 10,000 stations in the U.S. based on new methodologies to quality control the daily data, summarize the daily data into monthly values and the creation of maps to visualize the information. There are maps for minimum temperature, maximum temperature, and precipitation. There are two types of data that can be displayed; maps for a particular month and year from 1895 to present, or climatology maps. The climatology maps represent average values from 1981 to 2010. These are also known as the “1981-2010 Normals”.

### **NOAA: [Defining Climate Normals](#)**

You’re looking forward to taking a much-deserved vacation in four months, and you want to visit a U.S. city you’ve never been to before. So, how do you decide where to go? Perhaps you’ll consider places where you can expect your ideal temperatures. But, at four months out, your trusted weather forecast probably won’t be much help in finding locations that meet your temperature criteria. Fortunately, our scientists have calculated the “normal” temperatures you can expect to see each month at locations across the United States. We call them [Climate Normals](#), and we compute a new installment every decade.

### **ESRI: [Severe Weather Public Information Map](#)**

Manage your severe weather response with live feeds and sensor data. This map features live feed layers for Severe Weather across the United States and Canada and displays the predicted ice accumulation for the next 72 hours across the Continental United States. Data are updated hourly from the National Digital Forecast Database produced by the National Weather Service.

### **NOAA: [Climate Data Primer](#)**

Heading out for a walk on a chilly spring morning, you notice misty clouds on the hills in the distance. You’re feeling eager for summer to arrive, but the hillsides are just beginning to green up after the end of winter. You wonder, “Is it cooler than usual this spring? I think I’m usually wearing shorts by this time of year.” Thinking about the weather, you recognize what you’re really concerned about is if it will rain on your barbecue this weekend.

### **NOAA: [Historical Climate Summaries – New Version](#)**

The Regional Climate Centers (RCC) deliver climate services at national, regional and state levels working with NOAA partners. The Regional Climate Center data interface is being updated, but you can already start using the new version. Click ‘OK’ on the note about the page not loading Google Maps correctly, then choose one of the two ways to use the map as

described below the map. Click on any data point that appears to get more data than you probably want! This website includes the '30-year normals' used in the U.S. Climate Data locations, the maps in the U.S. Climate Atlas – AND you can get all the raw data available for the life of each gauge on the RCC map!

**NOAA: [Comparative Climatic Data](#)**

The Comparative Climatic Data tables of meteorological elements outline the climate conditions at major U.S. weather observing stations, Puerto Rico, and the Pacific Islands. The stations list is alphabetically by state. The table arrangement is so a single table of the same element allows the user to compare the values for different locations. Some elements will not be in the table for weather stations that do not regularly report that element. This site also allows users to [view data and graphs of temperature and precipitation Climate Normals](#) for over 9,800 stations across the United States.

**US EPA: [Climate Change Indicators: Weather and Climate](#)**

Rising global average temperature is associated with widespread changes in weather patterns. Scientific studies indicate that extreme weather events such as heat waves and large storms are likely to become more frequent or more intense with human-induced climate change. This chapter focuses on observed changes in temperature, precipitation, storms, floods, and droughts.

**Real World Learning Objects: [Using Excel to Create a Climograph](#)**

A climograph is a chart commonly used to graphically display both annual temperature (highs, lows, and averages) and precipitation information for a city or region. Meteorologists and climatologists use climatograms to understand the general climate of a region. They are also frequently included in travel books and tourism brochures so interested visitors can select the "best" time of year to visit a certain location. This website walks one through [how to use a spreadsheet program to create a climograph](#), and then use and analyze the graph to make a recommend times of the year to visit their area of study.

**GardenZeus: [California Climate Zones](#)**

The same weather and climate factors that may affect vacation plans also come into play when planning what to plant in your garden. GardenZeus California Climate Zones were developed by taking into account many factors including seasonal climate, temperature averages, elevation, frequency of frosts and precipitation. The website includes a wonderful synopsis of the prevailing weather and climate in each of their California climate zones, which upon clicking on shows a list of garden plants recommended for the region.

**Desert research Institute: [Stories in the Snow](#)**

DRI is pioneering an exciting and unique approach to the science of snow. The Stories in the Snow project engages community members as citizen scientists in real data collection and research throughout the Sierra Nevada. Every snowflake is unique, and the shape of freshly-fallen crystals can tell us about real-time atmospheric conditions. Using smartphone technology, you can help track the path a snowflake has taken through the atmosphere!

**[California Project WET Supplemental Materials Page](#)**

Remember to check this Water Education Foundation web page to find California specific supplements and other materials for use with Project WET activities, including other activities tied to weather and climate such as the California version of *'Discover the Waters of Our National Parks,' 'Snow and Tell' or 'Back to the Future.'*