



CARING FOR OUR Watersheds

California

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Photo by Creston Ga

Caring for Our Watersheds is a program that empowers students to imagine, develop and create solutions in their local watersheds. The program promotes watershed awareness and stewardship, values student ingenuity and offers support when turning theoretical ideas into action. Judges in the environmental field score student entries, and 10 projects are selected for the final competition, held this year on April 16. Students present their projects and finalists receive cash awards and matching awards for their school. In addition, \$10,000 in implementation funding (up to \$1,000 per project) is available to all participants, so any student can see his or her idea turn into a reality.



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*Caring for Our Watersheds is a joint program of
the Center for Land-Based Learning and Agrium.*

The finalists in the 2016 Caring for Our Watersheds competition, which was held at the Crocker Art Museum on April 16.

Photo by Nate Eckler



OUT OF 411 PROPOSALS SUBMITTED THIS YEAR, THESE 10 ADVANCED TO A FINAL COMPETITION WHERE STUDENTS COMPETED FOR \$12,000 IN AWARDS FOR THEMSELVES AND THEIR SCHOOLS.

Project: THE PROBLEM WITH SINGLE-USE BOTTLES

Team Members: Brook Gallagher

School: Colusa High School

Description: Reduce single-use plastic bottle waste by providing reusable bottles to students, installing water bottle filling stations and offering incentives for using them. Bottles include a pamphlet with statistics on the negative impacts of single-use bottles.

Project: CARPOOLING APP FOR MIRA LOMA

Team Members: Tamana Gill

School: Mira Loma High School

Description: Develop an app that will help students more effectively plan and utilize carpools to Mira Loma. Carpooling would not only reduce emissions, but also reduce other car pollutants that enter stormwater runoff and our waterways.

Project: REDUCING SEDIMENT DELIVERY

Team Members: Taylor Lowery

School: Foresthill High School

Description: Plant native vegetation along a bare area of the cross-country course to reduce erosion and sediment delivery to Owl Creek. Excess sediment can degrade stream habitat. Plantings will stabilize soil, slow runoff and trap sediment, while providing additional wildlife habitat.



Project: FLUSHING AWAY WATER WASTE

Team Members: Noah Wallace, Jacob Gerigk, Nathan Shaldone

School: Rio Americano High School

Description: Improve high school's water efficiency by installing waterless urinals in male bathrooms. Replacing the current devices, which use 1 gallon per flush, could save an estimated 144,000 gallons of water per year.

Project: TRASH-A-THON — A FUNDRAISER SUPPORTING EDUCATION AND THE ENVIRONMENT

Team Members: Mia Belluomini, Aiden Keller

School: Sierra Academy of Expeditionary Learning

Description: Establish a fundraiser, modeled after a jog-a-thon, where students gather pledges based on the amount of litter they pick up. Proceeds would benefit school environmental improvements and a local organization that protects waterways.



Project: ART DRAIN

Team Members: Alyssa Gnos

School: George Washington Carver High School

Description: Creatively raise awareness that storm drains deliver water and pollutants directly back to waterways. Install inlet filters in neighborhood storm drains to reduce current oil and sediment delivery and use colorful imagery around each drain to educate about stormwater runoff.

Project: RIPARIAN RESTORATION AT MAMMOTH BAR

Team Members: Marjorie Miller

School: Foresthill High School

Description: Plant native species adjacent to a frequently used OHV site along the American River. Heavy OHV use increases the potential for erosion and sedimentation in waterways, thus degrading aquatic habitats. Plantings will stabilize the bank and trap sediment from the impacted area.



Project: AQUAPONICS SYSTEM FOR RESTORATION

Team Members: Ravina Sidhu

School: Mira Loma High School

Description: Install an aquaponics system in the school's greenhouse in order to cultivate native plants for a restoration project. Aquaponics, which combines the raising of fish with the growing of plants in water, uses substantially less water than traditional growing, as water and nutrients are recycled.

Project: CONVERTING LAWNS INTO GARDENS

Team Members: Peter Fang, Vue Yang, Julie Xiong, Marylou Dunn

School: Valley High School

Description: Convert unused lawn areas on campus to native plant gardens. Project would demonstrate the use of drought-tolerant species that require less watering and do not need fertilizers or pesticides, addressing issues of water quantity and quality.

Project: WATERSHED MURALS

Team Members: Hieu Khong, Hoang Tran, Dang Nguyen, Minh Tran

School: Florin High School

Description: Create five watershed murals on campus to educate about local waterways and wildlife. Murals, placed on empty panels left from locker removal, would beautify campus and help inspire people to care about the environment.

HONORABLE MENTIONS

THE HASTE TO REDUCE WASTE

Lia Roccucci, Elmerissa Langman (Rio Americano High School)

A GARDEN FIX FOR FLOODING

Maddie Brock (Christian Brothers H.S.)

THE POWER OF THE TUNA CAN

Escher Beran, Sage Furman, Ana Huston-Isais, Jason Wright (Da Vinci High School)

BAT BOXES

Ryan Kizer (The MET Sacramento)

CLEAN WATER/CLEAN WATERSHEDS

Shiann Bounthai, Kailani Farr, Rowenikka Fields, Savan Reyes (Grant High School)

RECYCLING AT THE FAIR

Kierstin Parker (4H—Mother Lode 49ers)

TREE PLANTING WITH ELEMENTARY STUDENTS

Sandra Longfellow (The MET Sacramento)

SAMPLE OF PROJECTS IMPLEMENTED

Antelope High School:

- Sierra Creek Oak Planting
- Native Species Planting and Pollinator Info Kiosk

William Daylor High School:

- Drip Irrigation/Solar-powered Pump — water catchment system
- Reducing Plastic Packaging in School Meals

Colusa High School:

- Monofilament Recycling Containers — placed at Sacramento River boat landings
- Owl Boxes Built/Placed on Farms — alternate to rodenticide

Da Vinci High School:

- Native Plant Pollinator Garden

Stockton Collegiate High School:

- Raising Salmon in Class for Release to River

Christian Brothers High School:

- Wildlife Habitat Restoration

Valley High School:

- School Composting
- Water Education Booth

Mira Loma High School:

- Himalayan Blackberry Removal/Restoration

The MET Sacramento:

- Southside Park Cleanup
- Tree Planting at Local Elementary School
- Rain Barrels on Campus

Florin High School:

- Water-efficient Landscaping/Planter Boxes

Every Little Bit **HELPS**

Caring for Our Watersheds competition teaches students more than just science

by Anne Stokes



Foresthill High School senior Wyatt Ralston implemented a project that called for putting gravel and native plants around a storm drain on campus to slow runoff and reduce erosion.

Photo by Anne Stokes

For Foresthill High School senior Wyatt Ralston, competing in the Caring for Our Watersheds program taught him a lesson one might be hard pressed to find in a book: how to make a difference.

“If everyone does one small thing, it turns into one big thing.”

Wyatt Ralston
Foresthill High School senior

“I learned a lot about our local watershed, like how all of these storm drains around here go into the American River and it pollutes the water and can make it unsanitary,” Ralston says. “Now I’m trying to help as much as I can.”

Small projects like this can help.”

Ralston’s project involved creating storm drain gardens on his high school campus to reduce erosion and the runoff of sediment into nearby waterways.

“I didn’t think dirt was that bad,” Ralston recalls, but he learned that when rainwater travels over bare ground, it can pick up sediment and pollutants that can harm aquatic habitats.

Each year, Ralston’s teacher Katherine Cantrell challenges her AP environmental science students to come up with solutions to these kinds of problems for the Caring for Our Watersheds contest. Thanks to project implementation funding provided, student proposals can become reality. Cantrell says the opportunity to put ideas into action is a great life experience for her students.

“I think it’s important for them to

see that they can make a difference, not just talk about it,” she says.

The storm drain garden proposal placed third in the 2015 competition. Ralston worked for 3-4 months on gathering supplies and getting permissions to implement the project. He received extra help from his classmates and fellow Boy Scouts who installed gravel and native plants around four storm drains on campus, which will help to slow and filter stormwater before it returns to local streams.

Ralston says home and business owners could easily install their own storm drain gardens. He hopes his project will inspire others to do their part to help the environment.

“I’d like [people] to learn that small stuff really does matter,” he says. “If everyone does one small thing, it turns into one big thing, and it can make a big dent in [the problem].”

WHY DO YOU PARTICIPATE IN CARING FOR OUR WATERSHEDS?



“Every year I’m inspired by the students’ ideas and their dedication to being stewards of the planet. The projects are meaningful for the students and align with the mission of the U.S. Fish and Wildlife Service in a variety of ways, from improving water quality of streams to creating habitat for pollinators.”

KARLEEN VOLLHERBST
U.S. Fish and Wildlife Service



“Any opportunity that gives students the chance to make an impact on their communities is always wonderful. I’m just happy to have the opportunity to get involved and really make meaningful environmental change at my school.”

MIA BELLUOMINI
Student at Sierra Academy of Expeditionary Learning



“The Caring for Our Watersheds contest has allowed me to focus my students on a learner-centered project related to their study of environmental science, which also connects students to both their community and the Sacramento River watershed, a very integral part of all aspects of life in Colusa County.”

CRAIG RICHARDS
Colusa High School teacher

Get **INVOLVED**

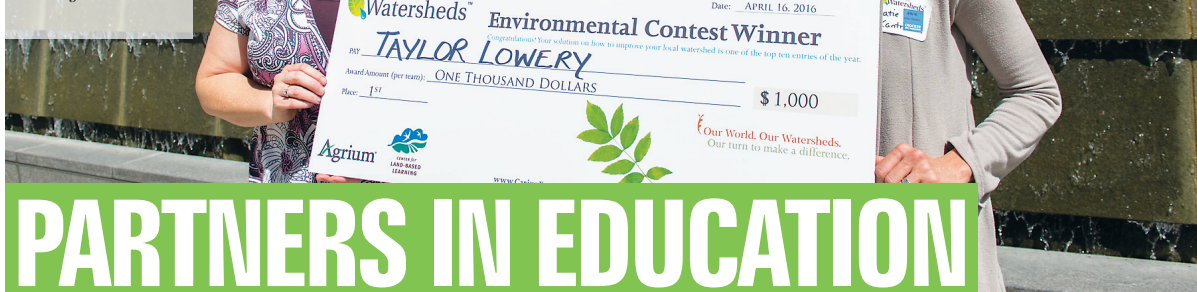
TEACHERS, ENVIRONMENTAL PROFESSIONALS, COMMUNITY SPONSORS — WE NEED YOU!

- Bring the Caring for Our Watersheds contest to your classroom or club
- Volunteer as a mentor for student projects
- Help score written proposals and verbal presentations
- Provide funding to implement projects and expand the contest.

E-mail beth@landbasedlearning.org
or call 530-795-1544

Center for Land-Based Learning Executive Director Mary Kimball with 2016 Caring for Our Watersheds first place winner Taylor Lowery and Taylor's teacher at Foresthill High School, Katherine Cantrell.

Photo by Nate Eckler



PARTNERS IN EDUCATION

Both Agrium and the Center for Land-Based Learning understand the importance of protecting our watersheds and conserving natural resources. But it's equally important to cultivate future land stewards and tomorrow's advocates for the environment. That's why both organizations have partnered together to establish Caring for Our Watersheds: California, a unique program that enhances classroom learning through the practice of environmental research, writing skills, public speaking

and hands-on stewardship. The program, which is funded by Agrium and run by the Center for Land-Based Learning, asks high school students to propose ideas on how to improve local watersheds. Students with strong proposals will then have the opportunity to put those ideas into action. As projects are planned and implemented, students develop valuable leadership skills, learn sustainable practices and contribute to creating a healthier ecosystem. Students also have opportunities to

connect with agricultural and environmental professionals who volunteer and mentor the students as they learn new skills and develop deeper connections with the community they live in.

Caring for Our Watersheds is open to all high school students who live in the Sacramento-San Joaquin watershed in Colusa, El Dorado, Glenn, Placer, Sacramento, San Joaquin, Solano, Sutter, Yolo and Yuba counties.

TEACHERS AND SCHOOLS

Aart Dewaard – George Washington Carver High School
Ann Marie Kennedy – Grant High School
Chris Chu – The MET Sacramento
Colleen Kelly – Mira Loma High School
Craig Richards – Colusa High School
Dana Chu – Florin High School
Danny Delgado – Christian Brothers High School
John Grima Jr. – DaVinci High School
Joyce Dibble – Rio Americano High School
Kathryn Sleeper – Florin High School
Katie Cantrell – Foresthill High School
Ken Steele – Valley High School
Michelle O'Shea – Sierra Academy of Expeditionary Learning
Rochelle Jacks – Mira Loma High School
Toby Spencer – Rio Americano High School

JUDGES AND VOLUNTEERS

Alex Klein – UCD Graduate Student, Ecology
Amy Talbot – Regional Water Authority
Brian Brown – Project WET, Water Education Foundation
Charmaine Boulmay – Sacramento Splash
Dana Stokes – Retired Environmental Specialist
Elisabeth Johnson – Staff Professional, Carollo Engineers
Gina Radieve – CA Department of Water Resources
Hannah Ritchie – Western Placer USD
Hunter Merritt – U.S. Army Corps of Engineers
Janice Kelly – Education Consultant/Writer
John Killey – Retired Environmental Specialist
Joshua McCabe – Utility Forester, ACRT
Karleen Vollherbst – U.S. Fish and Wildlife Service
Kate Morejohn – UCD alumna
Kathy Shulz – Water Education Specialist, DWR
Kayla Burns – UCD Graduate Student, Soils/Biogeochemistry
Laura McGowan – UCD Graduate Student/Atmospheric Sciences
Lynn Martindale – UCD Agricultural Education
Jill Dunphy – Project Manager, CH2M
Mara Johnson – Environmental Scientist, Pesticide Regulation
Mike Dunphy – U.S. Fish and Wildlife Service
Nina Fontana – UCD Graduate Student/Ecology
Phil Mullins – Crop Production Services
Roland Brady – Brady and Assoc. Geological Services
Stephen Krebs – UCD Ecology Ph.D./Viticulturist
Trina Camping – UCD Soil Science graduate
Vicki Sacksteder – San Juan Water District

Center for Land-Based Learning

- Dedicated to creating the next generation of farmers and teaching California's youth about the importance of agriculture and natural resource conservation
- Engages students and community in its programs: SLEWS (Student and Landowner Education and Watershed Stewardship), FARMS Leadership, Growing Green Internship and California Farm Academy
- Programs emphasize hands-on learning, sustainable practices and leadership
- Creates connections to agricultural and environmental careers



www.LandBasedLearning.org

Agrium

- Provides nutrients, agricultural products and services around the globe
- Believes that helping to increase food production responsibly means doing so in ways that protect the environment, support economic vitality and enhance communities
- Started Caring for Our Watersheds in 2007 by partnering with local organizations that run the program. Locations now include Canada, the U.S., Australia and Argentina.
- Offers other interactive educational tools, including Growing the Next Generation and Seed Survivor

www.Agrium.com/Sustainability



SMUD

Special thanks to SMUD for sponsorship of our final competition and awards banquet.