



CARING FOR OUR Watersheds California

INSIDE:

2018 finalists
Implemented projects



TURNING *Ideas*
INTO ENVIRONMENTAL
Solutions

Nutrien™



Caring for Our Watersheds, a joint program of Nutrien and the Center for Land-Based Learning, empowers students to imagine, develop and create solutions in their local watersheds through an environmental proposal writing contest. Up to \$10,000 in cash is available to students so that they can turn their ideas into reality.

2018 Caring for Our Watersheds Finalists

The finalists in the 2018 Caring for Our Watersheds competition, which was held April 14 at the Tsakopoulos Library Galleria.
Photo by Melissa Uroff



OUT OF 460 PROPOSALS SUBMITTED THIS YEAR, THESE 10 ADVANCED TO A FINAL COMPETITION WHERE STUDENTS COMPETED FOR CASH AWARDS FOR THEMSELVES AND THEIR SCHOOLS.

INNOVATIVE FRENCH DRAIN TO DECREASE STORMWATER POLLUTION

Team Members: Dylan O'Ryan, Hayley Hower
School: Lodi High School

Establish stormwater "best management practices" on their school's campus. Install a rock and sand infiltration buffer to capture and store runoff and decrease the amount of sediment/pollutants flowing down the storm drain to the river.



TOILET LEAK DETECTION

Team Members: Aya Harel
School: Mira Loma High School

Assist homeowners in detecting toilet leaks, which have the potential to waste over 50 gallons of water per day. Create a device that would automate the basic procedure for leak detection. Toilet and other leaks account for approximately 16 percent of indoor household water use in California.

SHEDDING NEW LIGHT ON OUR WATERSHED: CFL RECYCLING DRIVE

Team Members: Nayana Venukanthan
School: Mira Loma High School

Initiate a recycling drive in the community for compact fluorescent (CFL) bulbs. CFL bulbs contain mercury, which poses a threat to aquatic organisms, wildlife and humans. Recycling CFLs can prevent the release of mercury into the environment and allow for the reuse of the glass, metals and other materials.



TRAILHEAD FIRE AMERICAN RIVER REPAIR

Team Members: Cole Moore
School: Foresthill High School

Restore a vegetation buffer zone along the banks of the Middle Fork of the American River that burned in the recent Trailhead Fire. The plantings help to stabilize the bank and reduce erosion and sediment delivery to the creek. Excess sediment can degrade aquatic habitat.

BEE GARDEN

Team Members: Kayley Amen, Alyssa Davis, Scarlett Stein, Kaitlin Schoch

School: Pioneer High School

Enhance habitat for bees/pollinators by planting native plants in an area by their school farm. Species planted would be drought tolerant and provide nectar sources throughout the year. The pollinator garden would also serve as an educational tool for agricultural science classes on campus.

CONSERVING NATURAL RESOURCES: VIDEO FOR EDUCATION

Team Members: Maite Orpustan

School: Sierra Academy of Expeditionary Learning

Create an animated educational video for young students to teach about simple ways to conserve energy and water. The simple interactive video would be used as part of a lesson in elementary school classes.



WATERSHED CHILDREN'S BOOK

Team Members: Sonya Shifrin

School: River City High School

Create an educational children's book, with original watercolor illustrations, to raise awareness about issues affecting our watershed. Print and donate copies to school libraries and plan class visits and events to promote the book's message.

NATIVE DROUGHT RESISTANT LANDSCAPING ON CAMPUS

Team Members: Evan Recanzone

School: Christian Brothers High School

Convert a non-native rose plot on campus to a diverse native plant garden. Demonstrate the use of drought-tolerant species that require less watering and do not need fertilizers and pesticides, thus addressing issues of water quantity and quality. Plantings would also provide habitat for birds, pollinators and other wildlife.

BAT BOXES IN AGRICULTURE

Team Members: Cade Roper

School: Colusa High School

Build and install nest boxes for bats on local farms. Bat boxes can provide a safe environment for hundreds of bats, which are predators to insects, including many crop pests. A healthy bat population can provide natural pest-control and reduce the need for pesticides.

BIRD BOXES IN ARDEN PARK

Team Members: Emma Hutchinson, Anna Swanson

School: Rio Americano High School

Build nest boxes for cavity-nesting birds that have lost their natural habitat with the removal of old, dead trees in developed areas. Engage neighborhood families in the installation, maintenance, and monitoring of the boxes and nesting activity.

HONORABLE MENTIONS

CAMPUS MURAL AND NATIVE PLANT GARDEN

Jesha Morgan, Jackson Mossman,
Emma Lotter, Dominic Wing
(George Washington Carver High School)

REPLACING STYROFOAM LUNCH TRAYS

Olivia Lee, Lauren Goi-Yamamoto
(Winston Churchill Middle School)

RECYCLING AT RIO AMERICANO

Kira Givans, Aviva Spector, Juliet Del Core,
Katherine Leher (Rio Americano High School)

PUTAH CREEK CLEAN-UP

Simon Downes-Toney (The MET Sacramento)

Turning Ideas INTO ACTION

A sampling of some implemented projects



CAMPUS MURAL AND NATIVE PLANT GARDEN

Project Leaders: Jesha Morgan, Jackson Mossman, Emma Lotter, Dominic Wing

School: George Washington Carver High School

In an effort to communicate an environmental message, beautify their campus, and demonstrate water-wise planting, this group is working on multi-faceted project that includes painting a large water- and nature-themed mural and planting a small California native species garden in an adjacent area. They hope to awaken a sense of environmental consciousness in the student body as they see and interact with the art and garden.

"At George Washington Carver we ask our students, 'How will you engage the world?' We look at social and environmental justice issues and discuss what we can do. Being part of the Caring for Our Watersheds project fits perfectly within our mission. During the first semester, seniors write a proposal and during the second semester they implement what they envisioned. Real learning takes place in the real world of nuts and bolts, restrictions and possibilities, ease and stress. This project is an important part of Carver's environmental science curriculum."

~ Aart DeWaard

Teacher, George Washington Carver High School

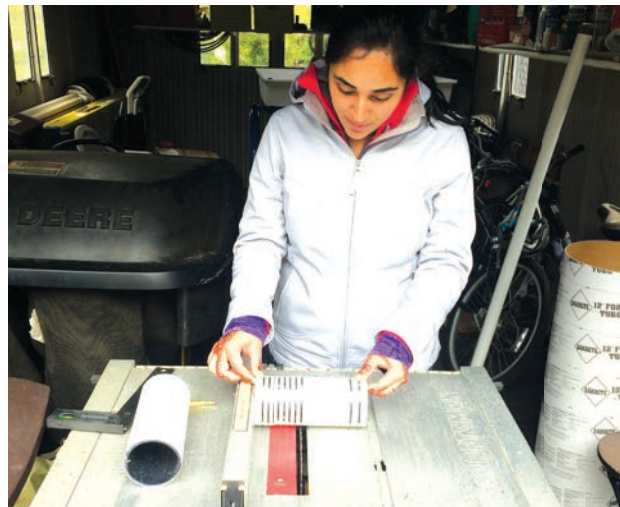


COMPOSTING ON CAMPUS

Project Leaders: Stan Tokarev, Mevin Deo

School: George Washington Carver High School

To complement Carver's robust school garden, Stan and Mevin are building a three-sectioned bin to start a composting system at school. This will divert food and garden waste from the local landfill, provide nutrient-rich soil for the garden, and demonstrate the process and environmental benefits of composting.



AQUAPONICS SYSTEM FOR RESTORATION

Project Leaders: Ravina Sidhu, Jasleen Sidhu

School: Mira Loma High School

After Ravina proposed this project, her sister Jasleen built and installed the aquaponics system at school in order to cultivate native plants for an ongoing riparian restoration project. Aquaponics, a system that combines the raising of fish with the growing of plants, uses substantially less water than traditional growing as water and nutrients are recycled in a closed-loop fashion.



WATERSHED SCIENCE EDUCATION

Project Leader: Mianna Muscat

School: The MET Sacramento

Mianna organized an educational field trip, during which students learned about the processes that provide water for the state and methods scientists use to track the snowpack, which makes up much of California's water. Project funding helped all 30 students in class to attend the trip and get this hands-on field experience in the area of water science and management.



First-place winner Nayana Venukanthan poses with Center for Land-Based Learning Executive Director Mary Kimball and Phil Mullins of Nutrien.
Photo by Melissa Uroff

CREATING TOMORROW'S ENVIRONMENTAL LEADERS

What is a watershed and why should we care about them?

A watershed is an area of land that drains to a central water body such as a river or lake. Watersheds supply our drinking water, provide water for agriculture and recreation, and serve as habitat for native plants and animals.

What is the Caring for Our Watersheds program?

Caring for Our Watersheds is an education program that engages students in preserving and improving their local watersheds.

How does it work?

Students submit proposals that answer the question: What can you do to improve your watershed? The program rewards the students and the schools who submit the most innovative and well-planned project ideas. Proposals are

scored by judges and the top 10 projects are selected to compete in the final competition.

Who can compete?

All high school students that live in the Sacramento-San Joaquin watershed can compete.

What can you win?

All finalists will win cash prizes up to \$1,000 and a matching cash award for the school. In addition, \$10,000 is available for project implementation. In total, \$27,000 is available to students and schools.

How can I get involved?

Teachers can bring Caring for Our Watersheds into their classroom or club, environmental professionals can score proposals, and community members can mentor students implementing projects.

Who organizes the contest?

The Center for Land-Based Learning, whose mission is to inspire, educate and cultivate future generations of farmers, agricultural leaders, and natural resource stewards, organizes the contest in California. The Center for Land-Based Learning runs programs in 27 California counties that connect youth and adults to agriculture and environmental science careers.

Who started Caring for Our Watersheds?

Nutrien (formerly Agrium) started the program with support from other local and national conservation partners. The Center for Land-Based Learning is Nutrien's California conservation partner.

TEACHERS AND SCHOOLS

Aart DeWaard — George Washington Carver High School
Bruce Hansen — Winston Churchill Middle School
Chris Chu — The MET Sacramento
Colleen Kelly — Mira Loma High School
Danny Delgado — Christian Brothers High School
Jeremy Heavlin-Martinez — River City High School
John Wirt — Colusa High School
Joyce Dibble — Rio Americano High School
Katie Cantrell — Foresthill High School
Kimberly Lumbard — Pioneer High School
Leigh Sumers — Rio Americano High School
Linda Reed — Rio Americano High School
Marika Beck — Sierra Academy of Expeditionary Learning
Marisol Villarreal — Pioneer High School
Melissa Turner — Lodi High School
Michelle O'Shea — Sierra Academy of Expeditionary Learning
Robert Sherriff — Winston Churchill Middle School
Rochelle Jacks — Mira Loma High School
Toby Spencer — Rio Americano High School

JUDGES AND VOLUNTEERS

Amanda Lindell — UCD Graduate Student/Science Education
Brian Brown — Project WET, Water Education Foundation
Bronwyn Hogan — U.S. Fish and Wildlife Service
Charmaine Boulmay — Sacramento Splash (retired)
Elaine Swiedler — Center for Land-Based Learning
Elisabeth Beckensten — Water Resource Control Engineer, SWRCB
Hunter Merritt — U.S. Army Corps of Engineers
Jill Dunphy — Project Manager, CH2M/Jacobs
Joshua McCabe — Utility Forester, ACRT
Kathryn Schulz — Water Education Specialist, DWR
Laura McGowan — UCD Graduate Student/Atmospheric Sciences
Leo Tuchman — Center for Land-Based Learning
Lindsey Troutman — U.S. Fish and Wildlife Service
Meghan Amos — Sacramento Splash
Mike Dunphy — U.S. Fish and Wildlife Service
Monica Garcia — Regional Water Authority
Nina Fontana — UCD Graduate Student/Ecology
Nina Suzuki — UCD Arboretum and Public Garden
Phil Mullins — Crop Production Services
Stephen Krebs — UCD Ecology Ph.D./Viticulturist
Trina Camping — Literacy & Makerspace, Woodland Library

Get Involved!

Environmental professionals and community sponsors — we need you! Contact beth@landbasedlearning.org or call 530-795-1544 to learn how you can support this unique program!



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