Students have helped plant native plants in the areas, both restoring areas that have been damaged by hard use and little care, and protecting the soil from erosion and further loss while they learn basic watershed science. Wonderful things happen when it all comes together.

Helping to ensure that it does come together, week in and week out, is our amazing team of educators who bring a quality and care to their roles in our program that would be hard to match anywhere. Jamie Solomon joined our team as Education Coordinator a year ago, and is a big part of how well our program runs. She works with nearly 100 classrooms each year, and she and our team of educators are the reason teachers return to the program year after year.

In these pages, you'll learn about our K-12 education programs and hear from the teachers and restoration professionals who work with us.
Watershed Explorers
3rd Graders Investigate Their Watersheds

Watershed Explorers is an introductory watershed science program designed for third graders sited at three County locations: Hanns Park in Vallejo, Rockville Park in Fairfield and Lagoon Valley Park in Vacaville. Four in-class lessons, taught by the classroom teacher, cover basic ecology concepts and stewardship responsibilities. The program ends with a four-hour field trip that cements the lessons learned in the classroom, and helps students to form an experiential awareness of the outdoor natural world. After Watershed Explorers, students:

- understand how storm water effects their watershed, and have a hands-on sense of what oil and human debris do to the environment;
- know individual stewardship practices to protect their watershed;
- understand the difference between native and invasive plants and how they matter.

1,761 kids became watershed explorers in 2014. To find out more about this program, registration for 2015, please look under the “projects and programs” tab at www.solanorcd.org.

The Watershed Explorers Program is funded by local and state partners, including Solano County, each Solano County City, and the CA State Parks Habitat Conservation Fund.

Get the Lay of the Land by e-mail!

Our newsletter is available in pdf format, for delivery by email. If you would like to start receiving the Lay of the Land in your email in-box instead of as a mailed paper copy, please contact Judy Powell at jkpowell@solanorcd.org
Suisun Marsh Watershed Program
A Living Laboratory for Middle Schoolers

The Suisun Marsh Watershed Program targets middle schoolers. Four in-class lessons are taught by our Program Coordinator, and focus on the marsh’s specialized local watershed. In the first three lessons, students learn about the characteristics of a watershed, water conservation, storm water pollution and its effects on our creeks, marsh, and ocean; geography and mapping of Solano County related to the Suisun Marsh Watershed; and native and non-native plants and animals. Students research an endangered, threatened, or species of concern and present their findings to the class in a poster session.

After the third lesson, students take a full-day field trip to the Rush Ranch Nature Center, rotating through three hands-on learning stations covering the marsh’s soil, water, and plants. After lunch, students hike through the Rush Ranch property and write poetry about Suisun Marsh for submittal to the River of Words Poetry Contest. Students learn about marine debris and their role in its creation and management during the last in-class lesson. The program offers an optional tour of the North Bay Regional Water Treatment Plant, to increase student understanding of the connection between source water and their household water taps.

The 2014 Suisun Marsh Watershed program is underway now, and we expect nearly 900 students to participate. For more information about the program, registration for the 2015 program, click the “projects and programs” tab at www.solanorcd.org.

The Suisun Marsh Watershed Program is funded by the Solano County Water Agency with support from the Fairfield-Suisun Sewer District and the Solano County Office of Education, in partnership with Solano Community College.
The Solano County Biomonitoring Program is an urban-runoff education program. The program takes a micro-perspective approach, looking at a single reach of a single creek, evaluating watershed health through physical, chemical and biological parameters. Program educators teach seven in-class lessons to participating classes which include topical activities that focus on stream ecology, storm water and watersheds, topographic mapping, macroinvertebrate identification and chemical water testing. Students participate in two field trips: a restoration-focused trip where they remove invasive plants and plant native vegetation, and an all-day citizen science field trip to monitor the health of a local creek.

During the biomonitoring field trip, students use the California Streamside Biosurvey, a non-lethal catch and release protocol, to assess invertebrate populations on site at the survey creek. The Biosurvey includes three components which are assessed creekside during the field trip:

1. Biological survey collection and analysis of benthic macroinvertebrates;
2. Habitat assessment of the physical characteristics of the stream’s substrate, flow, banks, and riparian zones;
3. Chemical analysis of water quality for dissolved oxygen, pH, temperature, turbidity, phosphates, and nitrates.

Data from student surveys becomes part of state efforts to protect and restore watershed health.

300 students participated in the 2014 Biomonitoring program. More information about the program and registration for 2015 can be found under the www.solanorcd.org “projects & programs” tab.

The Biomonitoring Program is funded by Vallejo Sanitation & Flood Control District and Solano County Office of Education.
Education and Restoration
Students are helping Solano RCD professionals restore public spaces in the County

Solano RCD’s restoration work is usually for public benefit—returning open space and parks to functional ecological places where people can visit for stress relief, relaxation and recreation and wildlife can find good habitat. Most projects are more successful if the beneficiaries have some “skin in the game,” and involving volunteers in protecting and restoring the County’s open space and natural areas often gives people a very personal stake in a project’s success. Kids make great volunteers, and the lessons we learn when we are young are often the most enduring.

We asked Katherine Holmes, Solano RCD Assistant Executive Director, and Mike Gordon, Solano RCD Restoration Project Manager about working with kids in their projects and got these answers:

How often are you able to use student volunteers in your projects?

Mike: There have been student-focused events that help with the planting in Vallejo in each year of the project. These activities happen in the winter and early spring months.

Katherine: I think it is really important to involve the whole community in restoration projects whenever possible. As we write our grant proposals, we include funding requests for Watershed Explorers field days. So far, two of my big projects in Vacaville have included grant funding to get elementary school students out doing restoration. Last year, we had 180 students out helping with our Urban Greening project on Alamo Creek, and we should have even more students involved for the next two years, both on Alamo Creek and also on Horse Creek.

What do kids/students bring to your projects?

Mike: Students of all ages can help in different ways. Third graders bring infectious enthusiasm. High schoolers, some of them, can bring impressive work ethic and physical stamina.

Katherine: Every tree Solano RCD staff plants helps restore Solano County wildlands. That’s great, but every tree that a student plants helps restore wildlands AND engages that student, allowing them to learn about wildlife habitat and natural resources. Many times that engagement has a ripple effect when that student tells their family and friends about their experiences. I firmly believe that bringing kids in to our restoration projects is an important investment in our future. Habitat restoration by itself isn’t enough—we need to also restore peoples’ connection to wildlife and wildlands, and working with kids is a great way to do that.

What challenges do you encounter working with kids/students?

Mike: Managing large groups and maintaining quality control is always difficult. With high school students sometimes you can employ a student volunteer to check the work of their peers. At one site, I did not realize that a particular planting area was too steep for third graders. It didn’t seem steep to me but it presented quite a challenge to the kids!

Katherine: Many kids today don’t have a lot of experience working outside these days. Many have never even planted a plant before. So there’s a lot of exciting things the kids are exposed to at our field days, and sometimes it is a little difficult to get them to calm down and focus. However, our education program staff does a great job working...
with young people, and the student planting days along Alamo Creek got a lot accomplished last winter.

Do you have any dream projects you’d like to see implemented that involve kids??

Mike: I would love to have an area where kids could plant native plants, control weeds, install bird boxes and help with irrigation. Blue Rock Springs Creek Corridor is close, but the weeds present are too difficult to control by manual removal alone and require herbicide application, obviously not a job for students.

Katherine: My dream projects working with kids are already happening! We’ve got every elementary school within walking distance of my restoration projects participating in planting days. The kids are planting wildflowers, native grass plugs, and several types of native shrubs. Match funding (from the Watershed Explorers program) has allowed our education staff to combine this field experience with in-class curriculum so that students also learn about watershed science. It’s a fantastic pairing of activities and I’m excited that Vacaville youth have the chance to learn about and restore creeks in their own neighborhoods.

The Teachers’ Point of View

How Solano RCD programming works in the classroom

We asked teachers who have participated in our programs to tell us a little about their class’ experiences. Six teachers were able to make time in their busy days to answer four questions for us.

1. What Solano RCD Programs do you work with?
   - Tori Ridosh, Safety Academy, Fairfield: Suisun Marsh Watershed Program
   - Jill Bolduc, Fairfield High School, Fairfield: Biomonitoring Program
   - Genuina Mercado, Cooper Elementary School, Vallejo: Watershed Explorers Program
   - Carole Schneider, Crystal Middle School, Suisun City: Suisun Marsh Watershed Program
   - Nicole Bandy, Vallejo Charter School, Vallejo: Watershed Explorers Program
   - Valerie Blanchard, Orchard Elementary School, Vacaville: Watershed Explorers Program

2. Did the education program you participated in deliver what you expected?
   - Ms. Ridosh: (It worked in) well with the 6th grade curriculum. My teaching partners, Katie Hawkins and Phyllis McFadden, and I worked the program into our science camp field trip and a project based learning experience where students have to decide whether they should sell bottled water or tap water at school events. This fits well into Solano County because by going to the Water Treatment Plant, we learned how clean our water becomes. Students took what they learned from the marsh and applied it to the science camp experience.
   - Ms. Bolduc: The hands-on experiences are great for connecting what we learn in the classroom to the actual environment and applying the concepts to real experiences. My classes reviewed what we had already learned and applied their knowledge to assessing problems in the environment and carrying out solutions like planting native species during ecological restoration and gathering data for assessment as in the biomonitoring of a local creek.
   - Ms. Mercado: The program is well tied in with a reading/Science theme, “Animal Habitats” and complements...
“Campus Ecology,” an activity that allows students to discover the organisms (on) their campus and their roles in keeping the environment healthy. The Hanns Park field trip enhances Social Studies lessons on geographical features of the city/state, community workers, as well as citizenship. The opportunity to make use of cooperative learning strategies (outside) the classroom setting, and to learn from other professionals and experts (is valuable). I learn new things each trip.

Ms. Schneider: My students (learn) the ecology of our local watershed and marsh. It is valuable for students to have hands-on experience with the water, soil and plant experiments.

Ms. Bandy: Vallejo Charter School is an Expeditionary Learning School. We create our own standards-based curricula in science and social studies, and real-world activities that make a real difference in the community are central to our educational model. Watershed Explorers was a perfect fit with our plant and wetlands studies.

Ms. Blanchard: The watershed program directly correlates with 3rd grade curriculum of ecology, habitat, food chains, and their local watershed. It provides students hands-on real world experience in the natural environment. We expected learning to be fun, engaging, and cemented. It was!

3. How did your class respond to the experience? Were there any challenges to your participation?

Ms. Ridosh: My class used the information about watersheds and mapping throughout the year. They used the information as they explained flood plains, mapping, and pollutants in water and the information they received seemed to be useful and applied to their lives.

Ms. Bolduc: Especially last year, classes responded really well to the restoration experiences. I had them write a reflection when we returned and they were grateful for the opportunity to get dirty. The biomonitoring program offers chances to both gather and report real data for other scientists to use which is a great start to a future career related to science.

Ms. Mercado: Every year, my class rates the program one of the top “Most Memorable Events of the School Year.” I think that the children are able to be partners in communicating to their families the significance of watershed protection and preservation.

Ms. Schneider: Students enjoy the change of pace that the lessons bring and especially the field trip.

Ms. Bandy: We were blown away by the quality of the program. Every year, our students and their families are incredibly impressed. Students love being outdoors and learning about the watershed, from working on the interactive watershed model, to observing the creek, to identifying native and non-native plants, to doing actual restoration work while in the field. The primary challenge is transportation. We rely on parent drivers.

Ms. Blanchard: (Students) were enthralled and many said it was the best field trip ever. Many planned to return with their families. Logistics with parent participation/transportation, (are) minor issues.

4. What would you like to see in future programming?

Ms. Ridosh: (Student-developed) solutions to (environmental) problems by designing, making, or improvising new and old technology and (the) addition of a technological aspect to the program.

Ms. Bolduc: Seniors are required to participate in community service activities. Recruitment for restoration opportunities could get more students involved in science or outdoor appreciation. Any help would be put to good use by environmental science classes, special ed classes, and STEM classes at FHS.

Ms. Mercado: (More) hands-on activities, like making (straw) bee houses, and rewards/incentives (to help) sustain conservation practices and continue to connect with (the RCD).

Ms. Schneider: An additional lesson devoted solely to water conservation.

Ms. Bandy: Continued restoration work - it is so important for students to tangibly see how they make a difference!

Ms. Blanchard: The existing programs are thorough and well-run. It’s important for children to realize how much they can affect their local watershed, and how simple it can be to improve our environment.
Solano RCD Staff Directory

Marianne Butler  Education Program Manager
707-301-5778 • Marianne.Butler@solanorcd.org

Miles DaPrato  Restoration Project Manager
707-678-1655 x 120 • Miles.DaPrato@solanorcd.org

Michael Gordon  Restoration Project Manager
707-678-1655 x 122 • Michael.Gordon@solanorcd.org

Jerah Frye  Restoration Field Technician
Jerah.Frye@solanorcd.org

Katherine Holmes  Assistant Executive Director
707-678-1655 x 118 • Katherine.Holmes@solanorcd.org

Amy King  Watershed Project Manager
707-678-1655 x 109 • Amy.King@solanorcd.org

Andrea Mummert  Conservation Project Manager
707-678-1655 x 112 • Andrea.Mummert@solanorcd.org

Judy Powell  Office Manager
707-678-1655 x 101 • jkpowell@solanorcd.org

Chris Rose  Executive Director
707-678-1655 x 119 • Chris.Rose@solanorcd.org

Jamie Solomon  Education Program Coordinator
916-719-1609 • Jamie.Solomon@solanorcd.org

Seasonal Education & Restoration Staff:
Deborah Bartens, Don Broderson, Jeff Carlson, Duc Jones, Wendy Low, Carla Murphy & Marisa Britts

---

Solano Resource Conservation District

Fall Plant Sale
October 18, 2014

8:00 am-12:00 pm
at the Conservation Education Center
6390 Lewis Road, Vacaville

Featuring:
California Native & Regionally Appropriate Plants
Wildlife Presentation
the Suisun Marsh Natural History Association
Free Plants for Everyone Under 12
Interactive Watershed Model
Solano County Master Gardeners

cash or checks only, please
Map is available at www.solanorcd.org

---

Solano RCD Fall Native Plant Sale is October 18

---

The Lay of the Land

---

Solano RCD Fall Native Plant Sale is October 18

---

Solano Resource Conservation District

Fall Plant Sale
October 18, 2014

8:00 am-12:00 pm
at the Conservation Education Center
6390 Lewis Road, Vacaville

Featuring:
California Native & Regionally Appropriate Plants
Wildlife Presentation
the Suisun Marsh Natural History Association
Free Plants for Everyone Under 12
Interactive Watershed Model
Solano County Master Gardeners

cash or checks only, please
Map is available at www.solanorcd.org

---

Solano RCD Fall Native Plant Sale is October 18

---

The Lay of the Land

---

Solano RCD Fall Native Plant Sale is October 18

---

Solano Resource Conservation District

Fall Plant Sale
October 18, 2014

8:00 am-12:00 pm
at the Conservation Education Center
6390 Lewis Road, Vacaville

Featuring:
California Native & Regionally Appropriate Plants
Wildlife Presentation
the Suisun Marsh Natural History Association
Free Plants for Everyone Under 12
Interactive Watershed Model
Solano County Master Gardeners

cash or checks only, please
Map is available at www.solanorcd.org

---

Solano RCD Fall Native Plant Sale is October 18

---

The Lay of the Land

---

Solano RCD Fall Native Plant Sale is October 18

---

Solano Resource Conservation District

Fall Plant Sale
October 18, 2014

8:00 am-12:00 pm
at the Conservation Education Center
6390 Lewis Road, Vacaville

Featuring:
California Native & Regionally Appropriate Plants
Wildlife Presentation
the Suisun Marsh Natural History Association
Free Plants for Everyone Under 12
Interactive Watershed Model
Solano County Master Gardeners

cash or checks only, please
Map is available at www.solanorcd.org

---

Solano RCD Fall Native Plant Sale is October 18

---

The Lay of the Land

---