



Marin County Stormwater Pollution Prevention Program (MCSTOPPP)
 (www.mctoppp.org)

PRBO Conservation Science's Students and Teachers Restoring a Watershed (STRAW) (<http://www.prbo.org/cms/192>)

2010-2011 MCSTOPPP/STRAW Collaboration

In-Class presentations: MCSTOPPP staff assisted members of the STRAW faculty (retired teachers and naturalists) to give in-class presentations to approximately 24 classes on stormwater pollution prevention and riparian restoration. The presentations prepared 826 students for their restoration days and connected riparian restoration concepts to stormwater pollution prevention and to creek habitat protection. The MCSTOPPP/STRAW PowerPoint for the in-class presentation was improved for 2010-11 to better emphasize the importance of maintaining a healthy and diverse riparian corridor and the aspects of stormwater pollution prevention. The main concepts of the PowerPoint presentation focus on helping students to understand that they all live in a watershed by teaching them the anatomy of the watershed (headwaters, valley floor, estuary/wetland, and bay/ocean); that there are storm drain networks through everyone's neighborhood and they all lead straight to a creek or bay; the types of pollutants that can get into a storm drain and what the students and community can do to prevent stormwater pollution; the importance of pollution free riparian habitat for native and endangered species and how pollutants diminish aquatic habitat; and how they will get to improve the riparian habitat with their creek restoration project.

10-11 MCSTOPPP-STRAW RESTORATIONS	TOTALS
Number of Major East Marin Watersheds	4
Number of Major West Marin Watersheds	0
Number of Restoration Sites	5
Number of Restoration Days	7
Number of Schools	5
Number of Teachers	15
Number of Students	826
Number of Parents	55
Number of Volunteers	13
Square Feet (pulled and/or planted)	8,488
Total Number Planted (riparian native plants)	207
Total cubic yards of non-native plants removed	36

2010-2011 Arroyo Corte Madera del Presidio Watershed

In the Arroyo Corte Madera del Presidio Watershed students from Park Elementary School participated in a maintenance day at Boyle Park. The STRAW team supervised and led 19 students and 9 parents from the 1st Grade class in maintenance that included weeding around native plants that were planted by previous years' students, hand watering and adding dri-water, and removing some non-native English Ivy. A special thanks to the Mill Valley Parks Department for providing assistance with hauling and mulching of the removed invasive vegetation.

2010-2011 Miller Creek Watershed

In the Miller Creek Watershed, students performed restorations and maintenance at 2 sites: adjacent to Dixie School and in Marinwood Park adjacent to Miller Creek Middle School (MCMS). The Dixie School District and the Marinwood Community Services District granted access so that students could maintain the MCSTOPPP/STRAW restoration sites. A special thanks to the Marinwood Community Services District who also provided assistance with hauling and mulching of the removed invasive vegetation. This was the 8th year of restoration at these sites.

At the Marinwood Park/MCMS site 194 students from Miller Creek Middle School's 6th grade classes, and 182 students from the 7th grade classes, were accompanied by 4 teachers and 5 volunteers. They helped to remove approximately 20 cubic yards of Himalayan Blackberry, English Ivy, and Cape Ivy. They also planted 137 native riparian plants which included Red alder, White Alder, Snowberry, California Fescue, and the transplanting of Santa Barbara Sedge. The MCSTOPPP/STRAW team completed 2 days of student restorations at this site.



Photos Above: Miller Creek Middle School students remove non-native, invasive species and load them in the truck.

Photo Below (left): Students transplant native Santa Barbara Sedge into an area of creek bank and floodplain that was heavily covered with invasive, non-native English Ivy, Cape Ivy, and Himalayan Blackberry.



Photo Below (right): Following the Santa Barbara Sedge transplanting, students are seeding the newly exposed areas of the creek bank and flood plain with California Fescue, afterwards the area will be covered with straw.

A little further upstream at the Dixie School Site on Miller Creek, 75 4th grade students from Dixie Elementary School teamed up with 15 parents and their 3 teachers to pull 5.5 cubic yards of non-native species such as Himalayan Blackberry, Star Thistle, and Wild Radish. They also mulched around existing native plants from the previous season, installed dri-water, and added deer fencing to help these newer plants get established. A special thanks to the County of Marin's Department of Public Works for removing the non-native vegetation.



Photo Right: Pictured (Sticky Monkey Flower, Blue Elderberry, and Coffeeberry) are some of the many native plants that students weeded around, installed dri-water, and added deer fencing.

2010-2011 San Rafael Watershed

In Mahon Creek, 252 students and 3 teachers from Davidson Middle School's 6th grade classes, were joined by 5 volunteers to complete 2 days of restorations in the tributary that runs through Davidson Middle School. The students removed 8 cubic yards of Himalayan Blackberry, Acacia, Pampas Grass, Cotoneaster, and French Broom. After planting 49 native riparian plants including Box Elder, Oregon Ash, Valley Oak, California Black Walnut, Blue Elderberry, and Juncus, they mulched around the plants and installed deer fencing to help the new plants become established. A special thanks to the City of San Rafael Department of Public Works for arranging the removal of the invasive vegetation.

Photo Left: In this section of the creek students are removing a thicket of Himalayan Blackberry and other non-natives and preparing to plant native species.

Photo Right: Students planted Juncus along the water's edge, and larger native trees and shrubs. These species will grow to provide shade and habitat along the creek channel.



2010-2011 Novato Creek Watershed

In Novato Creek, 29 students from Rancho Elementary School's 4th grade class were accompanied by their teacher, 12 parents, and 3 volunteers. The students removed 3 cubic yards Himalayan Blackberry, English Ivy, Vinca, and French Broom. After removing the invasive species, they planted

21 natives including Snowberry and California Fescue, seeded the remaining exposed areas with native Red Fescue, and then covered the area with straw. The students also got a chance to work with staff from Point Reyes Bird Observatory (PRBO) to conduct a riparian bird survey of the various species utilizing the area. A special thanks to the City of Novato Parks Department for arranging the removal of the invasive vegetation.

Photo Left: Parents hold large trash bags to collect non-native plants removed by the students and then dump them in the collection pile for City of Novato Parks staff.



Photo Right: Students working with PRBO staff learn to identify and count native bird species in the riparian habitat as a way of measuring effectiveness for creek restorations.



MCSTOPPP/STRAW Collaboration

MCSTOPPP is honored to partner with Point Reyes Bird Observatory (PRBO) Conservation Science's STRAW Project, as well as the teachers and students who take part in these projects. The restorations are partially funded by MCSTOPPP (a partnership of all cities, towns and unincorporated areas of Marin) and by grants and other funding obtained by PRBO Conservation Science's STRAW Project (formerly with the Bay Institute). The STRAW faculty organize the in-class presentations, and STRAW Restoration staff organize restoration days, perform maintenance and monitoring, and procure most of the supplies and plants needed to conduct the restorations. MCSTOPPP assists with the in-class presentations, restoration days, and select maintenance days. MCSTOPPP conducts photo-monitoring for all of the partnered sites.