



**Marin County Stormwater Pollution Prevention Program (MCSTOPPP)**  
[www.mctoppp.org](http://www.mctoppp.org)

**The Bay Institute's Students and Teachers Restoring a Watershed (STRAW)**  
[http://www.bay.org/watershed\\_education.htm](http://www.bay.org/watershed_education.htm)

**2009-2010 MCSTOPPP/STRAW Collaboration**

**In-Class presentations:** MCSTOPPP and STRAW staff gave in-class presentations to approximately 17 classes on stormwater pollution prevention and riparian restoration. The presentations prepared 971 students for their restoration days and connected riparian restoration concepts to stormwater pollution prevention and to creek habitat protection. The MCSTOPPP/STRAW presentation stresses the importance of maintaining a healthy and diverse riparian corridor. We also focus on helping students to understand that they all live in a watershed by teaching the anatomy of the watershed (headwaters, valley floor, estuary/wetland, and bay/ocean) and by pointing out the connection between rain water, storm drains, creeks, and pollutants. We try to help students understand the importance of preventing excessive erosion and we introduce the concept that sediment is one of the leading surface water quality pollutants and diminishes aquatic habitat.

<b>09-10 MCSTOPPP-STRAW RESTORATION</b>	<b>TOTALS</b>
Number of Major East Marin Watersheds	3
Number of Major West Marin Watersheds	0
Number of Restoration Sites	5
Number of Restoration Days	8
Number of Schools	7
Number of Teachers	17
Number of Students	971
Number of Parents	83
Number of Volunteers	15
Square Feet (pulled and/or planted)	31,823
Total Number Planted (riparian native plants)	114
Total cubic yards of non-native plants removed	105

**2009-2010 Arroyo Corte Madera del Presidio Watershed**

In the Arroyo Corte Madera del Presidio Watershed the MCSTOPPP/STRAW team participated in 2 restoration days, one at Old Mill Creek with students from Old Mill Elementary School and the second at Boyle Park with students from Park School. The MCSTOPPP/STRAW team supervises and leads students in restoration activities including pulling invasive non-native plants, installing dri-water irrigation, amending soil, planting native plants, and mulching with forest duff and blended mulch.

At the Old Mill Park site 107 students in 1<sup>st</sup> and 3<sup>rd</sup> grades, 36 parents, and 2 volunteers removed non-native invasive plants (mainly English Ivy), amended the soil, installed dri-water for temporary irrigation, and planted 52 native plants including big leaf maple, California huckleberry, California fescue, molate red fescue, torrent sedge, and wild ginger.



Photo Right: A weeded, planted and mulched bank in Old Mill Park that was previously dominated by invasive, non-native English Ivy

At the Boyle Park site 43 students in 1<sup>st</sup> through 5<sup>th</sup> grades, 16 parents, and 2 volunteers removed non-native invasive plants (mainly Himalayan blackberry and French Broom), amended the soil, installed dri-water for temporary irrigation, and planted 7 native plants including box elder, California buckeye, and coast live oak.

Photos Below: In Boyle Park, students from Park School remove non-native, invasive species, dig holes, amend the soil, plant new native plants, and install Dri-Water tubes and gel packs that will slow release water to the plants for 1-2 months.



## 2009-2010 Miller Creek Watershed

In the Miller Creek Watershed, students performed restorations and maintenance at 2 sites: adjacent Dixie School and in Marinwood Park adjacent 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. This was the 7<sup>th</sup> year of restoration at these sites.

At the Marinwood/MCMS site all of the 6<sup>th</sup> and 7<sup>th</sup> grade students from MCMS, 4<sup>th</sup> grade students from Mary Silveira, and 2<sup>nd</sup> and 3<sup>rd</sup> grade students from Marin Horizon, helped to remove 20 cubic yards of Himalayan Blackberry, English Ivy, Cape Ivy, and Spiderwort. They also planted 33 native riparian plants which included coast live oak, creek dogwood, and Santa Barbara sedge. MCMS students also installed 320 sq. ft. of erosion control blanket and distributed straw and native grass seed as erosion

prevention measures. The MCSTOPPP/STRAW team completed 3 days of student restorations at this site.



Photos Above: Miller Creek Middle School students do weeding then add mulch and dri-water to snowberries planted last season.

Photo Below (before): In 2007 this area of creek bank and floodplain was heavily covered with invasive, non-native English Ivy, Cape Ivy, Spiderwort, and Himalayan Blackberry.

Photo Below (after): In 2010 students continue to clear non-native invasives, install erosion control blanket, and seed with native grasses so native trees, shrubs and grasses can repopulate.



There was also a maintenance day at the Dixie School site where 4<sup>th</sup> grade students from Dixie School pulled 4 cubic yards of Himalayan blackberry, and other non-native species. 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.

Photo Right: Students from Dixie Elementary School removed non-native, invasive species, mulched and added dri-water to existing plants and installed deer fencing to help newer native plants become established.



## 2009-2010 San Rafael Watershed

In Mahon Creek, 265 6<sup>th</sup> grade students completed 2 days of restorations in the section of creek that runs through Davidson Middle School. The students removed an incredible 75 cubic yards of Himalayan Blackberry and French broom and planted 22 native riparian plants. The species included big leaf maple, box elder, Oregon ash, coast live oak, valley oak, black walnut, and blue elderberry.

Photo Left: Students plant larger native trees and shrubs, then apply mulch and install deer cages. These species will grow to provide canopy to shade the creek channel.

Photo Right: Students remove heavily overgrown non-native Himalayan blackberry and French broom, then plant native species along the creek bank.



## 2009-2010 Novato Creek Watershed

STRAW worked with the Marin County Flood Control and Water Conservation District, AmeriCorps (from Conservation Corps North Bay) with support from BioMarin to continue restoration efforts in Miwok Park on Novato Creek. A total of 153 native plants were planted. They included wild rose, California blackberry, thimbleberry, Dutchman's pipevine, California honeysuckle, blue elderberry, California fescue, molate red fescue, and onion grass.

## MCSTOPPP/STRAW Collaboration

MCSTOPPP is honored to partner with The Bay Institute's STRAW staff 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 others funding obtained by The Bay Institute's STRAW project. STRAW staff organize presentations and restoration days, perform maintenance and monitoring, and procure most of the supplies and plants needed to conduct the restorations. MCSTOPPP staff assist with presentations and restoration days, and occasionally with maintenance efforts. MCSTOPPP conducts photo-monitoring.