

## Educational Measurable Benchmarks 2009 Spring Semester

- **Development of curriculum using NAAEE's Environmental Education Materials: Guideline for Excellence and relevant references.** Materials and subjects were chosen to expand the student's knowledge of mining history and impacts, ecology, soil science, restoration ecology, invasive species ecology and biology, benthic macroinvertebrates (BMIs), water quality monitoring, and adaptive management.
- **Administration of pre-education survey.** Prior to presenting the first lesson each student took the survey with questions pertaining to each of the subjects and issues listed above.
- **Bi-monthly class lessons.** Beginning the last week of February, lessons were given at Forest Charter School (FCS) twice a month, school holidays and class trips permitting. Lessons focused on one or more of the subjects listed above, and often included a class discussion or brainstorm about these subjects, or an activity related to the Stocking Flat restoration project.
- **Restoration.** Beginning the last week of February, students began visiting Stocking Flat twice a month to work on a restoration project. Students began by removing invasive Himalayan blackberry (*Rubus discolor*) from the riparian corridor along Deer Creek, after which they planted California wild grape plants and Arroyo willow cuttings. During subsequent trips to Stocking Flat students watered the plants and completed a vegetation monitoring protocol designed to track changes in the vegetation community at the site. After learning about adaptive management and analyzing these data themselves the students made recommendations for the management of the site and the plants.
- **Monitoring.** In addition to monitoring the vegetation at Stocking Flat the students learned about water quality monitoring, and used data from monitoring sites near Stocking Flat to evaluate the success of the project. They also learned about how BMIs are used as an indicator of aquatic health, and helped to collect and identify BMIs from Stocking Flat.
- **Adoption of an "Eco-Pal" program.** On two of the restoration days, students from Yuba River charter school, a local middle school, joined the students from FCS. On these days, FCS students played a different role, actually teaching the middle school students about restoration, invasive species, and how to complete the vegetation monitoring.
- **Administration of the Post-education survey.** At the end of the Spring 2009 semester students were given the same survey that they were given before the start of the program, and all of the students improved their scores.
- **Creation of an Environmental Resource Library at Forest Charter School.** Working with teachers from FCS, we have begun approaching universities, junior colleges, and educational publishers about donating books and other reference materials for the resource library.