

Sierra Watershed Education Partnerships

Trout Creek Restoration Project: Education Element

*If you tell me, I forget.
If you show me, I remember.
If I do it, I learn.*

I. Intent:

To "learn by doing" about ecological systems by participating in the Trout Creek Restoration Project. System components include both social and environmental elements.

II. Goals and Objectives:

1. Create a series of learning experiences for students/teachers in the Tahoe Truckee Unified School District (District) and members of the public that result in restoration of a portion of Trout Creek.
 - a. Develop an educational program that involves a series of classroom-based elements followed by on-site activities. The student component will follow the concepts presented in the Adopt-a-Watershed curriculum. On-site activities shall involve students, teachers, and members of the public to restore a portion of Trout Creek.
 - b. The learning experiences will involve both social and environmental elements. This includes, but may not be limited to: land use, history, transportation, flood plain issues, hydrology, soils, water quality, vegetation communities, and fish and other wildlife habitat.
2. Establish both short-term and long-term restoration activities that increase awareness of watershed issues and insure project success through improved public behavior.
 - a. Develop a broad-based monitoring program that involves students and members of the public that is capable of tracking environmental change over time. This should include an annual comprehensive bioassessment that begins with establishing baseline conditions and then monitors changes over time.
 - b. Establish annual activities that address project needs. These activities should include, at minimum, pollutant clean-up, revegetation, and public education. These can occur as part of the annual Truckee River Day (in the fall) and Watershed Fair (in the spring).
3. Create partnerships between the Town of Truckee, SWEP, District, and other interest groups to form a service learning project for students that meets educational needs while fostering civic involvement and school-to-work concepts.
 - a. Develop a program that fully utilizes student potential in contributing to community projects.
 - b. Use the existing elements of SWEP and the District's watershed education program and develop new partnerships with community groups. This will strengthen SWEP's connections to the community, meet the District's science education responsibilities for the selected students, as well as improving the school-to-work connections and sense of community responsibility necessary to create informed and active citizens.

III. Project Accomplishments and Schedule:

Pre-project (2001)

Task 1. Develop the Trout Creek Educational Plan.

- a. Working with the Town of Truckee, identify the project's community based restoration components. This will establish the parameters of the student/community education and restoration effort.
- b. Identify the components of a long-term field study project involving, at maximum, three grade levels and four teachers in the Tahoe-Truckee Unified School District. The study project description will include:
 - establishing pre-project baseline conditions (mapping land uses, stream characteristics and vegetation communities; conducting water quality tests; conducting invertebrate inventories);
 - classroom study and activities needed to meet educational and project goals. This includes defining the materials needed to create an archive for monitoring data and growing revegetation plants;
 - a project schedule coordinated with the public education/restoration element to build a strong classroom/public project; and
 - an evaluation method that includes reflection opportunities, demonstration techniques (i.e. at the Watershed Fair) and quantitative measures.
- c. Define the teacher training needs associated with the long-term field study. These needs should also be considered in the next step.
- d. Working with the Truckee River Habitat Restoration Committee, identify public restoration opportunities and training program elements, if any. To reduce duplication and help build a joint classroom/public project, this training program should meet the needs of both the public and involved teachers.

Product: A detailed educational plan with evaluation element. Spring, 2001.

Task 2. Education/Restoration, Phase I

- a. Collaborate with all possible partners to create detailed classroom/public training materials.
- b. Begin training with evening/weekend classes open to involved teachers and members of the public. Initial training sessions will introduce the broader concepts of systems and system interactions and lay the foundation for establishing baseline conditions. Additional workshops for teachers to create detailed lesson plans and activity schedules will be necessary.
- c. Integrate age appropriate elements discussed above into classroom presentations and preparation for field work. Establish pre-project student knowledge and begin student data archive. Project partners will be encouraged to meet with student groups as an integral element of student participation.

- d. Coordinate several field days in the spring, summer and fall that encourage student/community interaction in performing baseline analysis defined in the Educational Plan. These days could be incorporated in the Truckee River Day and Watershed Fair activities. Students will assist in organizing and publicizing these educational opportunities. Collect and record data resulting from field days.

Products: Coordinate and hold 3 training sessions for teachers and other members of the community. Coordinate and hold 3 field days to gather and record pre-project site data. Create a data archive of baseline conditions. Spring 2001 - Fall, 2001.

Project Construction (2002)

Task 3. Education/Restoration, Phase II

- a. Continue training sessions with teachers and members of the public, shifting the emphasis from pre-project tasks to concepts and techniques of restoration.
- b. Continue classroom project activities, shifting emphasis as described above. Consider opportunities for: students to grow plants to be used in the restoration, raise fish to be released in the restored creek, develop public educational materials, and participate in the public involvement phase of project design.
- c. As allowed by the construction schedule, coordinate and hold 5 field days for students and members of the public to complete actual restoration. Collect and record data resulting from field days. These days could be incorporated in the Truckee River Day and Watershed Fair activities. Students and other project partners will assist in organizing and publicizing these educational opportunities.

Products: Coordinate and hold 3 training sessions for teachers and other members of the community. Coordinate and hold 5 field days to complete restoration and record project site data. Continue the data archive. Spring, 2002 - Fall 2002.

Post Construction (2003) - - Need additional funding for this task

Task 4. Education/Restoration, Phase III

- a. Coordinate and hold 3 field days for students and members of the public to evaluate restoration success, contribute information to project revision if necessary, and begin long-term monitoring. Collect and record data resulting from field days. These days could be incorporated in the Truckee River Day and Watershed Fair activities.

IV. Project Budget:

Task Descriptions

	<i>Project Coordinator</i>	<i>Project Assistant</i>	<i>Expenses</i>
Task 1: Educational Plan	Coordinate with teachers/partners to develop project educational plan.	None.	None.
Task 2: Education/ Restoration, Phase I	Coordinate and implement training, and student pre-project field trips. Collaborate with partners for community field days.	Assist teachers with curriculum, field days, and data archive.	Travel, student travel, curriculum materials.
Task 3: Education/ Restoration, Phase II	Coordinate and implement training, and student project field trips. Collaborate with partners for community field days.	Assist teachers with curriculum, field days, and data archive.	Travel, student travel, curriculum materials.
Task 4: Education/ Restoration, Phase III	Coordinate and implement student project field trips. Collaborate with partners for community field days.	Assist teachers with curriculum, field days, and data archive.	Travel, student travel, curriculum materials.

Task Costs

	Unit	Cost	Subtotal	Total
<i>Task 1 (2001)</i>				<i>\$2,160</i>
Project Coordinator	120 hrs	\$18/hr	\$2,160	
<i>Task 2 (2001)</i>				<i>\$5,300</i>
Project Coordinator	200 hrs	\$18/hr	\$3,600	
Project Assistant	100 hrs	\$12/hr	\$1,200	
Supplies			\$500	
<i>Task 3 (2002)</i>				<i>\$7,540</i>
Project Coordinator	300 hrs	\$18/hr	\$5,400	
Project Assistant	100 hrs	\$12/hr	\$1,200	
Supplies			\$940	
<i>PROJECT TOTAL</i>				<i>\$15,000</i>