# Change on the Range

ECOS Final Team Report: Target Range School
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Target range parents and students work on restoration of the native plant garden during a community work event


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***Abstract***

Our project builds upon the excellent foundation of two previous ECOS demonstration projects at Target Range School in order to leave a lasting outdoor classroom that teachers and students from all grades can use for ecological inquiries. Our theme for the project is ecological change. We have connected the two initial projects with a gravel path (built by the students) and have built student workbenches, which can be used for inquiry and outdoor reflection in the native plant garden. We also fenced in and restored the native plant garden in order to help make it more sustainable.

***Introduction***

We built upon the foundation of the two previous years of ECOS involvement at Target Range School by tying together and adding to the previous demonstration projects. To do this, we outlined four main components to our demonstration project:

1) To complete a gravel path connecting the two existing demonstration projects and install four student work tables in the native plant garden;
2) To restore and fence in the native plant garden (1st year ECOS demonstration project) with the consultation and assistance of the ECOS teachers and fellows who installed it;
3) To finish terracing and construction of the cottonwood grove amphitheatre (2nd year ECOS demonstration project) in consultation with the second-year ECOS teachers and fellows, and
4) To construct a permanent, interpretive sign describing the entire demonstration project.

Items (1) and (4) are the specific contribution of this year's teachers, fellows, and students, and will be acknowledged as such. Items (2) and (3) are designed to help make the previous ECOS projects at Target Range sustainable in the long-term.

Concomitant with these construction projects, we developed and compiled a series of ecological inquiries that specifically use these outdoor areas. We are collating these inquiries and presenting them to the teachers at the school so that future classes can use the outdoor classroom. Along with these inquiries, we will leave guidelines for maintaining the areas so that they do not fall into disrepair over time.

***Schoolyard demonstration project description***

***a. Ecological theme***

The theme for our demonstration project is ecological change. The outdoor classroom will allow students to examine seasonal changes, as well as explore differences between the types of species and communities found in the cottonwood grove versus the native plant garden. These two native areas can be contrasted with some of the weedier portions of the schoolyard, as students explore the changes that take place in an ecological community with introduced species.

***b. Intended use***

The demonstration project is designed for use by the whole school, which includes grades K-8. There are already six teachers invested in various aspects of the demonstration project (three years of ECOS with two teachers involved each year), and we hope that non-ECOS teachers will use the outdoor classroom as well. We made a presentation to the school board during the spring

term, so that parents, the board, and the administration would be aware of the project and involved in its maintenance and sustainability. We have also been in contact with the previous ECOS teachers about long-term sustainability of the project.

***c. Purchases and construction***

We were able to use leftover gravel donated by JTL and rocks found around the schoolyard to build the gravel path. We bought the weed fabric and fabric pins to line the path. These were all the materials needed to construct the path. We acquired materials for the four workbenches from Home Resource, Home Depot, and Ace Hardware. All materials from Home Resources were donated. We built the four workbenches in the fall and installed them during a community work event in the spring. We purchased fencing materials for the garden from Boyce Lumber and Quality Supply in the spring, and installed the fence during the same community work event. We purchased a number of native plants from Caras Nursery and Marchie's Nursery, in addition to having some plants donated by individuals. The third grade class planted these plants.

***d. Demonstration project description***

Our demonstration project has two components. First, we planned to link the two existing projects with a gravel path and build 4 workbenches to be used for outdoor inquiry. Additionally, we will be building an interpretive sign that explains the whole project. This component adds to the existing projects by tying the three projects together physically and creating additional space for outdoor inquiry. Secondly, we worked on the two previous projects to make them more sustainable in the long-term. This work included fencing the native plant garden, stabilizing the amphitheatre, and labeling plants. Below is a description of what has been accomplished, and how the area has been used to date.

**(1) Path connecting native garden to cottonwood grove**

We built a path to connect the native plant garden to the second-year demonstration project, the cottonwood grove amphitheatre. Randee Stephens' sixth grade class helped line the path with rocks once we had delineated the course of the path and lined it with the weed fabric. They also assisted with the spreading of gravel across the path. This path leads from the entrance to the native plant garden to the top of the amphitheatre. So far, this path has been used by both current ECOS classes to walk between the garden and cottonwood grove on a number or inquiries. Additionally, we have used the path during camouflage inquiries with both classes.

**(2) Student worktables for inquiry and journaling**

We placed four worktables in the center of the native plant garden in April. These tables are placed on a gravel-lined area and are surrounded by different garden beds. The design is based on the worktables in the Lewis and Clark Elementary School ODC: the tables are low to the ground and built using durable, composite materials. The legs of the tables are buried in the ground, making them solid and immovable. Although they have not been installed for long, we have had classes sit on the worktables during class discussions. We anticipate that they will be available for discussions, writing and reflection, and for outdoor inquiries.

**(3) Restoration and completion of native garden**

The native plant garden was initiated as the demonstration project for the first year of ECOS involvement at Target Range. Since its inception, the garden has been sporadically

maintained, and was overrun with weeds, contained trash and debris, and had poorly defined borders. We planned to help weed and clean up the garden, label all the native plants with placards, fence the garden and plant some additional natives to replace those that have died. We tried to work closely with the ECOS teachers and fellows who designed and created this garden two years ago. We acquired most of the materials necessary for building the fence, and constructed it during a work party in April. During that work party, parents and students also made great headway weeding and mulching the beds. In early May we were able to plant dozens of new native plants with Tara Barba's third grade class. We will continue to work on weeding and maintenance of the garden throughout the remainder of the school year. Additionally, we purchased and prepared tags to label all the plants we purchased, and we placed them with the help of the sixth grade students in May. Students have been able to use the garden area for journaling and inquiries on phenology and camouflage.

**(4) Cottonwood grove and amphitheatre**

Both classes were involved in trash and debris removal in the grove, and assisted with relining the paths with rocks. There were a number of cottonwood logs in the grove from a tree that had been removed, which we placed as additional seating. The teachers and parents involved last year worked last fall to finish the terracing work (minor leveling, bracing the slope with wood from the grove, etc.). They have placed cottonwood logs along the terraced levels as seats. We had planned to build benches on the terraced amphitheatre steps, in order to have a permanent and safe place for students to sit while they are using the area. However, did not have the time and funding to build these benches. We ended up deciding to spend the majority of our time and funds on the native plant garden. So far, both of this year's ECOS classes have used to cottonwood grove for journaling, discussions, and several inquiries on phenology, plant ecology, camouflage, bird watching, geology, and other topics. We have observed other classes using the grove as well.

**(5) Interpretive sign for the whole demonstration project**

We plan to make a permanent sign that we will install outside the entrance to the garden, which will describe the whole demonstration project, including the garden, path, worktables, and cottonwood grove. This sign will be permanently installed, and will reference the ECOS program and the students and teachers involved in these projects. It will give some information about the native plant garden, including descriptions of common native and non-native species, and information about the cottonwood grove amphitheatre. We have begun work on this sign, and plan to have it installed by the end of the school year.

***e. Current status of the project***

The project is currently mostly complete. Major construction is complete, but we still need to install gates to the garden. Although all of the plants have been planted, we still need to label some of them. Construction of the interpretive sign has not been completed. We plan to have it installed by the end of the school year. We are planning one additional work party to weed and install the gates and sign in early June. Additional work could be done in the cottonwood grove, but we have not plan any additional work this year. We realized that making the cottonwood grove amphitheatre truly permanent and stable would have required all our time and funding, and chose to focus on garden restoration instead. However, progress has been made, and we have

been able to use it extensively for outdoor inquiry. These last pieces to complete do not preclude full use of the outdoor classroom for the remainder of this year and the coming years.

***f. Changes to the proposal***

We have adjusted our proposal based on the involvement of previous classes and teachers in aspects of the earlier demonstration project. For example, we had not anticipated that last year's teachers and parents would continue terracing work in the amphitheatre. Since they have continued some work in the cottonwood grove, we decided not to focus on that aspect of our proposal, and rather decided to put most of our effort into the native plant garden.

***Contributing businesses and community members***

1. Home Resource donated significant materials for the construction of the workbenches and fence.

Home Resource
825 W. Kent
Missoula, MT 59801
406-541-8300

2. JTL provided gravel for our gravel path and additional gravel for the native plant garden.

JTL
2800 40th Ave
Missoula, MT
406-728-8325

3. Star Rental donated the use of a posthole digger for our work party.

Star Rental
2105 South Ave W
Missoula, MT 59801
(406) 728-5092

4. Finally, a number of parents of Target Range third graders and one of the first grade parents assisted with our native plant garden community workday. These parents brought tools from home to assist with the gardening and fence-building activities. One parent brought spare gates from his home that we will use as the gates to the garden. Their time and equipment were much appreciated and facilitated the work we did during that event.

***Sustainability***

The long-term sustainability of this project will involve a concerted effort by the school community to continue a baseline of regular maintenance work in the native plant garden. Due to a single year of neglect, over half of the native plants planted during the first year of ECOS were dead by the time we began our fellowship, and weeds were rampant. Because we spent so much time weeding and planting new plants, we were unable to spend as much time expanding on the previous demonstration projects as we had originally planned. Regular maintenance of the

garden involves having regular weeding events. Weeding could be accomplished by Target Range students, or by organizing monthly or bi-monthly weeding events that the parent community could attend. These weeding parties will be crucial during the summer growing months. The irrigation system should be tested at the start of each growing season. Minimal maintenance will be required during the winter months. We will be writing a garden maintenance manual to present to the teachers at the end of the school year. We hope this will help them guide their efforts to maintain the garden.

Maintenance of the remainder of the project will require less effort. The worktables and fence should last a long time without any work. The gravel path may periodically need more gravel, and replacement of the rocks lining the path, which may get knocked out of place.

The cottonwood grove amphitheatre will require considerable effort to complete and maintain. Currently, old cottonwood logs serve as benches, but students regularly knock these down the hill. More permanent benches should be installed. Terracing work needs to be finished. Plants could then be planted along the terracing to help anchor it.

If Target Range School works with a new cohort of ECOS fellows in the coming years, one good way to integrate with the current work would be to make a concerted effort to make the cottonwood grove amphitheatre more stable and permanent, starting with the actions described above. Additionally, a new cohort could develop some interpretive signs to go along the gravel path.

***Summary***

During the course of the school year, we accomplished four major goals. First, we constructed a gravel path to connect the native plant garden (first year ECOS demonstration project) with the cottonwood grove amphitheatre (second year ECOS demonstration project). Second, we built four low worktables, which we installed in the native plant garden. Third, we fenced the native plant garden, which helped to delineate its borders and which will hopefully dissuade grazing wildlife and dogs. Finally, we spent a large amount of time weeding and mulching the garden and planting dozens of new native plants. We have ensured that the irrigation system is still working well for this year, and have labeled the majority of the native plants. We are working on an interpretive sign that will summarize the three years of ECOS work on the demonstration project.

**Appendix 1**. Curricula: Attached

**Appendix 2**. Photos: Attached