



NFWF

Riparian Oak Maintenance in Lower Topanga Creek State Park (amended)

Recipient: Resource Conservation District of the Santa Monica Mountains

Project Period: March 19, 2018 – March 31, 2020

Award Amount: \$44,857.85

Matching Contributions: \$112,682.50

Project Number: #8006.18.060656

Summary of Accomplishments

During the course of this project, 422 students contributed over 2000 hours and 7300 community volunteer hours (equivalent to 2,453 volunteers) assisted in the planting of 287 native trees and understory plants in the restoration areas of Lower Topanga State Park at the Rodeo Grounds. Continuous maintenance of the planting areas around each tree and additional invasive species removal totaled over 3 acres of weeding. Survival rate of the plants was 89% although it was not possible to measure increased cover as the seedlings were still small.

Project Activities & Outcomes

Our project goals and associated activities included the following:

- 1) Add over 100 plants and sustain over 200 previously planted trees by providing supplemental water during hot summer months, removing competing invasive plants, and aiding the long-term establishment of mixed age riparian woodland.
 - a) A total of 287 individual plants were planted as part of this project, with 255 (89%) alive as of December 2019 (Table 1). This is significantly more than we anticipated in the grant proposal and the additional planting was made possible thanks to the contributions of the TreePeople nursery and other grant and corporate funds that purchased cages and rebar.

Table 1. Summary of species planted for this grant (as of December 2019)

Planting	Species	# Trees	# Dead	Average	Survivor
Area A	Coast Live	16	3	79	84%
Area B	Coast Live	33	3	11	92%
Area C	Coast Live	15	0	134	100%
Area D	Coast Live	23	2	48	92%
Area E	Coast Live	4	0	53	100%
Area G	Coast Live	25	11	42	69%
Area H	Coast Live	11	3	43	79%
Area I	Coast Live	70	2	35	97%
Area B	Coffeeberry	5	0	10	100%
Area C	Coffeeberry	5	0	95	100%
Area D	Coffeeberry	1	0	122	100%
Area G	Coffeeberry	2	0	53	100%
Area H	Coffeeberry	3	1	51	75%
Area I	Holly Leaf	1	0	36	100%
Area I	Laurel	1	0	61	100%
Area B	Sycamore	6	1	21	86%
Area D	Sycamore	9	2	74	82%
Area E	Sycamore	5	2	89	71%
Area G	Sycamore	18	2	30	90%
Area H	Sycamore	1	0	15	100%
Area I	Tovon	1	0	33	100%
TOTAL		255	32	55.1	89%

- 2) Improve tree cover providing summer shade to moderate water temperatures in this low gradient alluvial floodplain.
 - a) It was not possible to accurately assess changes in tree cover as our seedlings are mostly still under a meter tall.

- 3) Remove invasive plants such as *Euphorbia terracina* which are crowding and competing with both volunteer and planted native species to recover native pollinators and restore native cover.
 - a) During the course of the project at least 3 acres total of weeds were repeatedly removed around the perimeters of each individual plant.

- 4) Stabilize the creek bank and enhance recovery of the natural braided floodplain, reducing downstream erosion, enhancing fish passage, and creating spawning and rearing habitat for southern steelhead.
 - a) The previously planted mulefat, willow and sycamore trees have become well established along the banks for the creek, providing erosion control and bank stabilization. The additional trees installed during this project have filled in gaps.

- 5) Enhance the diversity and stability of the benthic macro-invertebrate community by providing leaf litter, which becomes important substrate and food source.
 - a) This project allowed us to qualitatively document the benthic macro-invertebrate community in the restoration area. Abundance and composition of species varied with rainfall but the most important information was documenting the new presence of red swamp crayfish in fall 2019. They have previously been confined to more upstream locations.

Outcomes

The project outcomes and progress are summarized below:

1. Over 300 3rd – 12th grade students from underserved Title 1 Schools (mostly in downtown LA) will participate in hands-on restoration and data collection.
 - a. A total of 422 students participated in planting, weeding and watering the trees, as well as collect data on tree growth and condition at 8 events (Table 2). These field events provided Title 1 Students from Los Angeles the opportunity to not only help with the trees, but also provided instruction on water quality, benthic macro-invertebrates and helped students understand why fish need trees. A bonus was that following the program, the students went across to the beach for their lunch before heading back to school. For many of these students, this was their first visit to the ocean.
2. Over 300 community volunteers (Scout groups, church groups, Chamber of Commerce groups, etc.) will participate in hands-on restoration and data collection.
 - a. A total of 7,359 hours (equivalent to 2,453 volunteers) was contributed during 39 events (Table 2). Volunteers came as individuals as well as through groups such as student honor societies, churches, brownie troops, boy scouts, and corporations.

Table 2. Summary of participants in Oak Care Events.

Month	Title 1 Student event	RCDSMM Community Event (proposed/ actual)	TreePeople Community Event (proposed/ actual)	Number of Student Participant Hours	Number of Community Participant Hours	Total Events/ Month
Mar 18	0	0/0	1/1	0	63	1
Apr 18	0	0/0	1/2	0	113	2
May 18	0	0/0	1/1	0	64	1
June 18	0	0/1	1/2	0	196	3
July 18	0	1/1	1/2	0	281	3
Aug 18	0	1/1	1/1	0	296	2
Sept 18	0	1/2	1/2	50	489	4
Oct 18	0	1/1	1/2	0	380	3
Nov 18	1	0/1	1/0	0	135	2
Dec 18	0	0/1	1/1	0	269	2
Jan 19	0	0/0	1/1	0	197	1
Feb 19	1	0/0	1/1	213	113	2
Mar 19	1	0/1	1/1	600	366	3
Apr 19	1	0/1	1/3	460	755	5
May 19	1	0/1	1/1	340	490	3
Jun 19	0	0/0	1/5	0	849	5
Jul 19	0	1/1	1/3	56	500	4
Aug 19	0	1/1	1/4	0	692	5
Sept 19	0	1/1	1/3	0	282	4
Oct 19	1	1/1	1/1	150	217	3
Nov 19	1	1/0	1/1	0	354	2
Dec 19	1	1/1	1/2	171	258	4
TOTAL	8	10/16	22/39	2040	7359	64

Lessons Learned

Describe the key lessons learned from this project, such as the least and most effective conservation practices or notable aspects of the project's methods, monitoring, or results. How could other conservation organizations adapt their projects to build upon some of these key lessons about what worked best and what did not?

The survival of our trees depended on two elements; 1) consistent watering, and 2) protection from herbivory. The impact of the drought was severe, and the water provided by our volunteers was critical. Setting up over 1,000 feet of hose to get from the water source to the restoration site also included hauling buckets across the creek. This was pretty hard work for most of our volunteers, especially the students.

Also, as the trees began to grow, our survival rate was lowered when they grew taller than the wire cages in which they were planted. We obtained additional grant funds to purchase 3 and 4 foot tall chicken wire that we fashioned into above ground cages to prevent deer browsing.

Last but not least, it was incredibly helpful to have the CA Conservation Corps assist with weed management. Invasive species such as *Euphorbia terracina* provided a lot of competition for our native trees. The volunteers were able to help maintain weed free zones around each individual, but to control spread over time we realize that we need more large scale removal efforts.

Dissemination

Both the RCDSMM and TreePeople have been conducting tree planting at other locations where the lessons learned here helped us to get higher survival rates at the other sites by not making the same mistakes. Although we did not do any formal outreach to the public, many of the volunteer groups who assisted shared social media posts about their experiences. Additionally, we mentored a new tree planting group Sky Valley volunteers who came to learn how to make cages, plant, water and maintain their restoration efforts by working with us.

Project Documents

Selected photos are included below. Additional maps, photos, and newsletter can be provided upon request.

POSTING OF FINAL REPORT: *This report and attached project documents may be shared by the Foundation and any Funding Source for the Project via their respective websites. In the event that the Recipient intends to claim that its final report or project documents contains material that does not have to be posted on such websites because it is protected from disclosure by statutory or regulatory provisions, the Recipient shall clearly mark all such potentially protected materials as "PROTECTED" and provide an explanation and complete citation to the statutory or regulatory source for such protection.*



Image 1: Briefing before volunteer Oak Care Event



Image 2: Volunteers weeding during an Oak Care Event



Image 3: Field Trip students watering trees during October 2019 event

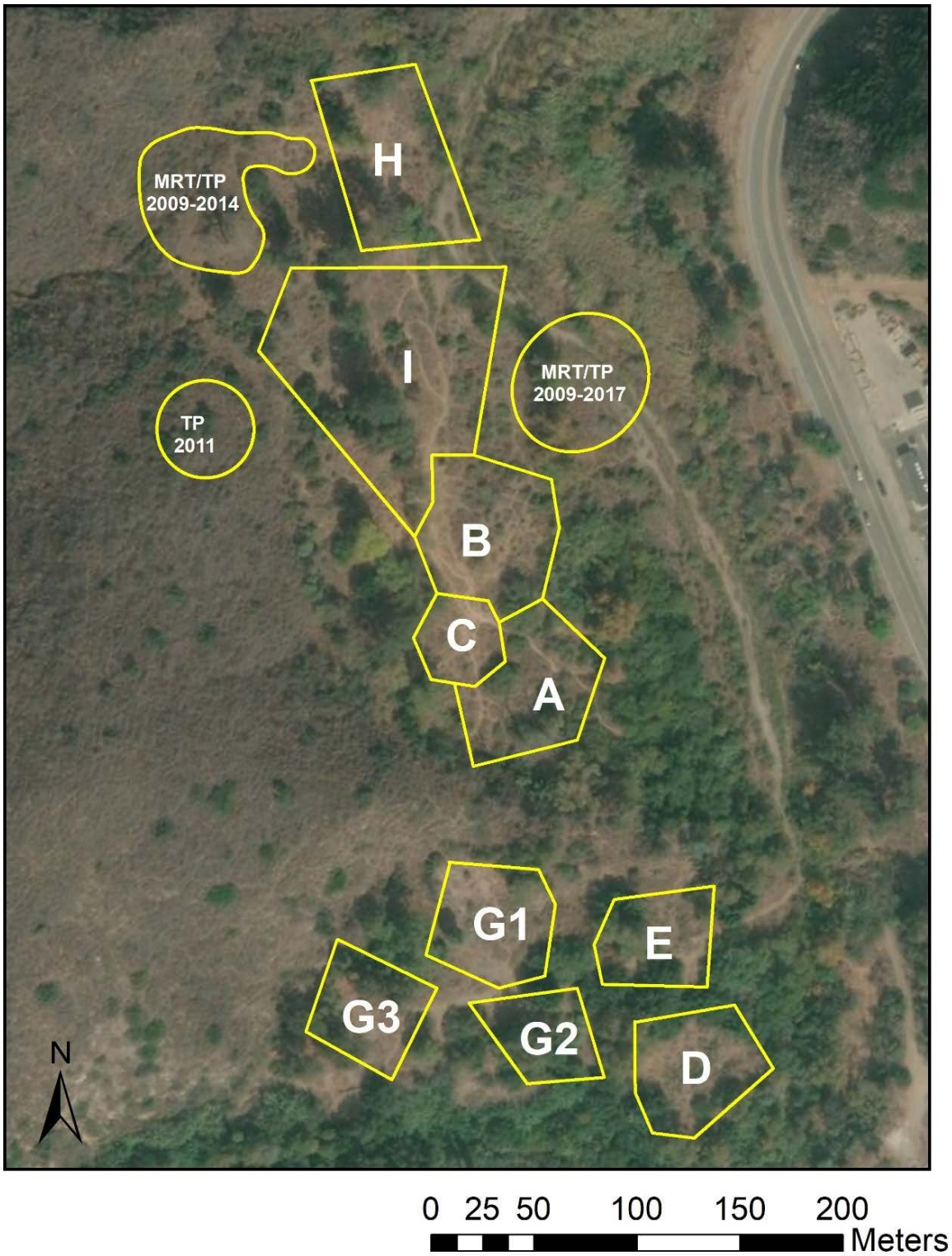


Image 4. Planting sections within project area