

Alameda County Fish and Wildlife Propagation Fund Final Report

Earth Team 2018-2019

Project 1: Martin Luther King Shoreline

Summary

The project has successfully addressed the objectives of restoring local natural habitats and engaging audiences of low-income youth and citizens from local communities. Participating interns contribute directly to habitat restoration, they engage peers and family members through conversations and knowledge spread, and they develop transferrable STEM skills that prepare them for post-secondary education and employment. Thus far, interns have gained environmental and career skills through hands on work at the Martin Luther King Shoreline, and from close relationships with Earth Team and East Bay Regional Parks District staff.

1. Youth Team Recruitment, Data Collection, Research and Restoration Activities

OBJECTIVE 1: Apply restoration curriculum and environmental monitoring skills to rehabilitate a 3 acre area in Martin Luther King Shoreline, removing invasive species, working with Earth Team educators, IPM/EBRPD staff and local community volunteers.

Recruitment: Earth Team staff implemented intern recruitment during this reporting period. While Skyline High School recruitment was completed in August, due to later academic start dates in Castro Valley and San Lorenzo School Districts, recruitment for additional schools occurred in early September. Recruitment presentations at Castro Valley High School occurred on 09/06/19.

492 students from 17 classes were reached. At San Lorenzo High School, recruitment was held on 09/09/19, and 385 students from 15 classes were engaged. Finally, recruitment at Arroyo High School was led by their career center director, and we estimate that around 150 students were reached. Earth Team staff completed interviews for all applicants during this reporting period. Number of applicants and interviews is as follows: 42 at Skyline High School, 55 at Castro Valley High School, 30 at San Lorenzo High School, and 31 at Arroyo High School. Students interviews are held over the phone and last for a duration of 10-15 minutes. Students are asked about their interest in the program, issues of watershed health and stormwater quality, access to outdoor spaces, skills and areas for improvement, and scheduling. Teams are selected to incorporate people with different strengths, and students with less effective phone communication skills are often given additional opportunities to communicate their interest in the program.



Restoration Activities:

This semester, student students participated in various restoration activities at the MLK shoreline. Primarily, they removed invasive species from the site. Preparation for these activities occurs on and off-campus through curriculum focused on ecosystem maintenance, plant identification, and more.

After-school on-campus meetings:

San Lorenzo High

09/19/19: Program Orientation and Introduction, Review Code of Conduct



09/26/19: Goal Setting, Group Agreements, Climate Change Discussion, Intro to Marine Debris
10/3/19: Watershed Lecture, Plant Identification Activity, Campus Plant Walk
10/17/19: Continued watershed education activities, Marine Debris Tracker
10/24/19: Lake Chabot Watershed Hike, Ecosystem Discussion, Plant ID Activity
10/26/19: On-campus Beautification Day led by the Druids club
11/7/19: NOAA Winged Ambassador Albatross Bolus Activity, Marine Debris Tracker
11/14/19: Eucalyptus Debate

Castro Valley High

09/11/19: Program Orientation and Introduction, Review Code of Conduct
09/18/19: Introduction to Marine Debris
09/25/19: Goal Setting, Group Agreements, Climate Change Discussion
10/16/19: Watershed Lecture, Plant Identification Activity, Campus Plant Walk
10/23/19: Lake Chabot Watershed Hike, Ecosystem Discussion, Plant ID Activity
11/6/19: NOAA Winged Ambassador Albatross Bolus Activity, Marine Debris Tracker
11/13/19: Eucalyptus Debate

Arroyo High

09/10/19: Program Orientation and Introduction
09/17/19: Goal Setting, Group Agreements, Review Code of Conduct
09/24/19: Professional Skills Workshop, Climate Change Discussion
10/1/19: Watershed Lecture, Plant Identification Activity, Campus Plant Walk
10/8/19: Discussion: importance of biodiversity in ecosystems, continued plant walk activity
10/15/19: Wildfire Lecture
10/22/19: Lake Chabot Watershed Hike, Ecosystem Discussion, Plant ID Activity
11/5/19: GLOBE Hydrosphere and Pedosphere Data Collection Training

Skyline High

09/04/19: Program Orientation and Introduction, Review Code of Conduct
09/11/19: Goal Setting, Group Agreements, Introduction to Marine Debris
09/18/19: Professional Skills Workshop
10/02/19: GLOBE Hydrosphere and Pedosphere Data Collection Training
10/16/19: Marine Debris Tracker Litter Clean Up
10/23/19: Pedosphere Data Collection, Marine Debris Tracker
11/06/19: 3 Bin Sorting
11/20/19: Career Development Activity, Research Question Development

After-school field meetings:

San Lorenzo High

10/31/19: Soil and Water Test Training, Marine Debris Tracker
11/21/19: MLK Shoreline (invasive species removal and endangered bird habitat maintenance)

Castro Valley High

10/30/19: Soil and Water Test Training, Marine Debris Tracker
11/20/19: Oyster Bay with EBRPD (removed invasive species and maintained native plants)

Arroyo High

10/29/19: Soil and Water Test Training
11/12/19: Don Castro Regional Park with EBRPD (invasive species removal and habitat restoration)
11/19/19: Arroyo High Garden (preparation of campus garden for planting, to be used for on campus stormwater and habitat outreach activities)

Skyline High

09/25/19: MLK Shoreline with EBRPD (stinkwort, mustards, yellow star thistle)

11/13/19: Educational Hike Joaquin Miller Park, Tree Measurement Activity

Weekend meetings:

San Lorenzo High

10/12/19: MLK Shoreline with EBRPD (stinkwort, mustards, yellow star thistle)

11/16/19: Oyster Bay EBRPD (invasive species removal and maintenance of recently planted trees)

Castro Valley High

10/12/19: MLK Shoreline with EBRPD (stinkwort, mustards, yellow star thistle)

11/16/19: Don Castro Regional Park with EBRPD (invasive species removal)

Arroyo High

10/19/19: MLK Shoreline with EBRPD (stinkwort, thistle)

11/16/19: Oyster Bay with EBRPD (invasive species removal and maintenance of recently planted trees)

Skyline High School

9/14/19: MLK Shoreline with EBRPD (stinkwort, mustards, yellow star thistle)

10/19/19: Oyster Bay with EBRPD (invasive species removal and maintenance of recently planted trees)

11/16/19: Don Castro Regional Park Restoration

2. Public Education and Outreach Activities

OBJECTIVE 2: Educate and train on leadership/ communication skills to educate peers and community on the environmental values that tidal marshes and wetlands provide to wildlife and the community.

Leadership team training:

Earth Team interns participate in thorough and diverse training prior to begin their projects. While the focus of field visits is to implement restoration activities, Earth Team is certain to prepare students before restoration activities begin. In order to safely and effectively implement restoration work and in order to engage peers and community members with the issues, interns require introductory leadership training. Students are trained in three areas: STEM skills, social-emotional skills, and career skills. Developing curriculum and activities focused on these three areas prepares students to perform at a high level in the field and at community engagement events. Various trainings and activities include introductions to ecology, plant identification, and data collection. Students practice professional communication skills and team dynamics, so they are able to work well with partners and fellow students in the field. They also learn about communication methods aimed at scientific and general audiences and practice public speaking to prepare them to engage with and lead community members at engagement events. The first semester of this year focused heavily on these leadership trainings, which set the stage for students to succeed in second semester activities like extended field days and community events.



Public education and outreach presentations:

Earth Team students have begun to develop the skills needed to plan and participate in community outreach campaigns during in-class workshops and through partnerships with professionals. During various workshops, students have done activities focused on creating engaging outreach materials, public speaking, professional



communication, developing research questions to drive projects, effective development of visual guides and materials and more. As they learn and practice these foundational skills, they are preparing for outreach and educational campaigns that will occur in Spring. Students will engage on campus communities through tabling and presentations and will share project outcomes with the scientific and general community at tabling events and the GLOBE Pacific Student Research Symposium in May.

Volunteer event:

This semester, interns worked closely with EBRPD staff, Doc Quack, and other site volunteers. They participated in various restoration activities at MLK shoreline, which will continue into next semester. As students continue to familiarize themselves with the site and activities, they will prepare to engage peers and community members for volunteer workdays in the spring.

Project 2: Alameda Naval Base

Summary

The timeline for this project dictates that field days at the Alameda Naval Base will not occur until February and March. As a result, activities so far have focused on training intern teams in skills they will use in the field at the Alameda Naval Base and preparing them for the work. Interns have practiced restoration and STEM skills at MLK Shoreline and other local sites, and have experience removing invasive species and restoring bird habitat. In late winter and spring, when field dates are scheduled with Susan Euing from the USFWS, students will already have a strong grasp on the work they will be doing.

1. Youth Team Recruitment, Research and Restoration Activities

OBJECTIVE 1: Apply restoration curriculum and environmental monitoring skills to rehabilitate a 10 acre area at the Alameda Naval Base, removing invasive species, installing chick shelters, working with Earth Team educators, USFWS staff and local community volunteers.

Recruitment: Earth Team staff implemented intern recruitment during this reporting period. While Skyline High School recruitment was completed in August, due to later academic start dates in Castro Valley and San Lorenzo School Districts, recruitment for additional schools occurred in early September. Recruitment presentations at Castro Valley High School occurred on 09/06/19. 492 students from 17 classes were reached. At San Lorenzo High School, recruitment was held on 09/09/19, and 385 students from 15 classes were engaged. Finally, recruitment at Arroyo High School was led by their career center director, and we estimate that around 150 students were reached. Earth Team staff completed interviews for all applicants during this reporting period. Number of applicants and interviews is as follows: 42 at Skyline High School, 55 at Castro Valley High School, 30 at San Lorenzo High School, and 31 at Arroyo High School. Students interviews are held over the phone and last for a duration of 10-15 minutes. Students are asked about their interest in the program, issues of watershed health and stormwater quality, access to outdoor spaces, skills and areas for improvement, and scheduling. Teams are selected to incorporate people with different strengths, and students with less effective phone communication skills are often given additional opportunities to communicate their interest in the program.

Restoration Activities: Restoration activities at the Alameda NWR are seasonal and will begin in February and will continue through March and potentially April. Therefore, restoration activities proposed will be completed next semester. These activities will include: maintenance of constructed of protective chick fences, installation and monitoring of chick shelters, invasive species monitoring and removal, and the opportunity for predator monitoring and chick monitoring. Interns have spent this reporting period learning and practicing restoration techniques at other sites that have prepared them to begin work at the Alameda Naval Base.

After-school on-campus meetings:

San Lorenzo High

09/19/19: Program Orientation and Introduction, Review Code of Conduct
09/26/19: Goal Setting, Group Agreements, Climate Change Discussion, Intro to Marine Debris
10/3/19: Watershed Lecture, Plant Identification Activity, Campus Plant Walk
10/17/19: Continued watershed education activities, Marine Debris Tracker
10/24/19: Lake Chabot Watershed Hike, Ecosystem Discussion, Plant ID Activity
10/26/19: On-campus Beautification Day led by the Druids club
11/7/19: NOAA Winged Ambassador Albatross Bolus Activity, Marine Debris Tracker
11/14/19: Eucalyptus Debate

Castro Valley High

09/11/19: Program Orientation and Introduction, Review Code of Conduct



09/18/19: Introduction to Marine Debris
09/25/19: Goal Setting, Group Agreements, Climate Change Discussion
10/16/19: Watershed Lecture, Plant Identification Activity, Campus Plant Walk
10/23/19: Lake Chabot Watershed Hike, Ecosystem Discussion, Plant ID Activity
11/6/19: NOAA Winged Ambassador Albatross Bolus Activity, Marine Debris Tracker
11/13/19: Eucalyptus Debate

Arroyo High

09/10/19: Program Orientation and Introduction
09/17/19: Goal Setting, Group Agreements, Review Code of Conduct
09/24/19: Professional Skills Workshop, Climate Change Discussion
10/1/19: Watershed Lecture, Plant Identification Activity, Campus Plant Walk
10/8/19: Discussion: importance of biodiversity in ecosystems, continued plant walk activity
10/15/19: Wildfire Lecture
10/22/19: Lake Chabot Watershed Hike, Ecosystem Discussion, Plant ID Activity
11/5/19: GLOBE Hydrosphere and Pedosphere Data Collection Training

Skyline High

09/04/19: Program Orientation and Introduction, Review Code of Conduct
09/11/19: Goal Setting, Group Agreements, Introduction to Marine Debris
09/18/19: Professional Skills Workshop
10/02/19: GLOBE Hydrosphere and Pedosphere Data Collection Training
10/16/19: Marine Debris Tracker Litter Clean Up
10/23/19: Pedosphere Data Collection, Marine Debris Tracker
11/06/19: 3 Bin Sorting
11/20/19: Career Development Activity, Research Question Development

After-school field meetings:

San Lorenzo High

10/31/19: Soil and Water Test Training, Marine Debris Tracker
11/21/19: MLK Shoreline (invasive species removal and endangered bird habitat maintenance)

Castro Valley High

10/30/19: Soil and Water Test Training, Marine Debris Tracker
11/20/19: Oyster Bay with EBRPD (removed invasive species and maintained native plants)

Arroyo High

10/29/19: Soil and Water Test Training
11/12/19: Don Castro Regional Park with EBRPD (invasive species removal and habitat restoration)
11/19/19: Arroyo High Garden (preparation of campus garden for planting, to be used for on campus stormwater and habitat outreach activities)

Skyline High

09/25/19: MLK Shoreline with EBRPD (stinkwort, mustards, yellow star thistle)
11/13/19: Educational Hike Joaquin Miller Park, Tree Measurement Activity

Weekend meetings:

San Lorenzo High

10/12/19: MLK Shoreline with EBRPD (stinkwort, mustards, yellow star thistle)
11/16/19: Oyster Bay EBRPD (invasive species removal and maintenance of recently planted trees)

Castro Valley High

10/12/19: MLK Shoreline with EBRPD (stinkwort, mustards, yellow star thistle)

11/16/19: Don Castro Regional Park with EBRPD (invasive species removal)

Arroyo High

10/19/19: MLK Shoreline with EBRPD (stinkwort, thistle)

11/16/19: Oyster Bay with EBRPD (invasive species removal and maintenance of recently planted trees)

Skyline High School

9/14/19: MLK Shoreline with EBRPD (stinkwort, mustards, yellow star thistle)

10/19/19: Oyster Bay with EBRPD (invasive species removal and maintenance of recently planted trees)

11/16/19: Don Castro Regional Park Restoration

2. Public Education and Outreach Activities

OBJECTIVE 2: Educate and train on leadership/ communication skills to educate peers and community on the environmental values that local nesting habitats provide to wildlife and the community.

Leadership teams training



Earth Team interns participate in thorough and diverse training prior to begin their projects. While the focus of field visits is to implement restoration activities, Earth Team is certain to prepare students before restoration activities begin. In order to safely and effectively implement restoration work and in order to engage peers and community members with the issues, interns require introductory leadership training. Students are trained in three areas: STEM skills, social-emotional skills, and career skills. Developing curriculum and activities focused on these three areas prepares students to perform at a high level in the field and at community engagement events. Various trainings and activities include introductions to ecology, plant identification, and

data collection. In order to prepare for this particular project aimed at restoring habitat for Least Terns, students completed NOAA's Winged Ambassador curriculum, culminating in the analysis of albatross boluses. This allowed students to conceptualize habitat needs for migratory birds and tied in issues of litter as well, as students found high plastic content in boluses. Students also practice professional communication skills and team dynamics, so they are able to work well with partners and fellow students in the field. They also learn about communication methods aimed at scientific and general audiences and practice public speaking to prepare them to engage with and lead community members at engagement events. The first semester of this year focused heavily on these leadership trainings, which set the stage for students to succeed in second semester activities like extended field days and community events.

On-campus tabling:

During the restoration phase of their project, students will table on campus to share their work, invite peers to community volunteer events and more.

Video and public event attendance:

During their visits to the site in spring students will capture footage of their activities. They will share video footage with campus communities during class and tabling. Students and community members will also be invited to attend the Return of the Terns public event in late spring to see the nesting bird at the Alameda NWR.