



## Alameda County Fish and Wildlife Propagation Fund Final Report

Earth Team 2017-2018

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### Summary

The project so far has successfully addressed the objectives of creating new green infrastructures and restoring local natural habitats as well as the broader engagement of low-income youth and citizens in project implementation. Earth Team hired 24 high school students from San Lorenzo High School and Skyline High School to participate in restoration focused sustainable youth internships. The student interns received hands-on training in order to develop green skills in environmental monitoring and restoration in addition to preparation for careers and college. As proposed, EBRPD/IPM made interns aware of their current internship opportunities for the summer of 2018. The project has successfully implemented the planned activities to meet its 13103 a) public education, 13103 e) vegetation management and 1303 i) scientific research objectives.

### Research and Restoration Activities

**OBJECTIVE 1:** *Apply restoration curriculum and environmental monitoring skills to rehabilitate a 3 acre area inside Oyster Bay, removing 300 cubic yards of invasives and introducing native species, working with Earth Team educators, IPM/EBRPD staff and local community volunteers.*

The 24 interns involved with this project worked with Earth Team coordinators and EBRPD Resource Analyst IPM Pamela Beitz to engage in restoration activities at Oyster Bay during the 2017-2018 school year. This year, EBRPD's focus in the park with Earth Team was the continued development of appropriate overwintering monarch butterfly habitat. Oyster Bay Regional Shoreline is expected to become a major migration stop for endangered Monarch butterflies. This year, interns were already able to observe several dozen Monarch butterflies nesting in the grove of Torrey pines in the park. To help ensure the survival of these butterflies, it is important to plant and promote species that provide a nectar source for feeding over the winter. Oyster Bay Regional Shoreline will also be home to a massive frisbee golf course along the shore, and an outdoor bicycling skills course. Interns will be assisting Pamela and the EBRPD in planting and watering native plants, as well as removing invasive plants in order to implement these recreation areas.

### Invasive Species Removal

To clear space for native and winter nectaring plants, the students removed invasive plants from over 10,000 square feet of land. For effective removal, students learned to identify several different native and non-native species. They also learned to use shovels, hand grubbers, and weed wrenches in a safe manner. The most prominent invasive species at the work site included pampas grass, French broom, and stinkwort. Consequently, removal efforts focused heavily on these three species. The pampas grass and French broom had been growing vigorously and many large individuals crowded the area. The removal of each of these mature plants required several people working together and took longer than expected. After recognizing this, efforts were targeted on the removal of these large individuals rather than high volume removal of small/immature individuals.

### Native Plant Installation

Interns successfully installed 164 native plants and seeds (see species list below) during their work sessions at Oyster Bay. Buckeye seeds were collected from mature trees already established in the park and planted in the ground to promote propagation. The rest of the plants were planted from small containers and were planted, mulched, and watered by the team. Time was spent in the classroom researching and learning about the plant list below. After discussions with EBRPD staff, it was determined that wattle installation for erosion control was not necessary at this point in time. However, interns were instructed to create berms around the new plantings to help the plants hold water and retain soil structure.



#### Species list:

- Blueblossom (Ceanothus thyrsiflorus)
- Monkey flower (Mimulus autanicus)
- Gumnut (grindelia stricta)
- Goldenrod (Euthamia occidentalis)
- Lizard tail (Saururus cernuus)
- Toyon (Heteromeles arbutifolia)
- Quail bush (Atriplex lentiformis)
- Buckeye (Aesculus)

#### ***Vegetation Research & Monitoring***

After a short weekday training on using CalFlora (a vegetation monitoring app), interns spent 1 Saturday meeting mapping invasive species at Oyster Bay. Time was spent researching and studying about different invasive species in the invasive weed identification guide provided by EBRPD. After researching was species are present in the park, the students used iPads to log locations, species, and pictures of invasive species in the park. These “points” in CalFlora can be used in the future to target removal efforts where known invasive species are present. Due to time constraints, BioBlitz was passed over in favor of using CalFlora to map invasive species.

#### **Research and Restoration Activities Deliverables Results Table**

Restoration Activity	Conservation Metric	Units	# work days	Result	Notes
Native plant installation workday	Native plants installed	# Plants	4	164 plants	164 native plants installed
Invasive plant removal workday	Invasive Species Removed	Square feet	3	10,000 square feet	Invasives removed over an area approximately this size.
Erosion Control w/ wattle construction and installation	Erosion control areas	Linear feet	-	-	EBRPD staff did not need this done during this grant period
Map distribution & density of invasives	Vegetation Monitoring	Points	1	82 points	82 points in CalFlora
BioBlitz	Species observations entered into iNaturalist phone app	# observations	-	-	Entered 82 points in CalFlora, did not use bioblitz
Planting Palette Research	# Plant species researched for installation or removal at restoration site	# species	-	30 species	Interns researched the 8 plant species installed this grant period at Oyster Bay and researched 22 invasive species from the EBRPD Invasive Weed Identification Guide

#### **Restoration activity field events:**

- *November 18, 2017 Field Event:* Invasive species removal and buckeye seed planting.
- *December 16, 2017 Field Event:* Native plant installation.
- *January 20, 2018 Field Event:* Invasive species removal and native plant installation.
- *February 10, 2018 Field Event:* Vegetation monitoring with CalFlora and public surveying/outreach.
- *March 24, 2018 Field Event (Community Event):* Community event with educational components, invasive species removal, and native plant installation.

#### **Public Education and Outreach Activities**

**OBJECTIVE 2:** Educate and train students at one nearby Title 1 public high school with environmental restoration concepts and skills as well as the leadership and communication skills required to educate peers and community on the environmental values that Oyster Bay Regional Shoreline provides to wildlife and the community.



### ***Peer Education and Outreach***

As outlined above, the 24 hired interns received training in restoration concepts and skills during their field events. In addition to their field events, the students had 4 classroom meetings where they prepared for their community event. To educate and engage their peers at their high school, San Lorenzo High School interns chose 2 classes at their school to give a presentation in. The presentation included information about Oyster Bay and the importance of restoration and environmental work. During these presentations, pre and post surveys were given to the interns to gauge knowledge and interest in the subject. At the end of the presentations, classmates were encouraged to attend Earth Team's community restoration day at Oyster Bay. Most of surveyed students had never heard of or been to Oyster Bay before, and about half reported they were interested in visiting the park or participating in volunteer events.

### ***Public Education and Outreach***

Interns created a similar but slightly different survey for a day of education and outreach at Oyster Bay. The survey questions asked about Oyster Bay's history, restoration vocabulary and knowledge, and participant habits and opinions. By surveying the public, the students were also able to inform others about their project and encourage community members to come out to their community restoration day. Surveys were given to individuals visiting the park via iPads during a 2 hour period at the park entrance on a Saturday morning. Out of 55 people that entered the park, the interns approached 40 people with event flyers and only 22 agreed to take the survey. In general, people visited the park primarily to walk their dogs off leash and were interested in participating in restoration activities. Many people are suspicious or wary of the restoration activities, most likely due to lack of information about what the desired results of the work are.

### ***Intern-Hosted Community Workday***

Earth Team interns hosted a community work day at Oyster Bay on March 24, 2018. To prepare for this community work day, the interns spent several in class sessions planning activities, creating educational materials, and reaching out for volunteers. They created a flyer, 2 signs, and a brochure that explained Oyster Bay's history and its transformation into a park. During the event, there were a total of 25 volunteers, including children, high school students, and community members. The students worked with Pamela Beitz to educate the volunteers on restoration techniques and guided them through invasive species removal and native plant installation. The day started off with rainy and windy weather, which may have deterred some volunteers from attending the event. However, the weather cleared up and the day was a productive one.

### ***Community Meetings/Presentations***

After their field work ended for the school year, the interns focused on giving presentations about their project. The first such opportunity was at San Lorenzo High School's annual Native Garden Day. At this event, different organizations host tables and the school's environmental club hosts a native plant sale to raise money. Earth Team hosted a table with a tree identification game, their Oyster Bay brochure, and a poster displaying the different restoration activities they engaged in during field events. The table had approximately 75 visitors.

Some interns presented a slideshow about the year's accomplishments at Oyster Bay at a San Leandro City Council meeting. This meeting was surprisingly well attended by the public and including the council members there were about 50 people total in attendance. The interns received extremely positive feedback from the council members and were able to take a picture with the mayor and council together.

Our partners at EBRPD hosted a volunteer recognition dinner in late May and invited our interns to give a speech at the dinner. Two interns attended and spoke about their accomplishments and obstacles they had to overcome. With over 100 people in attendance at this dinner, the interns received overwhelmingly positive and supportive feedback and raised a lot of interest in their project.



### Public Education and Outreach Deliverables Results Table

Educational/Outreach Activity	Metric	Units	# work days	Result	Notes
Interns present summary of internship and findings at community meetings	Community members directly engaged	#community members	3	225 community members	225 community members were engaged during public events/meetings
Outreach to community members who walk trails through restoration site	Community members counted by interns on Saturdays	#community members	1	55	Interns counted 55 community members at the park this day. They reached out to 40 of them to take a survey, 18 people declined, 22 took survey and received a flyer for their community event
Intern-hosted class field trip to restoration site	Students attending field trip	#students	2	65 students	No capacity for sanctioned field trip. Instead, interns gave presentations in 2 class periods about oyster bay and encouraged students to come to community event. 7 classmates came to the event.
Intern-hosted public work days	Volunteers participating	#volunteers	1	25 volunteers	The interns planned for and hosted 1 community workday at Oyster Bay.
Design signs about restoration efforts and stewardship action for the public to take	Signs posted	#signs	-	2 signs	Interns created 2 signs.
Monthly photo, video, web posts	Social media posts	Blog entries		10 blogs	10 blogs related to the project & team were posted.
Articles in annual EBRPD & Earth Team newsletters	Printed media articles	#articles		-	-

#### Educational/Outreach activity events:

- *February 10, 2018 Field Event:* Vegetation monitoring with CalFlora and public surveying/outreach.
- *March 24, 2018 Field Event (Community Event):* Community event with educational components, invasive species removal, and native plant installation.
- *May 6, 2018 San Lorenzo High Native Garden Day:* Hosted table with Oyster Bay brochure/poster.
- *May 21, 2018 San Leandro City Council Presentation*
- *May 23, 2018 EBRPD Volunteer Dinner Speech*

#### **Project Visits**

All classroom visits, field visits, and public events were logged into Earth Team's database as "project visits". These records include the date, time, location, # of participants, and all relevant outcome data.



Project No.: 10290 (13 records)								
Visit Record No.	Visit Start Date/Time	Visit Type	Off-Campus Participants	Total On-Campus Participants	Plants Installed	Invasives Removed	No. of Surveys	Hours
<b>Class/Field Visit: Class/Campus Visit (5 records)</b>								
VN-101414	1/23/2018 15:30	Field Prep	0	0	-	-	-	2
VN-101423	1/30/2018 15:30	Field Visit Prep	0	0	-	-	-	2
VN-101645	2/27/2018 10:00	School Outreach	0	62	-	-	62	2
VN-101500	3/13/2018 15:30	Field Visit Prep	0	0	-	-	-	2
VN-101502	3/20/2018 15:30	Field Visit Prep	0	0	-	-	-	2
<b>Class/Field Visit: Field Visit (4 records)</b>								
VN-101565	11/18/2017 9:40	Field Visit	6	0	40	4,000	-	2.33
VN-101386	12/16/2017 9:00	Field Visit	1	0	20	0	-	3
VN-101408	1/20/2018 9:00	Field Visit	3	0	15	2,000	-	3
VN-101441	2/10/2018 9:00	Field Visit	40	0	-	-	22	2
<b>Class/Field Visit: Public Event (4 records)</b>								
VN-101534	3/24/2018 9:00	Field Visit	25	0	89	4,000	-	3.5
VN-101579	5/6/2018 9:45	Field Visit	55	20	-	-	-	2.25
VN-101628	5/21/2018 18:30	Other	50	0	-	-	-	1.25
VN-101629	5/23/2018 17:00	Other	120	0	-	-	-	3.5
<b>Total Hours:</b>								<b>30.83</b>

During the course of the 2017-2018 school year, the interns had 13 meetings related to Oyster Bay. A total of 10 hours were spent in the classroom preparing for field visits & educating peers, 13.53 hours were spent on field work at Oyster Bay, and 7 hours were spent on public presentations and outreach.

## Photos and graphic reports

Top 5 blogs:

[Oyster Bay Restoration Day Fun!](#)

[Monarch Butterfly Habitat Creation at Oyster Bay](#)

[More Oyster Bay Restoration](#)

[Community Restoration Day at Oyster Bay Regional Shoreline](#)

[Surveying and Educating the Public](#)

Best pictures:



Google Photo Albums:

[SLZ Oyster Bay EBRPD Volunteer Dinner 5.23.18](#)

[SLZ San Leandro City Council Presentation 5.21.18](#)

[SLZ at SLZ High's Native Garden Day 5.6.18](#)

[SLZ Oyster Bay Community Restoration Day 3.24.18](#)

[SLZ Oyster Bay Prep Meeting 3.20.18](#)

[SLZ Oyster Bay Surveys and Vegetation Monitoring Meeting 2.10.18](#)

[SLZ Oyster Bay #3; 1.20.18](#)



[SLZ & SKY Oyster Bay Restoration Day 11.18.17](#)

[SLZ Oyster Bay Day 2 12.16.17](#)