

Progress Reports by Grassroots Ecology
Burrowing Owl - Alviso Planting Project

Contents include:

- November and December 2023
- July to October 2023
- January to June 2023



Progress Report to Valley Water
Burrowing Owl - Alviso Planting Project
November and December 2023

The following report outlines activities for November and December 2023 at the San Jose - Santa Clara Regional Wastewater Facility (RWF). Valley Water is currently the sole funder of Grassroots Ecology’s work at the site for native plant installation and maintenance, invasive plant management, and volunteer events. The current PO funds activities through December 2023. As of January 2024, Grassroots Ecology does not have funding to continue work at the site; however, we have submitted a proposal to the Santa Clara Habitat Agency requesting funds to maintain existing plantings and continue to offer volunteer events to the public.

The chart below is a summary of key outcomes from July-December 2023.

Task	Proposed for July-December 2023	Actual for July-December 2023
Community Workdays	5	7
Volunteers	60	62
Volunteer hours		181
Area of habitat improved including invasive removal	1 acre	1 acre

Community Engagement

In November and December 2023, Grassroots Ecology hosted 3 volunteer events where 21 volunteers contributed 63 hours of service. Additionally we hosted one all-staff workday with 17 members of the Grassroots Ecology staff.

- All events this winter were focused on planting 250 California native plants to infill in the existing habitat islands. Volunteers were especially excited to help with the planting efforts, and many of our repeat volunteers joined in to help.
- We were able to install around 50 - 60 plants at each volunteer event with the remainder of the plants installed by Grassroots Ecology staff.
- All plants were watered using recycled water delivered by Purple Pipe.
- Grassroots Ecology staff and volunteers also helped remove crabgrass that is encroaching in the planting area.
- Snacks, stickers and sunscreen were provided at all volunteer events.

Native Plant Installation

- Grassroots Ecology staff and volunteers planted 250 plants at RWF in November and December. Based on lessons learned from the heavy rains and flooding last year, this year planting was focused on areas with higher elevation

to reduce the risk of new plants being inundated during winter months. Rather than expanding the footprint of our planting area, this year we focused on infill and connecting the habitat islands.

- The winter rains were slow to come this year leaving us with challenging planting conditions onsite because the ground was very hard and dry. Rain finally arrived in late December for our last planting day.
- Below is the 2023 plant list with species totals

RWF Plant List December 2023	
Yarrow	30
Marsh Baccharis	30
Hearst's Ceanothus	10
California Fuschia	15
California Buckwheat	15
Gum Plant	30
Coyote Mint	15
California Wild Rose	30
Salvia 'Bee's Bliss'	15
California Goldenrod	30
Western Vervain	30
TOTAL	250

Invasive Plant Management and Site Maintenance

- Between July-December 2023, 1 acre was managed by hand pulling invasive plants.
 - The focus this winter was on the crabgrass that is encroaching from the roadside into the planting area as well as removing any remaining stinkwort along the roads and near our restoration plots.
- A truckload of bagged weeds was removed from site and disposed of at the Zanker landfill.
- The smaller purple water tank that was no longer being used was removed from the site. Three large tanks remain onsite for future watering.
- All Grassroots Ecology tools and supplies except for the watering buckets were removed from the site.
- Broken stakes and trash were removed from the restoration area and thrown away.
- Plant maintenance was done throughout the restoration area.
 - Rotten straw and detritus was removed from a 6 inch radius around all plants
 - Bamboo markers were placed in areas where native plants are coming up via rhizomes and seeds
 - Fresh mulch rings were installed around small plants that need the extra protection
 - Weed cotyledons were removed

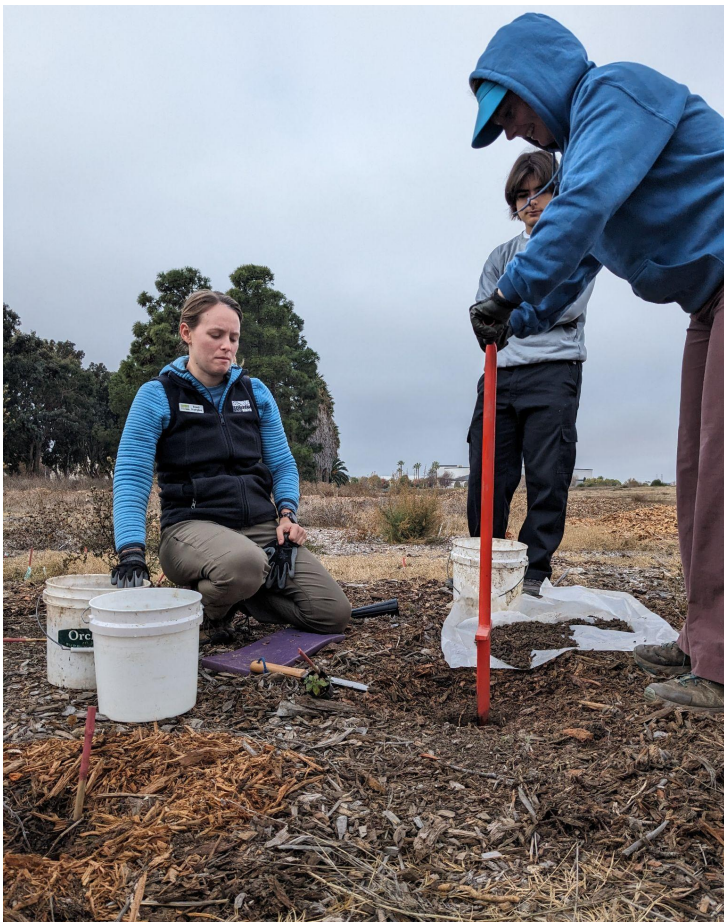
Field Photos



Volunteers take a break from planting natives!



Grassroots Ecology Staff help for a morning of planting



Challenging planting conditions require the digging bar



A small and mighty group of volunteers in November



Planting demo by CACC americorps member Maya



Volunteers infill plants in the habitat islands in December



A volunteer plants in between the tall asters



A volunteer plants behind a sagebrush

Field Log

Date	Activities	Notes and Observations
11/8/2023	GRE staff maintenance day - Removed the purple tank from the site and returned it to AP - A truckload of bagged weeds was removed from site and disposed of at the Zanker landfill - Removed unused tools and supplies from the site and returned to AP and Nursery	
11/17/2023	Community volunteer workday: Planting and watering - 10 Ceanothus - 15 Rose - 15 Salvia - 15 Fuschia	The ground is very hard and dry
12/4/2023	Community volunteer workday: Planting and watering - 15 Ca rose - 15 Buckwheat - 15 Goldenrod - 15 Coyote mint	The ground is very hard and dry
12/11/2023	Purple Pipe onsite to fills tanks and overhead water all habitat islands	
12/15/2023	Community volunteer workday: Planting and watering - 15 Gumplant - 22 Goldenrod - 5 Buckwheat - 4 Coyote mint - 25 Yarrow - 15 Verbena	Big group! Lots of plants went in
12/19/2023	GRE Staff planting day Finished planting all 2023 plants! - Removed crab grass in target areas. - Mulched and weeded edges of habitat islands. - Added mulch rings around small plants - Removed rotten straw and stakes from planting areas. - Removed trash from worksite - Removed all tools except for the watering buckets from the site.	Beautiful conditions for planting, soft ground at last



Progress Report to Valley Water
Burrowing Owl - Alviso Planting Project
July - October 2023

The following report outlines activities from July - October 2023 at the San Jose - Santa Clara Regional Wastewater Facility (RWF). Valley Water is currently the sole funder of Grassroots Ecology's work at the site for native plant installation and maintenance, invasive plant management, and volunteer events. The current PO funds activities through December 2023; Grassroots Ecology will no longer have funding to work at the site once the remaining budget is used. However we are interested in continuing native plant restoration efforts and community engagement if funding is available. Grassroots Ecology submitted a project summary to the Coastal Conservancy for their Sea Level Rise adaptation funding, but they did not invite a proposal.

The chart below is a summary of key outcomes from July-October 2023. More volunteer events are planned to take place in November and December to install 250 plants.

Task	Proposed for July-December 2023	Actual for July-October 2023
Community Workdays	5	4
Volunteers	60	41
Volunteer hours		118
Area of habitat improved including invasive removal	1 acre	1 acre

Site Conditions

Summer 2023 was a cooler summer overall. In early summer the pools of water from heavy winter rains dried up and the plants began to recover. All the plants in the high ground areas did well and put out a lot of new growth and blooms. Most of the plants that were submerged for the winter died with the exception of California rose, California aster, narrowleaf milkweed, and some California sagebrush.

Community Engagement

From July - October 2023, Grassroots Ecology hosted 4 volunteer events where 41 volunteers contributed 118 hours of service.

- One of the workdays was with Grassroots Ecology's summer naturalist interns. These college students volunteer with Grassroots Ecology all summer at various restoration sites as they work towards earning their California Naturalist Certification. The interns came to RWF in July to water native plants, remove invasive species within the project area, and monitor insects using a bioblitz method. An update from the insect monitoring is attached.

- Three of the workdays were public community events held on Friday mornings for volunteers who are aged 18+. Many of the volunteers are repeat volunteers who come back every month to help out. Our typical volunteers are a mix of college students (from SJSU, West Valley and De Anza), people of working age who have flexibility on Friday mornings, and retired people. The burrowing owl project is a draw for volunteers who are engaged in birding and local biodiversity efforts. Everyone is happy to be helping in the effort to support the burrowing owls.
- During the summer and fall, volunteer work consists of bucket watering all the planted plants, removing lots of weeds and conducting general site maintenance. We provide educational elements about the burrowing owls to our volunteers.

Native Plant Maintenance

- The plants in the habitat islands are generally doing well with some species putting out rapid summer growth and many species blooming. We saw very little plant mortality this summer and some of the plants (notably buckwheat and sagebrush) that suffered from the floods rebounded.
- Summer maintenance activities primarily consist of bucket watering with volunteers once a month and overhead watering by Purple Pipe about once a month.
- The two milkweed seed plots that volunteers helped install in January have been very successful. As of October 2023, the two 10' by 10' plots each have 80% cover of narrowleaf milkweed seedlings with about 10% of the plants having matured and set seeds. We observed three instances of monarch caterpillars using milkweed onsite!
- While quantitative vegetation monitoring is no longer part of the project scope, we compiled an [annotated species list](#) with notes about all species planted in the upland zone and the seasonal wet zone.
- 250 additional plants will be planted in the upland zone in November and December 2023. Rather than expanding the planting area, these new plants will be installed in the existing habitat islands as infill. We are planning to plant hardy, rhizomatous plants including California rose, goldenrod and marsh baccharis - all species that are doing well given the challenging conditions of the site - in strategic areas where they will form a hedge to reduce the number of invasive weeds that are creeping into the site. We will concentrate the plants in areas of higher elevation so that they are less likely to become inundated by water over the winter.
- The marsh baccharis and marsh goldenrod that were planted in the "seasonally wet area" look great, the small islands are blooming, flourishing and expanding.
- Since we have not lined up any new funding for this project, the maintenance of these plants will end in December.

Invasive Plant Management

- Approximately 1 acre was managed by hand pulling invasive plants with a focus on yellow starthistle and stinkwort. Roadways and revegetation areas were prioritized to help protect native biodiversity and limit the spread of invasive propagules.
- The yellow starthistle population within the upland habitat islands has been greatly reduced and is now easily managed with routine maintenance by volunteers. The population in the surrounding area is also reduced, and large piles of mulch have been spread out around the habitat islands to reduce the existing weed populations.
- Stinkwort came up early this summer and volunteers began to remove it beginning in June. Luckily, stinkwort has not infested the habitat islands, but it is prolific along the roadways and the greater RWF site.

- Unfortunately, the perennial pepperweed population at RWF has started to encroach on the upland planting zone. We removed individuals that are growing inside the habitat islands, but hand pulling is not a very effective strategy for this species so we expect to see many resprouts.
- A few new non-native species have started to take hold within the habitat islands. These new populations are likely coming in as resources such as groundwater and sunlight are more readily available with the removal of yellow starthistle. Newer infestations include prickly lettuce that was removed in June before it flowered, and crabgrass which is beginning to become a problem in the northwest corner of the upland planting zone.
- Grassroots Ecology staff spent one afternoon pulling invasive stinkwort from the “seasonally wet area”. While three large trash bags worth of stinkwort were removed, the population in this area has been greatly reduced as a result of three years of management. The stinkwort was bagged and brought off site for disposal.

Field Photos



Volunteers take a break after lots of watering



Summer interns removed huge yellow starthistle on the outskirts of the habitat islands in July



Summer interns monitor the insect population using the



Volunteers hacked and bagged stinkwort on the edges of the

bioblitz method



California buckwheat provided late summer flowers

habitat islands at the October community workday



Grassroots Ecology staff remove stinkwort in the seasonally wet zone



Milkweed seedling in September



A monarch caterpillar on planted narrowleaf milkweed

Field Log

Date	Activities	Observations
7/12/23	Summer intern workday - Water all habitat islands - Insect bioblitz for species richness - The interns removed a massive amount of giant weeds onsite - it was awesome	- Owls were very active in their enclosures, which made it easy to see them with binoculars - Saw two coyotes on the far side of the bufferlands close to the owl enclosures
7/29/23	Purple Pipe onsite to fill tanks and overhead water all habitat islands	
8/4/23	Community workday - Water all habitat islands - Weed removal: spiny lettuce, pepperweed, crab grass, YST	- Lots of spiders and lizards living in the tool tarp
8/24/23	Purple Pipe onsite to fill tanks and overhead water all habitat islands	
9/15/23	Community workday - Water all habitat islands - Weed removal: crab grass, stinkwort, spiny lettuce, any remaining yellow starthistle - Deadhead coyote mint, yarrow, grindelia	- First time seeing a monarch caterpillar on milkweed!
10/9/23	Purple Pipe onsite to fill tanks and overhead water all habitat islands	
10/20/23	Community workday - Water all habitat islands - Weed removal: crab grass, stinkwort - Mulch rings around all small plants and covering any exposed soil - Staff removed stinkwort from the seasonally wet planting area, there was a big reduction of stinkwort in this area compared to last year	- Saw two more monarch caterpillars - The marsh baccharis and marsh goldenrod patches are expanding in the seasonally wet area, lots of blooms and seeds



Progress Report to Valley Water and SCVHA
Burrowing Owl - Alviso Planting Project
January - June 2023

The following report outlines activities from January - June 2023 at the San Jose - Santa Clara Regional Wastewater Facility (RWF). During this timeframe Valley Water provided funding for native plants, installation and maintenance of native plants, invasive plant management, and six volunteer events. Santa Clara Valley Habitat Agency provided funding for watering the native plantings and one volunteer event. The chart below is a summary of key outcomes.

January - June 2023	Proposed	Actual
Community Workdays (SCVHA)	1	1
Community Workdays (VW)	5	6
Volunteers	60	47
Volunteer hours		138
Plants	300	284
Area of habitat improved including invasive removal	1 acre	1 acre

Site Conditions

Winter 2022-23 experienced above average rainfall which caused flooding through the lower elevation of the RWF. Standing water remained in many areas through spring. Even in areas where there was no standing water above ground, the water table was very high and water filled in quickly when holes were dug. The two upland test plots were under standing water for several months which caused significant mortality of previously planted native plants. The upland habitat islands - adjacent to the test plots - are at a slightly higher elevation and were therefore drier, especially starting in spring. While flooding does not happen every year at the project site, it is not uncommon and should be considered when planning for the site. Monitoring the survival of various species within the planting areas can help inform future revegetation efforts.

Community Engagement

From January - June 2023, Grassroots Ecology hosted seven volunteer events where 47 volunteers contributed 138 hours of service. All volunteer events were funded by Valley Water unless otherwise noted.

- In January volunteers helped install two narrowleaf milkweed seed plots. This entailed clearing mulch, spreading compost and cold-stratified milkweed seeds, then covering the plots with weed-free straw.
- Five volunteer workdays in February, March, and April were dedicated to planting native plants from the Grassroots Ecology nursery. 284 plants were installed within the upland habitat islands.

- In June volunteers helped with invasive plant removal and native plant care (weeding and watering). This volunteer day was funded by SCVHA.
- Volunteer participation was lower than expected due to stormy and wet winter conditions. While we had many more volunteers register for these events, we experienced a high volume of attrition due to rain. Nonetheless, we were still able to accomplish all of our restoration goals.
- In addition to having community members out to the site, Grassroots Ecology did a series of videos on [instagram](#) about the native plant restoration efforts at RWF.

Native Plant Installation and Maintenance

- The plants in the habitat islands are generally doing well with some species putting out rapid growth and many species blooming. The main cause of plant loss this year has been due to the flooding in the RWF. Many plants in the lowest portions of the planting area were inundated with water for 4+ months. This caused lots of plants to die (about 90% mortality in the test plots and 40% mortality in the habitat islands) but the plants that survived the floods look great with lots of new growth.
- 284 plants were planted this winter - all within the upland habitat islands. Plants were planted in small groupings by species (e.g. a cluster of 5 coyote mint). All species planted this year had been tested in previous years and were selected based on success in the past. Planting locations within the habitat islands was determined by ground level, with all new plants placed in the high ground areas to avoid becoming inundated with water in future flood events. Planting was harder this year due to the very wet soil but the volunteers were up for the challenge and we got all the plants into the ground without problems.
- There has been a significant decrease in weeds, especially yellow starthistle, from within the habitat islands and we are seeing natural recruitment of native plants such as alkali mallow and fiddleneck.
- After all plants were installed, Purple Pipe delivered water to the site. Plants were watered directly and the water tanks were filled. Grassroots Ecology staff and volunteers used the stored water to bucket water the plants approximately once per month in the spring.
- The two milkweed seed plots that volunteers helped install in January are doing great. As of June 2023 the two 10' by 10' plots each have 80% cover of narrowleaf milkweed (photo below).
- Grassroots ecology staff and interns visited the site in late May for routine maintenance of the planting areas and to plan upcoming volunteer events.
- Funding sources no longer support monitoring of the revegetation zones. Survivability monitoring did take place from spring 2021 - spring 2022; findings from that monitoring can be found in this [report](#). While quantitative vegetation monitoring is no longer happening, we did put together an [annotated species list](#) with notes about all species planted in the upland zone and the seasonal wet zone.

Invasive Plant Management

- Approximately 1 acre was managed by hand pulling invasive plants with a focus on yellow starthistle and stinkwort. Roadways and revegetation areas were prioritized to help protect native biodiversity and limit the spread of invasive propagules.
- The yellow starthistle population within the upland habitat islands has been greatly reduced and is now easily managed with routine maintenance by volunteers. The population in the surrounding area is also reduced, and there are large piles of mulch onsite that will be spread over the yellow starthistle populations.
- Stinkwort came up early this summer and volunteers began to remove it starting in June. Luckily, stinkwort has not infested the habitat islands but it is prolific along the roadways and the greater RWF site.

- Unfortunately, the perennial pepperweed population at RWF has started to encroach on the upland planting zone. We removed individuals that are growing inside the habitat islands, but hand pulling is not a very effective strategy for this species and we expect to see many resprouts this summer.
- A few newer invasive species have started to take hold within the habitat islands. These new populations are most likely due to the removal of other non-natives such as yellow starthistle as well as the wet conditions of this past winter. Newer infestations include prickly lettuce that was removed in June before it flowered, and crabgrass which is beginning to become a problem in the northwest corner of the upland planting zone.

Field Photos



The winters big rains brought flooding to the habitat islands



Volunteers on March 17th braved stormy weather to help install native plants during a break in the rain



March 20th volunteer workday, planting the habitat islands



In January milkweed seed test plots were created. The team celebrated completion of the task



The California sagebrush that survived the flooding is growing fast



Hairy gumplant blooming in June 2023



Sticky monkeyflower blooming for the June volunteers, the small shrubs had more flowers this year than average



Milkweed seed test plots were installed in January and by June the seeds had germinated and were starting to grow!

Field Log

Date	Tasks	Notes and Field Observations
1/13/23	Community workday - 2 milkweed seed plots installed in upland zone	
1/30/23	GrE staff planning day - planting plan - staking/placing plants in habitat islands	- lots of flooding/standing water in the upland zone - test plots are inundated with water
2/13/23	community workday - planting in habitat islands, around 60 plants - light watering in - valentine's day themed "owl-entines day" volunteer day	- 2 coyotes hanging out in fields - one volunteer brought her birding scope out to look for owls - sagebrush and buckwheat don't look great, but we're concerned about high groundwater - standing water still there, test plots still inundated
2/27/23	community workday - planting in habitat islands, around 40 plants - light watering in	- rainy but fun! 3 volunteers were troopers. We ended early because the rain was picking up. - standing water still there, test plots still inundated
3/17/23	community workday - planting	- big group, lots of planting got done - still very wet in some areas - moving all new plants to "high ground"
3/20	community workday - planting	- Killdeer nesting in habitat island 3, we stayed clear of the nest area
4/7	community workday - planting - removing invasive seedlings and watering Purple Pipe fills all tanks	- got all the plants in the ground! - removed all YST seedlings from the planting areas, additionally removed geranium and grasses from habitat islands
5/31	GrE staff maintenance day - watering all plots - weeding in habitat islands - planning for spring workday	- the site is finally drying up - lots of plants died within the wet/swampy areas
6/14	Community workday - water all habitat islands - remove weeds: prickly lettuce, pepperweed, crab grass, YST	- water tanks are now empty - lots of stinkwort coming in on the roadway - more prickly lettuce this year than years past - crab grass in the northwest corner is getting bad - milkweed plots look great