Arana Gulch Habitat Management Plan
City of Santa Cruz

Year 11 (2024) Annual Report

Appendices

CDFW Permit No. 2081 (a)-13-013-RP
CDFW Permit No. 2081 (a)-18-016-RP
Coastal Development Permit No. 3-11-074 (Arana Gulch)

February 13, 2025

Appendix A AMWG Meeting Minutes, 2024

AMWG Meeting Minutes for:

May 3, 2024
September 11, 2024

Minutes
Arana Gulch Adaptive Management Working Group Meeting

9:00 a.m. – 12:00 p.m. on May 3, 2024

MEETING

Working Group Members present:
Travis Beck, City of SC Dept. of Parks and Recreation
Ako Culver, City of SC Dept. of Parks and Recreation
Kathy Lyons, Biotic Resources Group
Bill Davilla, EcoSystems West
Suzanne Schettler, CA Native Plant Society
Sylvie Childress, UCSC Greenhouses
Rachel Pausch, CA Coastal Commission
Teresa and Frank Locatelli, Ranchers
Mandy Culpepper, CA Department of Fish and Wildlife

AMWG Members Absent:
Devii Rao, USDA
Todd Lemein, US Fish and Wildlife Service

Other Attendees:
Kristy Young
Mark Locatelli
Justin Davilla, EcoSystems West
Ricardo Valdes, City of Santa Cruz Public Works Department

The meeting was held at the Santa Cruz Bible Church coffee room (9:00 -10:30) then at Arana Gulch (10:30 – 12:00). Travis Beck facilitated the meeting, representing the City of Santa Cruz Department of Parks and Recreation.

Meeting at SC Bible Church

Welcome and Meeting Objectives. Travis opened the meeting. Travis announced that he is leaving his position at the City of Santa Cruz so this will be his last AMWG meeting. The City will be recruiting a person, possibly a position focused on open space management and resource management and this person would take over AMWG facilitation.

The minutes from the November 7, 2023 meeting were reviewed and approved.

1. Report on Fall 2023 Santa Cruz tarplant (SCT) management. Kathy reported on the fall management with Area A and C. The cross fence in Area A was installed in January and cows were placed into Area A South – West pasture. This was later than originally designed as the intent at the November AMWG meeting was to have cows into this SCT occupied areas in October 2023 to facilitate SCT seed/soil contract and seed dispersal and to experimentally compare grazing and mowing treatments. Cattle grazed this pasture for approx. 3 weeks in January/February and were then moved to Area A North. In fall 2023, some on-site SCT seed head/plants were hand-spread onto raked unoccupied areas outward of the 2023 plots to facilitate spread of the species. Cows were allowed to enter the Area C SCT Outplanting Area from November to mid-February to graze on grass and thatch and facilitate SCT seed/soil contact and seed dispersal.
2. Summary of 2024 SCT Out Planting. Kathy reported on the outplantings of SCT. 1,078 SCT plugs were installed over two days in February 2024. Most plants were installed in the Area A South-East pasture; however over 290 SCT were installed in the cattle exclosure in Area C. A map was presented showing the location of the install plots.
3. Summary of Spring Grassland/Prairie Monitoring. Kathy presented summary data from the grassland monitoring transects. A chart was presented showing the data. Similar to previous years, Area C and D are dominated by non-native grasses and forbs. Area C has 58 % cover by annual exotic grasses and 42 % cover by exotic annual forbs. Area D has 74 % cover by annual exotic grasses and 24 % cover by exotic annual forbs. More native species were found in Area A, with native perennial grasses proving 16 % cover in Area A South East and 33% in Area A South West, with native grass cover proved mostly by California oatgrass and purple needlegrass. Area A South West has 30 % cover by annual exotic grasses, 30% cover by exotic annual forbs, 8% cover by exotic perennial forbs, 0% cover by native annual forbs and 33 % cover by native perennial grasses. Area A South East has 38 % cover by annual exotic grasses, 31% cover by exotic annual forbs, 12% cover by exotic perennial forbs, 2% cover by native annual forbs and 16 % cover by native perennial grasses.
4. Summary of Canopy Height. Kathy report on canopy heights in February and April and a chart was presented showing the data. The target height from November to April is 5-8 cm. Area A North and Area A South West were in target in February as these pastures were grazed. Other pastures were above the target. In April, all sites were above target; measurements were taken prior to seasonal mowing in Area A South West and East.
5. Rail Trail Mitigation Projects. Justin Davilla and Ricardo Valdes reported on the status of the rail trail from San Lorenzo River to 17th Avenue (Segment 9); the environmental review has been completed and the project is in the design phase. There is the need to mitigate for impact to sensitive habitats and compensate for tree removal. Justin presented a summary table of project impacts to habitat types and a tree removal table.

Most of the tree removal will occur between East Cliff and 17th Avenue. Most oak tree removal will occur in the Schwann Lagoon area and in mixed riparian areas. Justin presented the mitigation requirements for impacts to environmentally sensitive habitat areas (ESHA) and the mitigation ratios being used. Ratios developed in the Gleason Beach memo from the Coastal Commission are being proposed; this includes categories for creation (3:1), substantial restoration (3:1) enhancement (6:1) and preservation (9:1). There is a minimum 1:1 ratio for wetlands. The agencies have requested the mitigation occur on City or County lands in close proximity to the project site and the Arana Gulch Open Space was identified as a potential site. Justin presented a figure depicting possible mitigation actions within Arana Gulch, focused on coastal prairie restoration, oak woodland creation, oak woodland enhancement and riparian creation. The actions would be consistent with the Arana Gulch Management Plan yet would not be double-listing actions required in the Plan. Justin anticipates there would be 10 years of active maintenance and monitoring of any mitigation actions. Mitigation would need to be implemented within one year of project initiation. Permits to regulatory agencies have not been submitted; so, the proposed actions in Arana Gulch are just preliminary and for discussion. Rachel requested the priorities of the Arana Gulch Management Plan be revisited at the next AMWG meeting and relook at Master Plan priorities in light of proposed rail trail mitigation opportunities. Travis reported that that would be a task for the new person hired by the City.

Field meeting

Site Tour, Updates and Discussion. Travis opened the field meeting with a walk over Hagemann Gulch, then to Area C SCT Outplanting Area, Area A South East and West, and then perimeter trail to view potential rail trail mitigation areas.

1. Field Observation of Hagemann Gulch: Group viewed eucalyptus tree falls and cleanup. There are opportunities for removal of non-native elms and ivy.
2. Area C SCT Outplanting Area: Viewed installed plants. Management action is to weed whip to the height of the SCT plants. Ako and crew will do this work.
3. Area A South East SCT Outplanting Area: Viewed installed plants. Management action is to weed whip to the height of the SCT plants. Ako and crew will do this work.
4. Area A South West and East: Mow all of area (excluding SCT outplantings) to 8". Ako and crew will do this work. One mowing has already occurred this spring (April).
5. Mowing and Cattle Management in Area A. Group discussed mowing and cattle management in Area A. Consensus is to keep mowing Area A South (East and West) through September to 8-inch canopy height. Allow cattle access to both east and west pastures in October after SCT have dropped seed. Allow cattle to compact seed into soil and create open ground.

6. SCT Seed Collection: Consensus is to do SCT seed collection in 2024 for additional seed increase. Consensus to evaluate the need for another outplanting of SCT plugs in 2025 based on results of SCT census in 2024. The AMWG should reconvene in September to review results of SCT census and decide on fall actions.
7. Rail Trail Mitigation – Prairie Enhancement Area: Group viewed area south of pasture fence and Justin discussed additional enhancement actions that could occur here, such as additional mowing, over seeding, outplantings and weed control. Potential for enhancement of area with butterfly nectar plant species.
8. Rail Trail Mitigation – Wetland Enhancement Area: Group viewed potential wetland enhancement area and Justin discussed possible enhancement actions that could occur here, such as invasive weed control, improving hydroperiod and possible trail improvements.
9. Rail Trail Mitigation – Riparian Creation Area: Group viewed grassy area on higher elevation along Arana Creek for riparian creation and Justin discussed possible enhancement actions that could occur here, such as invasive weed control, installation of woody trees and shrubs.
10. Rail Trail Mitigation – Overall Concept: Voting members of the group presented a general consensus that the mitigation plan is appropriate and consistent with the Arana Gulch Management Plan, subject to Coastal Commission, CDFW permit review and approvals.

Next Meeting: Not determined, but desired to be at the end of September 2024.

Draft - **Minutes**
Arana Gulch Adaptive Management Working Group Meeting
9:00 a.m. – 12:00 p.m. on September 11, 2024

MEETING

Working Group Members present:
Mike Godsy, City of SC Dept. of Parks and Recreation
Blake Woessner, City of SC Dept. of Parks and Recreation
Ako Culver, City of SC Dept. of Parks and Recreation
Kathy Lyons, Biotic Resources Group
Suzanne Schettler, CA Native Plant Society
Gray Hayes, CA Native Plant Society
Sylvie Childress, UCSC Greenhouses
Rachel Pausch, CA Coastal Commission
Teresa Locatelli, Rancher
Mandy Culpepper, CA Department of Fish and Wildlife

AMWG Members Absent:
Devii Rao, USDA; notified will be replaced in 2025, name TBD
Todd Lemein, US Fish and Wildlife Service
Bill Davilla, EcoSystems West

Other Attendees:
Justin Davilla, Ecosystems West

The meeting was held at the Santa Cruz Bible Church coffee room (9:00 -10:30) then at Arana Gulch (10:30 – 12:00). Rachel Pausch facilitated the meeting.

Meeting at SC Bible Church

Welcome and Meeting Objectives. Mike Godsy opened the meeting. Mike announced that he is the new Parks superintendent and this is his first AMWG meeting. He expects to take over AMWG facilitation after this initial meeting.
The minutes from the May 2024 meeting had not been circulated to the AMWG members prior to the meeting, so no action was taken. Mike indicated that the May 2024 minutes will be emailed to members for review and comment.

1. Public Comments. As the meeting was not noticed to the public, there were no public attendees and no public comments.

2. Revisit Arana Gulch Habitat Management Plan (HMP) Goals and Objectives. Rachel facilitated a review of the goals and objectives of the HMP through a PowerPoint presentation. The PowerPoint will be distributed to AMWAG members.
    a. Recent history of the Arana Gulch property was presented. Gray indicated that prior to rancho-period grazing (point-of-contact), the site was historically burned and grazing was a massive shift in grassland management.
    b. Review of Coast Development Permit (CDP) conditions:
        i. Informal paths: not all have been abandoned as required in the CDP.
        ii. Hagemann Gulch management: some work done on invasive plant removal and fuel reduction, but limited. Kathy reported that polygons of invasive plant species are periodically updated; Gray suggested more data on progress be prepared/presented. Rachel suggested monitoring to detect a trend in decreasing invasive plant cover in treated areas.
        iii. Arana Gulch Creek: main stressors identified in the HMP are sedimentation and erosion. There is no longer coordination with the Resource Conservation District (RCD) or an Arana Creek group; the status of that program is unknown. Blake reported that the City has been focused on removal of homeless encampments and they have done some willow planting and fencing in areas to restore areas affected by the encampments. The City has also done ice plant removal from the marsh plain. There was discussion on engaging the RCD on Arana Creek issues and better monitoring of progress. Rachel suggested monitoring to detect a trend in decreasing invasive plant cover in treated areas.
    c. Coastal Prairie Management Area: Major threats were discussed. Gray opined that there has been a change in prairie hydrology and the shallow water table is being drained by the trail cuts. Kathy opined a major threat is lack of bare ground for native plant recruitment. Goals of the coastal prairie and the Santa Cruz tarplant (SCT) were discussed. Suzanne suggested more analysis of soil properties. There was discussion on the cattle grazing and the desire to more closely monitor cattle movement to determine grazing duration and intensity and effects on the prairie and SCT. Air tags were discussed as well as a QR Code for citizens to submit photos of where cattle were on various days to help document grazing patterns. Mowing actions were reviewed and discussed. Ako and Blake reported that mowing in Area A is by a rotary mower set at 8-10" height, as per previous AMWG meeting recommendations. Use of the flail mower would be at a low height (approx. 2 inches) and has not been used. There was a discussion on mowing and grazing in Area A South for fall/spring 2024/25. Summary of 2024 SCT Out Planting. Kathy reported on the SCT census to date,

presenting a handout on number of SCT on site and map of distribution. Total SCT of 4,140 plants, most in Area A SE. Lower number of self-recruited SCT in Area A SW than in 2023, which she attributes to dense grass growth and thatch. High survival rate of 2024 SCT outplantings in Area A SE. Almost all other SCT were observed in previous (i.e., 2023) outplanting sites, as evidenced by the presence of previously placed wood chips.

3. **Field Meeting.** Group reconvened in field with a focus on Area A South and SCT and grassland management. Existing site condition (grass growth, canopy height, and thatch) were discussed and SCT plants observed in both Area A SW and SE. There was a discussion on management actions for fall 2024 and spring 2025, with the following consensus:
    a. In October/November 2024 (after first 1-inch of rain), graze Area A SW. Teresa indicated that would be fine. Supplemental feed (alfalfa and molasses tubs) will be placed in Area A SW to encourage cows to be in this area (water trough is in Area A North). Add broom brushes to one or two existing metal posts to encourage cattle to congregate/create bare ground. Allow cattle to remain in Area A SW until SCT plants bolt in spring 2025 (i.e., October 2024 – April 2025). Remove cows after first nipping of SCT plants is observed (this would not apply to 2025 SCT outplantings).
    b. Prior to rain in October/November 2024, collect SCT seed from the 2024 outplantings and hand broadcast into Area A SW to boost ray/disk achenes.
    c. In spring 2025 continue to mow Area A SW and SE with a rotary mower whenever grass height meets or exceeds 8 inches. Mow both areas at the same time.
    d. Conduct an experimental flail mowing of a portion of Area A SE. Flail mow the area at same schedule as rotary-mowed areas. Document RDM, canopy height, plant cover, and thatch in this mowed strip and compare to data from rotary mowed areas. Gray reports that flail mowing has little/no RDM.
    e. SCT Outplantings. Continue to have UCSC grow SCT plants for outplanting. Install SCT outplantings in Area A SW, Area A SE and Area C (cattle exclosure). Install SCT outplantings in equal numbers in Area A SW and Area A SE and spread out plantings throughout the pastures (use randomly placed 10’x10’ plots; use of wood chip mulch in okay).
    f. Area C SCT Cattle Exclosure: Allow cows into this area in mid-September; allow cattle to trample/graze and vector SCT seeds within and outside of exclosure.
    g. SCT Seed Collection: Consensus is for UCSC to do SCT seed collection in 2024 for additional seed increase.

Next Meeting: Not determined, but expected to be in spring 2025.

Experimental questions to be answered with Fall 2024-2025 (or previous) data:

- Does a cattle grazing + mowing treatment result in different SCT recruitment/performance (height, flowers, etc.) than just mowing?
    - Is SCT outplant performance different between grazing+mowing regime vs. mowing regime?
- Is native grass performance different between grazing+mowing vs. mowing regime?
- What is the invasive plant cover before, directly after, and months after community invasive removal (Hagemann Gulch or Arana Creek)?

Action items for coming year:

- Fall-Winter 2024
    - Approve AG AMWG minutes from May 2024 (AMWG)
    - Circulate data (e.g., polygons) on invasive cover in Hagemann Gulch and Arana Creek; if no data, develop (simple) protocol to implement baseline and following community work in winter? (KL) Data and mps to be included in Annual Report
    - Open fence to Area C to allow cattle in (KL)
    - Maintain height of grasses at 8-10” with rotary mower on both sides of north/south fence in south Area A (BW, AC) Continue to mow on both sides .
    - Maintain test strip of grass in southeast Area A mowed with flail mower (BW, AC)
    - Engage with RCD about HMP goals for Arana Creek (appoint RCD AMWG member; potential sediment/steelhead/tidal reach/Greenbelt Gully projects; see HMP) (BW, MG)
    - Spread SCT plant material/seed from southeast Area A to southwest Area A following introduction of cows (KL)
    - Add broom brushes, molasses, other attractants in southwest Area A, discuss cost with City for reimbursement (T. Locatelli)
    - Move cattle into southwest Area A after first inch of rain (T. Locatelli)
    - Move attractants around southwest Area A as halos of bare ground form around barrels (T. Locatelli)
    - Develop QR code and site to upload community science photos of cattle position (BW, MG, KL, RP?) or consider installation of wildlife cameras
    - Collect SCT seed (SC)
    - Outplanting of UCSC SCT in southeast and southwest Area A (SC)
- Spring 2025
    - Remove cattle from southwest Area A when SCT bolts or cows begin nipping SCT (T. Locatelli)

Appendix B Photo Monitoring

P1-1, 2024

P1-2, 2024

P1-3, 2024

P1-4, 2024

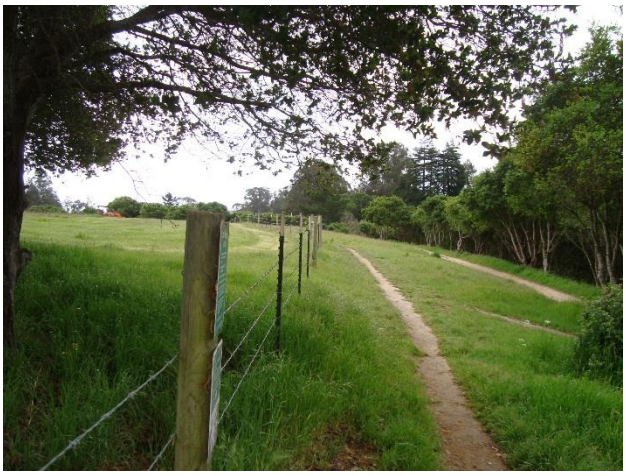
P2-1, 2024

P2-2, 2024

P2-3, 2024

P2-4, 2024

P3-1, 2024



P3-2, 2024

P3-3, 2024

P3-4, 2024

P4-1, 2024

P4-2, 2024

P4-3,2024

P4-4,2024

P5-1,2024

P5-2, 2024

P5-3,2024

P5-4, 2024

P6-1, 2024

P6-2, 2024

P6-3, 2024

P6-4, 2024

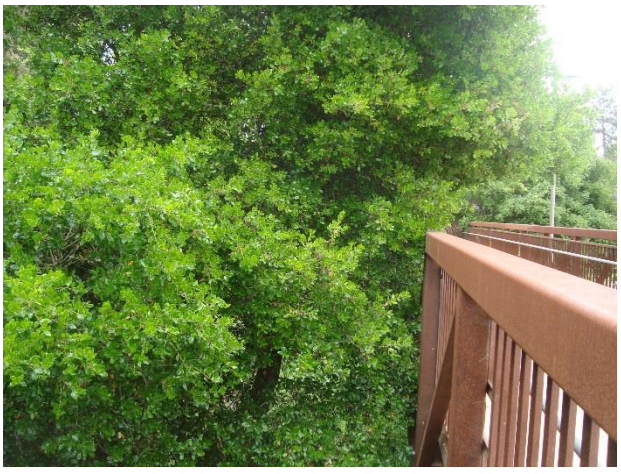
P7-1,2024

P7-2, 2024

P7-3, 2024

P7-4, 2024

P8-1, 2024



P8-2, 2024

P8-3,2024

P8-4, 2024

P9-1, 2024

P9-2, 2024

P9-3, 2024

P9-4, 2024

P10-1,2024

P10-2, 2024

P10-3, 2024

P10-4, 2024

P11-1, 2024

P11-2, 2024

P11-3,2024

P11-4, 2024

P12B-1, 2024

P12b-2, 2024

P12B-3, 2024

P12B-4, 2024

P12-1,2024

P12-2, 2024

P12-3, 2024

P12-4, 2024

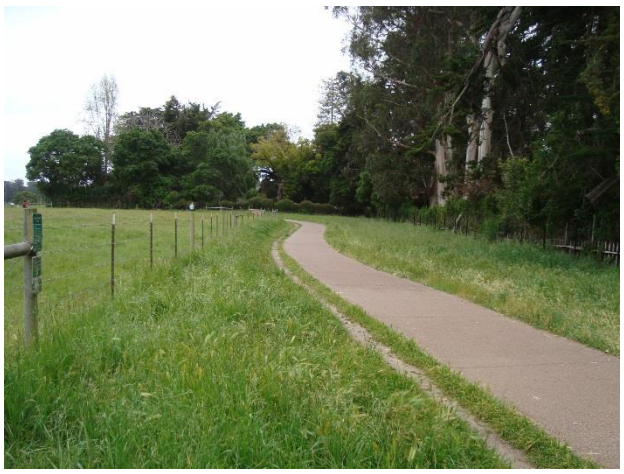
P13-1, 2024

P13-2, 2024

P13-3, 2024

P13-4, 2024

P14-1, 2024



P14-2, 2024

P14-3, 2024

P14-4, 2024

P15-1, 2024

P15-2, 2024

P15-3, 2024

P15-4, 2024

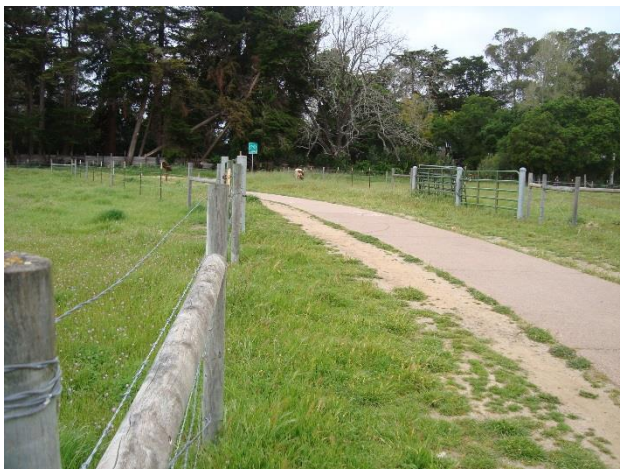
P16-1, 2024

P16-2, 2024

P16-3, 2024

P16-4, 2024

P17-1, 2024



P17-2, 2024

P17-3, 2024

P17-4, 2024

P18-1, 2024

P18-2, 2024

P18-3, 2024

P18-4, 2024

Arana Gulch Greenbelt
2024 Vegetation Transect Photos, April 1 and 2, 2024

AT1, 2024

AT2, 2024

AT3, 2024

AT4, 2024

AT5, 2024

AT6, 2024

Arana Gulch Greenbelt
2024 Vegetation Transect Photos, April 1 and 2, 2024

AT7, 2024

AT8, 2024

AT9, 2024

AT10, 2024

AT11, 2024

AT12, 2024

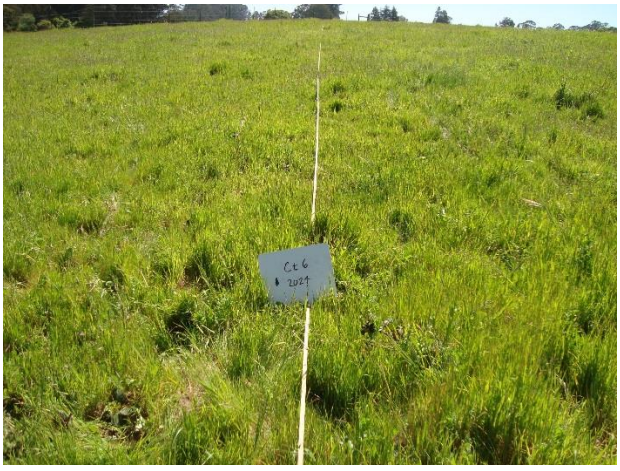
Arana Gulch Greenbelt
2024 Vegetation Transect Photos, April 1 and 2, 2024

AT13, 2024

CT2, 2024

CT5,2024

CT3,2024



CT6,2024

DT4, 2024

Arana Gulch Greenbelt
2024 Vegetation Transect Photos, April 1 and 2, 2024

DT3,2024

DT2, 2024

DT1, 2024