

East Bay Regional Park District

Wildfire Hazard Reduction and Resource Management Plan (WHRRMP)

Fuels Management Program

Annual Summary of Work

Project Year 2019

7/17/2020

This report details the fuel management activities and status of mitigation measures and impacts permitted under the EBRPD Wildfire Hazard Reduction and Resource Management Plan (WHRRMP), pursuant to project permits issued by the United States Fish and Wildlife Service and the California Department of Fish and Wildlife. This Annual Status Report is submitted in accordance with the conditions of the WHRRMP Biological Opinion and Incidental Take Permit as well as the approved Mitigation and Monitoring Plan (MMP) (2017). This document includes a summary of work and monitoring activities, status of habitat, summary of Project Daily Monitoring Reports, observations of wildlife, and assessment of project performance standards.

Summary of Fuel Management Work

EBRPD implemented eleven projects covered under the FEMA Fuels regulatory permits in 2019. The primary activities in these projects were tree removal, ladder fuel removal, and brush thinning, either with hand tools or by a masticator. Several projects were a combination of both. All relevant conditions were adhered to during project work and biological monitors were present for all work. Designated Biologists completed 259 Daily Monitoring Reports (DMRs) to document project activities and biological observations, and ensure compliance. In the Project Descriptions, the project name is the Recommended Treatment Area (RTA) followed by the year of Initial Treatment.

Project Descriptions

ALAMEDA WHIPSNAKE STUDY (2018, 2019)

Fourteen RTAs are included in the Alameda whipsnake study. Traplines in brush were activated and sampled in 2016, treated in 2018-2019, sampled in 2019, and will be activated again in 2021 to determine whether brush work has any effects on Alameda whipsnake. The study is being conducted in the following RTAs: CC001, CC003, CC007, CC012, SR001, SR003, SR004, SR005, TI006, TI012, TI015, TI022, and WC011. The bulk of this work was conducted by CiviCorps crews, using hand tools. The treatment involves clearing 0.25 acre plots around traplines, which is similar to the brush island treatment. All work was monitored by Designated Biologists.

AC006 (2019)

In Anthony Chabot Regional Park, this project consisted of removal of pines and clearing of ladder fuels in approximately 1 acre. The project was conducted over 8 days.

General Habitat Quality. The majority of this RTA is oak/bay woodland, at 44%, and coastal scrub/coyote brush scrub, adding up to 42%. Removal of non-native trees is considered to improve habitat conditions. Clearing of ladder fuels does not have a significant effect on habitat condition. No vegetation type conversion occurred.

AC007 (2019)

In Anthony Chabot Regional Park, this project consisted of brush reduction and clearing of ladder fuels in approximately 8 acres. The project was conducted over 30 days.

General Habitat Quality. The majority of this RTA is eucalyptus plantation and annual grassland. Scrub is described as sparse. No vegetation type conversion occurred.

AC012 (2018)

In Anthony Chabot Regional Park, this project consisted of brush reduction and clearing of ladder fuels in approximately 8 acres. This project is in Monitoring Year 1.

General Habitat Quality. The majority of this RTA is eucalyptus plantation and annual grassland. Scrub is described as sparse. No vegetation type conversion occurred.

AC013 (2018)

In Anthony Chabot Regional Park, this project consisted of brush reduction and clearing of ladder fuels in approximately 8 acres. This project is in Monitoring Year 1.

General Habitat Quality. The majority of this RTA is eucalyptus plantation and annual grassland. Scrub is described as sparse. No vegetation type conversion occurred.

AC014 (2018)

In Anthony Chabot Regional Park, this project consisted of brush reduction and clearing of ladder fuels in approximately 8 acres.

General Habitat Quality. Scrub habitats (PCE 1) in this RTA were very dense (>90% canopy coverage) prior to mastication. In most areas, the density of this scrub habitat has now been reduced to approximately 48% canopy cover. Mastication has created a contiguous mosaic of open and closed canopy scrub patches with interspersed de-vegetated areas. The scrub patches are approximately 50'x60' polygons, with equally sized de-vegetated patches separating them. This constitutes an improvement of PCE 1 habitat, as whipsnakes are more likely to use scrub with an open and closed mosaic with light penetration (Swaim and McGinnis, 1992).

CC003 (2019)

In Claremont Canyon Regional Preserve, this project consisted of brush reduction and clearing of ladder fuels in approximately 3 acres. The project was conducted over 36 days.

General Habitat Quality. Habitat quality is described as high quality coyote brush scrub and poor quality successional grassland.

LE005 (2019)

In Leona Canyon Regional Preserve, this project consisted of brush reduction and clearing of ladder fuels in approximately 4.3 acres. The project was conducted over 13 days.

General Habitat Quality. Habitat quality for AWS was improved through removal of French broom cover and opening of scrub canopy. Recently cleared areas are currently characterized as disturbed, but are expected to transition to annual grassland or successional grassland following the rainy season. The RTA border is still considered high-quality coastal scrub with some small scrub patches reaching into the interior of the RTA.

LC010 (2019)

In Lake Chabot Regional Park, this project consisted of brush reduction and clearing of ladder fuels in approximately 4.8 acres. The project was conducted over 10 days.

General Habitat Quality. There is very little core scrub within the RTA. There is some medium quality core scrub adjacent to the RTA; however, it is very dense with few mosaic features and minimal sunlight penetration. The oak/bay woodland provides medium/poor quality dispersal habitat, because there is minimal under-story and therefore minimal prey items and cover. The annual grassland provides medium quality dispersal and foraging habitat.

SR004 (2019)

In Sibley Regional Preserve, this project consisted of brush reduction, tree removal, and clearing of ladder fuels in approximately 9 acres. The project was conducted over 23 days.

General Habitat Quality. In the northern portion of the work area, coyote brush scrub was converted to oak-bay woodland, which serves as dispersal habitat adjacent to core scrub. A significant portion of the RTA's understory was cleared where adjacent to residences. These areas are lower quality dispersal habitats due to the absence of cover.

TI012 (2018, 2019)

In this RTA in Tilden Regional Park, at the edge of the wildland-urban interface in the Berkeley Hills, brush was masticated and eucalyptus removed in the northern portion of the RTA. This project took 21 days.

General Habitat Quality. Large areas of coyote brush scrub were removed from the northern portion of the site. Areas previously identified as successional grassland has naturally been colonized by coyote brush scrub and now meet the criteria for core scrub for Alameda whipsnake. Patches of scrub remain where woodrat nests were left in place. Areas converted from scrub to successional grassland still qualify as foraging and dispersal habitat for AWS.

WC003 (2018)

EBRPD removed surface and ladder fuels and thinned brush on 1 acre of this 1.7 acre RTA. All treatment activities in the 2018 treatment occurred in oak woodland. All scrub in the RTA is located in the eastern

side of the area and was not treated. There was no change to scrub pre- versus post- work.

General Habitat Quality. Alameda whipsnake habitat is medium to lower quality throughout the RTA. The scrub habitat within the RTA qualifies as core scrub, contains diverse vegetation, and is adjacent to high-quality core scrub/PCE1 habitat outside of the RTA. The oak-bay woodland habitat is good quality for Alameda whipsnake dispersal and foraging and if maintained will be a good fuel break and continue to provide good dispersal habitat. Recruitment and dispersal may be limited in the area because the RTA is bordered by neighborhoods and development on 2 sides.

WC009 (2019)

Along the western edge of Wildcat Canyon Regional Park close to homes, EBRPD removed surface and ladder fuels and thinned brush on about 4 acres. The work was conducted using hand tools and took 10 workdays.

General Habitat Quality. All work that occurred in the RTA was outside of core scrub habitat. No change to core scrub habitat occurred as a result of work activities. Daily monitoring occurred during work activities, and scrub removal was never observed at this site. The increase in core scrub between the pre and post assessments is not due to any vegetation management activities or actual change in habitat type. This increase occurred because in January 2020, a more precise improved mapping process was implemented utilizing ArcGIS which provides more accurate acreage. The difference in core scrub is a result of the difference on error between the old measurement techniques, and the improved techniques. Treatment did not result in any changes to core scrub acreage.

WC010 (2019)

Along the western edge of Wildcat Canyon Regional Park close to homes, EBRPD worked to conduct initial treatment to create a fuel break, removing surface and ladder fuels and thinning brush on about 10.8 acres. The work was conducted using hand tools and took 26 workdays.

General Habitat Quality. Habitat quality is very similar to WC009. Poor quality AWS habitat is present onsite. Dense patches of coyote brush, hemlock, French broom, and poison oak make up the existing PCE1 (core scrub) habitats. Areas adjacent to core scrub consist of dense oak-bay woodland and riparian woodland. These areas meet definitions for PCE 1 and PCE 2, but due to the dense canopy cover with little light penetration and the lack of native plants, habitat quality is low. No rocky outcrops were observed on site.

WC011 (2019)

Along the western edge of Wildcat Canyon Regional Park close to homes, EBRPD worked to conduct initial treatment to create a fuel break, removing surface and ladder fuels and thinning brush on about 33 acres. The work was conducted using hand tools and took 65 workdays.

General Habitat Quality. This area is a northeast facing slope dominated by oak woodland and riparian. Although scrub was removed in the RTA this habitat type will grow back quickly and regrowth was observed onsite. Density of the scrub was reduced also but will be beneficial in the short-term as the sunlight penetration into scrub has increased.

ALAMEDA WHIPSNAKE EAST BAY HILLS STUDY: UPDATE

Project Year 2019 was the third year of the Alameda whipsnake study, conducted pursuant to the FEMA Biological Opinion. Project Year 2017 was Trapping Year 1; Project Year 2018 was Treatment Year 1; Project Year 2019 was Trapping Year 2; Project Year 2020 will be Treatment Year 2, and the final trapping season will occur in Project Year 2021. The results from Trapping Year 2019 are still in review; however, as supported by both static and dynamic occupancy modeling, the study determined that brush reduction treatment is indicating a positive effect on occupancy of the Alameda whipsnake. Excerpted from the 2019 draft study report:

Current results indicate a pre-existing, negative difference in probability of occupancy by AWS at areas categorized as 'treatment' relative to those categorized as 'control'. In 2016, when use of only one RTA by AWS was observed, we noted that frequent use of this particular treatment area suggested that treatment in itself may not be the driver of difference observed and that we expected that habitat variation may be the underlying cause of some of the pre-treatment difference. Now, based on preliminary assessment of post-treatment occupancy in 2019 relative to pre-treatment values of 2019, it does appear that AWS are responding positively to treatment. This inference is supported both from static occupancy-derived odds ratios and dynamic occupancy modeling with treatment as an explanatory variable comparing occupancy responses in 2016 and 2019. The biological impact of treatment effect, however, may be limited currently given the extremely low estimated value for probability of site colonization and the marginally positive estimated probability of site survival, which treatment effect acts upon.

-Swaim Biological, 2019, in review

This study, though it is not yet complete, has been highly informative as to the status of Alameda whipsnake (AWS) in the FEMA Fuels project area. The first observation, as described above, is that AWS has a very low probability of occupancy in the majority of the WHRRMP Project area. The lack of observations of AWS during work is likely attributable to this in areas of known non-occupancy as identified by the study. The positive effect of fuel treatment on AWS occupancy is supported by species accounts in the Federal Register and scientific literature that indicate that AWS benefit from treatments that open the scrub canopy, increase light penetration to the ground, and create habitat heterogeneity.

COVERED SPECIES HABITAT IMPACTS

Work in 2019 was performed in grassland, brush/scrub, oak woodland, pine forest and eucalyptus plantation. Only brushland qualifies as AWS habitat and is subject to impact reporting requirements, although all changes in vegetation cover are reportable (Appendix 1). Within that habitat type, brush scrub within Critical Habitat is referred to as PCE 1. Within suitable AWS habitat, brush scrub is referred to as Core Scrub. When describing general habitat characteristics, all native scrub is referred to as core scrub.

The Biological Opinion allows 96 acres of "Degraded" (30-70% scrub) core scrub and 226.6 acres of "Loss (amount of treated core scrub converted to grassland habitat, generally assumed to be 70% of the amount treated)" (Biological Opinion, Table 15). In other words, the BO defines Degraded as remaining

shrub islands and Loss as interstitial spaces between those islands, when the treatment is 30-70 shrub island approach. The ITP states that “the Project is expected to cause the permanent loss, by conversion to dispersal/foraging habitat, of approximately 226.6 acres of sore scrub habitat, and the Project will degrade, by fragmentation, approximately 96 acres of core scrub habitat” (ITP, p. 14).

Per the request of the US Fish and Wildlife Service, Table 1 reports the total acreage of PCE 1 and core scrub removed in Project Year 2019, by low-impact (hand tools) and high-impact (heavy equipment). Table 2 describes the cumulative project impacts to these habitat types project-wide.

Table 1. Summary of AWS habitat treatments in 2019.

EBRPD Core Scrub Impacts and Impact Types, Project Year 2019					
Critical Habitat			Suitable Habitat		
	Acreage Scrub Cleared			Acreage Scrub Cleared	
	Hand Work	Masticator		Hand Work	Masticator
CC003	0.50	0.58	AC007	0.00	0.08
WC010	0.01	0.31	TI012	0.00	0.34
WC011	0.01	0.74	LE005	3.24	
Total Impacts	0.52	1.63		3.24	0.42

Scrub removed from core scrub complexes totaled .52 acres in Critical Habitat using low impact methods, and 1.63 using heavy equipment. Scrub removed in Suitable Habitat totaled 3.24 acres using low impact methods, and .42 acres in Suitable Habitat using high impact methods. In all 5.81 acres of scrub was removed.

TOTAL IMPACTS

Table 2 describes the total impacts by RTA by project year, broken into low and high impact treatments.

Table 2. Cumulative Project core scrub impacts by Project Year.

EBRPD Core Scrub Impacts and Impact Types, Total Project Wide						
Project Year	Critical Habitat			Suitable Habitat		
		Acreage Scrub Cleared			Acreage Scrub Cleared	
		Low Impact	High Impact		Low Impact	High Impact
2018	CC003*	2.75		TI012	0.27	0.87
	CC007*	0.75		AC012		0.31
	CC008*	1.50		AC013		0.80
	CC012*	1.00		AC014		8.50
	SR003*	0.75				
	SR004*	1.00				
	SR005*	2.00				
	TI006*	0.75				
	TI015*	1.25				
	TI022*	1.00				
	WC011*	0.75				
	WC003	0.27				
2019						
	CC003	0.50	0.58	AC007	0.00	0.08
	WC010	0.01	0.31	TI012	0.00	0.34
	WC011	0.01	0.74	LE005	3.24	
	Total Impacts	14.29	1.63		3.51	10.9

* Alameda whipsnake study

Total impacts up to December 31, 2019 are 15.92 acres in Critical Habitat and 14.41 acres in Suitable Habitat.

SUMMARY OF MONITORING REPORTS AND OBSERVATIONS OF WILDLIFE

No Covered Species were observed during work in 2019 and no take occurred. However, many observations of San Francisco Dusky-footed Woodrat (*Neotoma fuscipes* ssp. *annectens*) were made during work. CNDDDB records were generated for these observations. See Appendix 5, CNDDDB Observation Records, for accounts of sightings of DFWR individuals during work. No Dusky-footed woodrats were harmed during work. In cases where nest removal was critical to fuel treatment success, nests were dismantled and moved in accordance with the approved San Francisco Dusky-footed Woodrat Protocol (EBRPD 2019). Use of this protocol allowed nests to be relocated without harming woodrats.

MITIGATION AND MONITORING PLAN (MMP) PERFORMANCE CRITERIA

Because initial treatments within each RTA will occur over multiple years and the frequency of initial treatments within each RTA are not anticipated to occur at regular intervals, annual acreage standards cannot be established. Rather, these performance standards are based on Year 10 (post-implementation) final acreages. Therefore, the annual reports will benchmark against Year 10 standards and determine if adaptive management will be required to meet performance criteria by Year 10.

Performance standards relating to AWS habitat are based on the habitat definitions from the BO and the MMP in Section 2.2 and are described below.

4.1.1 Non-AWS Habitat Conversion Acreages

By Year 10, the acreage of each vegetation community type that does not support AWS habitat (e.g., Eucalyptus Forest/Plantation) within each RTA will not exceed the post-implementation acreages defined in the BO (Tables 2 and 3). This will ensure that non-AWS vegetation community types do not increase in acreage during Project implementation.

4.1.2 AWS Habitat Conversion Acreages

By Year 10, following conversion of AWS core scrub/PCE 1 habitat to foraging/dispersal/PCE 2 habitat, the reductions of AWS core scrub/PCE 1 habitat acreages within each RTA will not exceed the reduction in acres defined in the BO (Tables 2 and 3). In this way, habitat impacts will not exceed the maximum thresholds of take for AWS defined in the BO (Tables 2 and 3).

4.1.3 Primary Constituent Element 1 and Core Scrub Thinning

As described in the BO, thinning treatments will consist of the removal of contiguous areas of shrubs (rather than even thinning treatments) totaling up to 70 percent of woody aerial cover, creating a patchwork of remaining closed-canopy “shrub islands” within treated areas (USFWS 2013). These patches must total to at least 30 percent overall woody plant aerial cover on an annual basis following initial treatments.

4.1.4 Woody Vegetation Composition

In each portion of the treatment area where there is woody vegetation removal (e.g., shrub “island” creation), using the methods described in the WHRRMP, no more than 10% of the canopy coverage removed may return due to re-sprouts or seedlings. For example, if woody species comprised 80 percent of aerial cover prior to treatment within a portion of a treatment area where all woody plants were removed, the resprouts/seedlings of those plants could not comprise more than 8 percent of the aerial cover of the total area where woody plant removal occurred. This applies to all woody species, both native and exotic.

4.2 Exotic Species Management

These performance standards focus on the removal and treatment of individual exotic plants and do not pertain to the conversion of exotic dominated vegetation communities. Because significant levels of exotic woody plant recruitment are anticipated following the initial treatments, performance standards relating to reductions in exotic species plant cover focus on gradual reductions in exotic plant cover. It is anticipated that as exotic plants are removed, they will be replaced with native species through natural recruitment (see Sections 4.2.1 and 4.2.2 below).

Table 3 contains an accounting of exotic vegetation cover for exotic species of concern as defined in the MMP and as measured in post-treatment assessments.

Table 3. Cover of Exotic Vegetation in Treated RTAs.

COVER OF EXOTIC SPECIES IN WORK AREAS, YEAR 2019		
RTA	SPECIES	PERCENT COVER
AC006	<i>Eucalyptus sp.</i>	<1.0
AC006	<i>Genista monspessulana</i>	<1.0
AC006	<i>Acacia melanoxylon</i>	<1.0
AC007	<i>Eucalyptus sp.</i>	14.25
AC007	<i>Genista monspessulana</i>	<2
AC007	<i>Pinus radiata</i>	<1.0
AC007	<i>Rubus armeniacus</i>	<3%
AC012	<i>Eucalyptus sp.</i>	59
AC012	<i>Acacia melanoxylon</i>	<1.0
AC013	<i>Eucalyptus sp.</i>	50
AC014	<i>Pinus radiata</i>	<1.0
	<i>Eucalyptus sp.</i>	<1.0
	<i>Cytisus scoparius</i>	<1.0
	<i>Genista monspessulana</i>	<1.0
SR004	<i>Genista monspessulana</i>	<1.0
TI012	<i>Cotoneaster spp</i>	<5
	<i>Eucalyptus sp.</i>	40%
	<i>Genista monspessulana</i>	<1.0
	<i>Pinus radiata</i>	10%
	<i>Rubus armeniacus</i>	<1.0
WC003	<i>Pinus radiata</i>	<2.0
	<i>Prunus spp</i>	3.0
WC009	<i>Genista monspessulana</i>	<1.0
	<i>Cirsium vulgare</i>	<1.0
WC011	<i>Pinus radiata</i>	1%
	<i>Genista monspessulana</i>	<10
	<i>Herdera helix</i>	4%
	<i>Eucalyptus sp.</i>	3%
	<i>Acacia spp</i>	1%
	<i>Rubus armeniacus</i>	1%

4.2.1 Tree Re-sprouting

To prevent the successful re-sprouting of treated exotic trees, all observed basal re-sprouts and seedlings must be removed/treated within one year of the initial treatment (generally the cut-stump method) of exotic trees.

4.3 Wood Chip Placement

These performance criteria are based on the Proposed Project description from the BO and focus on what proportion of a RTA can be covered with wood chips, the depth of the applied wood chips, and the location of the distributed wood chips in relation to sensitive resources.

4.3.1 Extent and Depth of Wood Chip Placement

Within a treatment area, the aerial cover of woodchips cannot exceed 20 percent of the treatment area if a tracked chipper is used, or 10 percent of the treatment area if chipping is confined to roadways and landings. Additionally, the depth of applied wood chips cannot exceed 6 inches (USFWS 2013).

Wood chips cannot be placed within 50 feet of rock outcrop/PCE 3 habitat (USFWS 2013) and AWS core scrub/PCE 1 habitat, within 100 feet of pallid manzanita shrubs, or in areas that drain directly into areas that contain pallid manzanita shrubs. By Year 10, wood chips placed within treated and/or disturbed AWS foraging/dispersal/PCE 2 habitat must be fully decomposed.

Table 4. Wood chips depths and coverage in work areas.

ACCOUNTING OF WOOD CHIP COVERAGE IN WORK AREAS				
RTA	SITE	AVERAGE DEPTH	TOTAL COVERED AREA (SQ. FT)	% RTA
AC006	1	2.76	150	<1%
	2	2.54	625	
	3	1.7	400	
AC007	1	2.41	1200	<1%
	2	0.6	500	
	3	1.6	150	
	4	1.3	2100	
	5	1.2	2500	
	6	1.2	4500	
	7	0.8	2,100	
AC013	1	4.33		<1%
	2	39	84	
	3	38	680	
	4	34	265	
	5	48	250	
AC012	1	6.5	17,474	<1%
	2	4.6	100	
	3	6.9	11,800	
	4	4.4	22,000	
AC013	1	29	600	<1%
	2	48	1,000	
	3	24	750	
	4	30	900	
AC014	1	2.89	23,458	<1%
SR004	1	4.9	1,000	<1%
	2	5	600	
TI012	1	2	400	<1%
	2	5.5	5,000	
	3	7	9,000	
WC003	1	4.75	200	<1%

4.4 Soil Stability and Erosion

Performance standards that relate to soil stability and surface erosion are described below.

4.4.1 Surface Erosion

Unless noted during the initial site assessment, no accelerated surface erosion (i.e. rills) resulting from vegetation treatment activities (e.g., vehicle tracks, upturned roots, and heavy equipment) or other disturbances can be present within the treatment area.

See Table 5 for accounting of the status of these Performance Criteria.

Table 5. Performance Criteria Table for Fuel Management MMP

PERFORMANCE CRITERIA TABLE FOR EBRPD FUEL MANAGEMENT, MMP TABLE 7.				
Title		Description	Status	Note
4.1.1	Non-AWS Habitat Conversion Acreages	Non-AWS habitats have not increased in size or extent.	Met	See Appendix 1
4.1.2	AWS Habitat Conversion Acreages	AWS habitat areas have not been reduced in size/extent more than what was quantified in the BO.	Met	See Appendix 1
4.1.3	PCE 1 and Core Scrub Thinning	Following treatment in core scrub/PCE 1 habitats, the remaining "shrub islands" constitute more than 30 percent of the treated core scrub/PCE 1 area where post-treatment habitat is classified as core scrub/PCE 1.	Met	See Appendix 3
4.1.4	Woody Vegetation Composition	By year 10, less than 10 percent of the treated woody vegetation returned as seedlings/resprouts on an aerial cover basis (e.g., if initial woody aerial cover of a treated area was 50 percent, and all woody plants were removed, no more than 5 percent of the woody aerial cover of the total area is comprised of woody seedlings or basal resprouts.)	N/A	
4.2.1	Tree Re-sprouting	No basal resprouts/seedlings of treated woody exotic plants are present in an area after 1 year following initial treatment.	N/A	
4.3.1	Extent and Depth of Wood Chip Placement	Wood chips do not comprise more than 20 percent (if a track chipper is used) or 10 percent (if chipping is confined to roadways and landings) of a treated area, and the depth of wood chips is 6 inches or less.	Incomplete	See Appendix 3; some piles deeper than 6 inches
4.3.2	Wood Chip Locations	No wood chips are present within 50 feet of rock outcrop/PCE 3 habitat, core scrub/PCE 1 habitat (after a BO amendment), or 100 feet of any pallid manzanita plants. By Year 10, all wood chips have decomposed.	Met	See Appendix 3
4.4.1	Surface Erosion	No areas of accelerated surface erosion resulted from vegetation treatment activities.	Met	See Appendix 3

For questions regarding this Status Report, contact Kristen Van Dam, Fuels Management Designated Representative, at kvandam@ebparks.org.