Final
Annual Report
Task Order 4
Former Fort Ord Site 39
Habitat Restoration
2013
Contract No. W91238-10-D-0002

FORMER FORT ORD
Monterey County, California

Prepared for

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Acronyms and Abbreviations

BLM	Bureau of Land Management
Burleson	Burleson Consulting, Inc.
BMP	Best Management Practice
CDFW	California Department of Fish and Wildlife
CSUMB	California State University Monterey Bay
HA	Historic Area
HMP	Habitat Management Plan
HRP	Habitat Restoration Plan
km	kilometer
SSRP	Site Specific Restoration Plan
TO	Task Order
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
Watershed Institute	CSUMB Watershed Institute

Site 39 Habitat Restoration Annual Report

Task Order 4

1.0 Introduction

Burleson Consulting, Inc. (Burleson) was issued ID/IQ Contract Number W91238-10-D-0002 by the U.S. Army Corps of Engineers (USACE) to complete habitat restoration at Site 39 Remedial Action Areas at Former Fort Ord, Monterey, CA. This annual report summarizes results of Task Order (TO) 4 from September 17, 2012 through January 31, 2014. Additionally, this report includes a summary of minor storm water-related site repairs and restoration activities associated with TO 5 that were completed during the TO 4 time period.

1.1 Purpose

Former military ranges require soil remediation and subsequent habitat restoration in areas that range in size from 0.05 to 14 acres and are scattered around the perimeter of the Site 39 Inland Ranges area (Site 39) of Former Fort Ord. More than 53 acres of soil remediation areas may require restoration at Historic Areas (HA) 18, 19, 22, 23, 27, 27A, 28, 29, 33, 34, 36, 37, 38, 39/40, and 43, 44, 48 and Austin Road Stockpile. The contract objective is to provide seed/plant collection, propagation, planting and establishment services necessary to restore an area of Habitat Reserve containing primarily rare Central Maritime Chaparral habitat with smaller inclusions of coastal scrub and vernal pool habitats to the requirements of the Site 39 Habitat Restoration Plan (HRP) (Shaw 2009).

Burleson developed Site Specific Restoration Plans (SSRPs) for HAs 18, 19, 22, 23, 26, 27, 27A, 28, 29, 33, 34, 36, 37, 38, 39/40, 43, 44, 48 and Austin Road Stockpile (Burleson 2013) which provide detailed information (site conditions, baseline vegetation, target collection/propagation requirements) for each HA and the Plant Material, Collection, Storage, and Propagation Protocols for Site Restoration at Site 39 (Burleson 2010). These documents provide the necessary information and guidance to conduct restoration activities under TO 4.

TO 4 tasks included the following:

- Plant material salvage,
- Storage of plant materials collected under TO 3,
- Propagation of collected materials,
- Updates to SSRPs for HA 28, HA 34, and HA 38,
- Passive and active restoration activities of HA 19
- Passive restoration of HA 34 (completed in 2012),
- Completion of passive restoration at HAs 18, 22, 23, 27, 27A, 29, 33, 36, 39/40, and 43 (completed in 2012)
- Minor storm water-related repairs to HAs 29 and 39/40 (completed in 2012), and
- Monitoring of restoration sites to ensure vegetative establishment.

Restoration activities and minor storm water-related site repairs conducted during the TO 4 time period that were part of TO 5 included the following:

- 100% passive restoration at HA 28
- HA 38 passive restoration
- HA 37 passive restoration

- Drainage and erosion repair at HA 28.

Figure 1 shows the restoration status of HAs within Site 39 Inland Ranges.

1.2 General Site Conditions

Site 39 is dominated by central maritime chaparral which is a regionally rare, fire-dependent plant community found within the coastal fog zone on sandy to rocky soils. Chaparral habitats are dominated by drought-deciduous or evergreen sclerophyllous shrubs. This unique species-rich plant community changes in composition from the western edges of the Site 39 Inland Ranges, which are frequently foggy and cool, to the eastern edges which are less foggy, warmer, and drier.

2.0 Methods

Burleson developed Site 39 Plant Material Collection, Storage, and Propagation Protocols for Former Fort Ord (Burleson 2010) and HA SSRPs (Burleson 2013). The protocols contain detailed information on salvage and propagation techniques that crews are following when conducting these activities and the SSRPs provided site specific collection and propagation requirements. Burleson teamed with Rana Creek and California State University Monterey Bay (CSUMB) Watershed Institute (Watershed Institute) to complete habitat restoration activities.

2.1 Site Specific Restoration Plans

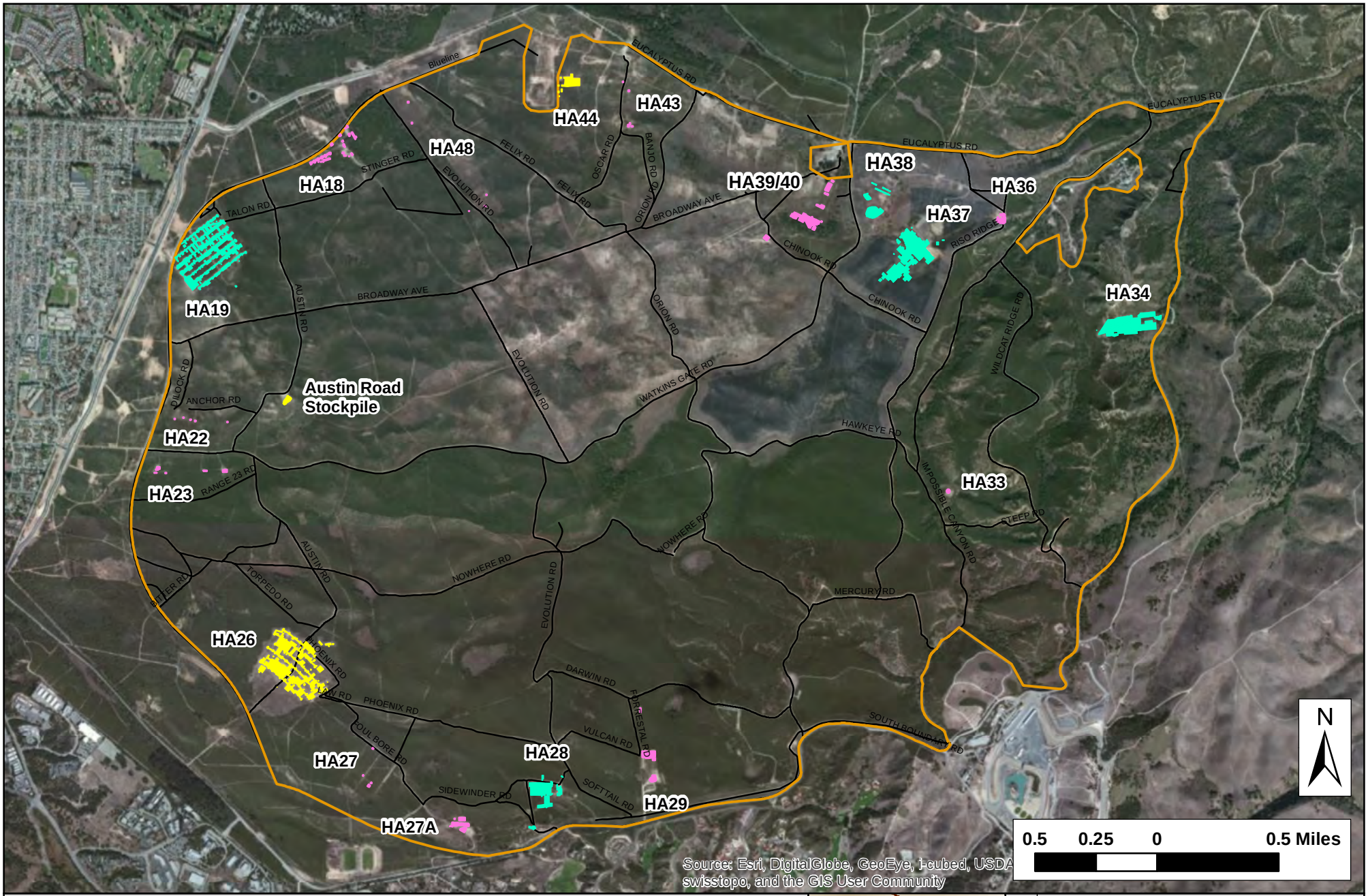
Burleson updated SSRPs for HA 28, HA 34, and HA 37 to reflect changes in HA footprints and to modify associated plant palettes. Specifically, seed collection and propagation quantities were revised to reflect the change in footprint. Burleson is working closely with USACE personnel to verify that site conditions are correct and up to date.

2.2 Plant Salvage

Plant salvage refers to the collection of plant material (seeds/cuttings) that will be used in future restoration activities. Burleson biologists worked with the USACE to coordinate salvage and scouting activities with other Site 39 activities. In accordance with the protocol (Burleson 2010), crews collected HMP species within a 1-kilometer (km) radius centered on each HA. For common, non-HMP species, crews collected material within a ten-mile radius of each HA. Due to the low numbers of sand gilia plants encountered within 1 km of HA 19, a 2-km collection radius was used. This increased collection zone only applied to sand gilia for HA 19.

Burleson completed seed collection for TO 4 by the end of October 2013. All common non-HMP species contractual goals were met. One HMP species, sand gilia, missed its collection target by 0.2 pounds due to collection constraints and availability. Burleson is currently propagating this HMP species to meet contractual requirements. HMP and common, non-HMP species collection totals are shown in Table A-1 in Appendix A.

Burleson input GPS data, quantity, and types of plants salvaged and additional collection notes into the plant inventory database so that species collected could be tracked and compared with TO 4 collection requirements.



LEGEND

- Roads
- Impact Area

Restoration Progress

- Restoration Complete/ Monitoring
- Restoration In Progress
- Future Restoration

FIGURE 1 - Restoration Progress

Site 39 Inland Ranges
Historic Areas Location Map
Former Fort Ord

Source: U.S. Army Corps of Engineers Former Fort Ord
Aerial and Restoration data provided by Fort Ord GIS website

Burleson Consulting, Inc.

Path: S:\GIS\Projects\Fort Ord\TO-4\01-21-2014 Site 39 Historic Areas -Restoration Progress.mxd

2.2.1 Seed Purchase

Burleson provided Hedgerow Farms with Fort Ord-specific *Elymus glaucus* (blue wildrye) seed and they were contracted to grow 200 pounds of blue wildrye seed. Hedgerow Farms was able to grow about 170 pounds of blue wildrye seed in 2013. An additional 60 pounds of seed was provided to make up for last year's total of 140 pounds. Lack of adequate precipitation during the 2012-2013 rainy season hindered seed production. Additionally, Hedgerow Farms has increased the plot from a quarter acre to a half acre to ensure the full seed total is available for harvest next season. Remaining quantities are expected to be provided by Hedgerow Farms for the 2014-2015 restoration season.

Burleson purchased approximately10 pounds of Fort Ord-specific *Horkelia cuneata* (wedge-leaved horkelia) from Hedgerow Farms in the fall of 2013. This species was propagated through an existing contract between the Bureau of Land Management (BLM) and Hedgerow Farms.

Blue wildrye and wedge-leaved horkelia seed was applied during the winter 2013 restoration activities at the appropriate restoration sites. See Section 2.5 for detailed information regarding restoration activities.

2.3 Plant Storage, Processing, and Propagation and Data Management

Collected plant material was stored in the Watershed Institute's greenhouse, Burleson's office, or a storage unit located next to the greenhouse and tracked in an electronic plant inventory database for data management. Plant material was stored in a cool, dry location until crews were ready to process seeds. Labeling and tracking procedures followed the protocol (Burleson 2010) and included at a minimum:

- Scientific name and Common name
- Container size (if applicable)
- Quantity (in nursery)
- Quantity (delivered)
- Seed/cutting origin
- Client
- Batch name and date sown
- Experimental treatments used during propagation (if applicable)

Seed processing began after labeling was completed for collected plant material. Collected seed was processed to remove residual hull, stems, leaves, and chaff, as much as possible. Seed weight totals were entered into the plant inventory database after seed processing was completed. Appendix A shows processed seed quantities for common and HMP species collected in relation to SSRP totals required for TO 4 in Table A-1.

Plant propagation was implemented at the Watershed Institute's greenhouse in accordance with the protocol (Burleson 2010) for a number of common and HMP species used in active restoration. The Watershed Institute staff has been focused on propagating common species, while Burleson staff has focused on the "hard to grow" species. Sufficient plants were propagated to complete active restoration at HA 34.

Table 1 shows the final plant propagation inventory for common and HMP species required for active restoration under TO 4 that will be installed under TO 5.

Table 1
Final Plant Propagation Inventory
Task Order 4

Species	Plants required for 3 acres at HA 34	Current Inventory
Achillea millefolium (White Yarrow)	95	95
Adenostoma fasciculate (Chamise)[1]	500	500
Arctostaphylos hookeri (Hooker's manzanita)[2]	500	500
Arctostaphylos montereyensis (Toro manzanita)[2]	500	500
Arctostaphylos tomentsa (Shaggy-bark manzanita)[1]	500	500
Artemisia californica (California sagebrush)	316	316
Baccharis pilularis (Coyote bush)	316	316
Eriophyllum confertiflorum (Golden yarrow)	474	474
Helianthemum scoparium (Rush-rose)	632	632
Horkelia cuneata (Wedge-leaved horkelia)	632	632
Lotus scoparius (Deerweed)	632	632
Lupinus arboreus (Yellow bush lupine)	158	158
Mimulus aurantiacus (Sticky monkey flower)	474	474
Salvia mellifera (Black sage)	332	332

[1]Indicates hard to grow species
[2]Indicates HMP species

2.4 Greenhouse Area Improvements

Burleson completed improvement activities around the greenhouse area. In 2013, Burleson expanded the sun area to handle a larger number of plants, installed a deer fence around the greenhouse area to prevent herbivory, replaced plastic roofing on a greenhouse, replaced visqueen roofs on the seed drying racks, and constructed several planter boxes for propagation and seed sources.

2.5 Restoration and Erosion Control Activities

The objective of restoration activities is to return the area to a natural landscape that conforms to the adjacent habitat communities in accordance with the SSRPs. Restoration activities completed in 2013 included passive restoration at HAs 19, 28, 34, 37, and 38 and active restoration at HAs 19, 29, and 39/40. Erosion control activities were conducted at HA 28 due to minor storm water-related erosion. Additional seed broadcast and planting were performed at sites where targets were not met under previous TOs (HA 39/40). Passive restoration at HA 34 and minor storm water-related repairs at HAs 29 and 39/40 under TO 4 was completed during the 2012 restoration activities. Restoration activities from 2013 are summarized below.

- HA 19 5 acres worth of seed and 2,430 plants installed
- HA 28 3.4 acres worth of seed and erosion control
- HA 29 215 plants installed (follow-up restoration to meet target)
- HA 34 Purchased and surplus seed provided for hydro-seeding activities
- HA 37 1 acre worth of seed
- HA 38 0.2 acre worth of seed
- HA 39/40 1,348 plants installed (follow-up restoration to meet target)

Originally, Burleson was contracted to perform passive restoration on 9.6 acres at HA 19 and active restoration on 3 acres at HA 34. Due to continued erosion and storm water-related issues at HA 34, the majority of the site was regraded and additional erosion controls were installed. The USACE is monitoring the site for further erosional damage. Plant species propagated for active restoration at HA 34 are currently being installed at HAs 37 and 38.

Monitoring results at HA 19 indicated the site was progressing towards meeting the success criteria through natural recruitment and previous restoration activities. Based on HA 19's trajectory towards success, the USACE directed Burleson to utilize some of the HA 19 seed at alternate locations. Seed collected for HA 19 was applied at HAs 19, 28, 34, 37, and 38.

Appendix B provides the detailed restoration work plans for each HA that includes the seed broadcast amounts and total numbers and names of installed plants. Each work plan provides general site conditions, map of the HA, amount of seed applied compared to target amounts, and general work performed.

2.5.2 Monitoring

The goal for monitoring was to establish baseline percent cover data of plots designated for restoration and the early effects of passive restoration activities already conducted on some of the plots. HAs 18, 22, 23, 27, 27A, 29, 33, 39/40, and 43 received the full prescription for restoration over the 2011-2012 restoration season. These HAs received a full passive seed broadcast application and HAs 29 and 39/40 received full active planting as well. However, lack of adequate precipitation during the previous year has hindered germination and stunted many of the installed plant species.

Visual monitoring of the restoration sites has been conducted at this stage of the restoration to produce the following information:

- Develop a species list
- Obtain estimated percent vegetation cover
- Determine if seeds from broadcast seeding are germinating

A species list was developed by walking through each restoration site and identifying all species found. Estimated percent vegetation cover was determined by visually observing the area and estimating percent cover for each species (qualitative data) found within the restoration site. Determining if newly germinating plants were from natural recruitment or broadcast seeding is very difficult to tell. This is an instance where the surveyor uses professional judgment to determine if passive restoration activities are having a positive effect on the restoration site or not. One to two more years of growth may still be needed before quantitative surveys (transects/quadrats) can be performed.

Results of monitoring for each HA are presented in Appendix C.

2.5.3 Erosion Control Activities

Burleson completed minor storm water-related site repairs in 2013 under TO 5 at HA 28. Repair of erosion damage and implementation of erosion and sediment control Best Management Practices (BMP) was completed. Activities included repairing rill erosion, installing 800 linear feet of straw fiber rolls and 2,000 square feet of coir fabric. Erosion and sediment control BMP and seeding were installed according to documentation provided by USACE. Photographs of erosion control activities can be viewed in Appendix D.

2.6 Community Involvement Workshop /Open House and Bus Tour

In addition to general restoration activities, Burleson participated in the Fort Ord Clean-Up Open House and Bus Tour on September 13, 2013, located at the Shaw Building on Former Fort Ord. The open house invited members of the community to get information regarding cleanup efforts on former Fort Ord. Burleson personnel provided a poster board highlighting the restoration efforts within Site 39 Inland Ranges following remediation activities, along with examples of seeds and plants.

2.7 Annual Meeting

In accordance with the HRP, annual meetings are held to present a review of restoration site data with regulatory agencies and the Army to discuss restoration activities, annual monitoring results, and to discuss proposed adaptive management strategies to improve restoration success. These meetings evaluate weed management, sampling protocols, “passive” versus “active” approaches, the need to implement corrective measures, and assessment of the 13-year monitoring end point proposed in the HRP.

The third Annual Site 39 Restoration Meeting was held at the BRAC conference room on January 31, 2014 at former Fort Ord, California. Participants included Burleson and members of the Army, USACE, California Department of Fish and Wildlife (CDFW), BLM, U. S. Fish and Wildlife Service (USFWS), HydroGeologic Inc., Arcadis, Ecosystems West, Tetra Tech, and ITSI/Gilbane.

Burleson presented information on seed collection, seed storage and processing, and propagation activities covered under TO 4. Restoration activities that took place under TO 5 and upcoming

restoration activities were also discussed. An overall summary of Burleson restoration activities in 2013 was discussed.

3.0 References

Burleson 2010. Site 39 Plant Material Collection, Storage, and Propagation Protocols for Former Fort Ord, California.

Burleson 2013. Site Specific Restoration Plan Historic Areas 18, 19, 22, 23, 26, 27, 27A, 28, 29, 33, 34, 36, 37, 38, 39/40, 43, 44, 48, and Austin Road Stockpile. Former Fort Ord, California

Detka and Lambrecht. 2007. Effects of Fire on Germination of *Ericameria fasciculata* (Asteraceae), a Rare Maritime Chaparral Shrub

Shaw Environmental 2009. Final Habitat Restoration Plan Site 39 Inland Ranges Former Fort Ord, California.

Appendix A-Seed Collection Table

Table A-1 **Species Seed Collected in Pounds** **Task Order 4**		
Species	**Target**	**Collected**
Achillea millefolium - Common Yarrow	13.5	13.5
Arctostaphylos pumila - Sandmat manzanita	9.6	9.6
Artemisia californica - California sagebrush	16.5	16.5
Baccharis pilularis – Coyotebrush	1.5	1.5
Ceanothus cuneatus var. rigidus - Monterey ceanothus	9.6	9.6
Ericameria ericoides - Mock heather	2.4	2.4
Ericameria fasciculata - Eastwood's goldenbush	0.9	0.9
Eriophyllum confertiflorum - Golden yarrow	6.0	6.0
Eschscholzia californica - California poppy*	1.5	0.05
Gilia tenuiflora ssp. Arenaria -Sand gilia*	0.19	0.019
Helianthemum scoparium - Rush rose	13.5	13.5
Horkelia cuneata - Wedgeleaf horkelia	25.5	25.5
Lotus scoparius - Deerweed	28.5	28.5
Lupinus albifrons - Silver bush lupine	1.5	1.5
Mimulus aurantiacus - Sticky monkey flower	5.4	5.4
Salvia mellifera - Black Sage	21.0	21.0
Trifolium wildenovii - Tomcat clover	0.1	0.1

*Live Plants were propagated in lieu of seed

Appendix B- Restoration Work Plans and Reports

Vegetation Abbreviations for Fort Ord SSRP Species

Species	Symbol
Achillea millefolium	ACMI
Adenostoma fasciculatum	ADFA
*Arctostaphylos hookerii**	ARHO*
*Arctostaphylos montereyensis**	ARMO*
*Arctostaphylos pumila**	ARPU*
Arctostaphylos tomentosa	ARTO
Artemisia californica	ARCA
Artemisia douglasiana	ARDO
Baccharis pilularis	BAPI
Ceanothus cuneatus var. *rigidus**	CERI*
Chorizanthe pungens var. *pungens**	CHPUP*
Cordylanthus rigidus ssp. *Littoralis**	CORIL*
Croton californicus	CRCA
Distichlis spicata	DISP
Elymus glaucus **+**	ELGL**+**
Eriophyllum confertiflorum	ERCO
Ericameria ericoides	ERER
*Ericameria fasciculata**	ERFA*
Eschscholzia californica	ESCA
Gilia tenuiflora ssp. *Arenaria**	GITEA*
Helianthemum scoparium	HESC
Horkelia cuneata	HOCU
Hordeum sp.	HODU+
Juncus patens	JUPA
Lotus scoparius	LOSC
Lupinus albifrons	LUAL
Lupinus arboreus	LUAR
Lupinus nanus	LUNA
Mimulus aurantiacus	MIAU
Nassella cernua	NACE
Nassella pulchara	NAPU
Rhamnus californica	RHCA
Salvia mellifera	SAME
Solidago californica	SOCA
Trifolium wildenovii	TRWI

* HMP Species

+Purchased seed

Table 1. Abbreviations for plant species.

HA 18

HA 18
Site Conditions and
Previous Work Performed

Initial Site Condition (December, 2011)

- There are 15 polygons for HA 18 totaling 61,734 ft^2 (Figure 1).
- P8, P9, P10, P11, P12, & one half of P14 (11% of total area) are set aside for Monterey spine flower (CHPUP) (Figure 1).
- Straw was crimped at this site.
- P2, P3, P4, P5, P6, P7, P8, & P15 are surrounded by high quality habitat and have modest to good natural recruitment.
- P9, P10, P11, P12, P13, & P14 all have poor natural recruitment.
- P1 is a degraded area with severe ice plant encroachment.
- P1 has poor natural recruitment but there are some small areas with good natural recruitment.

Updated Site Condition (January 2014)

- All polygons have been cast with 100% seed.
- All polygons were flagged to avoid negative impact from vegetation clearing surrounding the site for UXO cleanup and fire break purposes (Figure 2).
- BLM sprayed ice plant throughout the site.

Restoration work performed as of February 2014

1. Updated photo points.
2. Monitored HMP polygons.
3. All polygons were flagged to avoid impact from vegetation clearing.

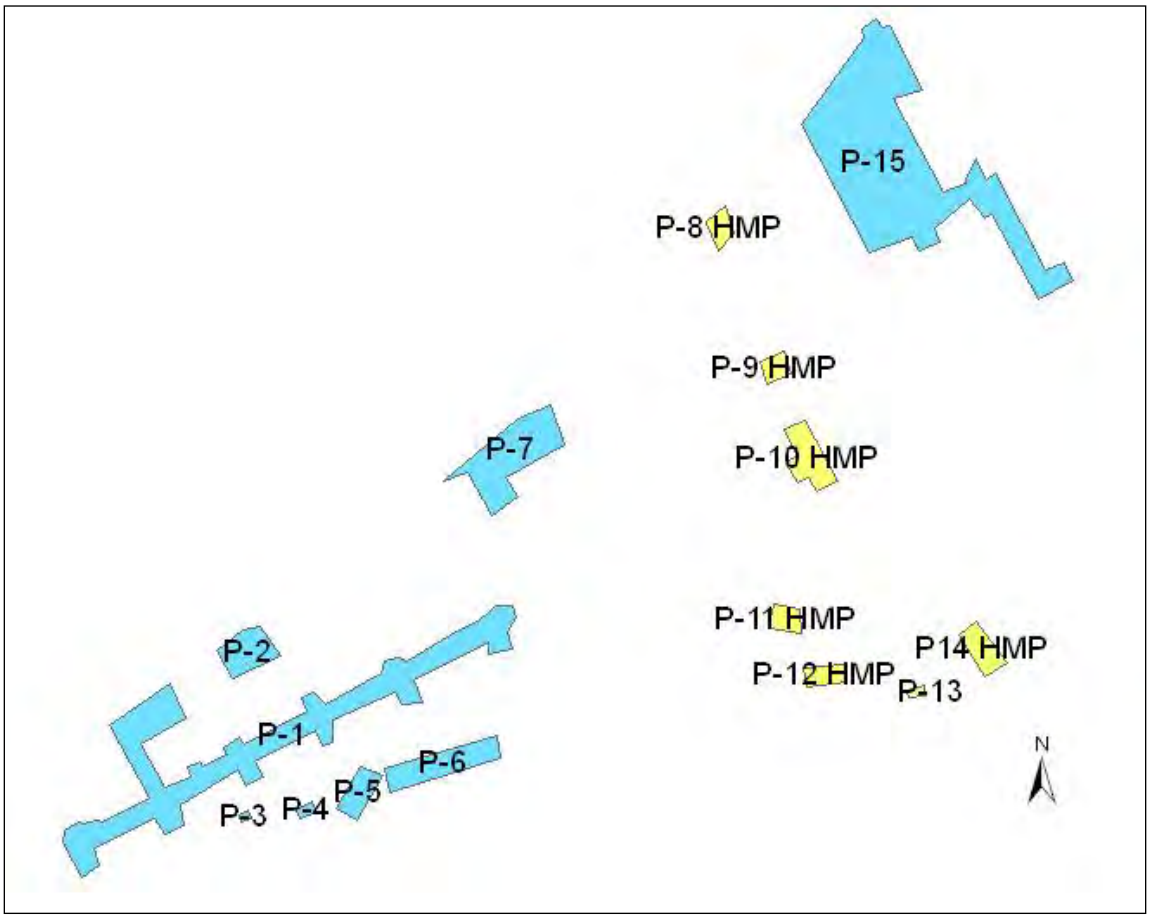


Figure 1. HA 18 restoration polygons. Yellow = HMP & Blue = non-HMP.

HA 18 Restoration Work Performed
April 9th, 2013

Crew: Shawn Wagoner, Scott Salembier
Time on site: 1 hour
Total crew time: 2 hours
Activities: Photo points
Work Performed at all polygons

1. Updated photo points.

HA 18 Restoration Work Performed
June 26th, 2013

Crew: Scott Salembier, Phillip Reyes
Time on site: 1 hour
Total crew time: 2 hours

Activities: Monitoring
Work Performed at all polygons

1. Monterey Spineflower density surveys.

HA 18 Restoration Work Performed
July 31st, 2013

Crew: Philip Reyes, Scott Salembier
Time on site: 2 hours
Total crew time: 4 hours
Activities: Site visit
Work Performed at all polygons

1. Installed polygon boundary markers within 100 ft of perimeter Blueline Road (Figure 2).

Figure 2. Polygon boundary marker.

HA 18 Restoration Work Performed
November 7th, 2013

Crew: Shawn Wagoner, Scott Salembier
Time on site: 1 hour
Total crew time: 2 hours
Activities: Photo points
Work Performed at all polygons

1. Updated photo points.

HA 19

HA 19
Site Conditions and
Previous Work Performed

Initial Site Condition (January, 2013)

- At 14 acres, HA 19 is a large remediation site best described as many arms and sections jutting out from long wide excavated rows in a roughly North-South fashion (Figure 3).
- The immediate area surrounding the site consists of high quality habitat with manzanita/chamise chaparral being the dominant vegetation type.
- Natural recruitment is high in many sections (Figure 3).
- Invasive species are an issue with ice plant being very abundant at the site (Figure 3). Diligence is being taken to eradicate ice plant via hand pulling by Burleson and spraying by BLM.
- HA 19 has one planting polygon which will be planted this season (Figures 3, 5, 6, 7 & 8, see Table 4 for planting inventory).
- 25 % of the total seed was collected (Table 2) and was cast throughout the site in areas wider then 10m, with low natural recruitment, and low ice plant invasion (Figure 3).
- HA 19 has two HMP forbs on the plant palette; Monterey spine flower and Sand gilia. Monterey spine flower will be broadcast this season.
- Sand gilia will be broadcast next season due to the very low amount collected this season.
- The site has been straw crimped with barley.
- The site has little erosion potential due to sandy soil and relatively gently slopes throughout the site.

Updated Site Condition (January, 2014)

- 5 acres worth of seed was cast over the site (Figure 4, Table 3), giving 8.2 acres cast in total.
- ~6 g of Sand gilia was collected (target 90.7 g) this year, but only ~ 4 g was used to broadcast; the rest was kept to propagate plants for out planting and seed harvest.
- HMP polygons for Monterey spineflower (90.7 g over ~30,000 ft^2) and Sand gilia (4 g over 2,500 ft^2) were formed and cast (Figure 4; see Table 3 for broadcasting quantity).
- BLM Weed Crew sprayed icepant throughout the site, which was effective (Note absence of red, Figure 3).
- Plant installation occurred with all remaining targets being hit (Table 4).
- Restoration site boundaries were flagged (Figure 9) to avoid impact from vegetation clearing activities for the Blueline Road firebreak.

Restoration work performed as of February 2014

1. Finished common species and Monterey Spineflower seed broadcast; started Sand gilia seed broadcast.
2. Finished plant installation.
3. Updated photo points.
4. Flagged polygons within 100 ft of Blueline Road.

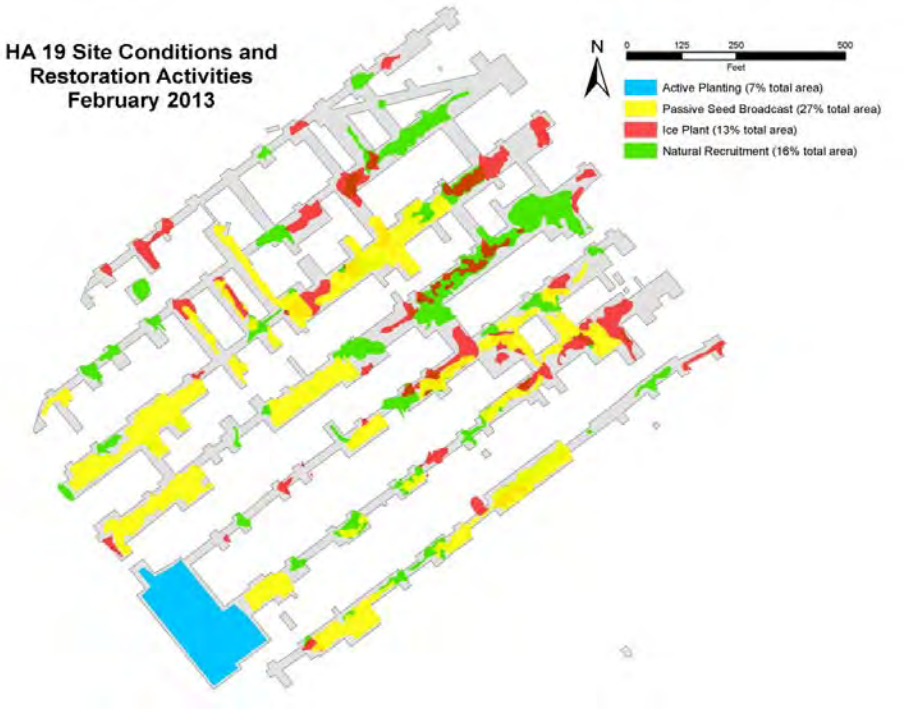


Figure 3. **HA 19 Site condition including passive broadcast locations, ice plant locations, and natural selection locations**.

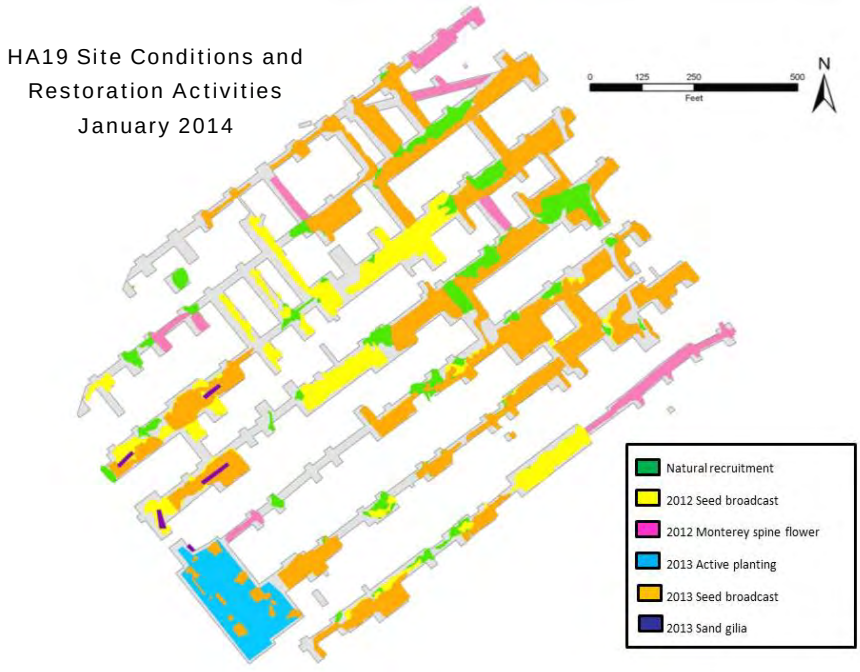


Figure 4. HA 19 Site condition including passive broadcast locations, and natural selection locations, note absence of ice plant.

HA 19 25% Seed Allocation Table

	Plot #: 1 Area (ft²): 152660 % Total Area: 25		
Species	**Target (lb)**	**Target (g)**	**Weighed Amount (g)**
ACMI	3.5	1587.6	1595.7
ADFA	3.5	1587.6	1591.4
ARPU	3.5	1587.6	1775.4
ARTO	7.0	3175.2	3185.0
ARCA	3.5	1587.6	1589.4
BAPI	0.5	238.1	238.5
CERI	3.5	1587.6	1690.2
CHPUP	0.2	90.7	96.8
ELGL	31.5	14288.3	14388.0
ERER	0.9	396.9	398.8
ERFA	0.4	158.8	167.9
ERCO	0.9	396.9	485.0
GITEA	0.2	90.7	-
HESC	3.5	1587.6	1588.6
Hordeum	31.5	14288.3	14388.0
HOCU	7.0	3175.2	3178.4
LOSC	7.0	3175.2	3178.0
MIAU	1.4	953.0	956.1
NACE	17.5	7937.9	7940.0
SAME	3.5	1587.6	1589.4
Total (g)	130.4	59478.4	60020.6

HMP Forbs

Purchased Seed

Table 2. 25% total seed broadcast at HA 19.

		HA19		
		Restoration Seed Broadcast		
		Acres broadcast		5
Scientific Name	**Common Name**	**lbs/ acre**	**lbs**	**Grams**
Achillea millefolium	White Yarrow	1.0	5.0	2268.6
Arctostaphylous pumila	Sandmat manzanita	1.0	5.0	2268.6
Artemisia californica	California sagebrush	1.0	5.0	2268.6
Baccharis pilularis	Coyote bush	0.2	1.0	453.7
Ceanothus cuneatus var. rigidus	Monterey ceanothus	1.0	5.0	2268.6
Chorizanthe pungens var. pungens	Monterey spineflower	0.15	0.2	90.7
Elymus glaucus	Blue wildrye	9.0	45.0	20417.4
Eriophyllum confertiflorum	Golden yarrow	0.3	1.5	680.6
Ericameria ericoides	Mock heather	0.1	0.5	226.9
Ericameria fasciculata	Eastwood's golden fleece	0.3	1.5	680.6
Gilia tenuiflora ssp. arenaria	Sand gilia	0.15	0.002	1.0
Helianthemum scoparium	Rushrose	1.0	5.0	2268.6
Hordeum sp.	Sterile barley	9.0	45.0	20417.4
Horkelia cuneata	Wedge-leaved horkelia	2.0	10.0	4537.2
Lotus scoparius	Deerweed	2.0	10.0	4537.2
Mimulus aurantiacus	Sticky monkey flower	0.6	3.0	1361.2
Salvia mellifera	Black sage	1.0	5.0	2268.6
			lbs	**Grams**
		Total	147.5	66924.8

HMP Forbs
Purchased seed

Table 3. 40% total seed broadcast at HA 19.

HA 19 Planting Inventory				
Species	**Planting Target**	**Total Planted**	**Need to Plant**	**NOTES**
Achillea millefolium (White Yarrow)	75	117	0	**Target hit**
Adenostoma fasciculata (Chamise)	100	100	0	**Target hit**
Arctostaphylos pumila (Sandmat manzanita)	80	255	0	**Target hit**
Arctostaphylos tomentosa (Shaggy-bark manzanita)	150	150	0	**Target hit**
Artemisia californica (California sagebrush)	52	68	0	**Target hit**
Baccharis pilularis (Coyote bush)	150	150	0	**Target hit**
Ceanothus rigidus (Monterey ceanothus)	50	119	0	**Target hit**
Elymus glaucus (Blue wildrye)	55	138	0	**Target hit**
Ericameria ericoides (Mock Heather)	50	58	0	**Target hit**
Ericameria fasciculata (Eastwood's gold fleece)	50	97	0	**Target hit**
Eriophyllum confertiflorum (Golden yarrow)	200	200	0	**Target hit**
Helianthemum scoparium (Rush-rose)	250	255	0	**Target hit**
Horkelia cuneata (Wedge-leaved horkelia)	250	250	0	**Target hit**
Lotus scoparius (Deerweed)	250	250	0	**Target hit**
Lupinus albifrons (Silver bush lupine)	-	9	-	**Target hit**
Mimulus aurantiacus (Sticky monkey flower)	250	262	0	**Target hit**
Nasella cernua (Nodding Needlegrass)	200	200	0	**Target hit**
Salvia mellifera (Black sage)	250	252	0	**Target hit**
Total	2462	2930	0	

Table 4. HA 19 planting inventory for Task Order 4

HA 19 Restoration Work Performed
January 2nd, 2013

Crew: Shawn Wagoner, Scott Salembier
Time on site: 4.5 hours
Total crew time: 9 hours
Activities: Active Restoration
Work Performed at Planting

1. Started active planting phase: installed 180 plants.

Figures 5, 6, 7 & 8. HA 19 active plant installation.

HA 19 Restoration Work Performed
January 3rd, 2013

Crew: Shawn Wagoner, Scott Salembier, Thor Anderson, Phillip Reyes
Time on site: 4 hours
Total crew time: 16 hours
Activities: Active Restoration
Work Performed at P1

1. Installed 260 plants.

HA 19 Restoration Work Performed
January 7th, 2013

Crew: Shawn Wagoner, Scott Salembier, Phillip Reyes
Time on site: 5 hours
Total crew time: 15 hours
Activities: Active Restoration
Work Performed at planting polygon

1. Installed 263 plants.

HA 19 Restoration Work Performed
January 9th, 2013

Crew: Shawn Wagoner, Scott Salembier, Thor Anderson, Phillip Reyes
Time on site: 4 hours
Total crew time: 16 hours
Activities: Active Restoration
Work Performed at planting polygon

1. Installed 330 plants.

HA 19 Restoration Work Performed
January 14th, 2013

Crew: Shawn Wagoner, Scott Salembier, Phillip Reyes
Time on site: 5 hours
Total crew time: 15 hours
Activities: Passive Restoration, Weed Management and GPS/GIS
Work Performed throughout site

1. Started broadcast of 25% seed over the site excluding the planting polygon and areas of high natural recruitment.
2. Removed ice plant when encountered.
3. GPS the site for natural recruitment, ice plant invasion, and passive seed broadcast.

HA 19 Restoration Work Performed
January 15th, 2013

Crew: Shawn Wagoner, Scott Salembier, Phillip Reyes
Time on site: 5.5 hours
Total crew time: 16.5 hours
Activities: Passive Restoration, Weed Management and GPS/GIS
Work Performed throughout site

1. Continued passive seed broadcast.
2. Continued mapping natural recruitment, ice plant invasion, and passive seeding areas.

HA 19 Restoration Work Performed
January 16th, 2013

Crew: Shawn Wagoner, Scott Salembier, Phillip Reyes
Time on site: 1.5 hours
Total crew time: 4.5 hours
Activities: Passive Restoration, Weed Management and GPS/GIS
Work Performed throughout site

1. Continued passive seed broadcast.
2. Continued mapping natural recruitment, ice plant invasion, and passive seeding areas.

HA 19 Restoration Work Performed
January 17th, 2013

Crew: Shawn Wagoner, Scott Salembier, Phillip Reyes
Time on site: 2 hours
Total crew time: 6 hours
Activities: Passive Restoration, Weed Management and GPS/GIS
Work Performed throughout site

1. Continued passive seed broadcast.
2. Continued mapping natural recruitment, ice plant invasion, and passive seeding areas.

HA 19 Restoration Work Performed
January 23rd, 2013

Crew: Shawn Wagoner, Scott Salembier, Phillip Reyes
Time on site: 2 hours
Total crew time: 6 hours
Activities: Passive Restoration, Weed Management and GPS/GIS
Work Performed throughout site

1. Finished passive seed broadcast.
2. Finished mapping natural recruitment, ice plant invasion, and passive seeding areas.

HA 19 Restoration Work Performed
January 29th, 2013

Crew: Shawn Wagoner, Scott Salembier, Phillip Reyes
Time on site: 2 hours

Total crew time: 6 hours
Activities: Active Restoration
Work Performed at planting polygon

1. Installed ADFA and ARPU (70 plants total).

HA 19 Restoration Work Performed
January 30th, 2013

Crew: Shawn Wagoner, Scott Salembier
Time on site: 1 hour
Total crew time: 2 hours
Activities: Active Restoration
Work Performed at planting polygon

1. Installed ARPU and CERI (41 plants total).

HA 19 Restoration Work Performed
February 6th, 2013

Crew: Shawn Wagoner, Scott Salembier, Phillip Reyes
Time on site: 2 hours
Total crew time: 6 hours
Activities: Active Restoration
Work Performed at planting polygon

1. Installed 170 plants.

HA 19 Restoration Work Performed
February 12th, 2013

Crew: Shawn Wagoner, Scott Salembier, Phillip Reyes
Time on site: 4 hours
Total crew time: 12 hours
Activities: Passive Restoration, Weed Management and GPS/GIS
Work Performed throughout site

1. Weeded predetermined HMP polygons of ice plant.
2. Broadcast Monterey spineflower (HMP) in predetermined polygons (Figure 4).
3. GPS all HMP polygons.

HA 19 Restoration Work Performed
February 19th, 2013

Crew: Shawn Wagoner, Scott Salembier, Phillip Reyes
Time on site: 6 hours
Total crew time: 18 hours
Activities: Active Restoration
Work Performed throughout site

1. Installed 240 plants.

HA 19 Restoration Work Performed
February 22nd, 2013

Crew: Shawn Wagoner, Scott Salembier, Phillip Reyes
Time on site: 6 hours
Total crew time: 18 hours
Activities: Active Restoration
Work Performed throughout site

1. Installed 214 plants.

HA 19 Restoration Work Performed
February 25th, 2013

Crew: Shawn Wagoner, Scott Salembier, Phillip Reyes
Time on site: 2 hours
Total crew time: 6 hours
Activities: Active Restoration
Work Performed throughout site

1. Installed 120 plants.

HA 19 Restoration Work Performed
March 3rd, 2013

Crew: Shawn Wagoner, Scott Salembier, Phillip Reyes
Time on site: 1 hour
Total crew time: 3 hours
Activities: Active Restoration
Work Performed throughout site

1. Installed 86 plants.

HA 19 Restoration Work Performed
March 4th, 2013

Crew: Shawn Wagoner, Scott Salembier, Phillip Reyes
Time on site: 1 hour
Total crew time: 3 hours
Activities: Active Restoration
Work Performed throughout site

1. Installed 86 plants.

HA 19 Restoration Work Performed
March 5th, 2013

Crew: Shawn Wagoner, Scott Salembier, Phillip Reyes

Time on site: 3 hours
Total crew time: 9 hours
Activities: Active Restoration and Monitoring
Work Performed throughout site

1. Installed 158 plants.
2. Conducted Visual Survey.

HA 19 Restoration Work Performed
March 13th, 2013

Crew: Shawn Wagoner, Thor Anderson, Scott Salembier, Phillip Reyes
Time on site: 3 hours
Total crew time: 13 hours
Activities: Active Restoration and Passive Restoration
Work Performed throughout site

1. Installed 222 plants.
2. Flagged HMP polygons.

HA 19 Restoration Work Performed
April 3rd, 2013

Crew: Shawn Wagoner, Phillip Reyes
Time on site: 1.5 hours
Total crew time: 3 hours
Activities: Monitoring
Work Performed throughout site

1. Started plant survivorship monitoring.

HA 19 Restoration Work Performed
April 4th, 2013

Crew: Shawn Wagoner, Phillip Reyes
Time on site: 6 hours
Total crew time: 12 hours
Activities: Monitoring
Work Performed throughout site

1. Finished plant survivorship monitoring.
2. Installed 7 ADFA and 8 ERER.

HA 19 Restoration Work Performed
April 11th, 2013

Crew: Shawn Wagoner, Phillip Reyes, Scott Salembier
Time on site: 1 hour
Total crew time: 3 hours
Activities: Site Inspection

Work Performed throughout site

1. Checked and fixed plant survivorship tags.

HA 19 Restoration Work Performed
July 31st, 2013

Crew: Philip Reyes, Scott Salembier
Time on site: 2.5 hours
Total crew time: 5 hours
Activities: Site visit
Work Performed at all polygons

1. Installed polygon boundary markers within 100 ft of perimeter.

Figure 9. Boundary marker installation.

HA 19 Restoration Work Performed
October 3rd, 2013

Crew: Phillip Reyes, Scott Salembier
Time on site: 4 hours
Total crew time: 8 hours
Activities: Monitoring
Work Performed throughout site

1. Conducted plant survivorship monitoring.

HA 19 Restoration Work Performed
November 6th, 2013

Crew: Shawn Wagoner, Scott Salembier
Time on site: 7 hours
Total crew time: 14 hours
Activities: Passive Restoration, GPS/GIS
Work Performed throughout site

1. Broadcast 4 g Sand gilia over 2500 ft^2.
2. GPS Sand gilia plots.


Figures 10 & 11. Sand gilia broadcast.

HA 19 Restoration Work Performed
November 7th, 2013

Crew: Phillip Reyes, Scott Salembier
Time on site: 4 hours
Total crew time: 8 hours
Activities: Monitoring
Work Performed throughout site

1. Conducted plant survivorship monitoring.

HA 19 Restoration Work Performed
November 12th, 2013

Crew: Thor Anderson, Shawn Wagoner, Phillip Reyes, Scott Salembier
Time on site: 4 hours
Total crew time: 16 hours
Activities: Passive Restoration
Work Performed throughout site

1. Broadcast seeding ~ 1.5 acres.

HA 19 Restoration Work Performed November 14th, 2013

Crew: Shawn Wagoner, Phillip Reyes, Scott Salembier
Time on site: 4 hours
Total crew time: 12 hours
Activities: Passive Restoration
Work Performed throughout site

1. Broadcast seeding ~ 1 acre.

HA 19 Restoration Work Performed November 19th, 2013

Crew: Shawn Wagoner, Phillip Reyes, Scott Salembier
Time on site: 5 hours
Total crew time: 15 hours
Activities: Passive Restoration
Work Performed throughout site

1. Broadcast seeding ~ 1 acre.

HA 19 Restoration Work Performed November 20th, 2013

Crew: Shawn Wagoner, Phillip Reyes, Scott Salembier
Time on site: 5 hours
Total crew time: 15 hours
Activities: Passive Restoration
Work Performed throughout site

1. Broadcast seeding ~0.85 acre.

HA 19 Restoration Work Performed November 21st, 2013

Crew: Shawn Wagoner, Phillip Reyes, Scott Salembier
Time on site: 3 hours
Total crew time: 9 hours
Activities: Passive Restoration
Work Performed throughout site

1. Broadcast seeding ~0.5 acre.

HA 19 Restoration Work Performed February 3rd, 2014

Crew: Thor Anderson, Shawn Wagoner, Phillip Reyes, Scott Salembier
Time on site: 3 hours
Total crew time: 12 hours
Activities: Active Restoration, Site Inspection

Work Performed throughout site

1. Installed 50 ARTO, 30 ADFA and a few surplus HESC, CERI and LUAL. Included a mycorrhizal + fertilizer component to the ARTO and ADFA plants.
2. Inspected our Sand gilia plots.

HA 19 Restoration Work Performed
February 4th, 2014

Crew: Thor Anderson, Shawn Wagoner, Phillip Reyes, Scott Salembier
Time on site: 3 hours
Total crew time: 12 hours
Activities: Active Restoration, Site Inspection
Work Performed throughout site

1. Installed the remaining targets for ADFA, ARTO, ERER, ERCO, HOCU, and SAME. Included a mycorrhizal + fertilizer component to the all the plants.

Figures 12 & 13. Mycorrhizal + fertilizer inoculation and plant installation.

HA 22

HA 22
Site Conditions and
Previous Work Performed

Initial Site Condition (December, 2011)

- There are five polygons for HA22: P1, P2, P3, P4, and P5 (Figure 14).
- Polygon P2 is divided into two areas, P2A and P2B, to accommodate CHPUP habitat requirements (Figure 14).
- P2A (~100 ft^2) will be set aside for CHPUP.
- Total area for all polygons is 2,138 ft^2.
- There are minor ice plant issues on all polygons.
- Site has been crimped with straw.
- Surrounding native habitat is of high quality.
- Natural recruitment within site is good.

Updated Site Condition (January, 2014)

- 100% seed cast on all polygons.

Restoration work performed as of February 2014

1. Update photo points.
2. Monitoring HMP polygons.

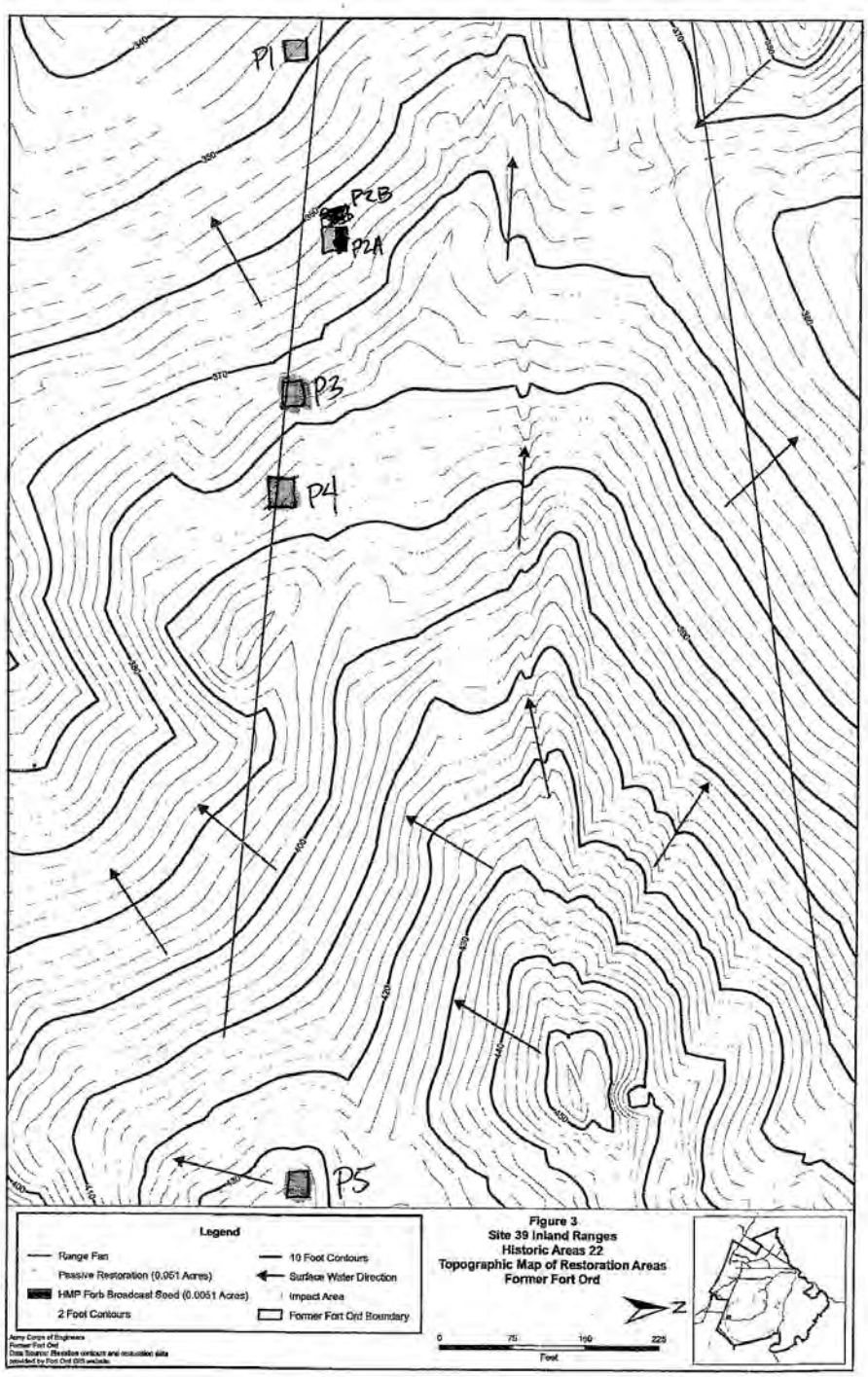


Figure 14. HA 22 restoration polygons.

HA 22 Restoration Work Performed
April 9th, 2013

Crew: Shawn Wagoner, Scott Salembier
Time on site: 0.5 hour
Total crew time: 1 hour
Activities: Photo points
Work Performed at all polygons

1. Updated photo points.

HA 22 Restoration Work Performed
June 26th, 2013

Crew: Scott Salembier, Phillip Reyes
Time on site: 1 hour
Total crew time: 2 hours
Activities: Monitoring
Work Performed at all polygons

1. Monterey Spineflower density surveys.

HA 22 Restoration Work Performed
November 7th, 2013

Crew: Shawn Wagoner, Scott Salembier
Time on site: 0.5 hour
Total crew time: 1 hour
Activities: Photo points
Work Performed at all polygons

1. Updated photo points.

HA 23

HA 23
Site Conditions and
Previous Work Performed

Initial Site Condition (December, 2011)

- There are five polygons for HA 23: P1, P2, P3, P4, and P5 (Figure 15).
- P5 was divided into two areas to make space for CHPUP. These areas are labeled P5A and P5B (Figure 15).
- P5A is reserved for CHPUP and is located in the southwest corner of P5.
- There is natural recruitment of CHPUP in P5.
- Total area for all polygons is 11,697 ft^2.
- Small amounts of Ice Plant are present on P1, P3, P4, and P5.
- A moderate amount of ice plant is present on P2.
- Site has been crimped with straw.
- Surrounding native habit is of high quality.
- Natural recruitment within site is good.

Updated Site Condition (January, 2014)

- 100% seed cast on all polygons.

Restoration work performed as of February 2014

1. Update photo points.
2. Monitoring HMP polygons.

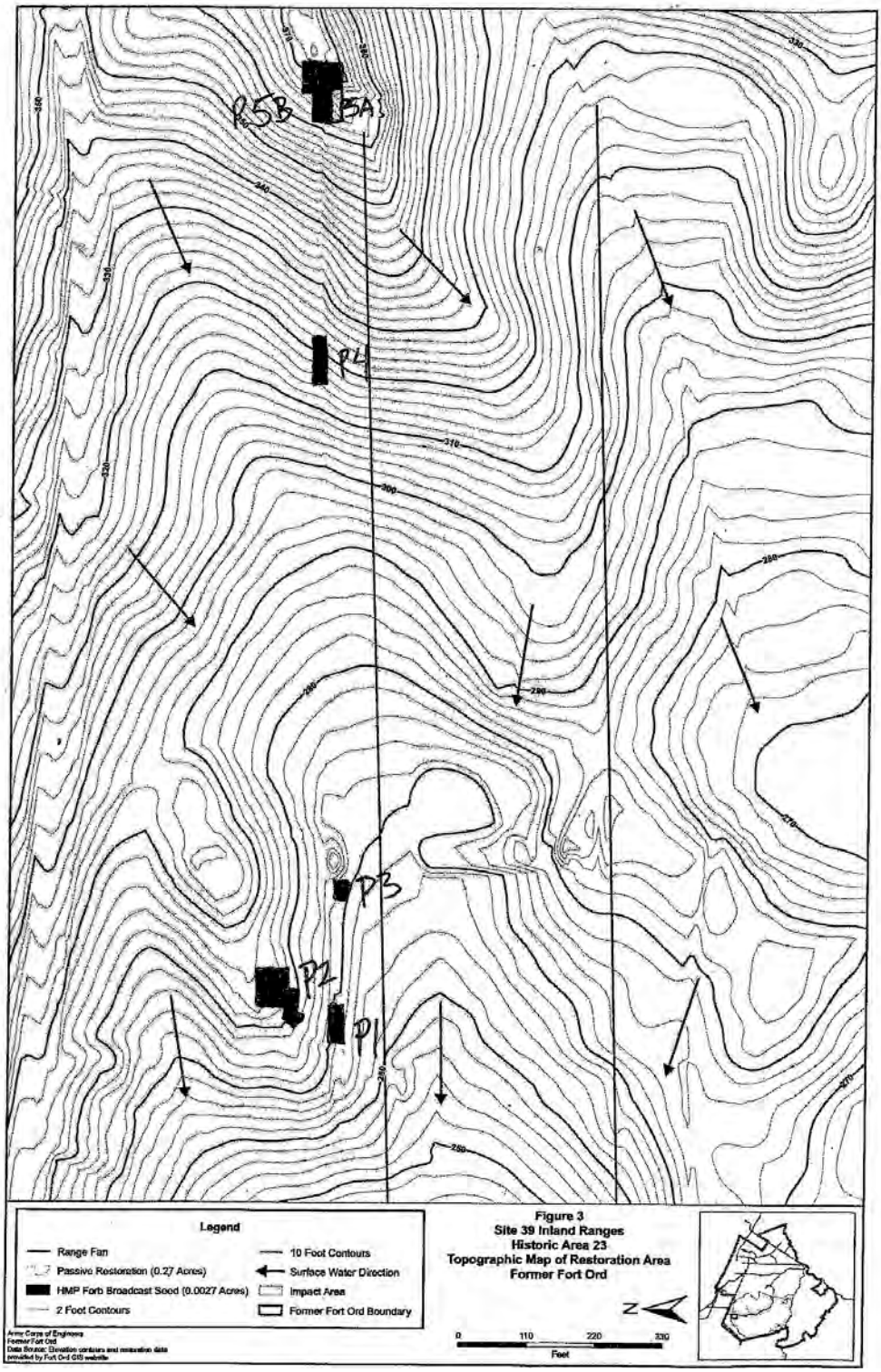


Figure 15. HA 23 restoration polygons.

HA 23 Restoration Work Performed
April 9th, 2013

Crew: Shawn Wagoner, Scott Salembier
Time on site: 0.5 hour
Total crew time: 1 hour
Activities: Photo points
Work Performed at all polygons

1. Updated photo points.

HA 23 Restoration Work Performed
June 26th, 2013

Crew: Scott Salembier, Phillip Reyes
Time on site: 0.5 hour
Total crew time: 1 hour
Activities: Monitoring
Work Performed at all polygons

1. Monterey Spineflower density surveys.

HA 23 Restoration Work Performed
November 7th, 2013

Crew: Shawn Wagoner, Scott Salembier
Time on site: 0.5 hour
Total crew time: 1 hour
Activities: Photo points
Work Performed at all polygons

1. Updated photo points.

HA 27/27A

HA 27
Site Conditions and
Previous Work Performed

Initial Site Condition (December, 2011)

- There are four polygons for HA27: P1, P2, P3, and P4 (Figure 16).
- Total area for all polygons is 2,773 ft^2.
- Major pampas grass issue at all polygons with hundreds of seedlings.
- Major pampas seed bank mixed in with straw at site.
- Minor ice plant issues at all polygons.
- Modest natural recruitment observed.

Updated Site Condition (January, 2014)

- 100% seed cast on all polygons.
- A 100 ft fire break was cleared along the road adjacent to P1 which was tracked through.

Restoration work performed as of February 2014

1. Update photo points.
2. Monitoring HMP polygons.

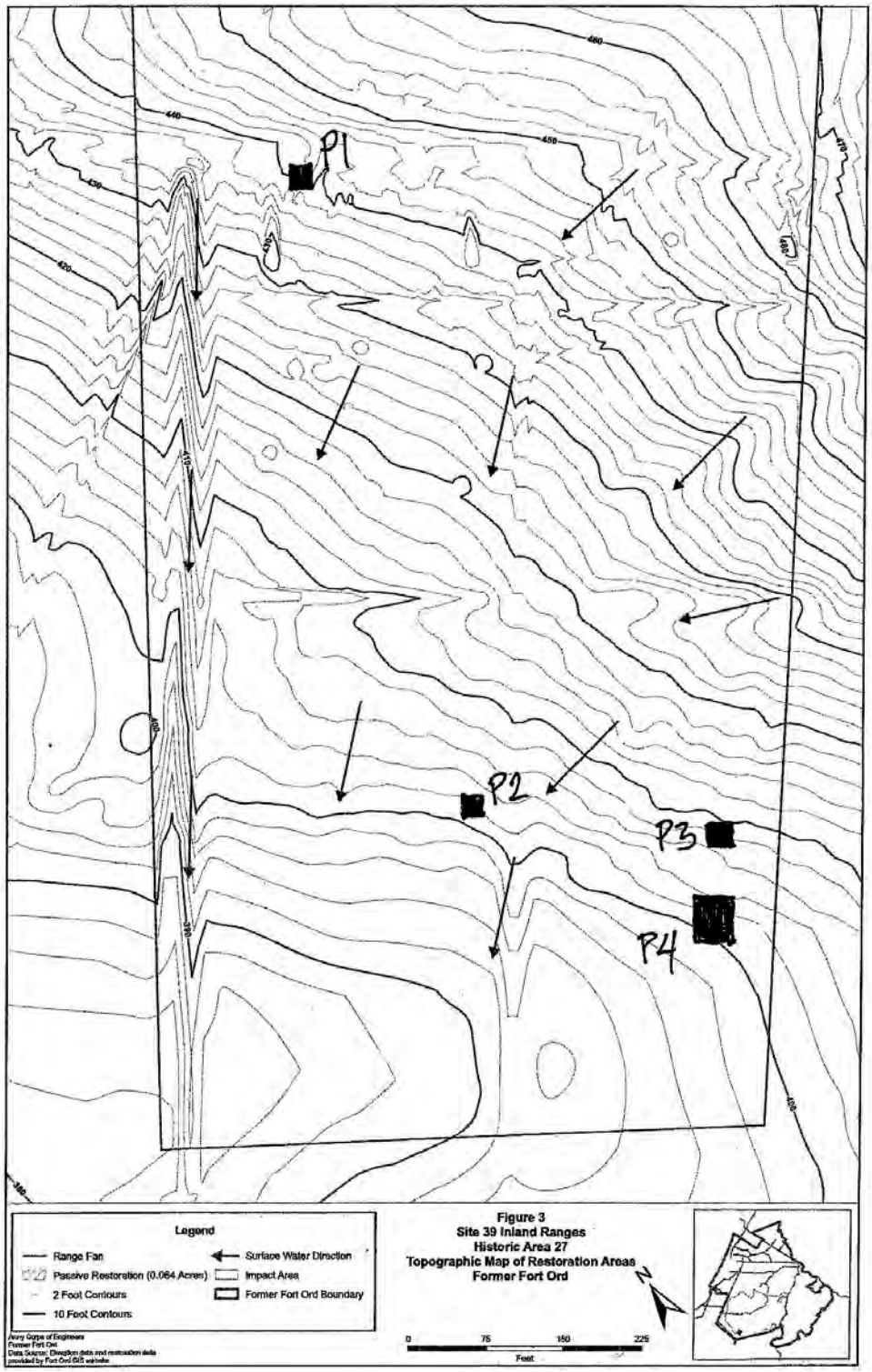


Figure 16. HA 27 restoration polygons.

HA 27 Restoration Work Performed
April 9th, 2013

Crew: Shawn Wagoner, Scott Salembier
Time on site: 0.5 hour
Total crew time: 1 hour
Activities: Photo points
Work Performed at all polygons

1. Updated photo points.

HA 27 Restoration Work Performed
November 7th, 2013

Crew: Shawn Wagoner, Scott Salembier
Time on site: 0.5 hour
Total crew time: 1 hour
Activities: Photo points
Work Performed at all polygons

1. Updated photo points.

HA 27A Restoration Work Performed
February 5th, 2014

Initial Site Condition (December, 2011)

- There are three polygons for HA27A: P1, P2, and P3 (Figure 17).
- Total area for all polygons is 27,576 ft^2.
- Minor ice plant presence in all polygons.
- Major pampas grass issue on P3 with hundreds of seedlings.
- Major erosion issues on P3 with two gullies and a rill running through it.
- Lots of exposed sandstone or very shallow soil on the NE corner of P3.

Updated Site Condition (January, 2014)

- 100% seed cast on all polygons.
- The unit containing HA 27A was brush cut and P1 was tracked walked through by heavy machinery. Lots of vegetation debris was thrown onto P1 and P2.

Restoration work performed

1. Update photo points.
2. Monitoring HMP polygons.

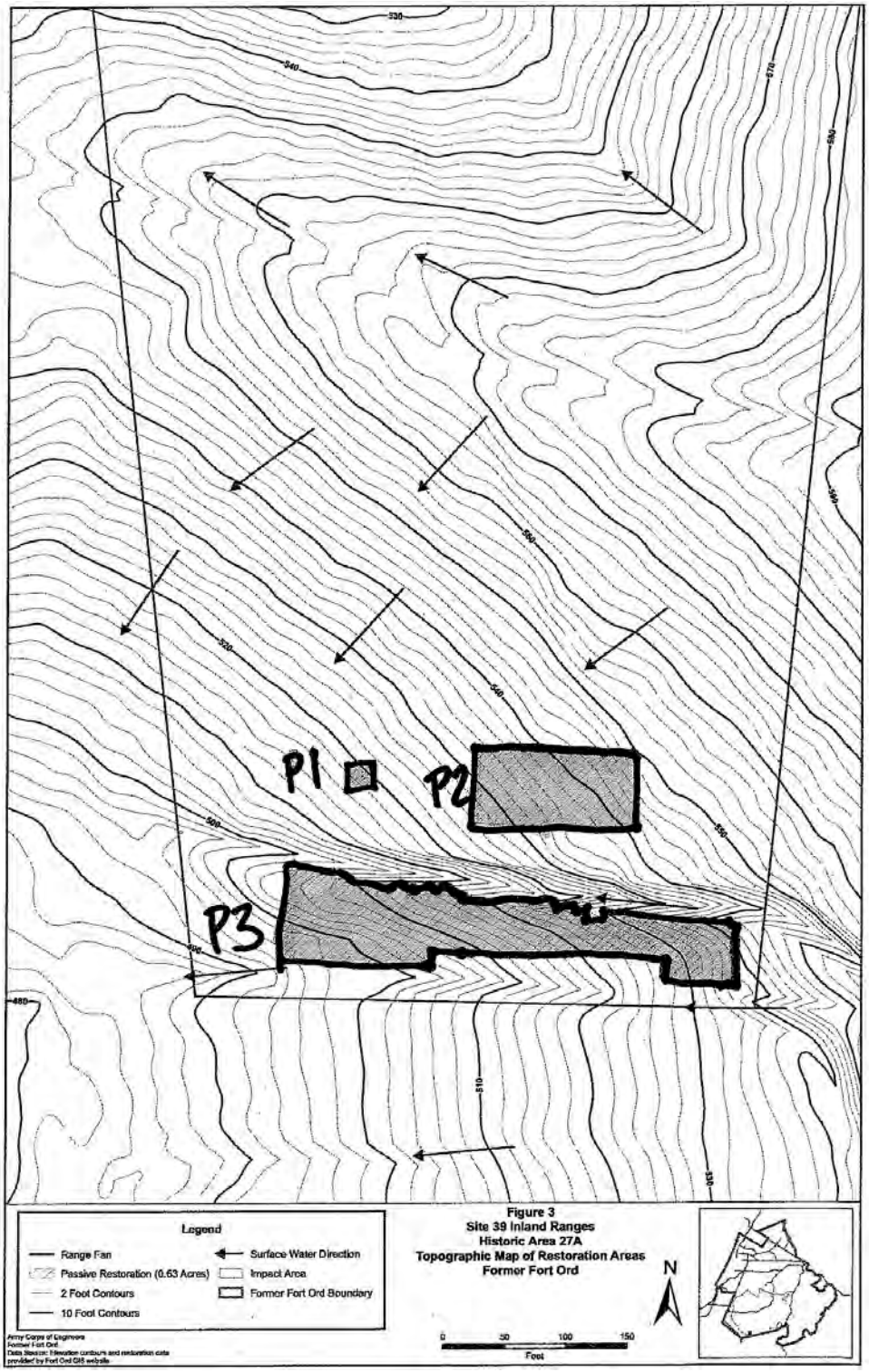


Figure 17. HA 27A restoration polygons.

HA 27A Restoration Work Performed
April 9th, 2013

Crew: Shawn Wagoner, Scott Salembier
Time on site: 0.5 hour
Total crew time: 1 hour
Activities: Photo points
Work Performed at all polygons

1. Updated photo points.

HA 27A Restoration Work Performed
November 7th, 2013

Crew: Shawn Wagoner, Scott Salembier
Time on site: 0.5 hour
Total crew time: 1 hour
Activities: Photo points
Work Performed at all polygons

1. Updated photo points.

HA 28

HA 28
Site Conditions and
Previous Work Performed

Initial Site Condition (December, 2012)

- HA 28 is a 3.4 acre sized remediation site on the southern portion of the MRA with 3 distinct areas, A1-A3 (Figure 18).
- A1 is about 2.6 acres and will receive Passive Restoration, Active Restoration, and Erosion Control measures with ~400 L.F. straw wattles and 2,000 S.F of coir fabric (Figure 18)
- A2 is about 0.25 acres and will receive Passive Restoration and Erosion Control Measures with ~400 L.F straw wattles (Figure 18).
- A3 is about 0.7 acres and will receive Passive Restoration and Erosion Control measures from ITSI/Gilbane (Figure 18).
- A separate broadcast seed mix will be created for the Erosion Control area and the Passive Restoration area.
- The surrounding habitat is of good quality; however this area will be brush cut for MEC detection.

Updated Site Condition (January, 2014)

- All of the Erosion Control Measures have been executed.
- 100% seed has been cast other than Monterey spineflower, which will be completed in 2014 (Table 5).
- Plant installation will occur in the 2014/2015 planting season.
- The site was impacted from the prescribed burn; a small amount of fire retardant was spread on A-1 and A-2 when the fire jumped containment lines. Some of the surrounding habitat north of the site was burned.

Restoration work performed as of February 2014

1. Conducted Erosion Control Measures.
2. Cast 100% Seed.

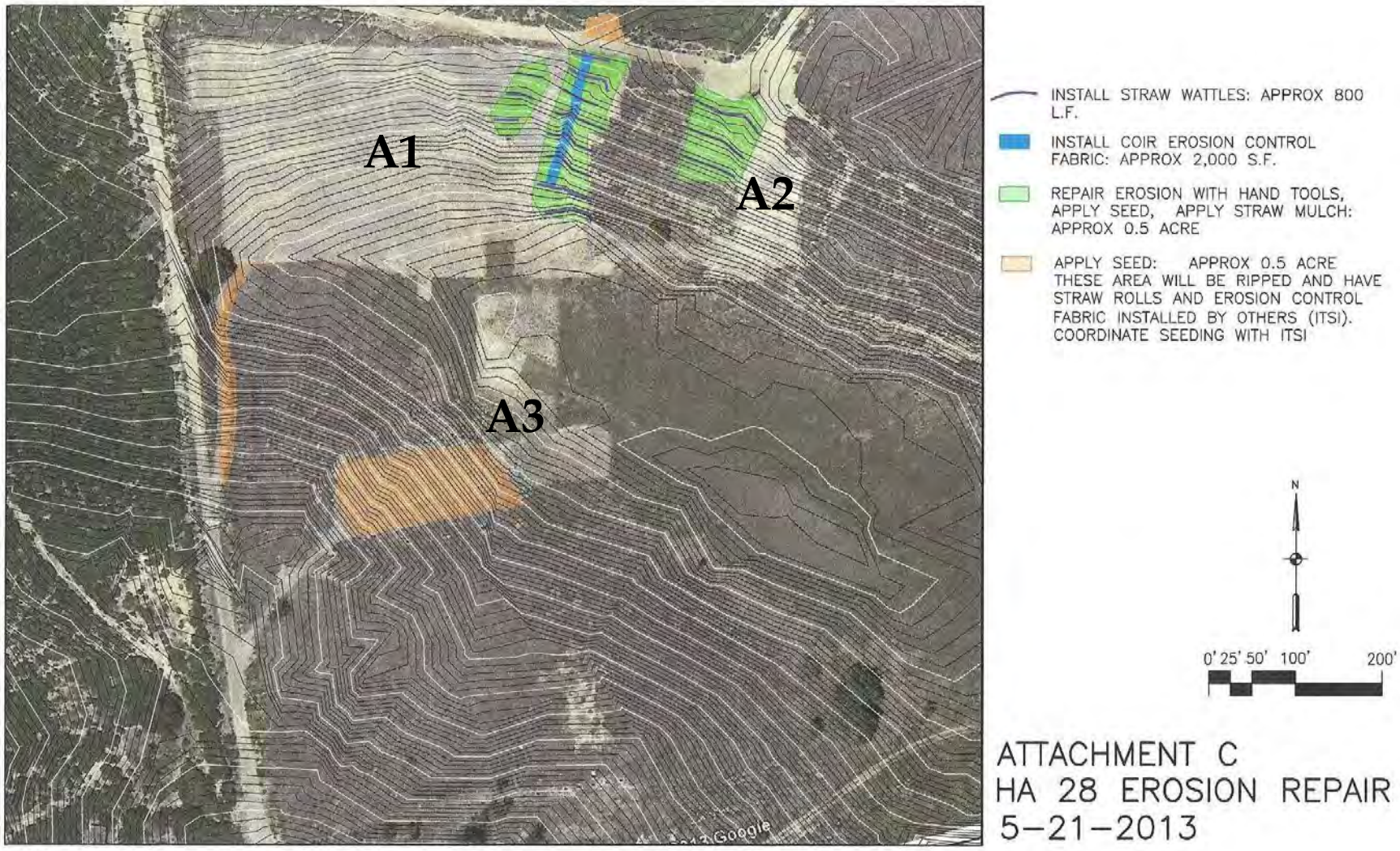


Figure 18. HA 28 map showing A1-A3 Erosion Control footprint.

		HA28			HA28		
		Erosion Control Broadcast			Restoration Broadcast		
		Acres broadcast		1	Acres broadcast		3.4
Scientific Name	**Common Name**	**lbs/acre**	**lbs**	**grams**	**lbs/acre**	**lbs**	**grams**
Achillea millefolium	White Yarrow	1.0	1.0	453.7	1.0	3.4	1542.6
Baccharis pilularis	Coyote bush	0.5	0.5	226.9	0.2	0.5	231.4
Ceanothus cuneatus var. rigidus	Monterey ceanothus	-	-	-	0.5	1.7	764.5
Elymus glaucus	Blue wildrye	20.0	20.0	9074.4	4.0	13.6	6170.6
Eriophyllum confertiflorum	Golden yarrow	1.1	1.1	499.1	1.3	4.2	1911.3
Ericameria ericoides	Mock heather	3.1	3.1	1406.5	-	-	-
Ericameria fasciculata	Eastwood's golden fleece	-	-	-	0.2	0.7	305.8
Helianthemum scoparium	Rushrose	1.0	1.0	453.7	0.8	2.5	1146.8
Hordeum sp.	Sterile barley	50.0	50.0	22686.	20.0	68.0	30853.0
Horkelia cuneata	Wedge-leaved horkelia	2.0	2.0	907.4	2.0	6.8	3085.3
Lotus scoparius	Deerweed	1.8	1.8	816.7	2.0	6.7	3058.1
Mimulus aurantiacus	Sticky monkey flower	0.5	0.5	226.9	0.9	3.1	1388.4
Salvia mellifera	Black sage	1.0	1.0	453.7	2.0	6.7	3058.1
			lbs	**grams**		**lbs**	**grams**
		Total	82.0	37205	Total	118	53515.9

Purchased Seed

Table 5. HA 28 seed broadcast totals by species and activity.

HA 28 Restoration Work Preformed
September 30th, 2013

Crew: Thor Anderson, Shawn Wagoner, Scott Salembier, Philip Reyes, Jeremey Ashe
Time on site: 6 hours
Total crew time: 30 hours
Activities: Erosion Control
Work done at site

1. Collapsed rills and gullys.
2. Smoothed out area for coir fabric.
3. Dug trenches for straw wattles.
4. Installed several straw wattles.

Figure 19. HA 28 rill and gully collapsing.

Figure 20. HA 28 wattle installation.

HA 28 Restoration Work Preformed
October 1st, 2013

Crew: Thor Anderson, Shawn Wagoner, Scott Salembier, Philip Reyes, Jeremey Ashe
Time on site: 6 hours
Total crew time: 30 hours
Activities: Erosion Control, Passive Restoration
Work done at site

1. Installed several straw wattles.
2. Started installing coir fabric.
3. Started seeding erosion control footprint.

HA 28 Restoration Work Preformed
October 2nd, 2013

Crew: Thor Anderson, Shawn Wagoner, Scott Salembier, Philip Reyes, Jeremey Ashe
Time on site: 4 hours
Total crew time: 20 hours
Activities: Erosion Control, Passive Restoration
Work done at site

1. Finished installing straw wattles.
2. Finished installing coir fabric.
3. Finished seeding erosion control footprint.

Figure 21. HA 28 completed erosion control footprint.

HA 28 Restoration Work Preformed
October 22th, 2013

Crew: Thor Anderson, Shawn Wagoner,
Time on site: 1 hour
Total crew time: 2 hours
Activities: Site Inspection
Work done at site

1. Inspected areas covered by fire retardant during prescribed burn.
2. Inspected burned chaparral north of the site.

Figures 22 & 23. Areas covered with retardant during prescribed burn.

Figure 24. Burned area just north from HA 28.

HA 28 Restoration Work Preformed October 29th, 2013

Crew: Thor Anderson, Shawn Wagoner, Scott Salembier, Philip Reyes
Time on site: 6 hours
Total crew time: 24 hours
Activities: Erosion Control, Passive Restoration
Work done at site

1. Started to broadcast seed all polygons.

HA 28 Restoration Work Preformed October 31st, 2013

Crew: Thor Anderson, Shawn Wagoner, Scott Salembier, Philip Reyes
Time on site: 4 hours
Total crew time: 16 hours
Activities: Passive Restoration
Work done at site

1. Continued broadcast seeding the whole site.

HA 28 Restoration Work Preformed November 4th, 2013

Crew: Thor Anderson, Shawn Wagoner, Scott Salembier, Philip Reyes
Time on site: 4 hours
Total crew time: 16 hours
Activities: Passive Restoration
Work done at site

1. Finished broadcast seeding the whole site.
2. Spread straw on site.

Figure 25. HA 28 seed and straw application.

HA 29

HA 29
Site Conditions and
Previous Work Performed

Initial site Condition (January, 2012)

- HA 29 has four polygons: P1, P2, P3, and P4 (Figure 26).
- HA 29 is approximately 0.96 acres.
- P3 will receive both active planting and broadcast seeding. Active planting will commence before broadcast seeding.
- The surrounding area used to be covered by pampas grass but was sprayed by BLM. However pampas grass still has a large presence on HA 29. P3 and P4 are the sites most affected and will need continuous monitoring to abate pampas invasion.
- P3 has several sink holes which will fill with water during storms. This will be monitored to ensure no major erosion issues develop.
- Surrounding habitat is of good quality.

Updated Site Condition (January, 2014)

- 100% seed cast on all polygons.
- 100% plants installed in P3 (Table 6).

Restoration work performed as of February 2014

1. Finished installing all plants in P3.
2. Conducted survivorship monitoring on installed plants.

Figure 26. HA 29 restoration polygons.

HA 29 Planting Inventory					
Species	**Planting Target**	**Total Planted**	**Need to Plant**	**Container Type**	**NOTES**
Adenostoma fasciculata (Chamise)	120	120	0	**D-Pots**	**Target hit.**
Arctostaphylos hookeri (Hooker's manzanita)	5	5	0	**1 Gal**	**Target hit**
Arctostaphylos montereyensis (Toro manzanita)	15	15	0	**1 Gal**	**Target hit**
Arctostaphylos pumila (Sandmat manzanita)	20	20	0	**1 Gal**	**Target hit**
Arctostaphylos tomentosa (Shaggy-bark manzanita)	25	25	0	**1 Gal**	**Target hit.**
Ceanothus rigidus (Monterey ceanothus)	5	5	0	**1 Gal**	**Target hit.**
Ericameria fasciculata (Eastwoods gold fleece)	5	25	0	**D-Pots**	**Target hit.**
Total	195	215	0		

Table 6. HA 29 planting inventory for Task Order 4.

HA 29 Restoration Work Preformed
January 24th, 2013

Crew: Shawn Wagoner, Scott Salembier, Phillip Reyes
Time on site: 3 hours
Total crew time: 9 hours
Activities: Active Restoration
Work done at P3

1. Planted ADFA and ERFA.

HA 29 Restoration Work Preformed
February 7th, 2013

Crew: Shawn Wagoner, Scott Salembier, Phillip Reyes
Time on site: 1.5 hours
Total crew time: 4.5 hours
Activities: Active Restoration, Weed Management
Work done at P3

1. Planted ARPU, ARMO, ARTO (44 plants) and weeded Pampas. Also added mycorrhizae packets to several shrubs.

HA 29 Restoration Work Preformed
February 20th, 2013

Crew: Shawn Wagoner, Scott Salembier, Phillip Reyes
Time on site: 2 hours
Total crew time: 6 hours
Activities: Active Restoration
Work done at P3

1. Planted 88 plants.

HA 29 Restoration Work Preformed
March 25th, 2013

Crew: Shawn Wagoner, Scott Salembier
Time on site: 6.5 hours
Total crew time: 13 hours
Activities: Monitoring
Work done at P3

1. Conducted plant survivorship monitoring.

HA 29 Restoration Work Preformed
April 9th, 2013

Crew: Shawn Wagoner, Scott Salembier
Time on site: 0.5 hours
Total crew time: 1 hour
Activities: Photo Points
Work done at all polygons

1. Updated all photo points.

HA 29 Restoration Work Preformed
October 2nd, 2013

Crew: Shawn Wagoner, Scott Salembier, Philip Reyes, Jeremey Ashe
Time on site: 0.5 hours
Total crew time: 1 hour
Activities: Erosion Control
Work done at P3

1. Replaced the top wattle.

HA 29 Restoration Work Preformed
October 3rd, 2013

Crew: Scott Salembier, Philip Reyes
Time on site: 5 hours
Total crew time: 10 hours
Activities: Monitoring
Work done at P3

1. Conducted plant survivorship monitoring.

HA 29 Restoration Work Performed
November 7th, 2013

Crew: Scott Salembier, Shawn Wagoner
Time on site: 1 hour
Total crew time: 3 hours
Activities: Photo points
Work Performed at all polygons

1. Updated photo points.

HA 33

HA 33
Site Conditions and
Previous Work Performed

Initial Site Condition (December, 2011)

- There is one polygon for HA 33: P1 (Figure 27).
- P1 is divided into two sub polygons: P1A and P1B (Figure 27).
- P1A (60 ft^2) is set aside for Monterey spine flower (CHPUP) (Figure 27).
- Total area for polygon is 529 ft^2.
- Straw was not crimped at this site.
- Ice plant and Pampas grass seedlings are found within the polygon.
- Poor natural recruitment was observed.
- Surrounding habit is of poor quality.

Updated Site Condition (January, 2014)

- 100% seed cast on all polygons.

Restoration work performed as of February 2014

1. Update photo points
2. Monitoring HMP polygons.

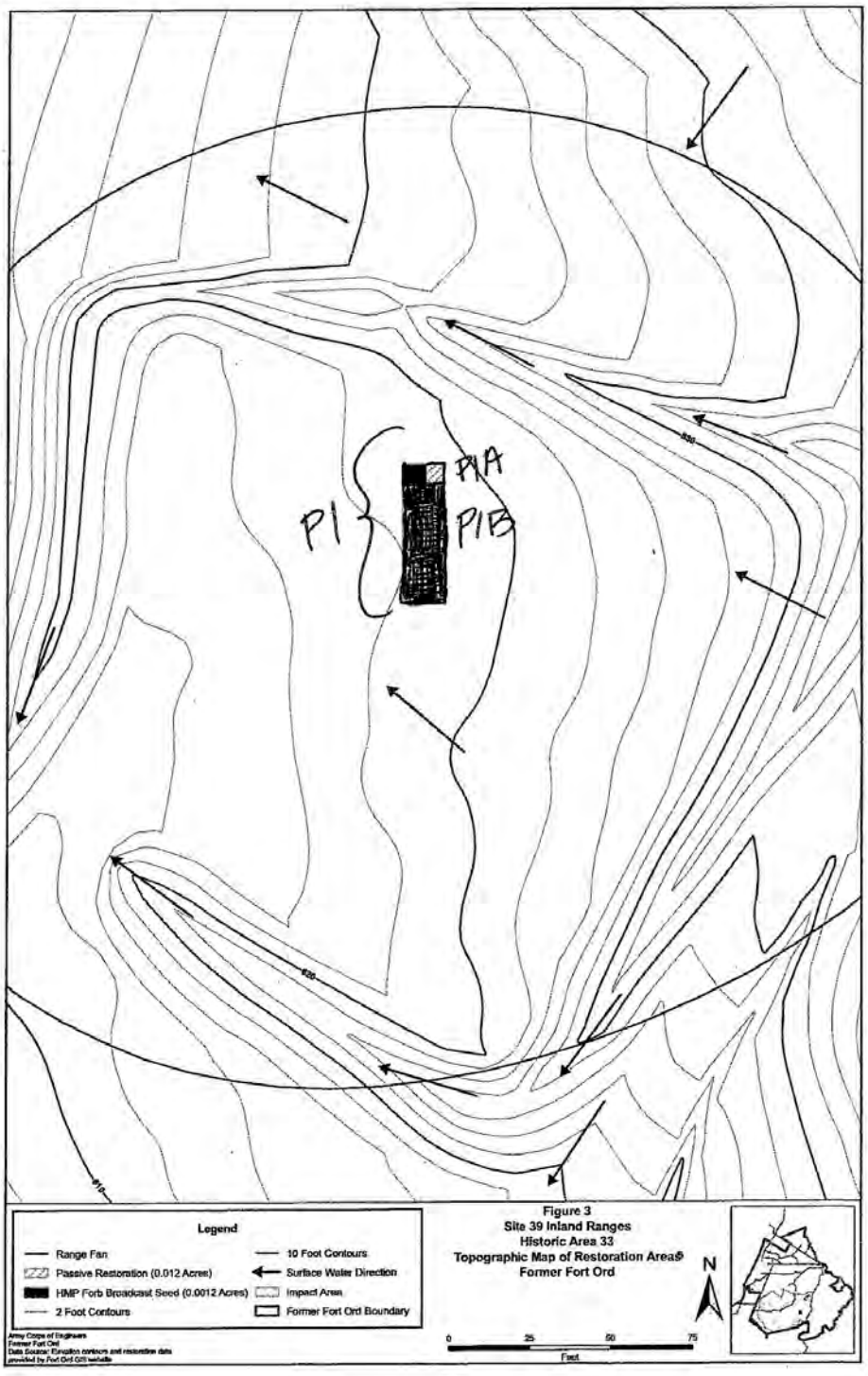


Figure 27. HA 33 restoration polygons.

HA 33 Restoration Work Performed
April 9th, 2013

Crew: Scott Salembier, Shawn Wagoner
Time on site: 0.25 hour
Total crew time: 0.5 hour
Activities: Photo points
Work Performed at all polygons

1. Updated photo points.

HA 33 Restoration Work Performed
June 26th, 2013

Crew: Scott Salembier, Phillip Reyes
Time on site: 0.25 hour
Total crew time: 0.5 hour
Activities: Monitoring
Work Performed at all polygons

1. Monterey Spineflower density surveys.

HA 33 Restoration Work Performed
November 7th, 2013

Crew: Scott Salembier, Shawn Wagoner
Time on site: 0.25 hour
Total crew time: 0.5 hour
Activities: Photo points
Work Performed at all polygons

1. Updated photo points.

HA 34

HA 34
Site Conditions and
Previous Work Performed

Initial Site Condition (December, 2012)

- HA 34 consists of one large continuous area with no areas set aside for HMP forb broadcast (Figure 28).
- HA 34 is approximately 9.5 acres.
- The immediate area surrounding the site consists of high quality habitat; manzanita/chamise chaparral and soft sage scrub are the dominant vegetation types. There is some oak woodland/oak savanna habitat at the base and southeastern portion of the site.
- The site has been straw crimped with barley.
- The presence of invasive species is relatively minor; there is some ice plant in the middle of the site, but no pampas grass, yet. Diligence will be taken to avoid invasive species impacts.
- Very little natural recruitment observed at the site.
- The site has serious erosion potential and has already experienced a couple of large events.
- Major grading and soil removal was done to combat erosion.

Updated Site Condition (January, 2014)

- Received many erosion control repairs and hydromulch application with native seed mix provided by Burleson (Figure 29).

Restoration work performed as of February 2014

1. Conducted presence/absence visual survey.
2. Supplied ~ 5 acres of native seed mix and barley (Table 7) to ITSI/Gilbane/Perma Green for hydromulch application.

Figure 28. HA 34 restoration polygon.

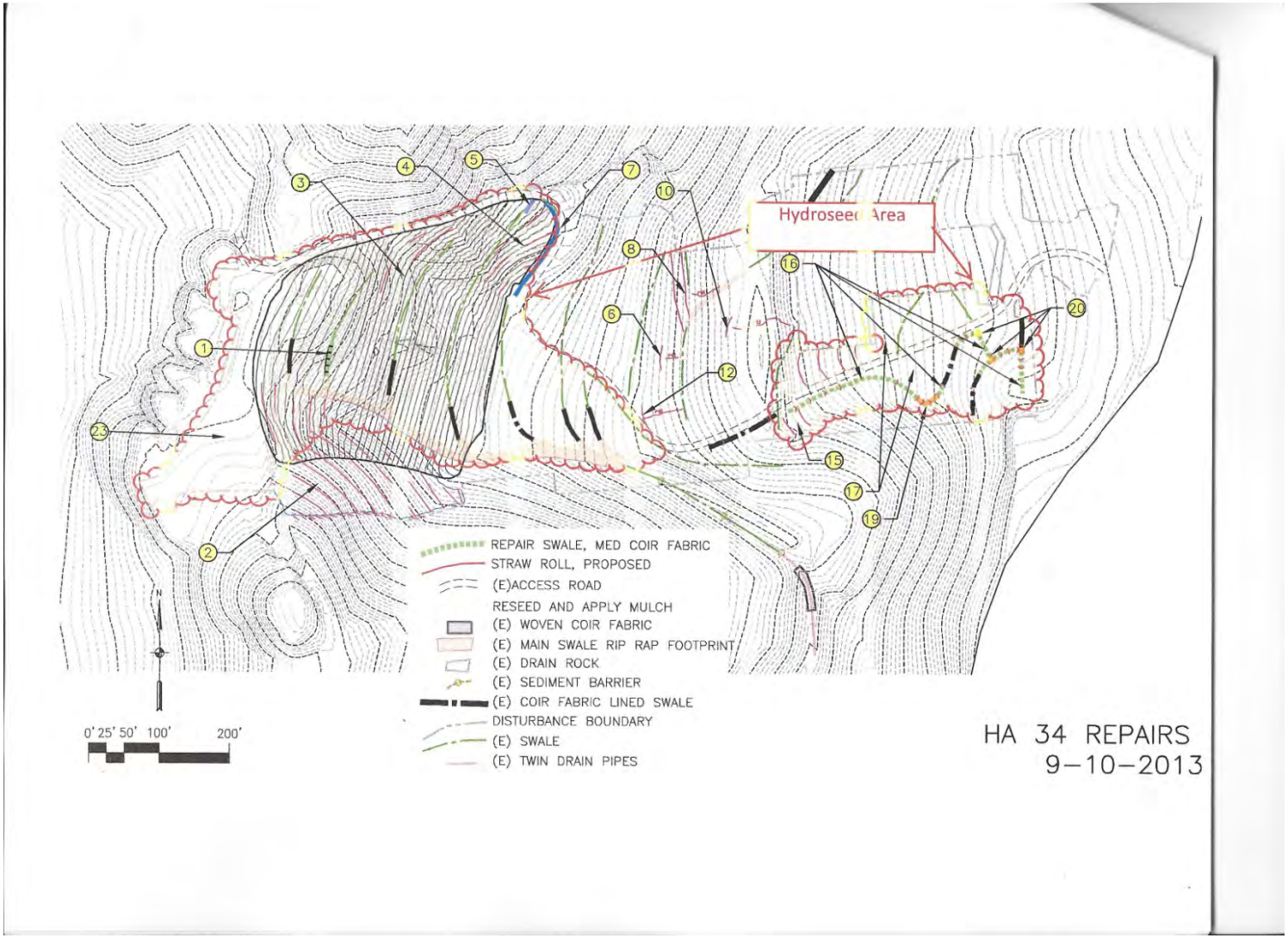


Figure 29. HA 34 hydroseeding areas.

		HA34		
		Restoration Broadcast		
		Acres to broadcast		5
Scientific Name	**Common Name**	**lbs/ acre**	**lbs**	**grams**
Artemisia californica	California sagebrush	-	4.6	2087.1
Baccharis pilularis	Coyote bush	-	1.35	612.5
Ceanothus cuneatus var. rigidus	Monterey ceanothus	-	3.3	1497.3
Elymus glaucus	Blue wildrye	10.0	46	20871.1
Hordeum sp.	Sterile barley	35.0	245	111161.5
Horkelia cuneata	Wedge-leaved horkelia	-	4.6	2087.1
Salvia mellifera	Black sage	-	0.6	272.2
			lbs	**grams**
		Total	305.45	138589

Purchased Seed

Table 7. HA 34 seeding table.

HA 34 Restoration Work Performed
March 11th, 2013

Crew: Thor Anderson, Scott Salembier, Shawn Wagoner, Philip Reyes
Time on site: 1.5 hours
Total crew time: 6 hours
Activities: Monitoring
Work Performed at all polygons

1. Conducted presence/absence visual survey.

HA 34 Restoration Work Performed
January 27th, 2014

Crew: Scott Salembier
Time on site: 8.5 hours
Total crew time: 8.5 hours
Activities: Passive Restoration
Work Performed at all polygons

1. Assist hydroseeder in spreading native seed mix.


Figures 30 & 31. Hydroseeding at HA 34.

HA 34 Restoration Work Performed
January 29th, 2014

Crew: Scott Salembier
Time on site: 4 hours
Total crew time: 4 hours
Activities: Passive Restoration
Work Performed at all polygons

1. Assist hydroseeder in spreading native seed mix.

HA 36

HA 36
Site Conditions and
Previous Work Performed

Initial Site Condition (December, 2011)

- HA 36 consists of one polygon with no areas set aside for HMP forb broadcast (Figure 32).
- HA 36 is approximately 0.39 acres.
- Isolated pampas grass plants are present around the site.
- The southern edge of the site has serious erosion issues.
- The immediate area around the site is low quality, recently mowed chaparral.
- The polygon has straw crimped.
- The site is covered in bulldozer tracks and the soil is compacted.
- Very little natural recruitment observed at the site.

Updated Site Condition (January, 2014)

- 100% seed cast on all polygons.

Restoration work performed as of February 2014

1. Updated photo points.

Figure 32. HA 36 restoration polygon.

HA 36 Restoration Work Performed
April 9th, 2013

Crew: Shawn, Wagoner, Scott Salembier
Time on site: 0.25 hours
Total crew time: 0.5 hours
Activities: Photo points
Work Performed at all polygons

1. Updated photo points.

HA 36 Restoration Work Performed
November 7th, 2013

Crew: Shawn Wagoner, Scott Salembier
Time on site: 0.25 hours
Total crew time: 0.5 hours
Activities: Photo points
Work Performed at all polygons

1. Updated photo points.

HA 37

HA 37
Site Conditions and
Previous Work Performed

Initial Site Condition (December, 2013)

- HA 37 consists of one large continuous polygon with no areas set aside for HMP forb broadcast and is approximately 11.2 acres in size (Figure 33).
- HA 37 will receive Passive Restoration, Active Restoration, and Erosion Control measures (Figure 33).
- The immediate area around the site varies from poor to marginal habitat.
- There is a vernal pool to the NE which is separated from the site by a berm.

Updated Site Condition (January, 2014)

- Erosion Control measures completed.
- Surplus seed, amounting to ~ 45% of the total needed, was cast throughout the site (Figure 33, Table 8)
- No planting has occurred yet due to the lack of rain.

Restoration work performed as of February 2014

1. ~ 45% seed cast throughout the site.

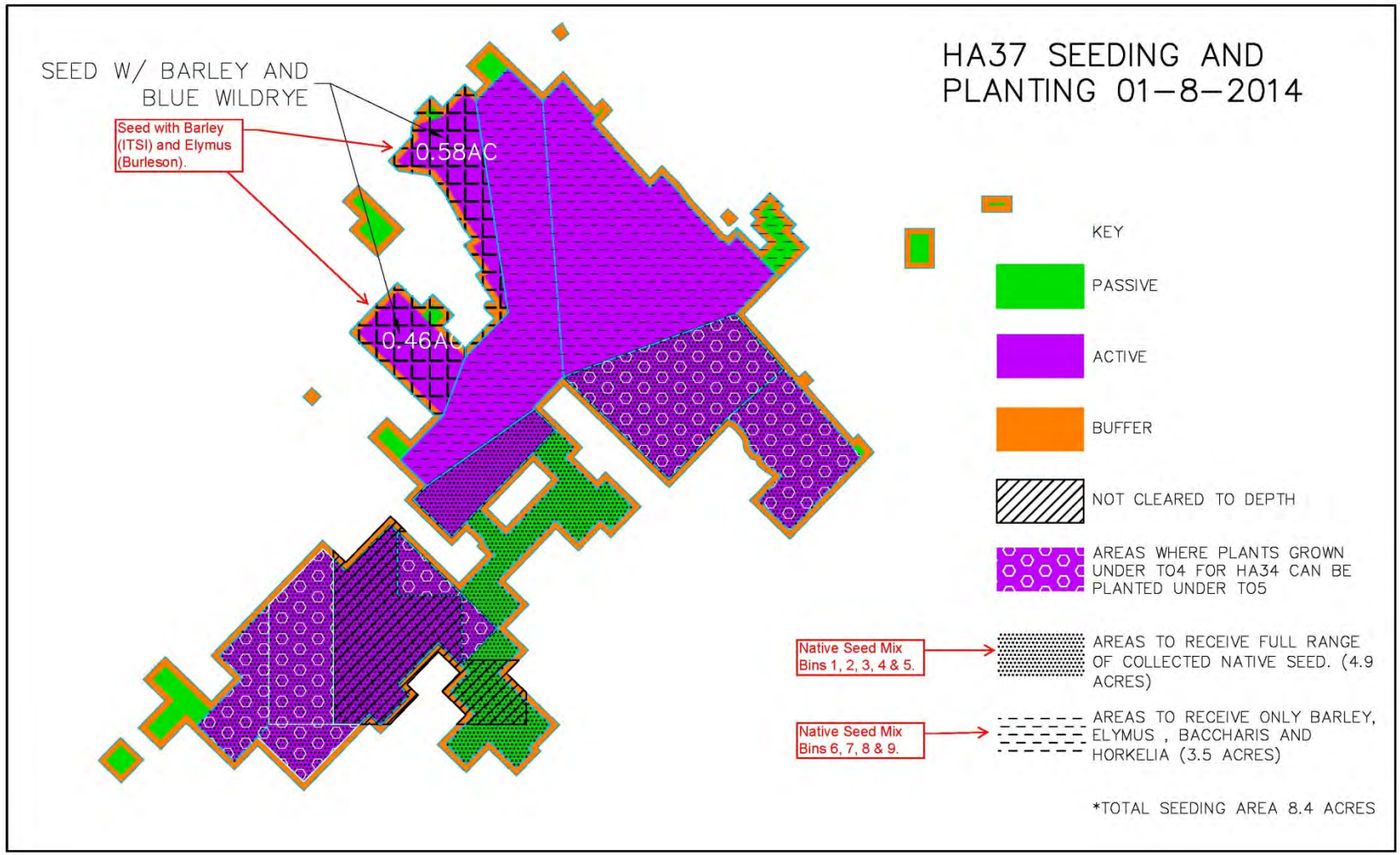


Figure 33. HA 37 restoration activities.

		HA37		
		Restoration Broadcast		
		Acres broadcast		8.4
Scientific Name	**Common Name**	**lbs/acre**	**lbs**	**grams**
Achillea millefolium	White Yarrow	-	4.80	2177.9
Adenostoma fasciculatum	Chamise	-	3.3	1497.3
Baccharis pilularis	Coyote bush	-	1.40	635.2
Elymus glaucus	Blue wildrye	-	50.00	22686.0
Eriophyllum confertiflorum	Golden yarrow	-	5.00	2268.6
Ericameria ericoides	Mock heather	-	4.20	1905.6
Helianthemum scoparium	Rushrose	-	5.20	2359.3
Horkelia cuneata	Wedge-leaved horkelia	-	16.1	7304.9
Lotus scoparius	Deerweed	-	8.70	3947.4
Mimulus aurantiacus	Sticky monkey flower	-	0.10	45.4
Salvia mellifera	Black sage	-	7.20	3266.8
			lbs	**grams**
		Total	106.0	48094.4

Purchased seed

Table 8. HA 37 seed broadcast amounts.

HA 37 Restoration Work Performed
January 9th, 2014

Crew: Thor Anderson, Shawn Wagoner, Scott Salembier, Philip Reyes
Time on site: 5 hours
Total crew time: 20 hours
Activities: Passive Restoration
Work Performed at site

1. Broadcast seeded Elymus and Barley on about 1.5 acres near the Northern portion of the site.
2. ITSI/Gilbane water tank irrigated seeded area.

Figure 34. HA 37 seeding.

Figure 35. HA 37 watering.

HA 37 Restoration Work Performed
January 13th, 2014

Crew: Thor Anderson, Shawn Wagoner, Scott Salembier, Philip Reyes
Time on site: 2 hours
Total crew time: 8 hours
Activities: Passive Restoration
Work Performed at all polygons

1. Broadcast seeded 3 acres near the western portion of the site.
2. ITSI/Gilbane water tank irrigated seeded area.

HA 37 Restoration Work Performed
January 14th, 2014

Crew: Shawn Wagoner, Scott Salembier
Time on site: 2 hours
Total crew time: 4 hours
Activities: Passive Restoration
Work Performed at all polygons

1. Broadcast seeded 4 acres near the Southern and central portion of the site.
2. ITSI/Gilbane water tank irrigated seeded area.

HA 37 Restoration Work Performed
January 15th, 2014

Crew: Shawn Wagoner, Scott Salembier, Philip Reyes
Time on site: 2 hours
Total crew time: 6 hours
Activities: Passive Restoration
Work Performed at all polygons

1. Broadcast seeded 2 acres near the Eastern portion of the site.
2. ITSI/Gilbane water tank irrigated seeded area.

HA 38

HA 38
Site Conditions and
Previous Work Performed

Initial Site Condition (December, 2012)

- HA 38 is a small remediation site in the northern portion of the MRA with 4 polygons (Figure 36).
- The 3 small polygons will receive Passive Restoration and the 1 large polygon will receive both Active and Passive Restoration (Figure 36).
- HA 38 is about 1.42 acres in size.
- The surrounding habitat is of marginal to good quality.

Updated Site Condition (January, 2014)

- ~20% seed (0.2 acres) has been cast on the Passive Restoration areas (Figure 36)

Restoration work performed as of February 2014

1. Cast ~20% seed on Passive Restoration areas.

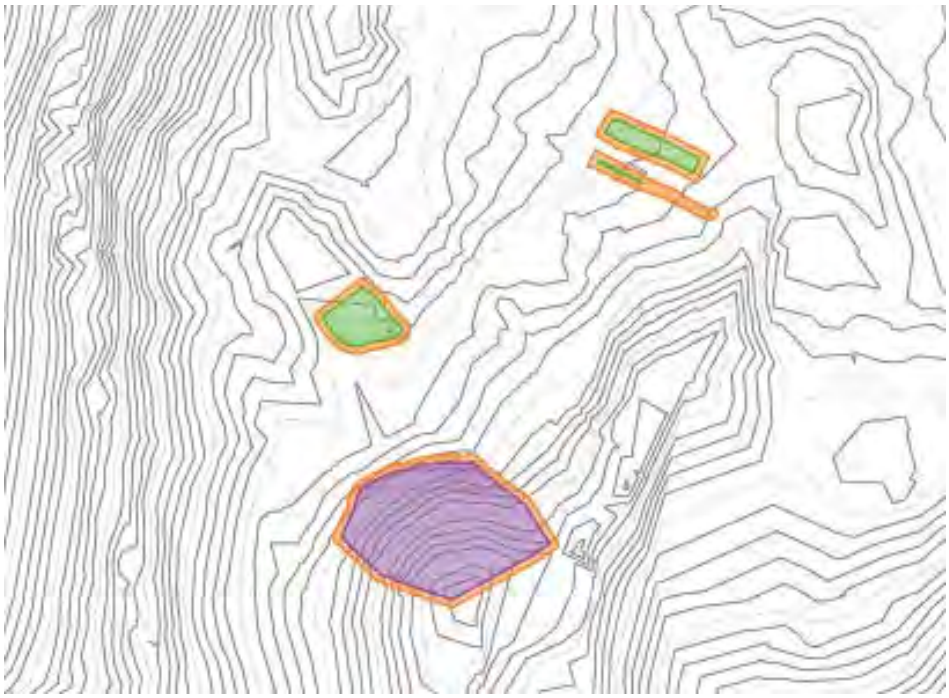


Figure 36. HA **38 restoration polygons. Green = Passive Restoration & Purple = Active Restoration.**

		HA38		
		Restoration Broadcast		
		Acres broadcast		0.2
Scientific Name	**Common Name**	**lbs/ acre**	**lbs**	**grams**
Achillea millefolium	White Yarrow	1.0	0.20	90.7
Baccharis pilularis	Coyote bush	0.2	0.03	13.6
Ceanothus cuneatus var. rigidus	Monterey ceanothus	-	-	-
Elymus glaucus	Blue wildrye	3.0	0.60	272.2
Eriophyllum confertiflorum	Golden yarrow	1.3	0.25	113.4
Helianthemum scoparium	Rushrose	0.8	0.15	68.1
Hordeum sp.	Sterile barley	10.0	2.00	907.4
Horkelia cuneata	Wedge-leaved horkelia	2.0	0.40	181.5
Lotus scoparius	Deerweed	2.0	0.40	181.5
Lupinus albifrons	Silverbush lupine	0.8	0.15	68.1
Mimulus aurantiacus	Sticky monkey flower	0.9	0.18	81.7
Salvia mellifera	Black sage	2.0	0.40	181.5
			lbs	**grams**
		Total	4.8	2159.7

Purchased Seed

Table 9. HA 38 seed broadcast targets.

HA 38 Restoration Work Performed
October 23rd, 2013

Crew: Thor Anderson, Shawn Wagoner
Time on site: 2 hours
Total crew time: 4 hours
Activities: Passive Restoration
Work Performed at passive polygons

1. Broadcast 100% seed.

HA 39/40

HA 39/40
Site Conditions and
Previous Work Performed

Initial Site Condition (December, 2011)

- HA39/40 has four areas, D1-D4, with six polygons total, P1-P6 (Figure 37).
- D1 area is characterized by grassland habitat and contains two polygons: P1 and P2 (Figure 37).
- D2 area is characterized by a combination of grassland and wet meadow habitat, and contains one polygon: P3 (Figure 37).
- D3 area is characterized by wet meadow habitat and contains one polygon: P4 (Figure 37).
- D4 area is characterized by a combination of coastal scrub and grassland habitat which includes the active restoration area. D4 has two polygons: P5A/B and P6 (Figure 37).
- Total area for all polygons is 107,114 ft^2.
- All polygons have been crimped with straw.
- P2 will be divided into two sections: Northern and Southern. The Southern section will receive 50% of the seed target on year one, while the Northern section will receive no seed. This will be done to compare seeded vs. unseeded plant diversity the following year.
- In P5, sections will be marked off to accommodate space for HMP forbs. P5B will be for active planting and non-HMP seed broadcast. P5A and P5C will be designated for Monterey Spineflower broadcast. P6 will be designated for Seaside birds-beak broadcast.
- P5B has moderate erosion issues with the potential for additional moderate to major erosion issues.
- Mild threat of invasive species.
- Natural recruitment was good in most polygons, especially around the edges.
- Surrounding habitat is moderate to high quality.

Updated Site Condition (January, 2014)

- 100% seed cast on all polygons.
- ~19 g of Sand gilia was collected (target 18 g) this year, but only 9.8 g was used to broadcast; the rest was kept to propagate plants for out planting and seed harvest.
- HMP polygons for Sand gilia (~ 9.8 g over 2,800 ft^2) were formed and cast (Figures 37).
- Planting targets met for Carex, DISP, LUAL, LUAR and LUNA (Table 10).

Restoration work performed as of February 2014

1. Updated photo points
2. Installed Carex, DISP, ESCA, LUAL, LUAR and LUNA.
3. Cast remaining TRWI target.
4. Cast Sand gila seed in P2 and P5.
5. Monitored CHPUP, CORIL and GITEA polygons.

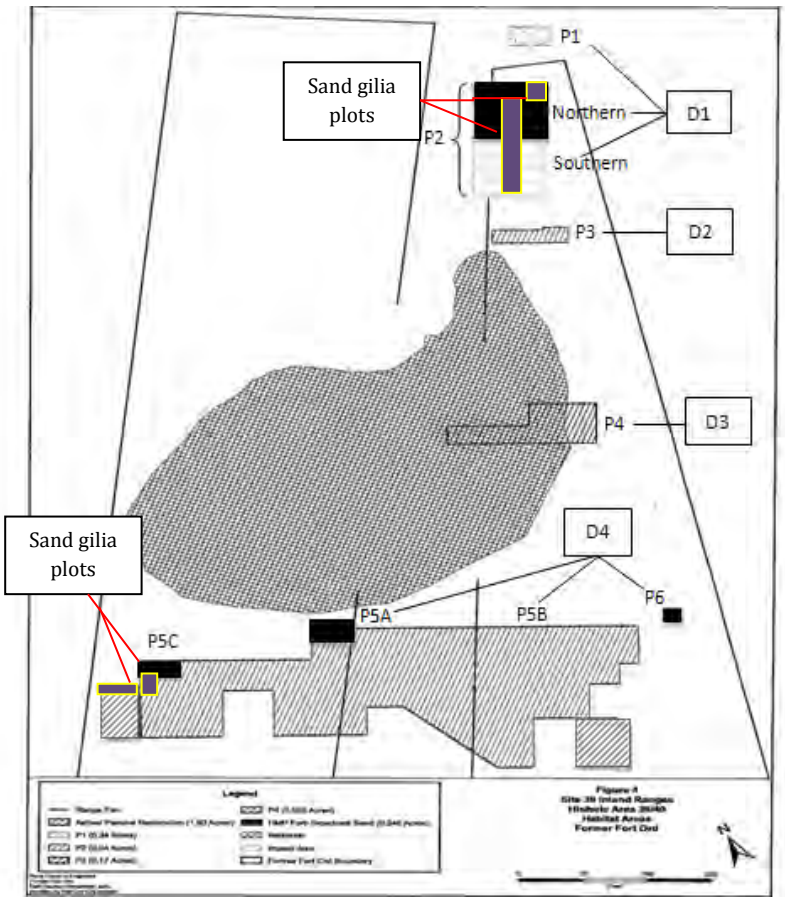


Figure 37. HA39/40 map with Sand gilia plot locations.

HA 39/40 Planting Inventory					
Species	**Planting Target**	**Total Planted**	**Need to Plant**	**Container Type**	**NOTES**
Carex sp. (Sedge)	-	623	0	**1 Gal**	**Target hit.**
Distichlis spicata (Saltgrass)	-	240	0	**D-Pots**	**Target hit.**
Eschscholzia californica (California poppy)	250	260	0	**D-pots**	**Target will be hit 13/14' season.**
Lupinus chamissonis (Silver bush lupine)	75	75	0	**Cones**	**Target hit.**
Lupinus nanus (Sky lupine)	150	150	0	**Rose Pots**	**Target hit.**
Total	475	1348	0		

Table 10. HA 39/40 planting inventory for Task Order 4.

HA 39/40 Restoration Work Performed February 5th, 2013

Crew: Scott Salembier, Shawn Wagoner, Phillip Reyes
Time on site: 4.5 hours
Total crew time: 13.5 hours
Activities: Active Restoration
Work Performed at P3, P4, P5B

1. Planted Carex spp, ESCA, LUAL, and LUNA – 91 plants total.

HA 39/40 Restoration Work Performed February 25th, 2013

Crew: Scott Salembier, Shawn Wagoner, Phillip Reyes
Time on site: 3 hours
Total crew time: 9 hours
Activities: Active Restoration
Work Performed at P5B

1. Planted 93 ESCA.

HA 39/40 Restoration Work Performed February 26th, 2013

Crew: Scott Salembier, Shawn Wagoner, Phillip Reyes
Time on site: 0.5 hours
Total crew time: 1.5 hours
Activities: Active Restoration
Work Performed at P5B

1. Planted 20 LUNA.

HA 39/40 Restoration Work Performed March 4th, 2013

Crew: Scott Salembier, Shawn Wagoner, Phillip Reyes
Time on site: 2.5 hours
Total crew time: 7.5 hours
Activities: Active Restoration
Work Performed at P5B

1. Planted LUNA and LUA. 185 plants in total.

HA 39/40 Restoration Work Performed
March 12th, 2013

Crew: Scott Salembier, Shawn Wagoner, Phillip Reyes
Time on site: 3 hours
Total crew time: 9 hours
Activities: Active Restoration
Work Performed at P3, P4 and P5B

1. Planted Carex and DISP.

HA 39/40 Restoration Work Performed
April 9th, 2013

Crew: Shawn Wagoner, Scott Salembier
Time on site: 1.25 hours
Total crew time: 2.5 hours
Activities: Active Restoration
Work Performed at P3, P4 and P5B

1. Updating all photo points.
2. Checked Sand gilia plot.

HA 39/40 Restoration Work Performed
April 29th, 2013

Crew: Shawn Wagoner, Phillip Reyes
Time on site: 1 hour
Total crew time: 2 hours
Activities: Monitoring
Work Performed at P3, P4 and P5B

1. Monitoring our Sand gilia plot to measure density.


Figures 38 & 39. HA 39/40 Sand gilia density surveys.

HA 39/40 Restoration Work Performed
June 26th, 2013

Crew: Scott Salembier, Phillip Reyes
Time on site: 1.5 hours
Total crew time: 3 hours
Activities: Monitoring
Work Performed at P5

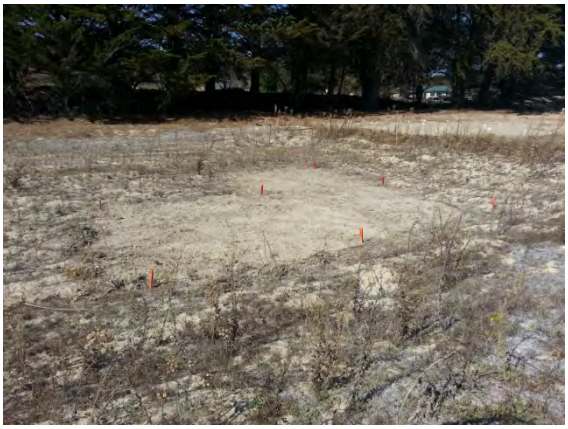
1. Monterey Spineflower and Seaside bird's-beak density surveys.


Figures 40 & 41. HA 39/40 Sand gilia density surveys.

HA 39/40 Restoration Work Performed
October 21st, 2013

Crew: Thor Anderson, Shawn Wagoner
Time on site: 3 hours
Total crew time: 6 hours
Activities: Passive Restoration
Work Performed at P2 and P5B

1. Cast 9.8 g of Sand gilia seed over 2800 ft^2 area.

Figures 42 & 43. HA 39/40 Sand gilia plot creation.

HA 39/40 Restoration Work Performed
November 7th, 2013

Crew: Scott Salembier, Shawn Wagoner
Time on site: 1.5 hours
Total crew time: 3 hours
Activities: Photo points
Work Performed at all polygons

1. Updated photo points.

HA 39/40 Restoration Work Performed
January 16th, 2014

Crew: Scott Salembier, Shawn Wagoner, Philip Reyes
Time on site: 1 hour
Total crew time: 3 hours
Activities: Passive Restoration
Work Performed at P5

1. Broadcast TRWI remaining target.

HA 39/40 Restoration Work Performed
February 3rd, 2014

Crew: Scott Salembier, Philip Reyes
Time on site: 2 hour
Total crew time: 4 hours
Activities: Active Restoration
Work Performed at P5

1. Installed 76 ESCA.

HA 43

HA 43
Site Conditions and
Previous Work Performed

Initial Site Condition (December, 2011)

- There are four polygons for HA-43: P1, P2, P3, and P4 (Figure 44).
- P1 will be divided into two areas to accommodate space for HMP forbs.
- P2 or P3 will be divided into two areas to accommodate space for HMP forbs
- P1A will be reserved for CORIL and will be placed in the north side of the polygon.
- P2A or P3A will be reserved for CHPUP and GITEA.
- The four polygons add up to 3,687.2 ft^2.
- Ice plant is minor issue on all polygons.
- All polygons have no erosion issues.
- All polygons are surrounded by high quality habitat.
- All polygons have straw that has been crimped.
- A modest amount of natural recruitment was observed in P2, P3, and P4.
- P1 had a strong natural recruitment for early colonizer species (HOCU, LOSC & HESC).

Updated Site Condition (January, 2014)

- All polygons have been cast with 100% seed, including HMP forbs.

Restoration work performed as of February 2014

1. Update photo points
2. Monitoring HMP polygons.

Figure 44. HA 43 restoration polygons.

HA 43 Restoration Work Performed April 9th, 2013

Crew: Shawn Wagoner and Scott Salembier
Time on site: 0.25 hour
Total crew time: 0.5 hour
Activities: Photo Points
Restoration work performed at HA 43

1. Updating all photo points.

HA 43 Restoration Work Performed April 29th, 2013

Crew: Shawn Wagoner and Phillip Reyes
Time on site: 0.5 hour
Total crew time: 1 hour
Activities: Monitoring
Restoration work performed at P3

1. Monitored our Sand gilia Plot.
2. Installed high visibility wood stakes around perimeter of Sand gilia plot.

Figures 45 & 46. HA 43 Sand gilia density surveys.

HA 43 Restoration Work Performed
June 26th, 2013

Crew: Scott Salembier, Phillip Reyes
Time on site: 0.25 hours
Total crew time: 0.5 hours
Activities: Monitoring
Work Performed at all polygons

1. Monterey spineflower and Seaside bird's-beak density survey.

HA 43 Restoration Work Performed
November 7th, 2013

Crew: Scott Salembier, Shawn Wagoner
Time on site: 0.25 hours
Total crew time: 0.5 hours
Activities: Photo points
Work Performed at all polygons

1. Updated photo points.

HA 43 Restoration Work Performed
April 9th, 2013

Crew: Shawn Wagoner and Scott Salembier

Time on site: 0.25 hour

Total crew time: 0.5 hour

Activities: Photo Points

Restoration work performed at HA 43

1. Updating all photo points.

HA 43 Restoration Work Performed
April 29th, 2013

Crew: Shawn Wagoner and Phillip Reyes

Time on site: 0.5 hour

Total crew time: 1 hour

Activities: Monitoring

Restoration work performed at P3

1. Monitored our Sand gilia Plot.
2. Installed high vis wood stakes around perimeter of Sand gilia plot.

Figures 45 & 46. HA 43 Sand gilia density surveys.

HA 43 Restoration Work Performed
June 26th, 2013

Crew: Scott Salembier, Phillip Reyes

Time on site: 0.25 hours

Total crew time: 0.5 hours

Activities: Monitoring

Work Performed at all polygons

1. Monterey spineflower and Seaside bird's-beak density survey.

HA 43 Restoration Work Performed
November 7th, 2013

Crew: Scott Salembier, Shawn Wagoner
Time on site: 0.25 hours
Total crew time: 0.5 hours
Activities: Photo points
Work Performed at all polygons

1. Updated photo points.

Appendix C- Monitoring Results

Vegetation Abbreviations for Fort Ord SSRP Species

Species	Symbol
Achillea millefolium	ACMI
Adenostoma fasciculatum	ADFA
*Arctostaphylos hookerii**	ARHO*
*Arctostaphylos montereyensis**	ARMO*
*Arctostaphylos pumila**	ARPU*
Arctostaphylos tomentosa	ARTO
Artemisia californica	ARCA
Artemisia douglasiana	ARDO
Baccharis pilularis	BAPI
Ceanothus cuneatus var. *rigidus**	CERI*
Chorizanthe pungens var. *pungens**	CHPUP*
Cordylanthus rigidus ssp. *Littoralis**	CORIL*
Croton californicus	CRCA
Distichlis spicata	DISP
Elymus glaucus **+**	ELGL **+**
Eriophyllum confertiflorum	ERCO
Ericameria ericoides	ERER
*Ericameria fasciculata**	ERFA*
Eschscholzia californica	ESCA
Gilia tenuiflora ssp. *Arenaria**	GITEA*
Helianthemum scoparium	HESC
Horkelia cuneata	HOCU
Hordeum sp.	HODU
Juncus patens	JUPA
Lotus scoparius	LOSC
Lupinus albifrons	LUAL
Lupinus arboreus	LUAR
Lupinus nanus	LUNA
Mimulus aurantiacus	MIAU
Nassella cernua	NACE
Nassella pulchara	NAPU
Rhamnus californica	RHCA
Salvia mellifera	SAME
Solidago californica	SOCA
Trifolium wildenovii	TRWI

* HMP Species

+Purchased seed

SSRP Visual Observation Survey

Site Name: HA 34	**Dates: March 3rd, 2013**
Polygon #: 1	**Survey Team: TA, SW, SS, PR**
Comments: This was a presence/absence survey; % cover was not estimated due to the large size of the site.	

Species	% Cover Estimate	Native	Non-native	HMP	Notes
ACMI		x			From Burleson seed
ANAR		x			Scarlet pimpernel
ARCA		x			From Burleson seed
ARTO		x			1 seedling, source unknown
BAPI		x			From Burleson seed
CAED			x		Iceplant
CLPE		x			Miner's lettuce
CRCO		x			Pygmyweed
ELGL		x			From Burleson seed
Erodium sp.			x		Filaree, storksbill
Gnaphalium sp.		x			Cudweed
HEGR		x			Telegraphweed
HOCU		x			Horkelia
Hordeum sp.			x		From Burleson seed - ground cover
HYGL			x		Smooth cat's ear
Lessingia sp.		x			Daisy
LOSC		x			Deerweed
LUAR		x			From Burleson seed
LUBI		x			Lindley's annual lupine
MAFA		x			Wild cucumber
MIAU		x			From Burleson seed
NAHA		x			Naverattea
NAPU		x			Purple needle grass
PLCO			x		Cut-leaved plantain
PLLA			x		Buckhorn plantain
PLMA			x		Common plantain
QUAG		x			Coast live oak
RUUR		x			California blackberry
SIMA			x		Milk Thistle
TODI		x			Poison Oak

HA 18 HMP Annual Density Survey					
Site Name: HA 18					**Surveyors: SS, PR**
Polygon #: 8, 9, 10, 11, 12, 14					**Time: 2 hours**
Comments: We counted every Monterey spineflower encountered.					
Species	**Area (ft^2)**	**# Individuals**	**# Individuals / 100 ft^2**	**Density Class**	**Notes**
Chorizanthe pungens var. pungens	5531	2522	46	Low	Conditions of individuals varied, found evidence of blooming, seeding, desiccation and herbivory.

HA 22 HMP Annual Density Survey					
Site Name: HA 22					**Surveyors: SS, PR**
Polygon #: P2A					**Time: 0.5 hours**
Comments: We counted every Monterey spineflower encountered.					
Species	**Area (ft^2)**	**# Individuals**	**# Individuals / 100 ft^2**	**Density Class**	**Notes**
Chorizanthe pungens var. pungens	132	127	96	Medium	Conditions of individuals varied, found evidence of blooming, seeding, desiccation and herbivory.

HA 33 HMP Annual Density Survey					
Site Name: HA 33					**Surveyors: SS, PR**
Polygon #: P1A					**Time: 0.25 hours**
Comments: We counted every Monterey spineflower encountered.					
Species	**Area (ft^2)**	**# Individuals**	**# Individuals / 100 ft^2**	**Density Class**	**Notes**
Chorizanthe pungens var. pungens	54	44	81	Medium	Conditions of individuals varied, found evidence of blooming, seeding, desiccation and herbivory.

HA 39/40 HMP Annuals Density Surveys

Site Name: HA 39/40		**Surveyors: SS, PR**
Polygon #: P5A		**Time: 1 hour**

Comments: We counted every Monterey spineflower encountered.

Species	Area (ft^2)	# Individuals	# Individuals / 100 ft^2	Density Class	Notes
Chorizanthe pungens var. pungens	2950	372	13	Low	Conditions of individuals varied, found evidence of blooming, seeding, desiccation and herbivory.

Site Name: HA 39/40		**Surveyors: SS, PR**
Polygon #: P6		**Time: 0.25 hours**

Comments: We counted every Seaside bird's beak encountered.

Species	Area (ft^2)	# Individuals	# Individuals / 100 ft^2	Density Class	Notes
Cordylanthus rigidus ssp. littoralis	240	13	5	Low	Conditions of individuals varied, found evidence of blooming, seeding, desiccation and herbivory.

Site Name: HA 39/40		**Surveyors: SW, PR**
Polygon #: P5C		**Time: 1 hour**

Comments: We counted every Sand gilia encountered.

Species	Area (ft^2)	# Individuals	# Individuals / 100 ft^2	Density Class	Notes
Gilia tenuiflora ssp. arenaria	600	533	88.8	Medium	Conditions of individuals varied, found evidence of blooming, seeding, desiccation and herbivory.

HA 43 HMP Annuals Density Surveys

Site Name: HA 43		**Surveyors: SS, PR**
Polygon #: P3A		**Time: 0.25 hours**
Comments: We counted every Monterey spineflower encountered		

Species	Area (ft^2)	# Individuals	# Individuals / 100 ft^2	Density Class	Notes
Chorizanthe pungens var. pungens	224	128	57	Low	Conditions of individuals varied, found evidence of blooming, seeding, desiccation and herbivory.

Site Name: HA 43		**Surveyors: SS, PR**
Polygon #: P1A		**Time: 0.25 hours**
Comments: We counted every Seaside bird's beak encountered.		

Species	Area (ft^2)	# Individuals	# Individuals / 100 ft^2	Density Class	Notes
Cordylanthus rigidus ssp. littoralis	114	101	89	Medium	Conditions of individuals varied, found evidence of blooming, seeding, desiccation and herbivory.

Site Name: HA 43		**Surveyors: SW, PR**
Polygon #: P3B		**Time: 0.5 hours**
Comments: We counted every Sand Gilia encountered.		

Species	Area (ft^2)	# Individuals	# Individuals / 100 ft^2	Density Class	Notes
Gilia tenuiflora ssp. arenaria	100	37	37	Low	Conditions of individuals varied, found evidence of blooming, seeding, desiccation and herbivory.

Appendix D- Photograph Log of Activities

Appendix D
Restoration of Site 39 Inland Ranges
Former Fort Ord
Photo Log of Activities
Annual Report 2013

Photo Log Section Guide	
Task	**Photo Section**
Plant Salvage	A
Plant Material Storage, Processing, and Propagation	B
Restoration Activities	C
Monitoring Activities	D
Erosion Control Activities	E

Photo Description	Photo
Plant Salvage Burleson seed crew collecting common yarrow, May 2013. **A-1**	
Plant Material Storage, Processing, and Propagation View of Burleson seed drying racks at CSUMB Watershed Institute's Greenhouse. Seed is stored here until it has dried and is ready to be cleaned and processed. **B-1**	

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Photo Description	Photo
Plant Material Storage, Processing, and Propagation Sun area was expanded to handle more plants and irrigation system was expanded to cover the growing sun area. **B-2**	
Plant Material Storage, Processing, and Propagation Shade area was expanded to handle more plants. **B-3**	

Appendix D
Restoration of Site 39 Inland Ranges
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Photo Description	Photo
Plant Material Storage, Processing, and Propagation Burleson Horticultural Technicians cleaning and processing common yarrow seed. **B-2**	
Plant Material Storage, Processing, and Propagation Burleson Horticultural Technicians preparing seed mix for broadcast. **B-3**	

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Photo Description	Photo
Plant Material Storage, Processing, and Propagation Seed bins with pre-mixed seed ready for broadcast. **B-4**	
Plant Material Storage, Processing, and Propagation View of freshly sown Hard-to-Grow (HTG) species. Species in photograph include chamise, shaggy-bark manzanita, Hooker's manzanita, and Toro manzanita. **B-5**	

Appendix D
Restoration of Site 39 Inland Ranges
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Photo Description	Photo
Restoration Activities Burleson Horticultural Technician conducting seed broadcast at HA 37 **C-1**	
Restoration Activities Burleson Horticultural Technicians and Staff Biologist irrigating freshly broadcast seed at HA 37. **C-2**	

Appendix D
Restoration of Site 39 Inland Ranges
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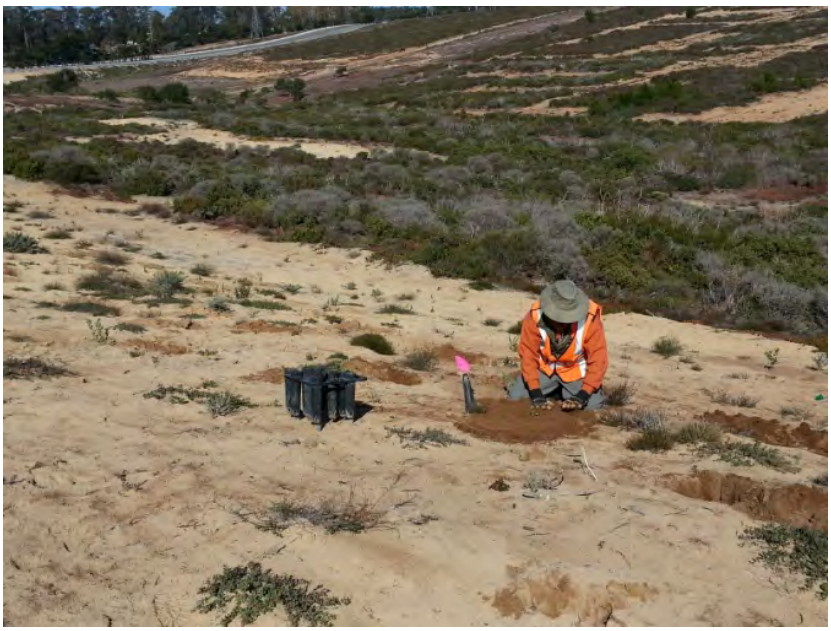
Photo Description	Photo
Restoration Activities Burleson Horticultural Technician installing plants at HA 19. **C-3**	
Restoration Activities View of upper portion of HA 34 following hydro-seeding activities. Burleson supplied the hydro-seeder with native seed used in the application at HA 34. Native seed should speed up the restoration process. **C-4**	

Appendix D
Restoration of Site 39 Inland Ranges
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Photo Description	Photo
Monitoring Activities Burleson Horticultural Technician conducting sand gilia density survey at HA 39/40. **D-1**	
Monitoring Activities Burleson Horticultural Technician conducting Monterey spineflower and Seaside's birds beak density surveys at HA 39/40. **D-2**	

Appendix D
Restoration of Site 39 Inland Ranges
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Photo Description	Photo
Monitoring Activities Close-up view of Monterey spineflower at HA 39/40 encountered during HMP annual surveys. **D-3**	
Monitoring Activities View of HMP annuals plot location at HA 43 prior to surveying. **D-4**	

Appendix D
Restoration of Site 39 Inland Ranges
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Photo Log of Activities
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Photo Description	Photo
Monitoring Activities Burleson Horticultural Technician installing boundary marker at HA 19 for future monitoring and to delineate site. **D-5**	
Erosion Control Activities Burleson Horticultural Technicians collapsing erosion gully at HA 28 using hand tools. Hand tools were used to keep site impacts at a minimum. **E-1**	

Appendix D
Restoration of Site 39 Inland Ranges
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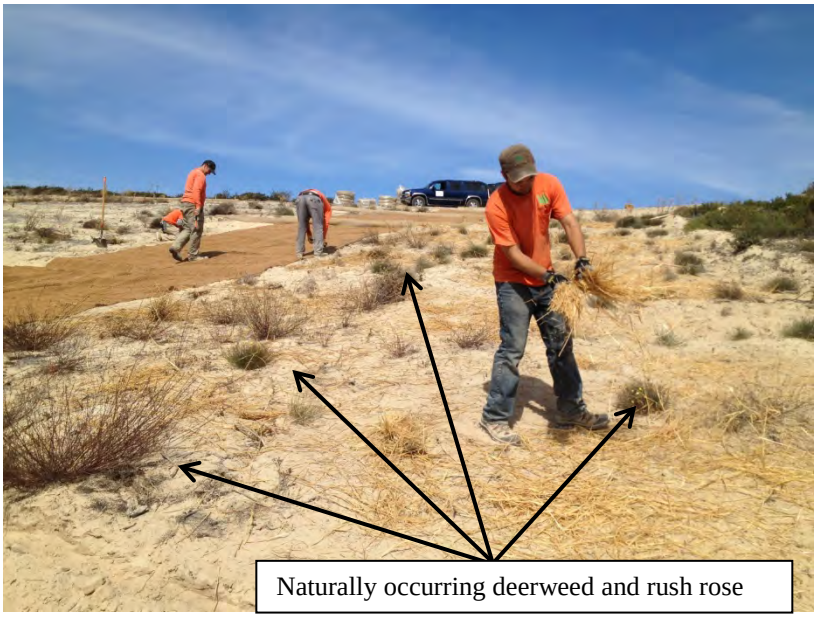
Photo Description	Photo
Erosion Control Activities Burleson Horticultural Technicians installing coir fabric and straw wattles at HA 28 for erosion control. **E-2**	
Erosion Control Activities Burleson Horticultural Technicians broadcast straw mulch after erosion control activities were completed. Naturally recruited plant species can be seen in foreground. **E-3**	

Appendix D
Restoration of Site 39 Inland Ranges
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Photo Description	Photo
Erosion Control Activities Overall view of HA 28 following erosion control activities. **E-4**