

**Annual Report
Task Order 3
Former Fort Ord Site 39
Habitat Restoration
2012
Contract No. W91238-10-D-0003**

**FORMER FORT ORD
Monterey County, California**

Prepared for



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Acronyms and Abbreviations

BLM	Bureau of Land Management
Burleson	Burleson Consulting, Inc.
CDFW	California Department of Fish and Wildlife
CSUMB	California State University Monterey Bay
DTSC	Department of Toxic Substances Control
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	California State University Monterey Bay Watershed Institute

Site 39 Habitat Restoration Annual Report Task Order 3

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) 3 from September 15, 2011 through January 31, 2013. Additionally, this report includes a summary of minor storm water related site repairs and restoration activities associated with TO 4 that were completed during the TO 3 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 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 Phase 1 sites (HAs 18, 19, 22, 23, 26, 27, 27A, 28, 29, 33, 34, 36, 37, 39/40, 43) (Burleson 2012) 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 3.

TO 3 involved plant material salvage, storage of plant materials collected under TO 2, propagation of collected materials, development of SSRPs for HA 38 and Austin Road Stockpile, passive and active restoration activities of HA 19 and Phase 1 sites (HAs 18, 22, 23, 27, 27A, 29, 33, 36, 39/40, and 43), and monitoring restoration sites to ensure vegetative establishment.

TO 3 originally included efforts to salvage, collect, and propagate sufficient plant for the following:

- 100% plant material collection of Habitat Management Plan (HMP) and non-HMP species for HA 19;
- 50% plant material collection for Phase 1 sites (HAs 18, 22, 23, 27, 27A, 29, 33, 36, 39/40, and 43);
- 50% passive restoration (seed broadcasting) of Phase 1 sites; and
- 100% active restoration (live plant installation) of non-HMP species for HAs 29 and 39/40.

Erosion problems at HA 34 required immediate revegetation in the fall of 2012 through the

winter. A modification was made to plant salvage activities under TO 3 to implement erosion controls at HA 34 that refocused efforts to salvage, collect, and propagate sufficient plant material for the following:

- 25% plant material collection of non-HMP species and 100% of HMP forbs for HA 19;
- 50% plant material collection for Phase 1 sites;
- 100% plant material collection for HA 34;
- 50% passive restoration of Phase 1 sites; and
- 100% active restoration of non-HMP species for HAs 29 and 39/40.

Restoration activities and minor storm water related site repairs conducted during the TO 3 time period that were part of TO 4 included the following:

- 100% passive restoration at HA 34;
- 50% passive restoration of Phase 1 sites; and
- Drainage and erosion repair at HAs 29 and 39/40.

Figure 1 shows the restoration status of sites 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 Phase 1 sites SSRPs (Burleson 2012) under TO 1 of this contract. 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 was 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 developed SSRPs for HA 38 and Austin Road Stockpile under TO 3 which encompass almost 3 acres. The SSRPs were prepared in accordance with requirements of the HRP and are consistent with the first SSRPs prepared under TO 1 and TO 2. The plans are dynamic and may change as site conditions change. 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 (seed/cuttings) that will be used in future restoration activities. Burleson Staff Biologist worked with the USACE to coordinate salvage and scouting activities with other Site 39 activities. In accordance with the protocol (Burleson 2010), crews collect HMP species within a 1-kilometer (km) radius centered on each HA. For common, non-HMP species, crews are collecting within a ten-mile radius of each HA.

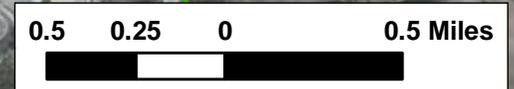
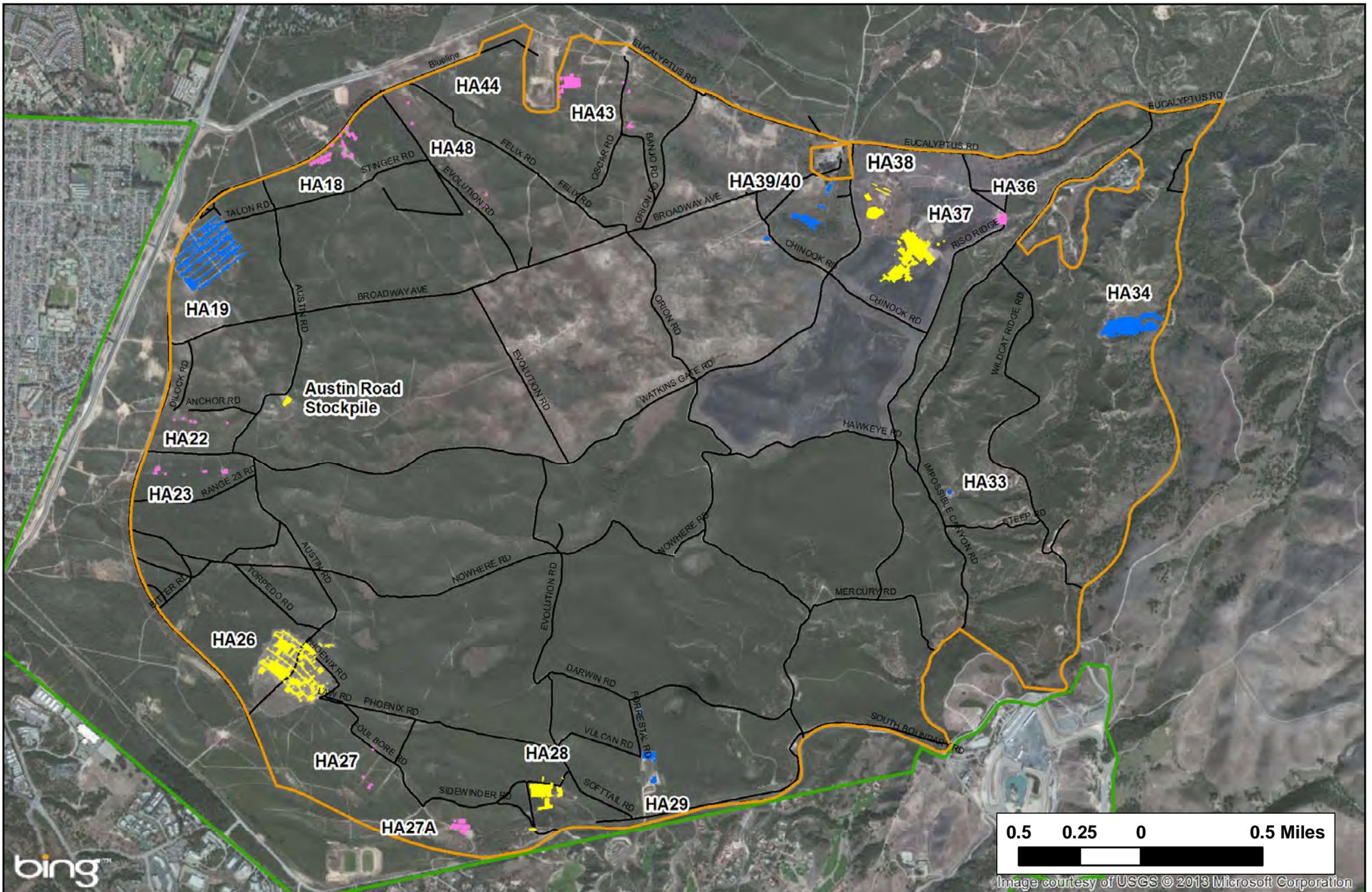


Image courtesy of USGS © 2013 Microsoft Corporation

Legend

- Roads
- Impact Area
- Former Ft Ord Boundary
- Restoration Progress
 - Monitoring
 - Restoration In Progress
 - No Work Done



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

Burluson Consulting, Inc.

Burleson completed seed collection for TO 3 by the end of October 2012. All common non-HMP species SSRP goals were met except for California poppy and tomcat clover. SSRP HMP species (Monterey ceanothus, Monterey spine-flower, Seaside's birds-beak, sand gilia, and Eastwood's golden fleece) target goals were not met at some HAs because sufficient plant material was not available within the 1-kilometer collection radius. Crews are waiting for these species to become viable and remaining quantities are expected to be collected during the summer of 2013. Additional propagation may be needed for HMP species whose targets are unattainable through collection constraints and availability. HMP and common, non-HMP species collection totals are shown in Tables A-1 and A-2 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 3 collection requirements.

2.2.1 Seed Purchase

Burleson established a seed growing contract to acquire seed from Hedgerow Farms. Burleson provided Hedgerow Farms with Fort Ord-specific *Elymus glaucus* (blue wild-rye) seed and they were contracted to grow 200 pounds of the blue wildrye seed. Hedgerow Farms was able to grow about 140 pounds of blue wild-rye seed in 2012. Lack of adequate precipitation during the 2011-2012 rainy season hindered seed production. Remaining quantities are expected to be provided by Hedgerow Farms for the 2013-2014 restoration season.

Burleson purchased approximately 34 pounds of Fort Ord-specific *Nassella pulchra* (purple needle grass) from Hedgerow Farms in the spring of 2012. This species was propagated through an existing contract between the Bureau of Land Management (BLM) and Hedgerow Farms.

Blue wild-rye and purple needle grass seed was applied during the winter 2012 restoration activities at the appropriate restoration sites. See Section 2.3 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 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 3 in Tables A-1 and A-2, respectively. Two common non-HMP

species, California poppy and tomcat clover, did not meet target goals due to lack of plant material being available during the collection season. Missed targets are expected to be reached during the following collection season.

Plant propagation was implemented at the Watershed Institute's greenhouse in accordance with the protocol (Burlison 2010) for a number of common species used in active restoration. Sufficient plants were propagated to complete active restoration at HA 19. Additionally, three plant species were successfully propagated for HA 39/40 that were not installed during the previous TO due to lack of inventory.

Table 1 shows the final plant inventory for species required for active restoration under TO 3 that will be installed under TO 4. Six additional Monterey ceanothus plants are still needed to complete TO 3 requirements. The remaining plants quantities are expected to be achieved through additional propagation of cuttings or through surplus inventory from the Watershed Institute (see below).

The Watershed Institute is expected to have surplus common plant species from BLM restoration activities available. Burlison will salvage these surplus plants for Site 39 restoration sites. The types and number of plant species has yet to be determined until the BLM restoration activities are complete (January–March, 2013). Additional species will still need to be collected and propagated. Final numbers of salvaged plants from the Watershed Institute's restoration activities will be included in a following quarterly report for TO 4.

Table 1: Final Watershed Plant Propagation Inventory for Task Order 3

Species	Species required at HA-19	Species required at HA-39/40 ¹	Current Inventory
<i>Achillea millefolium</i> (White Yarrow)	75		75
<i>Artemisia californica</i> (California sagebrush)	52		52
<i>Baccharis pilularis</i> (Coyote bush)	150		150
<i>Ceanothus cuneatus</i> var. <i>rigidus</i> (Monterey ceanothus)	50		44
<i>Elymus glaucus</i> (Blue wildrye, western ryegrass)	55		55
<i>Ericameria ericoides</i> (Mock heather)	50		50
<i>Ericameria fasciculata</i> (Eastwoods gold fleece)	50		50
<i>Eriophyllum confertiflorum</i> (Golden yarrow)	200		200
<i>Eschscholzia californica</i> (California poppy)		250	250

Table 1: Final Watershed Plant Propagation Inventory for Task Order 3 (Continued)

Species	Species required at HA-19	Species required at HA-39/40 ¹	Current Inventory
<i>Helianthemum scoparium</i> (Rush-rose)	250		250
<i>Horkelia cuneata</i> (Wedge-leaved horkelia)	250		250
<i>Lotus scoparius</i> (Deerweed)	250		250
<i>Lupinus chamissonis</i> (Silver bush lupine)		75	75
<i>Lupinus nanus</i> (Sky lupine, Douglas' annual lupine)		150	150
<i>Mimulus aurantiacus</i> (Sticky monkey flower)	250		250
<i>Nasella cernua</i> (Nodding Needlegrass)	200		200
<i>Salvia mellifera</i> (Black sage)	250		250

¹Species not planted at HA 39/40 previous restoration season due to lack of inventory.

Rana Creek propagated manzanita and chamise cuttings for active restoration at HA 19 for TO 3. Table 2 shows their final inventory. Some plants are green but do not show new growth, while others display obvious new shoots. Rooted cuttings and plants grown by seed are still in production and could take root over the next months. In addition, cuttings have been started at the Watershed Institute greenhouse to supplement species that have not successfully propagated with Rana Creek. Initial propagation of chamise was not successful and Rana Creek is continuing propagation through additional cuttings. Burleson has had success propagating sandmat manzanita and expects to have the remaining quantity needed for HA 19. Remaining inventory for shaggy-bark manzanita is expected to be available this summer and will be installed during the 2013-2014 restoration season.

Table 2: Rana Creek Final Inventory for Task Order 3

	Chamise	Sandmat manzanita	Shaggy-bark manzanita
HA-19 (TO3) - Quantity Required	100	80	150
Current inventory (salvage)	0	0	0
Current inventory (rooted cuttings)*	0	112	131
Current inventory (Plants grown by seed)*	4	0	0
Total inventory	4	112	131
Quantity needed: Over (Under)	(96)	32	(19)
Notes:			
* Plants currently in production as cuttings or sown seed.			
More <i>Arctostaphylos tomentosa</i> in production. Probably will not be ready for outplanting for several months			

2.4 Propagation Tests

Burleson conducted propagation tests at the Watershed Institute using a variety of techniques and experimental research on seeds prior to broadcasting or sowing to achieve optimal germination rates. All tests were closely observed and the findings were statistically evaluated and recorded. The final results showed there was no significant difference between seed that was treated or sown directly. Techniques and results are shown below.

2.4.1 Propagation Tests Using Heat, Water and Smoke

This technique was applied to Eastwood's golden fleece and manzanita seeds prior to seed broadcasting or sowing. Treatment methods and results are shown below.

Paired treatment methods for seeds being evaluated included:

- Dry heat, no smoke
- Dry heat, smoke
- Wet heat, no smoke
- Wet heat, smoke
- No heat, no smoke (control)

Results of propagation tests:

- ***Ericameria fasciculata* - Eastwood's golden fleece:**

E. fasciculata - grow trial test results using liquid smoke suggested that no additional treatment is necessary. There was no significant difference in mean observed germination of *E. fasciculata* in smoke treatment or control (DI) ($t = 1.5822$, $df = 2.358$, $p\text{-value} = 0.2355$). Results were in line with observations from Detka (2007). The seeds were sown directly into seed trays with conventional soil mixture and yielded germination rates exceeding 50%. Plants have been successfully re-potted and the species is responding well to hardening outside of the greenhouse environment. No additional grow trials are necessary and future propagation requires no additional seed treatment.

- ***Arctostaphylos montereyensis* - Toro manzantia:**

A. montereyensis responded very well to a wet heat + 1% smoke solution. Results of grow trials suggest that we could expect 7-17% germination when treated in this manner. The next highest germination rate was from the paired treatment of dry heat + no smoke. This suggested that heating may be the most important component in seed treatment. Seeds that received no heat + no smoke treatment (control) had extremely low germination response (<2%). Only two individuals from the dry heat + no smoke treatment were successfully transplanted into half gallon pots and were showing signs of new growth. Preliminary results from cutting trials were considerably more successful than propagation from seed and we recommend using this technique for future propagation tests. No additional grow trials are necessary.

- ***Arctostaphylos pumila* - Sandmant manzanita:**

A. pumila germination only occurred in the wet heat + smoke treatment yielding between 1-5% germination. This suggested that this treatment encourages germination but given the relatively low germination rate, trials should continue with a larger number of seeds per treatment. A total of seven individuals were successfully transplanted into half gallon pots (five from wet heat + smoke treatment and two from dry heat + no smoke). Preliminary results from cutting trials were considerably more successful than propagation from seed and

we recommend using this technique for future propagation tests. No additional grow trials are necessary.

- ***Arctostaphylos hookeri*- Hooker's manzanita:**

A. hookeri preliminary results suggested no significant difference in germination response between treatments. Nearly all the treatments produced 1-2 seedlings that promptly died before transplanting. This very low germination response and low observed survivorship in all treatments makes it difficult to ascertain the role of treatment at this time. By 07/01/12, trials were terminated with no additional success. Preliminary results from cutting trials were considerably more successful than propagation from seed and we recommend using this technique for future propagation tests. No additional grow trials are necessary.

2.4.2 Propagation Tests Using Sulfuric Acid (H₂SO₄)

Burleson conducted germination trials of *A. montereyensis* and *A. tomentosa* using varying concentrations of sulfuric acid (H₂SO₄). Exposing seeds to higher concentrations is intended to mimic digestion (herbivory) while lower concentration treatments are designed to mimic post-burn soil conditions. Treatment methods and the results of sulfuric acid on germination success to date are shown below.

Acid concentrations of H₂SO₄ being evaluated include:

- Control (H₂O)
- 0.5 Moles per liter
- 1.0 Moles per liter
- 3.0 Moles per liter
- 18.0 Moles per liter

Results of propagation test:

Germination trials began on June 13, 2012, when seeds were placed in the sunny side of the greenhouse for warmth and stored in clear Ziploc bags to keep seeds moist and prevent evaporation. *A. montereyensis* and *A. tomentosa* seeds were exposed to all five concentrations for one hour, and seeds sampled from each category were checked at five minute intervals for seed coat softening. There were no signs of germination from either plant. Preliminary results from cutting trials were considerably more successful than propagation from seed and we recommend using this technique for future propagation tests. No additional grow trials are necessary.

2.4.3 Propagation Tests Using Varying Potting Mixtures

Burleson conducted seed propagation tests to establish techniques to propagate sand gilia. The goal was to successfully propagate mature seed-producing individuals for out-planting and future seed collection stock.

Seed stock from two different collection years (2004 and 2012) was used in all paired trials. Seed stock from 2004 was collected by ITSI/Shaw staff biologist near the vicinity of HAs 43-48 and was supplied to Burleson by the U.S. Army. Seed stock from 2012 (5/24/12) was collected by Burleson staff from HA 43. Seed stock from both years was sown into 2" plastic pots containing 1 part sterile sand and 10 parts conventional cactus potting mix which consists of 40-50% pumice, cinders, and perlite, and 40-50% organic content (forest products, softwood bark, and worm castings). A charate treatment was produced from pulverizing charred (not ashed) stems from manzanita, chamise, and ceanothus.

All seeds were sown on top of potting media and covered with either a charate treatment (n=35 [2012] and n=36 [2004]) consisting of a thin layer of charred wood and shredded coconut fiber or a control (no charate, only finely shredded coconut fiber) (n = 35 [2012] and n = 36 [2004]). An additional portion of seed (2004 n = 400, 2012 n = 242) were sown into 90 mm plastic Petri dishes containing two sheets of Whatman filter qualitative paper #1 to directly examine the germination viability of seed from 2004 and 2012 external from potting media influence.

All seed sowing was initiated on 5/30/12 and seeds (treated 2" pots and Petri dishes) were cold stratified in a conventional refrigerator (34-41°F) for 30 days. Following cold stratification all sown seeds were exposed to natural daylight and ambient greenhouse air temperatures. There were no signs of germination.

Burleson will continue propagation tests with s and gilia using surplus seed provided to Burleson by University of California Santa Cruz from UC MBest property. The same techniques will be applied to determine if seed provided by ITSI/Shaw was no longer viable and if location of seed collection influences germination. Results will be provided in subsequent reports.

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. The restoration procedures for all HAs included passive restoration and additional active restoration at HAs 29 and 39/40. Erosion control activities were also conducted at HAs 29 and 39/40 due to minor storm water related erosion.

2.5.1 Restoration Activities

Burleson completed restoration activities with plant material collected under TO 3 as follows:

- 50% passive restoration of Phase 1 sites (HAs 18, 22, 23, 27, 27A, 29, 33, 36, 39/40, and 43);
- 100% passive restoration of HA 34; and
- 100% active restoration of HAs 29 and 39/40

Appendix B provides the detailed restoration work plans for each HA that includes the 50% 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 this year 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. Since most of the restoration sites received 50% of their prescribed seed, a fully completed restoration site has yet to occur. Additionally, lack of adequate precipitation during the previous year has hindered germination and stunted many of 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 2012 under TO 4. Repair of erosion damage and implementation of erosion and sediment control Best Management Practices (BMP) were completed for HA 39/40 and HA 29. Activities included installing 50 linear feet of straw fiber rolls for HA 29 and installing 1,100 linear feet of fiber rolls and 1,518 square feet of coir fabric on HA 39/40. 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 February 25, 2012 and June 23, 2012, 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 second Annual Site 39 Restoration Meeting was held at the BRAC conference room on February 7, 2013 at former Fort Ord, California. Participants included Burleson and members of the Army, USACE, California Department of Fish and Wildlife (CDFW), BLM, USFWS, DTSC, the CSUMB Watershed Institute, ARCADIS, Ecosystems West, Tetra Tech, and ITSI.

Burleson presented information on seed collection, seed storage and processing, and propagation activities covered under TO 3. Restoration activities that took place under TO 4 and upcoming restoration activities were also discussed. A key point presented at the meeting was the refocused seed collection from HA 19 to HA 34 to combine revegetation efforts with erosion control BMPs, and the resulting potential loss of broadcast seed at HA 34 following a major storm event. Proposed adaptive management strategies included expansion of HMP collection areas from 1 kilometer to 2 kilometers for sand gilia collection at HA 19. A summary of the meeting is provided in Appendix E.

3.0 References

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

Burleson 2012. Site Specific Restoration Plan Historic Areas 18, 19, 22, 23, 26, 27, 27A, 28, 29, 33, 34, 36, 37, 39/40, 43. 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 Tables

Table A-1 Common Species Chart-Seed Collected in Pounds Task Order 3		
Species	Target	Collected
<i>Achillea millefolium</i> - Common Yarrow	14.31	14.31
<i>Adenostoma fasciculatum</i> - Chamise	14.78	14.78
<i>Arctostaphylos tomentosa</i> - Shaggy bark manzanita	29.60	29.60
<i>Artemesia californica</i> - California sagebrush	13.50	13.50
<i>Artemesia douglasiana</i> – mugwort	3.61	3.61
<i>Baccharis pilularis</i> – Coyotebrush	2.37	2.37
<i>Carex sp.*</i>	0.11	0.00
<i>Croton californicus</i> - Croton	0.46	0.46
<i>Distichlis spicata</i> – Saltgrass*	0.11	0.00
<i>Ericameria ericoides</i> - Mock heather	1.07	1.07
<i>Eriophyllum confertiflorum</i> - Golden yarrow	4.31	4.31
<i>Eschscholzia californica</i> - California poppy**	2.02	0.81
<i>Helianthemum scoparium</i> - Rush rose	14.81	14.81
<i>Horkelia cuneata</i> - Wedgeleaf horkelia	31.86	31.86
<i>Juncus patens</i> - Spreading rush	0.28	0.28
<i>Lotus scoparius</i> - Deerweed	31.52	31.52
<i>Lupinus albifrons</i> - Silver bush lupine	1.15	1.15
<i>Lupinus arboreus</i> - Yellow bush lupine	10.65	10.65
<i>Lupinus nanus</i> - Sky lupine	1.23	1.23
<i>Mimulus aurantiacus</i> - Sticky monkey flower	4.76	4.76
<i>Rhamnus californica</i> - California coffeeberry	0.30	0.30
<i>Salvia mellifera</i> - Black Sage	14.81	14.81
<i>Solidago californica</i> - California goldenrod	0.28	0.28
<i>Trifolium wildenovii</i> - Tomcat clover**	0.56	0.28

*Live Plants in Lieu of seed

** Missed target due to lack of plant material available during collection season.

**Table A-2
HMP Species Collection and Totals Per Historic Area in Pounds
Task Order 3**

Species	18		19		22		23		27		27A		29		33		34		36		39/40		43	
	Target	Collected	Target	Collected	Target	Collected	Target	Collected	Target	Collected	Target	Collected	Target	Collected	Target	Collected	Target	Collected	Target	Collected	Target	Collected	Target	Collected
<i>Arctostaphylos hookerii</i> - Hooker's Manzanita													2.0	2.0			9.5	9.5	1.0	1.0				
<i>Arctostaphylos montereyensis</i> – Toro Manzanita									0.06	0.06	1.2	1.2	2.0	2.0	0.02	0.02	9.5	9.5	2.0	2.0				
<i>Arctostaphylos pumila</i> - Sandmat Manzanita	2.0	2.0	3.5	3.5	0.05	0.05	0.3	0.3	0.12	0.12	0.6	0.6	1.0	1.0	0.01	0.01			0.5	0.5			0.09	0.09
<i>Ceanothus cuneatus</i> var. <i>rigidus</i> – Monterey ceanothus	1.0	1.0	3.5	3.5	0.05	0.05	0.3	0.3	0.06	0.06	0.6	0.6	1.0	1.0	0.01	0.01	9.5	9.5	0.5	0.5			0.09	0.09
<i>Chorizanthe pungens</i> var. <i>pungens</i> – Monterey spineflower	0.15	0.15	0.2	0.2	0.00075	0.00075	0.0045	0.0045							0.0015	0.0015					0.08	0.08	0.001	0.001
<i>Cordylanthus rigidus</i> ssp. <i>Littoralis</i> - Seaside bird's beak																					0.08	0.0	0.001	0.001
<i>Ericameria fasciculata</i> - Eastwood's golden fleece	0.1	0.1	0.875	0.875			0.05	0.05					0.3	0.3					0.05	0.05			0.009	0.009
<i>Gilia tenuiflora</i> ssp. <i>Arenaria</i> Sand gilia			0.2	0.0007																	0.08	0.025	0.001	0.001

Appendix B-Restoration Work Plans and Reports

Vegetation Abbreviations for Fort Ord SSRP Species

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

* HMP Species

HA 18 Restoration Work Plan December 1, 2011

Initial Site Condition (December 1, 2011)

- There are 15 polygons for HA 18 totaling 61,734 ft².
- P8, P9, P10, P11, P12, & one half of P14 (11% of total area) are set aside for Monterey spine flower (CHPUP).
- 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 iceplant encroachment.
- P1 has poor natural recruitment but there are some small areas with good natural recruitment.

Restoration work plan for P8, P9, P10, P11, P12, and P14

- Weed site.
- Rake straw aside.
- Broadcast CHPUP seed evenly.
- Rake seed in.
- Do not cast any straw.

Restoration work plan for P1, P2, P3, P4, P5, P6, P7, P13, and P15

- Weed site.
- Rake straw aside.
- Broadcast 50% seed mix selectively avoiding iceplant mats and areas of good natural recruitment.
- Rake seed in.
- Cast straw.

HA 18 Restoration Work Performed November 5, 2012

Crew: Scott Salembier, Phillip Reyes and Shawn Wagoner

Time on site: 1 hour

Total crew time: 2 hours

Activities: Photo points and Monitoring

Work Performed at P8, 9, 10, 11, 12, 13, 14, and 15

- Updated photo points and visually monitored polygons.

HA 18 Restoration Work Performed November 6, 2012

Crew: Scott Salembier and Phillip Reyes

Time on site: 3 hours

Total crew time: 6 hours

Activities: Photo points and Monitoring

Work Performed at P1, 2, 3, 4, 5, 6, 7, and 15

- Updated photo points and visually monitored polygons.

HA 18 Restoration Work Performed December 19, 2012

Crew: Scott Salembier and Phillip Reyes

Time on site: 2 hours

Total crew time: 4 hours

Activities: Passive Restoration and Weed Management

Notes:

- In preparation for restoration activities, seed mixes were made to hit the remaining 50% seed target for HA 18. The amount of seed mixed for each polygon was made to match the percent area of each polygon to ensure that seed will be cast evenly.
- Restoration activities went as planned.

Work Performed at P 2, 3, 4, 5, and 15

- Raked off old straw
- Broadcast seed evenly or where appropriate
- Raked seed in
- Recast old straw

Work Performed at P 8, 9, 10, 11, 12, 13, and 14

- Broadcast CHPUP evenly
- Raked CHPUP in
- Left straw off polygon

HA 18 Restoration Work Performed December 20, 2012

Crew: Scott Salembier and Phillip Reyes

Time on site: 3 hours

Total crew time: 6 hours

Activities: Passive Restoration and Weed Management

Notes:

- In preparation for restoration activities, seed mixes were made to hit the remaining 50% seed target for HA 18. The amount of seed mixed for each polygon was made to match the percent area of each polygon to ensure that seed will be cast evenly.
- Restoration activities went as planned.

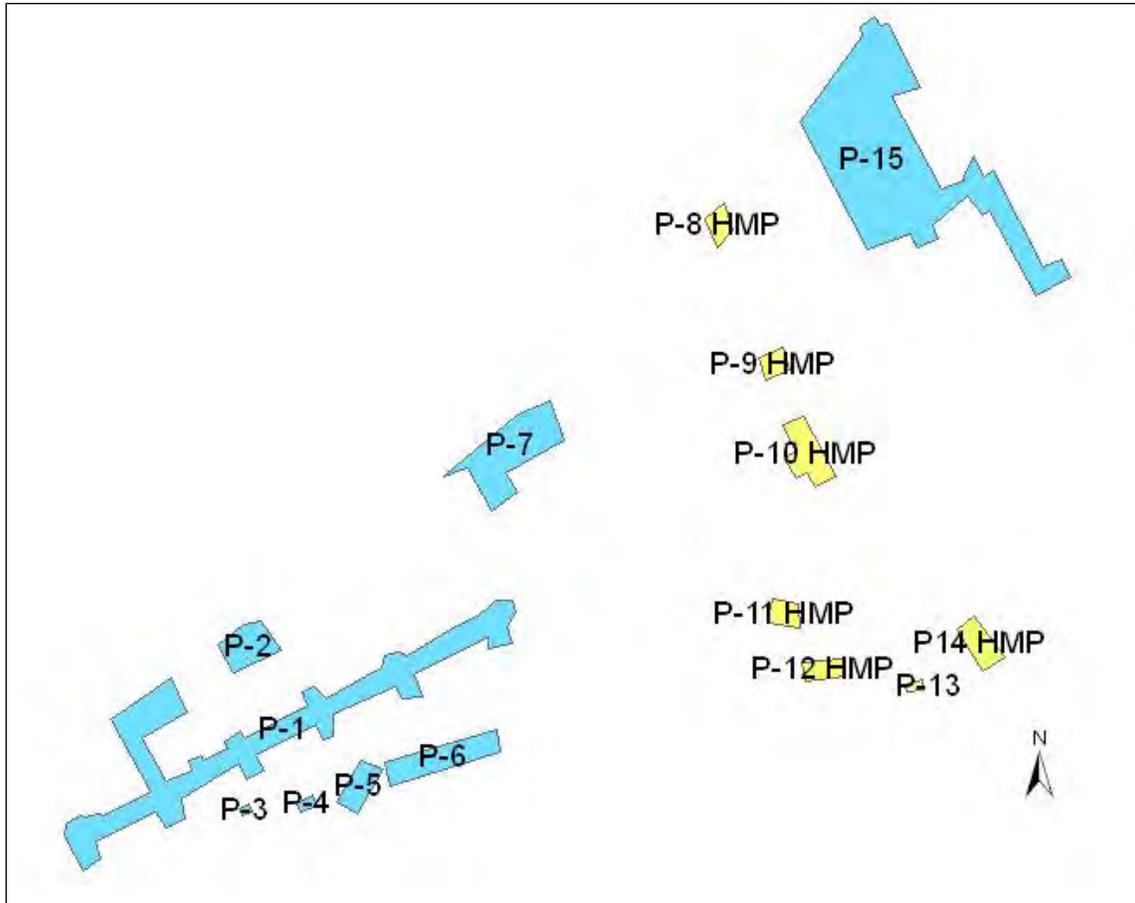
Work Performed at P 1, 6, and 7

- Raked off old straw
- Broadcast seed evenly or where appropriate
- Raked seed in
- Recast old straw



Polygons for HA 18

Note: P-13 should be blue in color.



HA 18 Seed Allocation Table - 1

Plot #		1		2		3		4		5		6	
Area (ft ²)		17691		2227		100		286		1374		2621	
%Total Area		32%		4%		0.18%		0.51%		2.5		5%	
Species	Overall Target (g)	Plot Target (g)	Amount applied (g)										
ADFA	318	103.4	127.2	12.7	13.0	0.6	0.9	1.6	1.8	8.0	8.2	15.9	17.6
ARPU*	318	103.4	234.0	12.7	16.1	0.6	1.8	1.6	2.0	8.0	12.3	15.9	18.1
ARTO	635	207.0	213.0	25.4	29.8	1.1	1.60%	3.2	3.6	15.9	16.4	31.8	35.8
ARCA	318	103.2	106.7	12.7	13.4	0.6	1.1	1.6	2.5	8.0	8.3	15.9	18.4
BAPI	45	14.4	14.4	1.8	1.8	0.1	0.1	0.2	0.3	1.1	0.1	2.3	3.4
CERI*	318	103.4	125.5	12.7	13.8	0.6	1.0	1.6	2.2	8.0	10.5	15.9	17.9
CHPUP*	5												
ELGL	5727.3	1861.4	1865.0	229.1	229.4	10.3	10.3	29.2	29.3	143.2	143.2	286.4	289.9
ERER	91	29.6	35.5	3.6	3.7	0.2	0.4	0.5	0.7	2.3	3.6	4.6	5.4
ERFA*	22.7	7.4	14.3	0.9	1.1	0.0	0.1	0.1	0.2	0.6	1.0	1.1	2.1
ERCO	91	29.6	39.0	3.6	4.0	0.2	0.5	0.5	0.5	2.3	3.3	4.6	5.7
HESC	318	103.4	122.8	12.7	13.7	0.6	1.0	1.6	1.7	8.0	8.6	15.9	20.5
HOCU	635	206.4	89.2	25.4	25.8	1.1	1.4	3.2	4.0	15.9	16.3	31.8	32.1
Hordeum	5727.3	1861.4	1881.0	229.1	229.6	10.3	11.2	29.2	32.4	143.2	145.7	286.4	290.3
LOSC	635	206.4	216.0	25.4	26.6	1.1	1.4	3.2	3.6	15.9	15.9	31.8	34.2
MIAU	136	44.2	56.0	5.4	10.1	0.2	2.4	0.7	5.5	3.4	16.5	6.8	7.1
SAME	318	103.4	143.0	12.7	15.4	0.6	1.3	1.6	2.7	8.0	8.7	15.9	18.9
STPU	3181.8	1034.1	1088	127.3	132.4	5.7	6.3	16.2	16.9	79.5	80	159.1	163.3

Total (g) 18840.1 6121.7 6370.6 753.4 779.7 33.9 41.2 96.1 109.9 470.9 498.6 941.8 980.7
 * HMP species

HA 18 Seed Allocation Table - 2

	7 5044 9%		8 1043 16%		9 672 10%		10 1650 25%		11 929 14%		12 965 15%		13 181 0.32%	
Species	Plot Target (g)	Amount applied (g)	Plot Target (g)	Amount applied (g)	Plot Target (g)	Amount applied (g)	Plot Target (g)	Amount applied (g)	Plot Target (g)	Amount applied (g)	Plot Target (g)	Amount applied (g)	Plot Target (g)	Amount applied (g)
ADFA	28.6	30.8											1.0	1.1
ARPU*	28.6	32.4											1.0	2.7
ARTO	57.2	60.4											2.0	2.8
ARCA	28.6	30.9											1.0	1.4
BAPI	4.1	5.2											0.1	0.1
CERI*	28.6	32.7											1.0	1.6
CHPUP*			0.4	1.4	0.3	1.4	0.6	1.8	0.4	1.7	0.4	2.6	0.0	
ELGL	515.5	517.0											18.3	19.2
ERER	8.2	10.3											0.3	0.6
ERFA*	2.0	3.1											0.1	0.2
ERCO	8.2	10.4											0.3	0.5
HESC	28.6	30.6											1.0	1.2
HOCU	57.2	58.1											2.0	2.2
HODU	515.5	516.0											18.3	18.7
LOSC	57.2	59.7											2.0	2.8
MIAU	12.2	15.2											0.4	2.7
SAME	28.6	32.3											1.0	1.6
STPU	286.4	286.4											10.2	10.5

Total (g) 1695.2 1731.5 0.4 1.4 0.3 1.4 0.6 1.8 0.4 1.7 0.4 2.6 60.3 69.9
 * HMP species

 CHPUP applied areas

HA 18 Seed Allocation Table - 3

	14 1274 20%		15 2526 46%	
Species	Plot Target (g)	Amount applied (g)	Plot Target (g)	Amount applied (g)
ADFA			146.3	149.2
ARPU*			146.3	148.6
ARTO			292.1	294.8
ARCA			146.3	149.6
BAPI			20.7	22.3
CERI*			146.3	147.3
CHPUP*	3.3	12.3		
ELGL			2634.5	2634.5
ERER			41.9	42.9
ERFA*			10.4	11.0
ERCO			41.9	42.9
HESC			146.3	147.2
HOCU			292.1	295.2
HODU			2634.5	2634.6
LOSC			292.1	294.5
MIAU			62.6	63.0
SAME			146.3	147.5
STPU			1463.6	1464.8

Total (g) 3.3 12.3 8664.1 8689.9

* HMP species



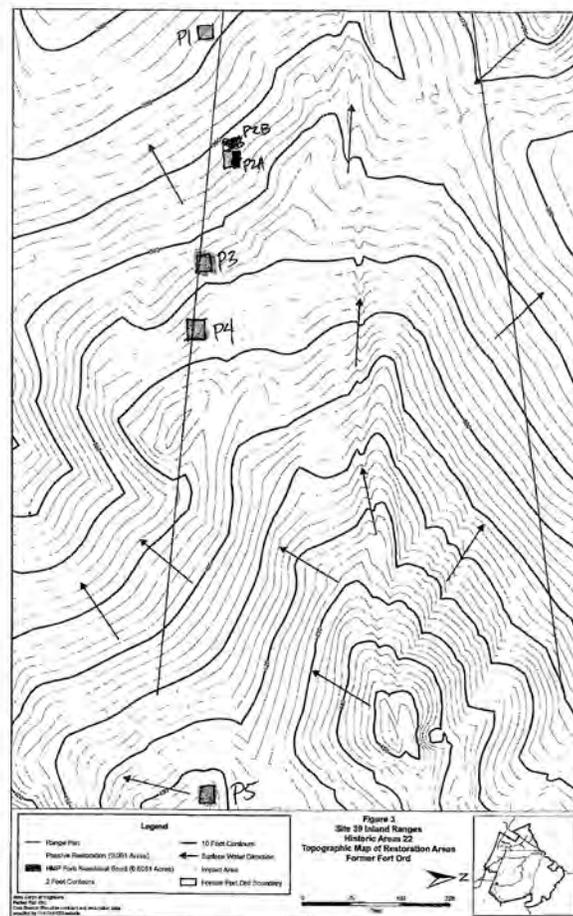
CHPUP applied areas

HA 22 Restoration Work Plan December 7, 2011

Initial Site Condition (December 7, 2011)

- There are five polygons for HA22: P1, P2, P3, P4, and P5
- Polygon P2 is divided into two areas, P2A and P2B, to accommodate CHPUP habitat requirements.
- P2A (~100 ft²) will be set aside for CHPUP.
- Total area for all polygons is 2,138 ft².
- There are minor ice plant issues on all polygons.
- Site has been crimped with straw.
- Surrounding native habit is of high quality.
- Natural recruitment within site is good.

Polygons for HA 22



Restoration work plan for P1, P2B, P3, P4, and P5

- Raked straw aside.
- Broadcast ~50% seed evenly.
- Raked seed in.
- Recast straw.

Restoration work plan for P2A

- Marked out a 10'x10' area in the northeast corner of P2 as the HMP area.
- Took GPS locations of HMP area.
- Raked straw aside.
- Broadcast CHPUP seed evenly.
- Raked seed in.
- Left straw off polygon.

HA 22 Restoration Work Performed October 30, 2012

Crew: Thor Anderson, Shawn Wagoner

Time on site: 2 hours

Total crew time: 4 hours

Activities: Passive Restoration, Weed Management, Site Inspection, Photo Points, Monitoring.

Notes:

1. In preparation for restoration activities, seed mixes were made to hit the remaining 50% seed target for HA 22. The amount of seed mix for each polygon was made to match the percent area of each polygon to ensure that seed will be cast evenly.
2. Seed treatments were applied to the appropriate species.
3. Visual surveys were conducted.
4. Restoration activities went as planned.

Work Performed at for P1, P2B, P3, P4, and P5

- Updated photo points.
- Visually monitored polygons.
- Raked straw aside.
- Broadcast with 50% seed evenly.
- Raked seed in.
- Recast straw.

Restoration Performed for P2A

- Updated photo points.
- Visually monitored polygon.
- Broadcast CHPUP seed evenly.
- Raked seed in.

HA-22 Seed Allocation Table

	Plot # Area (ft ²) %Total Area	1 400 19%		2A 300 14%		2B - HMP 100 5%		3 400 19%		4 638 30%		5 400 19%	
Species	Overall Target (g)	Plot Target (g)	Amount applied (g)	Plot Target (g)	Amount applied (g)	Plot Target (g)	Amount applied (g)	Plot Target (g)	Amount applied (g)	Plot Target (g)	Amount applied (g)	Plot Target (g)	Amount applied (g)
ACMI	11.3	2.1	2.2	1.6	2.0			2.1	3.0	3.4	5.0	2.1	2.5
ADFA	11.3	2.1	2.2	1.6	2.0			2.1	3.0	3.4	5.0	2.1	2.5
ARPU*	11.3	2.1	3.0	1.6	2.6			2.1	3.5	3.4	5.4	2.1	3.5
ARTO	22.7	4.2	5.2	3.2	4.2			4.2	5.2	6.8	7.8	4.2	5.5
BAPI	1.8	0.3	0.5	0.3	0.4			0.3	0.5	0.5	1.0	0.3	0.5
CERI*	11.3	2.1	3.0	1.6	1.7			2.1	2.2	3.4	3.5	2.1	2.2
CHPUP*	0.2					0.2	2.2						
CRCA	11.3	2.1	2.5	1.6	2.0			2.1	2.5	3.4	5.0	2.1	2.5
ERER	2.9	0.5	1.0	0.4	0.9			0.5	1.0	0.9	1.4	0.5	2.0
ERFA*	0.3	0.1	0.3	0.0	0.1			0.1	0.1	0.1	0.5	0.1	0.1
ERCO	3.4	0.6	1.0	0.5	1.0			0.6	1.0	1.0	1.5	0.6	1.0
HESC	11.3	2.1	2.5	1.6	1.8			2.1	2.5	3.4	4.0	2.1	2.5
HOCU	22.7	4.2	4.5	3.2	3.8			4.2	4.5	6.8	7.8	4.2	5.5
Hordeum	102.1	19.3	20.0	14.3	15.0			19.3	20.0	30.6	33.3	19.3	20.0
LOSC	22.7	4.2	5.0	3.2	4.0			4.2	5.0	6.8	7.8	4.2	5.0
MIAU	6.8	1.3	2.0	1.0	1.8			1.3	2.0	2.0	3.3	0.2	2.3
NACE	22.7	4.2	5.0	3.2	4.0			4.2	5.0	6.8	7.8	4.2	5.2
SAME	11.3	2.1	2.5	1.6	2.0			2.1	2.5	3.4	5.0	2.1	2.5

Total (g) 287.4 54.0 62.4 40.3 49.3 0.2 2.2 54.0 63.5 85.8 105.1 52.9 65.3

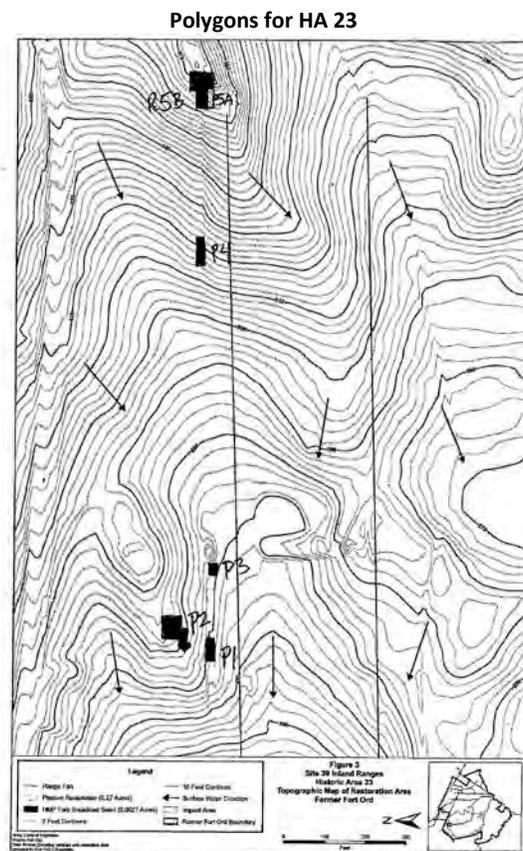
* HMP species

 CHPUP applied area

HA 23 Restoration Work Plan December 8, 2011

Initial Site Condition (December 8, 2011)

- There are five polygons for HA 23: P1, P2, P3, P4, and P5.
- P5 was divided into two areas to make space for CHPUP. These areas are labeled P5A and P5B.
- 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 ft².
- Small amounts of Ice Plant are present on P1, P3, P4, and P5.
- A moderate amount of iceplant is present on P2.
- Site has been crimped with straw.
- Surrounding native habit is of high quality.
- Natural recruitment within site is good.



Restoration work plan for P1, P2, P3, P4, and P5B

- Rake straw aside.
- Broadcast 50% seed mix evenly.
- Recast straw.

Restoration work plan for P5A

- Mark out a 10'x12' area in the southwest corner of P5 as the HMP area.
- GPS HMP area.
- Rake straw aside.
- Broadcast CHPUP seed evenly.
- Leave straw off polygon.

HA 23 Restoration Work Performed November 1, 2012

Crew: Thor Anderson and Shawn Wagoner

Time on site: 1.5 hours

Total crew time: 3 hours

Activities: Weed Management, Photo Points, Monitoring.

Notes:

- In preparation for restoration activities, seed mixes were made to hit the remaining 50% seed target for HA 23. The amount of seed mix for each polygon was made to match the percent area of each polygon to ensure that seed was cast evenly.
- Seed treatments were applied to the appropriate species.
- Visual surveys were conducted.
- Restoration activities went as planned.

Work Performed at P1, P2, P3, P4, & P5B

- Updated photo points.
- Visually monitored polygons.
- Removed iceplant when encountered.

Work Performed at P5A

- Updated photo points.
- Visually monitored polygon.
- Removed iceplant when encountered.

HA 23 Restoration Work Performed November 5, 2012

Crew: Thor Anderson and Shawn Wagoner

Time on site: 2.25 hours

Total crew time: 6.75 hours

Activities: Passive Restoration.

Notes:

- In preparation for restoration activities, seed mixes were made to hit the remaining 50% seed target for HA 23. The amount of seed mix for each polygon was made to match the percent area of each polygon to ensure that seed will be cast evenly.
- Seed treatments were applied to appropriate species.
- Visual surveys were conducted.
- Restoration activities went as planned.

Work Performed at P1, P2, P3, P4, and P5B

- Raked straw aside.
- Remaining 50% seed was broadcast evenly.
- Seed was raked into the substrate.
- Recast straw.

Work Performed at P5A

- CHPUP seed was broadcast evenly.
- Seed was raked into the substrate.

HA-23 Seed Allocation Table

	Plot # Area (ft ²) %Total Area	1 916 8%		2 3996 34%		3 490 4%		4 1415 12%		5B 4880 42%		5A - HMP 118 1%	
Species	Overall Target (g)	Plot Target (g)	Amount applied (g)	Plot Target (g)	Amount applied (g)	Plot Target (g)	Amount applied (g)	Plot Target (g)	Amount applied (g)	Plot Target (g)	Amount applied (g)	Plot Target (g)	Amount applied (g)
ACMI	68	5.3	5.5	23.2	25.0	2.8	3.0	8.2	9.0	28.4	30.0		
ADFA	68	5.3	5.5	23.2	25.2	2.8	3.0	8.2	9.0	28.4	30.0		
ARPU*	68	5.3	7.0	23.2	25.0	2.8	4.0	8.2	10.2	28.4	33.3		
ARTO	136.1	10.7	12.0	46.5	50.0	5.7	7.7	16.5	18.5	56.8	60.0		
BAPI	11.3	0.9	1.0	3.9	4.4	0.5	0.7	1.4	1.6	4.7	4.9		
CERI*	96.1	7.7	10.0	32.7	35.0	3.8	6.8	11.5	15.0	40.4	45.5		
CHPUP*	1											1	1.5
CRCA	68	5.3	5.5	23.2	25.5	2.8	3.0	8.2	8.8	28.4	29.0		
ERER	18.1	1.4	1.6	6.2	7.0	0.8	1.0	2.2	2.5	7.6	8.0		
ERFA*	11.3	0.9	1.0	3.9	4.0	0.5	0.7	1.4	1.5	4.7	4.8		
ERCO	20.4	1.6	2.0	7.0	10.0	0.9	1.5	2.5	3.0	8.5	10.0		
HESC	68	5.3	5.5	23.2	25.5	2.8	3.8	8.2	10.0	28.4	31.5		
HOCU	136.1	10.7	11.1	46.5	47.0	5.7	6.0	16.5	17.0	56.8	57.5		
HODU	612.3	49.0	50.0	208.2	210.0	24.5	26.5	73.5	75.0	257.2	260.0		
LOSC	136.1	10.7	11.0	46.5	47.0	5.7	6.0	16.5	17.5	56.8	57.5		
MIAU	40.8	3.3	4.0	13.9	15.0	1.6	2.6	4.9	6.0	17.1	20.0		
SAME	68	5.3	5.3	23.2	25.0	2.8	3.0	8.2	10.0	28.4	30.0		
STCE	136.1	10.7	11.7	46.5	47.7	5.7	6.5	16.5	17.0	56.8	60.0		

Total (g) 1763.7 139.3 149.7 601.0 628.3 72.4 85.8 212.5 231.3 737.5 772.0 1.0 1.5

* HMP species

CHPUP applied areas

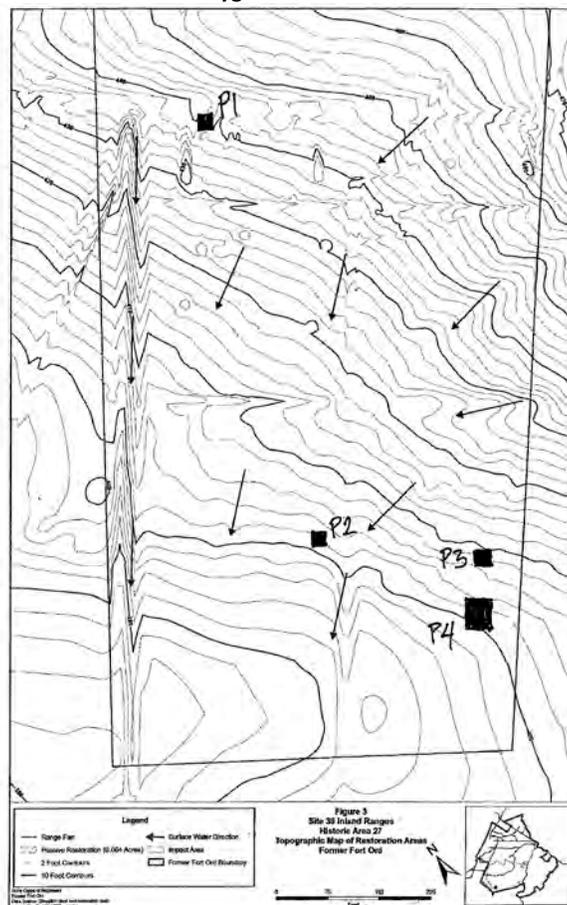
HA 27 Restoration Work Plan

December 14, 2011

Initial Site Condition

- There are four polygons for HA27: P1, P2, P3, and P4.
- Total area for all polygons is 2,773 ft².
- Major pampas grass issue at all polygons with hundreds of seedlings.
- Major pampas seed bank mixed in with straw at site.
- Minor iceplant issues at all polygons.
- Modest natural recruitment observed.

Polygons for HA 27



Restoration work plan for P1, P2, P3, and P4

- Rake straw aside and leave in pile off site.
- Weed site.
- Broadcast 50% seed mix evenly.
- Rake seed in.
- Cast site with fresh straw.

HA 27 Restoration Work Performed November 13, 2012

Crew: Scott Salembier, Phillip Reyes

Time on site: 1 hour

Total crew time: 2 hours

Activities: Photo points, Monitoring

Notes:

- In preparation for restoration activities, seed mixes were made to hit the remaining 50% seed target for HA 27. The amount of seed mix for each polygon was made to match the percent area of each polygon to ensure that seed was cast evenly.
- Seed treatments were applied to the appropriate species.
- Visual surveys were conducted.
- Restoration activities went as planned.

Work Performed at P1, P2, P3, and P4

- Updated photo points for each polygon.
- Visually monitored polygons for species composition and % cover.

HA 27 Restoration Work Performed November 20, 2012

Crew: Shawn Wagoner, Phillip Reyes

Time on site: 2 hours

Total crew time: 4 hours

Activities: Broadcast seeding and weeding.

Notes:

- In preparation for restoration activities, seed mixes were prepared to hit the remaining 50% seed target for HA 27. The amount of seed mix for each polygon was made to match the percent area of each polygon to ensure that seed was cast evenly.
- Seed treatments were applied to the appropriate species.
- Visual surveys were conducted.
- Restoration activities went as planned.

Work Performed at P1, P2, P3, and P4

- Raked straw off polygons and placed in piles adjacent to polygons.
- Weeded polygons (hundreds of small pampas grass seedlings)
- Broadcast seed mix evenly.
- Seed was raked into substrate.
- Fresh straw was cast onto the site.

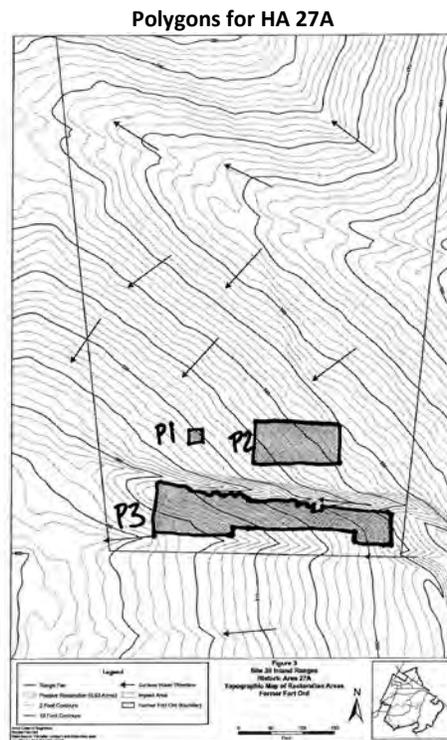
HA 27 Seed Allocation Table

	Plot # Area (ft ²) %Total Area	1 400 14%		2 400 14%		3 400 14%		4 1573 57%	
Species	Overall Target (g)	Plot Target (g)	Amount applied (g)	Plot Target (g)	Amount applied (g)	Plot Target (g)	Amount applied (g)	Plot Target (g)	Amount applied (g)
ARMO*	13.6	2.0	3.0	2.0	3.2	2.0	3.2	7.7	10.0
ARPU*	27.2	3.9	5.4	3.9	4.3	3.9	4.5	15.4	16.4
ARTO	27.2	3.9	5.0	3.9	4.3	3.9	4.5	15.4	16.4
BAPI	2.3	0.3	0.3	0.3	0.3	0.3	0.3	1.3	1.3
CERI*	27.2	3.8	4.1	3.8	4.8	3.8	4.0	15.5	15.5
HESC	13.6	2.0	3.0	2.0	2.1	2.0	2.0	7.7	7.7
HOCU	27.2	3.9	4.0	3.9	4.0	3.9	4.0	15.4	15.4
Hordeum	122.5	17.2	17.2	17.2	17.2	17.2	17.2	69.8	70.0
LOSC	27.2	3.9	4.0	3.9	3.9	3.9	4.0	15.4	15.4
SAME	13.6	2.0	2.5	2.0	2.0	2.0	2.0	7.7	7.7
Total (g)	301.6	42.9	48.5	42.9	46.1	42.9	45.7	171.5	175.8

HA 27A Restoration Work Plan December 16, 2011

Initial Site Condition (December, 2011)

- There are three polygons for HA27A: P1, P2, and P3.
- Total area for all polygons is 27,576 ft².
- Minor iceplant 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 P3



Restoration work plan for P1 and P2

- Rake straw aside.
- Broadcast 50% seed mix evenly.
- Recast straw.

Restoration work plan for P3

- Weed site.
- Erosion control.
- Rake straw aside.
- Broadcast seed only in areas where there is not the following: sandstone, wash zones, and good natural recruitment.
- Rake seed in.
- Recast straw.

HA 27A Restoration Work Performed December 4, 2012

Crew: Scott Salembier and Phillip Reyes

Time on site: 2 hours

Total crew time: 4 hours

Activities: Passive Restoration

Notes:

- In preparation for restoration activities, seed mixes were made to hit the remaining 50% seed target for HA 27A. The amount of seed mix for each polygon was made to match the percent area of each polygon to ensure that seed was cast evenly.
- Seed treatments were applied to the appropriate species.
- Visual surveys were conducted.
- Restoration activities went as planned.

Work Performed at P1 and P2

- Updated photo points.
- Visually monitored polygons.
- Raked straw off polygons.
- Removed weeds from polygons (hundreds of small pampas grass seedlings).
- Seed mix was broadcast evenly.
- Raked seed into substrate.
- Old straw was spread back onto site.

HA 27A Restoration Work Performed December 6, 2012

Crew: Scott Salembier, Phillip Reyes and Thor Anderson

Time on site: 2 hours

Total crew time: 6 hours

Activities: Passive Restoration and Weed Management

Notes:

- In preparation for restoration activities, seed mixes were made to hit the remaining 50% seed target for HA 27A. The amount of seed mix for each polygon was made to match the percent area of each polygon to ensure that seed was cast evenly.
- Seed treatments were applied to the appropriate species.
- Visual surveys were conducted.
- Restoration activities went as planned.

Work Performed at P3

- Updated photo points.
- Visually monitored the site.
- Raked straw off polygon.
- Weeds were removed from P3, hundreds of small pampas grass seedlings and some French Broom.
- Seed mix was broadcast evenly over site.
- Raked seed into substrate.
- Old straw was spread back onto the site.

HA 27A Seed Allocation Table.

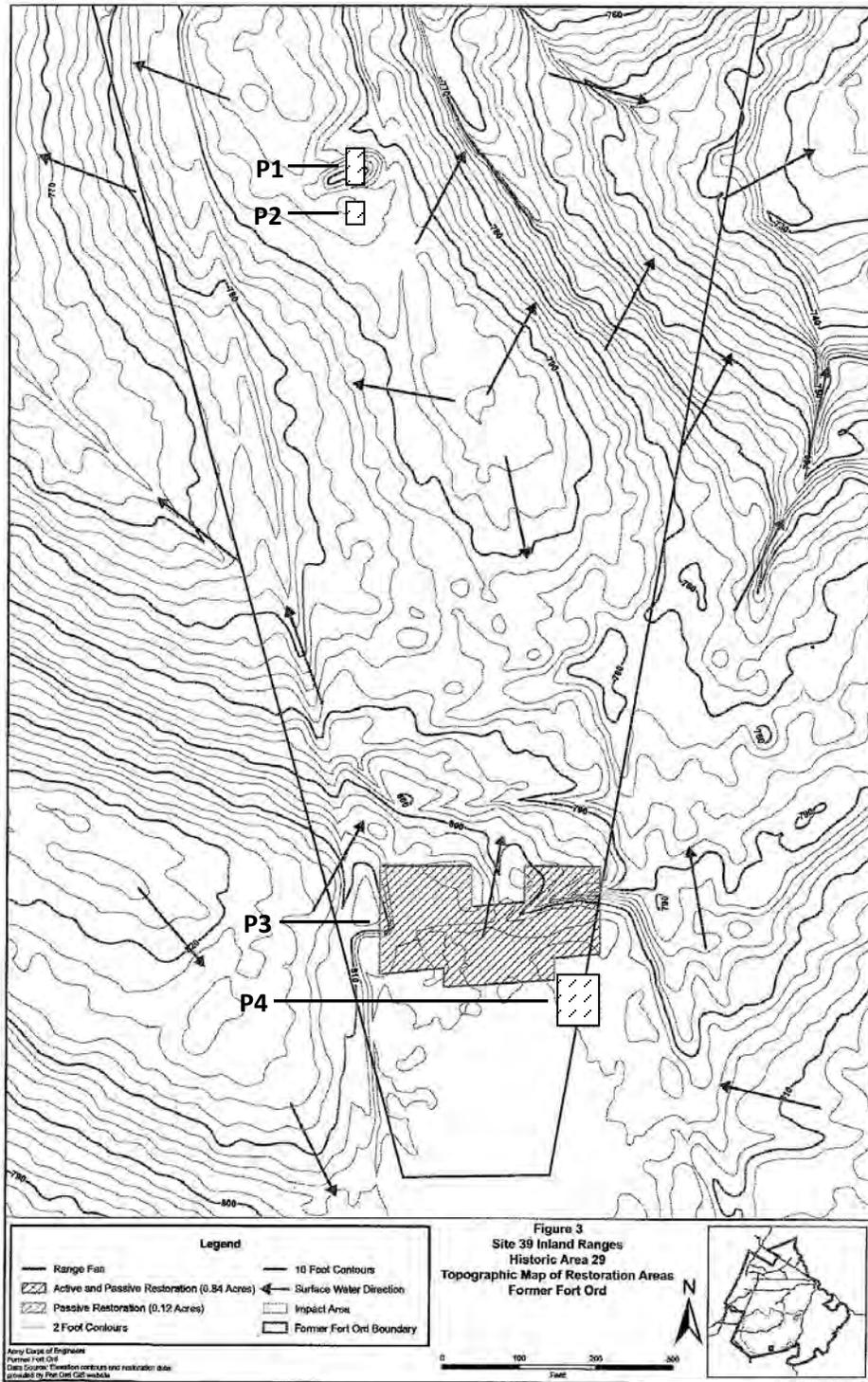
	Plot # Area (ft ²) %Total Area	1 400 1%		2 8230 30%		3 8946 69%	
Species	Overall Target (g)	Plot Target (g)	Amount applied (g)	Plot Target (g)	Amount applied (g)	Plot Target (g)	Amount applied (g)
<i>ADFA</i>	136.1	2.0	2.2	40.6	42.0	93.5	95.6
<i>ARMO*</i>	272.2	3.9	4.2	81.2	83.0	187.0	190.0
<i>ARPU*</i>	136.1	2.0	2.5	40.6	41.6	93.5	95.6
<i>ARTO</i>	272.2	3.9	4.5	81.2	83.0	187.0	190.0
<i>BAPI</i>	20.4	0.3	0.5	6.1	6.2	14.0	14.0
<i>CERI*</i>	136.4	1.4	1.5	40.9	41.0	94.1	100.0
<i>ERCO</i>	40.8	0.6	1.0	12.2	12.3	28.0	29.0
<i>HESC</i>	136.1	2.0	2.5	40.6	41.0	93.5	94.0
<i>HOCU</i>	272.2	3.9	4.0	81.2	81.3	187.0	187.0
<i>Hordeum</i>	2454.5	24.5	25.0	736.4	740.0	1693.6	1693.8
<i>LOSC</i>	272.2	3.9	4.0	81.2	83.0	187.0	189.0
<i>MIAU</i>	81.8	0.8	1.0	24.5	25.0	56.5	57.0
<i>SAME</i>	136.1	2.0	2.8	40.6	40.9	93.5	95.0
<i>Total(g)</i>	4367.1	51.3	55.7	1307.5	1320.3	3008.3	3030.0

HA 29 Restoration Work Plan January 24, 2012

Initial site Condition (January 24, 2012)

- HA 29 has four polygons: P1, P2, P3, and P4
- 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 a pampas forest but was sprayed by BLM. However pampas 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.

Polygons for HA-29.



Restoration work plan for P1, P2, and P4.

- Rake straw off site.
- Broadcast 50% seed over 100% of the site.
- Rake seed in.
- Recast straw.
- GPS polygons.

Restoration work plan for P3.

P3 is the largest polygon at HA 29 and will be receiving both active planting and broadcast seeding. Active planting will occur before broadcast seeding. Broadcast seeding will be done over the entire site.

- Identify and designate areas that will receive appropriate species, specie densities, and areas that will need to be monitored for erosion.
- Install native plants in designated areas, clumping the plant together where possible.
- Ensure that installed vegetation is buried so that a basin is formed around the base of the plant to trap rain/moisture.
- GPS P3.

HA 29 Restoration Work Performed October 1, 2012

Crew: Thor Anderson, Shawn Wagoner

Time on site: 1.5 hour

Total crew time: 3 hours

Activities: Site Inspection

Work done at P3

- Inspected polygon for installation of straw wattles and future seeding and planting locations.
- Inspected ponded area that was regraded (see photo below).



HA 29 Restoration Work Performed October 2, 2012

Crew: Shawn Wagoner, Jeremy Ashe

Time on site: 15 min

Total crew time: 30 min

Activities: Erosion Control

Work done at P3

- Delivered straw wattles to site for erosion control.



HA 29 Restoration Work Performed October 3, 2012

Crew: Shawn Wagoner, Jeremy Ashe, Thor Anderson, Phillip Reyes, Scott Salembier, Andrew Guest

Time on site: 4 hours

Total crew time: 24 hours

Activities: Erosion Control, Weed Management

Work done at P3

- Installed wattles and removed pampas grass.



HA 29 Restoration Work Performed October 11, 2012

Crew: Shawn Wagoner, Thor Anderson

Time on site: 30 min

Total crew time: 1 hour

Activities: Erosion Control, Weed Management

Work done at P3

- Inspected wattle installation and removed pampas.

HA 29 Restoration Work Performed October 23, 2012

Crew: Shawn Wagoner, Thor Anderson

Time on site: 1 hour

Total crew time: 2 hours

Activities: Erosion Control, Weed Management

Work done at P3

- Minor adjustments were made to wattles and pampas was removed, checked on installed plants.

HA 29 Restoration Work Performed November 14, 2012

Crew: Phillip Reyes, Scott Salembier

Time on site: 2.5 hours

Total crew time: 5 hours

Activities: Photo Points, Monitoring

Work done at P1, 2, 3 and 4

- Updated Photo points
- Visually monitored polygon.

HA 29 Restoration Work Performed December 3, 2012

Crew: Shawn Wagoner, Phillip Reyes

Time on site: 1 hour

Total crew time: 2 hours

Activities: Erosion Control

Work done at P3

- Secured wattles with stakes.



HA 29 Restoration Work Performed December 18, 2012

Crew: Scott Salembier, Phillip Reyes

Time on site: 6 hour

Total crew time: 12 hours

Activities: Passive Restoration, Weed Management

Notes:

- In preparation for restoration activities, seed mixes were made to hit the remaining 50% seed target for HA 29. The amount of seed mix for each polygon was made to match the percent area of each polygon to ensure that seed will be cast evenly.
- Seed treatments were applied to appropriate species.
- Restoration activities went as planned.

Work done at P1, P2, P3, and P4:

- Pampas grass was removed when encountered on the site during the broadcasting process.
- Old straw was raked off site.
- 100% seed target for HA 29 was broadcast evenly for each polygon.
- Broadcast seed was raked into the ground.
- Fresh straw was broadcast over P1, P2, P3, and P4.



HA 29 Seed Allocation Table

	Plot # Area (ft ²) %Total Area	1 1385 3%		2 400 1%		3 36642 87%		4 3602 9%	
Species	Overall Target (g)	Plot Amount (g)	Amount applied (g)	Plot Amount (g)	Amount applied (g)	Plot Amount (g)	Amount applied (g)	Plot Amount (g)	Amount applied (g)
ADFA	226.8	7.47	7.50	2.16	2.20	197.73	199.50	19.44	20.00
ARHO*	453.6	14.95	15.00	4.32	5.00	395.46	402.30	38.87	40.00
ARMO*	453.6	14.95	15.00	4.32	5.00	395.46	398.30	38.87	40.10
ARPU*	226.8	7.47	7.50	2.16	3.00	197.73	204.50	19.44	20.80
ARTO	453.6	14.95	15.00	4.32	5.00	395.46	397.60	38.87	40.70
BAPI	34	1.12	1.30	0.32	0.40	29.64	32.10	2.91	3.80
CERI*	453.6	13.61	19.80	4.54	8.90	394.63	398.90	40.82	41.90
ERFA	22.7	0.75	0.80	0.22	0.22	19.79	23.00	1.95	2.90
ERCO	68	2.24	3.30	0.65	1.20	59.28	61.80	5.83	6.20
HESC	226.8	7.47	8.10	2.16	3.60	197.73	201.40	19.44	20.50
HOCU	453.6	14.95	15.00	4.32	5.00	395.46	401.30	38.87	41.60
Hordeum	4090.9	122.7	123.0	40.9	41.0	3559.1	3564.0	368.2	368.20
LOSC	453.6	14.95	18.60	4.32	6.20	395.46	399.50	38.87	40.70
MIAU	136.4	4.09	5.00	1.36	1.50	118.64	121.70	12.27	15.20
SAME	226.8	7.47	9.90	2.16	4.40	197.73	201.20	19.44	21.80

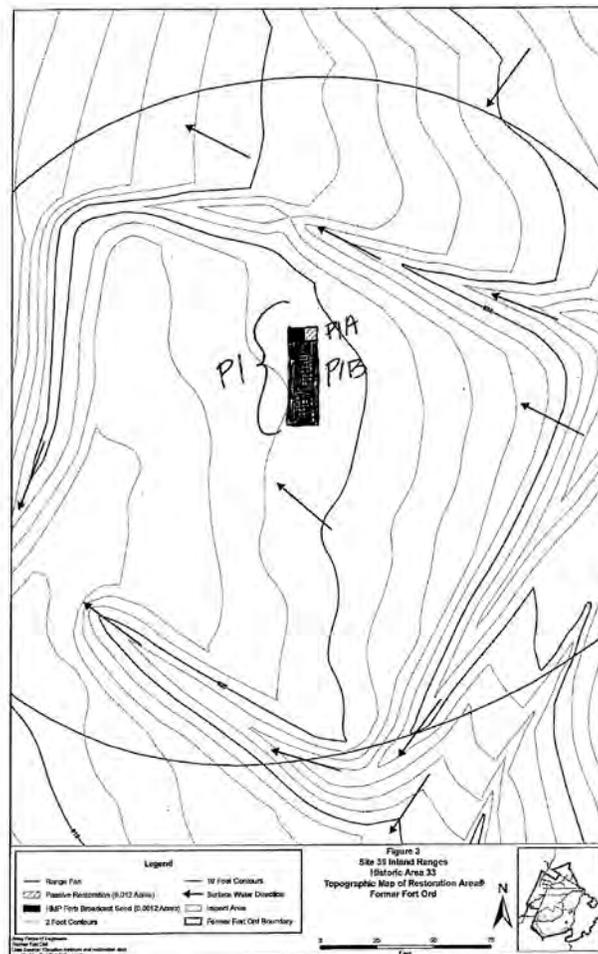
Total (g) 7980.77 249.17 264.80 78.21 92.62 6949.30 7007.10 704.09 724.40

HA 33 Restoration Work Plan December 19, 2011

Initial Site Condition (December 19, 2011)

- There is one polygon for HA 33: P1.
- P1 is divided into two sub polygons: P1A and P1B.
- P1A (60 ft²) is set aside for Monterey spine flower (CHPUP).
- Total area for polygon is 529 ft².
- 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.

Figure 1 Polygons for HA 33



Restoration work plan for P1A

- Mark out 6'x10' area for CHPUP.
- Weed site.
- Broadcast CHPUP seed evenly.
- Rake seed in.
- Do not cast any straw.

Restoration work plan for P1B

- Weed site.
- Broadcast 50% seed mix evenly.
- Rake seed in.
- Cast site with fresh straw.

HA 33 Restoration Work Performed November 14, 2012

Crew: Scott Salembier, Phillip Reyes

Time on site: 1 hour

Total crew time: 2 hours

Activities: Photo points, monitoring

Notes:

- In preparation for restoration activities, seed mixes were made to hit the remaining 50% seed target for HA 33. The amount of seed mix for each polygon was made to match the percent area of each polygon to ensure that seed was cast evenly.
- Seed treatments were applied to the appropriate species.
- Visual surveys were conducted.
- Restoration activities went as planned.

Work Performed at P1A and P1B

- Updated photo points for each polygon.
- Visually monitored polygons for species composition and % cover.

HA 33 Restoration Work Performed November 21, 2012

Crew: Shawn Wagoner, Phillip Reyes

Time on site: 30 min

Total crew time: 1 hour

Activities: Broadcast seeding

Notes:

- In preparation for restoration activities, seed mixes were made to hit the remaining 50% seed target for HA 33.
- Seed treatments were applied to the appropriate species.
- Visual surveys were conducted.
- Restoration activities went as planned.

Work Performed at P1A

- Broadcast CHPUP seed evenly.
- Raked seed into substrate.
- Did not cast any straw.

Work Performed at P1B

- Broadcast 50% seed mix evenly.
- Raked seed into substrate.
- Fresh straw was cast onto site.

HA 33 Seed Allocation Table

	Plot #	1A		1B	
	Area (ft ²)	60		529	
	%Total Area	10%		90%	
Species	Overall Target (g)	Plot Amount (g)	Amount applied (g)	Plot Amount (g)	Amount applied (g)
ACMI	2.3			2.3	3.0
ADFA	2.3			2.3	5.0
ARMO*	4.5			4.5	5.0
ARPU*	2.3			2.3	3.0
BAPI	0.3			0.3	0.3
CERI*	2.3			2.3	3.0
CHPUP*	0.3	0.3	0.5		
CRCA	2.3			2.3	3.0
ERER	0.6			0.6	1.0
ERCO	0.7			0.7	1.0
HESC	2.3			2.3	3.0
HOCU	4.5			4.5	5.0
Hordeum	40.9			40.9	41.0
LOSC	4.5			4.5	5.0
MIAU	0.2			0.2	5.0
NACE	4.5			4.5	5.0
SAME	2.3			2.3	5.0

Total (g) 77.1 0.3 0.5 76.7 93.3

*HMP Species

 CHPUP applied areas

HA 34 Restoration Work Plan

December 13, 2012

Initial Site Condition

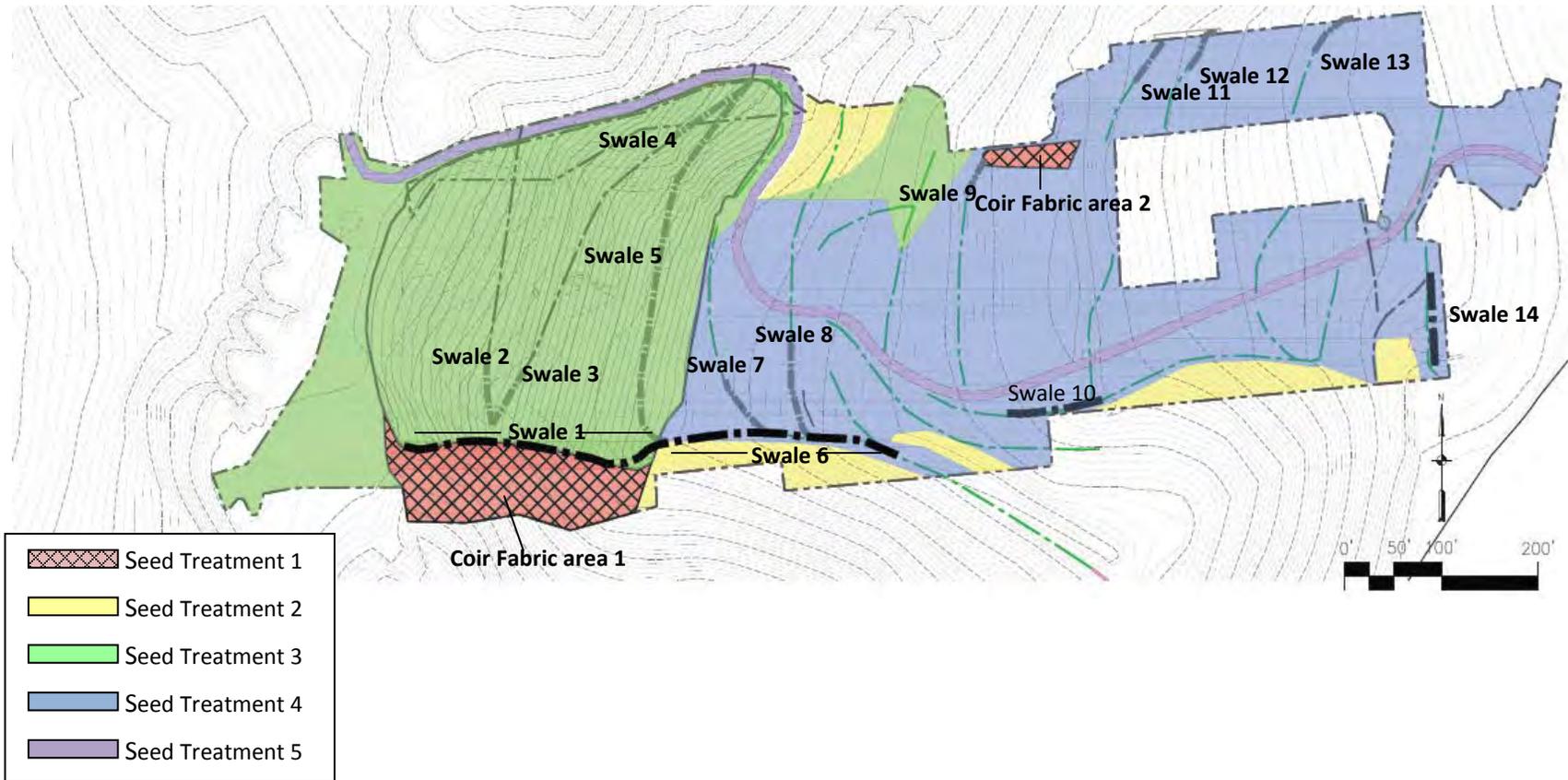
- HA 34 consists of one large continuous area with no sub-areas set aside for HMP forb broadcasting.
- HA 34 is approximately 9.5 acres.
- The immediate area surrounding the site consists of high quality habitat with manzanita/chamise chaparral and soft sage scrub being the dominant vegetation types. There is some oak woodland/oak savanna habitat at the base and southeastern portion.
- The site has been straw crimped with barley.
- Invasive species are relatively minor; there is some iceplant 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 will be done to combat erosion potential.

Aerial image of HA 34.



HA 34 is sectioned into Treatment areas which designate the type of fiber matrix and seed mix applied. Swale sand coir fabric areas were arbitrarily numbered and broadcast with the appropriate seed mix and amount.

Treatment Areas and swales.



HA 34 Restoration Work Performed November 1, 2012

Crew: Shawn Wagoner, Thor Anderson

Time on site: 45 min

Total crew time: 1.5 hours

Activities: Site Inspection

Work Performed at P1

- Discussed erosion control measures with Chuck and Thor and looked for potential erosion sites.

HA 34 Restoration Work Performed November 15, 2012

Crew: Shawn Wagoner, Thor Anderson, Scott Salembier, Phillip Reyes

Time on site: 4 hours

Total crew time: 20 hours

Activities: Seed broadcasting, site inspection

Notes:

- In preparation for restoration activities, seed mixes were prepared to meet the 100% target for HA 34 and applied at appropriate habitat type. Swales 9-14 (excluding swale 12) are in the lower soft sage scrub vegetation type. Swale 12 was not created, so its seed was distributed evenly between swale 11 and 13.
- Seed treatments were applied to the appropriate species dependent on appropriate areas.

Work Performed at P1

- Seed was broadcast in swales 9, 10, 11, 13, 14

HA 34 Seed Allocation table.

	Swale 9		Swale 10		Swale 11		Swale 12		Swale 13		Swale 14	
% total area	0.03%		0.05%		0.03%		0.03%		0.03%		0.05%	
Species	Swale amount (g)	Amount applied (g)										
ACMI	0.7	1.1	1.1	1.3	0.7	1.1	0.7	1.1	0.7	0.9	1.1	1.3
ARCA	1.3	1.5	2.2	2.5	1.3	1.5	1.3	1.5	1.3	1.5	2.2	2.5
BAPI	0.2	Used in slurry	0.3	Used in slurry	0.2	Used in slurry	0.2	Used in slurry	0.2	Used in slurry	0.3	Used in slurry
ELGL	4.1	4.2	6.8	7.0	4.1	4.2	4.1	4.2	4.1	4.2	6.8	7.2
ERCO	0.2	0.5	0.3	0.8	0.2	0.5	0.2	0.5	0.2	0.5	0.3	0.9
HESC	0.6	1.0	1.0	1.4	0.6	1.0	0.6	0.8	0.6	1.0	1.0	1.4
Hordeum	6.8	7.0	11.4	12.0	6.8	7.0	6.8	7.0	6.8	7.0	11.4	12.0
HOCU	1.2	1.5	2.1	2.5	1.2	1.3	1.2	1.3	1.2	1.3	2.1	2.3
LOSC	1.2	1.5	2.1	3.0	1.2	1.5	1.2	1.5	1.2	1.5	2.1	3.0
LUAR	1.3	1.7	2.2	2.3	1.3	1.7	1.3	1.7	1.3	1.7	2.2	2.3
MIAU	0.1	0.3	0.2	0.4	0.1	0.3	0.1	0.3	0.1	0.3	0.2	0.4
NAPU	0.9	1.3	1.5	1.7	0.9	1.1	0.9	1.3	0.9	1.2	1.5	1.7
SAME	0.7	1.0	1.1	1.5	0.7	1.0	0.7	1.0	0.7	1.0	1.1	1.5
Total (g)	19.3	22.6	32.2	36.4	19.3	22.2	19.3	22.2	19.3	22.1	32.2	36.5

HA 34 Restoration Work Performed November 19, 2012

Crew: Shawn Wagoner, Thor Anderson

Time on site: 30 min

Total crew time: 1 hour

Activities: Seed broadcasting

Notes:

- In preparation for restoration activities, seed mixes were prepared to hit the 100% target for HA 34 and applied at appropriate habitat type. Swale 6 is in the lower soft sage scrub vegetation type.
- Seed treatments were applied to the appropriate species.

Work Performed at P1

- Seed were broadcast at swale 6.

HA 34 Seed Allocation table.

	Swale 6	
% total area	0.10%	
Species	Swale amount (g)	Amount applied (g)
<i>ACMI</i>	2.2	2.3
<i>ARCA</i>	4.3	5.0
<i>BAPI</i>	0.6	Used in slurry
<i>ELGL</i>	13.6	13.9
<i>ERCO</i>	0.7	1.00
<i>HESC</i>	2.1	2.50
<i>Hordeum</i>	22.7	24.00
<i>HOUC</i>	4.1	4.20
<i>LOSC</i>	4.1	4.20
<i>LUAR</i>	4.3	4.40
<i>MIAU</i>	0.4	0.60
<i>NAPU</i>	3.0	4.00
<i>SAME</i>	2.2	2.50
<i>Total (g)</i>	64.42	68.60

HA 34 Restoration Work Performed November 21, 2012

Crew: Shawn Wagoner, Phillip Reyes

Time on site: 30 min

Total crew time: 1 hour

Activities: Seed broadcasting

Notes:

- In preparation for restoration activities, seed mixes were prepared to hit the 100% target for HA 34 and applied at appropriate habitat type. Swales 7 and 8 are in the lower soft sage scrub vegetation type.
- Seed treatments were applied to the appropriate species.

Work Performed at P1

- Seed were broadcast at swales 7 and 8.

HA 34 Seed Allocation table.

	Swale 7		Swale 8	
% total area	0.04%		0.05%	
Species	Swale amount (g)	Amount applied (g)	Swale amount (g)	Amount applied (g)
<i>ACMI</i>	0.9	1.0	1.1	1.5
<i>ARCA</i>	1.7	2.0	2.2	2.5
<i>BAPI</i>	0.3	Used in slurry	0.3	Used in slurry
<i>ELGL</i>	5.4	5.6	6.8	7.0
<i>ERCO</i>	0.3	0.60	0.3	0.5
<i>HESC</i>	0.8	1.00	1.0	1.2
<i>Hordeum</i>	9.1	10.00	11.4	12.0
<i>HOCU</i>	1.6	2.00	2.1	2.5
<i>LOSC</i>	1.6	2.00	2.1	2.5
<i>LUAR</i>	1.7	1.90	2.2	2.5
<i>MIAU</i>	0.2	0.50	0.2	0.4
<i>NAPU</i>	1.2	1.50	1.5	1.6
<i>SAME</i>	0.9	1.00	1.1	1.5
<i>Total (g)</i>	25.77	29.10	32.21	35.70

HA 34 Restoration Work Performed November 29, 2012

Crew: Shawn Wagoner, Phillip Reyes, Scott Salembier, Thor Anderson

Time on site: 6 hours

Total crew time: 24 hours

Activities: Seed broadcasting

Notes:

- In preparation for restoration activities, seed mixes were prepared to hit the 100% target for HA 34 and applied at appropriate habitat type. Swales 1-5, Treatment area 1-3 (including both coir fabric areas) are in the upper Manzanita/chamise chaparral vegetation type. Treatment 4 is in the lower soft sage scrub vegetation type.
- Swale 4 and 5 locations were changed and condensed, seed allocation was updated.
- Seed treatments were applied to the appropriate species.

Work Performed at P1

- Broadcast seeding swales 1, 2, 3, 4, and 5, coir fabric areas 1 & 2, and the rest of the site excluding the road and BAPI seed which is used in the hydromulch.

HA 34 Seed Allocation table.

	Swale 1		Swale 2		Swale 3		Swale 4		Swale 5	
% total area	0.13%		0.04%		0.04%		0.05%		0.19%	
Species	Swale amount (g)	Amount applied (g)								
ACMI	2.8	3.5	0.8	1.1	0.8	1.2	1.1	1.8	4.0	4.4
ADFA	5.6	6	1.7	2.1	1.7	2.7	2.2	2.8	8.2	8.5
ARHO*	5.6	6	1.7	2	1.7	2.5	2.2	2.9	8.2	9
ARMO*	5.6	6	1.7	2.7	1.7	2.2	2.2	3.2	8.2	9
ARTO	11.2	12.2	3.5	3.7	3.5	4.3	4.3	4.5	16.4	17.7
CERI*	5.6	7	1.7	2.7	1.7	2.7	2.2	2.5	8.2	8.7
ELGL	32.8	33.8	10.1	10.5	10.1	10.9	12.6	13	48.0	49.3
ERCO	0.8	1.1	0.3	0.5	0.3	0.5	0.3	0.5	1.2	2
HESC	2.7	4	0.8	1.1	0.8	1.1	1.1	1.6	4.0	4.3
Hordeum	29.5	30.5	9.1	9.2	9.1	10	11.4	12.5	43.2	44
HOCU	5.5	6	1.7	2.1	1.7	1.8	2.1	2.5	8.0	8
LOSC	5.5	6.5	1.7	2.8	1.7	1.8	2.1	2.3	8.0	8.5
NAPU	7.3	7.5	2.2	2.7	2.2	3	2.8	3	10.7	11.2
SAME	2.8	3.5	0.8	1.8	0.8	1.2	1.1	1.3	4.0	4.4

Total (g) 123.3 133.6 38.0 45.0 38.0 45.9 47.4 54.4 180.3 189.0

* HMP species

	Coir Fabric area 1		Coir Fabric area 2	
% total area	11.0%		0.8%	
Species	Amount needed (g)	Amount applied (g)	Amount needed (g)	Amount applied (g)
ACMI	233.0	233.3	16.9	17.0
ADFA	475.0	475.1	34.5	35.0
ARHO*	475.0	475.1	34.5	35.0
ARMO*	475.0	475.1	34.5	35.0
ARTO	950.0	950.1	69.1	70.0
CERI*	475.0	475.1	34.5	35.0
ELGL	2779.0	2780.0	202.1	203.0
ERCO	70.0	70.0	5.1	5.5
HESC	231.0	232.0	16.8	17.0
Hordeum	2500.0	2501.0	181.8	190.0
HOCU	461.5	462.0	33.6	35.0
LOSC	461.5	462.0	33.6	35.0
NAPU	617.5	618.0	44.9	45.0
SAME	233.0	235.0	16.9	17.0
Total (g)	10436.5	10443.8	759.0	774.5

	Treatment area 2		Treatment area 3	
% total area	13.8%		74.0%	
Species	Amount needed (g)	Amount applied (g)	Amount needed (g)	Amount applied (g)
ACMI	292.3	293.1	1565.3	1566.0
ADFA	595.9	596.0	3191.1	3192.1
ARHO*	595.9	596.0	3191.1	3192.1
ARMO*	595.9	596.0	3191.1	3192.1
ARTO	1191.8	1191.9	6382.3	6383.3
CERI*	595.9	596.0	3191.1	3192.1
ELGL	3486.4	3487.0	18669.8	18670.0
ERCO	87.8	88.0	470.3	471.3
HESC	289.8	290.0	1551.9	1552.0
Hordeum	3136.4	3136.7	16795.5	16800.0
HOCU	579.0	580.0	3100.4	3101.0
LOSC	579.0	580.0	3100.4	3101.0
NAPU	774.7	775.0	4148.5	4149.0
SAME	292.3	292.5	1565.3	1566.0
Total (g)	13093.1	13098.2	70114.3	70128.0

	Treatment 4	
% total area	99.59%	
Species	Amount needed (g)	Amount applied (g)
ACMI	2195.5	2196
ARCA	4300.5	4301
BAPI	633.8	Used in slurry
ELGL	13548.8	13549
ERCO	656.4	657.6
HESC	2050.6	2051.6
Hordeum	22634.1	22635.5
HOCU	4101.3	4102
LOSC	4101.3	4102
LUAR	4300.5	4301
MIAU	430.0	431
NAPU	3010.3	3011
SAME	2195.5	2200
Total (g)	64158.59	63537.70

* HMP species

HA 34 Restoration Work Performed December 3, 2012

Crew: Shawn Wagoner, Phillip Reyes, Thor Anderson

Time on site: 2 hours

Total crew time: 6 hours

Activities: Site Inspection

Work Performed at P1

- Photo documented erosion damage and loss of seed at site after rain event.

HA 34 Restoration Work Performed December 11, 2012

Crew: Shawn Wagoner, Phillip Reyes, Thor Anderson, Kevin Ghalambor, Scott Salembier

Time on site: 1.5 hours

Total crew time: 7.5 hours

Activities: Seed broadcasting

Work Performed at P1

- Burleson crew assisted ITSI/Shaw crew with seed broadcasting of barley seed.

HA 34 Restoration Work Performed December 17, 2012

Crew: Shawn Wagoner, Thor Anderson

Time on site: 1.25 hours

Total crew time: 2.5hours

Activities: Site Inspection

Work Performed at P1

- Inspected coir fabric area for seed germination. Found evidence of minimal germination. Burleson recommended an application of bonded fiber matrix over fabric and broadcasting of additional barley seed in rill areas under the fabric.

HA 34 Restoration Work Performed December 18, 2012

Crew: Shawn Wagoner

Time on site: 8 hours

Total crew time: 8 hours

Activities: Passive Restoration

Work Performed at P1

- Seeded the upper coir fabric area with ~12lbs of barley, focusing on the rills.
- Seeded the road with *Hordeum* starting at the top and working down.
- Discussed with hydromulch crew how to approach hydroseeding the lower 2/3 portion of HA 34.



Hordeum seed in tire treads on road.



Upper Coir Fabric slope with hydromulch.

HA 34 Restoration Work Performed December 19, 2012

Crew: Shawn Wagoner

Time on site: 8 hours

Total crew time: 8 hours

Activities: Passive Restoration

Work Performed at P1

- Used hydromulcher to disperse BAPI seed evenly on lower 2/3 portion of the site.



BAPI entering hydromulcher



Hydro-mulching mid-site.



Lower-site post hydro-mulching

Table 1. HA 34 seed mixes including coir fabric areas and swale areas.

Hand Broadcast Mix 1							
	Total 100%	Coir Fabric area 1 11.0%		Coir Fabric area 1 0.8%		Treatment area 2 13.8%	
Species	%	Amount needed (g)	Amount applied (g)	Amount needed (g)	Amount applied (g)	Amount needed (g)	Amount applied (g)
<i>ACMI</i>	49	233.0	233.3	16.9	17.0	292.3	293.1
<i>ADFA</i>	100	475.0	475.1	34.5	35.0	595.9	596.0
<i>ARHO*</i>	100	475.0	475.1	34.5	35.0	595.9	596.0
<i>ARMO*</i>	100	475.0	475.1	34.5	35.0	595.9	596.0
<i>ARTO</i>	100	950.0	950.1	69.1	70.0	1191.8	1191.9
<i>CERI*</i>	100	475.0	475.1	34.5	35.0	595.9	596.0
<i>ELGL</i>	65	2779.0	2780.0	202.1	203.0	3486.4	3487.0
<i>ERCO</i>	49	70.0	70.0	5.1	5.5	87.8	88.0
<i>HESC</i>	48.6	231.0	232.0	16.8	17.0	289.8	290.0
<i>Hordeum</i>	33.3	2500.0	2501.0	181.8	190.0	3136.4	3136.7
<i>HOCU</i>	48.6	461.5	462.0	33.6	35.0	579.0	580.0
<i>LOSC</i>	48.6	461.5	462.0	33.6	35.0	579.0	580.0
<i>NAPU</i>	65	617.5	618.0	44.9	45.0	774.7	775.0
<i>SAME</i>	49	233.0	235.0	16.9	17.0	292.3	292.5
<i>Total (g)</i>		10436.5	10443.8	759.0	774.5	13093.1	13098.2

Table 1 continued. HA 34 seed mixes including coir fabric areas and swale areas.

Hand Broadcast Mix 1												
	Treatment area 3 74.0%		Swale area 1 0.13%		Swale area 2 0.04%		Swale area 3 0.04%		Swale area 4 0.05%		Swale area 5 0.19%	
Species	Amount needed (g)	Amount applied (g)	Swale amount (g)	Amount applied (g)	Swale amount (g)	Amount applied (g)	Swale amount (g)	Amount applied (g)	Swale amount (g)	Amount applied (g)	Swale amount (g)	Amount applied (g)
<i>ACMI</i>	1565.3	1566.0	2.8	3.5	0.8	1.1	0.8	1.2	1.1	1.8	4.0	4.4
<i>ADFA</i>	3191.1	3192.1	5.6	6	1.7	2.1	1.7	2.7	2.2	2.8	8.2	8.5
<i>ARHO*</i>	3191.1	3192.1	5.6	6	1.7	2	1.7	2.5	2.2	2.9	8.2	9
<i>ARMO*</i>	3191.1	3192.1	5.6	6	1.7	2.7	1.7	2.2	2.2	3.2	8.2	9
<i>ARTO</i>	6382.3	6383.3	11.2	12.2	3.5	3.7	3.5	4.3	4.3	4.5	16.4	17.7
<i>CERI*</i>	3191.1	3192.1	5.6	7	1.7	2.7	1.7	2.7	2.2	2.5	8.2	8.7
<i>ELGL</i>	18669.8	18670.0	32.8	33.8	10.1	10.5	10.1	10.9	12.6	13	48.0	49.3
<i>ERCO</i>	470.3	471.3	0.8	1.1	0.3	0.5	0.3	0.5	0.3	0.5	1.2	2
<i>HESC</i>	1551.9	1552.0	2.7	4	0.8	1.1	0.8	1.1	1.1	1.6	4.0	4.3
<i>Hordeum</i>	16795.5	16800.0	29.5	30.5	9.1	9.2	9.1	10	11.4	12.5	43.2	44
<i>HOCU</i>	3100.4	3101.0	5.5	6	1.7	2.1	1.7	1.8	2.1	2.5	8.0	8
<i>LOSC</i>	3100.4	3101.0	5.5	6.5	1.7	2.8	1.7	1.8	2.1	2.3	8.0	8.5
<i>NAPU</i>	4148.5	4149.0	7.3	7.5	2.2	2.7	2.2	3	2.8	3	10.7	11.2
<i>SAME</i>	1565.3	1566.0	2.8	3.5	0.8	1.8	0.8	1.2	1.1	1.3	4.0	4.4
<i>Total (g)</i>	70114.3	70128.0	123.3	133.6	38.0	45.0	38.0	45.9	47.4	54.4	180.3	189.0

Table 1 continued. HA 34 seed mixes including coir fabric areas and swale areas.

Hand Broadcast Mix 2									
	Total 100%	Treatment 4 (Blue) 99.59%		Swale area 6 0.10%		Swale area 7 0.04%		Swale area 8 0.05%	
Species	%	Amount needed (g)	Amount applied (g)	Swale amount (g)	Amount applied (g)	Swale amount (g)	Amount applied (g)	Swale amount (g)	Amount applied (g)
<i>ACMI</i>	51	2195.5	2196	2.2	2.3	0.9	1.0	1.1	1.5
<i>ARCA</i>	100	4300.5	4301	4.3	5.0	1.7	2.0	2.2	2.5
<i>BAPI</i>	100	633.8	Used in slurry	0.6	Used in slurry	0.3	Used in slurry	0.3	Used in slurry
<i>ELGL</i>	35	13548.8	13549	13.6	13.9	5.4	5.6	6.8	7.0
<i>ERCO</i>	51	656.4	657.6	0.7	1.00	0.3	0.60	0.3	0.5
<i>HESC</i>	47.7	2050.6	2051.6	2.1	2.50	0.8	1.00	1.0	1.2
<i>Hordeum</i>	33.3	22634.1	22635.5	22.7	24.00	9.1	10.00	11.4	12.0
<i>HOCU</i>	47.7	4101.3	4102	4.1	4.20	1.6	2.00	2.1	2.5
<i>LOSC</i>	47.7	4101.3	4102	4.1	4.20	1.6	2.00	2.1	2.5
<i>LUAR</i>	100	4300.5	4301	4.3	4.40	1.7	1.90	2.2	2.5
<i>MIAU</i>	100	430.0	431	0.4	0.60	0.2	0.50	0.2	0.4
<i>NAPU</i>	35	3010.3	3011	3.0	4.00	1.2	1.50	1.5	1.6
<i>SAME</i>	51	2195.5	2200	2.2	2.50	0.9	1.00	1.1	1.5
<i>Total (g)</i>		64158.59	63537.70	64.42	68.60	25.77	29.10	32.21	35.70

Table 1 continued. HA 34 seed mixes including coir fabric areas and swale areas.

Hand Broadcast Mix 2												
Species	Swale area 9 0.03%		Swale area 10 0.05%		Swale area 11 0.03%		Swale area 12 0.03%		Swale area 13 0.03%		Swale area 14 0.05%	
	Swale amount (g)	Amount applied (g)	Swale amount (g)	Amount applied (g)	Swale amount (g)	Amount applied (g)	Swale amount (g)	Amount applied (g)	Swale amount (g)	Amount applied (g)	Swale amount (g)	Amount applied (g)
<i>ACMI</i>	0.7	1.1	1.1	1.3	0.7	1.1	0.7	1.1	0.7	0.9	1.1	1.3
<i>ARCA</i>	1.3	1.5	2.2	2.5	1.3	1.5	1.3	1.5	1.3	1.5	2.2	2.5
<i>BAPI</i>	0.2	Used in slurry	0.3	Used in slurry	0.2	Used in slurry	0.2	Used in slurry	0.2	Used in slurry	0.3	Used in slurry
<i>ELGL</i>	4.1	4.2	6.8	7.0	4.1	4.2	4.1	4.2	4.1	4.2	6.8	7.2
<i>ERCO</i>	0.2	0.5	0.3	0.8	0.2	0.5	0.2	0.5	0.2	0.5	0.3	0.9
<i>HESC</i>	0.6	1.0	1.0	1.4	0.6	1.0	0.6	0.8	0.6	1.0	1.0	1.4
<i>Hordeum</i>	6.8	7.0	11.4	12.0	6.8	7.0	6.8	7.0	6.8	7.0	11.4	12.0
<i>HOCU</i>	1.2	1.5	2.1	2.5	1.2	1.3	1.2	1.3	1.2	1.3	2.1	2.3
<i>LOSC</i>	1.2	1.5	2.1	3.0	1.2	1.5	1.2	1.5	1.2	1.5	2.1	3.0
<i>LUAR</i>	1.3	1.7	2.2	2.3	1.3	1.7	1.3	1.7	1.3	1.7	2.2	2.3
<i>MIAU</i>	0.1	0.3	0.2	0.4	0.1	0.3	0.1	0.3	0.1	0.3	0.2	0.4
<i>NAPU</i>	0.9	1.3	1.5	1.7	0.9	1.1	0.9	1.3	0.9	1.2	1.5	1.7
<i>SAME</i>	0.7	1.0	1.1	1.5	0.7	1.0	0.7	1.0	0.7	1.0	1.1	1.5
<i>Total (g)</i>	19.33	22.60	32.21	36.40	19.33	22.20	19.33	22.20	19.33	22.10	32.21	36.50

HA 36 Restoration Work Plan January 20, 2012

Initial Site Condition (January 20, 2012)

- HA 36 consists of one polygon with no areas set aside for HMP forb broadcasting.
- 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.



HA 36 Aerial Image (North is up).

Restoration work plan

- Pin Flag and GPS perimeter.
- Rake straw aside in areas that are not at high risk for erosion.
- Smooth out small ridges and bulldozer tracks.

- In the northern area of the polygon, broadcast evenly on areas that are not at risk of eroding. On the southern edge of the polygon, selectively broadcast patches between gullies and rills.
- Rake seed in.
- Recast straw, add additional straw where necessary.

HA 36 Restoration Work Performed December 4, 2012

Crew: Scott Salembier and Phillip Reyes

Time on site: 5 hours

Total crew time: 10 hours

Activities: Passive Restoration and Weed Management.

Notes:

- In preparation for restoration activities, seed mixes were made to hit the remaining 50% seed target for HA 36.
- Seed treatments were applied to the appropriate species.
- Visual surveys were conducted.
- Restoration activities went as planned.

Work Performed at P1

- Updated photo points.
- Visual survey monitoring.
- Raked straw off polygon.
- Weeded polygon (hundreds of small pampas grass seedlings).
- Broadcast seed mix evenly.
- Raked seed in.
- Casted site with fresh straw.

HA 36 Seed Allocation Table

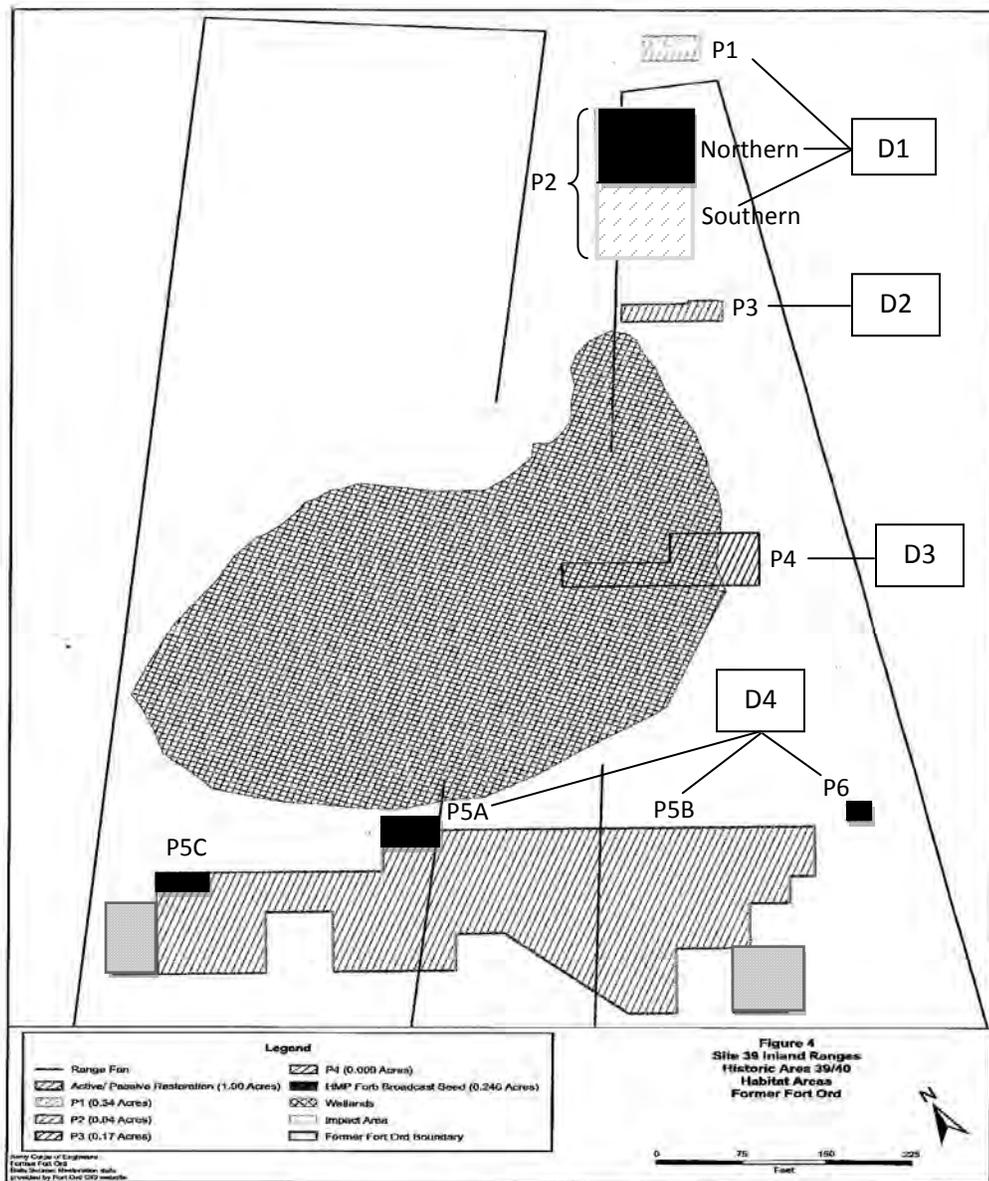
		Plot #	1	
		Area (ft ²)	17334	
		%Total Area	100%	
Species	Overall Target (g)	Plot Amount (g)	Amount applied (g)	
<i>ADFA</i>	113.4	113.4	115.2	
<i>ARHO*</i>	226.8	226.8	235.0	
<i>ARMO*</i>	226.8	226.8	230.0	
<i>ARPU*</i>	113.4	113.4	119.5	
<i>ARTO</i>	226.8	226.8	233.0	
<i>BAPI</i>	17.0	17.0	17.0	
<i>CERI*</i>	113.4	113.4	114.4	
<i>ERFA</i>	11.3	11.3	29.0	
<i>ERCO</i>	34.0	34.0	35.0	
<i>HESC</i>	113.4	113.4	114.0	
<i>HOCU</i>	226.8	226.8	227.0	
<i>Hordeum</i>	2045.5	2045.5	2046.3	
<i>LOSC</i>	226.8	226.8	230.0	
<i>RHCA</i>	113.4	113.4	114.0	
<i>SAME</i>	113.4	113.4	114.0	
<i>Total(g)</i>	3808.8	3808.8	3859.4	

HA 39/40 Restoration Work Plan January 26, 2012

Initial Site Condition (January 26, 2012)

- HA39/40 has four areas, D1-D4, with six polygons total, P1-P6.
- D1 area is characterized by grassland habitat and contains two polygons: P1 and P2.
- D2 area is characterized by a combination of grassland and wet meadow habitat, and contains one polygon: P3
- D3 area is characterized by wet meadow habitat and contains one polygon: P4.
- 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.
- Total area for all polygons is 107,114 ft².
- 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 broadcasting. P5A and P5C will be designated for Monterey Spineflower broadcasting. P6 will be designated for Seaside Birdsbeak broadcasting.
- P5B has moderate erosion issues with the potential for additional moderate to major erosion issues.
- Low threat of invasives.
- Natural recruitment was good in most polygons, especially around the edges.
- Surrounding habitat is moderate to high quality.

Polygons for HA39/40



Restoration work plan for P1, P3, and P4

- Rake straw off site.
- Broadcast 50% seed evenly over 100% of the site.
- Rake seed in.
- Recast straw.

Restoration work plan for P2.

P2 will be used as either a test plot to compare seeded v. non-seeded sites, or as an HMP Sand Gilia plot.

- Split P2 in half and designate one side P2A and the other P2B.
- Rake straw off site P2A.
- Broadcast 50% seed evenly over 100% of P2A.
- Rake seed in.
- Recast straw.
- GPS P2A.
- Leave P2B as is and GPS.

Restoration work plan for P5

P5 is the largest polygon at HA-39/40 and will receive active planting, broadcast seeding, and one, maybe two, HMP forb species. Active planting will be done before the general broadcast seeding. P5 will receive 100% seed on 50% of the site.

Seed Broadcasting HMP Forbs for P5A- CHPUP

- Mark off a 2459 ft² area in a centrally northern section of P5B and designate it P5A.
- Rake straw off entire site and leave off site.
- Broadcast CHPUP seed evenly
- Rake seed in.
- Erect temporary “fencing” around P5A
- GPS P5A

Seed Broadcasting Non HMP forbs for P5B.

- Split P5B in half.
- On the western half broadcast 50% of the seed evenly.
- GPS P5A seed broadcasting area.

Seed Broadcasting HMP Forbs for P5C- CHPUP

- Mark off a 600 ft² area in a centrally northern section of P5B and designate it P5C.
- Rake straw off entire site and leave off site.
- Broadcast CHPUP seed evenly
- Rake seed in.
- Erect temporary fencing around P5C.
- GPS P5C.

Active Planting for P5B.

- Identify and designate areas that will receive appropriate species, specie densities and areas that will need special attention due to erosion.
- Install live plants in designated areas, clumping when possible.
- Make sure installed plants have a basin to trap rain/moisture.
- GPS all of P5B

Seed Broadcasting HMP Forbs for P6 – CORIL

- Rake straw off entire site and leave off site.
- Broadcast CORIL seed evenly.
- Rake seed in.
- Erect temporary fencing around P6.
- GPS P6.

HA 39/40 Restoration Work Performed October 1, 2012

Crew: Shawn Wagoner, Thor Anderson

Time on site: 30 min

Total crew time: 1 hour

Activities: Site inspection

Work Performed at P5B

- Inspected site for future site work.

HA 39/40 Restoration Work Performed October 2, 2012

Crew: Shawn Wagoner, Jeremy Ashe

Time on site: 2 hours

Total crew time: 4 hours

Activities: Erosion Control

Work Performed at P5B

- Delivered straw wattles to planting site for erosion control.

HA 39/40 Restoration Work Performed October 8, 2012

Crew: Shawn Wagoner, Scott Salembier, Phillip Reyes

Time on site: 5 hours

Total crew time: 18 hours

Activities: Erosion Control

Work Performed at P5B

- Dug trenches for wattles.

HA 39/40 Restoration Work Performed October 9, 2012

Crew: Shawn Wagoner, Scott Salembier, Phillip Reyes, Jeremy Ashe, Andrew Guest

Time on site: 5 hours

Total crew time: 25 hours

Activities: Erosion Control

Work Performed at P5B

- Delineated lines for wattle installation. Dug trenches for wattles and installed two wattles.

HA 39/40 Restoration Work Performed October 10, 2012

Crew: Thor Anderson, Shawn Wagoner, Scott Salembier, Phillip Reyes, Jeremy Ashe, Andrew Guest

Time on site: 5 hours

Total crew time: 30 hours

Activities: Erosion Control

Work Performed at P5B

- Installed wattles and one section of coir fabric. Broadcast seed BAPI (114.6 g), LOSC (190.5 g), ELGL (280.7 g), and barley (1001.1 g) in coir fabric area.

HA 39/40 Restoration Work Performed October 11, 2012

Crew: Thor Anderson, Shawn Wagoner, Scott Salembier, Phillip Reyes, Jeremy Ashe, Andrew Guest

Time on site: 6 hours

Total crew time: 36 hours

Activities: Erosion Control

Work Performed at P5B

- Installed remaining wattles and coir fabric. In coir fabric area, broadcast BAPI (88.2 g), LOSC (309.9 g), ELGL (280.7 g), and barley (1154 g).

HA 39/40 Restoration Work Performed October 15, 2012

Crew: Thor Anderson, Scott Salembier, Phillip Reyes

Time on site: 8 hours

Total crew time: 24 hours

Activities: Erosion Control

Work Performed at P5B

- Loosened coir fabric.

HA 39/40 Restoration Work Performed October 23, 2012

Crew: Thor Anderson, Shawn Wagoner

Time on site: 15 min

Total crew time: 30 min

Activities: Erosion Control

Work Performed at P5B

- Inspection of Erosion control measures.

HA 39/40 Restoration Work Performed November 1, 2012

Crew: Thor Anderson, Shawn Wagoner

Time on site: 1.25 hours

Total crew time: 2.5 hours

Activities: Site Inspection

Work Performed at P5B

- Inspected coir fabric with Jim Lee. Checked HMP plots.

HA 39/40 Restoration Work Performed December 3, 2012

Crew: Shawn Wagoner, Phillip Reyes

Time on site: 1.5 hours

Total crew time: 3 hours

Activities: Site Inspection

Work Performed at P5B

- Ensured wattle stakes were secure.

HA 39/40 Restoration Work Performed December 6, 2012

Crew: Scott Salembier, Phillip Reyes

Time on site: 2 hours

Total crew time: 8 hours

Activities: Passive Restoration, Photo Points, Monitoring

Notes:

- In preparation for restoration activities, seed mixes were made to hit the remaining 50% seed target for HA 39/40. The amount of seed mix for each polygon was made to match the percent area of each polygon to ensure that seed will be cast evenly.
- Seed treatments were applied to the appropriate species.
- Visual surveys were conducted.
- Restoration activities went as planned.

Work Performed at P1

- Updated photo points.
- Visually monitored polygon.
- Raked straw off polygon.
- Broadcast 50% seed mix evenly.
- Raked seed in.
- Recast with fresh straw.

Work Performed at P2B

- Updated photo points.
- Visually monitored polygon.
- Raked straw off polygon.
- Broadcast seeded with 100%.
- Raked seed in
- Recast with fresh straw.

Work Performed at P3 and P4 and P6

- Updated photo points.
- Visually monitored polygons.

HA 39/40 Restoration Work Performed December 10, 2012

Crew: Thor Anderson, Shawn Wagoner, Scott Salembier, Phillip Reyes

Time on site: 6 hours

Total crew time: 24 hours

Activities: Passive Restoration, Photo Points, Monitoring

Notes:

- In preparation for restoration activities, seed mixes were made to hit the remaining 50% seed target for HA 39/40. The amount of seed mix for each polygon was made to match the percent area of each polygon to ensure that seed will be cast evenly.
- Seed treatments were applied to the appropriate species.
- Visual surveys were conducted.
- Restoration activities went as planned.

Work Performed at P3

- Broadcast seeded with 50% seed mix.
- Raked seed in

Work Performed at P4

- Broadcast seeded with 50% seed mix.
- Raked seed in

Work Performed at P5B

- Updated photo points.
- Visually monitored polygon.
- Raked straw off parts of polygon.
- Broadcast 50% seed mix on Eastern 50% of the site.
- Broadcast 100% ELGL and Hordeum on the entire site.
- Raked seed in.
- Weed wacked Conyza for mulch on part of the eastern part site.
- Recast with fresh straw where Conyza was absent.

Work Performed at P5A

- Updated photo points.
- Visually monitored polygon.

Work Performed at P5C

- Updated photo points.
- Visually monitored polygon.

HA 39/40 Restoration Work Performed December 11, 2012

Crew: Shawn Wagoner, Scott Salembier, Phillip Reyes

Time on site: 5 hours

Total crew time: 15 hours

Activities: Passive Restoration

Notes:

- In preparation for restoration activities, seed mixes were made to hit the remaining 50% seed target for HA-39/4. The amount of seed mix for each polygon was made to match the percent area of each polygon to ensure that seed will be casted evenly.
- Seed treatments were applied to the appropriate species.
- Visual surveys were conducted.
- Restoration activities went as planned.

Work Performed at P5B

- Broadcast the rest of the seed mix on P5B
- Raked seed in.
- Finished weed whacking Conyza

Work Performed at P5A

- Weeded Conyza and dead brush.
- Broadcast 50% CHPUP.
- Raked seed in.

Work Performed at P6

- Broadcast seeded 50% CORIL
- Raked seed in.

HA 39/40 Restoration Work Performed December 12, 2012

Crew: Scott Salembier, Phillip Reyes

Time on site: 1 hour

Total crew time: 2 hours

Activities: Passive Restoration

Notes:

- In preparation for restoration activities, seed mixes were made to hit the remaining 50% seed target for HA-39/40. The amount of seed mix for each polygon was made to match the percent area of each polygon to ensure that seed will be cast evenly.
- Seed treatments were applied to the appropriate species.
- Visual surveys were conducted.
- Restoration activities went as planned.

Work Performed at P5C

- Weeded Conyza and dead brush.
- Broadcast 50% CHPUP.
- Raked seed in
- Set and area for GITEA
- Broadcast ~20% GITEA
- Raked seed in.

HA 39/40 Seed Allocation Table-1

	Plot # Area (ft ²) %Total Area	1 1443 1%		2 13312 14%		3 1875 2%		4 7422 8%	
Species	Overall Target (g)	Plot Amount (g)	Amount applied (g)	Plot Amount (g)	Amount applied (g)	Plot Amount (g)	Amount applied (g)	Plot Amount (g)	Amount applied (g)
ACMI	605.8	5.8	5.8	71.3	71.5	9.1	9.1		
ARDO	47.7					9.1	9.1	38.6	38.6
BAPI	77.1	0.7	0.7	10.6	10.6				
CHPUP*	18.1								
CORIL*	18.1								
CRCA	124.8	5.8	5.5	71.3	71.3	9.1	9.1	38.6	38.7
ELGL	10063.6	139.0	139.0	1251.9	1251.9	163.6	163.6	695.5	695.6
ESCA	1038.8	11.6	11.6	142.6	14.7	18.2	18.2		
GITEA*	36.2								
HOCU	1020.6	14.2	14.2	140.0	140.4				
Hordeum	10063.6	139.0	130.0	1251.9	1251.9	163.6	163.6	695.5	695.5
JUPA	124.8	5.8	5.8	71.3	71.3	9.1	9.1	38.6	38.6
LOSC	366								
LUAL	627.6	33.0	33.0	98.3	99.0	36.1	36.8		
LUAR	519.4	5.8	5.8	71.3	71.4	9.1	9.1		
LUNA	1116.0	11.6	11.6	142.6	142.6	18.2	18.2	77.2	77.2
MIAU	1773.6	5.8	5.8	35.0	35.6				
NACE	2077.4	30.8	0.0	246.7	0.0			154.2	0.0
NAPU	1097.7	15.4	15.5	138.8	138.8			77.1	77.1
SOCA	124.8	5.8	5.8	71.3	71.3	9.1	9.1	38.6	38.6
TRWI	249.6	11.6	11.6	142.6	142.6	18.2	18.2	77.2	0
Total (g)	31191.2	441.7	401.7	3957.4	3584.9	472.5	473.2	1931.1	1699.9

* HMP species



CHPUP, CORIL, &/or GITEA applied areas

HA 39/40 Seed Allocation Table-2

	5A - HMP 2248 69%		5C - HMP 600 18%		5B 72983 75%		6 - HMP 400 12%	
Species	Plot Amount (g)	Amount applied (g)	Plot Amount (g)	Amount applied (g)	Plot Amount (g)	Amount applied (g)	Plot Amount (g)	Amount applied (g)
ACMI					433.2	433.2		
ARDO								
BAPI					65.8	66.0		
CHPUP*	13.8	13.9	4.3	4.5				
CORIL*							18.1	18.1
CRCA								
ELGL					7813.6	7813.6		
ESCA					866.4	205.4		
GITEA*			36.2	8.3				
HOCU					866.4	866.6		
Hordeum					7813.6	7813.6		
JUPA								
LOSC					366.0	368.0		
LUAL					460.2	460.2		
LUAR					433.2	433.3		
LUNA					866.4	866.6		
MIAU					37.5	39.0		
NACE					1732.8	0.0		
NAPU					866.4	866.6		
SOCA								
TRWI								
Total (g)	13.8	13.9	40.5	12.8	22621.6	20232.1	18.1	18.1

*HMP species

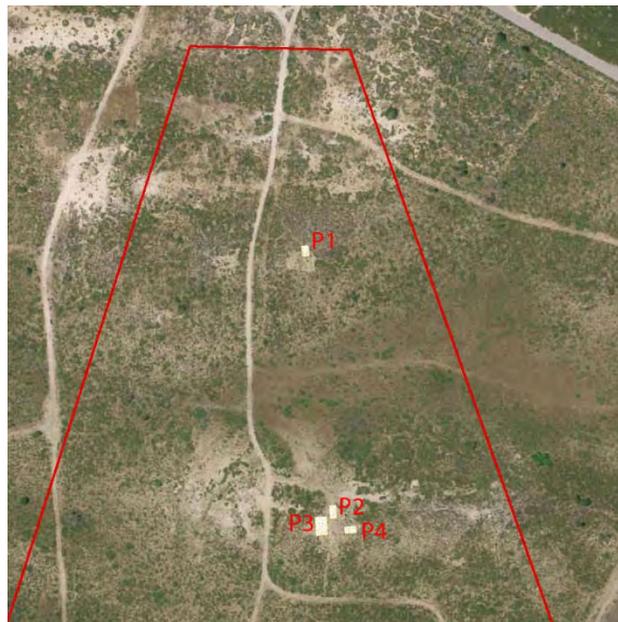


CHPUP, CORIL, &/or GITEA applied areas

HA 43 Restoration Work Plan December 5, 2011

Initial Site Condition

- There are four polygons for HA-43: P1, P2, P3, and P4
- 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 ft².
- 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).



HA 43 Aerial Image of polygons (North is up).

Restoration work plan for P1A

- Mark out approximately 100 square feet for CORIL.
- GPS area.
- Rake straw aside.
- Broadcast CORIL seed evenly.
- Rake seed in.
- Leave straw off polygon.

Restoration work plan for P1B

Due to abundant recruitment of early successional species we will exclude these species from the seed mix for this polygon. A portion of P1 will be set aside for CORIL since it is a hemiparasitic herb and may do well with the existing population for Deerweed (LOSC).

- Rake straw aside.
- Broadcast seed mix evenly.
- Rake seed in.
- Recast straw.

Restoration work plan for P2, P3B (or P2B) and P4

- Rake straw aside.
- Broadcast seed mix evenly.
- Rake seed in.
- Recast straw.

Restoration work plan for P3A (or P2A)

It has not been determined if P2 or P3 is better suited for HMP forbs. However, seed mix will be made in advance for P2 to receive the HMP forbs. If in the field, determined P3 is better suited for HMP forbs, then HMP forbs will set aside at P3 but seed mixes for each polygon will not change. See Table for exact amount of the seed applied to each polygon.

- Mark out approximately 100 ft² for CHPUP.
- Mark out approximately 100 ft² for GITEA.
- GPS both areas.
- Rake straw aside.
- Broadcast CHPUP seed in only 50 ft² of area.
- Rake seed in.
- Leave straw off polygon.
- No GITEA seed available this year.

HA 43 Restoration Work Performed November 8, 2012

Crew: Thor Anderson, Kevin Ghalambor, Shawn Wagoner

Time on site: 3 hours

Total crew time: 9 hours

Activities: Passive Restoration, Photo points, Monitoring.

Notes:

- In preparation for restoration activities, seed mixes were prepared to meet the remaining 50% seed target for HA 43. The amount of seed mix for each polygon was made to match the percent area of each polygon to ensure that seed will be cast evenly.
- Seed treatments were applied to the appropriate species.
- Visual surveys were conducted.
- Restoration activities went as planned.

Work Performed at P1A

- Updated photo point.
- Visually monitored polygon.
- Broadcast CORIL seed evenly.
- Raked seed in.
- Left straw off polygon.

Work Performed at P1B

- Updated photo point.
- Visually monitored polygon.
- Raked straw aside.
- Broadcast seed mix evenly.
- Raked seed in.
- Recast straw.

Work Performed at P2, P3B and P4

- Updated photo points.
- Visually monitored polygon.
- Raked straw aside.
- Broadcast seed mix evenly.
- Raked seed in.

- Recast straw.

Work Performed at P3A

- Broadcast CHPUP seed in the eastern section of the plot.
- Raked seed in.
- Left straw off polygon.
- Broadcast GITEA on western section of plot.
- Raked seed in.
- Left straw off section.

HA 43 Seed Allocation Table

	Plot # Area (ft ²) %Total Area	1A-HMP 99.6 2.7%		1B 490.4 16		2 755.9 20.5		3A - HMP 99.6 2.7%		3B 1585.5 45.7%		4 656.3 17.8%	
Species	Overall Target(g)	Plot Amount (g)	Amount applied (g)	Plot Amount (g)	Amount applied (g)	Plot Amount (g)	Amount applied (g)	Plot Amount (g)	Amount applied (g)	Plot Amount (g)	Amount applied (g)	Plot Amount (g)	Amount applied (g)
ADFA	20.4			3.3	3.5	4.2	5.1			9.3	10.3	3.6	4.0
ARPU*	20.4			3.3	5.0	4.2	6.2			9.3	11.0	3.6	4.5
ARTO	40.8			6.5	7.0	8.4	10.0			18.6	21.0	7.3	8.3
BAPI	3.2			0.5	0.6	0.7	0.8			1.5	1.5	0.6	0.6
CERI*	20.4			3.3	4.0	4.2	5.5			9.3	11.3	3.6	4.0
CHPUP*	0.2							0.2	1.0				
CORIL*	0.2	0.2	3.2										
ERFA*	2			0.3	0.3	0.4	0.5			0.9	1.1	0.4	0.8
ERCO	6.1			1.0	1.9	1.3	2.3			2.8	4.0	1.1	2.1
GITEA*	0.45							0.45	0.9				
HESC	20.4			3.3	6.0	4.2	6.2			9.3	12.3	3.6	6.6
HOCU	40.8			6.5	7.0	8.4	8.7			18.6	18.8	7.3	8.0
Hordeum	367.4			58.8	61.1	75.3	78.0			167.9	170.0	65.4	70.0
LOSC	40.8			6.5	7.0	8.4	10.0			18.6	20.0	7.3	8.0
RHCA	20.4			3.3	3.6	4.2	4.2			9.3	9.3	3.6	3.6
SAME	20.4			3.3	4.5	4.2	5.5			9.3	10.3	3.6	5.0

Total (g) 624.4 0.2 3.2 99.9 111.5 127.8 143.0 0.7 1.9 284.9 300.9 111.0 125.5

*HMP species

CHPUP, CORIL, &/or GITEA applied areas

Appendix C- Monitoring Results

SSRP Visual Observation Survey

Site Name: HA-18

November 13, 2012

Survey Team: PR, SS

Comments: Only one year has passed since site received initial seed broadcast. More time is needed to determine overall success of site. However, presence of a variety of native species that are part of the site's plant palette were found germinating on site.
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Species	% Cover Estimate	Native	Non-native	HMP	Notes
Annual Grass	<1	?			
ARCA	<1	X			
ARPU	<1	X		X	
ARTO	<1	X			
Bare Ground	~90-93				
BAPI	<1	X			
CAED	<1		X		
CARA	<1	X			
Carex Sp.	<1	X			
CEDE	<1	X			
CERI	<1	X		X	
CHPUP	<1	X		X	
COCA	<1	X			
COJU	<1		X		
ERCO	<1	X			
ERER	<1	X			
ERFA	<1	X		X	
Gnaphalium Sp.	<1	X			
HEGR	<1	X			
HESC	<1	X			
HOCU	<1	X			
HYGL	<1	X			
LECA	<1	X			
LEGL	<1	X			
LOSC	~1-3	X			
LUAR	<1	X			
MASA	<1	X			
MIAU	<1	X			
NAHA	<1	X			
NAPU	<1	X			
PLCO	<1		X		
QUAG	<1	X			
RUUR	<1	X			
SAME	<1	X			
SIMA	<1		X		
TODI	<1	X			

SSRP Visual Observation Survey

Site Name: HA22

October 30, 2012

Survey Team: TA and SW

Comments: Only one year has passed since site received initial seed broadcast. More time is needed to determine overall success of site. However, presence of a variety of native species that are part of the site's plant palette were found germinating on site.

Species	% Cover Estimate	Native	Non-native	HMP	Notes
ADFA	<1	X			
ARPU	<1	X		X	
Artemisia sp.	<1	X			
Bare Ground	~90-95				
CAED	<1		X		removed
CHPUP	<1	X		X	
CRCA	<1				
ERCO	<1				
ERER	<1	X			
Filaree sp.	<1		X		
Gnaphalium sp.	<1	X			
HESC	<1	X			
HOCU	<1	X			
LOSC	~3-5	X			
LUAL	<1	X			
MIAU	<1	X			
Navarretia sp.	<1	X			

SSRP Visual Observation Survey

Site Name: HA23

November 1, 2012

Survey Team: TA and SW

Comments: Only one year has passed since site received initial seed broadcast. More time is needed to determine overall success of site. However, presence of a variety of native species that are part of the site's plant palette were found germinating on site.

Species	% Cover Estimate	Native	Non-native	HMP	Notes
ACMI	<1	X			
ADFA	<1	X			
ARPU	<1	X		X	
ARTO	<1	X			
Aster sp.	<1	?	?		
Bare Ground	~90				
BAPI	<1	X			
CAED	<1		X		removed
Carex sp.	<1	X			
CERI	<1			X	
CHPUP	<1	X		X	
COCA	<1	X			Horse-tail
CRCA	<1	X			
ERCO	<1	X			
ERER	<1	X			
ERFA	<1				
Erodium sp.	<1		X		
Gnaphalium sp.	<1	X			
HEGR	<1	X			
HESC	<1	X			
HOCU	<1	X			
Lessingia sp.	<1	X			
LOSC	~2	X			
MIAU	~1	X			
Navarettia sp.	<1	X			
POMO	<1		X		Rabbitfoot Grass
TODI	<1	X			

SSRP Visual Observation Survey

Site Name: HA-27

November 13, 2012
Survey Team: PR, SS

Comments: Only one year has passed since site received initial seed broadcast. More time is needed to determine overall success of site. However, presence of a variety of native species that are part of the site's plant palette were found germinating on site.

Species	% Cover Estimate	Native	Non-native	HMP	Notes
ARPU	<1	X		X	
ARTO	<1	X			
Bare Ground	~98				
BAPI	<1	X			
Carex Sp.	<1	X			
CHPUP	<1	X		X	
COCA	<1	X			
COJU	~1		X		Pampas Grass
ERFA	<1	X		X	
Gnaphalium Sp.	<1	X			
HOCU	<1	X			
LECA	<1	X			
LOSC	<1	X			
MIAU	<1	X			
NAHA	<1	X			
SAME	<1	X			

Restoration**SSRP Visual Observation Survey****Site Name: HA-27A****November 13, 2012****Survey Team: PR, SS**

Comments: Only one year has passed since site received initial seed broadcast. More time is needed to determine overall success of site. However, presence of a variety of native species that are part of the site's plant palette were found germinating on site.

Species	% Cover Estimate	Native	Non-native	HMP	Notes
ADFA	<1	X			
Annual Grass	<1	X			
ARMO	<1	X		X	
ARPU	<1	X		X	
ARTO	<1	X			
B.G.	~97				
CAED	<1		X		
Carex Sp.	<1	X			
CERI	<1	X		X	
COCA	<1	X			
COJU	<1		X		Pampas Grass
ERCO	<1	X			
Gnaphalium Sp.	<1	X			
HEGR	<1	X			
HESC	~2	X			
HOCU	<1	X			
HYGL	<1	X			
JUPA	<1	X			
LOHE	<1	X			
LOSC	~2	X			
MASA	~1	X			
MIAU	<1	X			
NAHA	<1	X			
PIRA	<1	X			
QUAG	<1	X			
SAME	<1	X			
SIGA	<1	X			
TAOF	<1		X		Dandelion

Restoration**SSRP Visual Observation Survey****Site Name: HA-29****November 14, 2012****Survey Team: PR, SS**

Comments: Only one year has passed since site received initial seed broadcast. More time is needed to determine overall success of site. However, presence of a variety of native species that are part of the site's plant palette were found germinating on site.

Species	% Cover Estimate	Native	Non-native	HMP	Notes
ANAR	<1	X			
Annual Grass	<1	X			
ARPU	<1	X		X	
ARTO	<1	X			
Bare Ground	~98				
BAPI	~1	X			
Carex sp.	<1	X			
CEDI	<1	X			
COCA	<1	X			
COJU	<1		X		Pampas Grass
ERCO	<1	X			
ERFA	<1	X		X	
Gnaphalium Sp.	<1	X			
HEGR	<1	X			
HESC	<1	X			
HOCU	<1	X			
HYGL	<1	X			
LECA	<1	X			
LOHE	<1	X			
LOSC	<1	X			
MASA	<1	X			
MIAU	<1	X			
NAHA	<1	X			
PLCO	<1		X		
QUAG	<1	X			
SALA	<1	X			
SAME	<1	X			
SIGA	<1	X			
TODI	<1	X			

SSRP Visual Observation Survey

Site Name: HA-33

November 14, 2012

Survey Team: PR, SS

Comments: Only one year has passed since site received initial seed broadcast. More time is needed to determine overall success of site. However, presence of a variety of native species that are part of the site's plant palette were found germinating on site.

Species	% Cover Estimate	Native	Non-native	HMP	Notes
ARPU	>1	X		X	
ARTO	>1	X			
Bare Ground	~99				
BAPI	>1	X			
CARA	>1	X			
Carex sp.	>1	X			
COJU	>1		X		Pampas Grass
Gnaphalium Sp.	>1	X			
HEGR	>1	X			
HESC	>1	X			
HOCU	>1	X			
HYGL	>1	X			
LOSC	>1	X			
PLCO	>1		X		Cutleaf Plantain
QUAG	>1	X			

Restoration**SSRP Visual Observation Survey****Site Name: HA-36****November 15, 2012****Survey Team: PR, SS**

Comments: Not all Pampas was removed, Pampas that is still present is still too immature to go to seed. Only one year has passed since site received initial seed broadcast. More time is needed to determine overall success of site. However, presence of a variety of native species that are part of the site's plant palette were found germinating on site.

Species	% Cover Estimate	Native	Non-native	HMP	Notes
ANAR	>1	X			
ARHO	>1	X		X	near road
ARMO	>1	X		X	near road
ARPU	>1	X		X	near road
ARTO	>1	X			near scarpment
Bare Ground	~98				
BAPI	>1	X			
CAED	>1		X		Iceplant
Carex Sp.	>1	X			
CEDI	>1	X			
CERI	>1	X		X	
COCA	>1	X			
COJU	~1		X		Pampas Grass
ERFA	>1	X		X	
Gnaphalium Sp.	>1	X			
HEGR	>1	X			
HESC	>1	X			
HOCU	>1	X			
HYGL	>1	X			
LOHE	>1	X			
LOSC	>1	X			
LUAR	>1	X			
MASA	>1	X			
NAHA	>1	X			
PLCO	>1		X		Cutleaf Plantain
QUAG	>1	X			
RUUR	>1	X			
SIMA	>1		X		Milk Thistle

Restoration

SSRP Visual Observation Survey

Site Name: HA-39/40

December 6, 2012
Survey Team: PR, SS

Comments: Only one year has passed since site received initial seed broadcast. More time is needed to determine overall success of site. However, presence of a variety of native species that are part of the site's plant palette were found germinating on site.

Species	% Cover Estimate	Native	Non-native	HMP	Notes
ACMI	<1	X			
AICA	<1		X		
ANAR	<1		X		
Annual Grass	~1	X			
ARDO	<1	X			
ARPU	<1	X		X	
Bare Ground	~85-90				
BAPI	<1	X			
BRHO	<1		X		
CAED	<1		X		
CARA	<1	X			
Carex sp.	<1	X			
CHPUP	<1	X			
COCA	~1				
CRCA	<1	X			
DICA	<1	X			
DISP	<1	X			
ELGL	<1	X			
ERCO	<1	X			
Erodium Sp.	<1		X		
ESCA	<1	X			
Gnaphalium Sp.	<1	X			
HEGR	<1	X			
HESC	<1	X			
HOCU	<1	X			
Hordium sp.	~1		X		
HYGL	<1	X			
LECA	<1	X			
LOSC	<1	X			
LUAL	<1	X			
LUAR	<1	X			
LUNA	<1	X			
MASA	<1	X			
MIAU	<1	X			
NAHA	<1	X			
NAPU	<1	X			
PLCO	~1		X		
PLMA	<1		X		
PTAQ	<1	X			
RIPGUT	<1		X		
RUUR	~1	X			
SALA	<1	X			
SIMA	<1		X		
SOVE	<1	X			
TODI	<1	X			
TRIX	<1	X			
VILU	<1	X			

Restoration**SSRP Visual Observation Survey****Site Name: HA 43****November 8, 2012****Survey Team: TA, KG and SW**

Comments: Only one year has passed since site received initial seed broadcast. More time is needed to determine overall success of site. However, presence of a variety of native species part of the sites plant palette were found germinating on site.

Species	% Cover Estimate	Native	Non-native	HMP	Notes
ACMI	<1	x			
ADFA	<1	x			
ANMA	<1	x			Pearly Everlasting
Annual Grass	<1	x			
ARPU	<1	x		x	
ARTO	<1	x			
B.G.	~90-95				
BAPI	<1	x			
CAED	<1		x		Iceplant
Carex sp.	<1	x			
CEDE	<1	x			
CEDI	<1	x			
CERI	<1	x		x	
CHPUP	<1	x		x	
COCA	<1	x			Horse-tail
CRCA	<1	x			
ERCO	<1	x			
ERER	<1	x			
Gnalphalium sp.	<1	x			
HESC	~2	x			
HOCU	<1	x			
LOSC	<1	x			
LUAL	<1	x			
MASA	<1	x			Coast Tarweed
PTAQ	<1	x			Western Bracken Fern
SAME	<1	x			

Appendix D- Photograph Log of Activities

Appendix D
Restoration of Site 39 Inland Ranges
Former Fort Ord
Photo Log of Activities
Annual Report 2012

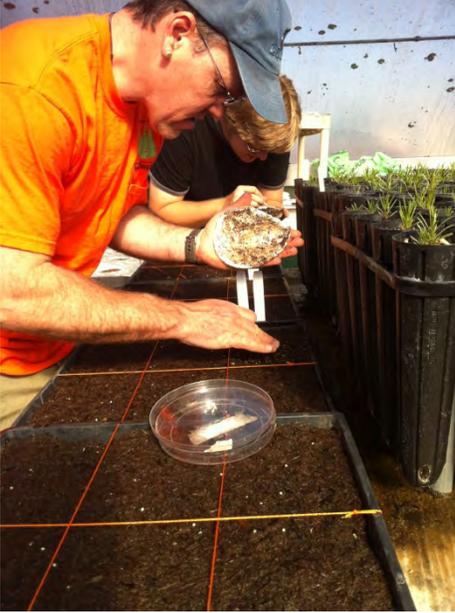
<i>Photo Log Section Guide</i>	
Task	Photo Section
Plant Salvage	A
Plant Material Storage, Processing, and Propagation	B
Seed Purchase	C
Restoration Activities	D
Storm Related Erosion (at HA34)	E
Erosion Control Activities	F

Photo Description	Photo
<p>Plant Salvage</p> <p>Burleson seed crew collecting <i>Ceanothus cuneatus</i> var. <i>rigidus</i>, May 2012.</p> <p style="text-align: center; margin-top: 20px;">A-1</p>	

Appendix D
Restoration of Site 39 Inland Ranges
Former Fort Ord
Photo Log of Activities
Annual Report 2012

Photo Description	Photo
<p>Plant Salvage</p> <p>Burleson seed crew member collecting <i>Lotus scorparius</i>, July 2012.</p> <p style="text-align: center;">A-2</p>	
<p>Plant Material Storage, Processing, and Propagation</p> <p>Burleson Horticultural Technicians cleaning <i>Trifolium Idenovii</i> seed, May 2012.</p> <p style="text-align: center;">B-1</p>	

Appendix D
Restoration of Site 39 Inland Ranges
Former Fort Ord
Photo Log of Activities
Annual Report 2012

Photo Description	Photo
<p data-bbox="248 426 509 506">Plant Material Storage, Processing, and Propagation</p> <p data-bbox="248 541 542 648">Burleson Horticultural Technicians preparing <i>Gilia tenuiflora</i> ssp. <i>arenaria</i> for propagation, May 2012.</p> <p data-bbox="383 789 435 821">B-2</p>	 A man in an orange polo shirt is working at a table in a library or office setting. He is focused on a large black tray filled with soil and small seedlings. He is using a small white card to label or identify the plants. In the background, there are bookshelves filled with books. Another person is partially visible behind him, also working with a similar tray.
<p data-bbox="248 1073 509 1152">Plant Material Storage, Processing, and Propagation</p> <p data-bbox="248 1188 565 1245">Burleson Biologist conducting seed germination trials.</p> <p data-bbox="383 1398 435 1430">B-3</p>	 A man in an orange polo shirt and a blue baseball cap is conducting a seed germination trial. He is leaning over a large black tray filled with soil. He is holding a small clear plastic cup and pouring its contents into the soil. A red grid is visible on the soil surface. In the background, there are several black trays containing small plants in pots.

Appendix D
Restoration of Site 39 Inland Ranges
Former Fort Ord
Photo Log of Activities
Annual Report 2012

Photo Description	Photo
<p>Plant Material Storage, Processing, and Propagation</p> <p>Processing <i>Ceanothus cuneatus</i> var. <i>rigidus</i> cuttings using rooting hormone and vitamin B1 solution, August 2012.</p> <p style="text-align: center;">B-4</p>	
<p>Plant Material Storage, Processing, and Propagation</p> <p>Burleson crew processing <i>Adenostoma fasciculatum</i> cuttings, September 2012.</p> <p style="text-align: center;">B-5</p>	

Appendix D
Restoration of Site 39 Inland Ranges
Former Fort Ord
Photo Log of Activities
Annual Report 2012

Photo Description	Photo
<p>Plant Material Storage, Processing, and Propagation</p> <p>Processed <i>Adenostoma fasciculatum</i> cuttings, September 2012.</p> <p style="text-align: center;">B-6</p>	
<p>Plant Material Storage, Processing, and Propagation</p> <p>Processed <i>Arctostaphylos</i> spp. cuttings, October 2012.</p> <p style="text-align: center;">B-7</p>	

Appendix D
Restoration of Site 39 Inland Ranges
Former Fort Ord
Photo Log of Activities
Annual Report 2012

Photo Description	Photo
<p>Plant Material Storage, Processing, and Propagation</p> <p>Rooting <i>Adenostoma fasciculatum</i> (left) and <i>Arctostaphylos montereyensis</i> (right) from cuttings propagated in peat pots, November 2012.</p> <p style="text-align: center;">B-8</p>	
<p>Plant Material Storage, Processing, and Propagation</p> <p>Rooting <i>Ceanothus cuneatus</i> var. <i>rigidus</i> propagated from seed, November 2012.</p> <p style="text-align: center;">B-9</p>	

Appendix D
Restoration of Site 39 Inland Ranges
Former Fort Ord
Photo Log of Activities
Annual Report 2012

Photo Description	Photo
<p>Plant Material Storage, Processing, and Propagation</p> <p><i>Ceanothus cuneatus</i> var. <i>rigidus</i> seedling trays propagated from seed, November 2012.</p> <p style="text-align: center;">B-10</p>	
<p>Plant Material Storage, Processing, and Propagation</p> <p><i>Distichlis</i> spp. trays propagated from root plugs, November 2012.</p> <p style="text-align: center;">B-11</p>	

Appendix D
Restoration of Site 39 Inland Ranges
Former Fort Ord
Photo Log of Activities
Annual Report 2012

Photo Description	Photo
<p>Plant Material Storage, Processing, and Propagation</p> <p>Greenhouse shade structure with fencing to prevent herbivory of propagated species.</p> <p style="text-align: center;">B-12</p>	
<p>Plant Material Storage, Processing, and Propagation</p> <p>HA27A seed mix samples prior to treatment.</p> <p style="text-align: center;">B-13</p>	

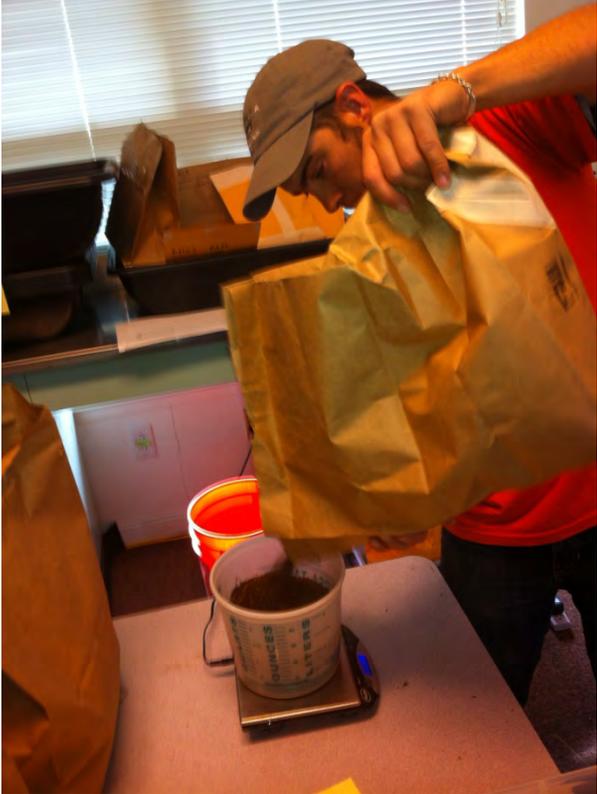
Appendix D
Restoration of Site 39 Inland Ranges
Former Fort Ord
Photo Log of Activities
Annual Report 2012

Photo Description	Photo
<p>Plant Material Storage, Processing, and Propagation</p> <p>Samples of seed mixes treated with liquid smoke.</p> <p style="text-align: center;">B-14</p>	
<p>Plant Material Storage, Processing, and Propagation</p> <p><i>Lotus scoparius</i> drying after treatment. Seed placed in bins with fan ventilation and on fine mesh elevated screens to allow for air flow, November 2012.</p> <p style="text-align: center;">B-15</p>	

Appendix D
Restoration of Site 39 Inland Ranges
Former Fort Ord
Photo Log of Activities
Annual Report 2012

Photo Description	Photo
<p>Plant Material Storage, Processing, and Propagation</p> <p>Burleson Horticultural Technician gathering treated dried seed from screens, November 2012.</p> <p style="text-align: center;">B-16</p>	
<p>Plant Material Storage, Processing, and Propagation</p> <p>Seeds storage bins organized by restoration site.</p> <p style="text-align: center;">B-17</p>	

Appendix D
Restoration of Site 39 Inland Ranges
Former Fort Ord
Photo Log of Activities
Annual Report 2012

Photo Description	Photo
<p>Plant Material Storage, Processing, and Propagation</p> <p>Burleson Horticultural Technician weighing seed for site specific seed mix.</p> <p style="text-align: center;">B-18</p>	
<p>Plant Material Storage, Processing, and Propagation</p> <p>Seed mix prepared and measured for site specific broadcast.</p> <p style="text-align: center;">B-19</p>	

Appendix D
Restoration of Site 39 Inland Ranges
Former Fort Ord
Photo Log of Activities
Annual Report 2012

Photo Description	Photo
<p>Seed Purchase</p> <p><i>Elymus glaucus</i> seed purchased from Hedgerow Farms located in Winters, California.</p> <p style="text-align: center;">C-1</p>	
<p>Restoration Activities</p> <p>Burleson Horticultural Technician talking with the public at the Fort Ord Cleanup Open House, June 2012.</p> <p style="text-align: center;">D-1</p>	

Appendix D
Restoration of Site 39 Inland Ranges
Former Fort Ord
Photo Log of Activities
Annual Report 2012

Photo Description	Photo
<p>Restoration Activities</p> <p>Burleson Horticultural Technician and Staff Biologist measuring HMP forbs broadcasting location at HA 43. Blue pin flags indicate HMP forbs broadcast location for future monitoring.</p> <p style="text-align: center;">D-2</p>	
<p>Restoration Activities</p> <p>Treated seed for HA22 broadcasting.</p> <p style="text-align: center;">D-3</p>	

Appendix D
Restoration of Site 39 Inland Ranges
Former Fort Ord
Photo Log of Activities
Annual Report 2012

Photo Description	Photo
<p>Restoration Activities</p> <p>Burleson Horticultural Technician raking existing straw and preparing site for seed broadcasting at HA 22.</p> <p style="text-align: center;">D-4</p>	
<p>Restoration Activities</p> <p>Burleson Horticultural Technician hand broadcasting seed at HA 22.</p> <p style="text-align: center;">D-5</p>	

Appendix D
Restoration of Site 39 Inland Ranges
Former Fort Ord
Photo Log of Activities
Annual Report 2012

Photo Description	Photo
<p>Restoration Activities</p> <p>Burleson Horticultural Technician hand broadcasting <i>Gilia tenuiflora</i> ssp. <i>arenaria</i> seed at a previously determined location at HA43.</p> <p style="text-align: center;">D-6</p>	
<p>Restoration Activities</p> <p>Burleson Horticultural Technician applying hay at erosion control site on HA39/40, December 2012.</p> <p style="text-align: center;">D-7</p>	

Appendix D
Restoration of Site 39 Inland Ranges
Former Fort Ord
Photo Log of Activities
Annual Report 2012

Photo Description	Photo
<p>Restoration Activities</p> <p>Field meeting at HA34 with Army, ITSI/Shaw (USACE contractor), BLM, and Burleson discussing earthwork/erosion control/restoration issues, May 2012.</p> <p style="text-align: center;">D-8</p>	
<p>Restoration Activities</p> <p>Upper section of HA34, after initial grading activities, prepared for seed broadcasting, November 2012.</p> <p style="text-align: center;">D-9</p>	

Appendix D
Restoration of Site 39 Inland Ranges
Former Fort Ord
Photo Log of Activities
Annual Report 2012

Photo Description	Photo
<p data-bbox="248 426 496 453">Restoration Activities</p> <p data-bbox="248 485 557 621">Collaboration and discussion with ITSI/Shaw (USACE contractor) regarding HA34 seed broadcasting, November 2012.</p> <p data-bbox="375 758 444 785">D-10</p>	
<p data-bbox="248 1087 496 1115">Restoration Activities</p> <p data-bbox="248 1146 557 1199">Seed mix for broadcasting at HA34, November 2012.</p> <p data-bbox="375 1444 444 1472">D-11</p>	

Appendix D
Restoration of Site 39 Inland Ranges
Former Fort Ord
Photo Log of Activities
Annual Report 2012

Photo Description	Photo
<p>Restoration Activities</p> <p>Example seed coverage and composition broadcast at HA34, November 2012.</p> <p style="text-align: center;">D-12</p>	
<p>Restoration Activities</p> <p>Burleson Horticultural Technicians broadcasting seed at HA34, November 2012.</p> <p style="text-align: center;">D-13</p>	

Appendix D
Restoration of Site 39 Inland Ranges
Former Fort Ord
Photo Log of Activities
Annual Report 2012

Photo Description	Photo
<p>Restoration Activities</p> <p>Burleson Horticultural Technician broadcasting seed at swale site at HA34, November 2012.</p> <p style="text-align: center;">D-14</p>	
<p>Storm Related Erosion (at HA34)</p> <p>Erosion control method at HA34 using netting, photo showing scoured trench banks and erosion occurring underneath the coir fabric, December 2012.</p> <p style="text-align: center;">E-1</p>	

Appendix D
Restoration of Site 39 Inland Ranges
Former Fort Ord
Photo Log of Activities
Annual Report 2012

Photo Description	Photo
<p>Storm Related Erosion (at HA34)</p> <p>Series of check dams leading to BLM property. For site comparison prior to November 30, 2012, storm event see photo D-14 above. December 2012.</p> <p style="text-align: center;">E-2</p>	
<p>Erosion Control Activities</p> <p>Establishing erosion control wattle spacing at HA29. Blue flags designate future placement of wattle, October 2012.</p> <p style="text-align: center;">F-1</p>	

Appendix D
Restoration of Site 39 Inland Ranges
Former Fort Ord
Photo Log of Activities
Annual Report 2012

Photo Description	Photo
<p>Erosion Control Activities</p> <p>Burleson Horticultural Technicians transporting wattles to erosion control site at HA29, October 2012.</p> <p style="text-align: center;">F-2</p>	
<p>Erosion Control Activities</p> <p>Burleson Horticultural Technicians excavating wattle footprint to provide erosion control stability, October 2012.</p> <p style="text-align: center;">F-3</p>	

Appendix D
Restoration of Site 39 Inland Ranges
Former Fort Ord
Photo Log of Activities
Annual Report 2012

Photo Description	Photo
<p>Erosion Control Activities</p> <p>Burleson Horticultural Technicians stabilizing erosion control structures at HA29, October 2012.</p> <p style="text-align: center;">F-4</p>	
<p>Erosion Control Activities</p> <p>Effective wattle erosion control method showing the prevention of extended sediment transport after large storm event at HA39/40. Note coir fabric underneath wattles at far end, December 2012.</p> <p style="text-align: center;">F-5</p>	

Appendix D
Restoration of Site 39 Inland Ranges
Former Fort Ord
Photo Log of Activities
Annual Report 2012

Photo Description	Photo
<p>Erosion Control Activities</p> <p>Effective erosion control method showing the prevention of extended sediment transport and sprouting of seed after large storm event at HA39/40, December 2012.</p> <p style="text-align: center;">F6</p>	
<p>Erosion Control Activities</p> <p>Seedlings sprouting as part of erosion control and habitat restoration at HA39/40, December 2012.</p> <p style="text-align: center;">F-7</p>	 <p style="text-align: right; color: red;"><i>Hordeum</i></p> <p style="text-align: right; color: red;"><i>Achillea spp.</i></p>

Appendix E-Site 39 Annual Meeting Minutes

2nd Annual Site 39 Restoration Meeting Minutes Former Fort Ord, California, February 7th 2013

The second annual Site 39 Restoration meeting was held on February 7th, 2013 at the BRAC conference room, Former Fort Ord, California.

Participants/Attendees:

Regina Donohue, CDFW	Bart Kowalski USACE (phone)
Patty Velez, CDFW	Lena Chang, USFWS (phone)
Bill Collins, BRAC	Bill Davilla, Ecosystems West
Eric Morgan, BLM	Justin Davilla, Ecosystems West
Susan Hubard, BLM	Ted Donn, Tetra Tech
Sarah Chmielewski, BLM	Laura Lee Lienk, Watershed Institute(CSUMB)
Kelly Bougher, BLM	Christine Mcknew, Watershed Institute(CSUMB)
Ryan, Colley, BLM	Jami Davis, DD&A representing ITSI
James Lee, USACE	Kristie Reimer, Arcadis
Chris Goddard, USACE	Mary Carroll, Arcadis
James Specht, USACE	Thor Anderson, Burleson Consulting
Cary Stiebel, Chenega supporting USACE	Nadia Burleson, Burleson Consulting
David Eisen, USACE	Kevin Ghalambor, Burleson Consulting

The meeting consisted of presentations by Burleson Consulting, Arcadis, Tetra Tech with EcoSystems West, and Denise Duffy & Associates representing ITSI.

1. A presentation from Kevin Ghalambor and Thor Anderson of Burleson Consulting on the status of site 39 habitat restoration was presented.

Key points:

- Refocused efforts to HA-34 to help with erosion control and re-vegetation
- Intense storm event occurred potentially washing out broadcast seeds
Full impact will not be known until thorough monitoring is conducted
- Seed collection targets not met
- Common species grow targets not met
- Exceeded HMP species grow targets
- Monitoring showed signs of natural recruitment and sprouting
- Continue to perform seed collection, propagation, broadcasting
- Key challenges: weather, non-natives, soil conditions and collection limitations
 - HA-19 is limited in the number of sand gilia plants, and half of the area within 1km radius is inaccessible
 - Adaptive management action: in HA-19 modify collection buffer zone from 1km to 2km for sand gilia seeds only
 - Recommendation: shift to a two year restoration schedule

Questions:

- CDFW: Is it a HRP requirement to keep within the 1km buffer for seed collection?
Response: HRP states 1km. 2km is required because half the site is off limits due to development and there are few sand gilia plants.

- EcoSystems West: How were plant pallet sizes composition determined?
Response: Based on size of site and percent cover from baseline data.

- CDFW: Are invasive plants in HA-19 expanding?
Response: BLM controls weeds and sprays annually or as requested

Comment from BLM: In their experience it is better to leave terrain rough with burrows rather than smooth. BLM has had more success with hand mulching than mechanical straw crimping.

- CDFW: Why California poppy seeds and tomcat clover seed collection targets were not achieved?
Response: Seeds have a short collection period and both are smaller and light weight seed.

2. A presentation from Mary Carroll and Kristie Reimer of Arcadis on the status of ESCA habitat remediation, Group 1,4 and Interim Action Ranges.

Key points:

- Developed Residential Quality Assurance Process to minimize habitat impacts
- Flagged Toro Manzanita and Hookers Manzanita, masticated around them
- 3 manmade aquatic features were identified, monitored and restored
- Range 47 Accelerated program, approximately 40000 container plants installed in 12 days
 - Installed irrigation, erosion control, and fencing
 - Conducted bilingual OSHA training for employed agricultural workers
- Completed majority of the Interim Action Ranges MRA

Questions:

- USACE: What are the four nurseries being used?
Response: Rana Creek, Elkhorn Slough Native Plant Nursery, Central Coast Wilds, Watershed Institute CSUMB
- CDFW: Were there aquatics identified?
Response: California fairy shrimp (*Linderiella occidentalis*)
- Ecosystems West: In East Garrison was there any other treatment such as torching?
Response: no other methods were used

3. A presentation from Ted Donn of Tetra Tech on the 2012 biological monitoring surveys for baseline, year 1, and year 3 at site 39

Key points

- Baseline Units: 6, 10, portions of 2 and 3
 - Monterey spineflower highly frequent, moderate density
 - Sand gilia present in 2-20% of grids, low density
 - Shrub community consists of 6 species with 105% cover
 - Three distinct groups of shrub communities, possibly correlated with topographic aspect

- Year 1 Units: 4, 11, 12, portion of 23
 - No detectable response to mastication on HMP Annual Plants
- Year 3 Units: 14 and 19
 - Positive response in occurrence and density to burning in Year 1, with decrease in sand gilia in Year 3
 - Reduced total shrub cover and increased species richness as result of colonization by subshrub species

Questions:

- CDFW: Why did Sand gilia decrease?
Response: Dry year and less bare ground
- Comment from Bill Collins: possibility of decreasing the frequency of monitoring, based on ongoing Tetra Tech analysis

4. A presentation from Jami Davis of Denise Duffy & Associates representing ITSI on 2012 biological monitoring.

Key points:

- Minimization measures to prevent impact
 - Biological training
 - Habitat Checklist
 - Access route and staging areas planning
 - Flagging and/or fencing off sensitive areas and known HMP plant populations
 - CTS exclusion fencing and monitoring
 - Regular monitoring of work activities
 - Erosion control
 - Invasive species control/prevention
- CTS encounter
- UC Reserve vegetation monitoring
 - System 2B: success criteria met for Monterey spineflower and grasses, 1 more year of sand gilia monitoring is scheduled
 - U/L 180 ft Aquifer: 1 more year of monitoring for HMP annual species is scheduled; positive trend in spineflower populations
 - Reference populations showed similar decline in numbers

No questions or comments:

Conclusion

Adaptive management actions for 2013 in Site 39 will incorporate the following:

- Burleson will expand seed collection for sand gilia in HA19 from 1km up to 2 km radius to meet the site seed collection targets.