



DEPARTMENT OF THE ARMY
ARMY BASE REALIGNMENT AND CLOSURE, FORT ORD OFFICE
P.O. BOX 5008, BUILDING #4463 GIGLING ROAD
MONTEREY, CA 93944-5008

BW-2801
AR

REPLY TO
ATTENTION OF:

Base Realignment and Closure Office

MAY 12 2016

Glen W. Knowles
U.S. Fish and Wildlife Service
2493 Portola Road, Suite B
Ventura, California 93003

Dear Mr. Knowles:

Enclosed are seven biological monitoring reports documenting results of the 2015 habitat monitoring surveys and mitigation measures implementation for Army cleanup actions conducted at former Fort Ord. The reports are; the *Annual Report Former Fort Ord Site 39, Habitat Restoration 2015, Former Fort Ord* (Burleson, 2016a), the *2015 Biological Monitoring Report for Units 5, 13, and 20; Units 1 West, 2 West, and 3 West; Units 2 East and 3 East; Units 15, 21, 32, and 34 and 2015 Annual Wetland Vegetation and Wildlife Monitoring Report, Former Fort Ord* (Burleson, 2016b), the *2015 Annual Natural Resource Monitoring, Mitigation, and Management Report* (Arcadis, 2015), the *2015 Annual Biological Monitoring Report, Former Fort Ord, California* (Kemron, 2016), the *2015 FONR Impact Assessment and Habitat and Rare Plant Species Survey Results, OUI, Operable Unit 1, Former Fort Ord, California* (HGL, 2015), *Final Operable Unit Carbon Tetrachloride Plume Evaluation Technical Memorandum, A-Aquifer, Former Fort Ord, California* (Ahtna, 2016), and the *2015 Annual Biological Monitoring Report, Fort Ord Dunes State Park, Former Fort Ord, California* (Chenega, 2016). Additionally, the *Addendum to Revisions of Survey Protocol for HMP Annual Plants: Implementation of Macroplot Sampling at Former Fort Ord* (Tetra Tech, 2016), is also included.

These reports are provided in accordance with the requirements of the Installation-Wide Multispecies Habitat Management Plan (Army, 1997) and the Biological Opinion (USFWS, 2015).

If you have any questions, please contact Bart Kowalski at (831) 242-7918 or by email bartholomew.l.kowalski@usace.army.mil.

Sincerely,

William K. Collins
BRAC Environmental Coordinator

Copies Furnished
Patty Valez, CDFW

ANNUAL REPORT TO U.S. FISH AND WILDLIFE SERVICE
U.S. Army, Base Realignment and Closure Office, Former Fort Ord, California
April 2016

Background

On October 19, 1993, the U.S. Army (Army) received a Biological Opinion (BO) from the U.S. Fish and Wildlife Service (Service). The BO required the Army to develop and implement an *Installation-Wide Multispecies Habitat Management Plan* (HMP; Army, 1997). The HMP was completed and signed by the Army and the Service in February 1994. The goal of the HMP is to “promote preservation, enhancement and restoration of habitat and populations of special-status species while allowing implementation of a community-based reuse plan that promotes economic recovery after the closure of Fort Ord.” This goal is being accomplished by transferring the larger contiguous and biologically diverse habitat parcels to natural resource management agencies such as the Bureau of Land Management (BLM), California Department of Parks and Recreation (CDPR), and the University of California at Santa Cruz (UCSC). This allows other numerous small, fragmented parcels within and adjacent to disturbed areas to be developed for economic recovery.

In April 1996, representatives from the Army, Service, Fort Ord Reuse Authority (FORA), UCSC and BLM agreed that a modification to the HMP was necessary to reflect changes in species listings, changes to the FORA Base Reuse Plan and changes in Army pre-disposal activities. As a result, the 1994 HMP was revised with input from FORA, UCSC, BLM, CDPR and others with resource conservation requirements. In April 1997, the Army and the Service signed the revised HMP. The HMP has been signed by all other signatory agencies including BLM, California Department of Transportation, UCSC, City of Marina, Marina Coast Water District, Monterey Peninsula College, Monterey Peninsula Regional Park District, FORA, Monterey County, York School, and CDPR.

The Army re-initiated formal consultation eight times since the HMP was published in April 1997. These consultations resulted in the Service issuing the following opinions: *Biological and Conference Opinion on the Closure and Reuse of Fort Ord, Monterey County, California* (1-8-99- F/C-39R, March 30, 1999), *Biological Opinion on the Closure and Reuse of Fort Ord, Monterey County, California, as it affects Monterey Spineflower Critical Habitat* (1-8-01-F-70R, October 22, 2002), *Biological Opinion for the Fort Ord Outfall Removal and Stormwater Diversion Project* (1-8-03-F-25, August 8, 2003), *Biological Opinion on the Cleanup and Reuse of Former Fort Ord, Monterey County, California, as it affects California Tiger Salamander and Critical Habitat for Contra Costa Goldfields* (1-8-04-F-25R, March 14, 2005) and *Amendment to Biological Opinion 1-8-04-25R, for the Cleanup and Reuse of Former Fort Ord, Monterey County, California, June 1, 2007*, *Biological Opinion for the Former Fort Ord Vegetation Clearance Activities and Transfer of Parcel E29b.3.1* (8-8-11-F-39, August 3, 2011, and *Formal Consultation for Vegetation Clearance Activities on 309 Acres in Burn Units 1, 2, and 3, on Former Fort Ord, Monterey County, California* (8-8-14-F-28, April 28, 2014). In 2015 the Service issued a *Programmatic Biological Opinion for Cleanup and Property Transfer Actions Conducted at the Former Fort Ord, Monterey County, California* (8-8-09-F-74, May 28, 2015) which supersedes the opinions listed above.

Coordination with the Service in 2015

As mentioned above, the Service issued a Programmatic Biological Opinion (BO; USFWS, 2015) covering Army cleanup and property transfer activities in May 2015.

On August 17, 2015, the Army requested an informal consultation for application of a natural polymer product over 1 acre in the restoration area of Historic Area 34 (HA34). The polymer is derived from symbiotic bacteria *Rhizobium tropici* and is used to stabilize steep slopes and improve seed germination. The area has been stripped of top soil as part of the lead cleanup remediation, and the steep slopes and highly erodible soils make this a challenging restoration site. This request was made prior to the 2015/2016 winter season. At this time the Army has no plans to apply the product at any of the restoration sites, and the consultation was closed.

On March 10, 2015, the Army requested authorization of Shaelyn Hession with Denise Duffy & Associates (DD&A), Inc., and Thor Anderson, Shawn Wagoner, and Chris Bronny with Burleson Consulting to handle, capture, survey, and relocate federally threatened California tiger salamanders (*Ambystoma californiense*; CTS) encountered during Army predisposal activities as required by the BO (USFWS, 2015). The Service responded to this request on May 6, 2016.

As required by the BO (USFWS, 2015), the Army has submitted annual reports documenting habitat monitoring results, property transfer status, and cleanup project updates to the Service and California Department of Fish and Wildlife (CDFW) since 1994. The enclosed reports describe actions taken in 2015 to implement requirements identified in the HMP (Army, 1997), and BO (USFWS, 2015). The following is a summary of Army actions relating to habitat management that occurred in 2015.

Implementation of the HMP and BOs

1. Landfill (OU2)

The landfill is identified in the *Final Record of Decision Amendment Site 39 Inland Ranges, Former Fort Ord* (RODA; Army, 2009) to receive additional contaminated soil from Site 39 excavations for consolidation of contaminated soil on former Fort Ord. No soil excavations were conducted in 2015. Work at the landfill associated with Site 39 is expected to continue through 2019 until the completion of the munitions and explosives of concern remediation project in the Impact Area.

Monterey County has been inspecting the landfill on quarterly basis with no issues identified.

Monterey County has shown interest in requesting a Right-of-Entry to the Landfill (Cell D) for habitat restoration as a condition of a sand gilia take permit issued by CDFW. The City of Marina's developer (Marina Heights) is also expected to request a Right-of-Entry to use the landfill (Cells B and C) to restore habitat as a condition of a sand gilia take permit issued by CDFW. The Army has not yet received any requests for a Right-of-Entry to use the former Fort Ord landfill.

The Army continues to fund BLM to provide invasive species' control on Army owned lands

including the landfill parcel through a Services Agreement. The Army is also working on relocation of the OU2 Groundwater Extraction and Treatment System from its current location off of 12th Street in Marina to the OU2 Landfill parcel.

2. Site 3 (Beach Ranges)

The Army, U.S. Environmental Protection Agency, and California Department of Toxic Substances Control signed a *Record of Decision Related to Munitions and Explosives of Concern – Track 1 Sites, No Further Action with Monitoring for Ecological Risks from Chemical Contamination at Site 3* (ROD; Army, 2005) documenting that the site is protective of ecological receptors including rare, threatened, and endangered species. The Army issued the *Final Habitat Restoration and Monitoring Plan, Non-Remediated Areas, Fort Ord Dunes State Park* (Shaw, 2008a) that has been implemented over the last five years by CDPR to fulfill the ecological monitoring requirement in the ROD (Army, 2005). The Army transferred the Beach Range parcels to the Department of Interior (DOI) in 2006. The DOI transferred the parcels to CDPR in 2008 and the site became the Fort Ord Dunes State Park in 2009.

CDPR has conducted invasive weed control on the portions of Beach Ranges (Ranges 5 and 7) that were selected for habitat restoration and monitoring as described in the *Final Habitat Restoration and Monitoring Plan* (Shaw, 2008a). Native dune species were planted in both restoration sites in the fall/winter of 2008 and 2009. Additional plants were installed in Site B only in 2012/2013 because a die-off was observed at that site. California Department of Fish and Wildlife expressed concern when the buckwheat survivorship continued to be low at Site B after the additional plantings. The Army started additional monitoring of buckwheat plants to compare the survivorship between remediated and non-remediated areas, which is described in the *2015 Annual Biological Monitoring Report, Fort Ord Dunes State Park, Former Fort Ord, California* (Chenega, 2016). Follow-up monitoring is planned for spring/summer 2016.

3. Contaminated Soil (Site 39)

Since the issuance of the *Final Feasibility Study Addendum Site 39 Inland Ranges, Former Fort Ord* (Shaw, 2008b), and RODA (Army, 2009), over 150,000 cubic yards from 62 acres have been excavated and placed in the landfill. The remediated areas are being monitored for erosion and invasive weed incursions and control actions will be conducted as necessary. Additional erosion control measures were conducted at HAs 28, 34 and 37 in 2015. As the Army clears more areas for the MEC cleanup, new sites with contaminated soil may be identified through the Basewide Range Assessment program, and the Site 39 RODA.

Passive and/or active restoration has been implemented in all but HA 44 and the Austin Road Stockpile, and is being conducted in accordance with the *Final Habitat Restoration Plan Site 39 Inland Ranges, Former Fort Ord, California* (HRP; Shaw, 2009) and the Site Specific Restoration Plans (SSRPs; Burleson, 2012, 2014). Restoration in HAs 18, 22, 23, 27, 27A, 29, 33, 36, 38, 39/40, and 43 is now complete and is in the monitoring phase. In 2015, restoration activities took place in HAs 19, 28, 34, 37, and 38. Detailed description of the 2015 restoration activities are provided in the *2015 Annual Report Former Fort Ord Site 39 Habitat Restoration* (Burleson 2016a). Monitoring results showed HMP annuals were in density classes at or above baseline levels

with the exception of sand gilia at HA43. Survivorship of installed plants seems to vary by site, with HAs 28, 29, and 38 showing mostly high level of survivorship, and HAs 19 and 37 mostly low to moderate. This is likely a result of different site conditions, such as soil type and wind exposure. Habitat restoration will continue until the remediation areas have been successfully restored in accordance with the SSRPs (Burleson, 2012, 2014) which are prepared per the HRP (Shaw, 2009).

4. Munitions and Explosives of Concern (MEC)

In April 2008 the Army, U.S. Environmental Protection Agency, and California Department of Toxic Substances Control signed the *Record of Decision Impact Area Munitions Response Area Track 3 Munitions Response Site, Former Fort Ord, California* (Army, 2008), which identifies the remedial alternative for 6,560 acres of the former Impact Area. The decision document identifies prescribed burning as the method for vegetation clearance within Central Maritime Chaparral to facilitate safe access to conduct MEC remediation. The MEC remedial actions will result in the removal of MEC from the surface of the entire site with subsurface removal on approximately 10% of the site (e.g. Fuel Breaks and Restoration Areas).

The Army continued the fuel break and access road maintenance activities within the Impact Area which resulted in re-grading and application of base-rock to approximately 2 miles of existing roads in the Impact Area. These maintenance activities were performed by the BLM under a Service Agreement with the Army.

The Army cut vegetation within approximately 597 acres in Units 5A, 9, 23, and 28, and re-masticated 174 acres within Units 11, 12, 14, 15, 10, and Watkins Gate Burn Area to facilitate MEC cleanup activities. The mastication was conducted in accordance with the Programmatic Biological Opinion issued by the Service on May 28, 2015. Munitions remediation activities were also conducted along Hugo Rd and fuel breaks. Conservation measures outlined in the Biological Opinion were implemented as described in the *2015 Annual Biological Monitoring Report, Former Fort Ord, California* (Kemron, 2016). Threatened and endangered species education briefings for ordnance and explosive cleanup personnel were given to 52 new employees last year. In addition, Habitat Checklists, tailgate briefings, and site visits were conducted routinely to ensure habitat protection measures were being implemented in accordance with the HMP and the Biological Opinion. These measures are also described in the above report.

2015 Vegetation monitoring was conducted in the following units; Baseline: BLM Area B (subareas A, B, C), Area B-3 (East, West), Unit 5, and containment lines of Units 13 & 20; Year 1: Units 1 West, 2 West, 3 West; Year 3: Units 2 East, 3 East; and Year 5: Units 15; 21, 32, 34. There were no areas requiring Year 8 surveys in 2015. The results of the monitoring are described in the *2015 Annual Monitoring Report* (Burleson, 2016b). The report provides analysis of data demonstrating that the recovery of maritime chaparral plant community in the affected remediation areas is on the projection toward baseline conditions. 2015 was Year 5 of monitoring for HMP annuals in Units 15, 21, and 34. The data do not indicate difference in response of HMP annuals between burned and masticated areas.

Wetland monitoring was conducted in Ponds 3 North and South, 16, 18, 30, 30B, 30C, 35, 39, 40 North, 40 South, 41, 42, 43, 44, 45, 60, and 101 East, and 101 West). However, by the time of CTS

sampling, only Ponds 16 (Unit 13), 30C (HA28), 3 North and 40 North in BLM Area B, as well ponds 56 and 60 on BLM property held enough water to support CTS, due to low precipitation. CTS larvae were found in Ponds 16, 56, and 60, which were all known CTS breeding ponds. Results of the vegetation and wetland monitoring are presented in the *2015 Annual Wetland Vegetation and Wildlife Monitoring Report* (Burleson, 2016b).

The biological surveys and mitigation measures on ESCA property were implemented in accordance with the monitoring protocol and are described in the *2015 Annual Natural Resource Monitoring, Mitigation, and Management Report* (ESCA 2016). The monitoring results of the restoration sites on ESCA property is described in the Appendix A of the above mentioned report. Based on the results of the 2015 monitoring, Range 47 and portions of North Range 44 subject to vegetation cutting have reached all Year 7 success criteria, as did all HMP herbaceous species areas, and will no longer be surveyed except for routine weed monitoring.

The Impact Area fence continues to be inspected weekly and repaired as necessary to prevent unauthorized access into the Impact Area. Access control is required by the Track 3 ROD and also prevents unnecessary impacts to natural resources within the Natural Resource Management Area (NRMA) which is future BLM land and part of the designated Fort Ord National Monument.

The Army and BLM continue to work together under a Services Agreement where the Army provides funding to BLM to conduct certain land management activities on Army owned lands including providing invasive weed control and erosion control. As a result, 1,151 gallons of herbicide (Rodeo, glyphosate based herbicide) were applied on 1,574 acres (includes scouting and treatments) of former Fort Ord Habitat Reserve to control the spread of Pampas grass, African ice plant, and French broom. BLM spent over 1,620 person-hours controlling the spread of invasive weeds still under Army control under the 2015 – 2016 Services Agreement.

5. Groundwater Remediation Project

Groundwater remediation and monitoring activities at Operable Unit 1 (OU1), and Operable Unit Carbon Tetrachloride Plume (OUCTP) were conducted while minimizing impacts to listed species and their habitats within the Fort Ord Natural Reserve owned and managed by UCSC. These activities were conducted in strict compliance with the Programmatic Biological Opinion.

In Operable Unit 2/12 (OU 2/12) the Army conducted 1st year follow up surveys at one well destroyed in 2014, described in *2015 Annual Biological Monitoring Report* (Chenega, 2016).

In OU1, a 1st year of follow up rare plant surveys were conducted at 7 well sites destroyed in 2014, and at the reference site, as described in the *2015 FONR Impact Assessment and Habitat and Rare Plant Species Survey Results, OUI* (HGL, 2015). The report also describes an evaluation of weed control activities from 2007 to 2013. Based on the results of the evaluation the Army will discontinue weed control activities in OU1.

In OUCTP, the Army conducted baseline surveys for installation of 8 wells needed for additional groundwater evaluation, as described in the Appendix F of the *Final Operable Unit Carbon Tetrachloride Plume Evaluation Technical Memorandum, A-Aquifer, Former Fort Ord, California*

(Ahtna, 2016).

6. Summary of Land Transfers

A total of 19,279 acres of the total 27,827 acres of former Fort Ord have been transferred since 1994. More than 9,463 acres have been transferred to agencies responsible for managing former Fort Ord lands as Habitat Reserves. Another 1,660 acres have been transferred as Development with Reserves or Development with Restrictions. A total of 8,156 acres have been transferred as Development parcels identified in the communities reuse plan. No property was transferred in 2015.

7. Incidental Take and Sightings

No take of Smith's blue butterflies or western snowy plovers occurred in 2015 as a result of the Army's ongoing pre-disposal actions. Two juvenile California tiger salamanders were discovered in 2015 at HA 37. The animals were found under a straw wattle during erosion control activities. They were collected by the approved on-site biologists per the Biological Opinion, and were released unharmed into small mammal burrows in the vicinity of where they were found. The incident was reported to USFWS as required by the Biological Opinion.

8. Annual Habitat Meeting

As required by the HRP (Shaw, 2009), the 5th Annual Former Fort Ord Habitat Restoration and Monitoring Meeting took place on February 2017, 2016, at the BRAC office. The purpose of the meeting is to present the results of the habitat restoration and monitoring to the agencies, and provide a venue for discussion of habitat related issues. The meeting minutes are attached at the end of this document.

The main topic of discussion was the implementation of macroplots in 2016 monitoring, as described in the *Revisions of Protocol for Conducting Vegetation Monitoring for Compliance with the Installation-Wide Multispecies Habitat Management Plan, Former Fort Ord* (Tetra Tech, 2015). The goal of including macroplots to annual monitoring is to determine if there is an increase in frequency of HMP annuals in adjacent areas post treatment. It is speculated that after vegetation removal, the HMP annuals will either colonize adjacent areas, or will germinate from the existing seed bank. It was agreed that a white paper that would address all the questions discussed at the meeting would be issued. The white paper, *Addendum to Revisions of Survey Protocol for HMP Annual Plants: Implementation of Macroplot Sampling at Former Fort Ord* (Tetra Tech, 2016) is included with this year's reports and is summarized below.

To determine the number of macroplots needed, a power analysis was conducted with assumed two distributions for HMP annuals' frequency increase. In order to obtain high power of estimate of change of frequency between sampling events approximately 11 grids per same age class treatment areas are needed. The results of the macroplot sampling in 2016 will be used to refine the estimates of the number of macroplots to be selected in each Unit.

9. References

- Ahtna, 2016. Final Operable Unit Carbon Tetrachloride Plume Evaluation Technical Memorandum, A-Aquifer, Former Fort Ord, California. Administrative Record Series Number OUCTP-0070.
- Burleson Consulting Inc., (Burleson), 2012. Site Specific Restoration Plan Historic Areas 18, 19, 22, 23, 26, 27, 27A, 28, 29, 33, 34, 36, 37, 38, 39/40, 43, 44, 48 and Austin Road, Former Fort Ord, California. Administrative Record Series Number BW-2581B.
- Burleson Consulting Inc., (Burleson), 2014. Updated Site Specific Restoration Plan Historic Areas 26, 28, 34, 37, 38, 44, and 48, Former Fort Ord, California. Administrative Record Series Number BW-2689B.
- Burleson Consulting Inc., (Burleson), 2016a. 2015 Annual Report Former Fort Ord Site 39 Habitat Restoration. Administrative Record Series Number BW-2800.
- Burleson Consulting Inc., (Burleson), 2016b. 2015 Biological Monitoring Report for Units 5, 13, and 20; Units 1 West, 2 West, and 3 West; Units 2 East and 3 East; Units 15, 21, 32, and 34 and 2015 Annual Wetland Vegetation and Wildlife Monitoring Report, Former Fort Ord. Administrative Record Series Number BW-2795.
- Chenega Support Services, 2016. 2015 Annual Biological Monitoring Report, Fort Ord Dunes State Park, Former Fort Ord, California. Administrative Record Series Number BW-2799.
- HydroGeoLogic, Inc. (HGL), 2015. 2015 FONR Impact Assessment and Habitat and Rare Plant Species Survey Results. Administrative Record Series Number OU1-622.
- Kemron, (2016), 2016. 2015 Annual Biological Monitoring Report, Former Fort Ord, California. Administrative Record Series Number BW-2798.
- Shaw Environmental, Inc. (Shaw), 2008a. Final Habitat Restoration And Monitoring Plan Non-remediated Areas, Fort Ord Dunes State Park (Formerly Site 3), Former Fort Ord, California. June. Administrative Record Series Number BW-2279J.
- Shaw Environmental, Inc. (Shaw), 2008b. Final Feasibility Study Addendum Site 39 Inland Ranges, Former Fort Ord, California. Administrative Record Series Number BW-2423F.
- Shaw Environmental, Inc. (Shaw), 2009. Final Habitat Restoration Plan Site 39 Inland Ranges, Former Fort Ord, California. Administrative Record Series Number BW-2450.
- Tetra Tech, Inc. and EcoSystems West Consulting Group, (Tetra Tech), 2015. Revisions of Protocol for Conducting Vegetation Monitoring for Compliance with the Installation-Wide Multispecies Habitat Management Plan, Former Fort Ord. Administrative Record Series Number BW-2747.
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Tetra Tech, Inc. and EcoSystems West Consulting Group, (Tetra Tech), 2016. Addendum to Revisions of Survey Protocol for HMP Annual Plants: Implementation of Macroplot Sampling at Former Fort Ord. Administrative Record Series Number BW-2745.3.

U.S. Army, (Army), 1997. Installation-Wide Multispecies Habitat Management Plan for Former Fort Ord, California. Administrative Record Series Number BW-1787.

U.S. Army, (Army), 2005. Record of Decision Related to Munitions and Explosives of Concern – Track 1 Sites, No Further Action with Monitoring for Ecological Risks from Chemical Contamination at Site 3. Administrative Record Series Number OE-0526.

U.S. Army, (Army), 2008. Record of Decision Impact Area Munitions Response Area Track 3 Munitions Response Site, Former Fort Ord, California. Administrative Record Series Number OE-0647.

U.S. Army, (Army), 2009. Final Record of Decision Amendment Site 39 Inland Ranges, Former Fort Ord, California. Administrative Record Series Number RI-041E.

United States Fish and Wildlife Service, (USFWS), 2015. Programmatic Biological Opinion for Cleanup and Property Transfer Actions Conducted at the Former Fort Ord, Monterey County, California (8-8-09-F-74). May 28. Administrative Record Series Number BW-2747.

5th Annual Former Fort Ord Habitat Restoration and Monitoring Meeting Minutes
Feb 17, 2016
Fort Ord BRAC Office, Building 4463 Gigling Rd, Seaside, CA

Members / Invited Attendees

Bill Collins, BRAC
 Bart Kowalski, Chenega
 Thor Anderson, Burleson
 Nadia Burleson, Burleson
 Shawn Wagoner, Burleson
 Michael Burleson, Burleson
 Shaelyn Hession, DD&A
 Jami Davis, DD&A
 James Lee, USACE
 Teresa Rodgers, USACE
 Min Wu, DTSC
 Josh Harwayne, DD&A

Patty Velez, CDFW
 Regina Donohoe, CDFW
 Lena Chang, USFWS
 Justin Davilla, EcoSystems West
 Bill Davilla, EcoSystems West
 Ted Donn, Tetra Tech
 Roy Evans, HGL
 Brittan Carlson, Ahtna
 Mary Carroll, Arcadis
 Gage Dayton, UCSC Natural Reserve

Agenda

Item	Action	Comment
Introductions	Update	Everyone at the meeting introduced themselves and meeting handouts were provided.
2015 Post Well Destruction Annual Biological Monitoring and Site 3 Dune Buckwheat Survival Monitoring	Update	by Bart Kowalski
Biological Monitoring for OUCTP Well Installations	Update	by Brittan Carlson
2015 Habitat Impact & Rare Plant Survey Summary OU 1	Update	by Roy Evans
2015 Biological Monitoring Fort Ord MEC Removal Environmental Protection Measures	Update	by Jami Davis
Wetland Monitoring	Update	by Jami Davis
MEC Cleanup: HMP Annuals & Shrubs	Update	by Ted Donn
Site 39 Habitat Restoration 2015 Activities	Update	by Thor Anderson
2015 Biological Monitoring – FORA ESCA Remediation Program	Update	by Mary Carroll
Monitoring Protocol Revisions	New	by Ted Donn, Bill Davilla, Justin Davilla
Field Visit to HAs 18, 19 and 29 for the Agencies	Field Visit	by Bart Kowalski and Thor Anderson

Post Well Destruction Monitoring: Chenega presented an update on Well Destruction Monitoring:

1. 21 wells identified for destruction.
2. Baseline data collected for Monterey spineflower and seacliff buckwheat 4/28/14.
3. First year follow up monitoring for Monterey spineflower conducted 4/29/15.
4. Decreased plant cover was observed across all sites during drought period at Site 3.
5. Baseline data for buckwheat survivorship study at Site 3 collected.
6. Second year follow up monitoring and first year follow up buckwheat survivorship planned for spring/summer 2016.

OUCTP Well Installations: Ahtna presented 2015 update:

1. Baseline surveying for well installation. Eight wells were installed.
2. Conducted environmental awareness training and habitat checklist implementation.
3. Construction phase monitoring was completed for tree removal, pruning, and woodrat nest dismantling.
4. Follow-up surveying scheduled for April-May 2016.

OU 1 2015 Habitat Impact & Rare Plant Survey Summary: HGL presented 2015 update:

1. Groundwater cleanup targets were met and closeout activities are ongoing.
2. HMP surveys conducted since 1998.
3. Compared surveys after well destruction to baseline before construction.
4. Annual surveys shown no evidence of adverse effects on HMP species.
5. No clear benefits on HMP annuals from weed control.

2015 Biological Monitoring Fort Ord MEC Removal Environmental Protection Measures: DD&A presented 2015 information:

1. DD&A monitored activities completed by Kemron for MEC removal
2. Environmental Protection Measures were implemented to minimize disturbance associated with MEC removal.

Wetland Monitoring: DD&A presented 2015 wetland monitoring information:

1. Six ponds were monitored in Impact Area and BLM Area B – pre-remediation at five ponds (including reference), post-remediation at one pond.
2. Hydrology- mapped inundated surface area with GPS and measured maximum depth by staff gauges (or estimating).
3. Water quality-temperature, pH, turbidity, and dissolved oxygen.
4. Conducted wildlife and CTS surveys. Biologists could not enter the ponds this year.
5. Completed quadrat vegetation surveys.

Agencies asked why biologists could not enter wetlands this year. The Army explained these ponds have not been cleared for munitions, so access is restricted. The Army plans to conduct munitions removal in all ponds in the near future, as the ponds dry out and are accessible to equipment and staff.

MEC Cleanup: HMP Annuals & Shrubs: Tetra Tech presented 2015 monitoring results and statistical evaluation:

1. 2,164 acres surveyed for HMP annual grids and transects including baseline, Year 1, Year 3, and Year 5.
2. Density class for three HMP annual species relatively constant over time.
3. Shrub transect monitoring was completed at 9 units.
4. Large change after cutting and burning with general progression towards baseline.
5. No detectable survey results of burn v. mastication vegetation clearance.
6. Protocol revisions were discussed.
 - a. HMP Annuals: discontinue Year 8 sampling, implement macroplots, and modify success criteria.
 - b. Shrub Transects: discontinue Year 13 sampling and modify success criteria.

Agencies asked what would happen if success criteria are not met with revised protocol. Tetra Tech replies that if they were to see any significant variation from the success criteria, the Army would go back to agencies and continue the conversation. The Army explained that new success criteria have been met in previous monitoring activities with the exception of Monterey spineflower in Unit 15. It is worth noting that 84% success criteria was achieved at Unit 15 at the end of four years of drought.

Site 39 Habitat Restoration 2015 Activities: Burleson presented habitat restoration activities that occurred in 2015:

1. Passive restoration occurred at 9.3 acres and approximately 8,500 plants were installed at five HAs.
2. Passive restoration included seed collection, production, and broadcast.
3. Active restoration included plant propagation and installation.
4. Erosion control repairs and monitoring were also completed.
5. Implemented BMPs to control pathogens at native plant nursery.
6. Presented upcoming 2016 restoration activities.

FORA ESCA Remediation Program 2015 Biological Monitoring in Habitat Parcels in FEG MRA and IAR MRA: Arcadis presented updates:

1. Army transferred 3,279 acres to FORA in 2007
2. HMP annual surveys were completed in Future East Garrison (FEG) MRA and Interim Action Ranges (IAR) MRA.

3. Compared mean vegetation cover and frequency in central maritime chaparral before and after cutting in FEG MRA and IAR MRA.
4. IAR MRA habitat restoration 2015 results exceeded performance metrics

Monitoring Protocol Revisions: Tetra Tech and EcoSystems led a brown bag discussion of the monitoring protocol revisions. Revisions to the protocol include:

1. Shrub transects – discontinue Year 13 sampling and revised success criteria.
2. HMP annuals – discontinue Year 8 sampling, implement macroplots, and revised success criteria.
3. Macroplot discussion:

Macroplot definition: Composed of 3 grids by 3 grids (each 100 foot by 100 foot) that results in 9 total individual grids.

Macroplot Method: A team will conduct meandering transects over baseline grids, when they find an annual HMP species they will record the location using GPS. That point will be entered into GIS with a grid overlay on top to identify the occupied grid. If more than 38 grids in a Unit come up occupied, 20% of the grids will be randomly selected (for density). Then 10% of these grids will be randomly selected with a macroplot placed around it. These macroplots will determine the baseline data for future monitoring. All unit macroplots will be averaged to determine the frequency of occurrence as a whole.

Things to consider: Treatment (burned vs. masticated), species, boundary restraints.

Treatment: Should macroplots be randomly selected in respect to treatment? Should all treatments be surveyed?

Boundary restraints: What should be done when grids exceed a unit? Change the shape/size?

Recommendations and questions by attendees:

- How many macroplots will be sufficient?
- What kind of statistical test will be used?
- It is important to maintain the ability to compare treatment (like the old method) with macroplots.
- What happens if you find occupancy in all 9 grids in the baseline year?

It was agreed that a study will be conducted to address the above questions, and that it will be presented in the form of a white paper to the agencies.

Field Visit: Agencies, Army, USACE, and restoration consultants visited HAs 18, 19, and 29. Photos follow.



Group Photo at HA 29



Visit to the HMP annuals plot at HA 18



Thor Anderson (Burleson) explaining wind erosion effects at HA 19.