APPENDIX A

Natural Resource Impact Mitigation Checklists and Reports for Habitat Parcels

NATURAL RESOURCE IMPACT MITIGATION CHECKLIST

Checklist No. 5

Revision 1

Title: Future East Garrison MRA Habitat Parcels Munitions and Explosives of Concern (MEC) Investigation

Notify the Senior Qualified Biologist (510-541-7509) before proceeding if it is proposed that work boundaries change, types of equipment change, additional vegetation removal is necessary, vegetation cutting methods change, or any other conditions change.

ESCA MRA:	Future East Garrison	**Date:**	5-8-2012
Work to be conducted:	Surveying and field staking, vegetation cutting, tree limbing (if required for trees larger than 5 inches diameter at breast height), chipping of vegetation debris on site or removal of debris from the work area (may be spread along roads/trails), erosion control measures (if required), instrument aided surface clearance, target-specific excavation (i.e., "mag and dig," including hand tool and/or mechanized equipment soil removal) as required to investigate MEC/MD, backfill of excavated soil, and field demolition of MEC as required.		
Relevant Work Plan Reference and Section(s):	Group 4 Remedial Investigation/feasibility Study Work Plan (relevant sections and Appendix E, Response to Comments); Field variance forms (FVF No. G4WP-001 and Draft FVF No. G4WP-003)		

1. LAND USE DESIGNATION:	☒ **Habitat Reserve**		**Development** ☐ **Non-Residential** ☐ **Residential**	☐ **Other (specify):**
2. LAND OWNER:	☐ **Army**	**Parcel No(s). and/or Location:**		
	☒ **FORA**	**Parcel No(s). and/or Location::**	E11b.6.1, E11b.7.1.1 (See Figure 1)	

3. FEDERAL ESA SPECIES REPORTED IN PARCEL(S):	☒ **Yes**	☐ **No**	☒ **Flagged/Marked**
Reported ESA Species [common name(s)]:	Monterey gilia (sand gilia), Monterey spineflower, California tiger salamander (CTS)		
Reported Species' Location(s):	For Monterey gilia and Monterey spineflower, see Figure 1 (spring 2010 ESCA RP survey results); CTS larvae were present in AF67 and AF66a in April and May 2011, respectively; juveniles and adults are potentially present all year round in underground burrows in all areas of both parcels. If present in an area, adults may migrate on the surface at night during October 15 through December 31 and during January 1 through March 15, after/during rainfall. If present in a breeding site, juveniles may migrate on the surface at night from the aquatic feature to upland areas during May15-August 15.		
Grid Numbers:			
Restrictions:	Off-road access is limited to vehicles/equipment required for completion of work activity. Excavations open overnight will be sloped or silt fenced to prevent trapping of CTS. For Monterey gilia, Monterey spineflower, and CTS (see Figure 1) an ESCA RP biologist will be present during brush cutting and intrusive MEC investigation activities in Areas A, B and E and where it is safe to do so. Brush cutting personnel in Area B will minimize disturbance of the trail soil to the extent feasible while accomplishing vegetation removal. Mechanized brush cutting equipment will not be used in Area B unless deemed necessary and no alternative is feasible. . In Areas B-D, if excavation for MEC is required, the top 6-in. of soil will be separately stockpiled during the dig and replaced as the final 6-in. surface soil layer when the dig is backfilled. This procedure preserves the species' "seed bank" in the area. In-place detonation may take place in Areas A-E if, in the judgment of the Senior UXO Supervisor, it is required owing to safety concerns. **Additional California Tiger Salamander Mitigation Measures:** Site work will occur during daylight hours. Between October 15 and March 31, all points of contact with the ground of work materials, vehicles and mechanized equipment left onsite overnight shall be inspected by site personnel for CTS presence in the morning prior to commencement of work after the occurrence of a rainfall event of at least ½ inch of rain has fallen within the prior 24-hr period. If a CTS or possible CTS is observed, the animal shall not be disturbed and a QB (i.e., a biologist approved by USFWS to rescue/handle CTS at former Fort Ord per the applicable BO) shall be immediately contacted to move the animal to a safe location. No personnel other than a QB may touch or handle CTS. If CTS are encountered, a QB will: take appropriate actions to avoid or minimize take of the species as authorized by USFWS, notify the U.S. Army and record the information on the appropriate reporting form.		

4. AQUATIC FEATURES (i.e., VERNAL POOLS/PONDS) PRESENT:	☒ **Yes**	☐ **No**	☐ **Flagged/Marked**

Location(s):	Several aquatic features (AFs) are located in the northeastern and southern portion ("hand grenade range") of Parcel E11.b.7.1.1 (see Figure 2). Four CTS "watershed" circles (i.e., 500 m radii from the AFs) occur within the habitat parcels in the MRA (see Figure 3).
Grid Number(s):	NA

Work can proceed in pools/ponds?:	☒ **Yes**	☐ **No**

Restrictions:	One or two of the AFs in Parcel E11b.7.1.1 (AF68AB and AF68C within Area A on Figure 1) could potentially be affected by work activities, depending on the exact location of the investigation corridor in that area (see Figures 4 and 5) as well as the extent of the AF (the positioning of some of the historical polygons were determined by ESCA RP biologists to be somewhat inaccurate when displayed in the current GIS system). CTS larvae were not observed in these AFs during the 2010-2011 surveys. The correct boundaries of these AFs will be marked in the field. To the extent feasible, disturbance of aquatic features will be avoided. If vegetation cutting or MEC investigation activities could potentially disturb an AF, an ESCA RP biologist will be consulted prior to such activities to identify measures for minimizing impacts per the USFWS 2005 Biological Opinion, as appropriate. An ESCA RP biologist may monitor such activities. Intrusive work (i.e., "mag and dig" excavation) within the boundaries of AFs shall be performed in accordance with applicable mitigation measures as determined by an ESCA RP biologist. An ESCA RP biologist will be present during such activity to confirm and document compliance with the mitigation measures. Mitigation measures may include conducting work when areas are dry, characterizing soil profile, minimizing excavation area and depth, salvaging topsoil, etc. The work plan does not indicate that more than 10% of the area within 500 m of a potential CTS breeding site (i.e., "watersheds" in Figure 3) will be affected; therefore, no mitigation measures related to this issue are required. In-place detonation may take place in AF areas if, in the judgment of the Senior UXO Supervisor, it is required owing to safety concerns. An ESCA RP biologist will implement appropriate mitigation measures consistent with the 2005 Biological Opinion if any such detonations take place in AFs.

5. VEGETATION REMOVAL		
☐ **None**	**Location(s):**	
☒ **Manual Removal**	**Location(s):**	Area B on Figure 1.
Restrictions:	To the extent feasible, only manual vegetation removal should be used in Area B.	
☒ **Mechanical Removal**	**Location(s):**	Mechanical removal is allowed in all work areas except Area B. In Area B mechanical removal is allowed only if necessary and no other alternative is feasible as determined by the ESCA RP biologist and the field personnel supervisor. Vegetation removal in and areas adjacent to aquatic features (Areas A and E) will be performed after coordinating with an ESCA RP biologist.
Restrictions:	Trees 5 inches in diameter (DBH) and larger will not be removed. Trees left in place will be limbed up to provide access for instrument aided surface clearing.	

6. EROSION CONCERNS/SITE RESTORATION:

No excavations greater than 1 acre are anticipated. Existing erosion areas along roadways and trails will have waddles, berms, silt fences, or equivalent sediment controls installed as required by existing soil management and erosion control plans. In particular, Parcel E11b.7.1.1, the hand grenade range and aquatic features, will be assessed by ESCA RP personnel for necessary erosion and sediment controls. If erosion work and/or BMP installation is proposed in the areas identified on Figure 2, an ESCA RP biologist will assist in planning the work to incorporate appropriate mitigation measures and will be present during installation.

7. SITE ACCESS: The MRA is accessed via Barloy Canyon Road from the south and Bunker Road from the north.

8. ADDITIONAL SITE CONCERNS:

Monitoring of HMP Annuals and shrubs will be conducted as needed in accordance with the HMP and VMP.

Additional HMP species reported in the MRA include: Eastwoods' ericameria, Monterey ceanothus, sandmat manzanita, Hooker's manzanita, toro Manzanita, California black legless lizard, California fairy shrimp. California red-legged frog and Monterey ornate shrew are not reported in the MRA, but could be present based on presence of potential.

Attachments

Figure 1. Future East Garrison MRA HMP Mitigation Measures Natural Resource Impact Mitigation Checklist.

Figure 2. Future East Garrison MRA Aquatic Feature Locations.

Figure 3. Future East Garrison MRA CTS Watershed Locations.

Figure 4. Future East Garrison MRA NE Aquatic Features in Investigation Area.

Figure 5. Future East Garrison MRA SW Aquatic Features in Investigation Area

Approved:

ARCADIS Senior Qualified Biologist: _____ **Date:** 5/8/2012

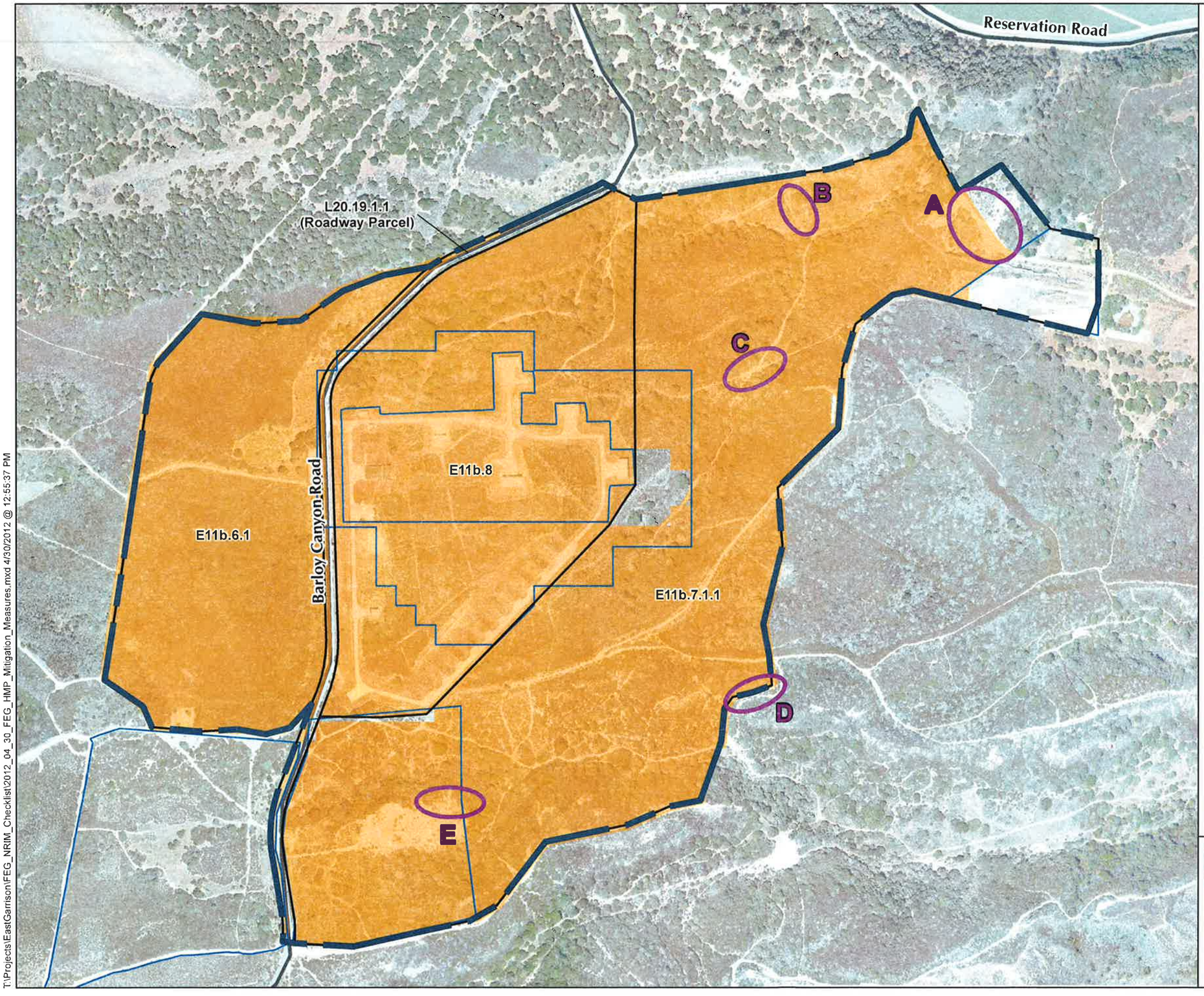
ESCA RP Program Manager: _____ **Date:** 5/16/12

ESCA Remediation Project Manager _____ **Date:** 5/16/12

Received:

FORA ESCA Program Manager: _____ **Date:** 5/17/12

Wildlife Biologist BRAC Fort Ord: William K. Collins **Date:** 5/17/12

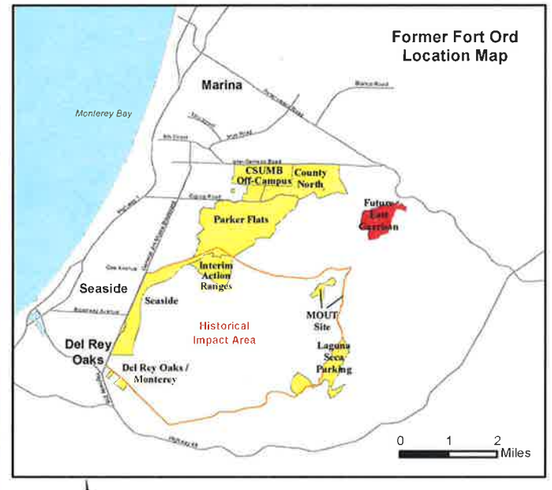


Legend

- Previously Investigated and Proposed Work Areas
- Munitions Response Area Boundary
- Major Road
- MRS Bounday
- E11b.8 — USACE Parcel

HMP Mitigation Measure Areas

- **A** — Aquatic Features: Biologist must be present during brush cutting & mag & dig
- **B** — Sand gilia habitat on steep slope: Biologist must be present during brush cutting & mag & dig
- **C** — Monterey spineflower habitat: Biologist must be present during mag & dig
- **D** — Sand gilia habitat: Biologist must be present during mag & dig
- **E** — Aquatic Features: Biologist must be present during brush cutting and mag & dig



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Feet

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Infrastructure, Water, Environment, Buildings

WESTON SOLUTIONS

Future East Garrison MRA
HMP Mitigation Measures
Natural Resource Impact Mitigation Checklist

FORA ESCA RP
Monterey County, California

Figure 1

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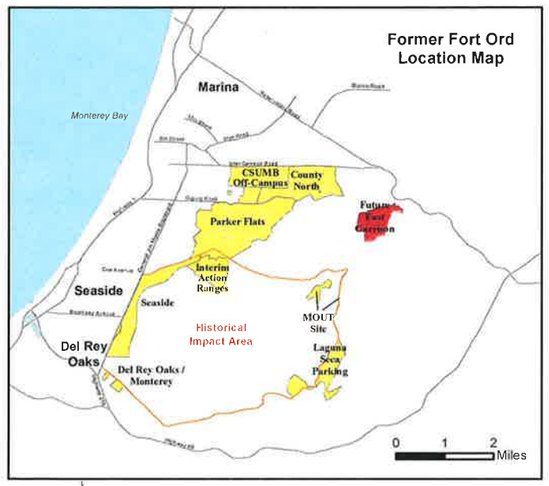
Legend

- Aquatic Features as of March 2010
- Previous Aquatic Feature Boundary
- Known CTS Breeding Location
- Munitions Response Area Boundary
- Major Road



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Future East Garrison MRA
Aquatic Feature Locations

FORA ESCA RP
Monterey County, California

Figure 2

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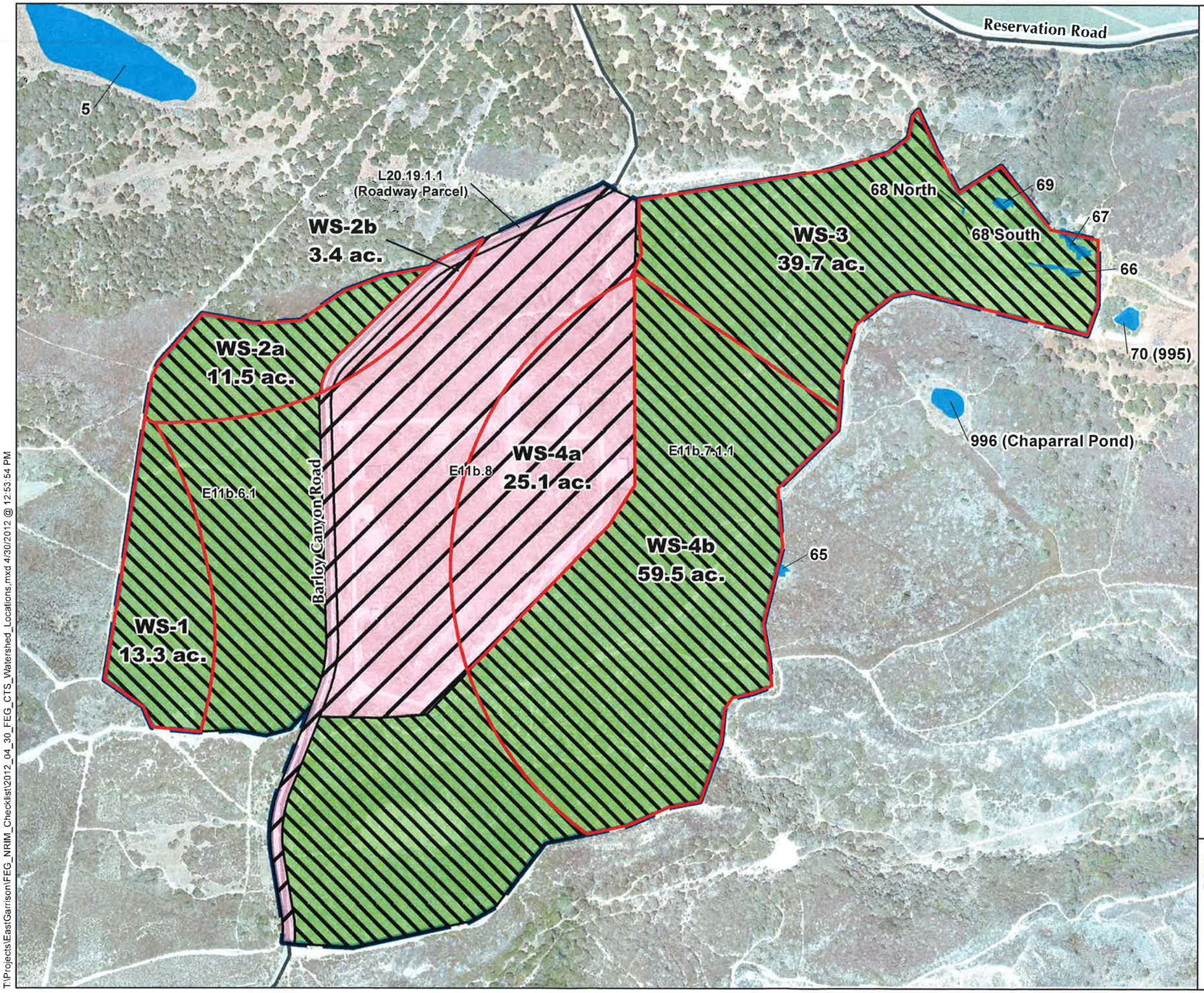
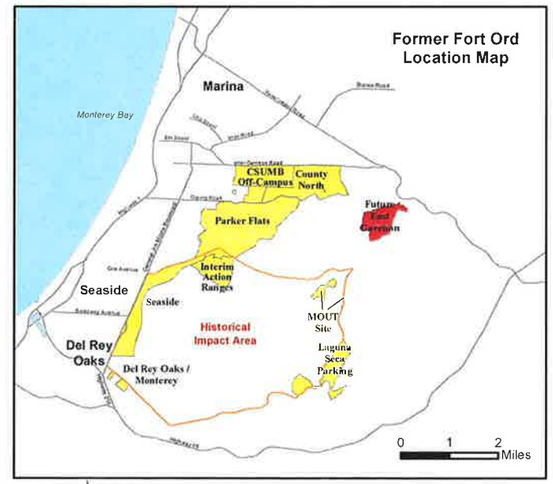


Legend

- 5 — Aquatic Features
- WS-2a — Watershed
- E11b.8 — USACE Parcel
- Munitions Response Area Boundary
- Major Road

Habitat Management Plan Category

- Development (includes proposed future Residential and Non-Residential areas)
- Habitat Reserve



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Future East Garrison MRA
CTS Watershed Locations

FORA ESCA RP
Monterey County, California

Figure 3

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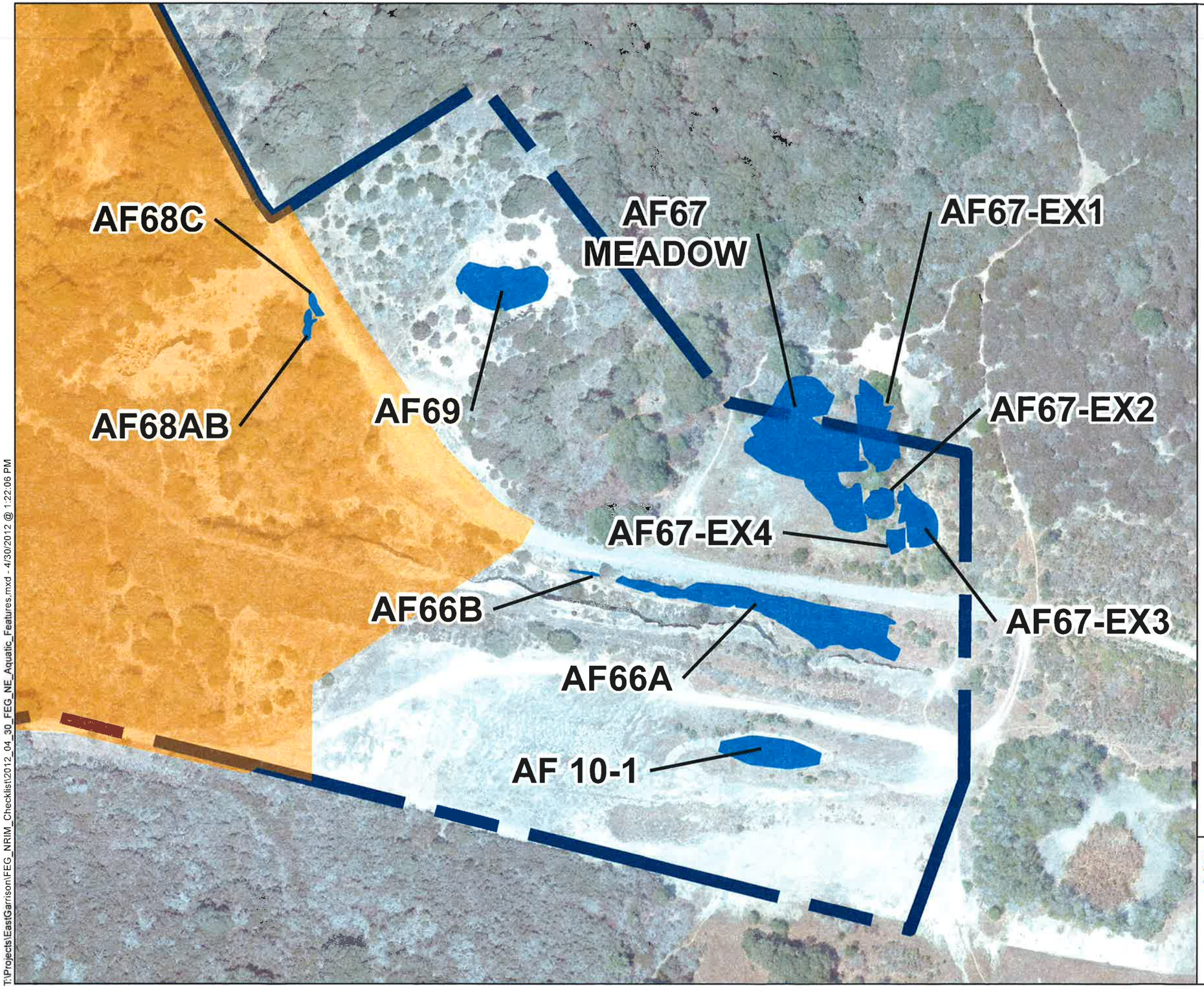
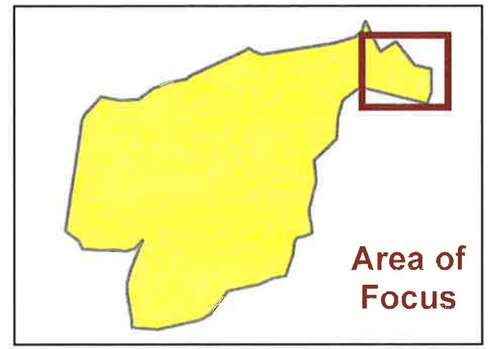
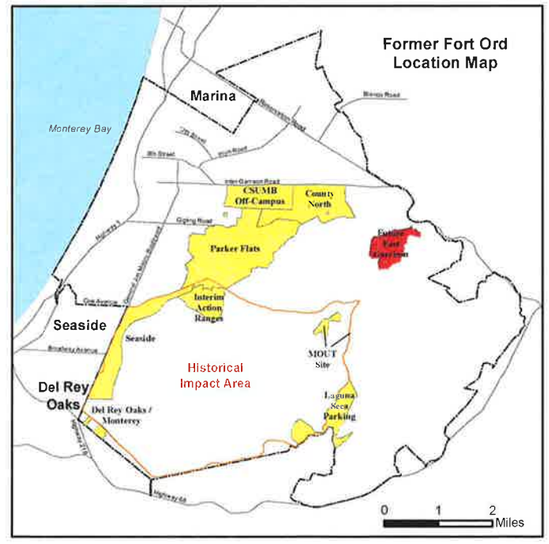
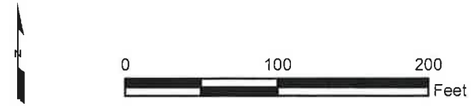


Legend

- North East (NE) Aquatic Features as of March 2010
- Previously Investigated and Proposed Work Areas
- Munitions Response Area







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WESTON SOLUTIONS

Future East Garrison MRA
NE Aquatic Features

FORA ESCA RP
Monterey County, California

Figure 4

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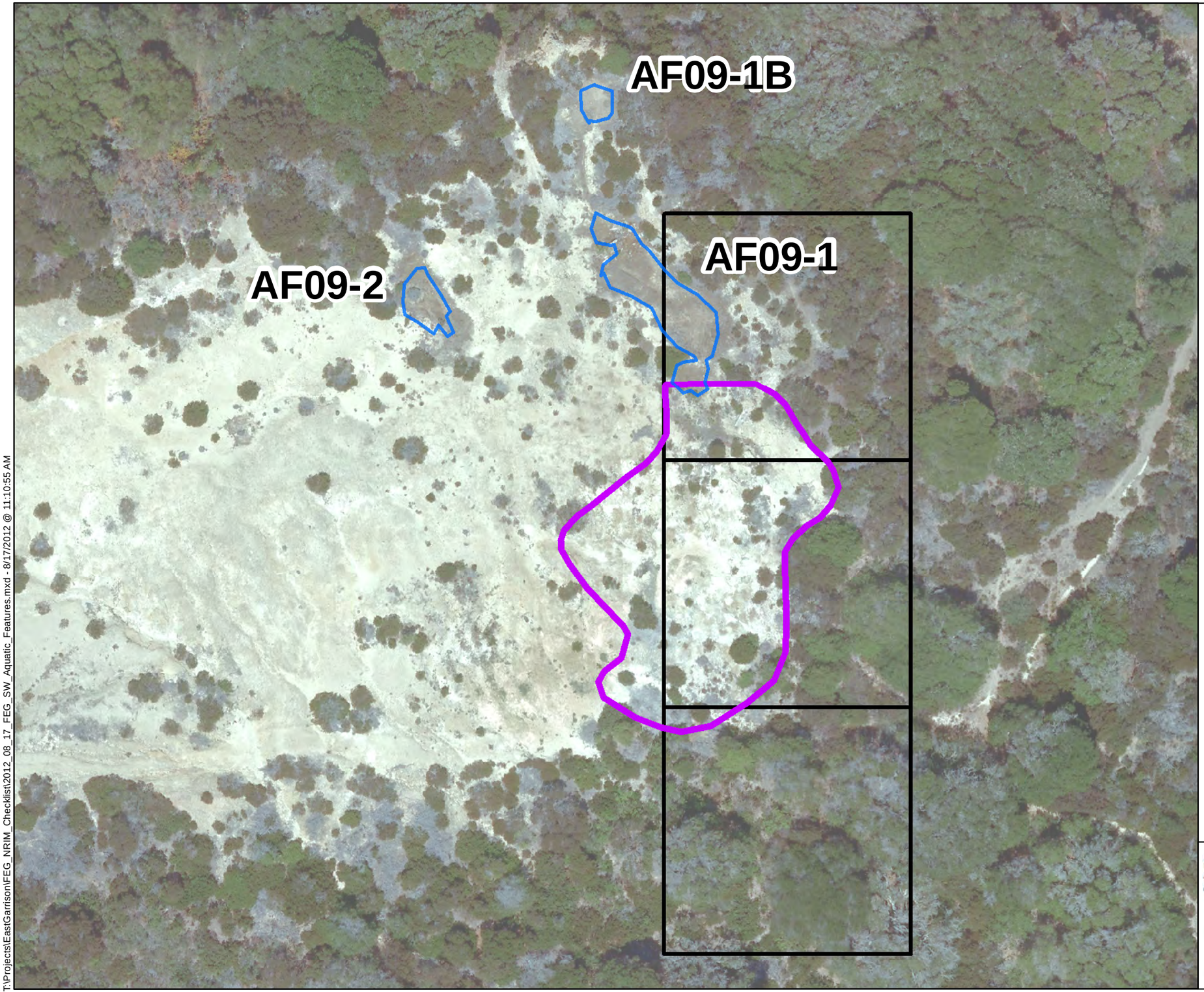
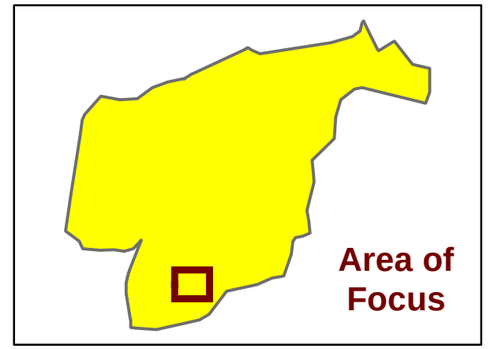
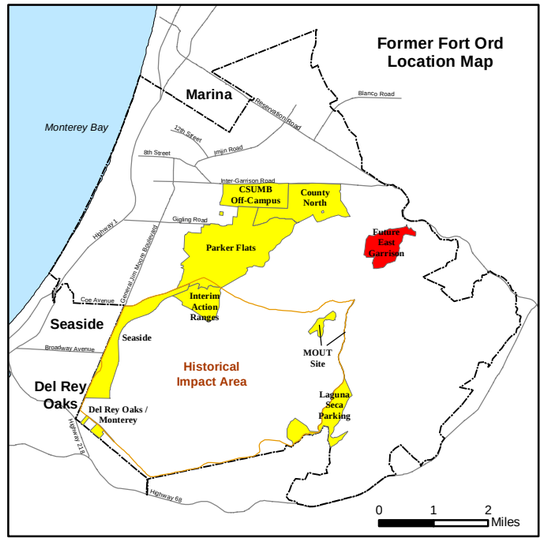


Legend

- South West (SW) Aquatic Features as of March 2010
- Potential Sifting Area
- Grids Potentially Needing Additional Sifting





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ARCADIS Infrastructure · Water · Environment · Buildings

WESTON SOLUTIONS

WESTCLIFFE | ENGINEERS

Future East Garrison MRA SW Aquatic Features and Potential Sifting Areas

FORA ESCA RP
Monterey County, California

DRAFT

Figure 5

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NATURAL RESOURCE IMPACT MITIGATION CHECKLIST

Checklist No. 5

Revision 2

Title: Future East Garrison MRA Habitat Parcels Munitions and Explosives of Concern (MEC) Investigation

Notify the Senior Qualified Biologist 805-478-0727 before proceeding if it is proposed that work boundaries change, types of equipment change, additional vegetation removal is necessary, vegetation cutting methods change, or any other conditions change.

ESCA MRA:	Future East Garrison	**Date:**	9-7-2012
Work to be conducted:	Mechanical soil sifting operations for Parcel E11b.7.1.1, Grenade Range Area; Surveying and field staking, vegetation cutting, tree limbing (if required for trees larger than 5 inches diameter at breast height), chipping of vegetation debris on site or removal of debris from the work area (may be spread along roads/trails), erosion control measures (if required), instrument aided surface clearance, target-specific excavation (i.e., "mag and dig," including hand tool and/or mechanized equipment soil removal as required to investigate MEC/MD, backfill of excavated soil, and field demolition of MEC as required.		
Relevant Work Plan Reference and Section(s):	Group 4 Remedial Investigation/Feasibility Study Work Plan; Field variance forms (FVF No. G4WP-001, FVF No. G4WP-003 and FVF No. G4WP-004) and FVF No. G4WP-005. Addition of Standard Operating Procedures for Soils and Vegetation Handling in Aquatic Features. (Attachment A)		

1. LAND USE DESIGNATION:	☒ **Habitat Reserve**	**Development** ☐ **Non-Residential** ☐ **Residential**		☐ **Other (specify):**
2. LAND OWNER:	☐ **Army**	**Parcel No(s). and/or Location:**		
	☒ **FORA**	**Parcel No(s). and/or Location:**	E11b.6.1, E11b.7.1.1 (See Figure 1)	

3. FEDERAL ESA SPECIES REPORTED IN PARCEL(S):	☒ **Yes**	☐ **No**	☒ **Flagged/Marked**
Reported ESA Species [common name(s)]:	Monterey gilia (sand gilia), Monterey spineflower, California tiger salamander (CTS)		
Reported Species' Location(s):	For Monterey gilia and Monterey spineflower, see Figure 1 (spring 2010 ESCA RP survey results and NRIM Checklist 05 Rev. 1). CTS larvae were present in AF67 and AF66a (Figure 2) in April and May 2011, respectively; juveniles and adults are potentially present all year round in underground burrows in all areas of both parcels. If present in an area, adults may migrate on the surface at night during October 15 through December 31 and during January 1 through March 15, after/during rainfall. If present in a breeding site, juveniles may migrate on the surface at night from the aquatic feature to upland areas during May15-August 15.		
Grid Numbers:	NA		
Restrictions:	Off-road access is limited to vehicles/equipment required for completion of work activity. Excavations open overnight will be sloped or silt fenced to prevent trapping of CTS. For Monterey gilia, Monterey spineflower, and CTS (see Figure 1) an ESCA RP Biologist will be present during brush cutting and intrusive MEC investigation activities in Areas A, B and E and where it is safe to do so. Cutting personnel in Area B will minimize disturbance of the trail soil to the extent feasible while accomplishing vegetation removal. Mechanized brush cutting equipment will not be used in Area B unless deemed necessary and no alternative is feasible. In Areas B-D, if excavation for MEC is required, the top 6-in. of soil will be separately stockpiled during the dig and replaced as the final 6-in. surface soil layer when the dig is backfilled. This procedure preserves the species' "seed bank" in the area. In-place detonation may take place in Areas A- E if, in the judgment of the Senior UXO Supervisor, it is required owing to safety concerns. **Additional California Tiger Salamander Mitigation Measures:** Site work will occur during daylight hours. Between October 15 and March 31, all points of contact with the ground of work materials, vehicles and mechanized equipment left onsite overnight shall be inspected by site personnel for CTS presence in the morning prior to commencement of work after the occurrence of a rainfall event of at least ½ inch of rain has fallen within the prior 24-hr period. If a CTS or possible CTS is observed, the animal shall not be disturbed and a QB (i.e., a biologist approved by USFWS to rescue/handle CTS at former Fort Ord per the applicable BO) shall be immediately contacted to move the animal to a safe location. No personnel other than a QB may touch or handle CTS. If CTS are encountered, a QB will: take appropriate actions to avoid or minimize take of the species as authorized by USFWS, notify the U.S. Army and record the information on the appropriate reporting form.		

4. AQUATIC FEATURES (i.e., VERNAL POOLS/PONDS) PRESENT:	☒ **Yes**	☐ **No**	☐ **Flagged/Marked**
Location(s):	Several aquatic features are located in Parcel E11.b.7.1.1 (see Figure 2). Four CTS "watershed" circles occur within the habitat parcels in the MRA (see Figure 3).		
Grid Number(s):	NA		
Work can proceed in pools/ponds?:	☒ **Yes**	☐ **No**	
Restrictions:	Aquatic features in Parcel E11b.7.1.1 may be affected by MEC investigation activities (Figures 4 and 5). Aquatic features AF09-1, AF09-1B and AF09-2 (Figure 5) will be subject to soil screening activities in support of MEC investigations. CTS larvae were not observed in AF09-1, AF09-1B or AF09-2 during the 2010-2011 surveys. The boundaries of these AFs will be marked in the field. To the extent feasible, disturbance of aquatic features will be minimized. Vegetation cutting and MEC investigation activities will be conducted in accordance with the Group 4 RI/FS work plan and applicable FVFs. An ESCA RP Biologist will monitor such activities. Intrusive work (i.e., "mag and dig" excavation, soil screening) within the boundaries of aquatic features shall be performed in accordance with applicable mitigation measures as determined by an ESCA RP Biologist (Attachment A). An ESCA RP Biologist will be present during such activity to confirm and document compliance with the mitigation measures. Mitigation measures may include conducting work when areas are dry, characterizing soil profile, minimizing excavation area and depth, salvaging topsoil and replacement, seed and propagule collection, etc. The work plan does not indicate disturbance of any known CTS breeding sites; therefore, no mitigation measures related to CTS are planned. In-place detonation may take place in aquatic feature areas if, in the judgment of the Senior UXO Supervisor, it is required owing to safety concerns. An ESCA RP Biologist will implement appropriate mitigation measures consistent with the 2005 Biological Opinion if any such detonations take place in aquatic features.		

5. VEGETATION REMOVAL		
☐ **None**	**Location(s):**	
☒ **Manual Removal**	**Location(s):**	Area B on Figure 1.
Restrictions:	To the extent feasible, only manual vegetation removal should be used in Area B.	
☒ **Mechanical Removal**	**Location(s):**	Mechanical removal is allowed in all work areas except Area B. In Area B mechanical removal is allowed only if necessary and no other alternative is feasible as determined by the ESCA RP Biologist and the field personnel supervisor. Vegetation removal in and areas adjacent to aquatic features (Areas A and E) will be performed after coordinating with an ESCA RP Biologist.
Restrictions:	Generally, trees 5 inches in diameter at breast height (dbh) and larger will not be removed. Trees left in place will be limbed up to provide access for instrument aided surface clearing. If MEC investigations identify areas of concern, trees greater than 5 inches dbh may need to be removed in support remedial activities. Impacts to the vegetation will be minimized to the greatest extent practical.	

6. EROSION CONCERNS/SITE RESTORATION:

Based on initial remedial investigation, excavation of areas greater than one acre may be required. Existing erosion areas along roadways and trails will have wattles, berms, silt fences, or equivalent sediment controls installed as required by existing soil management and erosion control plans. Parcel E11b.7.1.1, the hand grenade range and aquatic features, will be assessed by ESCA RP personnel for necessary erosion and sediment controls. If erosion work and/or BMP installation is proposed in the areas identified on Figure 2, an ESCA RP Biologist will assist in planning the work to incorporate appropriate mitigation measures and will be present during installation.

7. SITE ACCESS: The MRA is accessed via Barloy Canyon Road from the south and Bunker Road from the north.

8. ADDITIONAL SITE CONCERNS:

Monitoring of HMP annuals and shrubs will be conducted as needed in accordance with the HMP. Additional HMP species reported in the MRA include: Eastwood's ericameria, Monterey ceanothus, sandmat manzanita, Hooker's manzanita, Toro Manzanita, California black legless lizard, California fairy shrimp. California red-legged frog and Monterey ornate shrew are not reported in the MRA, but could be present based on presence of potential habitat.

Attachments

Figure 1. Future East Garrison MRA HMP Mitigation Measures, Natural Resource Impact Mitigation Checklist

Figure 2. Future East Garrison MRA Aquatic Feature Locations Natural Resource Impact Mitigation Checklist

Figure 3. Future East Garrison MRA CTS Watershed Locations Natural Resource Impact Mitigation Checklist

Figure 4. Future East Garrison MRA NE Aquatic Features in Investigation Area Natural Resource Impact Mitigation Checklist

Figure 5. Future East Garrison MRA SW Aquatic Features in Investigation Area Natural Resource Impact Mitigation Checklist

Attachment A – FVF No. G4WP-005. Addition of Standard Operating Procedures for Soils and Vegetation Handling in Aquatic Features.

Approved:

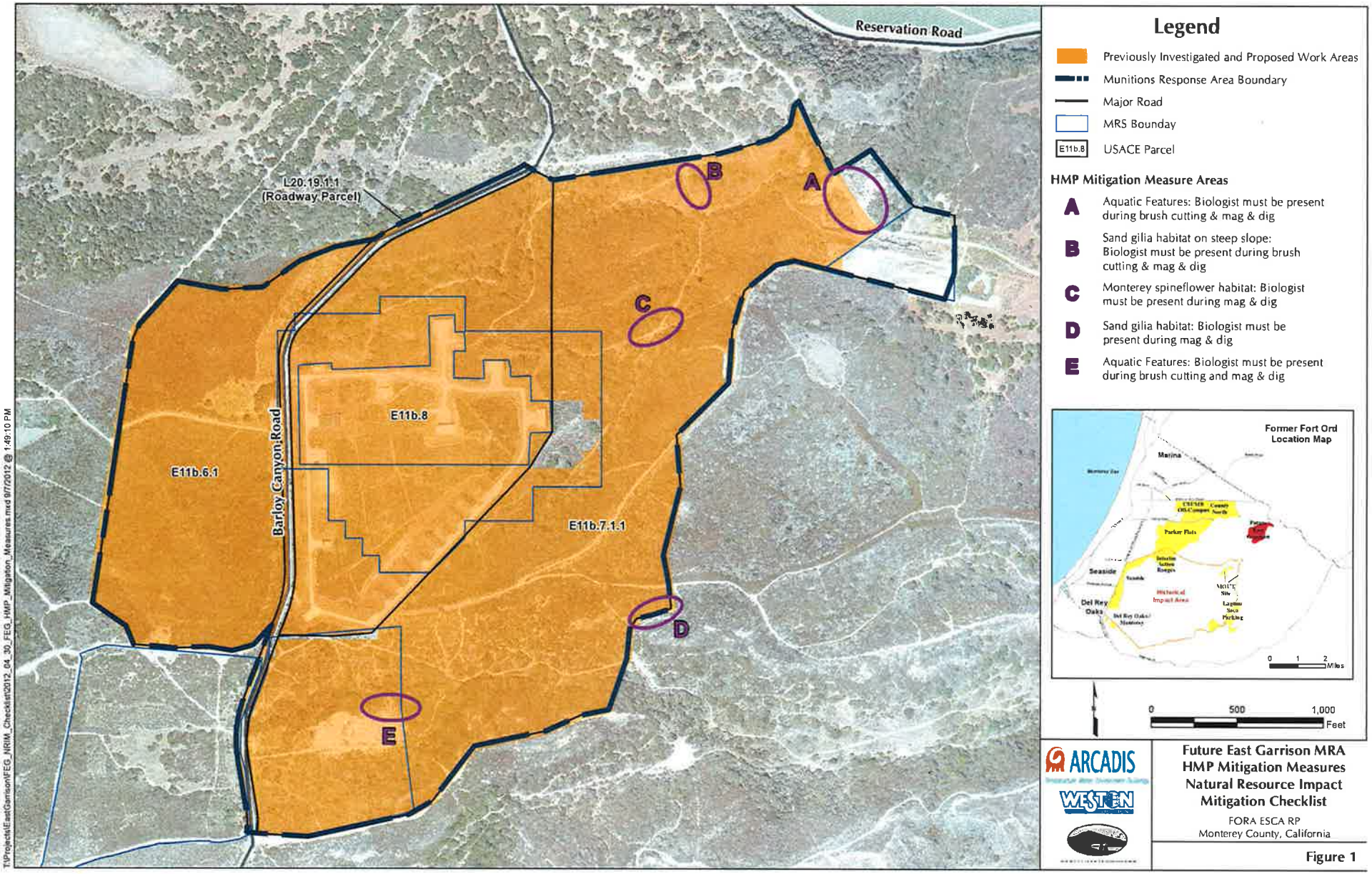
ARCADIS Senior Qualified Biologist: _____ **Date:** 9-7-12

ESCA Remediation Project Manager _____ **Date:** 9/7/12

ESCA RP Program Manager: _____ **Date:** 9-7-12

FORA ESCA Program Manager: _____ **Date:** 9-7-12

Wildlife Biologist BRAC Fort Ord: William K. Collins **Date:** 9-10-12


Reservation Road
L20.19.1.1
(Roadway Parcel)
Barloy Canyon Road
E11b.8
E11b.6.1
E11b.7.1.1
A
B
C
D
E
Legend
Previously Investigated and Proposed Work Areas
Munitions Response Area Boundary
Major Road
MRS Bounday
E11b.8
USACE Parcel
HMP Mitigation Measure Areas
A Aquatic Features: Biologist must be present during brush cutting & mag & dig
B Sand gilia habitat on steep slope: Biologist must be present during brush cutting & mag & dig
C Monterey spineflower habitat: Biologist must be present during mag & dig
D Sand gilia habitat: Biologist must be present during mag & dig
E Aquatic Features: Biologist must be present during brush cutting and mag & dig
Former Fort Ord Location Map
Marina
Seaside
Del Rey Oaks
Historical Impact Area
0 1 2 Miles
0 500 1,000 Feet
ARCADIS
WESTON
Future East Garrison MRA
HMP Mitigation Measures
Natural Resource Impact
Mitigation Checklist
FORA ESCA RP
Monterey County, California
Figure 1
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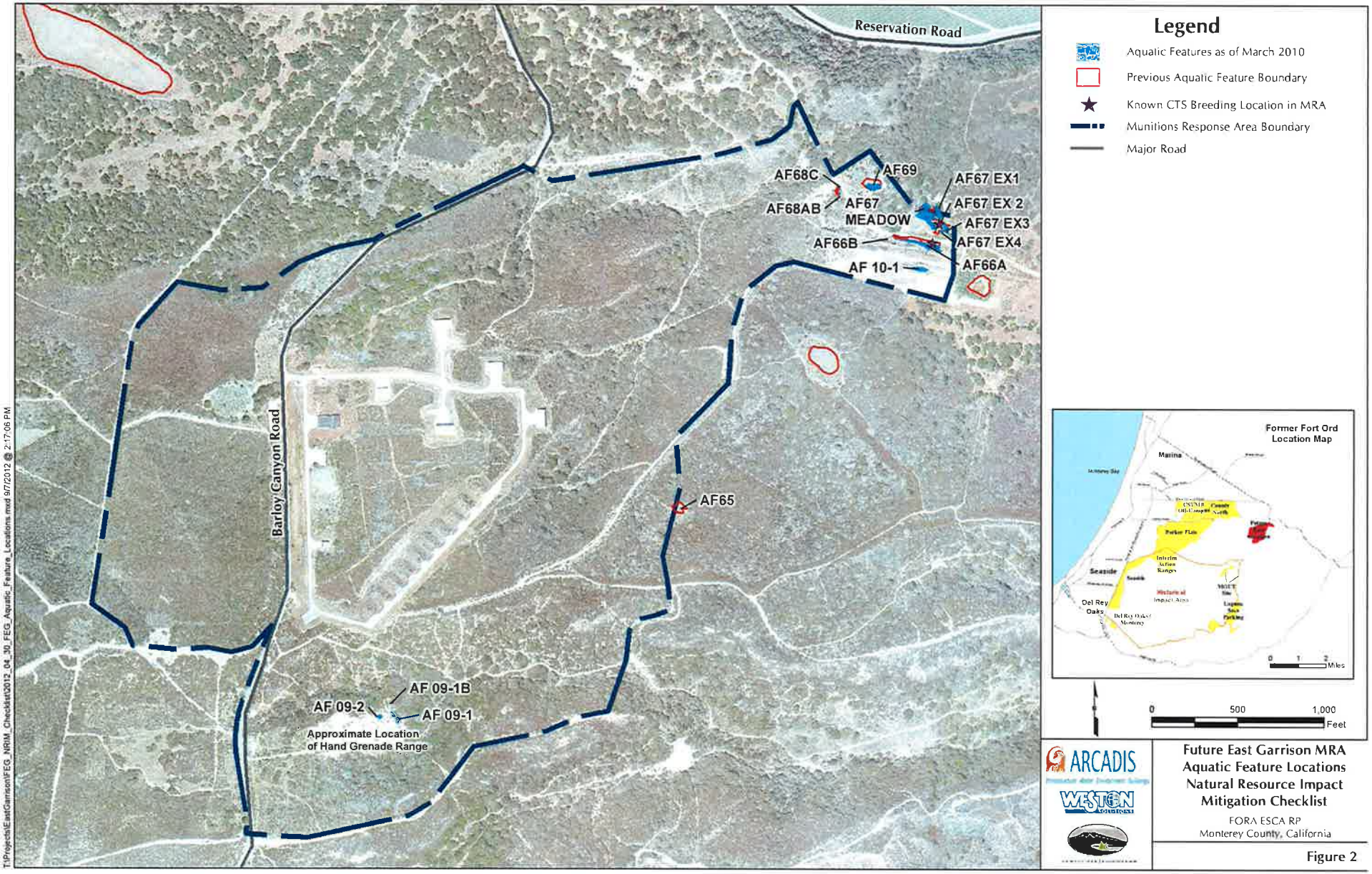

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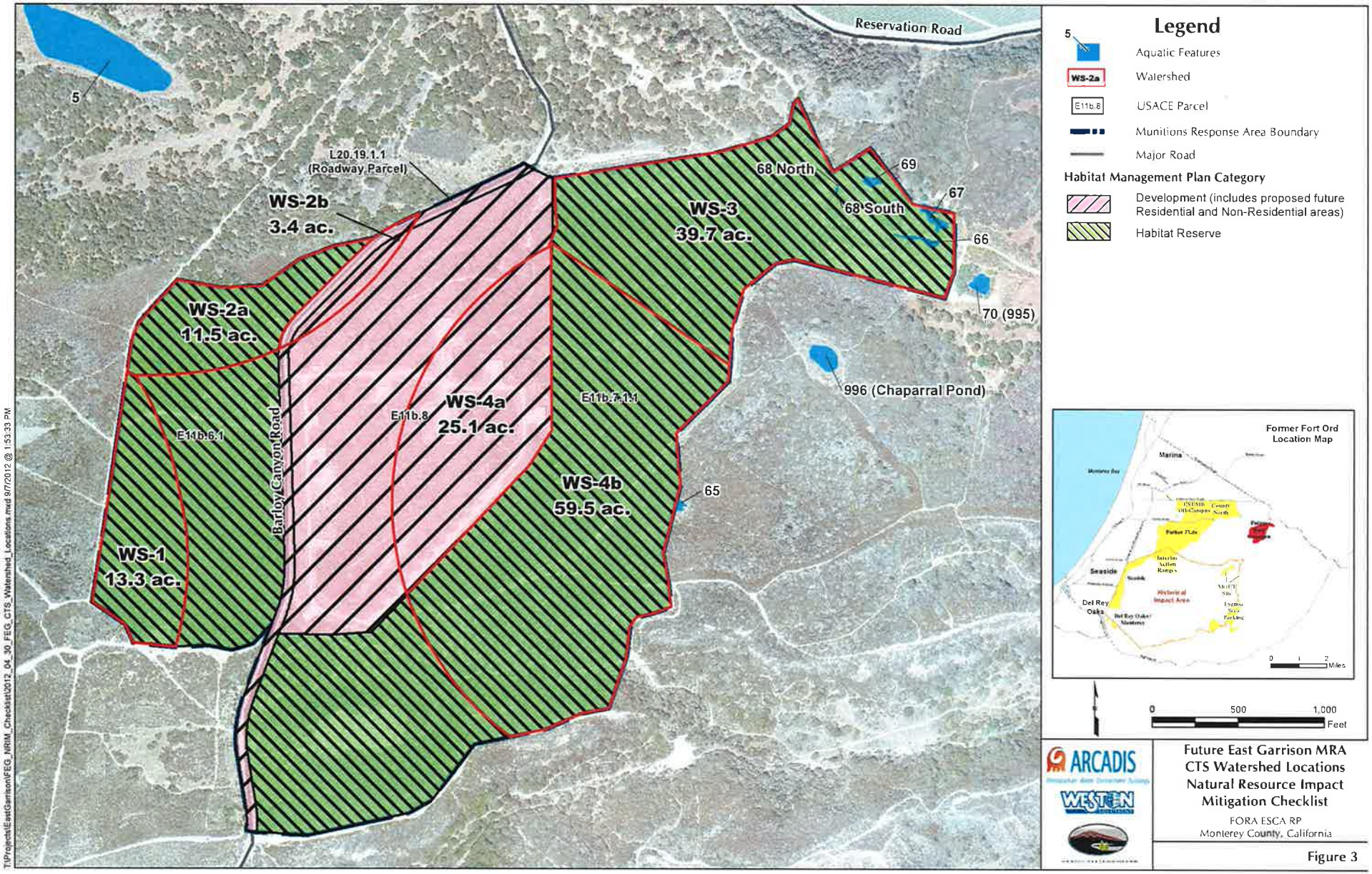

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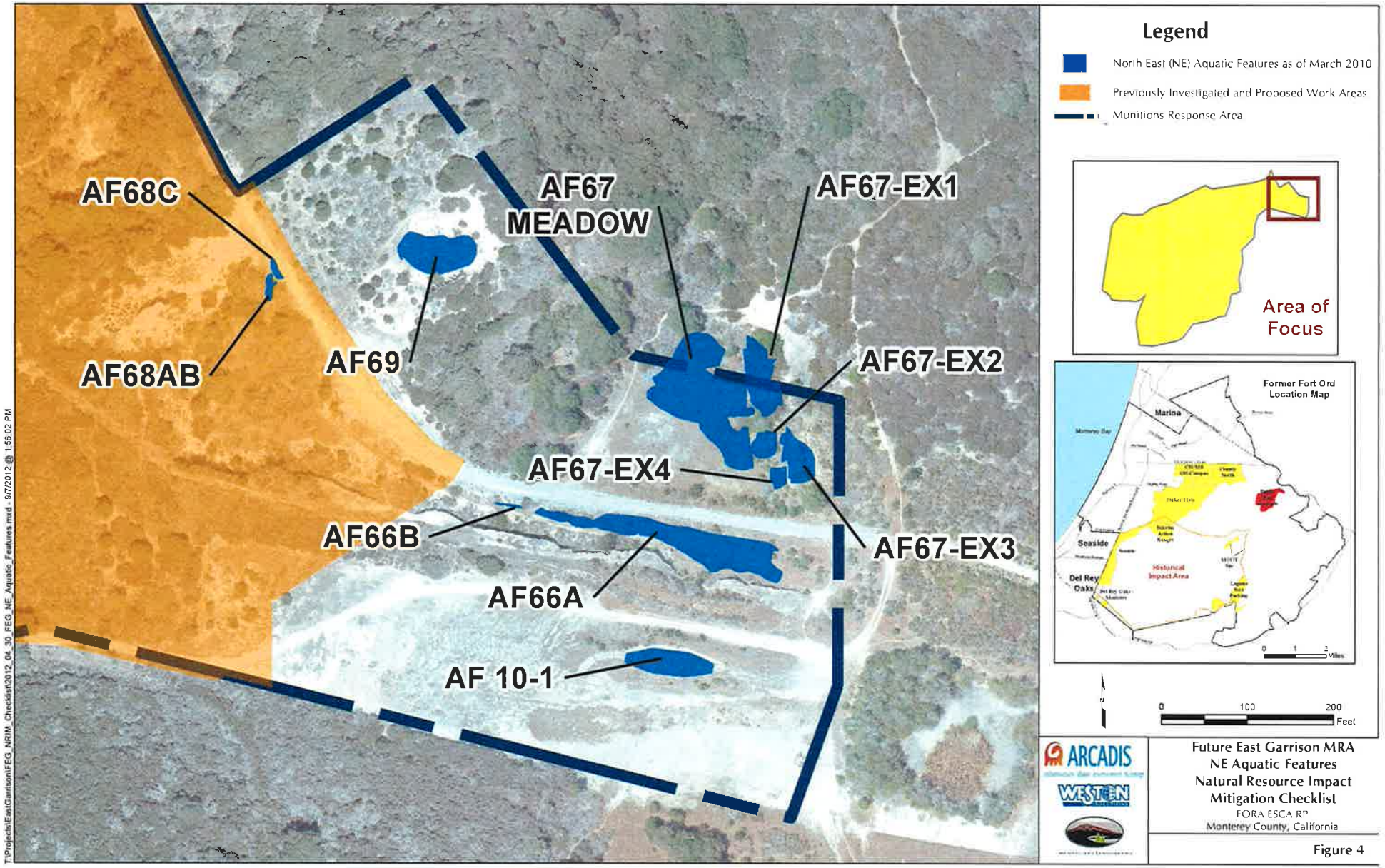
AF68C
AF68AB
AF69
AF67
MEADOW
AF67-EX1
AF67-EX2
AF67-EX4
AF67-EX3
AF66B
AF66A
AF 10-1
Legend
North East (NE) Aquatic Features as of March 2010
Previously Investigated and Proposed Work Areas
Munitions Response Area
Area of Focus
Former Fort Ord Location Map
Marina
Seaside
Del Rey Oaks
Historical Impact Area
Miles
0
100
200
Feet
ARCADIS
WESTON
Future East Garrison MRA
NE Aquatic Features
Natural Resource Impact
Mitigation Checklist
FORA ESCA RP
Monterey County, California
Figure 4
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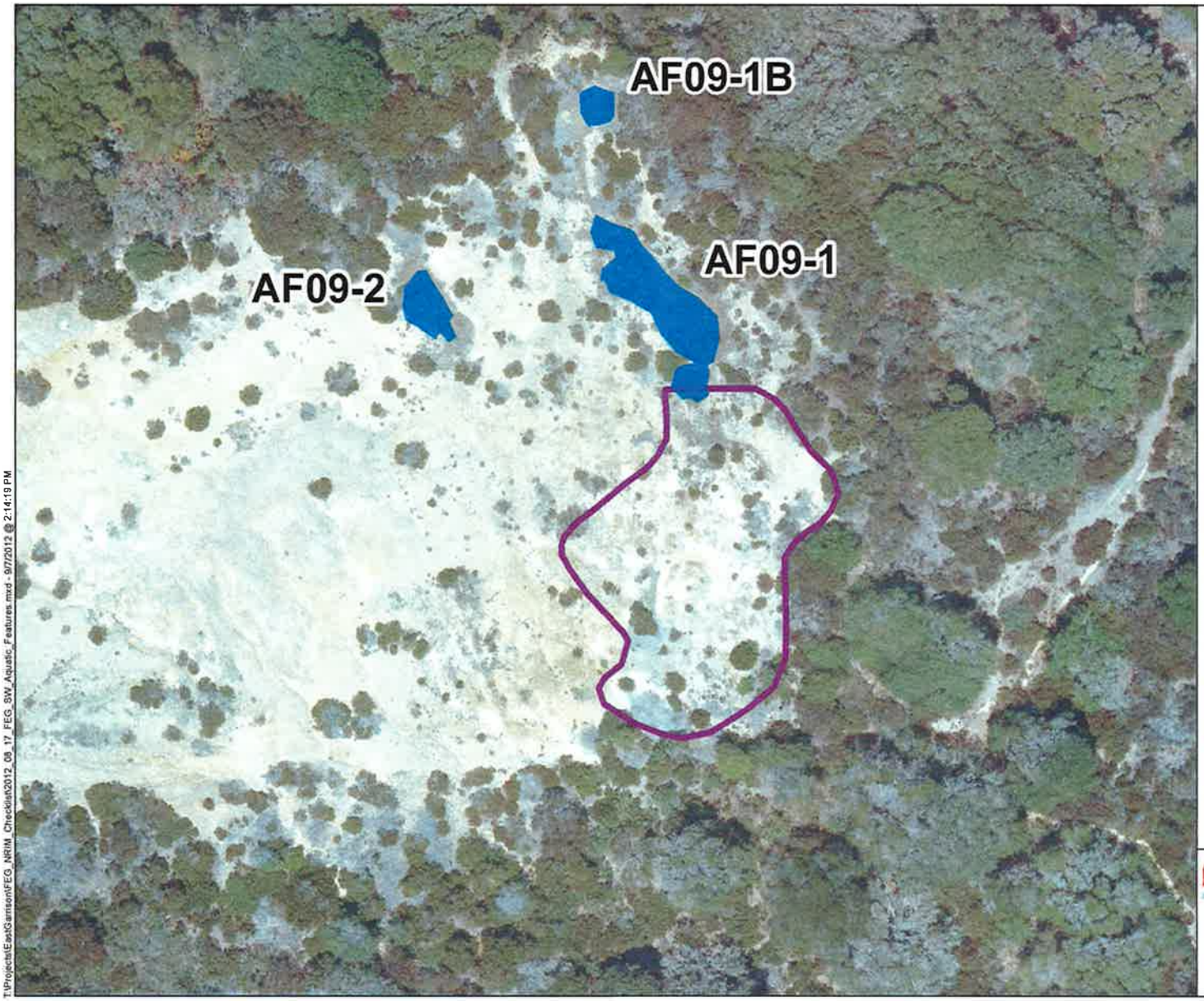
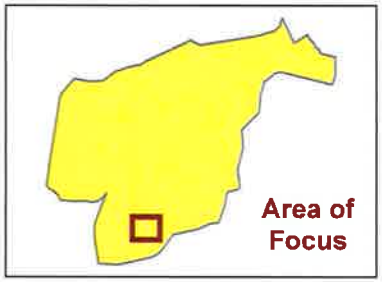
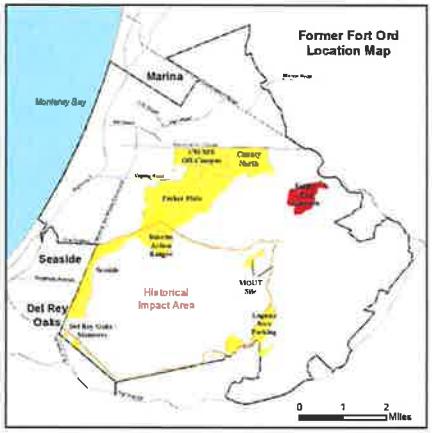


Legend

South West (SW) Aquatic Features as of March 2010 - Potential Sifting Areas

Sifting Area (Area May Be Expanded)





2007 Aerial Shown

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ARCADIS

WESTON

Future East Garrison MRA
SW Aquatic Features and Sifting Areas
Natural Resource Impact Mitigation Checklist
FORA ESCA RP
Monterey County, California

Figure 5

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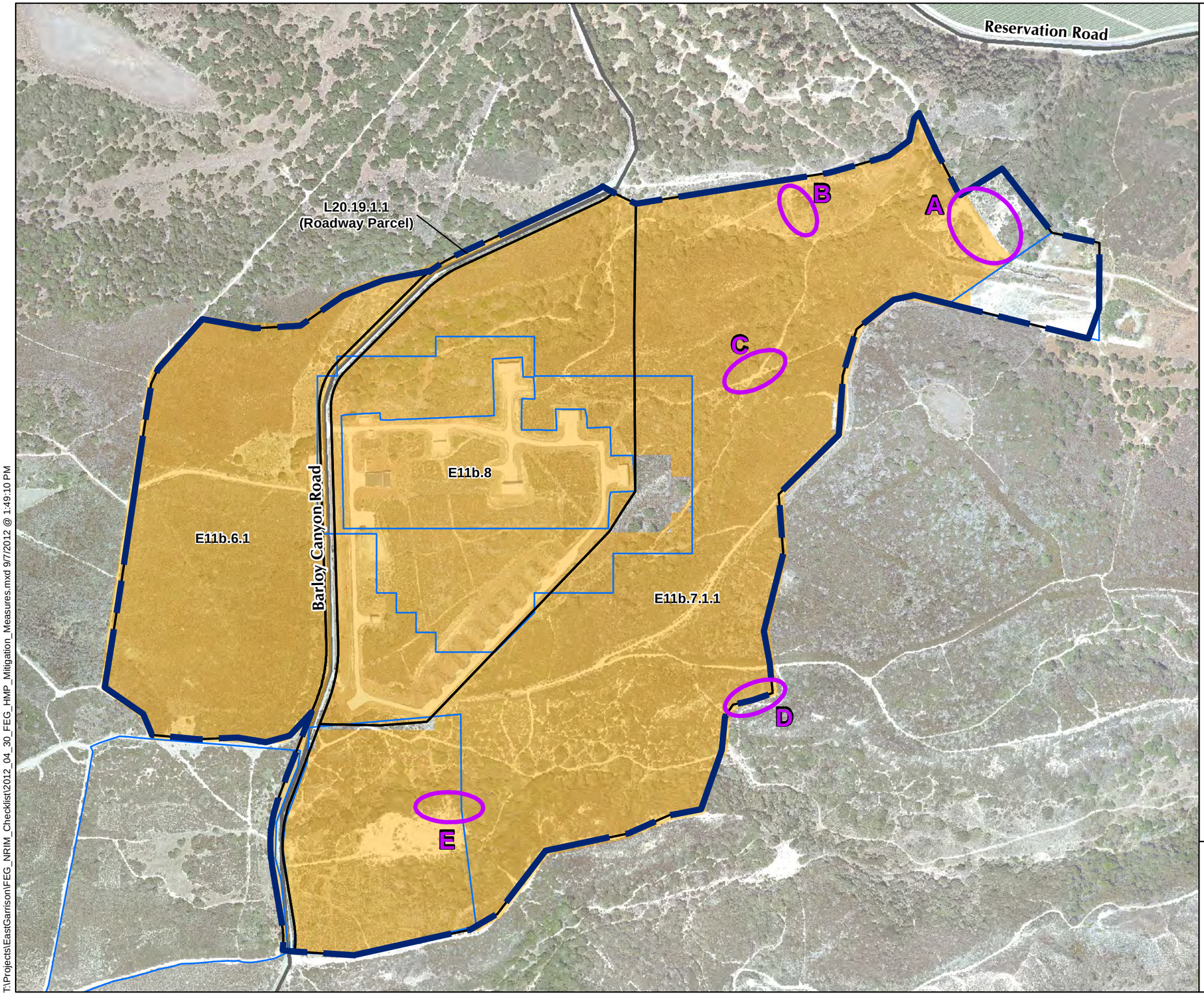
ATTACHMENT A

FVF No. G4WP-005

Addition of Standard Operating Procedures for Soils and Vegetation Handling in Aquatic Features.

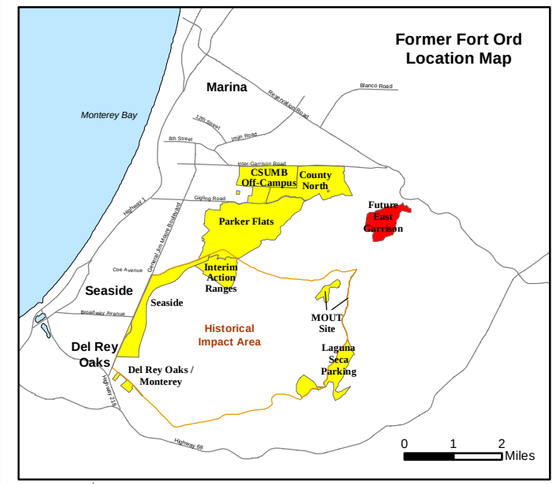


Legend

- Previously Investigated and Proposed Work Areas
- Munitions Response Area Boundary
- Major Road
- MRS Bounday
- E11b.8 — USACE Parcel

HMP Mitigation Measure Areas

- **A** — Aquatic Features: Biologist must be present during brush cutting & mag & dig
- **B** — Sand gilia habitat on steep slope: Biologist must be present during brush cutting & mag & dig
- **C** — Monterey spineflower habitat: Biologist must be present during mag & dig
- **D** — Sand gilia habitat: Biologist must be present during mag & dig
- **E** — Aquatic Features: Biologist must be present during brush cutting and mag & dig



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0 500 1,000 Feet

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Future East Garrison MRA HMP Mitigation Measures Natural Resource Impact Mitigation Checklist

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Monterey County, California

Figure 1

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Reservation Road

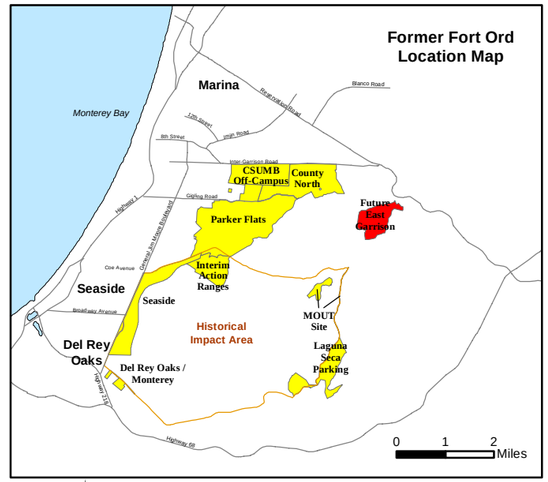
Barloy Canyon Road

AF68C
AF69
AF67 EX1
AF68AB
AF67 MEADOW
AF67 EX 2
AF67 EX3
AF66B
AF67 EX4
AF 10-1
AF66A
AF65
AF 09-1B
AF 09-2
AF 09-1
Approximate Location of Hand Grenade Range

Legend

- Aquatic Features as of March 2010
- Previous Aquatic Feature Boundary
- Known CTS Breeding Location in MRA
- Munitions Response Area Boundary
- Major Road

Former Fort Ord Location Map



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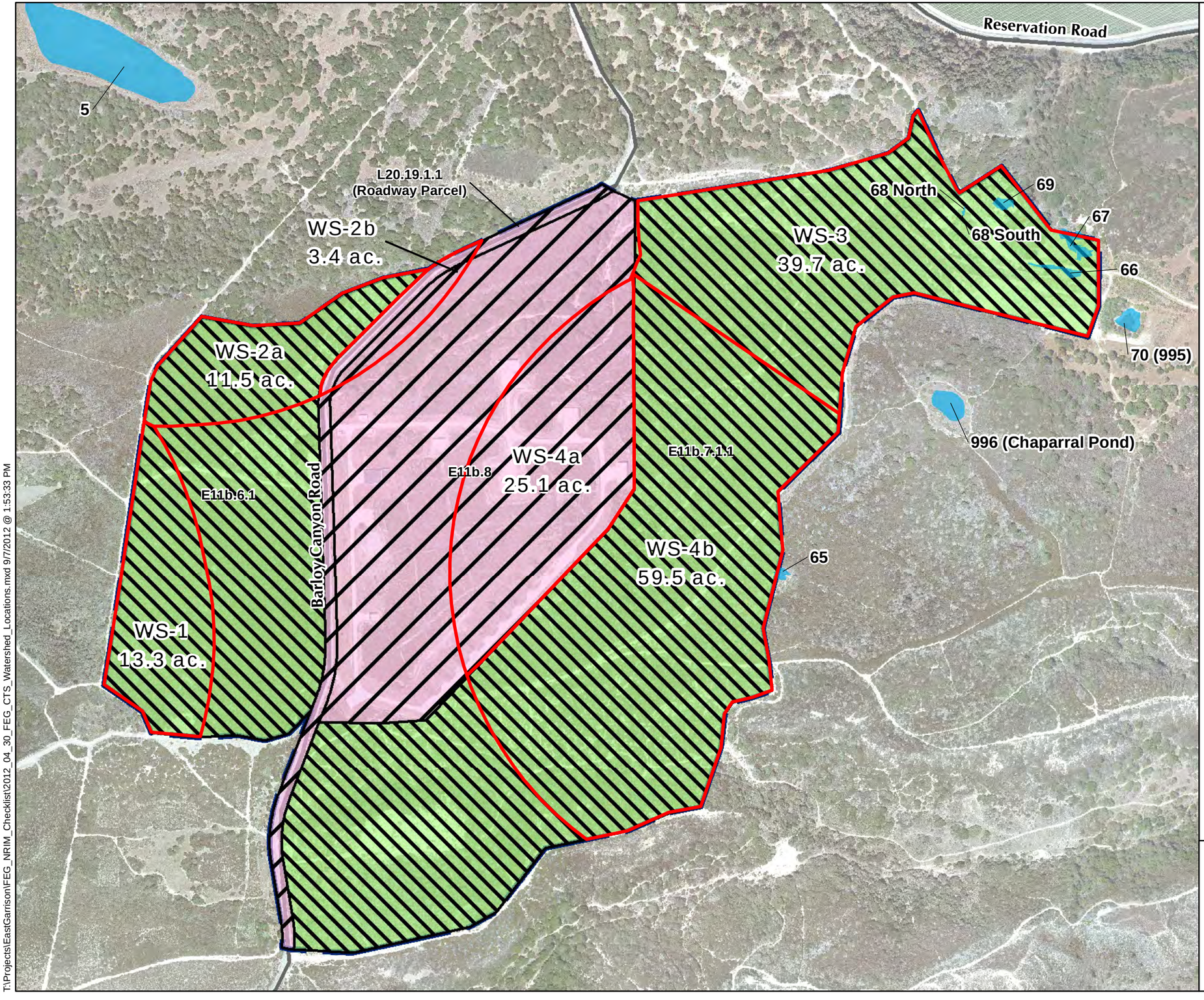
Future East Garrison MRA Aquatic Feature Locations Natural Resource Impact Mitigation Checklist

FORA ESCA RP
Monterey County, California

Figure 2

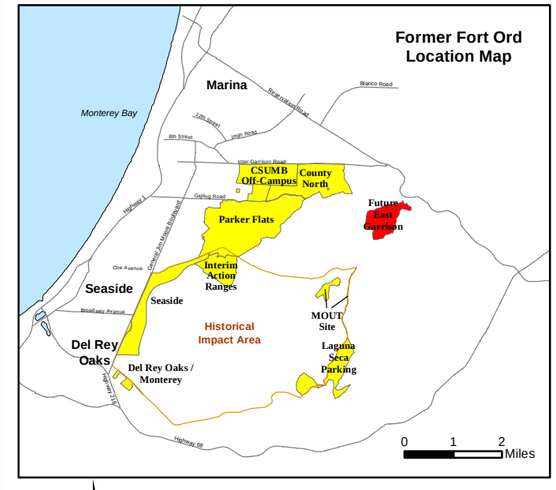


Legend

- 5 — Aquatic Features
- WS-2a — Watershed
- E11b.8 — USACE Parcel
- Munitions Response Area Boundary
- Major Road

Habitat Management Plan Category

- Development (includes proposed future Residential and Non-Residential areas)
- Habitat Reserve



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Future East Garrison MRA
CTS Watershed Locations
Natural Resource Impact Mitigation Checklist

FORA ESCA RP
Monterey County, California

Figure 3

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AF68C

AF68AB

AF67
MEADOW

AF69

AF67-EX1

AF67-EX2

AF67-EX4

AF67-EX3

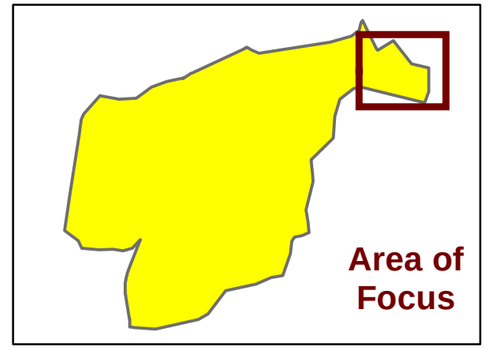
AF66B

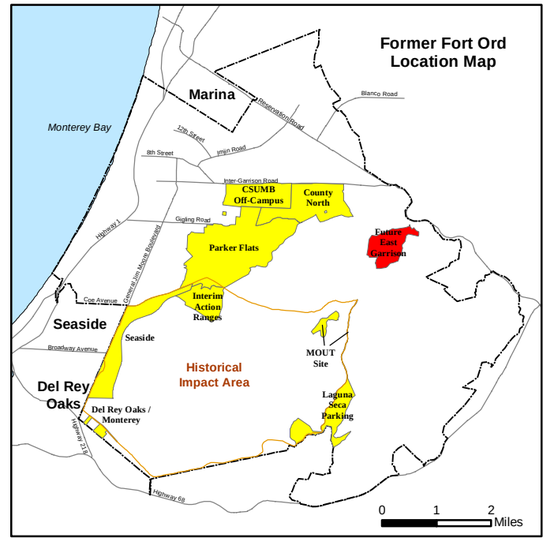
AF66A

AF 10-1

Legend

- North East (NE) Aquatic Features as of March 2010
- Previously Investigated and Proposed Work Areas
- Munitions Response Area





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Future East Garrison MRA
NE Aquatic Features
Natural Resource Impact
Mitigation Checklist
FORA ESCA RP
Monterey County, California

Figure 4

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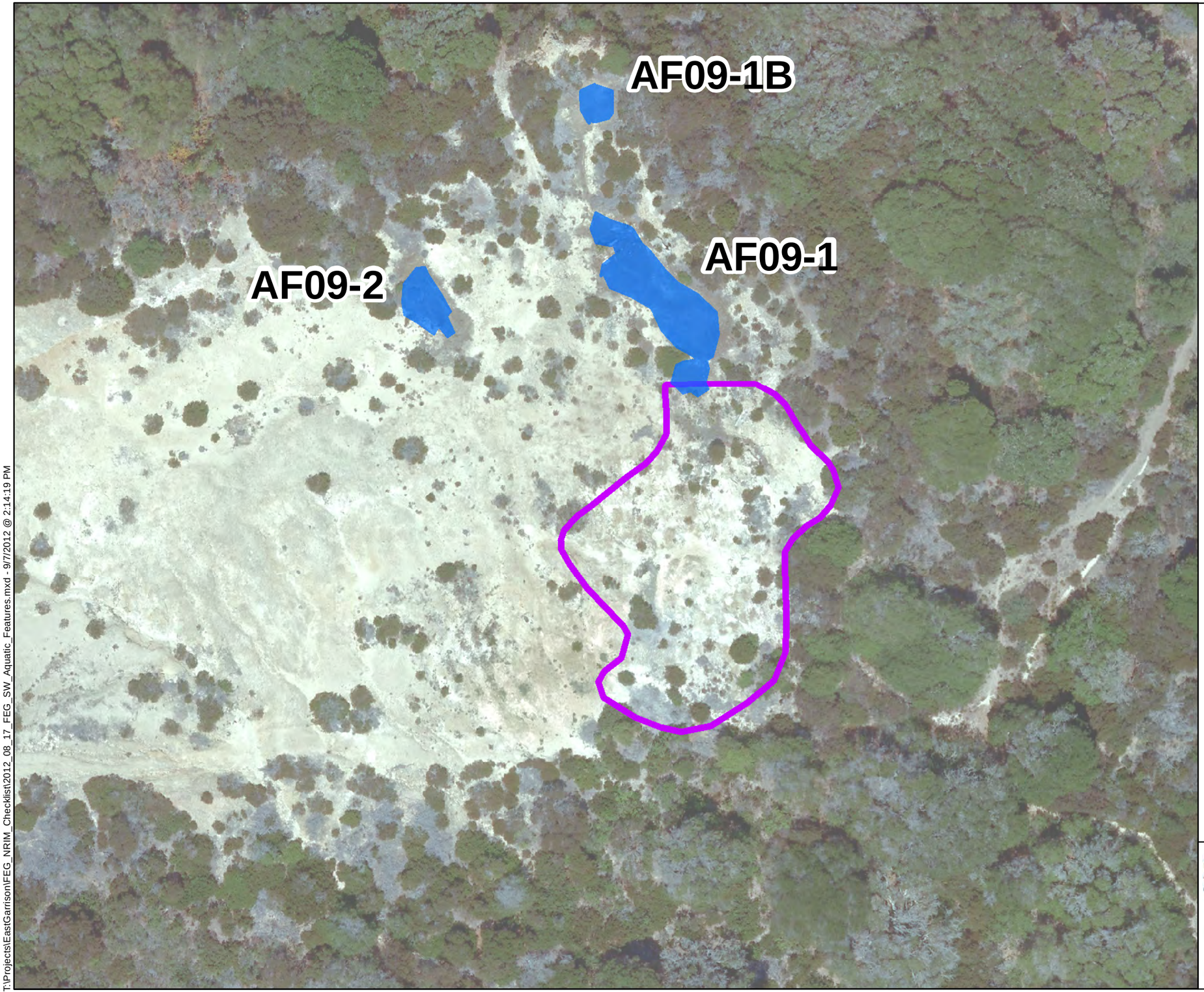
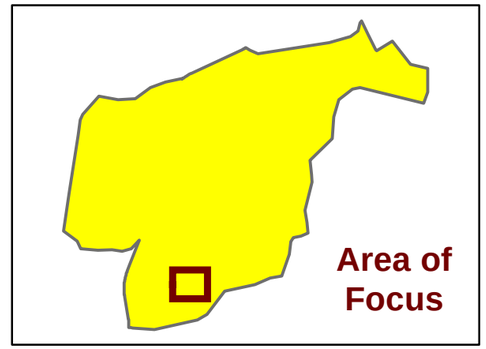
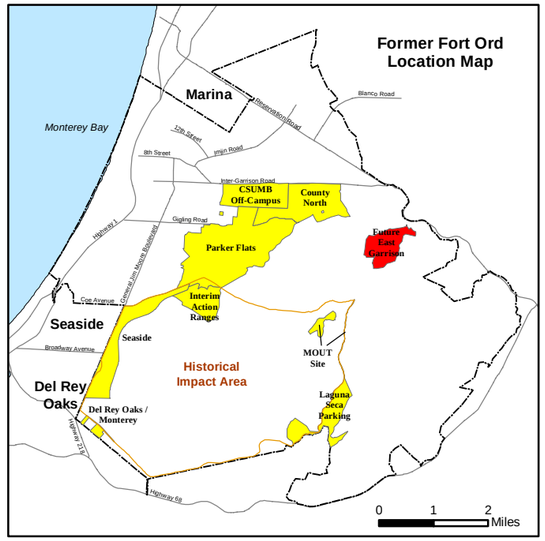


Legend

South West (SW) Aquatic Features as of March 2010 - Potential Sifting Areas

Sifting Area (Area May Be Expanded)





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2007 Aerial Shown

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Future East Garrison MRA
SW Aquatic Features and Sifting Areas
Natural Resource Impact Mitigation Checklist

FORA ESCA RP
Monterey County, California

Figure 5

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FIELD VARIANCE FORM

DATE:	27-SEPT-2012	**PROJECT NAME:**	Future East Garrison Munitions Response Area	**PROJECT LOCATION:**	Future East Garrison
APPLICABLE DOCUMENT / SECTION:		Final Group 4 Remedial Investigation/Feasibility Study Work Plan, Volume 2 – Sampling and Analysis Plan, Section 12.3.1Pre-field Work Monitoring			
SUBJECT:		Appendix C; Addition of Standard Operating Procedures for Soils and Vegetation Handling in Aquatic Features			

FIELD CHANGE CONDITION:

The Remedial Investigation at Future East Garrison Munitions Response Area (MRA) is being executed in accordance with the Final Group 4 Remedial Investigation/Feasibility Study Work Plan for the Future East Garrison MRA dated October 8, 2010 ("the Group 4 RI/FS Work Plan"), FVF No. G4WP-001, FVF No. G4WP-003, and FVF No. G4WP-004.

Soil screening operations for munitions and explosives of concern (MEC) are anticipated to occur in the southern portion of Parcel E11b.7.1.1. Three aquatic features have been identified within this area. The aquatic features are surrounded by un-vegetated exposed sandstone and limited maritime chaparral, which appears to have been mechanically scraped at one time. The aquatic features have been previously disturbed and appear to be unsuitable habitat for California tiger salamander populations. No California tiger salamanders were observed during protocol surveys during the 2010 and 2011 wet seasons.

A test pit was excavated in the vicinity of the three aquatic features on September 6, 2012 in order to assess the general soil conditions and soil types that may be encountered beneath the aquatic features. The test pit was excavated to an approximate depth of 80 centimeters (cm [32 inches]) below the ground surface. At this test pit location, a sand interval was encountered to the total depth of the pit. At an approximate depth of 70 cm (28 inches), the sand interval was observed to be moist and to contain some fine-grained material. Soil/sediment of the aquatic features located in the soil screening operations area appear to be primarily mineral-rich soils with little organic material. The Group 4 RI/FS Work Plan allows for subsurface investigations and remedial activities; however, Section 12.3.1 Pre-Field Work Monitoring states "Although aquatic features occur within certain habitat reserve parcels, no fieldwork is planned to be conducted in those locations". Based on field investigation in the vicinity of the aquatic features, there is a need to perform subsurface MEC investigation and remedial activities in the aquatic features area. A standard operating procedure for such activity in aquatic features is not included in Appendix C, Standard Operating Procedures, of the work plan.

RECOMMENDED APPROACH / CHANGE:

It is recommended that an amendment be made to Volume 2 of the Group 4 RI/FS Work Plan for the addition of a SOP for Soil and Vegetation Handling in Aquatic Features (attached) to Appendix C. The SOP for Soils and Vegetation Handling in Aquatic Features addresses the following:

- Soil handling and stockpiling operations during soil excavation and screening operations
- Collection and preservation of aquatic feature materials such as duff, seed, and plants
- Observation of the excavation activities by a geologist for soil identification
- Soil replacement after screening operations
- Re-vegetation of aquatic features upon completion of soil replacement
- Documentation and reporting procedures

IMPACT ON PRESENT AND COMPLETED WORK:

No impact to present or completed work.

REQUESTED BY: Kristie Reimer, ESCA Remediation Program Manager (ARCADIS)

	CLARIFICATION/FOR INFORMATION ONLY	X	**MINOR CHANGE**		**MAJOR CHANGE**

ESCA RP TEAM APPROVALS: D. KEAN, G. CLARK, L. TEMPLE, M. CARROLL, C. PARDINI, K. REIMER

COMMENTS

ARCADIS WESTON

ACKNOWLEDGED BY:	DON KEAN ESCA RP UXO SAFETY OFFICER (WESTON)	SIGNATURE	9/27/12 DATE
ACKNOWLEDGED BY:	GREG CLARK ESCA RP SENIOR UXO SUPERVISOR (WESTON)	SIGNATURE	9-27-12 DATE
ACKNOWLEDGED BY:	LINDA TEMPLE ESCA RP REMEDIATION PROJECT MANAGER (WESTON)	SIGNATURE	9/27/12 DATE
ACKNOWLEDGED BY:	MARY CARROLL ESCA RP SENIOR QUALIFIED BIOLOGIST (ARCADIS)	SIGNATURE	9-27-12 DATE
ACKNOWLEDGED BY:	CHARLES PARDINI, PG ESCA RP PROJECT GEOLOGIST (ARCADIS)	SIGNATURE	9-27-12 DATE
ACKNOWLEDGED BY:	KRISTIE REIMER ESCA RP PROGRAM MANAGER (ARCADIS)	SIGNATURE	9/27/12 DATE

FORA APPROVAL:

COMMENTS

☑ APPROVED ☐ REJECTED

for STAN COOK
FORA ESCA PROGRAM MANAGER

SIGNATURE

9-27-12
DATE

ATTACHMENTS:

Standard Operating Procedures for Soils and Vegetation Handling in Aquatic Features

STANDARD OPERATING PROCEDURE FOR SOIL AND VEGETATION HANDLING IN AQUATIC FEATURES

1.0 PURPOSE

The purpose of this standard operating procedure (SOP) is to describe the procedure that will be protective of the biotic constituents of aquatic features affected by manual and mechanical soil screening activities in support of Munitions and Explosives of Concern (MEC) remedial investigations located in the Future East Garrison Munitions Response Area (MRA) in accordance with the Final Group 4 Remedial Investigation/Feasibility Study (RI/FS) Work Plan (Group 4 RI/FS Work Plan [ESCA 2010]); and Field Variance Form (FVF) No. G4WP-001, FVF No.G4WP-003, and No.G4WP-004 (ESCA RP 2010, 2012a, and 2012b). Handling of soil and vegetation in aquatic features should be conducted under the guidance of the Wetland Monitoring and Restoration Plan for Munitions and Contaminated Soil Remedial Activities at Former Fort Ord (Burleson Consulting 2006); and in accordance with the Installation-Wide Multispecies Habitat Management Plan (HMP; USACE 1997). The work falls under the Biological Opinions (BOs; USFWS 1999, 2002, 2005) issued to the United States Department of the Army to enable compliance with the federal Endangered Species Act and to avoid or minimize, to the extent feasible, take of listed species as well as protecting other species of concern.

ARCADIS U.S., Inc. (ARCADIS) has prepared this document on behalf of the Fort Ord Reuse Authority (FORA) in accordance with industry standards and consistent with the requirements of the Remediation Services Agreement dated March 30, 2007 by and between ARCADIS and FORA including any applicable governing documents and applicable laws and regulations.

2.0 SCOPE

Personnel handling soil and vegetation in an aquatic feature shall conform to this SOP. This SOP is not a stand-alone document and personnel shall become familiar with associated work plans and documents and/or manuals related to this operation, associated field activities, and health and safety requirements.

3.0 REGULATORY REFERENCES

- Occupational Safety and Health Administration (OSHA) General Industry Standards, 29 CFR 1910
- OSHA Construction Standards, 29 CFR 1926
- Unites States Army Corps of Engineers Engineering Manual 385-1-1, Safety and Health Requirements Manual

4.0 RESPONSIBILITIES

4.1 Program Manager

The Program Manager (PM) is responsible for oversight and ensuring availability of resources to safely and effectively implement this SOP.

4.2 Senior Qualified Biologist

The Senior Qualified Biologist (SQB) is responsible for incorporating this SOP in plans, procedures, and training, and ensuring compliance during field operations.

4.3 Biological Monitor

An ESCA RP Qualified Biologist will monitor field activities to ensure that aquatic feature soil and vegetation handling operations are conducted and documented in accordance with the Group 4 RI/FS Work Plan, this SOP, and applicable regulatory guidance.

4.4 Project Geologist

An ESCA RP Project Geologist will monitor field activities to ensure that aquatic feature soil handling operations are conducted and documented in accordance with the Group 4 RI/FS Work Plan and this SOP.

4.5 Remediation Project Manager

The Remediation Project Manager (RPM) is responsible for ensuring availability of resources to safely and effectively implement this SOP.

4.6 Senior UXO Supervisor

The Senior Unexploded Ordnance Supervisor (SUXOS) is responsible for incorporating this SOP in plans, procedures, and training, and ensuring compliance during field operations.

4.7 UXO Safety Officer

The Unexploded Ordnance Safety Officer (UXOSO) ensures that field operations are conducted in a safe manner, in accordance with the Group 4 RI/FS Work Plan, this SOP, and applicable regulatory guidance.

4.8 UXO QUALITY CONTROL SPECIALIST

The Unexploded Ordnance Quality Control Specialist (UXOQCS) ensures that quality control (QC) inspections are performed and documented in accordance with the Group 4 RI/FS Work Plan. Deficiencies will be reported to the PM, SUXOS, and UXOSO. The

UXOQCS will verify that appropriate corrective measures are taken and documented. The UXOQCS will inspect munitions debris (MD) and non-munitions and explosives of concern scrap prior to disposal or recycling, and will sign off on Daily Quality Control Inspection Reports.

The UXOQCS is jointly responsible for verifying that material is free from explosives (FFE) with the SUXOS.

4.9 UXO Technician

The UXO Technician provides munitions and explosives of concern (MEC) support and is familiar with the equipment being utilized. The UXO Technician shall perform tasks to include a visual search/survey of the area(s) of operation

5.0 PROCEDURE

As stated, MEC remedial investigation activities in identified aquatic features is required, which will include subsurface soil disturbances and soil sifting activities. The monitoring biologist will conduct an overall visual survey of the area prior to starting operations. Photopoints will be established around each aquatic feature to show general shape, contours, and zonal boundaries of vegetation types. Each aquatic feature will be mapped using a handheld global positioning system unit. Soil profiles shall also be photographed and measured by layer during sifting activities.

For each aquatic feature soil will be stockpiled separately to allow for replacement after operations are complete that mirror preexisting conditions to the extent feasible. Soil disturbance activities will be conducted when the aquatic feature is dry.

The soil and vegetation handling process will be conducted as follows:

1. Prior to initiation of project activities, the biological monitor will collect seed of existing native vegetation using a combination of above-ground stem cutting and fruit and seed harvesting. Each species or vegetation zone will be collected separately, with propagules placed in paper bags, and labeled with aquatic feature number, scientific name(s) of propagule or vegetation zone, date, and collector. Materials will be appropriately stored and monitored.
2. The biological monitor will collect duff from the bottom of aquatic features that may contain additional seeds. This duff may be collected by sweeping of aquatic feature crusts and soils with a broom and placing gathered materials into paper bags. Duff from each vegetation zone will be collected separately, where relevant, with propagules placed in paper bags and labeled with aquatic feature number, scientific name or vegetation zone, date, and collector. Materials will be appropriately stored and monitored.
3. During soil removal activities the top approximately 6 inches of sediment will not be sifted. The sediment will be excavated with heavy equipment according to the aquatic feature and vegetation zone, and placed nearby on a clean soil surface to allow for inspection of the material using instrument-aided visual inspection. As part of the QC

process, the UXOQC personnel will conduct an inspection of the excavated top 6 inches of sediment at a minimum of once per day as it is excavated as indicated in the Group 4 RI/FS Work Plan. Once the soil has been declared FFE, the excavated soil and vegetative materials will be appropriated stored and monitored. Vegetation zones will be indicated or marked in the field to guide field crews. Such sediments will be segregated by aquatic feature and by vegetation zone so they can be replaced in the same location.

4. For soils excavated below approximately 6 inches, sift operations will be employed to address residual MEC in excavated soils. During sifting operations portions of perennial aquatic feature plants will be salvaged and stored appropriately until replacement into the recontoured aquatic feature.
5. Sediments excavated between approximately 6 and 25 inches below the ground surface will be kept separate from the topsoil and stockpiled according to the aquatic feature they came from.
6. Subsoils excavated deeper than approximately 25 inches below ground surface will be separated from other sediment intervals and stored separately by aquatic feature.
7. After project activities are complete, the general shape and topography of each aquatic feature will be restored.
8. Sediment replacement in each aquatic feature should result in restoration of an impermeable interval, if an impermeable interval is encountered, at the same approximate depth as that observed during removal. This impermeable interval should be subject to testing to ensure water retention and ponding similar to pre-disturbance conditions. If necessary, bentonite or other materials approved by the Project Geologist and Senior Qualified Biologist, will be used to enhance the impermeability of the interval layer.
9. Each sediment interval should be replaced to reflect presence and depth of pre-disturbance conditions.
10. Salvaged plant materials, seeds, and duff will be replaced in each aquatic feature in designated areas reflecting pre-disturbance vegetation zones, as overseen by the biological monitor.

6.0 DOCUMENTATION AND REPORTING

A summary of soil and vegetation handling activities will be reported in the 2012 FORA ESCA Remediation Program Annual Natural Resource Monitoring, Mitigation, and Management Report. In addition, documentation of species composition, and richness, potential presence of special status species, and other pertinent variables will be summarized in annual reports as appropriate. Such documentation may include comparisons with other similar aquatic features nearby.

7.0 SUMMARY

This SOP will be used to ensure that the requirements for soil and vegetation handling in aquatic features are conducted to ensure the long-term viability of biotic constituents of aquatic features affected by manual and mechanical soil screening activities in support of

MEC investigations in a safe, efficient, and productive manner. The Senior Qualified Biologist will make changes to this SOP as operational necessity dictates. Changes to this SOP will be made in coordination with the Army and documented in revisions to NRIM Checklist No. 5 Rev. 2.

8.0 REFERENCES

Burleson Consulting Inc. (Burleson). 2006. Wetland Monitoring and Restoration Plan for Munitions and Contaminated Soil Remedial Activities at Former Fort Ord. Folsom, California. (Fort Ord Administrative Record No. BW-2453)

Environmental Services Cooperative Agreement Remediation Program Team (ESCA RP Team). 2010. Final Group 4 Remedial Investigation/Feasibility Study Work Plan, Volume 2 Sampling and Analysis Plan, Future East Garrison Munitions Response Area, Former Fort Ord, Monterey County, California. October 8. (Fort Ord Administrative Record No. ESCA-0233C)

¾¾¾. 2010. Field Variance Form (FVF) No. G4WP-001. Expanded Investigation Acreage in Habitat Reserve Area Parcel E11b.7.1.1. December 13. (Fort Ord Administrative Record No. ESCA-0233C.2)

¾¾¾. 2012a. Field Variance Form (FVF) No. G4WP-003. Expanded Investigation Acreage in Habitat Reserve Area Parcel E11b.6. May 16. (Fort Ord Administrative Record No. ESCA-0233C.4)

¾¾¾. 2012b. Field Variance Form (FVF) No. G4WP-004. Addition of Soil Screening Standard Operation Procedure and Increased Minimum Separation Distances (pending submission)

U.S. Army Corps of Engineers (USACE). 1997. Installation-Wide Multispecies Habitat Monitoring Plan for Former Fort Ord, California. April. Sacramento, California. April 1. (Fort Ord Administrative Record No. BW-1787)

U.S. Fish and Wildlife Service (USFWS). 1999. Biological and Conference Opinion on the Closure and Reuse of Fort Ord, Monterey County, California (1-8-99-F/C-39R). March 30. (Fort Ord Administrative Record No. BW-2232A)

¾¾¾. 2002. 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. (Fort Ord Administrative Record No. BW-2233)

¾¾¾. 2005. Cleanup and Reuse of Former Fort Ord, Monterey County, California as it affects California Tiger Salamander and Critical Habitat for Costa Contra Goldfields (1-8-04-F-25R). March 14. (Fort Ord Administrative Record No. BW-2334)

ARCADIS

QUALIFIED BIOLOGIST NRIM CHECKLIST
FIELD INSPECTION REPORT – FORA/ESCA

Munitions Response Area Future East Garrison Date April 11, 2012 Page 1 of 4

Site Visited in MRA Ammunition Supply Point Bunkers

Other Documentation (i.e., maps, photos, etc.): Field notes: fn dym 2012 04 11 and fn JTT 2012 04 11

Qualified Biologist(s) Danielle Muic and Joshua Tallis Escort/Other

Weather/Site Conditions Partly Cloudy, ~55°F

Tasks to be Completed Provide Weston field crew additional CTS training and inspect under Kubota (All terrain vehicle) and DGM sled for CTS, due to greater than 0.5 inches of rainfall in the previous 24 hours.

Other Work Being Conducted Onsite Weston crew of 2, moving Kubota and DGM sled left over night in bunker, to preform DGM of grenade range in FEG

Work-Force Onsite (Company Name) Weston

		CHECKLIST
1) General Impact Minimization Measures	a. Ingress/Egress procedures	☐ Yes ☐ No N/A per inspection task Followed up with:
	b. Soil disturbance minimized to work areas only, per supervisor	☐ Yes ☐ No N/A per inspection task Followed up with:
	c. Vehicles staying on existing roads to extent possible	☐ Yes ☐ No N/A per inspection task Followed up with:
	d. Erosion absent from Borderland Interface areas	☐ Yes ☐ No N/A per inspection task Followed up with:
2) Habitat Checklist	a. Compliance w/ any add'l measures req'd?	☒ Yes ☐ No Biologists visually inspected under rubber tracks of Kubota vehicle and the DGM sled for CTS. None observed. Followed up with: None needed

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QUALIFIED BIOLOGIST IMPACT MITIGATION FIELD CHECKLIST – (CONTINUED)

Munitions Response Area Future East Garrison Date April 11, 2012

3) CTS Related Impact Minimization Measures	a. 2-km buffer staked	☐ Yes ☐ No N/A per NRIM Checklist Followed up with:
	b. 1-km buffer staked	☐ Yes ☐ No N/A per NRIM Checklist Followed up with:
3) CTS Related Impact Minimization Measures (cont'd)	c. 500 meter buffer staked	☐ Yes ☐ No N/A per NRIM Checklist Followed up with:
	d. Excavation silt fences ok	☐ Yes ☐ No N/A per inspection task Followed up with:

TIME	ACTIVITIES
0700	Safety meeting by Greg Clark at Weston trailer. Joshua Tallis gives CTS refresher focusing on how to inspect vehicles and equipment after more than a half inch of rain that fell in the prior 24 hours.
0715	J. Tallis and D. Muir depart the trailer for the field.
0725	J. Tallis and D. Muir arrive at the Ammunition Supply Point in Future East Garrison. Tailgate safety meeting.
	- Open bunker and inspect Kubota (with rubber tracks) and DGM sled for CTS using a high powered flashlight. No CTS were observed.
	- Weston crew arrived and moved the Kubota and DGM sled out of the bunker. Biologists inspected

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QUALIFIED BIOLOGIST IMPACT MITIGATION FIELD CHECKLIST – (CONTINUED)

Munitions Response Area Future East Garrison Date April 11, 2012 Page 3 of 4

TIME	ACTIVITIES
	under where the Kabota and sled were parked over night. No CTS were observed.
0805	J. Tallis and D. Muir depart Future East Garrison and return to office.

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QUALIFIED BIOLOGIST IMPACT MITIGATION FIELD CHECKLIST – (CONTINUED)

Munitions Response Area Future East Garrison Date April 11, 2012 Page 4 of 4

Route Copies To: _____ SIGNED Danielle Mucci

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(Senior QB)

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QUALIFIED BIOLOGIST NRIM CHECKLIST
FIELD INSPECTION REPORT – FORA/ESCA

Munitions Response Area Future East Garrison Date 25 May 2012 Page 1 of 4

Site Visited in MRA MRS 11 - Hand grenade south to the southern border of FEG.

Other Documentation (i.e., maps, photos, etc.): 2012 05 25 DVM MapA, D.Muir #2, J.Tallis #9

Qualified Biologist(s) Danielle Muir, Joshua Tallis Escort/Other Karl Christiansen

Weather/Site Conditions Partly to mostly cloudy ≈62°F, windy

Tasks to be Completed Conduct NRIM checklist field inspection report of vegetation cutting.

Other Work Being Conducted Onsite Central Coast Land Clearing conducting vegetation cutting.

Work-Force Onsite (Company Name) Central Coast Land Clearing

		CHECKLIST
1) General Impact Minimization Measures	a. Ingress/Egress procedures	☑ Yes ☐ No Crew accessing site from dirt road to the grenade range. Followed up with:
	b. Soil disturbance minimized to work areas only, per supervisor	☑ Yes ☐ No Minimal soil disturbance observed in the work area. Followed up with:
	c. Vehicles staying on existing roads to extent possible	☑ Yes ☐ No Vehicles using existing roads and staging equipment and vehicles on existing roads. Followed up with:
	d. Erosion absent from Borderland Interface areas	☑ Yes ☐ No Followed up with:
2) Habitat Checklist	a. Compliance w/ any add'l measures req'd?	☑ Yes ☐ No Trees >5" diameter at breast height retained and limbed up for safety. Followed up with:

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QUALIFIED BIOLOGIST IMPACT MITIGATION FIELD CHECKLIST – (CONTINUED)

Munitions Response Area Future East Garrison Date 25 May 2012 Page 2 of 4

3) CTS Related Impact Minimization Measures	a. 2-km buffer staked	☐ Yes ☑ No Entire MRA is with in the 2km buffer. Crew was trained on NRIM Checklist 5 RI and following applicable Followed up with: CTS mitigation measures.
	b. 1-km buffer staked	☐ Yes ☑ No in the entire MRA. Followed up with:
3) CTS Related Impact Minimization Measures (cont'd)	c. 500 meter buffer staked	☐ Yes ☑ No Followed up with:
	d. Excavation silt fences ok	☐ Yes ☐ No N/A - no excavation Followed up with:

TIME	ACTIVITIES
0730	D. Muir and J. Tallis observe Central Coast Land Clearing cutting vegetation along the South side of the "Hand Grenade Range" Photo # 3598. D. Muir & J. Tallis inspect areas to the South between the grenade range and the southern border of Future East Garrison. Photo #'s 3589-3593, where work is completed. Oak trees and large manzanitas have been left uncut and lower limbs have been trimmed. In Grid Cell # C4D5C3 12 A. montereyensis and 1 A. crustacea were left uncut and lower branches were cut for safety. Other grid cells with less numbers of manzanitas had less ~~that to~~ manzanitas left uncut.

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QUALIFIED BIOLOGIST IMPACT MITIGATION FIELD CHECKLIST – (CONTINUED)

Munitions Response Area Future East Garrison Date 25 May 2010

TIME	ACTIVITIES
	A. hookeri plants were all left uncut in Grid Cells C4D5C5 and C4D5F4. Photo #'s 3595 and 3596. Plants were flagged and avoided by the crew. one manzanita potentially identified as A. pajaroensis was flagged and avoided by the crew. Photo # 3599.
0945	D. Muir and J. Tallis left Future East Garrison.

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QUALIFIED BIOLOGIST IMPACT MITIGATION FIELD CHECKLIST – (CONTINUED)

Munitions Response Area Future East Garrison Date 25 May 2012 Page 4 of 4

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(Senior QB)

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QUALIFIED BIOLOGIST NRIM CHECKLIST
FIELD INSPECTION REPORT – FORA/ESCA

Munitions Response Area FEG (Future East Garrison) Date 10 July 2012 Page 1 of 4

Site Visited in MRA Parcel E11b.6.1 Northern portion

Other Documentation (i.e., maps, photos, etc.): Photos #3728 - 3730, Map Notes: 2012 07 10 Dfm map B
field notes Dfm #3

Qualified Biologist(s) Danielle Muir Escort/Other Bob Smith (Weston Solutions)

Weather/Site Conditions Sunny ~68°F wind ~10 mph

Tasks to be Completed Inspect vegetation cutting

Other Work Being Conducted Onsite vegetation cutting

Work-Force Onsite (Company Name) Central Coast Land Clearing (CCLC)

		CHECKLIST
1) General Impact Minimization Measures	a. Ingress/Egress procedures	☒ Yes ☐ No CCLC using existing roads to extent possible Followed up with:
	b. Soil disturbance minimized to work areas only, per supervisor	☒ Yes ☐ No Followed up with:
	c. Vehicles staying on existing roads to extent possible	☒ Yes ☐ No Followed up with:
	d. Erosion absent from Borderland Interface areas	☒ Yes ☐ No Followed up with:
2) Habitat Checklist	a. Compliance w/ any add'l measures req'd?	☒ Yes ☐ No Oak trees >5" dbh retained and limbed up. Followed up with:

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QUALIFIED BIOLOGIST IMPACT MITIGATION FIELD CHECKLIST – (CONTINUED)

Munitions Response Area FEG Date 10 July 2012 Page 2 of 4

3) CTS Related Impact Minimization Measures	a. 2-km buffer staked	☐ Yes ☒ No All MRA treated as with in buffer for CTS. All CTS measures followed. Followed up with:
	b. 1-km buffer staked	☐ Yes ☒ No same as above. Followed up with:
3) CTS Related Impact Minimization Measures (cont'd)	c. 500 meter buffer staked	☐ Yes ☒ No Followed up with:
	d. Excavation silt fences ok	☐ Yes ☐ No NA-no excavations Followed up with:

TIME	ACTIVITIES
1500	Danielle Muir and Brandon Nichalson arrived in FEG to inspect Central Coast Land Clearing cutting vegetation. Crew was retaining larger manzanitas. Mostly toro manzanitas and just a few A. Crustacea crustacea were retained. All oak trees > 5" DBH retained and limbed. In grid cell C4F3GØ 12 Toro Manzanitas and 1 A. Crustacea crustacea were retained. In grid cell C4F3FØ 7 Toro manzanitas and 2 A. Crustacea crustacea were retained. all oaks larger than 5" in DBH were retained and limbed up for safety.
1520	D. Muir and B. Nichalson talked with Mike of Central Coast Land Clearing

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QUALIFIED BIOLOGIST IMPACT MITIGATION FIELD CHECKLIST – (CONTINUED)

Munitions Response Area FEG Date 10 July 2012 Page 3 of 4

TIME	ACTIVITIES
	about the work being conducted. He indicated that areas with less manzanitas retained originally had less manzanitas and more chamise. He said grid cells to the North had more manzanitas retained. D. Muir & B. Nicholson did not visit these grid cells because the crews were still working in this area. Central Coast Land Clearing was using a bob cat with a grinding attachment as well as an excavator with a grinding attachment and two crew members with chain saws.
1600	D. Muir and B. Nicholson depart the site

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QUALIFIED BIOLOGIST IMPACT MITIGATION FIELD CHECKLIST – (CONTINUED)

Munitions Response Area Future East Garrison Date 10 July 2012 Page 4 of 4

Route Copies To: _____ SIGNED Danielle Muir

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(Senior QB)

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QUALIFIED BIOLOGIST NRIM CHECKLIST
FIELD INSPECTION REPORT – FORA/ESCA

Munitions Response Area Future East Garrison Date 25 July 2012 Page 1 of 3

Site Visited in MRA Parcel E11b.6.1 (Western Future East Garrison)

Other Documentation (i.e., maps, photos, etc.): MapNotes - 20120725 DYM MapA, Field Notes DYM #4, CJF #3
Photos 3803 - 3810

Qualified Biologist(s) Danielle Muir, Cynthia Fenter Escort/Other Eric Weston Solutions

Weather/Site Conditions Sunny ~60F

Tasks to be Completed Conduct NRIM Checklist Field Inspection of Vegetation cutting in western Future East Garrison.

Other Work Being Conducted Onsite Central Coast Land Clearing conducting the vegetation cutting. Weston Solutions conducting MEC investigation to the north over 700 feet away.

Work-Force Onsite (Company Name) Central Coast Land Clearing and Weston Solutions.

		CHECKLIST
1) General Impact Minimization Measures	a. Ingress/Egress procedures	☒ Yes ☐ No Followed up with:
	b. Soil disturbance minimized to work areas only, per supervisor	☒ Yes ☐ No Followed up with:
	c. Vehicles staying on existing roads to extent possible	☒ Yes ☐ No Followed up with:
	d. Erosion absent from Borderland Interface areas	☐ Yes ☐ No N/A per task - not inspected. Followed up with:
2) Habitat Checklist	a. Compliance w/ any add'l measures req'd?	☒ Yes ☐ No Oaks and other trees 5" in diameter were left uncut in place and were limbed up for safety. Followed up with:

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QUALIFIED BIOLOGIST IMPACT MITIGATION FIELD CHECKLIST – (CONTINUED)

Munitions Response Area Future East Garrison Date 25 July 2012 Page 2 of 3

3) CTS Related Impact Minimization Measures	a. 2-km buffer staked	☐ Yes ☒ No Entire Future East Garrison treated as CTS buffer and mitigation measures followed. Followed up with:
	b. 1-km buffer staked	☐ Yes ☒ No see above Followed up with:
3) CTS Related Impact Minimization Measures (cont'd)	c. 500 meter buffer staked	☐ Yes ☒ No see above Followed up with:
	d. Excavation silt fences ok	☐ Yes ☐ No N/A no excavations Followed up with:

TIME	ACTIVITIES
0710	D. Muir and C. Fenter mobilize to Future East Garrison.
	D. Muir discusses the characteristics of Arctostaphylos montereyensis with the Central Coast Land Clearing crew as a reminder to the previous training.
0730	D. Muir and C. Fenter use the Trimble GPS unit to identify grid cells. Manzanitas - Arctostaphylos montereyensis (ARMO) and Arctostaphylos crustacea crustacea (ARCR) that were left in place uncut were then counted inside three grid cells. Grid Cell # C4F4D2 contained 6 ARMO and 2 ARCR. Grid cell # C4F4C2 contained 13 ARMO and 1 ARCR. Grid cell # C4F3C9 contained 15 ARMO and 4 ARCR.
0835	D. Muir and C. Fenter depart Future East Garrison.

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QUALIFIED BIOLOGIST IMPACT MITIGATION FIELD CHECKLIST – (CONTINUED)

Munitions Response Area Future East Garrison Date 25 July 2012 Page 3 of 3

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QUALIFIED BIOLOGIST NRIM CHECKLIST
FIELD INSPECTION REPORT – FORA/ESCA

Munitions Response Area Future East Garrison (FEG) Date October 2, 2012 Page 1 of 4

Site Visited in MRA Grenade Range

Other Documentation (i.e., maps, photos, etc.): Photos: (4268-4326) 20121002 FEG, Field notes: D. Muir-fn dym 20121002 Weston
map 20121002 DRM Map A2

Qualified Biologist(s) Danielle Muir, Cynthia Fenter Escort/Other Bob Smith, Erick Gonzalez

Weather/Site Conditions Sunny warm ≈ 70°F – 92°F

Tasks to be Completed Monitor topsoil removal in aquatic feature AF09-1 and restoring subsoil and topsoil in aquatic features AF09-1B and AF09-2.

Other Work Being Conducted Onsite AF09-1 Topsoil removal, vegetation storage, topsoil stockpiling and covering, Restoration of soil in AF09-1B & AF09-2

Work-Force Onsite (Company Name) Weston Solutions crew of 2

		CHECKLIST
1) General Impact Minimization Measures	a. Ingress/Egress procedures	☒ Yes ☐ No Weston Crew using same ingress/egress route. ~~Followed up with:~~
	b. Soil disturbance minimized to work areas only, per supervisor	☒ Yes ☐ No Soil disturbance minimized to work area. ~~Followed up with:~~
	c. Vehicles staying on existing roads to extent possible	☒ Yes ☐ No Vehicles and equipment using existing access route ~~Followed up with:~~
	d. Erosion absent from Borderland Interface areas	☒ Yes ☐ No ~~Followed up with:~~
2) Habitat Checklist	a. Compliance w/ any add'l measures req'd?	☒ Yes ☐ No Topsoil handling and vegetation storage from Field Variance G4WP-005 Appendix E, SOP. ~~Followed up with:~~

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QUALIFIED BIOLOGIST IMPACT MITIGATION FIELD CHECKLIST – (CONTINUED)

Munitions Response Area FEG Date 10-2-12 Page 2 of 4

3) CTS Related Impact Minimization Measures	a. 2-km buffer staked	☐ Yes ☒ No Entire MRA – CTS mitigation measures followed. Followed up with:
	b. 1-km buffer staked	☐ Yes ☒ No See above Followed up with:
3) CTS Related Impact Minimization Measures (cont'd)	c. 500 meter buffer staked	☐ Yes ☒ No See above Followed up with:
	d. Excavation silt fences ok	☐ Yes ☐ No N/A Followed up with:

TIME	ACTIVITIES
0800	DYM and CJF onsite at FEG Grenade Range
	Take photos from all photo points (Photos 4268-4275)
	(see DYM field notes).
0815	Weston UXO techs Bob Smith and Erick Gonzalez
	use the backhoe to excavate the topsoil (2"-5")
	from ~~AF09-1~~ the upper edge of AF09-1. Species included
	Juncus occidentalis, Juncus bufonius var occidentalis,
	Tribolium obliterum, & Euthamia occidentalis. After soil
	was cleared for ^MEC (munitions of explosive concern) it was stockpiled on plastic.
	DYM & CJF removed and stored vegetation for restoration use.
	This topsoil from the upper edge was stored separately but in the
same way)	from the topsoil removed Oct 1, 2012 from the bottom
	area of the aquatic feature AF09-1. Topsoil piles
	were properly labeled by the area they were removed from.
	Photos #4268 – 4276.

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QUALIFIED BIOLOGIST IMPACT MITIGATION FIELD CHECKLIST – (CONTINUED)

Munitions Response Area FEG Date 10-2-12 Page 3 of 4

TIME	ACTIVITIES
1330	Weston crew uses backhoe to replace and compact soil removed during pot holing in aquatic feature AF09-1B. Soil was replaced in the order it was removed. Water was used to compact the sub-soil. Water was poured in the pot hole and a water test was preformed to make sure the feature would hold water. Water remained for twenty minutes. At that time it was determined to be adequate and the topsoil was replaced See photos #4277 - 4300.
1550	The same process for replacing ~~soil~~ and compacting ~~subsoil~~ and testing subsoil was conducted for aquatic feature AF09-2. See photos #4302 - 4326.
1700	DYM & CTF depart Future East Garrison.

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QUALIFIED BIOLOGIST IMPACT MITIGATION FIELD CHECKLIST – (CONTINUED)

Munitions Response Area Future East Garrison Date Oct 03 2012 Page 4 of 4

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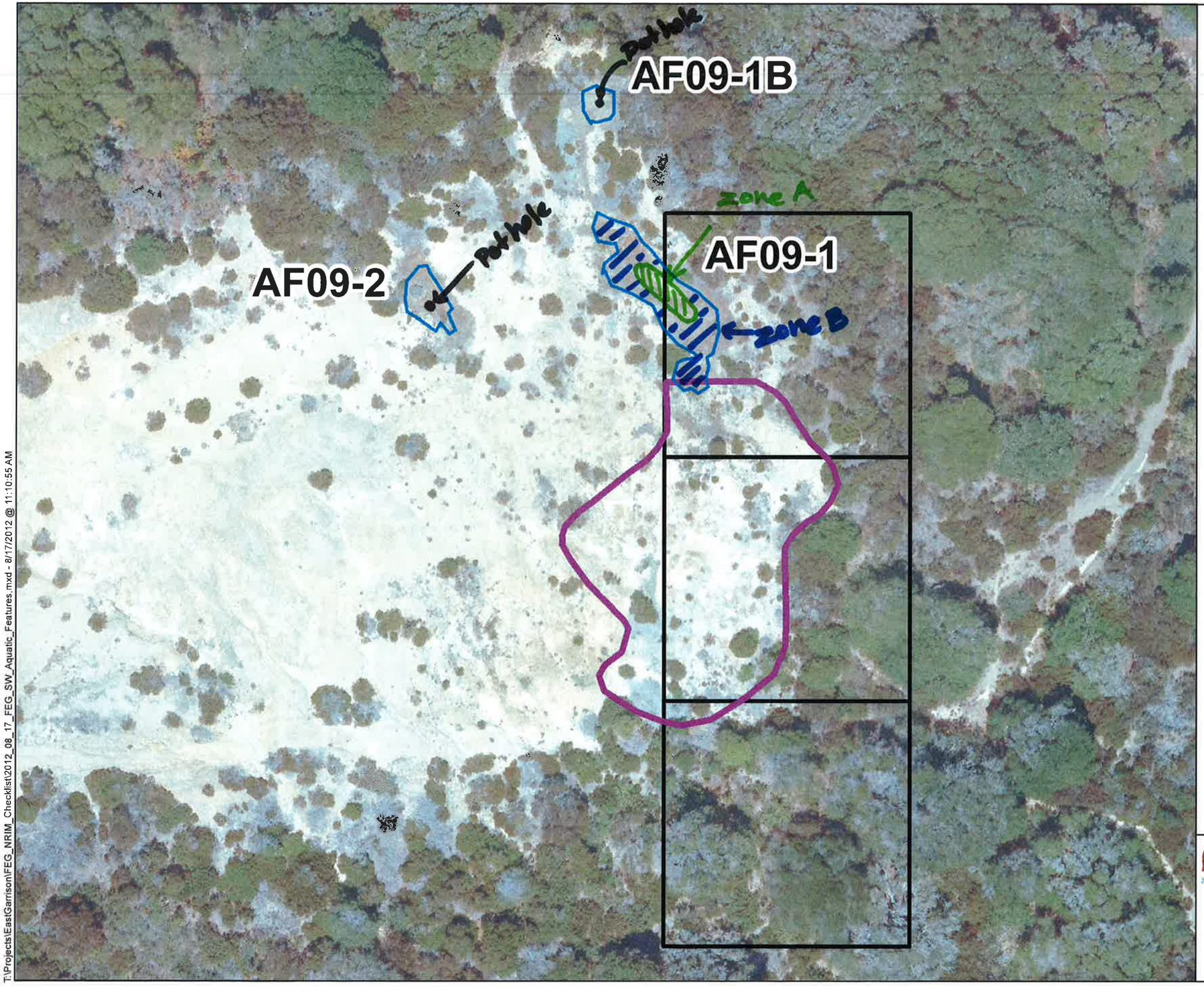
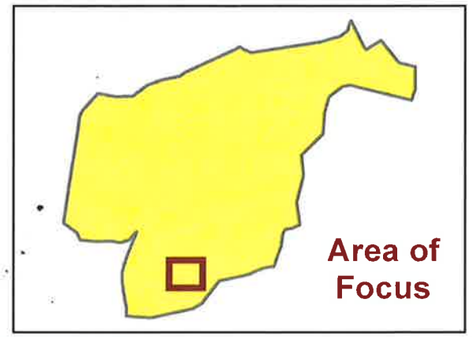
(Senior QB)

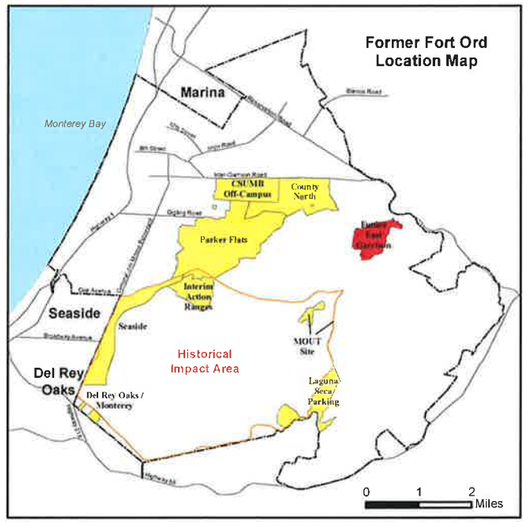
2012 10 02 DYM Map A2



Legend

- South West (SW) Aquatic Features as of March 2010
- Potential Sifting Area
- Grids Potentially Needing Additional Sifting





2007 Aerial Shown

0 30 60 Feet

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Infrastructure, Water, Environment, Buildings

WESTON SOLUTIONS

Future East Garrison MRA
SW Aquatic Features and Potential Sifting Areas

FORA ESCA RP
Monterey County, California

DRAFT

Figure 5

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QUALIFIED BIOLOGIST NRIM CHECKLIST
FIELD INSPECTION REPORT – FORA/ESCA

Munitions Response Area Future East Garrison Date October 8, 2012 Page 1 of 5

Site Visited in MRA "Hand grenade range"

Other Documentation (i.e., maps, photos, etc.): Map: 20121008 DYM Map A, +B FN: 20121008 DYM photos: 4340 - 4362

Qualified Biologist(s) Danielle Muir Escort/Other Mitchell Adams, Tishera Gibson

Weather/Site Conditions Sunny ~65°F.

Tasks to be Completed NRIM Checklist inspection on sift operation in FEG grenade range.

Other Work Being Conducted Onsite Sift operation

Work-Force Onsite (Company Name) Weston Solutions

		CHECKLIST
1) General Impact Minimization Measures	a. Ingress/Egress procedures	☒ Yes ☐ No Crew using same access route to enter and exit. Followed up with: N/A
	b. Soil disturbance minimized to work areas only, per supervisor	☒ Yes ☐ No Crew minimizing disturbance to work area. Followed up with: N/A
	c. Vehicles staying on existing roads to extent possible	☒ Yes ☐ No Equipment & vehicles staying on existing road into the grenade range. Followed up with: N/A
	d. Erosion absent from Borderland Interface areas	☒ Yes ☐ No Followed up with: N/A
2) Habitat Checklist	a. Compliance w/ any add'l measures req'd?	☒ Yes ☐ No Silt fence in place around AF09-2 to prevent sediment in aquatic feature Followed up with: N/A

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QUALIFIED BIOLOGIST IMPACT MITIGATION FIELD CHECKLIST – (CONTINUED)

Munitions Response Area Future East Garrison Date Oct 8, 2012 Page 2 of 5

3) CTS Related Impact Minimization Measures	a. 2-km buffer staked	☐ Yes ☒ No crew following CTS Mitigation measures Followed up with:
	b. 1-km buffer staked	☐ Yes ☒ No Same as above Followed up with:
3) CTS Related Impact Minimization Measures (cont'd)	c. 500 meter buffer staked	☐ Yes ☒ No N/A Followed up with: N/A
	d. Excavation silt fences ok	☐ Yes ☐ No No excavations requiring silt fence Followed up with: N/A

TIME	ACTIVITIES
0730	D. Muir arrived at the grenade range. Silt fence present ~~around~~ around aquatic feature AF09-2 to prevent sediment from the work area. photo number - 4343
0740	D. Muir met with crew and discussed work plan and SOP for handling the subsoil in the aquatic feature AF09-1. Topsoil was removed and stockpiled per the SOP last week. Disscussed with Mark Majors of Weston, keeping the next ≈15" of subsoil separate from the 15" of subsoil. The subsoil <15" should be hard and dry while the >15" subsoil should be moist and sandy. The exclusion zone for the work is 824'. D. Muir moved

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QUALIFIED BIOLOGIST IMPACT MITIGATION FIELD CHECKLIST – (CONTINUED)

Munitions Response Area Future East Garrison Date 10-8-12

TIME	ACTIVITIES
0900	to the southern boundary of FEG where visual inspection could be possible outside of the exclusion.
0930	D. Muir observed as an excavator was used to first remove the concrete and rebar debris in aquatic feature AF09-1. The debris was stockpiled on the grenade range to the West.
1015	The Weston crew began removing the subsoil ~20" in AF09-1 using the excavator. The soil was loaded into a dump truck.
1100	The crew stopped working so that ~~we can~~ D. Muir and M. Majors could inspect the work. In a few places the excavator had dug into the moist subsoil beneath the first layer. D. Muir explained the difference in the two layers to be kept separate. The operater, Bobby confirmed that he could see the difference.
1120	The crew again stopped working and D. Muir inspected. The operator was ~~stopping~~ excavating just the dry first layer of subsoil approximately one foot in depth and leaving the next layer separate to be excavated later. See photo# 4352. Soil was then stockpiled next to the sift plant. Photo# 4353

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QUALIFIED BIOLOGIST IMPACT MITIGATION FIELD CHECKLIST – (CONTINUED)

Munitions Response Area Future East Garrison Date October 8, 2012 Page 4 of 5

TIME	ACTIVITIES
1200	The Weston crew stopped for lunch. D. Muir inspected the work area. The two layers of subsoil were stockpiled separately next to the sift plant. Stockpiles were labeled appropriately.
1230	The Weston crew continued removing the subsoil in aquatic feature AF09-1, keeping the layers seprately stockpiled
1430	D. Muir inspected the work area. The Weston crew had completed excavation in the aquatic feature AF09-1 to a depth of approximately 30 inches. Weston UXO techs determined this was deep enough and no more potential MEC or grenade fragments were detected.
1500	The crew began removing vegetation in grid cell C4D5F5, to allow for sifting operations in the grid cell. All vegetation is to be removed in the three grid cells to the west of the grenade range See map A DYM 2012 10 08.
1700	D. Muir inspects the vegetation removal see Photo 4362.
1710	D. Muir departs the workarea.

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QUALIFIED BIOLOGIST IMPACT MITIGATION FIELD CHECKLIST – (CONTINUED)

Munitions Response Area Future East Garrison Date 10-8-12 Page 5 of 5

Route Copies To: _____ SIGNED Danielle Muir

Reviewed _____
(Senior QB)

2012 10 08 DYM Map A

AF09-1B

Concrete + rebar debris Removal

AF09-2

silt fence

AF09-1

Removal of AF09-1 Subsoil

Silt Plant

Subsoil ~5"-20" stockpile

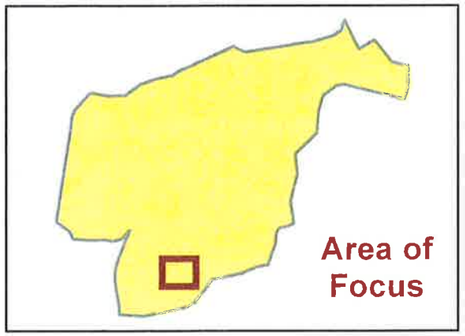
subsoil 20"+ stockpile

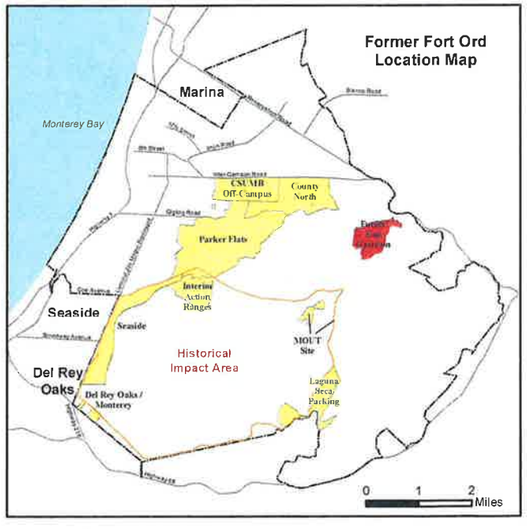
Subsoil has not been sifted.

Removal of Vegetation

Legend

- South West (SW) Aquatic Features as of March 2010
- Potential Sifting Area
- Grids Potentially Needing Additional Sifting





2007 Aerial Shown

0 30 60 Feet

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WESTON SOLUTIONS

Future East Garrison MRA SW Aquatic Features and Potential Sifting Areas

FORA ESCA RP
Monterey County, California

DRAFT

Figure 5

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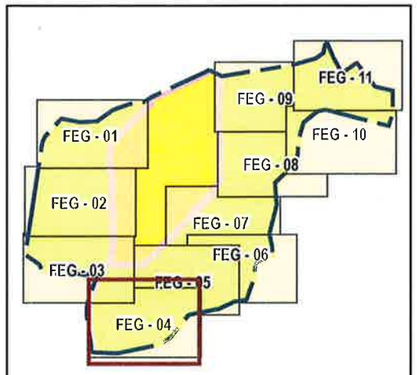
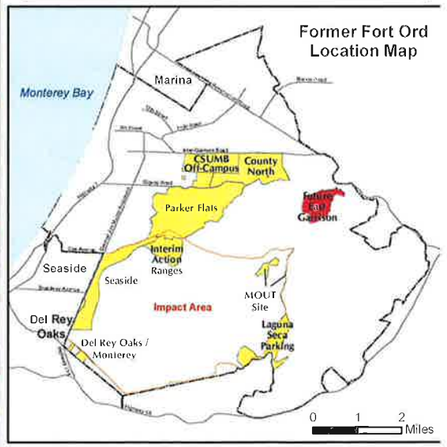
2012 1008 DFM Map B

Legend

- Munitions Response Area
- 100-ft Grid
- Grid Node





Field Mapbook
FOR INTERNAL USE ONLY

0 125 250 Feet

LFR
WESTON SOLUTIONS

FEG MRA
Habitat Mapbook Pg - 4

FORA ESCA RP
Monterey County, California

DRAFT Figure 040510 - B

NATURAL RESOURCE IMPACT MITIGATION CHECKLIST

Checklist No. 7

Revision 1

Title: Interim Action Ranges MRA MEC Design Study and Interim Remedial Actions

Notify the ESCA RP Senior Qualified Biologist (510-541-7509) before proceeding if it is proposed that work boundaries change, types of equipment change, additional vegetation removal is necessary, vegetation cutting methods change, or any other conditions change.

ESCA MRA:	Interim Action Ranges	**Date:**	10/13/11
Work to be conducted:	MEC design study and interim remedial actions will be performed in habitat parcels. Work activities will include: • field staking using GPS, • above ground vegetation removal along ingress/egress routes and within investigation transects in the Range 44 special case area (SCA) and non-completed areas (NCAs), • digital geophysical survey and anomaly investigation using excavation in the Range 44 SCAs and NCAs, • vegetation, root ball and soil removal and screening in Range 44 SCAs and NCAs if needed for MEC removal and safety reasons, soil transport to and from a screen plant and soil stockpiling in the development parcel, • vegetation, root ball and soil removal along design study transects and interim remedial action areas in the Range 47 SCA, soil transport to and from a screen plant and soil stockpiling in the development parcel, • digital geophysical survey and anomaly investigation using excavation in the Range 47 SCA, • instrument aided surface and sub-surface removal (i.e., "mag and dig"), as required for MEC remedial activities, • field demolition of MEC as required, and • backfill and re-contouring of excavated soil.		
Relevant Work Plan Reference and Section(s):	Final Phase II Interim Action Work Plan, Interim Action Ranges Munitions Response Area (relevant sections and Appendix B); Field Variance Form Nos. IARWP-002 (Range 47 berm), IARWP-003 (Range 47) and IARWP-004 (Range 44); pending approval		

1. LAND USE DESIGNATION:	☒ **Habitat Reserve**		**Development** ☒ **Non-Residential** ☐ **Residential**	☐ **Other (specify):**
2. LAND OWNER:	☐ **Army**	**Parcel No(s). and/or Location:**		
	☒ **FORA**	**Parcel No(s). and/or Location:**	See Figure 1 E38 – habitat parcel where support activities may occur (western portion of MRA) E39 - habitat parcel where initial MEC remedial activities will be performed (central portion of MRA) E40 – development parcel where support, sift plant and soil stockpiling activities will occur (central northern portion of MRA) E41 and E42 – habitat parcels where support activities may occur (northern portion of MRA)	

3. FEDERAL ESA SPECIES REPORTED IN PARCEL(S):	☒ **Yes**	☐ **No**	☐ **Flagged/Marked**
Reported ESA Species [common name(s)]:	Monterey gilia, Monterey spineflower, California tiger salamander (CTS) (potential)		
Reported Species' Location(s):	Monterey gilia and Monterey spineflower populations occur on open sandy areas in many locations throughout the MRA (MACTEC 2005). CTS are potentially present in the eastern two-thirds of the MRA which is within 2 kilometers of a pond where CTS breeding has been reported (Figure 1).		
Grid Numbers:	In 2005, MACTEC mapped the species locations to grid blocks in the MRA. In 2010, monitoring for these species was performed in some grid cells that are immediately adjacent to the SCA/NCA polygons as well as in projected ingress/egress pathways and grid cells identified for annual monitoring.		
Restrictions:	General: Work activities shall be conducted in such a manner as to minimize impacts to ESA-listed species and their habitats to the extent feasible while conducting MEC remedial and associated field activities. Field supervisors will work closely with ESCA RP Biologists to implement this general requirement. Vehicle and mechanized equipment operation: Vehicle and mechanized equipment operation is restricted to existing roads and MEC remedial/support areas to the extent feasible. Off-road access is allowed for vehicles/equipment required for completion of work activity when restriction to existing roads is infeasible. If off-road vehicle and/or mechanized equipment movement is needed in areas not shown on Figure 3, the field work supervisor will contact an ESCA RP Biologist who will determine suitable mitigation measures (if any) to be implemented in the area. The biologist will consult with the Senior Qualified Biologist if necessary to make these determinations. Vehicles and mechanized equipment operations in such areas will be coordinated with an ESCA RP Biologist. Ingress/egress: Ingress/egress routes where known sand gilia populations exist on the shoulder of roads will be avoided as feasible taking into account safety and operational requirements. The existing and planned routes are shown on Figure 3. If additional or more intensive activity becomes necessary in areas A and B shown on Figure 3 (e.g., expanding the width of the pathway to accommodate equipment), the Field Supervisor will contact an ESCA RP Biologist who will determine suitable mitigation measures (if any) to be implemented in the area. The biologist will consult with the Senior Qualified Biologist if necessary to		

	make these determinations. California Tiger Salamander Mitigation Measures: Field crews will implement the following CTS impact mitigation measures throughout the MRA (i.e., including habitat and development parcels): 1) If a CTS is uncovered during excavation or other soil handling operations, operations will immediately stop in the area and an ESCA RP Biologist shall be contacted. 2) Field personnel shall not touch CTS that are discovered. Only a USFWS-approved biologist may handle CTS. 3) Operations shall not resume in the affected area until the CTS is removed from the operation area by a Qualified Biologist (i.e., USFWS-approved biologist) and after approval by said biologist to resume operations. 4) Between October 15 and March 31 if rainfall greater than 0.5 inches has occurred within 24 hours of the beginning of the work day (0700), all work areas not within a high-hazard area and within the 2 km radius (Figure 1) will be inspected for presence of CTS prior to start-up of operations (i.e., prior to activation of operational safety exclusion zones). Inspections will be done by personnel who have received Environmental Awareness Training which includes recognition of CTS. Particular examination will be made of contact points between vehicles, equipment and material with the ground surface, as well as depressions such as excavations and road ruts.e to assure that CTS are not present. If CTS are sighted animal will not be touched or moved and an ESCA RP Qualified (USFWS approved) Biologist shall be contacted. The affected vehicle/equipment shall not be moved or operated until a Qualified Biologist has given the go-ahead after removing the CTS. 5) Between October 15 and August 31, all open excavations not within a high-hazard area that are greater than 6 inches deep and 0.05 acre in extent or larger and are within the 2 km radius shown on Figure 1 shall be inspected prior to the start of the day's further excavation work on mornings during rains, when substantial rain (>0.5 inches) is forecast within 24 hours, or when rain has fallen within the last 24 hours. Operation of mechanized equipment shall not commence in such excavations until the biologist has completed such inspections. If CTS are discovered, equipment operation shall not commence in the area until a Qualified Biologist removes the animal(s) from the excavation and gives approval for the start of field work within the area. When possible, such excavations should be silt fenced, covered or ramped. The ramps will allow animals to escape. Ramps will be approximately 2 feet wide, no greater than 30

	degrees in slope, and placed not more than 100 ft apart. Earthen ramps should be used when possible. If silt fencing, covers or ramps are not possible cover boards or other adequate shelters will be placed in the depression to provide temporary shelter for CTS. A Qualified Biologist will inspect the ramps or shelter boards to ensure that they achieve the intended effect. 6) The ESCA RP Senior Qualified Biologist shall notify the Army Wildlife Biologist "immediately" (i.e., within 24 hours or less) of the following: 1) handling of CTS, 2) discovery of injured or dead CTS as determined by a Qualified Biologist. Therefore, the Senior Qualified Biologist must be immediately notified by the onsite biologist of all such occurrences even if identification or other items require further confirmation.

4. HMP (NON-FEDERAL ESA) SPECIES REPORTED IN PARCEL(S):	☒ **Yes**	☐ **No**	☐ **Flagged/Marked**
Reported HMP Species [common name(s)]:	Eastwoods' ericameria; Monterey ceanothus; sandmat, Hooker's and toro manzanita; seaside bird's beak; coast wallflower; and California black legless lizard. Potential habitat for Monterey ornate shrew was reported in the MRA in the HMP.		
Reported Species' Location(s):	In the 1992 baseline survey, sandmat manzanita, Eastwoods' ericameria and Monterey ceanothus were reported in high abundance throughout the MRA and seaside bird's beak was reported only in the eastern ¾ of the MRA. Hooker's and toro manzanita and coast wallflower are not abundant in the MRA. In the HMP, California black legless lizard and Monterey ornate shrew were reported to potentially occur in the MRA.		
Grid Numbers:	The non-federal ESA HMP species have not been mapped to grid numbers.		
Restrictions:	General: Work activities shall be conducted in such a manner as to minimize impacts to HMP species and their habitats to the extent feasible while conducting MEC remedial and associated field activities. Field supervisors will coordinate with the ESCA RP Biologist to implement this general requirement. Vehicle and mechanized equipment operation: Same restrictions as for ESA species. Ingress/egress: Same restrictions as for ESA species.		

5. AQUATIC FEATURES (i.e., VERNAL POOLS/PONDS) PRESENT:	☐ **Yes**	☒ **No**	☐ **Flagged/Marked**
Location(s):	No aquatic features (AFs) are located in the IAR MRA. A 2 km CTS radius occurs within the habitat parcels in the MRA (Figure 1).		
Grid Number(s):	N/A		
Work can proceed in pools/ponds?: N/A	☐ **Yes**	☐ **No**	
Restrictions:			

6. VEGETATION REMOVAL		
☐ **None**	**Location(s):**	
☐ **Manual Removal**	**Location(s):**	
Restrictions:		
☒ **Mechanical Removal**	**Location(s):**	Mechanical vegetation removal will be required in the design study transects (Figure 2), Range 47 SCA interim remedial action per FVF No. IARWP-003 (Figure 4), Range 44 SCA-Northern Portion Design Study Expansion per FVF No. IARWP-004 (Figure 5) and on the ingress/egress corridors (Figure 3). For purposes of the design study and remedial action, mechanical vegetation removal includes near surface vegetation cutting with plant materials dropped in place and selected root raking activities with plant material hauled off-site. Plant materials hauled off-site may be brought back on-site for biological related activities and erosion control.
Restrictions:	Taking into consideration safety and operational requirements, oak trees 5 inches in diameter (DBH) will be left in place and limbed up as feasible. No trees over 5 inches DBH have been observed in the work areas.	

7. EROSION CONCERNS/SITE RESTORATION:

To complete the design study and interim remedial actions excavation and soil screening are planned for proposed 10 foot wide transects (Figure 2) and additional areas (Figure 4) in the Range 47 SCA. Digital geophysical survey, subsurface anomaly investigation operations, and excavation in Range 44 SCA and the NCAs (Figure 5) are planned. Erosion monitoring will be performed after significant rainfall and after the end of remediation activities. Erosion Best Management Practices as implemented in other MRAs by ESCA RP will be implemented as needed in areas of ESCA RP soil disturbance in SCAs/NCAs, along roadways and trails and in soil stockpile areas. Key focus of erosion control of the stockpiles in the development parcel will be to prevent soil erosion across the borderland boundary. Erosion BMPs to be implemented as needed may include crimped straw, waddles, berms, silt fences, plastic sheeting, etc.

8. SITE ACCESS:

The MRA is accessed via Eucalyptus Road to the north

9. ADDITIONAL SITE CONCERNS:

Excavation: During soil excavation along the investigation transects and all activities associated with the interim remedial actions in the Range 47 SCA and design study activities in Range 44 and the Central Area (Figure 3), the top 6 inches or top 12 inches of soil ("topsoil") will be screened and separately stockpiled so that it may be replaced on the surface during backfill. This procedure preserves the species' "seed bank," nutrients and beneficial organisms, such as mycorrhizae and bacteria in the area. The topsoil will be stockpiled so that it is not mixed with known weed populations while being stored.

Backfill: Upon completion of the design study field work and subsequently approved excavations, subsoil and topsoil will be replaced in proper sequence and re-contouring of the site will be conducted.

Restoration and Monitoring: Site restoration and monitoring will be conducted per the relevant protocols and plans.

Attachments

Figure 1. Interim Action Ranges MRA Natural Resource Impact Mitigation Checklist Ecological Profile Habitat Type

Figure 2. Interim Action Ranges MRA Natural Resource Impact Mitigation Checklist Proposed Design Study Transects and Work Area

Figure 3. Interim Action Ranges MRA Natural Resource Impact Mitigation Checklist Ingress/Egress Corridors

Figure 4. Interim Action Ranges MRA Natural Resources Impact Mitigation Checklist Range 47 SCA Interim Remedial Action

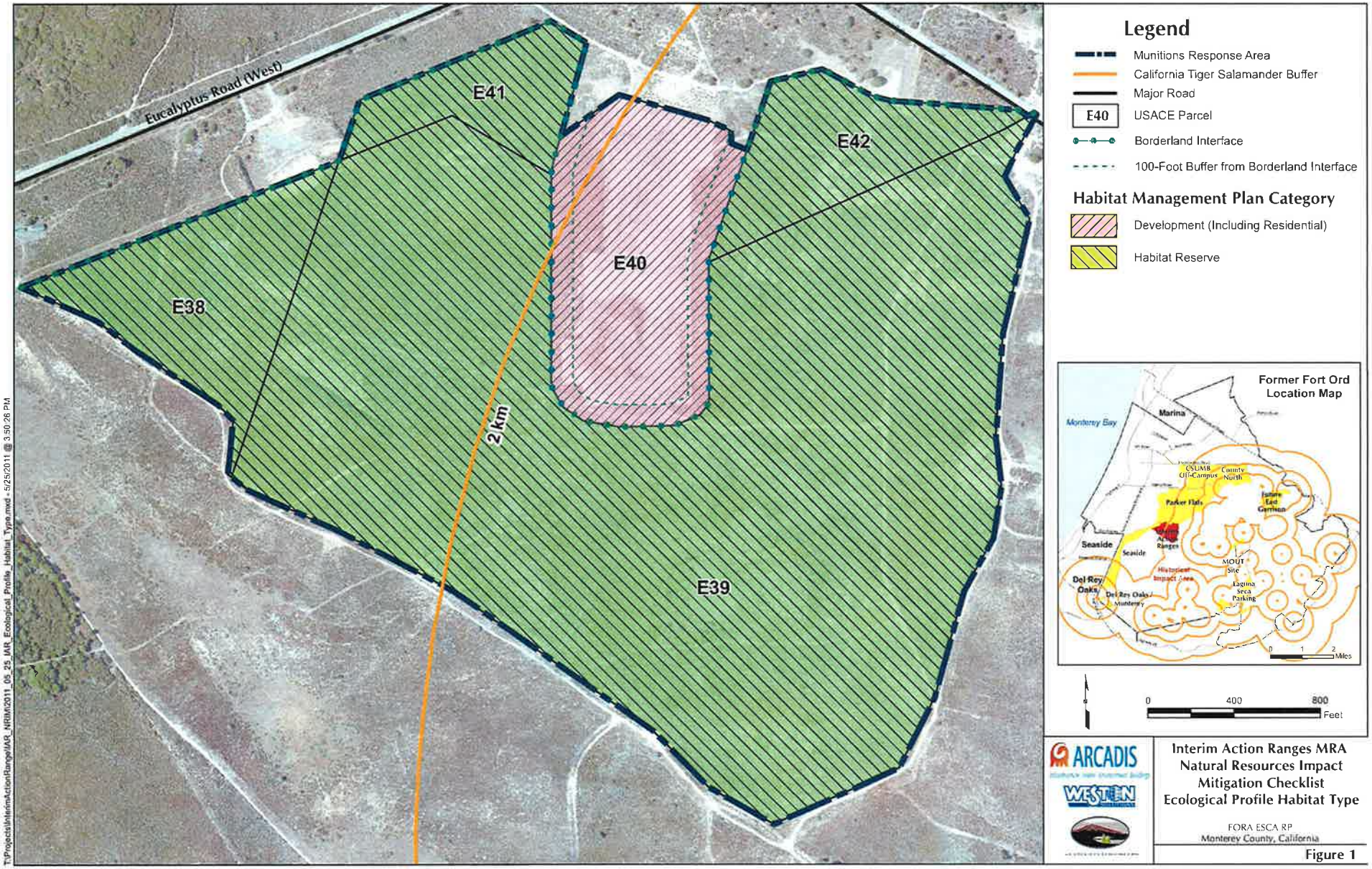
Figure 5. Interim Action Ranges MRA Natural Resources Impact Mitigation Checklist Range 44 SCA Design Study Expansion

Approved:

ARCADIS Senior Qualified Biologist:		**Date:**	**10/13/11**
ESCA RP Program Manager:		**Date:**	10/13/11
ESCA RP Senior UXO Supervisor		**Date:**	10/13/11

Received:

FORA ESCA Program Manager:		**Date:**	10/13/11
Wildlife Biologist BRAC Fort Ord:		**Date:**	10/13/11



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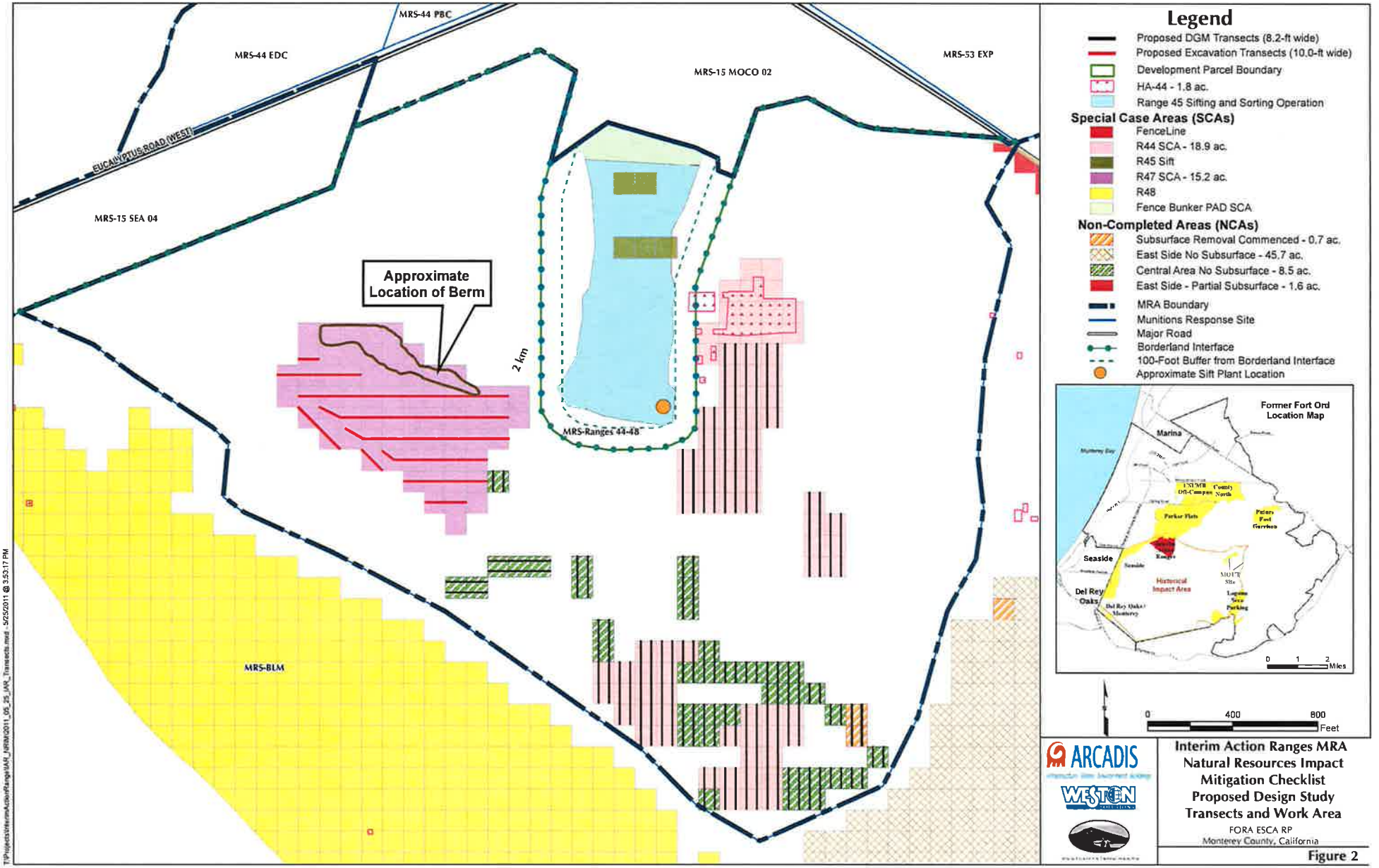

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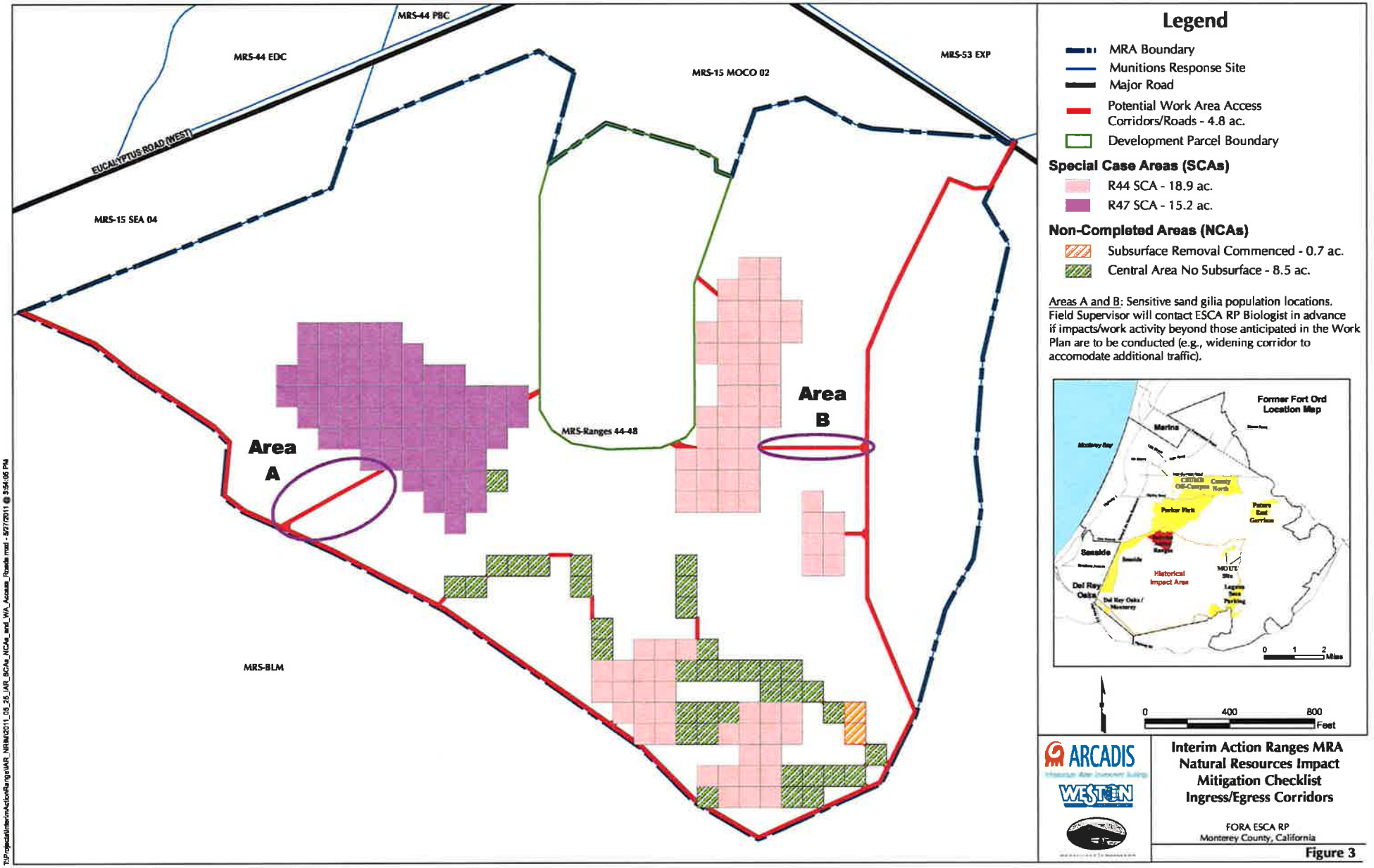
Interim Action Ranges MRA
Natural Resources Impact Mitigation Checklist
Proposed Design Study Transects and Work Area

FORA ESCA RP
Monterey County, California

Figure 2



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Interim Action Ranges MRA
Natural Resources Impact Mitigation Checklist
Ingress/Egress Corridors

FORA ESCA RP
Monterey County, California

Figure 3

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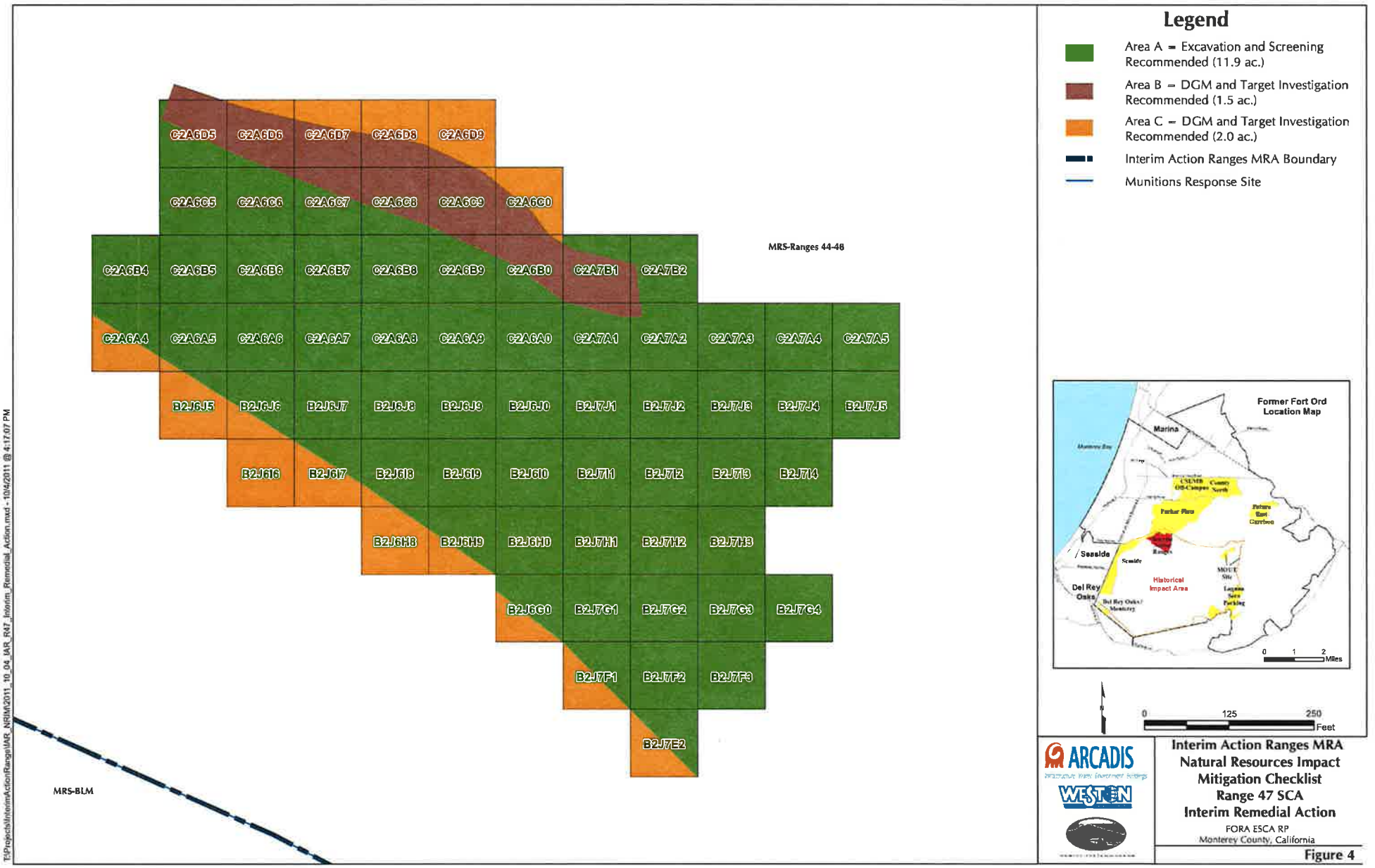

Legend

- Area A = Excavation and Screening Recommended (11.9 ac.)
- Area B = DGM and Target Investigation Recommended (1.5 ac.)
- Area C = DGM and Target Investigation Recommended (2.0 ac.)
- Interim Action Ranges MRA Boundary
- Munitions Response Site

0 125 250 Feet

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Interim Action Ranges MRA
Natural Resources Impact
Mitigation Checklist
Range 47 SCA
Interim Remedial Action

FORA ESCA RP
Monterey County, California

Figure 4

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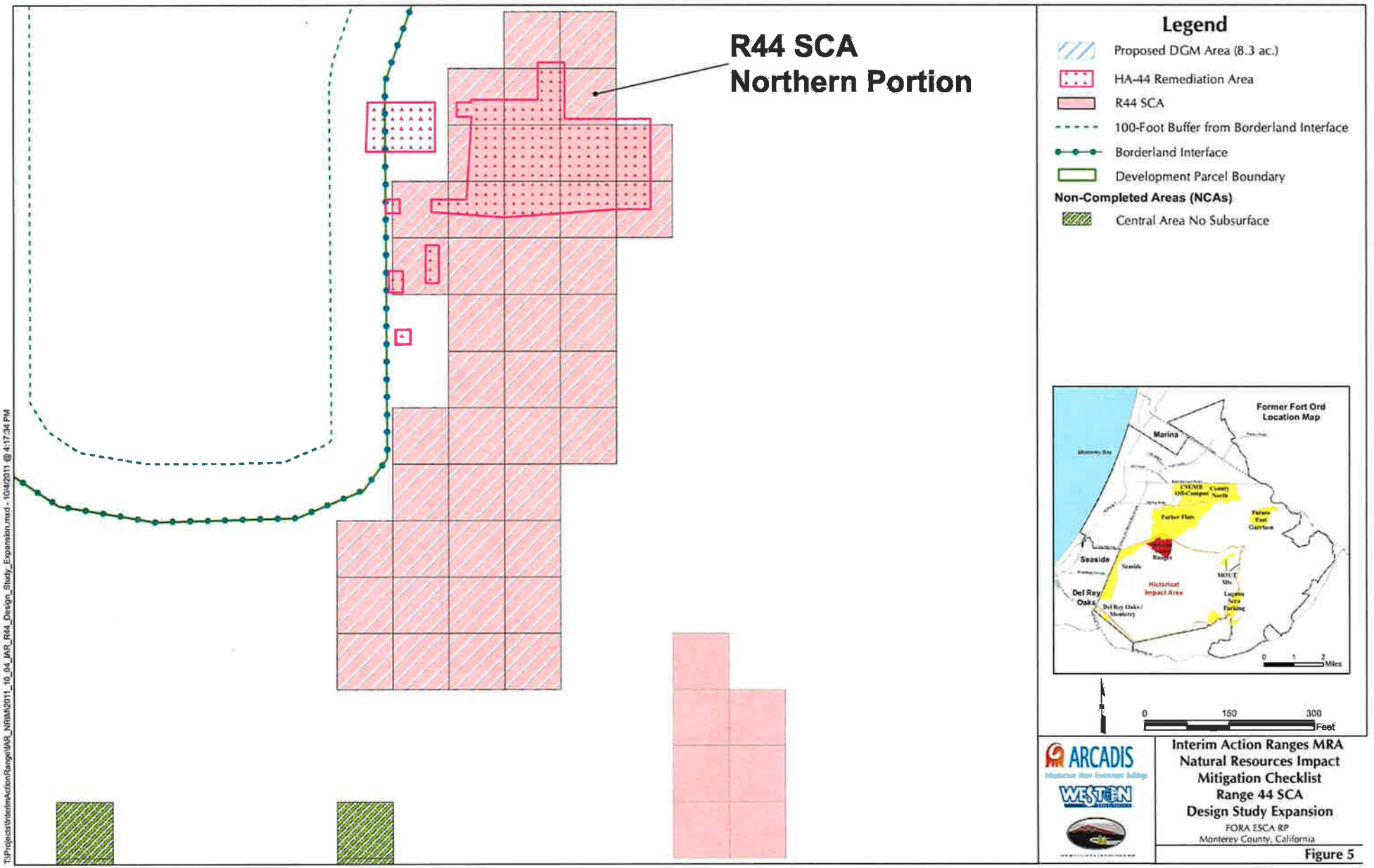

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Interim Action Ranges MRA
Natural Resources Impact Mitigation Checklist
Range 44 SCA
Design Study Expansion
FORA ESCA RP
Monterey County, California

Figure 5

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QUALIFIED BIOLOGIST NRIM CHECKLIST
FIELD INSPECTION REPORT – FORA/ESCA

Munitions Response Area Interim Action Ranges Date April 9, 2012 Page 1 of 3

Site Visited in MRA Ingress / Egress Ranges 44, 47, and central area

Other Documentation (i.e., maps, photos, etc.): Photos on WC Server by date Img-0252-257, 3223-3224/ Map notes JTT Map B 20120409

Qualified Biologist(s) Danielle Muir, Joshua Tallis Escort/Other Bruce Moe

Weather/Site Conditions Mostly sunny / some thin clouds, ~50°F

Tasks to be Completed MEC investigation and removal (mag and dig)

Other Work Being Conducted Onsite none

Work-Force Onsite (Company Name) Weston

		CHECKLIST
1) General Impact Minimization Measures	a. Ingress/Egress procedures	☒ Yes ☐ No Vehicles using existing ingress/egress procedures Followed up with:
	b. Soil disturbance minimized to work areas only, per supervisor	☒ Yes ☐ No Followed up with:
	c. Vehicles staying on existing roads to extent possible	☒ Yes ☐ No Vehicles staying on existing roads. Areas of known sand gilia populations vehicles have stayed on Followed up with: road and not widening into shoulder.
	d. Erosion absent from Borderland Interface areas	☐ Yes ☐ No not inspected Followed up with:
2) Habitat Checklist	a. Compliance w/ any add'l measures req'd?	☒ Yes ☐ No CTS - excavations backfilled or sloped so that CTS would not become entrapped. Followed up with:

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QUALIFIED BIOLOGIST IMPACT MITIGATION FIELD CHECKLIST – (CONTINUED)

Munitions Response Area Interim Action Ranges (IAR) Date April 9, 2012

3) CTS Related Impact Minimization Measures	a. 2-km buffer staked	☐ Yes ☒ No Entire MRA treated as potential CTS buffer and CTS mitigation is followed ~~for~~ in the entire MRA. Followed up with:
	b. 1-km buffer staked	☐ Yes ☒ No see above Followed up with:
3) CTS Related Impact Minimization Measures (cont'd)	c. 500 meter buffer staked	☐ Yes ☒ No see above Followed up with:
	d. Excavation silt fences ok	☐ Yes ☐ No No excavations observed Followed up with:

TIME	ACTIVITIES
1015	Danielle Muir and Joshua Tallis arrive at IAR and meet Bruce Moe. Bruce Moe escort D. Muir and J. Tallis in IAR.
	D. Muir and J. Tallis inspect ingress/egress see photos WC server 2012 04 09 Ingress-Egress Mont #5 IMG_0252 through IMG_0257 and IMG_3223-3224.
	Vehicles were observed to be using the established ingress/egress routes. No off road tire tracks were observed. No widening into the shoulders of established routes.

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QUALIFIED BIOLOGIST IMPACT MITIGATION FIELD CHECKLIST – (CONTINUED)

Munitions Response Area TAP Date April 9, 2012 Page 3 of 3

Route Copies To: _____ SIGNED Danielle Mun

Reviewed [signature] 4/18/12
(Senior QB)

NATURAL RESOURCE IMPACT MITIGATION CHECKLIST

Checklist No. 9

Revision 0

Title: Military Operations in Urban Terrain (MOUT) Site Munitions Response Area (MRA), Military Response Site (MRS-28) Field Verification of Surface Conditions

Notify the ESCA RP Senior Qualified Biologist (510-541-7509) before proceeding if it is proposed that work boundaries change, types of equipment change, additional vegetation removal is necessary, vegetation cutting methods change, or any other conditions change.

ESCA MRA:	MOUT (MRS-28)	**Date:**	1/17/12
Work to be conducted:	Mobilization, field staking to establish site boundaries, erosion control measure installation (if required), vegetation cutting, tree limbing (if required for trees larger than 5 inches diameter at breast height), chipping of vegetation debris on site or removal of debris from the work area, Analog instrument-aided field verification survey to verify that MEC are not present on the surface and field demolition of MEC as required. As the work is limited to surface clearance, only *de minimus* surface soil disturbance will occur. "Mag and dig" operations are not anticipated to occur.		
Relevant Work Plan Reference and Section(s):	FVF No. G3WP-001; Field Verification of Surface Conditions in the Southwestern Portion of the MOUT Training Area (MRS-28) and the Final Group 3 Remedial Investigation/Feasibility Study Work Plan, Former Fort Ord, dated November 13, 2009, Section 5.3 Task 3 Field Investigation		

1. LAND USE DESIGNATION:	☐ **Habitat Reserve**		**Development** ☒ **Non-Residential** ☐ **Residential**	☐ **Other (specify):**
2. LAND OWNER:	☐ **Army**	**Parcel No(s). and/or Location:**		
	☒ **FORA**	**Parcel No(s). and/or Location::**	See Figure 1, MOUT Site MRA Field Verification Area Natural Resource Impact Mitigation Checklist F1.7.2 – Non-Residential parcel where instrument aided field verification will be performed	

3. FEDERAL ESA SPECIES REPORTED IN PARCEL(S):	☐ **Yes**	☒ **No**	☐ **Flagged/Marked**
Reported ESA Species [common name(s)]:	California tiger salamander (CTS) (potential upland habitat); Monterey gilia and Monterey spineflower		
Reported Species' Location(s):	California tiger Salamander (CTS) potential upland habitat: The entire work area is within potential CTS upland habitat (within 1 km radii from four known and one potential breeding site). The southwest corner of the work area is within the 500 m radius of a known breeding site. (Figure 2), Monterey gilia and Monterey spineflower populations occur on open sandy areas (occurrence reported in small portions of the parcel in 1992).		
Grid Numbers:	NA		

Restrictions:	General: Work activities shall be conducted in such a manner as to minimize impacts to ESA-listed species and their habitats to the extent feasible while conducting MEC clearance and associated activities. Impacts to listed HMP species will be limited by minimizing investigations spatially and temporally, and by not performing work outside the work area. Access to the site will use existing roads and trails whenever feasible. All field personnel and their supervisors will be trained using the MOUT MRA Environmental Awareness Training module prior to initiating field work. Vehicle and mechanized equipment operation: Ingress/egress pathways to/from the work areas will be minimized to the extent practicable. Brush cutting equipment will operate only in areas where brush cutting is required per the FVF. Vehicle and mechanized equipment operation is restricted to existing roads/trails to the extent feasible. California Tiger Salamander Mitigation Measures: An ESCA RP biologist who is approved by the U.S. Fish and Wildlife Service to handle CTS per this checklist is referred to as a "Qualified Biologist" or QB. Site work will occur during daylight hours. Between October 15 and March 31, all points of contact with the ground of work materials, vehicles and mechanized equipment left onsite overnight shall be inspected by site personnel for CTS presence in the morning prior to commencement of work if ½ inch or more of rain has fallen within the prior 24-hr period. If a CTS or possible CTS is observed, the animal shall not be disturbed and a QB shall be immediately contacted to move the animal to a safe location. No personnel other than a QB may touch or handle CTS. If CTS are encountered, a QB will: take appropriate actions to avoid or minimize take of the species as authorized by USFWS, notify the U.S. Army and record the information on the appropriate reporting form.

4. HMP (NON-FEDERAL ESA) SPECIES REPORTED IN PARCEL(S):	☒ **Yes**	☐ **No**	☐ **Flagged/Marked**
Reported HMP Species [common name(s)]:	Eastwoods' ericameria, Monterey ceanothus, Hooker's and toro manzanita, Monterey ornate shrew.		
Reported Species' Location(s):	In the 1992 baseline survey, Eastwoods' ericameria, Monterey ceanothus, Hooker's and toro manzanita were reported in small portions of the work area. In the HMP, Monterey ornate shrew was reported to potentially occur in the MRA.		
Grid Numbers:	The non-federal ESA HMP species have not been mapped to grid numbers.		
Restrictions:	General: Work activities shall be conducted in such a manner as to minimize impacts to HMP species and their habitats to the extent feasible while conducting MEC remedial and associated field activities. Field supervisors will coordinate with the ESCA RP Biologist to implement this general requirement. Vehicle and mechanized equipment operation: Same restrictions as for federal-listed ESA species. Ingress/egress: Same restrictions as for ESA species.		

5. AQUATIC FEATURES (i.e., VERNAL POOLS/PONDS) PRESENT:	☐ **Yes**	☒ **No**	☐ **Flagged/Marked**
Location(s):	No aquatic features (AFs) are located in the MOUT MRA MRS-28. AFs are located within 500 meters of the MOUT MRA MRS-28 (Figure 2).		
Grid Number(s):	N/A		
Work can proceed in pools/ponds?: N/A	☐ **Yes**	☐ **No**	
Restrictions:			

6. VEGETATION REMOVAL		
☐ **None**	**Location(s):**	
☒ **Manual Removal**	**Location(s):**	Manual removal is allowed in all work areas.
Restrictions:		
☒ **Mechanical Removal**	**Location(s):**	Mechanical removal is allowed in all work areas.
Restrictions:	Trees 5 inches in diameter (DBH) and larger will not be removed. Trees left in place will be "limbed up" as needed to provide access for instrument aided surface clearing.	

7. EROSION CONCERNS/SITE RESTORATION:

Excavation or substantial soil disturbance is not anticipated during the instrument aided field verification field activities on the MOUT MRA MRS-28 work area. Therefore, it is unlikely that ESCA RP activities will result in soil erosion. However, if erosion is observed, wattles, berms, silt fences, and/or equivalent controls will be installed as needed in accordance with best management practices.

87. SITE ACCESS: The MRA is accessed via Eucalyptus Road to the north.

9. ADDITIONAL SITE CONCERNS: Materials, tools and equipment mobilized to the work area shall be free of offsite soil and plant material to minimize potential introduction of soil micro-organisms and weeds. ESCA RP personnel shall visually inspect such items prior to their use onsite to confirm that the items meet this requirement.

Non-federal listed HMP species:

Monterey ornate shrews have not been recorded on former Fort Ord; however, they are potentially present. If a shrew (mouse-like mammal) is encountered, contact a QB. A QB will record confirmed records of Monterey ornate shrews on the appropriate form.

Toro manzanita were reported from the parcel in 1992. Specimens of this species, if present in the work area, will be preserved if they are larger than 5" DBH per Section 6 of this checklist.

Hooker's manzanita, Monterey ceanothus and Eastwood's ericameria were reported to be present in 1992 in small portions of the parcel and may be present in the work area. The impact of the work on these species, if any, should be *de minimus*.

Attachments

Figure 1. MOUT MRA Field Verification Area Natural Resource Impact Mitigation Checklist Field Investigation Area

Figure 2. MOUT MRA Field Verification Area Natural Resource Impact Mitigation Checklist California Tiger Salamander Potential Habitat Zones

Approved:

ARCADIS Senior Qualified Biologist: _____ **Date:** 1/18/12

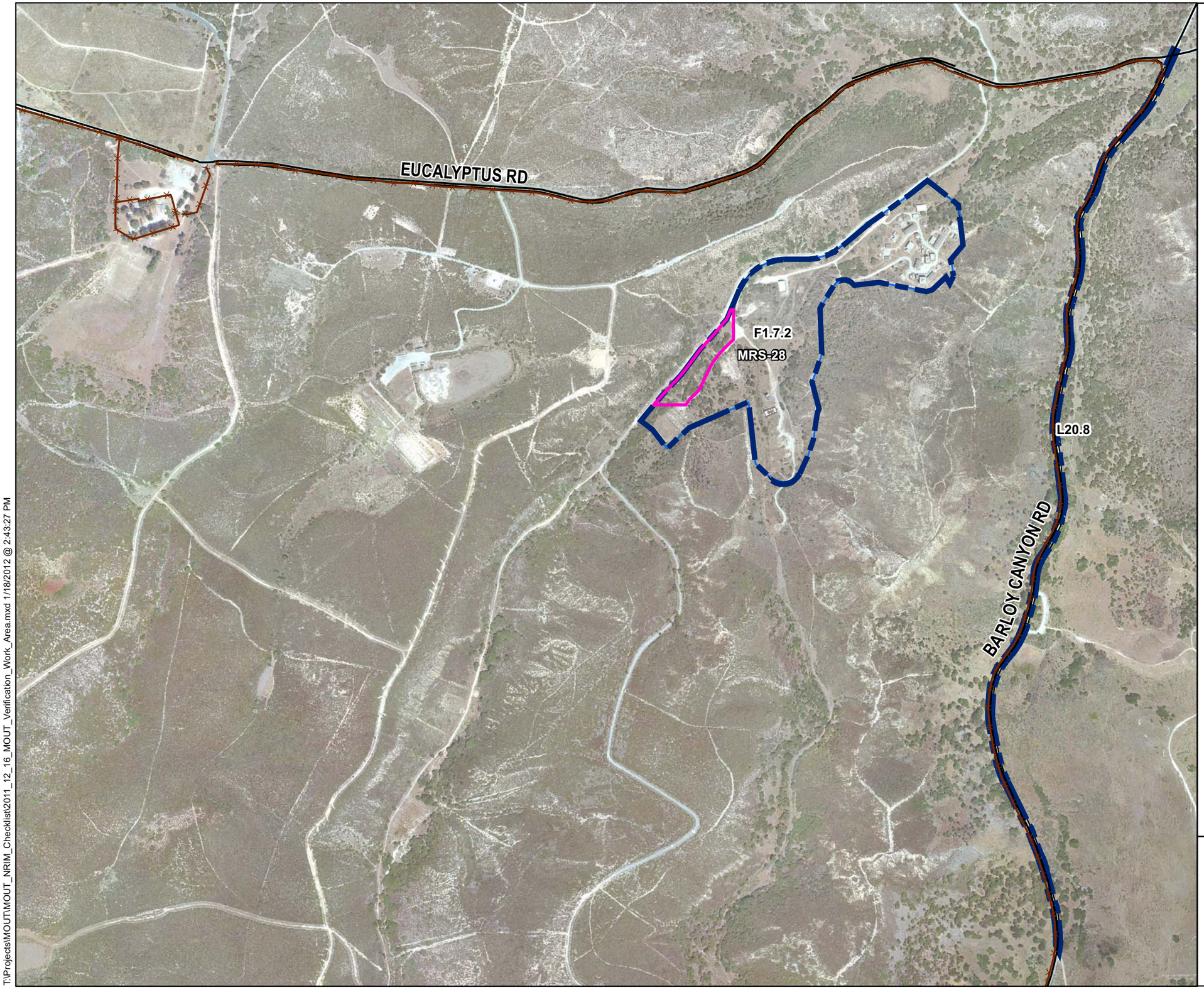
ESCA RP Program Manager: _____ **Date:** 1/23/12

ESCA Remediation Project Manager _____ **Date:** 1/18/12

Received:

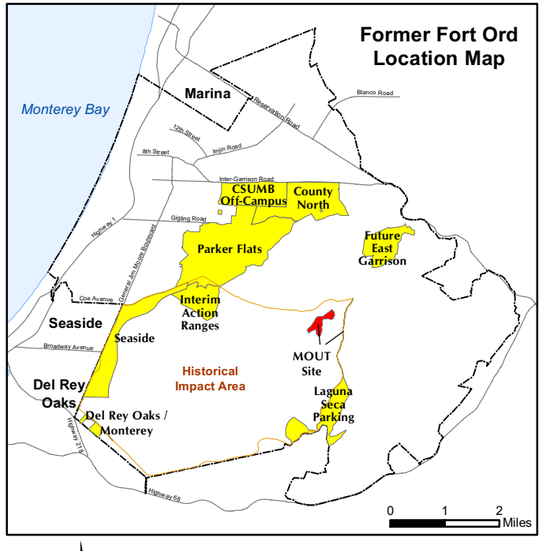
FORA ESCA Program Manager: _____ **Date:** 1/23/12

Wildlife Biologist
BRAC Fort Ord: William K. Collins **Date:** 1/26/12



Legend

- Field Verification Work Area
- Munitions Response Area
- Major Road
- Fence
- E23.1 — USACE Parcel
- MRS-28 — MRS Boundary



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Infrastructure · Water · Environment · Buildings

WESTON SOLUTIONS

WESTCLIFFE ENGINEERS

MOUT Site MRA
Field Verification Work Area
Natural Resource Impact Mitigation Checklist

FORA ESCA RP
Monterey County, California

DRAFT

Figure 1

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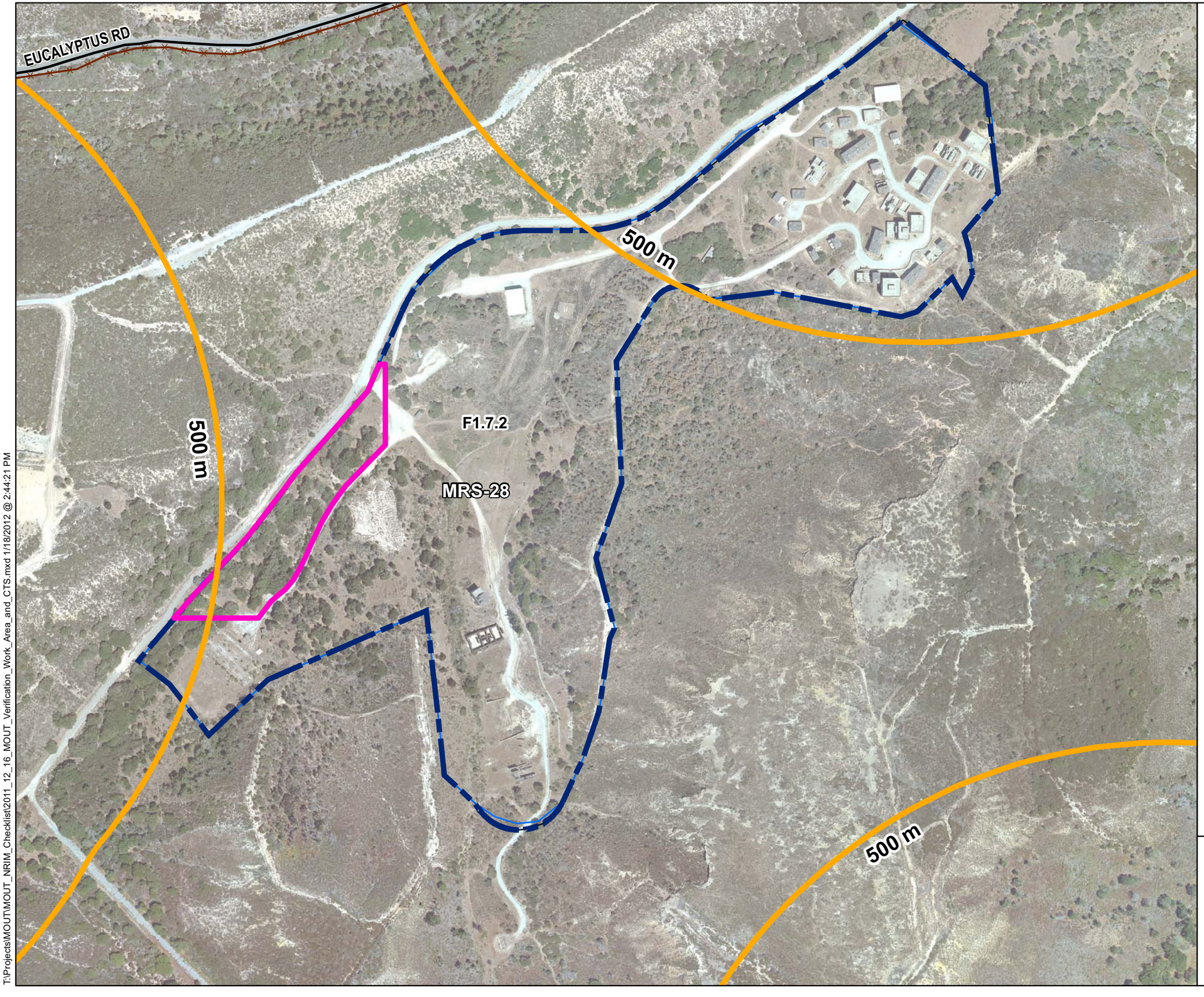
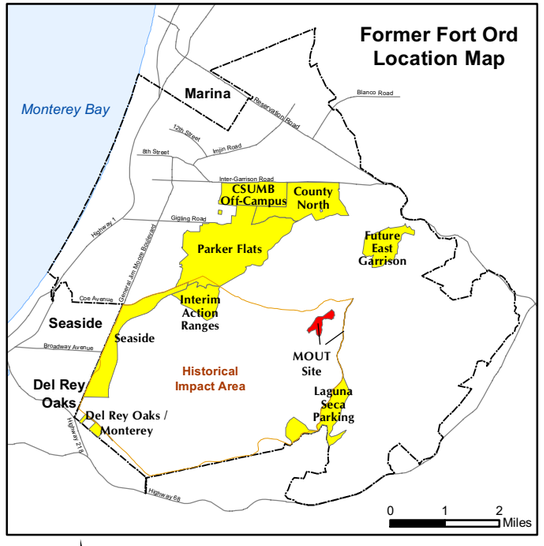


Legend

- California Tiger Salamander Buffer
- Field Verification Work Area
- Munitions Response Area
- Major Road
- Fence
- E23.1 — USACE Parcel
- MRS-28 — MRS Boundary



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MOUT Site MRA
Field Verification Work Area
California Tiger Salamander Buffer
Natural Resource Impact Mitigation Checklist

FORA ESCA RP
Monterey County, California

DRAFT

Figure 2

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QUALIFIED BIOLOGIST NRIM CHECKLIST
FIELD INSPECTION REPORT – FORA/ESCA

Munitions Response Area MOUT Date 14 February, 2012 Page 1 of 5

Site Visited in MRA Field Verification Work area

Other Documentation (i.e., maps, photos, etc.): Map A JTT 2012-02-14, Photos 20120214(1) through (9)

Qualified Biologist(s) Joshua Tallis Escort/Other Danielle Muir + Bob Smith

Weather/Site Conditions Partly cloudy, ~60° F

Tasks to be Completed Vegetation removal - Confirm checklist mitigation measures are implemented

Other Work Being Conducted Onsite None

Work-Force Onsite (Company Name) Central Coast Land Clearing

		CHECKLIST
1) General Impact Minimization Measures	a. Ingress/Egress procedures	☒ Yes ☐ No Followed up with:
	b. Soil disturbance minimized to work areas only, per supervisor	☒ Yes ☐ No Followed up with:
	c. Vehicles staying on existing roads to extent possible	☒ Yes ☐ No Followed up with:
	d. Erosion absent from Borderland Interface areas	☒ Yes ☐ No Followed up with:
2) Habitat Checklist	a. Compliance w/ any add'l measures req'd?	☒ Yes ☐ No Crew left all oaks >5" dbh standing. Very little chaparral was present. Followed up with:

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QUALIFIED BIOLOGIST IMPACT MITIGATION FIELD CHECKLIST – (CONTINUED)

Munitions Response Area MOUT Date 14 February 2012 Page 2 of 5

3) CTS Related Impact Minimization Measures	a. 2-km buffer staked	☐ Yes ☒ No N/A All of MRA is located in the 2Km buffer. Followed up with:
	b. 1-km buffer staked	☐ Yes ☐ No N/A All of MRA located in 1Km buffer Followed up with:
3) CTS Related Impact Minimization Measures (cont'd)	c. 500 meter buffer staked	☐ Yes ☒ No an area of approx. 1/4 acre is located in the work area. QB discussed the presence and location with field crew Followed up with:
	d. Excavation silt fences ok	☐ Yes ☐ No NA. No excavation planned. Followed up with:

TIME	ACTIVITIES
10:30	Joshua Tallis and Danielle Muir arrive at the MOUT MRA
10:34	Conduct safety tailgate meeting with Weston escort Bob Smith.
1038	Begin survey walking around entire Field Varification work area. ASV was being used for veg mastication. One man was using a pole chain saw to do limbing. Approx. half of the work area had been cleared. All large (>5" dbh) coast live oaks appeared to be retained. Very little chaparral was present.

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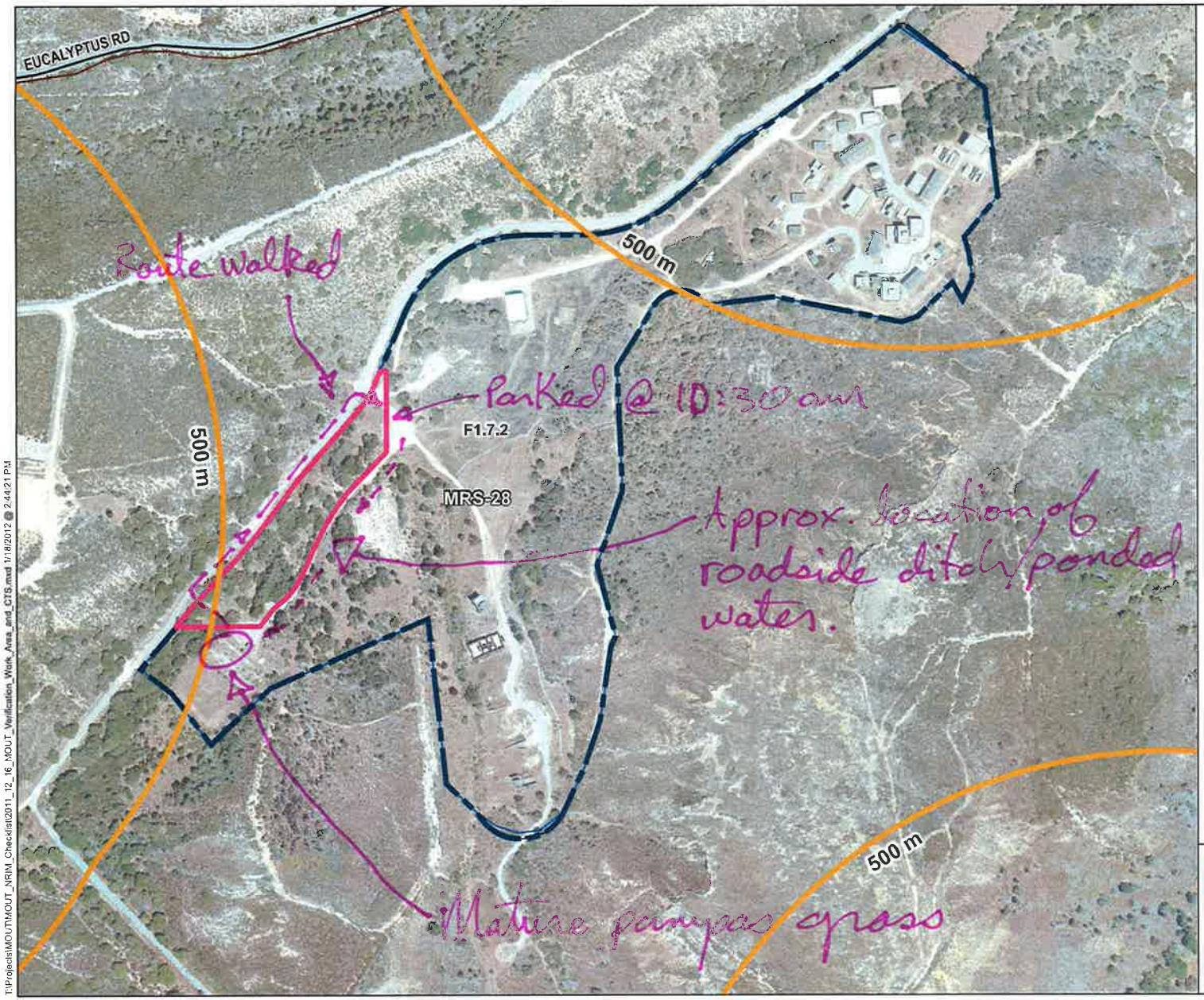
QUALIFIED BIOLOGIST IMPACT MITIGATION FIELD CHECKLIST – (CONTINUED)

Munitions Response Area MOUT Date 14 Feb. 2012

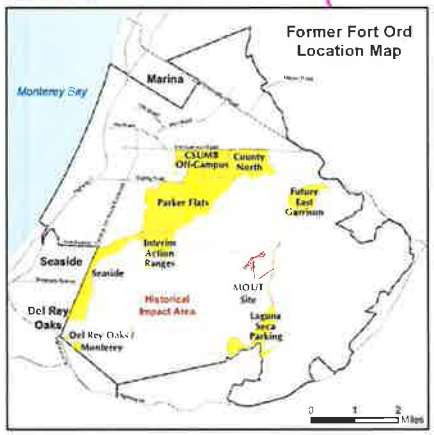
TIME	ACTIVITIES
10:48	Several mature pampas grass clumps found growing southwest of the field verification work area (about 50 ft away) and inside the MRA.
	Work crews were cutting in the designated area and V vehicle traffic was using existing roads when not actively cutting vegetation.
	A roadside ditch was found on the SE road as marked on Map 1 JTT 2012-02-14. The ditch was about 1 ft deep in ponded water and surrounded by wetland vegetation. No CTS observed.
1103	JTT and DYM depart MOUT



Legend

- California Tiger Salamander Buffer
- Field Verification Work Area
- Munitions Response Area
- Major Road
- Fence
- E23,1 USACE Parcel
- MRS-28 MRS Boundary

Map A
JTT
2012-02-14



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MOUT Site MRA
Field Verification Work Area
California Tiger Salamander Buffer
Natural Resource Impact
Mitigation Checklist
FORA ESCA RP
Monterey County, California

DRAFT

Figure 2

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QUALIFIED BIOLOGIST IMPACT MITIGATION FIELD CHECKLIST – (CONTINUED)

Munitions Response Area MOUT

Date February 14, 2012 Page 5 of 5

Route Copies To:

SIGNED

Reviewed 4/18/12
(Senior QB)

APPENDIX B

Documentation of Approval by USFWS for California Tiger Salamander Handling by ESCA RP Biologists

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ventura Fish and Wildlife Office
2493 Portola Road, Suite B
Ventura, California 93003

IN REPLY REFER TO:
O8EVEN00-2012-TA-0484

September 20, 2012

William K. Collins
Fort Ord Base Realignment and Closure Office
Building 4463 Gigling Road, Room 101
P.O. Box 5008
Monterey, CA 93944-5008

Subject: Authorization of Biologists under the Biological Opinion 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)

Dear Mr. Collins:

We have reviewed a request, submitted by ARCADIS U.S., Inc. on August 16, 2012, for our authorization of Cynthia Fenter and Danielle Muir to capture and relocate federally threatened California tiger salamanders (*Ambystoma californiense*). In an electronic message to Kirstina Barry of my staff on August 27, 2012, you confirmed that this request was made on behalf of the U.S. Army. Your request is made pursuant to term and condition 6(b) of the subject biological opinion, which requires our approval of all persons proposed to handle and relocate California tiger salamanders in association with the subject project.

After reviewing the qualifications you submitted with your request, we have concluded that Ms. Fenter and Ms. Muir possess the necessary training and experience to independently conduct the requested activities. We hereby authorize the above-named biologists to capture and relocate federally threatened California tiger salamanders pursuant to the terms and conditions outlined in the biological opinion for the cleanup and reuse former of Fort Ord. Please note that this authorization is valid for the subject project only. We recommend that these biologists review the project description, protective measures, and terms and conditions of biological opinion 1-8-04-F-25R prior to conducting the proposed activities. If you have any questions regarding this authorization, please contact Kirstina Barry at (805) 644-1766, extension 357.

Sincerely,

for

Douglass M. Cooper
Deputy Assistant Field Supervisor

APPENDIX C

Weed Monitoring Plans and Reports

ESCA RP Weed Monitoring Plan

Date: 13 February 2012

Prepared by: Joshua Tallis

MRA/Parcel and Specific Locations Monitored: Future East Garrison MRA / Vicinity of Aquatic Features AF-66 and AF-67 in northeast Future East Garrison

Monitoring Personnel: Joshua Tallis and Danielle Muir

Monitoring Protocol/procedure:

The goal of weed management is to avoid degradation of ecological communities and especially sensitive species populations as a result of weed invasion in parcels not designated for development. In 2010 and 2011 mature and immature French broom (*Genista monspessulana*) plants were removed in the vicinity of aquatic features AF-66 and AF-67 by hand pulling. However, due to the French brooms' persistent seed bank subsequent monitoring is important to determine if seedlings are present and, if necessary, whether additional removal of the plants should be performed before seed set. French broom flowers between March and July. Seeds of the French broom mature during June and July.

Monitoring will be done by visual inspection of the vicinity of historic populations.

The French broom monitoring and past abatement in Future East Garrison MRA is not required by the Habitat Management Plan because the plants and seed bank pre-existed the ESCA RP project. Soil has not been disturbed in the vicinity of the past French broom population as a result of ESCA RP work.

Recommendations:

Field Documentation (logbook citations, maps, photos, etc.):

Reviewed by:

ESCA RP Weed Monitoring Report

Date: February 17, 2012

Prepared by: Danielle Muir & Joshua Tallis

MRA/Parcel and Specific Locations Monitored: Future East Garrison MRA / Vicinity of Aquatic Features AF-66 and AF-67 in northeast Future East Garrison.

Monitoring Personnel: Joshua Tallis and Danielle Muir

Date Monitored: February 14, 2012

Monitoring Protocol/procedure: Personnel performed a visual inspection for French broom (*Genista monspessulana*) in the vicinity of known historic populations near Aquatic Features AF-66 and AF-67.

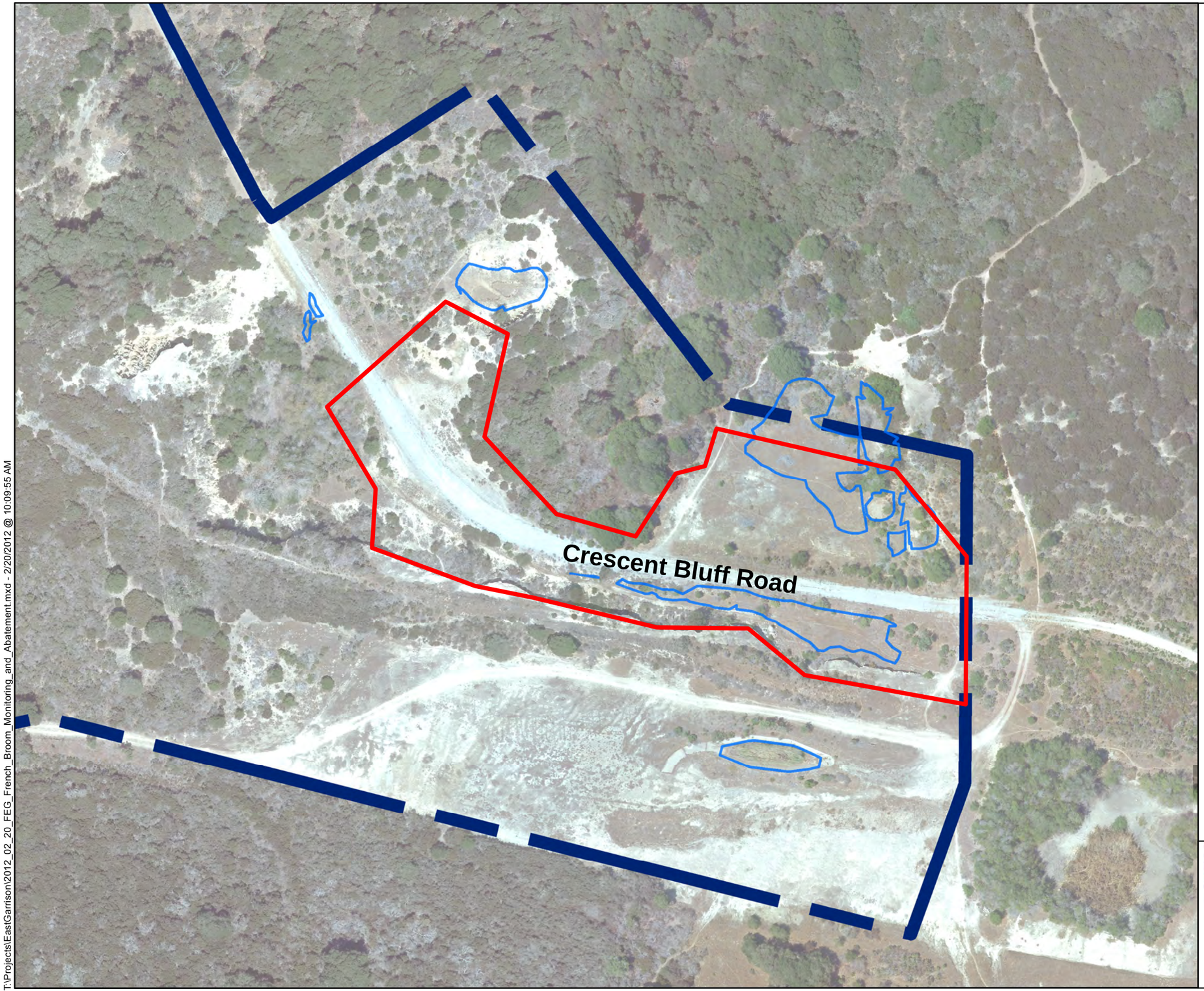
Results: Approximately 200 mature and immature French broom plants were observed in the vicinity of Aquatic Features AF-66 and AF-67. Approximately 25 mature plants measuring 1-4 feet tall were observed and 175 smaller immature seedlings were observed. A few of the mature plants appeared to have evaded previous abatement efforts. Two of the mature plants were observed to have begun initial flowering but had not yet set seed.

Abatement: All the French broom plants observed were removed manually by hand pulling by the monitoring personnel. It was also observed that a few other French broom plants had been manually pulled by unknown personnel a few days prior, as a few pulled plants were laying on the ground somewhat wilted.

Recommendations: The number of seedlings observed suggests that there are still a number of French broom seeds persistent in the seed bank. Future monitoring and abatement of French broom seedlings at this location would be valuable. The goal of weed management is to prevent degradation of ecological communities and sensitive species populations due to weed invasion in habitat parcels that arises as a result of ESCA RP remedial activities. The French broom monitoring and abatement in Future East Garrison MRA is not required by the Habitat Management Plan because the plants and seed bank pre-existed the ESCA RP project. Soil has not been disturbed in the vicinity of the French broom population as a result of ESCA RP work. While it is not required of ESCA RP it is recommended that French broom monitoring and abatement continue in this area until the seed bank is exhausted.

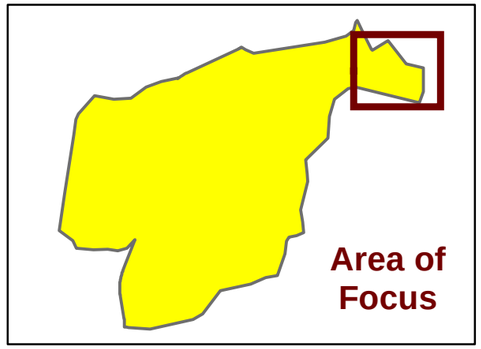
Field Documentation (logbook citations, maps, photos, etc.): Field notes in JTT Fort Ord#8 and DYM Fort Ord#1
Photos: See Attachment A
Maps: See Figure 1

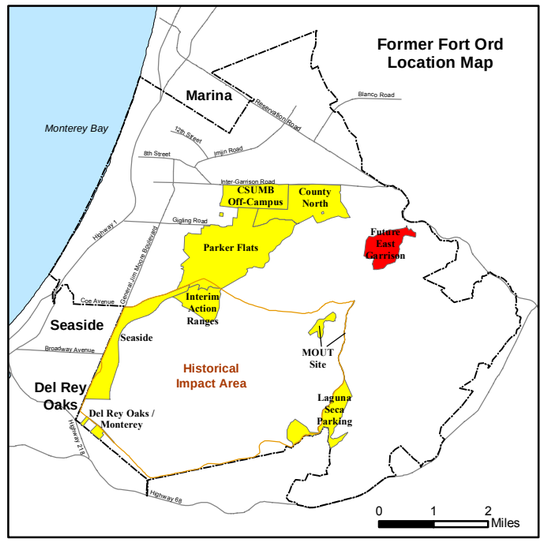
Reviewed by:



Legend

- Area of French Broom Removal
- Aquatic Features as of March 2010
- Munitions Response Area Boundary





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Future East Garrison MRA
2012 French Broom Monitoring and Abatement

FORA ESCA RP
Monterey County, California

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Figure 1

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Photo 1. Future East Garrison MRA-Aquatic Feature AF67: French broom weed abatement.

Photo 2. Future East Garrison MRA-Aquatic Feature AF-67: French broom weed abatement

Future East Garrison Weed Monitoring and Abatement Report

Date: April 11, 2012

Prepared by: Danielle Muir

MRA/Parcel and Specific Locations Monitored: Future East Garrison MRA / Vicinity of Aquatic Features AF66, AF67 and the concrete lined tank wash (AF10-1) in northeast Future East Garrison and southeast of the Ammunition Supply Point (ASP) in southeast Future East Garrison.

Monitoring Personnel: Joshua Tallis and Danielle Muir
Date Monitored: April 9, 2012

Monitoring Protocol/procedure: Personnel performed a visual inspection for French broom (*Genista monspessulana*) in the vicinity of Aquatic Features AF66, AF67, and near the concrete lined tank wash (AF10-1) in northeast Future East Garrison to be consistent with prior monitoring and abatement in these areas and to reduce weed populations in the habitat parcels. Visual inspection for Pampas grass (*Cortaderia selloana*) was done in southeast FEG where vegetation removal and munitions and explosives of concern (MEC) investigation has occurred.

Results:
Approximately 9 mature French broom (*Genista monspessulana*) plants were observed in the vicinity of Aquatic Features AF-66, AF-67 and the AF10-1. The mature plants were approximately 3-5 feet tall and flowering. The plants appeared to have evaded previous abatement efforts, however, were easily identified because they were flowering. Two pampas grass (*Cortaderia selloana*) plants were observed in the area southeast of the ASP where vegetation removal and MEC investigation has occurred. The plants were immature and had not yet flowered.

Abatement: All nine French broom plants observed were removed manually by hand pulling by the monitoring personnel. The plants were placed in a garbage bag and disposed of offsite to prevent additional seeds from accumulating in the area. The two pampas grass plants were manually removed and left on site where they could not survive or re-root.

Recommendations:
In northeast Future East Garrison, the number of French broom plants observed suggests that there are still a number of French broom seeds persistent in the seed bank. Future monitoring and abatement of French broom at this location would be valuable. The goal of weed management is to avoid degradation of ecological communities and especially sensitive species populations as a result of weed invasion in parcels not designated for development. The French broom monitoring occurred in an area where the ESCA RP team has not done MEC investigation or soil disturbance but is consistent with prior French broom abatement and good land stewardship.

Field Documentation: See field map D JTT 2012 04 09, field notes DYM 2012 04 09 and field notes JTT 2012 04 09

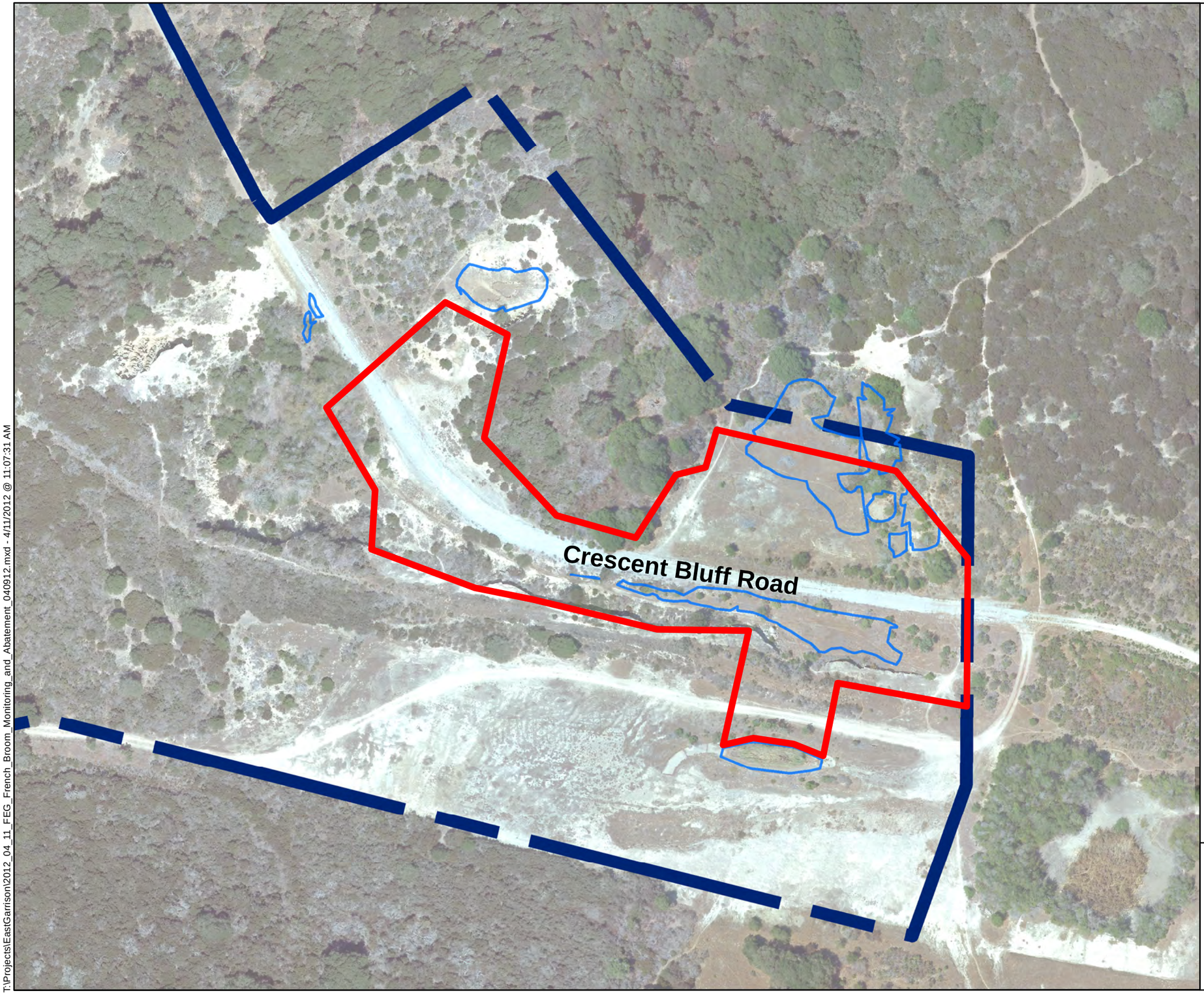
Photos: See Attachment A

Maps: See Figure 1 and 2

Reviewed by:

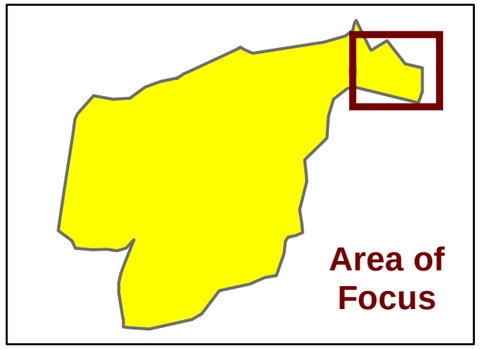
Joshua Tallis
ESCA RP Qualified Biologist

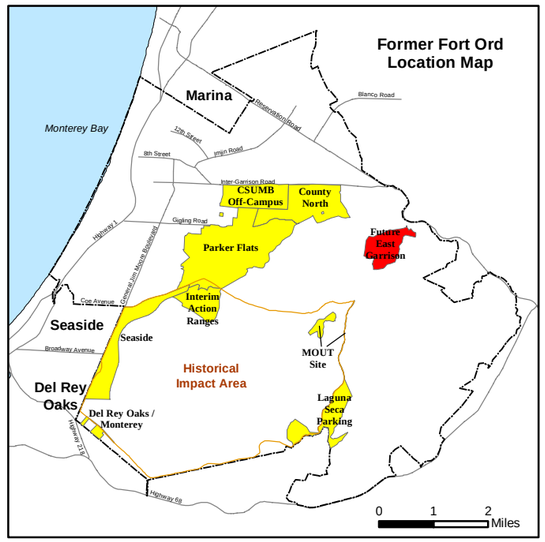
Two juvenile pampas grass plants abated in Future East Garrison MRA.



Legend

- Area of French Broom Removal
- Aquatic Features as of March 2010
- Munitions Response Area Boundary





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Future East Garrison MRA
2012 French Broom Monitoring and Abatement 9 April 2012

FORA ESCA RP
Monterey County, California

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Figure 1

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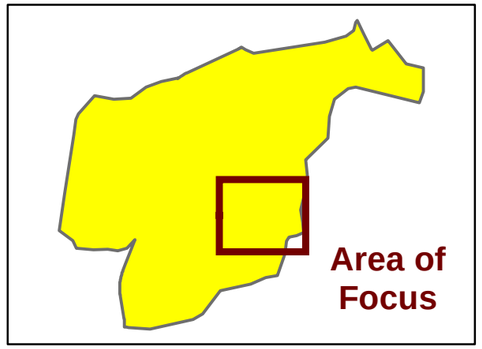
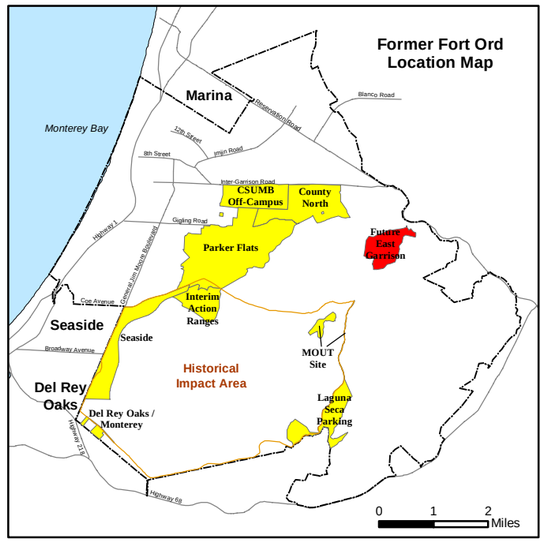
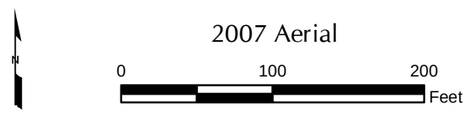
Legend

- Pampas Grass Abated 4/9/12
- Munitions Response Area Boundary







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Future East Garrison MRA 2012 Weed Monitoring and Abatement on 9 April 2012

FORA ESCA RP
Monterey County, California

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Figure 2

2012 WEED MONITORING PLAN – FORA/ESCA RP

Munitions Response Area: Interim Action Ranges MRA,

Parcel(s):

Date: 06 January 2012 draft

Area(s) to be monitored: Interim Action Ranges MRA,

Scope of monitoring effort:

1) Perform monitoring on January 4 of excavated area located in the R47 SCA in the Interim Action Ranges MRA, to determine if target weed populations are evident and reproductive.

2) Perform monitoring on January 4 of mag-and-dig work located in grid cells C2A8G7 and C2A8C7 in the R44 SCA North area in the Interim Action Ranges MRA, to determine if target weed populations are evident and reproductive.

ESCA RP Weed Monitoring Report

Date: January 6, 2012

Prepared by: Carrie Hofer

MRA/Parcel and Specific Locations Monitored: IAR MRA Development Parcel, Soil Stockpiles.

Monitoring Personnel: C. Hofer

Date Monitored: November 28, 2011

Purpose: Soil stockpiles from excavation activities in the Interim Action Ranges MRA habitat parcels were placed in the development parcel (see Figure 1). Weeds that grow on the stockpiles (particularly topsoil containing seed bank) have the potential to recruit across the Natural Resource Management Area boundary ("borderland boundary" or "blue line"). The purpose of this monitoring effort was to determine if weeds had grown on the stockpiles and if they could recruit into the habitat parcels.

Monitoring Protocol/procedure: C. Hofer inspected each soil stockpile in the IAR MRA Development Parcel looking for signs of weed and other plant growth. The primary stockpiles of concern are those noted as Topsoil in field notes and maps. Monitoring was conducted on foot under the escort of Weston UXO support.

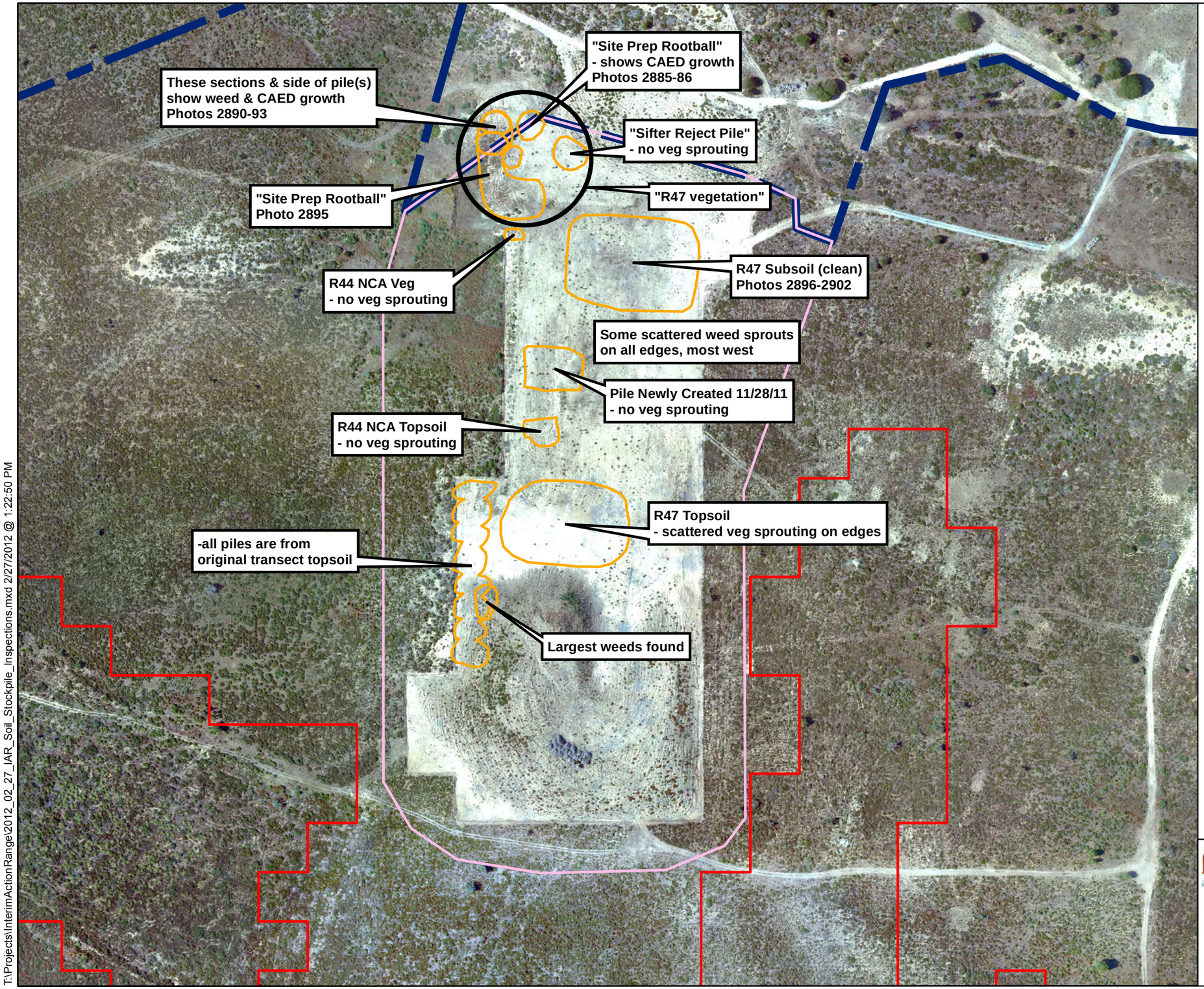
Results: No individuals of the target weed species (ice plant, French broom, pampas grass) were observed on the topsoil piles during the monitoring effort. As-yet unidentified minor growth of a variety of species was noted primarily occurring along the base perimeter of a number of stockpiles, both topsoil and non-topsoil.

Recommendations: None indicated by J. Tallis at the time of assessment. Further identification of plant growth based on photographs may be undertaken in the future.

Field Documentation: See Photograph Numbers 2885 to 2913, and respective field note book scans for respective assessment date.

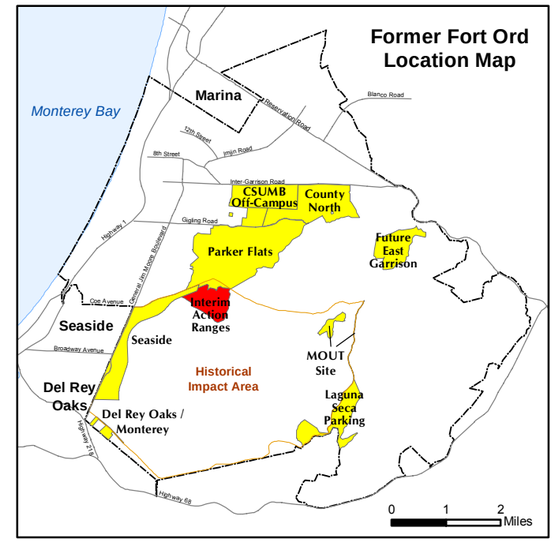
Reviewed by:

Phillip A. Lebednik, Ph.D.
ESCA RP Senior Qualified Biologist
1/6/12



Legend

- Soil Stockpile Inspection Areas
- SCA and NCA Boundaries
- IAR Development Parcel
- Munitions Response Area



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Interim Action Ranges MRA
2011 Weed Monitoring Report
Soil Stockpile Location and Observations
Novermber 28, 2011

FORA ESCA RP
Monterey County, California

Figure 1

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ESCA RP Weed Monitoring Plan

Date: 9 April 2012

Prepared by: Danielle Muir and Joshua Tallis

MRA/Parcel and Specific Locations Monitored: Seaside Munitions Response Area (MRA), Blue Line Road

Monitoring Personnel: Joshua Tallis and Danielle Muir

Previous Monitoring Efforts in Seaside MRA:

23JUN11 Joshua Tallis (JTT) and Carrie Hofer (CEH) monitor ice plant piles 200 feet SE of the NE Seaside gate.
21DEC10 Phil Lebednik (PAL) and JTT survey for weeds in Seaside MRA. Pre-existing was ice plant abundant but no visible pampas grass or French broom. Area with soil disturbance due to Munitions and Explosives of Concern (MEC) investigation and remediation is greater than 100 feet from Blue Line Road.
22APR10 PAL and JTT observe ice plant in the east end of Seaside MRA. There was a crew removing ice plant. PAL recommends removal along Blue Line Road.

Monitoring:

The ESCA RP is responsible for monitoring and controlling French broom (*Genista monspessulana*), ice plant (*Carpobrotus edulis*) and pampas grass (*Cortaderia selloana*) infestations that occur in areas of surface soil disturbances that are a consequence of activities related to munitions and explosives of concern (MEC) investigation and remediation activities by ESCA RP personnel in the ESCA parcels. The main goal of weed management is to control invasive weed populations in habitat parcels, adjacent to habitat areas, and along the boundary-land interface to minimize degradation of habitat quality and/or sensitive plant populations. Additionally, monitoring, and where necessary abating, invasive weed populations in development parcels will help to eliminate or minimize dispersal across the blue line into the adjacent Natural Resource Mitigation Area..

Weed monitoring will be done by visual inspection along the blue line road in the Seaside MRA. Consistent with previous years monitoring efforts, ice plant pampas grass and French broom will be monitored.

Field Documentation (logbook citations, maps, photos, etc.): Weed locations will be documented using field notes and field map notes, photos, and where appropriate GPS points/polygons.

Reviewed by: