LIVE OAK ASSOCIATES, INC.

an Ecological Consulting Firm

EAST GARRISON

CTS INTERIM MITIGATION MONITORING PLAN
MONTEREY COUNTY, CALIFORNIA

Prepared by

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1 INTRODUCTION

The Applicant, UCP East Garrison, LLC and any subsidiaries and affiliates or assignees, intends to construct up to 1,470 residences to be built on 244 gross acres (125 net acres), in unincorporated Monterey County, California. The site is approximately 2 miles east of the City of Marina and 5.5 miles southwest of the City of Salinas and is adjacent to the former Fort Ord (FFO) in an area known as East Garrison (Figure 1). The construction and operation of the Project may result in the incidental take of species listed as threatened or endangered under the Endangered Species Act (ESA) and the California Endangered Species Act (CESA).

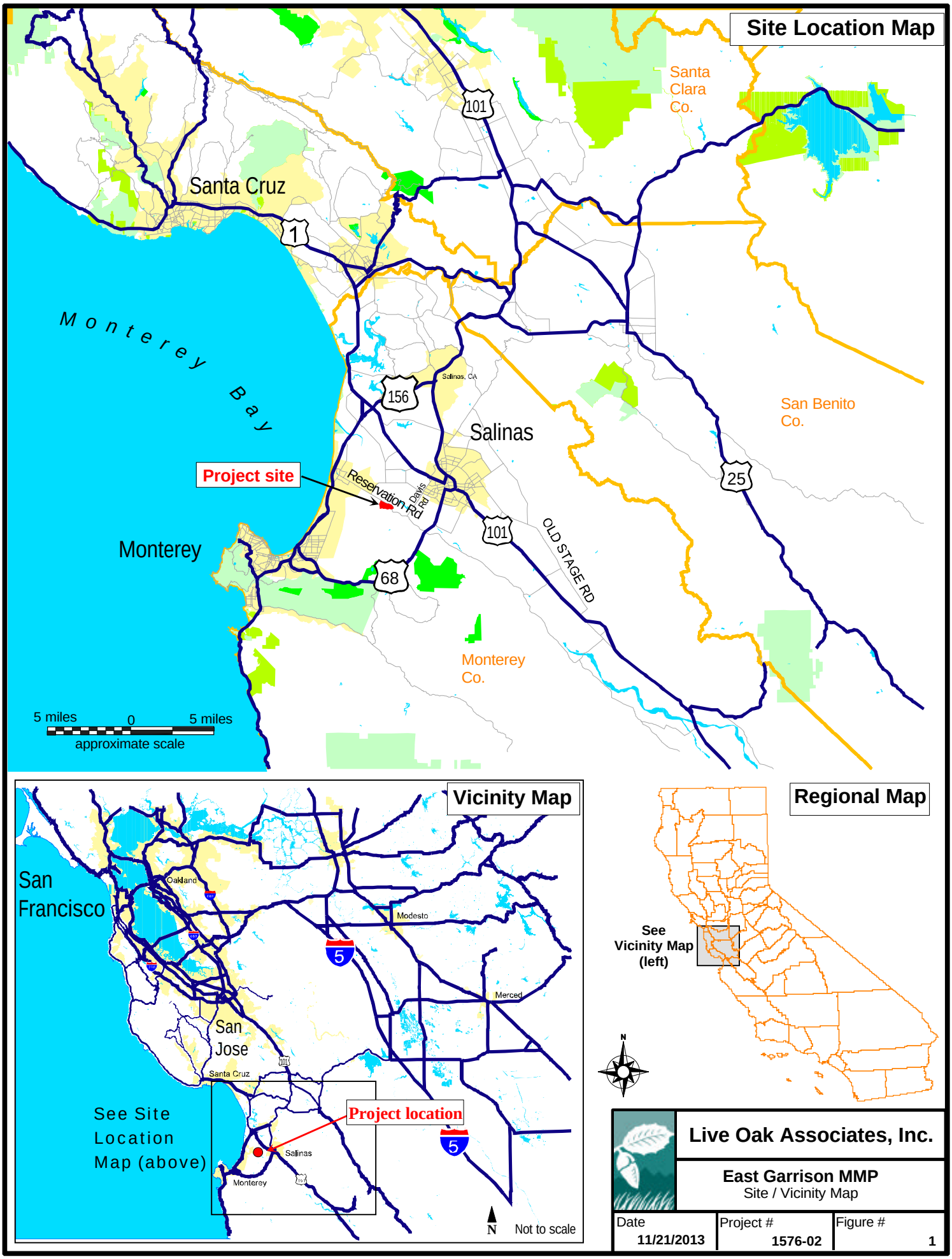
Live Oak Associates, Inc. (LOA) has prepared the following CTS interim mitigation monitoring plan (MMP) for a 134-acre portion of Parker Flats Reserve proposed as mitigation land, hereafter East Garrison Mitigation Lands, to compensate for impacts to the California tiger salamander (*Ambystoma californiense*) habitat on the East Garrison Specific Plan project site, including a history of conservation actions to date on Parker Flats Reserve.

This plan accounts for up to five years of interim management and monitoring of the East Garrison Mitigation Lands. In order to make this MMP both consistent and seamless with the Draft HCP in preparation, UCP East Garrison, LLC communicated with both the County of Monterey and the preparers of the Draft HCP (Denise Duffy & Associates, Inc.). Therefore, proposed management and monitoring actions have been designed to be consistent and seamless with the Draft HCP.

1.1 HISTORY OF PARKER FLATS RESERVE, EAST GARRISON MITIGATION LANDS, AND CONSERVATION ACTIONS

Much of the former Fort Ord lands have been cleared of ordnance and transferred to various agencies. The mitigation lands for the East Garrison Specific Plan project includes a subset of approximately 134 acres of the northern parcel of Parker Flats Habitat Management Area (otherwise referenced as Parker Flats Reserve) and is referred to as East Garrison Mitigation Lands. Parker Flats Habitat Management Area and the East Garrison Mitigation Lands are former Fort Ord lands that were designated as mitigation land under the Fort Ord Habitat

Conservation Plan; the East Garrison Mitigation Lands portion are proposed as mitigation lands for the East Garrison Specific Plan project site as shown in



Live Oak Associates, Inc.

East Garrison MMP
Site / Vicinity Map

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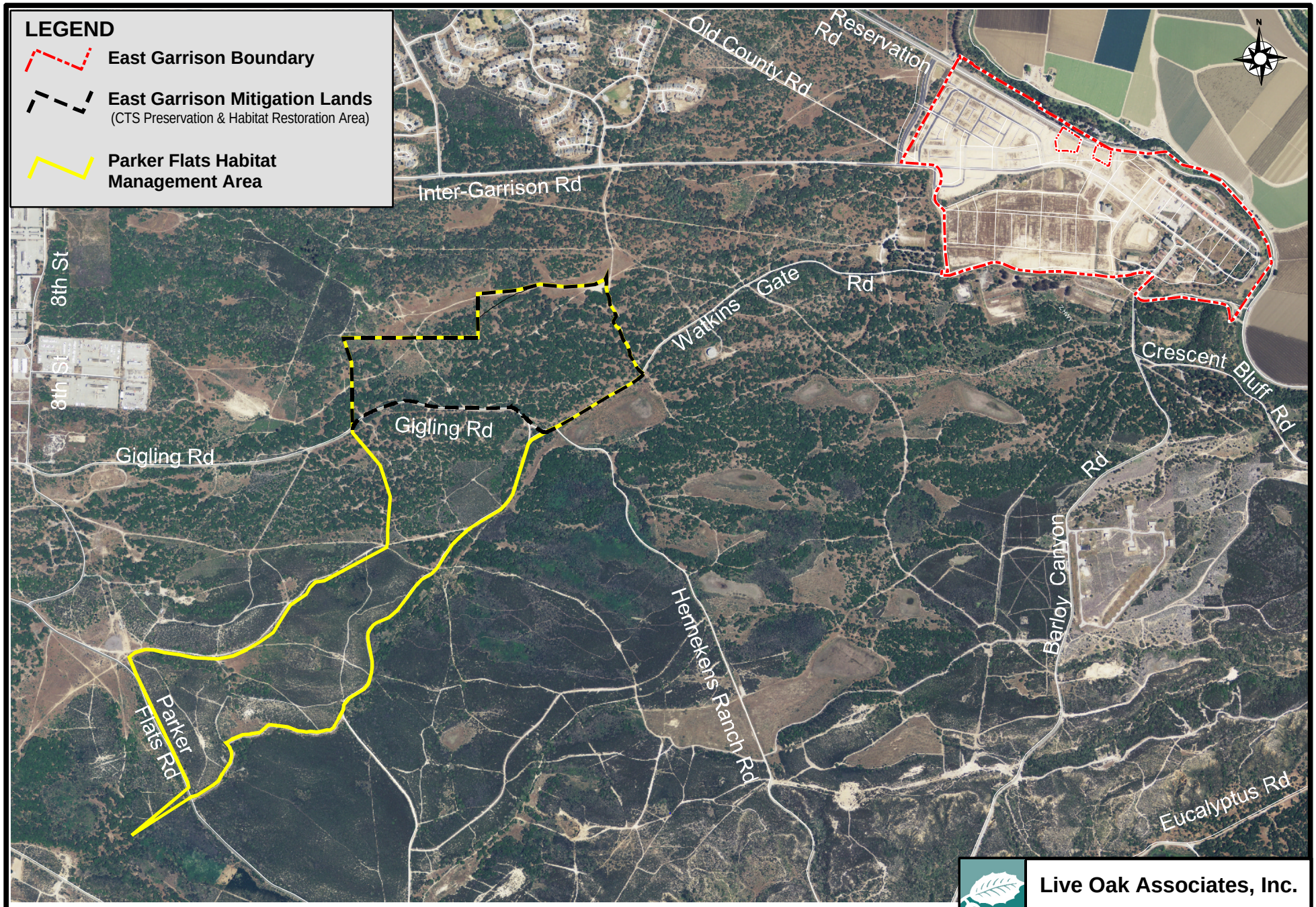
Figure 2. The Army, County of Monterey, and FORA have been implementing habitat mitigation and preservation measures on former Fort Ord under a Habitat Management Plan since 1997,and these measures will continue to be implemented until the Fort Ord HCP is adopted. In the meantime, this MMP is designed to fill the gap between the HMP and the HCP and provide for the implementation of avoidance and minimization measures on the East Garrison Mitigation Lands portion of the Parker Flats Habitat Management Area as further discussed below.

A number of documents pertaining to Parker Flats Reserve and former Fort Ord were consulted to prepare an appropriate CTS interim mitigation monitoring plan for the preservation of the East Garrison Mitigation Lands. In order to make this MMP consistent with the Draft HCP in preparation, UCP East Garrison, LLC communicated with both the County of Monterey and the preparers of the Draft HCP (Denise Duffy & Associates, Inc.). Therefore, proposed management and monitoring actions have been designed to be consistent and seamless with the Draft HCP. The following describes the avoidance and mitigation measures and other applicable restrictions set forth in the documents applicable to the East Garrison Mitigation Lands: USFWS Biological Opinion 2005, Deed Restriction 2012, Fort Ord Base Reuse Plan 1997, Installation-wide Multispecies Habitat Management Plan 1997, Assessment East Garrison-Parker Flats Land Use Modifications; Fort Ord, California 2002, Biological Evaluation of Army Actions that May Affect California Tiger Salamander and Contra Costa Goldfields Critical Habitat; Former Fort Ord, Monterey County, California 2004, and East Garrison Subsequent EIR. These documents primarily discuss "Parker Flats" as mitigation area within Fort Ord. A portion of Parker Flats Reserve has been designated as mitigation land for the Fort Ord HCP, and East Garrison Mitigation Lands are sited within that designated land. Consequently, discussions pertaining to "Parker Flats" also pertain to East Garrison Mitigation Lands, as these lands are a subset of Parker Flats Reserve.

1.1.1 Biological Opinion 2005

According to the Biological Opinion (BO) issued by the USFWS (1-8-04-F-25R; 2005), Parker Flats Reserve is in the "pre-disposal actions" category (as opposed to being in the "disposal and reuse actions" category). This category includes actions such as remedial actions necessary to prepare lands for property transfer. The County recorded a deed restriction on May 24, 2012

declaring the Owner to be Fort Ord Reuse Authority (FORA). However, the status of active munitions



Aerial photo courtesy of USDA-FSA Aerial Photography Field Office 2012

1 mile 0 1 mile

approximate scale

Live Oak Associates, Inc.

East Garrison MMP

CTS Preservation & Habitat Restoration Area

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clean-up on the East Garrison Mitigation Lands property is unknown, as signs on the edges of the property warn of the possibility of explosives past the point of the sign. Therefore, for purposes of this MMP, it is assumed that Parker Flats Reserve (and East Garrison Mitigation Lands) is currently in the "disposal and reuse actions" category with unknown status of munitions clean-up. On page 7 of the BO, the USFWS outline conservation measures for munitions response actions that the Army proposed. This MMP assumes that the Army is currently following these measures. The BO also outlines wetland restoration plan and mitigations (page 8), proposed conservation measures for contaminated soil remediation (page 11), proposed conservation measures for weed and erosion control (page 15), and proposed conservation measures for Parker Flats Habitat Reserve Interim Use (of which the East Garrison Mitigation Lands are a subset) (pages 16-17). The conservation measures for Parker Flats Habitat Reserve Interim Use appear to be limited to maintenance of the fuel breaks and access roads; these maintenance activities are limited to the summer months to avoid impacts to CTS. Maintenance may also occur when necessary to support a prescribed burn or to contain a potential wildfire to Army property. The BO states that all recipients of parcels from the Army have signed the HMP (see Section 1.1.3 below). Page 19 of the BO (USFWS 2005) states that this type of transfer ensures that "entities acquiring parcels designated as Habitat Reserves, Habitat Corridors, or Development with Reserve Areas or Restrictions manage the land in a manner consistent with the HMP". Page 42 of the BO (USFWS 2005) also describes caretaker actions for interim uses of Parker Flats Habitat Reserve, which includes prescribed burning with no pre-vegetation treatments applied and conducted prior to the rainy season, and road and fuel break maintenance limited to summer months. Other portions of Parker Flats Reserve appears to be in the category of "Borderlands", and the BO (page 49, USFWS 2005) identifies HMP requirements of Borderlands including "barriers to unauthorized vehicles, measures to prevent erosion, measures to prevent spread of invasive nonnative plant species, and fuel break construction on the development side of the boundary".

1.1.2 Deed Restriction 2012

A deed restriction was completed on May 24, 2012 declaring the Owner to be FORA, thereby documenting that the conveyance of Parker Flats Reserve (including the area currently defined as

East Garrison Mitigation Lands) from the Army to Fort Ord Reuse Authority has been completed. This deed restriction is governed by the Fort Ord Base Reuse Plan (FORA 2012).

1.1.3 Fort Ord Base Reuse Plan 1997 and Installation-wide Multispecies Habitat Management Plan 1997

The Fort Ord Base Reuse Plan (Reuse Plan; FORA 1997) identifies the Installation-wide Multispecies Habitat Management Plan (HMP; USACE 1997) as providing guidelines for former Fort Ord land; this Plan was developed with input from federal, state, local, and private agencies and organizations. The Reuse Plan (page 1-14; FORA 1997) states that "All recipients of the former Fort Ord lands will be required to abide by the resource conservation and habitat management guidelines and procedures specified in the HMP." Under the 1997 HMP, Parker Flats was proposed to be managed according to guidelines in the HMP. According to Figure 4-1 (dated 2006) on page 4-2 of the HMP (USACE 1997), Parker Flats was not designated as a habitat reserve under the 1997 HMP, and was designated as an area for development. Subsequently, the Army and FORA approved a land swap agreement as further discussed below which anticipated that Parker Flats would be preserved as a habitat reserve in exchange for the development of East Garrison. Preservation of the East Garrison Mitigation Lands portion of Parker Flats Reserve under this MMP will assure that this area will not be developed and will continue to provide habitat and retain the value of the surrounding contiguous habitat.

Figure 4-1 of the HMP, identifies 5 parcels that comprise a portion of Parker Flats Reserve (E19a.1, E19a.2, E21b.1, E21b.2, and E21b.3). Although species-specific surveys were not conducted for CTS for the HMP, no CTS were observed incidentally within these parcels. Although CTS were observed on adjacent parcels (F1.2, F1.4, and F1.9) and the adjacent Habitat Corridor (parcels L20.2.1 and L20.2.2), the land between East Garrison and Parker Flats Reserve is identified as supporting habitat for CTS (page 4-17and Appendix B; USACE 1997). More recently, CDFW requested that the HCP Team (i.e., Denise Duffy & Associates, Inc.) estimate the relative value of the upland habitat on the potential conservation lands, including Parker Flat, relying on principles derived from Trenham and Shaffer (2005). The relative value of upland habitat is inversely proportional with distance from a breeding pond. A more recent study (Searcy and Shaffer 2011) has confirmed this inverse relationship with distance from a breeding pond, but its findings suggests a shallower shape of the curve, with more CTS estivating further

from a breeding pond then was detected by Trenham and Shaffer (2005). Subsequently, Denise Duffy & Associates, Inc., based on direction from CDFW, generated a map with four Zones. These Zones relied not only on the shallower curve of the Searcy and Shaffer (2011) work, but on those from Trenham and Shaffer (2005), and effectively provided a more conservative estimate as to the habitat value of conservation lands for CTS. In other words, this approach reduces the potential of overvalue conservation lands. Based on the zonal estimates from Denise Duffy & Associates, Inc., the entire East Garrison Mitigation Lands fall within Zones 1 through 4 for upland habitat for CTS. A total of 104 acres of upland habitat are within 1 kilometer of breeding ponds just south of the East Garrison Mitigation Lands, including 49 acres in Zone 1 (within 380 meters of a breeding pond), 51.75 acres in Zone 2 (between 380 and 630 meters of a breeding pond), and 30.76 acres in Zone 3 (between 630 meters and 1 kilometer of a breeding pond). An additional 0.46 acres of the East Garrison Mitigation Lands are in Zone 4 (between 1 and 2.2 kilometers of a breeding pond) (Denise Duffy & Associates, Inc. pers. comm. 2013).

Pages 4-56 and 4-57 of the HMP (USACE 1997) identify parcels in the Borderland Development Areas Along NRMA Interface, some of which are within Parker Flats Reserve (parcels E19a.1, E19a.2, E21b.1, E21b.2, and E21b.3); the remaining parcels of Parker Flats Reserve are not identified in this document, although they are within the plan area. The identified parcels do not have defined resource conservation requirements because the 1997 HMP identified the parcels as future development areas. The 1997 HMP however, identified FORA as the responsible party for implementing management of the parcels including "implementing the firebreak/vehicle barrier, invasive exotic plant control, and erosion control requirements…" in the interim before development.

For the East Garrison area (parcels E11b.1-E11b.12; collectively referred to as parcel E11b) including the Project site (E-1b.1, E11b.8, and E11b.11), page 4-50 of the HMP (USACE 1997) states:

> "The habitat reserve areas in parcel E11b will be retained as natural habitat. Management will include special-status species monitoring, development and maintenance of fire breaks, controlled burning as appropriate, vehicle access controls, erosion control, and regular patrols to assure that passive public use

> and/or unauthorized actions are not adversely affecting natural habitat. A management plan will be developed to execute this strategy. The management plan will be implemented by Monterey County or MPC [Monterey Peninsula College], and either may contract with an appropriate and qualified CRMP agency or other appropriate qualified agency, as approved the USFWS, to manage natural resources in parcel E11b.
>
> If all or part of the 200-acre development area is transferred to an entity other than Monterey County, the recipient shall fund its pro-rated share of habitat management costs in parcel E11b to Monterey County or another designated habitat management agency.
>
> Monterey County, or the designated habitat management agency, will also coordinate with California Department of Forestry and DFG to determine suitable habitat management practices to retain and potentially enhance habitat values within the oak woodlands in parcel E11b."

The HMP also designates Monterey County or MPC as the responsible parties for this parcel.

The HMP (page 4-58; USACE 1997) states that the "BLM is using the CRMP [Coordinated Resource Management and Planning] process to develop management plans and prescriptions for BLM managed lands at former Fort Ord. The BLM has invited other public entities having natural resource management or habitat conservation responsibilities applicable to the former Fort Ord area to participate in this cooperative planning effort …BLM and UC/NRS are willing to consider managing species and habitats on other public and private lands on a fee bases for those entities required to conserve habitat under this HMP."

1.1.4 Assessment East Garrison-Parker Flats Land Use Modifications Fort Ord, California 2002

In May of 2002, Zander Associates evaluated the impacts of the Land-Use Modifications proposed by FORA and Monterey County for East Garrison and Parker Flats Reserve. The modification increased the development area at East Garrison by 241 acres and adjusted the boundaries of Parker Flats Reserve resulting in the designation of approximately 380 acres as

habitat reserve land, including the East Garrison Mitigation Lands, and approximately 70 additional acres within Monterey Horse Park as habitat reserve land. Together, the changes resulted in a total of approximately 447.1 acres (Table 3 of Zander Associates 2002) of habitat reserve on Parker Flats Reserve land in addition to the habitat reserve acres already designated in the HMP.

Zander Associates (2002) noted in its report that recent surveys (more recent than the 1997 HMP) identified CTS present in the large vernal pool to the south of the project site[1]. In order to address the potential impacts of the proposed land use changes, Zander Associates (2002) proposed that FORA and the County conduct prescribed burning and monitoring of chaparral habitats in the short term (3-5 years) in areas that were mechanically disturbed. Although the status of the implementation of this management measure is unknown, prescribed burning of chaparral habitats is included as a possible approach to management on the East Garrison Mitigation Lands in this MMP. The Zander Associates report also recommended construction of a low wall or other suitable barrier to prevent migration of CTS between breeding areas and developed areas; construction of this barrier wall would occur on developed parcel property and not on mitigation/habitat management lands.

1.1.5 Biological Evaluation of Army Actions that May Affect California Tiger Salamander and Contra Costa Goldfields Critical Habitat Former Fort Ord, Monterey County, California 2004

The Parker Flats Habitat Reserve supports approximately 104 acres (of a total of 147 acres) of CTS upland habitat based on a 1-kilometer dispersal distance (Directorate of Environmental and Natural Resources Management Environmental Management Division, Presidio of Monterey, California (DENRM) 2004). Chaparral portions of Parker Flats Habitat Reserve have been managed through prescribed burning (DENRM 2004).

1.1.6 East Garrison Subsequent EIR 2006

The East Garrison Specific Plan Subsequent EIR (2006) covered the land use modifications to the Habitat Management Plan associated with the land swap between East Garrison and Parker Flats Reserve. These changes were reflected in the East Garrison Specific Plan and the Vesting

[1] The 2002 Zander Associates report did not identify the entity responsible for the survey or the time frame in which the survey was conducted.

Tentative Map. Zander Associates prepared a biological assessment in May 2002 for the East Garrison and Parker Flats Reserve land swap and that information was included in the Michael Brandman Associates Subsequent EIR for the land swap and the associated modifications to the East Garrison Specific Plan. The Zander Biological Assessment noted that there was no suitable breeding habitat for CTS in the study area which included East Garrison and Parker Flats Reserve (see e.g., Biological Resources Assessment January 2004 at p. 9). Additionally, the SEIR stated that the project (East Garrison Specific Plan with the land swap) would not substantially reduce the amount of aestivation habitat available on the former Fort Ord for CTS as further discussed on page 4.7-28 of the SEIR. The SEIR stated that if CTS is listed as threatened, the Service likely will assume that CTS are present in the project area in the absence of protocol level survey. Monitoring and compliance with the HCP/IT were identified as mitigation measures in the SEIR (see e.g., 4.7-D-4 and 4.7-D-5). The SEIR also evaluated other environmental topics associates with the land swap and development of East Garrison and identified mitigation measures for new significant impacts and for those impacts that increased in their severity. Thus, the CEQA document covered the land swap.

History Overview

Monterey County currently owns Parker Flats Reserve, and it has been adopted into the reserve system and is currently referred to as Parker Flats Habitat Management Area. The East Garrison Mitigation Lands are a subset of the Parker Flats Habitat Management Area, and although Monterey County owns the East Garrison Mitigation Lands property, which will be incorporated into the reserve system under the Fort Ord HCP once it is implemented, UCP East Garrison, LLC will fund management and monitoring on the East Garrison Mitigation Lands in the interim. Once the Fort Ord HCP is adopted, management and monitoring of these lands will be managed by FORA or other organization with management responsibilities for the reserve areas, and will be consistent with other Habitat Reserves of former Fort Ord. In the interim, UCP East Garrison, LLC will manage and monitor the East Garrison Mitigation Lands in a manner consistent and seamless with the Draft HCP including barriers to unauthorized vehicles, measures to prevent erosion, measures to prevent spread of invasive nonnative plant species, and fuel break maintenance, and trash pick-up. In addition, the East Garrison Mitigation Lands shall be retained as natural habitat and management shall include monitoring for change in conservation value for

special status species and management actions may include controlled burning, however, as the reserve system does not plan fencing at this time, management including grazing will not be covered under this MMP; should the reserve system be fenced once the HCP has been implemented, grazing may become a suitable management option.

2 EXISTING CONDITIONS

2.1 PROPERTY DESCRIPTION

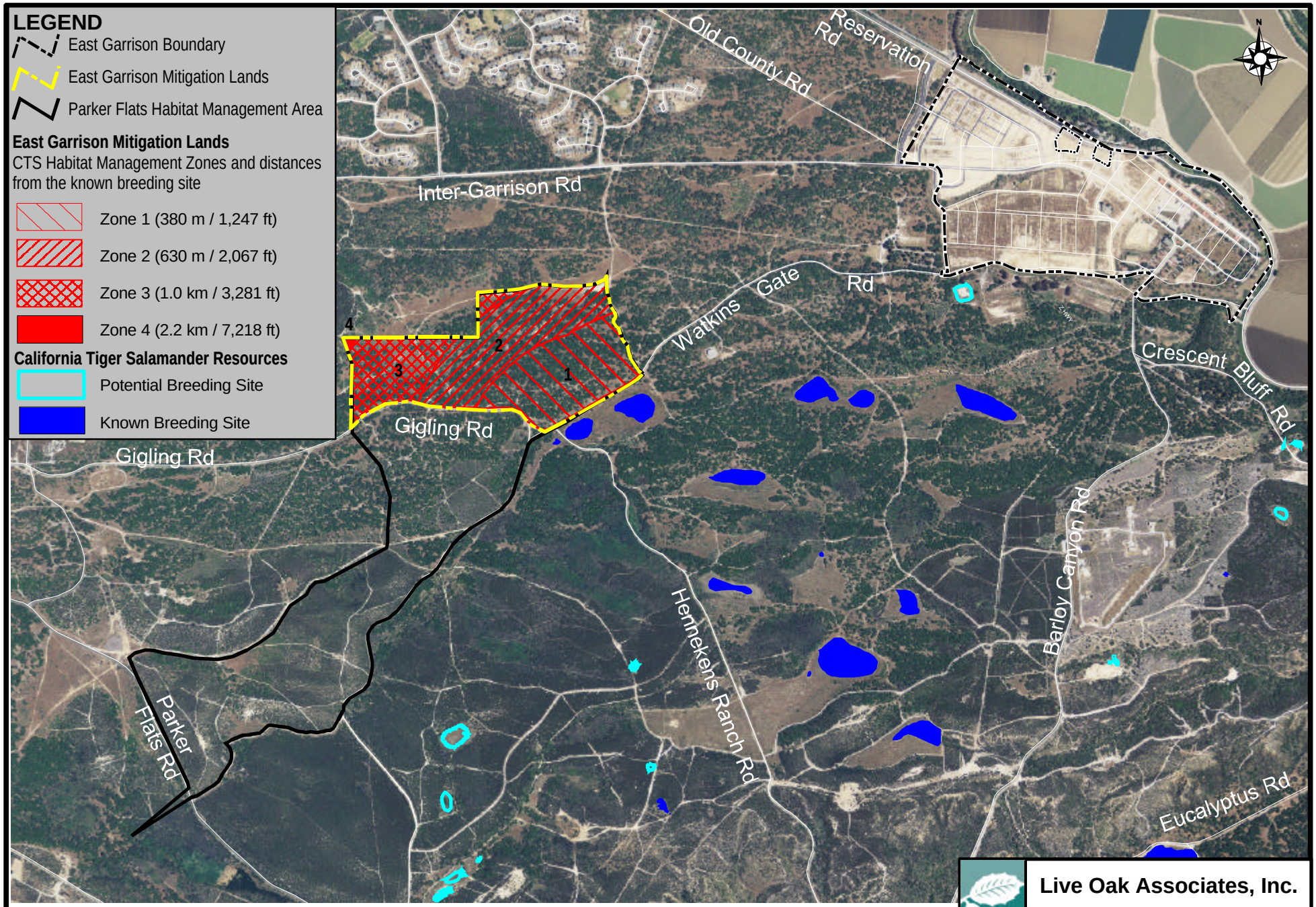
Parker Flats is located slightly south and to the west of the East Garrison Specific Plan project site, a portion of Parker Flats has been designated as the Parker Flats Habitat Management Area, a part of the Reserve System (Parker Flats Reserve), in the draft HCP (Figure 2). The mitigation lands for the East Garrison Specific Plan project includes a subset of approximately 134 acres of the northern parcel of Parker Flats Habitat Management Area and is referred to as East Garrison Mitigation Lands (northern section of parcel E19a.4), which supports three natural habitats: oak woodland, maritime chaparral, and grassland habitats (Monterey County, 2005, East Garrison Specific Plan FEIR), and will preserve upland habitat for CTS (Figure 3). Additionally, three federally and/or state listed plant species occur in the Parker Flats Reserve area including Monterey spineflower, sand gilia, and seaside bird's beak.

2.2 BIOTIC HABITATS/LAND USES OF THE EAST GARRISON MITIGATION LANDS

Four habitat types: oak woodland, maritime chaparral, grassland, and developed exist on the East Garrison Mitigation Lands, all of which the USFWS BO identifies as suitable upland habitat for CTS (2005). On November 27, 2012, LOA visited the boundaries of the East Garrison Mitigation Lands only, as ordnance signs were posted. The boundary roads were walked and the East Garrison Mitigation Lands surveyed from those roads. This survey was adequate enough to confirm that habitats previously reported in Figure 5 of an assessment by Zander Associates (2002) still existed in the same areas of the East Garrison Mitigation Lands, and that no major changes had occurred since the time of the 2002 report. The only notable change between the 2002 report and the 2012 site visit by LOA was the re-growth of much of the maritime chaparral that had previously been mechanically cleared.

2.2.1 Oak Woodland

The East Garrison Mitigation Lands support approximately 112.32 acres of the overall oak woodland habitat within the greater Parker Flats Habitat Management Area (Figure 4). This woodland is dominated by coast live oaks (*Quercus agrifolia*) with poison-oak



Aerial photo courtesy of USDA-FSA Aerial Photography Field Office 2012

1 mile 0 1 mile

approximate scale

Live Oak Associates, Inc.

East Garrison MMP
CTS Habitat

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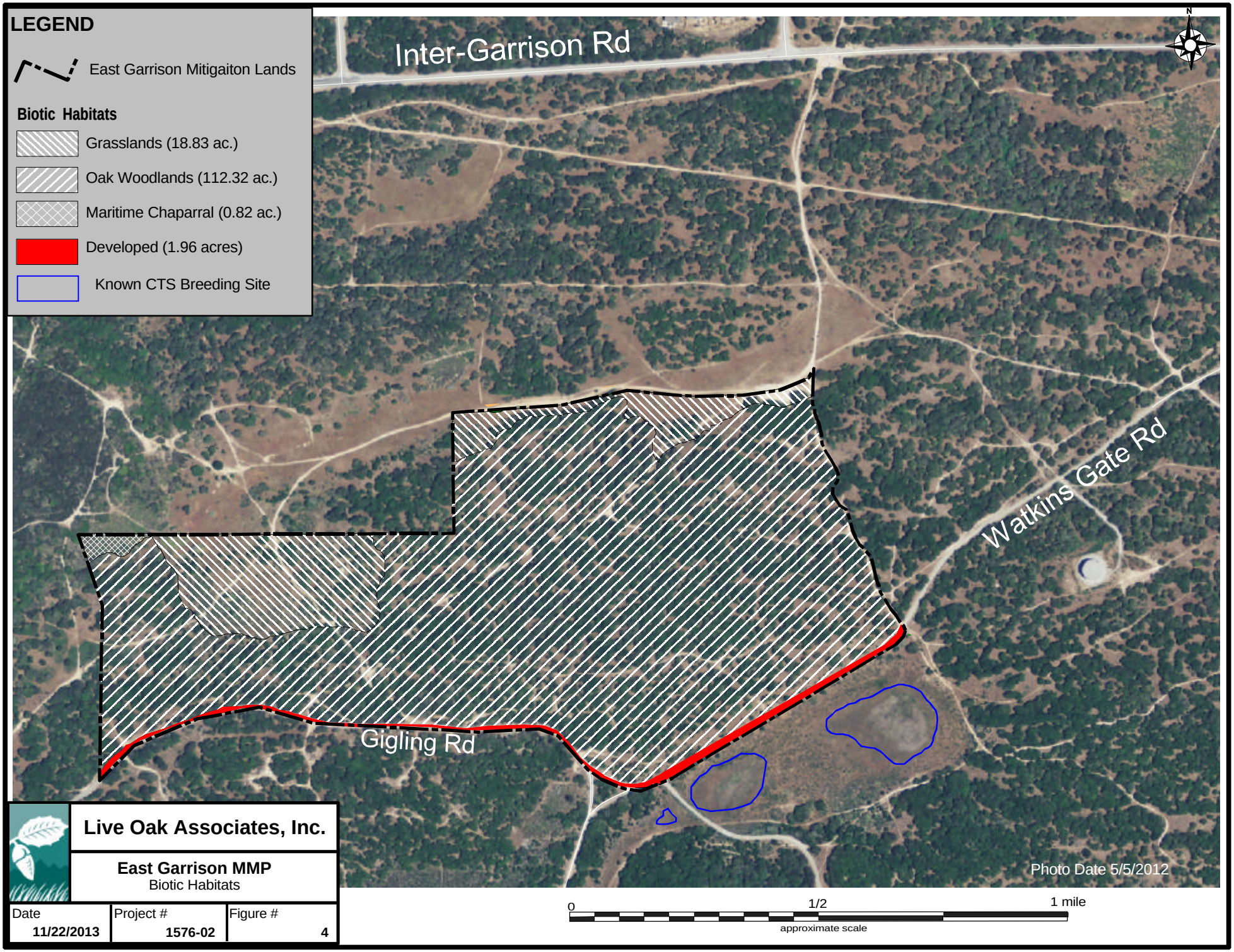
(*Toxicodendron diversilobum*) dominating the understory. Wildlife likely to occur in this habitat include the California tiger salamander (*Ambystoma californiense*), California newt (*Taricha torosa*), California slender salamander (*Batrachoseps attenuatus*), yellow-eyed ensatina (*Ensatina eschscholtzii*), arboreal salamander (*Aneides lugubris*), Pacific treefrog (*Hyla regalia*), western fence lizard (*Sceloporus occidentalis*), California kingsnake (*Lampropeltis getulus californiae*), Pacific gopher snake (*Pituophis catenifer catenifer*), terrestrial gartersnake (*Thamnophis elegans*), Northern Pacific rattlesnake (*Crotalus oreganus*), and an assortment of resident and migratory birds including the Cooper's hawk (*Accipiter cooperii*), red-tailed hawk (*Buteo jamaicensis*), California quail (*Callipepla californica*), great-horned owl (*Bubo virginianus*), barn owl (*Tyto alba*), Anna's hummingbird (*Calypte anna*), American crow (*Corvus brachyrhynchos*), western scrub jay (*Aphelocoma californica*), Stellar's jay (*Cyanocitta stelleri*), tree swallow (*Tachycineta bicolor*), oak titmouse (*Baeolophus inornatus*), lesser goldfinch (*Carduelis psaltria*), American robin (*Turdus migratorius*), as well as mammal species including the opossum (*Didelphis virginiana*), Botta's pocket gopher (*Thomomys bottae*), ornate shrew (*Sorex ornatus*), western grey squirrel (*Sciurus griseus*), woodrat (*Neotoma fuscipes*), raccoon (*Procyon lotor*), coyote (*Canis latrans*), bobcat (*Lynx rufus*), cougar (*Puma concolor*), and black-tailed deer (*Odocoileus hemionus columbianus*), to name a few.

2.2.2 Maritime Chaparral

The East Garrison Mitigation Lands support approximately 0.82 acres of the overall maritime chaparral habitat within the greater Parker Flats Habitat Management Area (Figure 4). The maritime chaparral was largely dominated by manzanita (*Arctostaphylos sp.*) or coyote brush (*Baccharis pilularis*) with poison-oak and ceanothus (*Ceanothus sp.*) mixed in. Most of the maritime chaparral in the greater Parker Flats Habitat Management Area was mechanically cleared before 2002, but since that time, the land has largely returned to chaparral based on the findings of the 2012 LOA survey. Species in the adjacent habitats are likely to occur in the maritime chaparral, with the addition of the alligator lizard (*Elgaria coerulea*) and brush rabbit (*Sylvilagus bachmani*).


LEGEND
East Garrison Mitigaiton Lands
Biotic Habitats
Grasslands (18.83 ac.)
Oak Woodlands (112.32 ac.)
Maritime Chaparral (0.82 ac.)
Developed (1.96 acres)
Known CTS Breeding Site
Inter-Garrison Rd
Watkins Gate Rd
Gigling Rd
N
Photo Date 5/5/2012
0
1/2
1 mile
approximate scale
Live Oak Associates, Inc.
East Garrison MMP
Biotic Habitats
Date
11/22/2013
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4

2.2.3 Grassland

The East Garrison Mitigation Lands support approximately 18.83 acres of the grassland habitat within the greater Parker Flats Habitat Management Area (Figure 4). The difference in acreage between 2002 and 2013 calculations is most likely due to the category to which land was assigned, including the addition of the Developed habitat category; additionally, as more than a decade passed between calculations, conditions may have changed on the ground. This is the smallest habitat in the greater Parker Flats Habitat Management Area, and consisted of both native and non-native grasses with come coyote brush mixed along the edges. Species in the adjacent habitats are likely to occur in the grassland habitats as well.

2.2.4 Developed

The East Garrison Mitigation Lands support approximately 1.96 acres of developed habitat (Figure 4). Areas classified as developed include pavement, existing structures, and highly disturbed areas. In general, these developed areas are small, and wildlife occurring adjacent to developed areas would be expected to occur within the developed habitat. In addition, any burrows under developed areas may serve as upland habitat for the California tiger salamander.

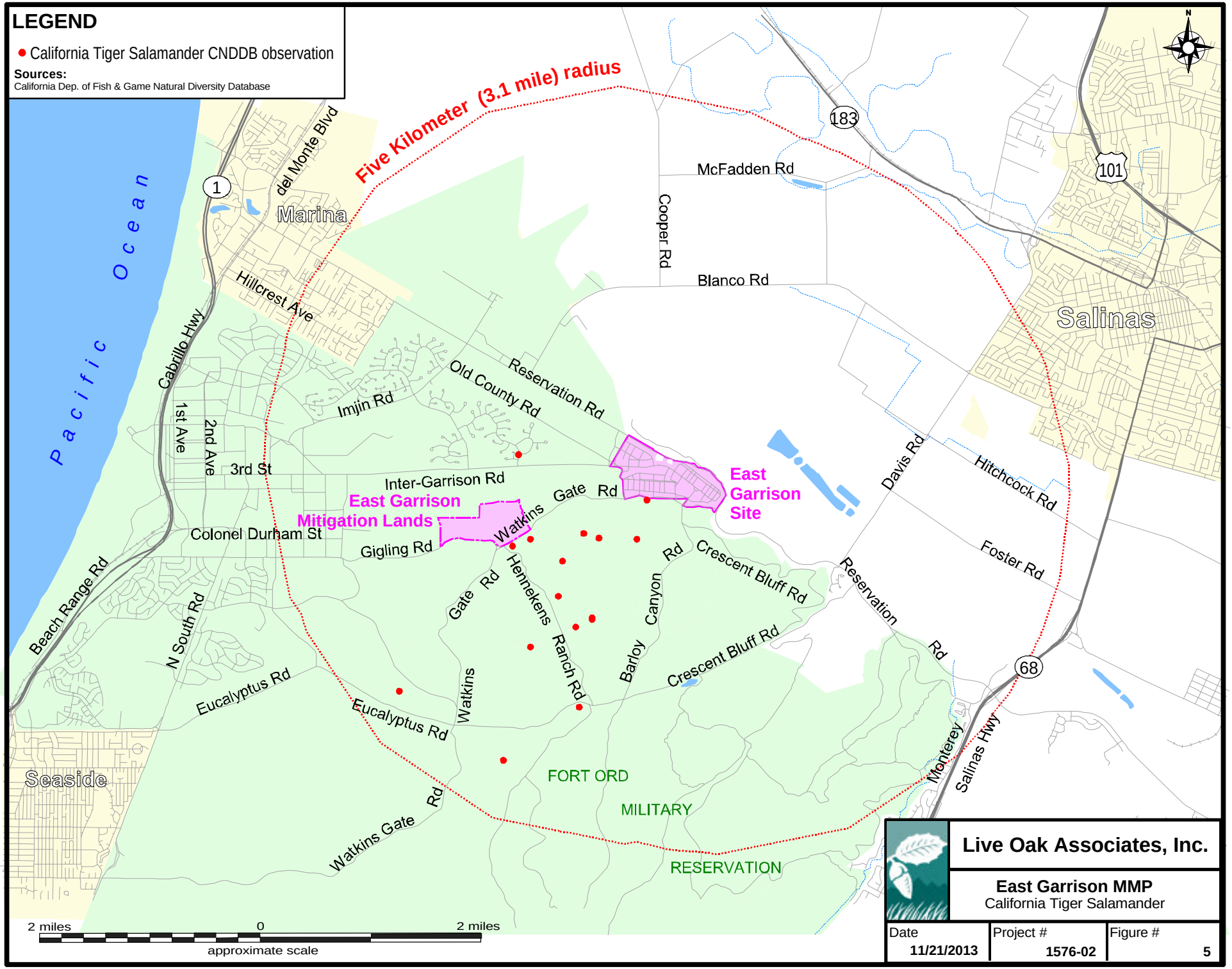
3 COVERED SPECIES

California Tiger Salamander (Ambystoma californiense)

Historical Local Distribution – Population centers for the Central California Distinct Population Segment identified by the USFWS include the Central Valley Region, Southern San Joaquin Region, East Bay Region, and Central Coast Region. Monterey County falls in Central Coast Region. The CNDDB has 15 records of the CTS within 5 km of the site (Figure 5) occurring primarily south and southeast of the site. Although there are no CNDDB records on Parker Flats Reserve or the East Garrison Mitigation Lands, they do exist adjacent to, just south of, the East Garrison Mitigation Lands. See Appendix A for CTS listing status and ecology.

Current Local Distribution – Eight CTS (one as a recapture) and one CTS hybrid were caught during a take-minimization monitoring program conducted by Zander Associates, in cooperation with Bryan M. Mori Biological Consulting Services, in the winter of 2005. The drift fences (salamander fence) with one-way ramps used for this study were left in place after the study was completed to prevent CTS from moving onto the site. On March 28, 2007, CTS were discovered breeding in an undisclosed location in an agricultural pond near the boundary of Former Fort Ord and Armstrong Ranch, northwest of Reservation Road (USFWS, 2007). All grading in Phases 1 and 2 was initiated in January 2007 and completed in early 2008 before CTS was listed under the California Endangered Species Act. Construction did not resume until 2011. In 2011, following the suggestion of LOA, the salamander fence with one-way ramps was extended so that the fencing along the entire southern border of the site became contiguous, as original the fencing from the 2005 study had large gaps at the location of trails and roads, and did not suffice as a contiguous barrier to CTS movement. In addition, the upper and lower detention basins were surrounded by silt fencing to prevent access to the site should a CTS make its way into the basin, and to prevent any CTS that may have been on the site from breeding in the detention basins.

One CTS was observed within a storm drain on the East Garrison Project site on April 3, 2012 by one of the construction personnel while they were inspecting the storm drain. As a BO was issued for this project, the USFWS was contacted and a USFWS representative and LOA herpetologist Dr. Mark Jennings attempted to relocate the CTS off-site, however, as it had rained since the CTS was located, the blocked off storm drain in which the CTS was found was


LEGEND
California Tiger Salamander CNDDB observation
Sources:
California Dep. of Fish & Game Natural Diversity Database
Five Kilometer (3.1 mile) radius
Pacific Ocean
Marina
Seaside
Salinas
del Monte Blvd
Hillcrest Ave
Cabrillo Hwy
1st Ave
2nd Ave
3rd St
Imjin Rd
Old County Rd
Reservation Rd
Inter-Garrison Rd
Colonel Durham St
Gigling Rd
Beach Range Rd
N South Rd
Eucalyptus Rd
Watkins Gate Rd
Watkins Gate Rd
Hennekens Ranch Rd
Barloy Canyon Rd
Crescent Bluff Rd
Crescent Bluff Rd
Reservation Rd
Cooper Rd
McFadden Rd
Blanco Rd
Davis Rd
Hitchcock Rd
Foster Rd
Monterey Salinas Hwy
East Garrison Mitigation Lands
East Garrison Site
FORT ORD
MILITARY
RESERVATION
183
101
1
68
2 miles
0
2 miles
approximate scale
Live Oak Associates, Inc.
East Garrison MMP
California Tiger Salamander
Date 11/21/2013
Project # 1576-02
Figure # 5

compromised, and the CTS could not be located. It is not possible to infer with any certainty if the individual CTS moved onto the site from adjacent areas through gap in the fence or if the CTS had remained onsite after the trapping efforts in 2005. Therefore, because one possibility is that this individual CTS estivated in the natural area between Phases I and II just north of the upper basin, additional silt fencing was erected around that natural area to prevent future access to the site in case this was the point of access. A second CTS was observed on the East Garrison Project site within a fresh bore hole in Phase III on February 5, 2013 by LOA ecologists during a nesting bird survey. It is assumed that the pond just off-site served as the breeding pond for both individuals, as it is the closest known breeding pond to the East Garrison Project site. Chad Mitcham with the USFWS, LOA herpetologist Dr. Jennings, and LOA ecologist Katrina Krakow relocated the second CTS to the off-site pond on February 6, 2013.

Status on Conservation Lands – The Army conducted surveys of the former Fort Ord area, in which they reported observations of CTS, but were not specific about their locations (USFWS 2005). Table B-1 of the HMP (1997) shows presence of CTS on each parcel on which it was encountered, however, CTS was not a targeted species in this effort, and no CTS were incidentally observed within parcels of Parker Flats Reserve, including the East Garrison Mitigation Lands. Through the Draft HCP process, Denise Duffy & Associates, Inc. has not identified breeding ponds on the East Garrison Mitigation Lands, or the greater Parker Flats Habitat Management Area, however, per the request of CDFW, they calculated the amount of upland habitat for CTS in the area covered by the Draft HCP, which includes the East Garrison Mitigation Lands, based on a degrading function of distance from known breeding ponds derived from research by Trenham and Shaffer (2005). This calculation resulted in the entire East Garrison Mitigation Lands being within Zones 1 through 4 for upland habitat for CTS. A total of 131.5 acres of upland habitat are within 1 kilometer of breeding ponds just south of the East Garrison Mitigation Lands, including 49 acres in Zone 1 (within 380 meters of a breeding pond), 51.75 acres in Zone 2 (between 380 and 630 meters of a breeding pond), and 30.76 acres in Zone 3 (between 630 meters and 1 kilometer of a breeding pond). An additional 0.46 acres of the East Garrison Mitigation Lands are in Zone 4 (between 1 and 2.2 kilometers of a breeding pond) (Denise Duffy & Associates, Inc. pers. comm.). Therefore, as these lands are defined as suitable upland habitat for two known CTS breeding ponds in the Draft HCP, the East Garrison

Mitigation Lands offer suitable in-kind (upland habitat) mitigation habitat for the CTS. For legal status and species ecology, see Appendix A.

4 CONSERVATION STRATEGY FOR THE EAST GARRISON MITIGATION LANDS CONSERVATION EASEMENT

The County and FORA have designated Parker Flats Habitat Management Area as conservation land for the Fort Ord HCP pursuant to the Land Swap Agreement, the 2006 East Garrison Project Specific Plan, and the prior deed restrictions. The East Garrison Mitigation Lands portion of the Parker Flats Habitat Management Area has been set aside as mitigation for the East Garrison Specific Plan Project. Moreover, the East Garrison Mitigation Lands support suitable upland habitat for CTS (Denise Duffy & Associates, inc., Draft Fort Ord HCP, in prep.). Although there are no CNDDB records for CTS on the East Garrison Mitigation Lands, records are reported adjacent to the East Garrison Mitigation Lands; therefore, as the East Garrison Mitigation Lands support suitable upland habitat, and CTS have been reported in the immediate vicinity, the East Garrison Mitigation Lands are expected to support estivating CTS.

4.1 CONSERVATION GOALS AND OBJECTIVES

The conservation goal for the East Garrison Mitigation Lands is to maintain suitable upland habitat for CTS through implementation of a monitoring program that informs how the site can be adaptively managed (e.g., modifications to management activities that are informed by findings from the monitoring component).

4.2 LANDS MANAGEMENT

A biological baseline for the East Garrison Mitigation Lands will be established by conducting onsite surveys prior to implementation of any land management measures. This baseline will guide future monitoring of the East Garrison Mitigation Lands. Management of the East Garrison Mitigation Lands will be consistent with requirements set forth by the USFWS and the HMP (1997) and Draft Fort Ord HCP (Denise Duffy & Associates, Inc., in prep) including both maintenance activities and timing requirement of those activities. Maintenance activities may include maintenance of fuel breaks and access roads in summer months, the possibility of prescribed burning conducted prior to the rainy season with no pre-vegetation treatments applied, erosion prevention activities, invasive nonnative plant removal, trash pick-up, and maintenance of barriers and signs to restrict access by off-road vehicles and pedestrians. These management activates are discussed in further detail below.

a) Barriers and signs intended to restrict access by off-road vehicles and pedestrians will be installed at all road and illegal trail entrances into the East Garrison Mitigation Lands. These barriers and signs will be assessed twice per year for conditions and replaced and/or repaired if necessary. Fencing is not being proposed under this MMP, as fencing is not currently being considered under the Draft HCP (Denise Duffy & Associates, Inc., pers. comm., 2013).

b) Conditions of fuel-breaks and access roads will be assessed annually and repairs and maintenance will be conducted as appropriate in summer months only. To the extent possible, earth movement within the dripline of oaks and excavation in the root zone of oaks will be avoided.

c) Need for erosion control along firebreaks and other bare-earth areas will be assessed biannually (in summer and winter months) and erosion control including earthen berms, mulch, waddle with biodegradable netting, or biodegradable erosion blankets may be installed to prevent erosion of these bare areas resulting in erosion of these features and/or siltation of off-site CTS breeding ponds. To the extent possible, earth movement within the dripline of oaks and excavation in the root zone of oaks will be avoided.

d) As a part of the baseline survey, the East Garrison Mitigation Lands will be assessed for areas in need of invasive non-native plant removal. Invasive non-native plant management shall be limited to the areas along firebreaks and any existing pedestrian trails within the East Garrison Mitigation Area. These plants shall be removed via hand-pull or hand tools only.

e) Trash pick-up (if necessary) will occur twice per year and may be conducted concurrently with another management task.

f) Additional management activities such as controlled burns conducted prior to the rainy season with no pre-vegetation treatments applied may be recommended depending on the results of the baseline survey. A second management strategy, grazing, may be employed after the Fort Ord HCP has been implemented should the HCP choose to install fencing

around the Reserve System. Until the HCP chooses to install fencing around the Reserve System, grazing shall be prohibited.

4.3 CONSERVATION EASEMENT MONITORING PLAN

Biannual monitoring will occur on the East Garrison Mitigation Lands for five years after the baseline has been established, and every five years thereafter. It is assumed that the Fort Ord HCP will be implemented within the first five years of this management and monitoring plan, at which point, the County of Monterey would become responsible for funding and conducting management and monitoring activities on the East Garrison Mitigation Lands under their Reserve System. As the East Garrison Mitigation Lands do not support breeding habitat, surveys for breeding CTS individuals would not be necessary, however nighttime surveys of upland habitat for CTS will occur during the rainy season. Any change in conservation value of the CTS upland habitat on the East Garrison Mitigation Lands would be noted. A habitat assessment will be conducted once a year in the active season for CTS for five years, and every five years thereafter. A qualified biologist will conduct these surveys to evaluate changes to both habitat and wildlife for the explicit purpose of noting any changes to the conservation value of the East Garrison Mitigation Lands for CTS:

<u>Vegetation/Habitat</u>

- plant species diversity (species list of dominant species)
- soil erosion (extent and location)
- nonnative invasive plant species (and locations)
- natural disturbances such as fire or significant soil shifts

<u>Wildlife</u>

- wildlife species diversity (species list)
- distribution status (if any) of listed species
- approximate distribution of small mammal burrows

Any measurable change that is due to abnormal variation in small mammal populations (e.g., unexplained or usual crash of the population) or changes is habitat composition and structure that reduces the conservation value of the East Garrison Mitigation Lands for the CTS will be noted and recommendations for modifying any future management activities will be made to the County.

4.4 ANNUAL MONITORING REPORT

The annual report will be prepared along with any other additional documentation and circulated to the Permitting Agencies by December 31 of each year.

Included will be (1) a list of management activities with dates of tasks including management of firebreaks, invasive weed removal, prescribed burns, installation of erosion barriers, etc. (2) recommendations with regard to any habitat enhancement measures deemed to be warranted, (3) recommendations with regard to any problems that need near, short, and/or long-term attention, and (4) any changes in the monitoring or management program that appear to be warranted based on monitoring results to date. Any recommended weed abatement will be consistent with the USFWS 4(d) rule as to avoid harm to CTS. The annual report will be submitted no later than December 31 of each year to the CDFW and USFWS with the monitoring results from the prior calendar year. Five year summary reports will be prepared to compare data from multiple years. The findings from the five-year reports will be used to inform any adaptive management recommendations or changes to current management practices. In addition, these findings will be used to identify the need for any additional monitoring or data gathering that augments information regarding the status of CTS on the East Garrison Mitigation Lands.

At the discretion of CDFW, the land manager will meet with one or both agencies each year, after the annual report is issued, to review implementation issues.

4.5 FUNDING

The UCP East Garrison, LLC as part of its development agreement has paid fees to fund the HCP to the County of Monterey. These funds are intended to fulfill the applicant's obligations as it relates to the HCP. The applicant will fund the Conservation Easement and MMP until such time that the HCP Joint Powers Authority (also known as the "Fort Ord Regional Habitat Cooperative" or the "Cooperative") is formed following adoption of the Installation-wide Multi-species Habitat Conservation Plan for Former Fort Ord, CA. The Cooperative will then become the responsible party for monitoring and managing the East Garrison Mitigation Lands. Therefore, UCP East Garrison, LLC, will provide adequate bridge funding for up to five years so this MMP can be fully implemented prior to the adoption of the HCP.

Following adoption of the HCP, the Cooperative will be responsible for the implementation of the HCP on the East Garrison Mitigation Lands and the Habitat Management Areas. In the interim, UCP East Garrison, LLC will provide the funding for the following tasks in Table 1. These costs include a baseline biological survey, baseline biological report, baseline assessment of management needs, and installation of barriers and signs to prevent off-road vehicles and pedestrians from entering the East Garrison Mitigation Lands. Baseline costs are estimated to be $21,034. First year cost for biological monitoring, biological survey, and maintenance activities is estimated to be $15,043, and a 5% increase has been accounted for the following 4 years resulting in a final budget of $104,155 for the baseline year and five years following the baseline year. UCP East Garrison, LLC assumes that the Fort Ord HCP will be implemented within these five years, and at that time, the HCP would become responsible for funding management and monitoring on the East Garrison Mitigation Lands. Therefore, as the Fort Ord HCP may be implemented during the lifetime of the MMP, UCP East Garrison, LLC proposes paying in two payments; the first payment will include funding for the baseline funding and years 1 and 2 of management and monitoring ($51,871) and the second payment will include funding for years 3 through 5 of management and monitoring ($52,284). Funds will be paid prior to the work to be conducted (i.e. first payment will be paid in full prior to baseline assessments and second payment will be paid in full prior to year 3 of management and monitoring).

Table 1. Funding.

Table 1. Funding Continued

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APPENDIX A

Legal Status – The Central California distinct population segment of California tiger salamander that may occur within the East Garrison Specific Plan area is listed as threatened under the ESA and the California Endangered Species Act (Fish and Game Code §§2050 *et seq*). Two other distinct population segments in Sonoma County and Santa Barbara County are listed as endangered under the ESA. The Santa Barbara County Distinct Population Segment was listed as endangered in 2000. The Sonoma County Distinct Population Segment was listed as endangered in 2002. The remaining population occurs throughout Central California, including the East Garrison Specific Plan area. The Central California Distinct Population Segment was listed as threatened in 2004. No Recovery Plan has been prepared for the CTS to date.

Species Ecology – The CTS was formerly classified as a subspecies of tiger salamander (*Ambystoma tigrinum*) but has since been identified as an individual species (Kraus 1988; Shaffer et al. 1991). A broad head, small eyes, and tubercles on the side of the feet characterize CTS. Coloration is a black back with yellow, cream, or white oval spots or bars. Some individuals may have a prominent cream band on the undersides. Snout-vent length ranges from 7.6 – 12.7 cm, and total length ranges from 15 – 22 cm (Stebbins 2003).

The CTS originally inhabited most of central California, and remains in remnant populations throughout much of its original range. CNDDB records for CTS show its distribution encompasses portions on Alameda, Amador, Calaveras, Contra Costa, Fresno, Kern, Kings, Madera, Mariposa, Merced, Monterey, Sacramento, San Benito, San Joaquin, San Luis Obispo, San Mateo, Santa Barbara, Santa Clara, Santa Cruz, Solano, Sonoma, Stanislaus, Tulare, Tuolumne, and Yolo Counties (NatureServe 2009). About 80% of all extant occurrences are in Alameda, Contra Costa, Madera, Merced, Monterey, San Benito, ad Santa Clara counties, with 30% of all occurrences in Alameda County (*ibid.*). The use of vernal pools and other temporary bodies of water for breeding limits the CTS to areas of low elevation and low topographic relief throughout their range (Stokes et al. 2008). Ephemeral vernal pools which refill with water on a yearly basis, are 40 – 80 cm in depth, and have a surface area of approximately 0.49 acres (0.2 hectares) or more are optimal for breeding CTS, although small, shallower pools will also house breeding CTS (Stokes et al. 2008). Depth of the breeding pool was highly correlated with

breeding CTS. Stokes et al. (2008) found no CTS larvae in pools with an average depth of less than 22 cm. Deep pools with permanent water may not be optimal for breeding populations of CTS because they often house predatory fish, crayfish, or bullfrogs that prey upon larval CTS. This creates a narrow window of pool depth where the pool will not completely dry out before CTS have metamorphosed, but also not contain water year round and house predators. Metamorphosed CTS move out of the vernal pools and into upland habitats. Small mammal burrows are important features of upland habitat. Adult CTS occupy small mammal burrows in grassland, savanna, or open woodland habitats (Trenham and Shaffer 2005).

Activity patterns of adult CTS are not well understood. Adult CTS live their entire lives in the burrows of small mammals such as the California ground squirrel. Adults begin moving toward breeding pools when the first fall rains begin to inundate pools. Breeding adults will continue moving to pools through the winter and spring. Adults can generally be found at breeding pools from October through May, although breeding is highly dependent on the amount of precipitation (Trenham et al. 2001; Trenham and Shaffer 2005). Adult CTS leave the breeding pools in late spring and return to upland habitats. Trenham and Shaffer (2005) used pitfall traps at various intervals away from a pool to determine the extent of upland use. They found that the numbers of adult CTS declined as distance from the pool increased out to approximately 2,034 feet (620 meters). Subadults also moved up to approximately 1,969 feet (600 meters) away from the pools, but most were concentrated between approximately 656 and 1,969 feet (200 and 600 meters) from the pool. This has led managers to suggest preserving upland habitats with suitable small mammal burrows out to approximately 1,969 feet (600 meters) from breeding pools (Trenham and Shaffer 2005).

CTS may take upward of four to five years to reach sexual maturity (Trenham et al. 2000). Although individuals can live upward of ten years, less than 50% of individuals breed more than once (Trenham et al. 2000). Rainfall can significantly alter adult breeding pool attendance, and production of metamorphs tends to be a boom-or-bust scenario (Loredo and Van Vuren 1996). Typically, greater numbers of breeding adults return to pools during years with greater rainfall (Trenham et al. 2000; 2001; Cook et al. 2006; Stokes et al. 2008). Males are often the first to arrive at breeding pools and remain in the pool longer than females (Trenham et al. 2000). Larvae remain in the pools approximately four months and emigrate from the pools as they dry.

Metamorph emigration typically occurs throughout May and is directly related to the pool drying date (Trenham et al. 2000).

Often amphibian populations are used as an example for the metapopulation/source-sink models. The CTS populations at different breeding pools often act in a metapopulation fashion (Trenham et al. 2001). Mark – recapture studies found that while most breeding adults return to their natal pool, 22% dispersed to different ponds (Trenham et al. 2001). It should be noted that Trenham and Shaffer (2005) did not capture any CTS, adult or subadult, more than approximately 2,034 feet (620 meters) from the pool. Thus, pools more than approximately 4,068 feet (1,240 meters) from one another may limit dispersal. Breeding CTS have been known to use artificially created pools, and the creation of pools in a stepping-stone fashion has been suggested to aid dispersal between populations (Stokes et al. 2008).

The diet of larval and metamorphosed CTS is not well studied. Studies on the diet of other larval *Ambystomids* have found that less developed larvae prey mainly on zooplankton, and larger, more developed larvae prey on amphipods, mollusks, and insect larvae as well as zooplankton (Dodson and Dodson 1971; Hoff et al. 1985; McWilliams and Bachmann 1989). Adult diet consists of terrestrial invertebrates such as earthworms, snails, and other insects. Vertebrates, such as small mammals and fish, may be taken as well (Stebbins 1959; NatureServe 2009).

Predatory fish and amphibian populations negatively affect CTS populations. Mosquitofish (*Gambusia* sp.), smallmouth bass (*Micropterus dolomieu*), green sunfish (*Lepomus cyanellus*), and bullfrogs (*Rana catesbiana*) are common predators of CTS larvae and adults (NatureServe 2009). Yearly drying of vernal pools used for breeding greatly reduces the numbers of these potential predators, however heavy spring and winter rains can connect pools to other permanent water sources and introduce CTS predators.

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