

Burrowing Owl Counts, Surveys, and Nesting Habitat Maintenance at Warm Springs Unit, Don Edwards San Francisco Bay National Wildlife Refuge

2015-2017 project overview

*Presented by
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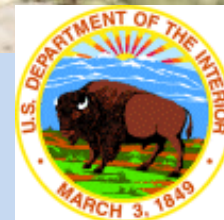
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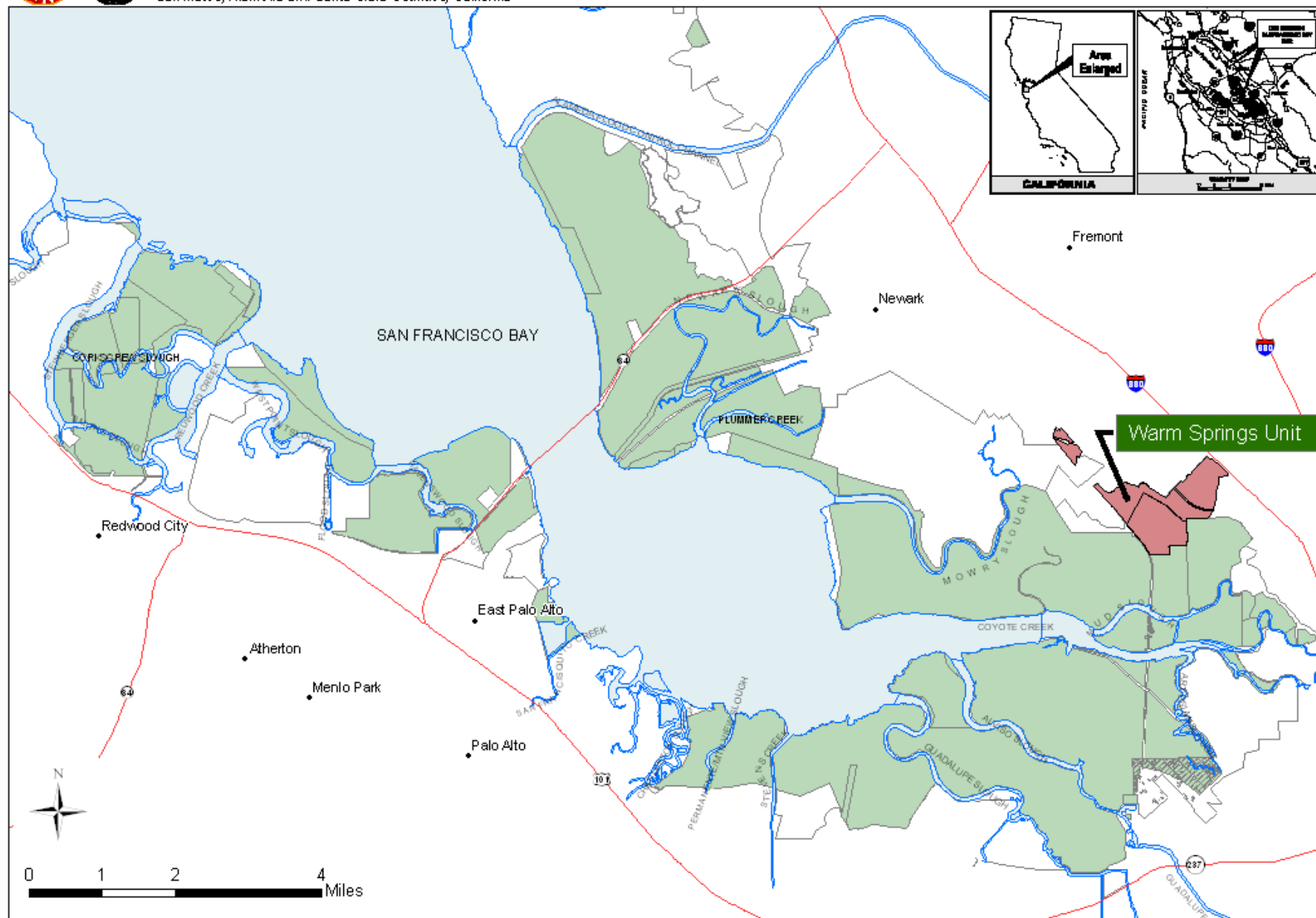


SANTA CLARA VALLEY
HABITAT AGENCY



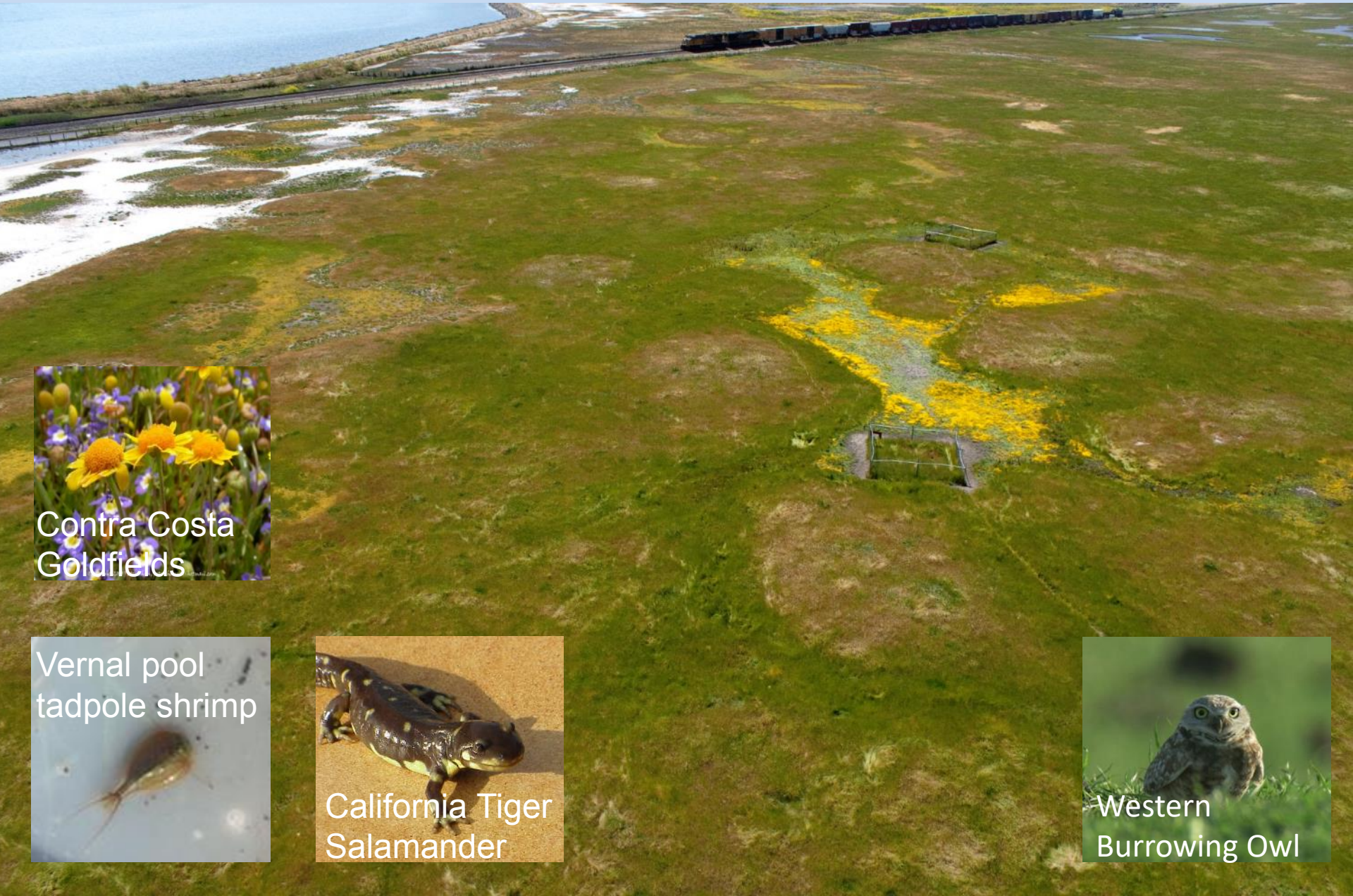


San Mateo, Alameda and Santa Clara Counties, California





Warm Springs Unit: An alkali grassland with vernal pools



Contra Costa
Goldfields



Vernal pool
tadpole shrimp



California Tiger
Salamander



Western
Burrowing Owl



Rotational grazing program

- Improve vernal pool habitat
- Keep upland grass short
- Increase CA ground squirrel activity
- Control weeds throughout the site



CA Ground squirrel activity



Challenges associated with vegetation management

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- A man wearing a cap, sunglasses, and a backpack stands in a field of tall, green weeds. In the background, there is a grassy area, a fence, and some industrial buildings under a clear sky.
- Weeds proliferate on disturbed soils like burrow mounds
 - Cows will not eat certain weeds especially when grass is available
 - The Refuge weed management effort often cannot meet the timing requirements for BUOW nesting habitat management
 - Effective vegetation management efforts require extensive BUOW monitoring

Solution: Management Agreement that focuses on BUOW

- Funder: SCVHA
- Land management Agency: USFWS
- Execution: SFBBO (with Refuge support)





Focused Vegetation management for BUOW nesting habitat



Foraging habitat enhancement: Rock piles installation



Install rock piles to attract small rodents and reptiles which are highly nutritious prey for Burrowing owls

Foraging habitat enhancement: Creation of vegetative islands/hedgerows





Creation of new nesting habitat



Installed 13 dirt piles to improve BUOW nesting habitat and encourage higher ground squirrel activity



Installation of artificial burrows





Use of artificial burrows



13





Rigorous monitoring of breeding BUOWs allows for adaptive management



- In 2015 and 2016, 85 volunteers spent 459 hours on BUOW surveys and habitat management



Banding of owls allows us to understand regional connectivity, survival and reproduction



Photo by Mike Bolte



Predator control: a necessity



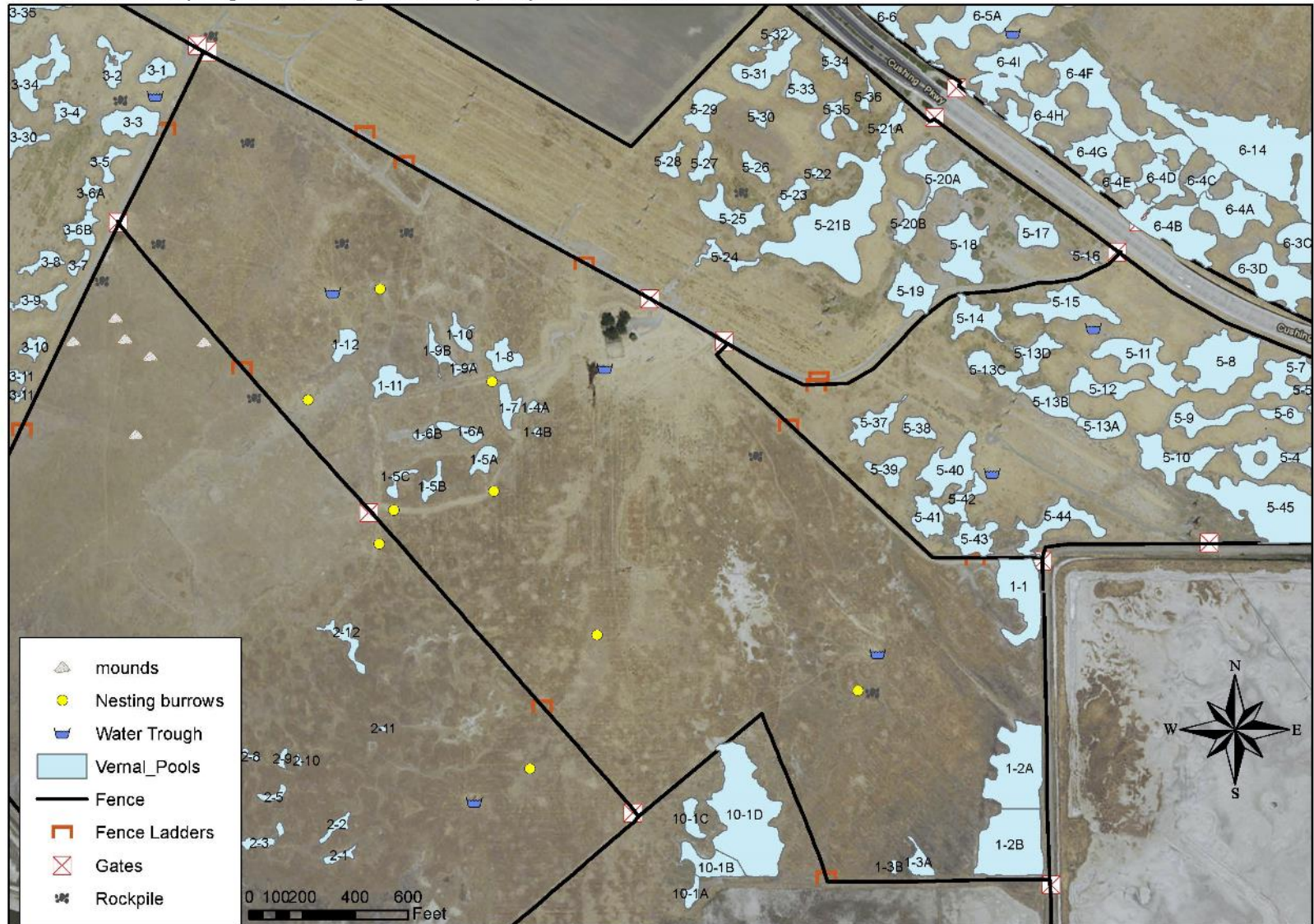
USDA Aphis team is conducting predator control. The installation of motion sensor cameras has helped us identify predation risks and coordinate with the APHIS team

2017 season so far



U.S. Fish & Wildlife Service

Warm Springs Burrowing owl surveys- April 2017, Field 1



Conclusions and future directions

- Increased management actions
 - Newly installed artificial burrows
 - Installed dirt mounds
 - Rock piles
 - Vegetation islands
 - Predator control
- Increased monitoring efforts
 - Cameras on burrows
 - Volunteer hours
 - Biologist focal observations
 - Most owls and young banded at Warm Springs



Questions?

