

California Ground Squirrels - a Keystone Species in our Wildlands

**Natural and Cultural Resources Committee
October 29, 2024**

East Bay 
Regional Park District

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Acknowledgements

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Andre Gregoire

Joe DiDonato

Chris Lyell

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East Contra Costa County Habitat Conservancy

NextEra Energy

Regional Parks Foundation



Shawn Smallwood



Goals of Today's Presentation

- Understand definition of “**keystone**” species
- Provide **natural history** of CA Ground Squirrels
- How we assess and protect **biodiversity**
- Discuss variety of **attitudes and options** for control

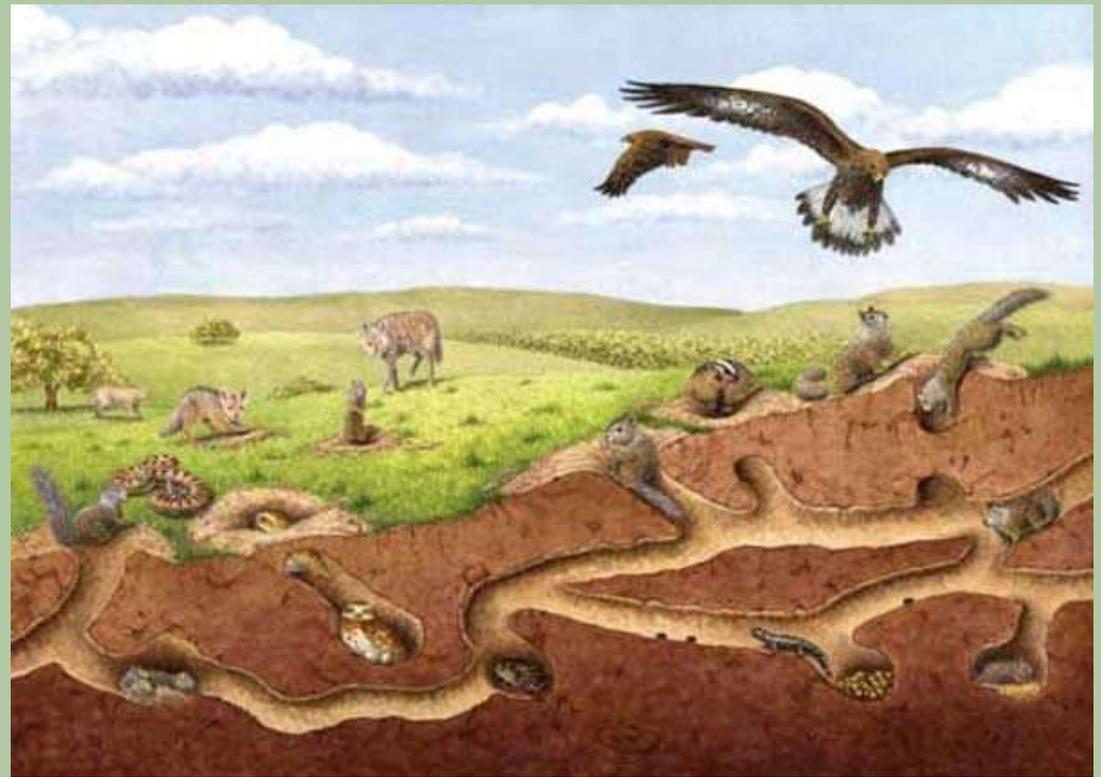


“preserve a rich heritage of
natural
and cultural resources”

-EBRPD Mission Statement, Master Plan 2013

What is a KEYSTONE SPECIES and why a GROUND SQUIRREL?

- Disproportionately large effect on natural environment relative to abundance
- Maintains structure of an ecological community



Species that Rely on Ground Squirrels for Food



Red-tailed Hawk



Bobcat



Badger

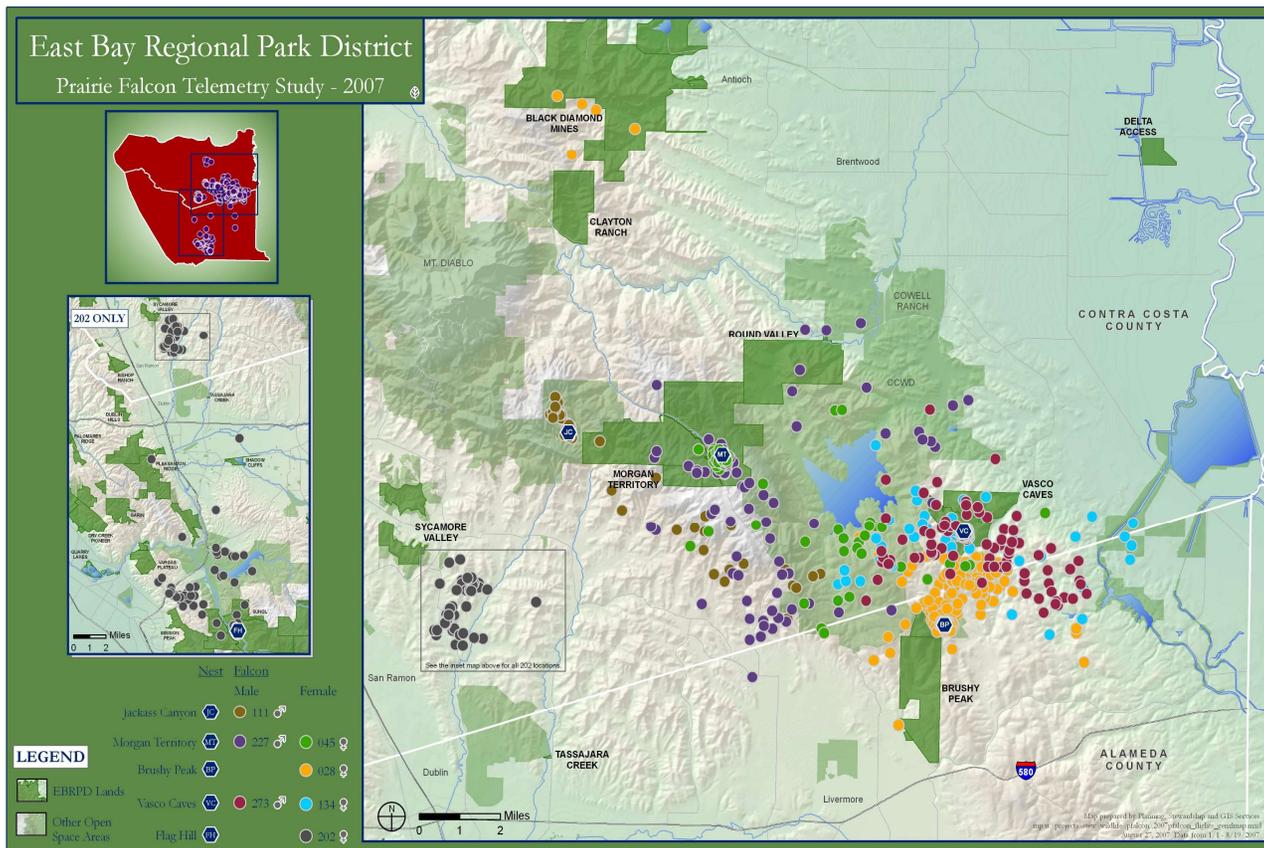


Coyote



Golden Eagle

Species that Rely on Ground Squirrels for Food



Andre Gregoire

Prairie Falcon

Species that Rely on Ground Squirrels for Habitat



BURROWS

- Multiple entrances
- Chambers
- 6 feet deep, 35 feet long
- Satellite burrows



California Ground Squirrel

Otospermophilus beecheyi

Ground squirrels mate in the early spring, following their hibernation season.



Mothers will carry the babies for around a month until birth.



A typical litter of ground squirrels can range from 5 to 8 babies.



The mothers care for the young ground squirrels until they are around 8 weeks old.



The squirrels reach adulthood after a year and can reproduce following that point.



The average ground squirrel lives for around 3 to 4 years, but can sometimes even live for up to 8 years.

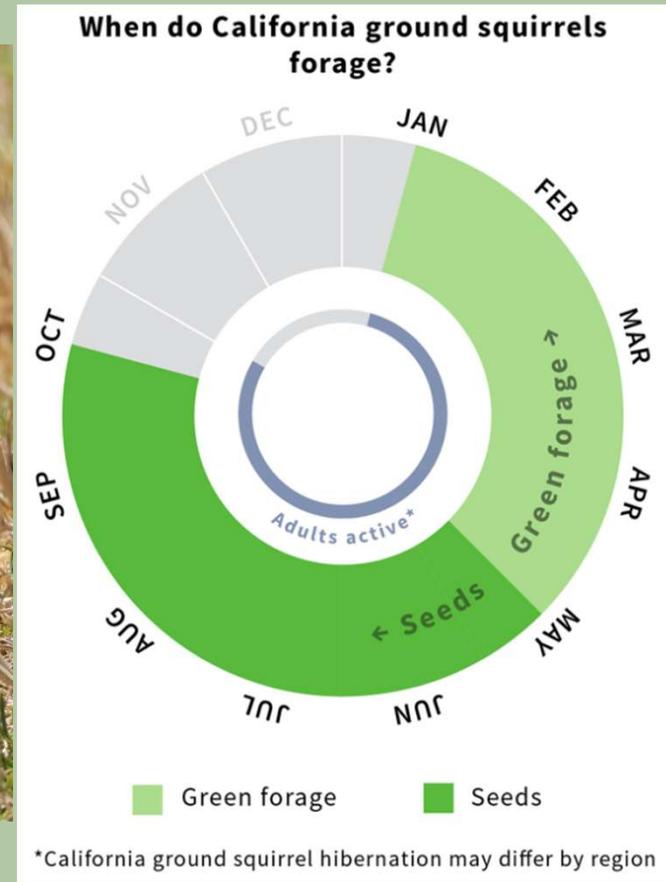


GROUND SQUIRRELS LIFE CYCLE AND REPRODUCTION



California Ground Squirrel

Otospermophilus beecheyi



California Ground Squirrel

Otospermophilus beecheyi

Visual Scan



Predator Defenses Whistle

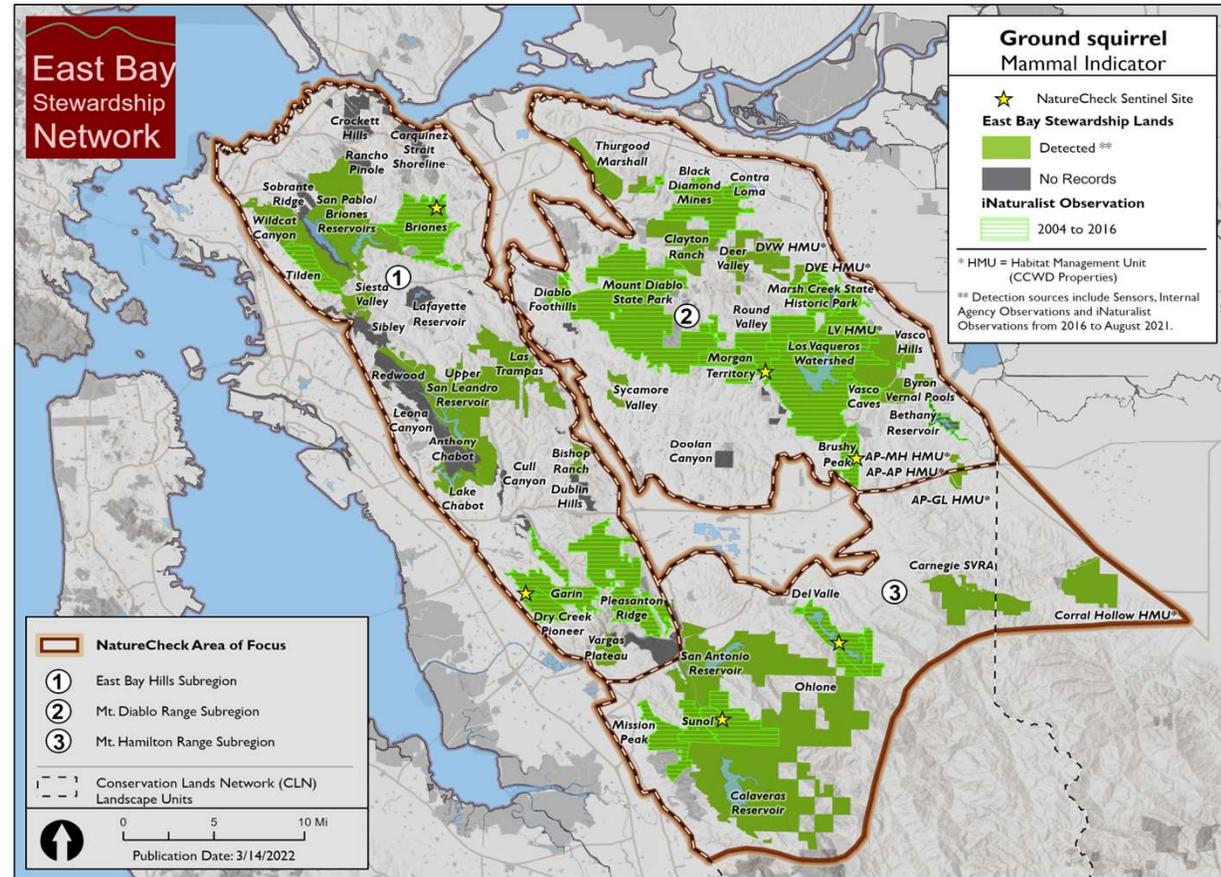


Snake Chatter – Tail Wag/Heat



Chatter

Where are they Found- GRASSLANDS



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Vasco Caves

2000

Changed grazing -

Cattle (year-round)

Sheep (seasonal)

2000 - 2022

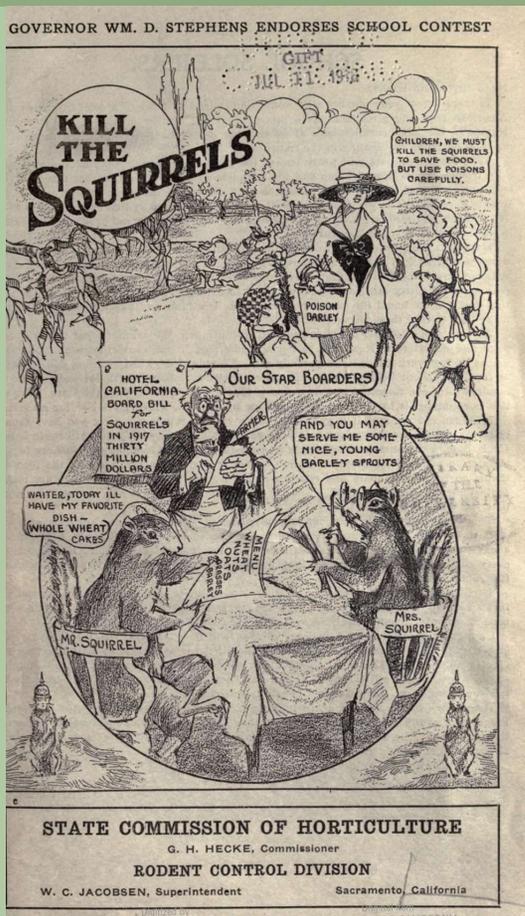
UC Grasslands Study*

Other Studies

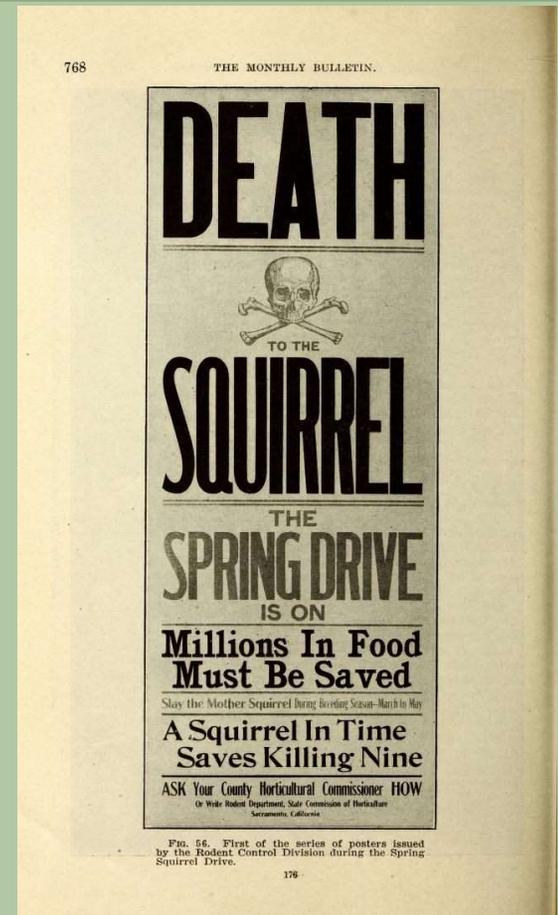
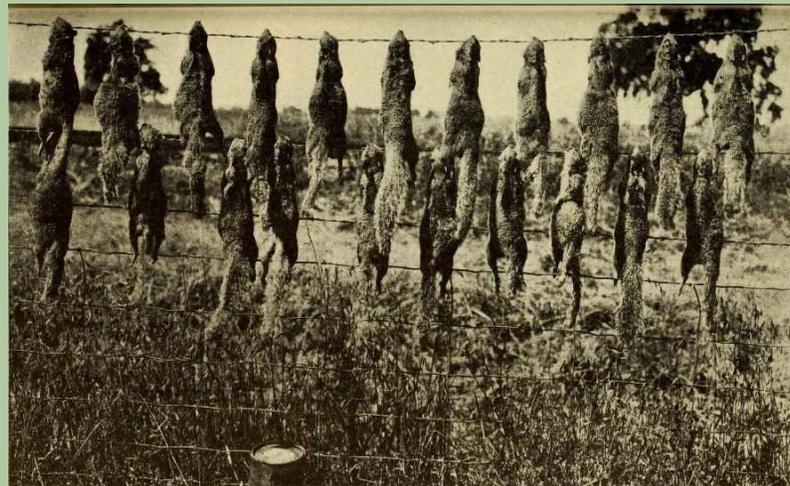


*<https://www.ebparks.org/natural-resources/grazing/benefits>

Understanding & Protecting Biodiversity



1918 California War on Ground Squirrels



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Vasco Caves – 2006 - 2007



Arnold Schwarzenegger
Governor

RANGE MANAGEMENT PRACTICES TO REDUCE WIND TURBINE IMPACTS ON BURROWING OWLS AND OTHER RAPTORS IN THE ALTAMONT PASS WIND RESOURCE AREA, CALIFORNIA



Sheep graze on Vasco Caves Regional Park. Photo by K. S. Smallwood.

Prepared For:
California Energy Commission
Public Interest Energy Research Program

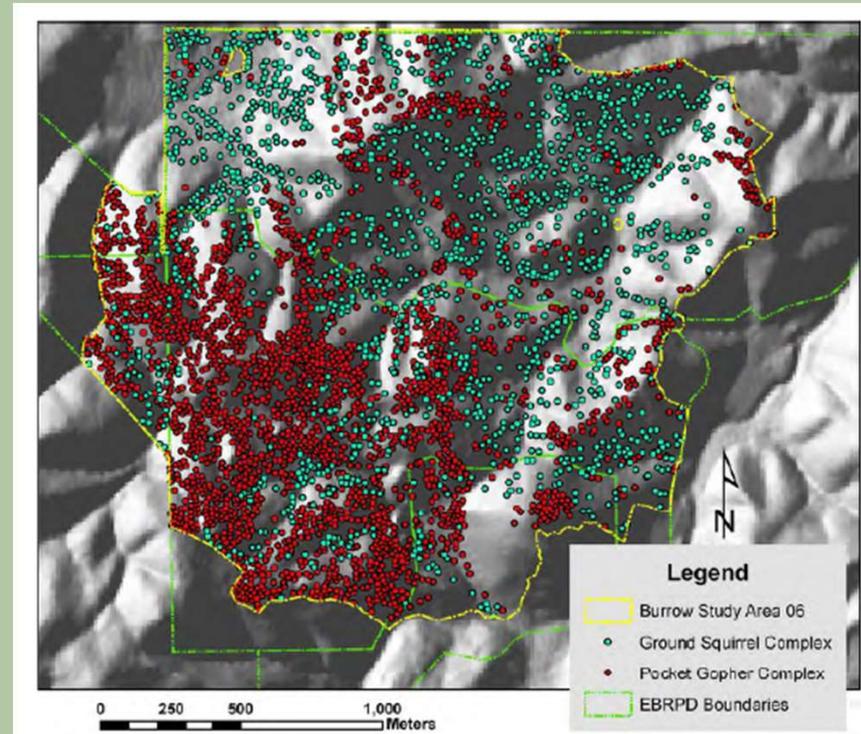
Prepared By:
East Bay Regional Park District

PIER FINAL PROJECT REPORT

October 2009
CEC-500-2008-080

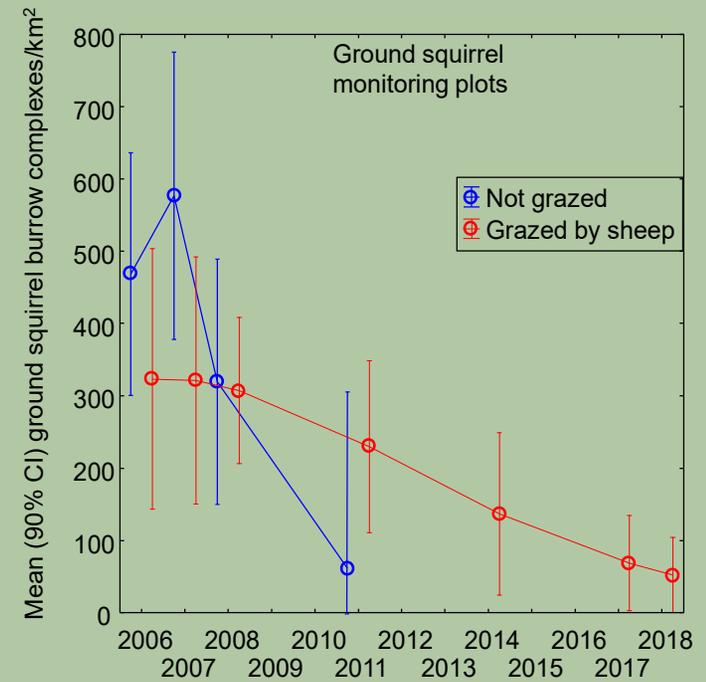
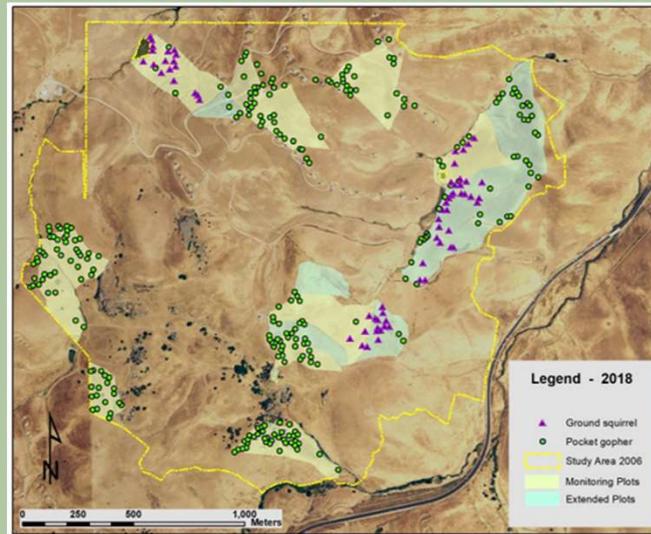
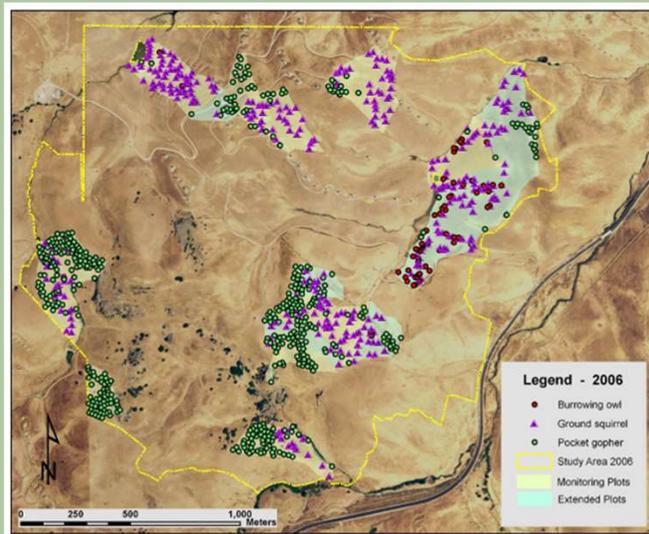


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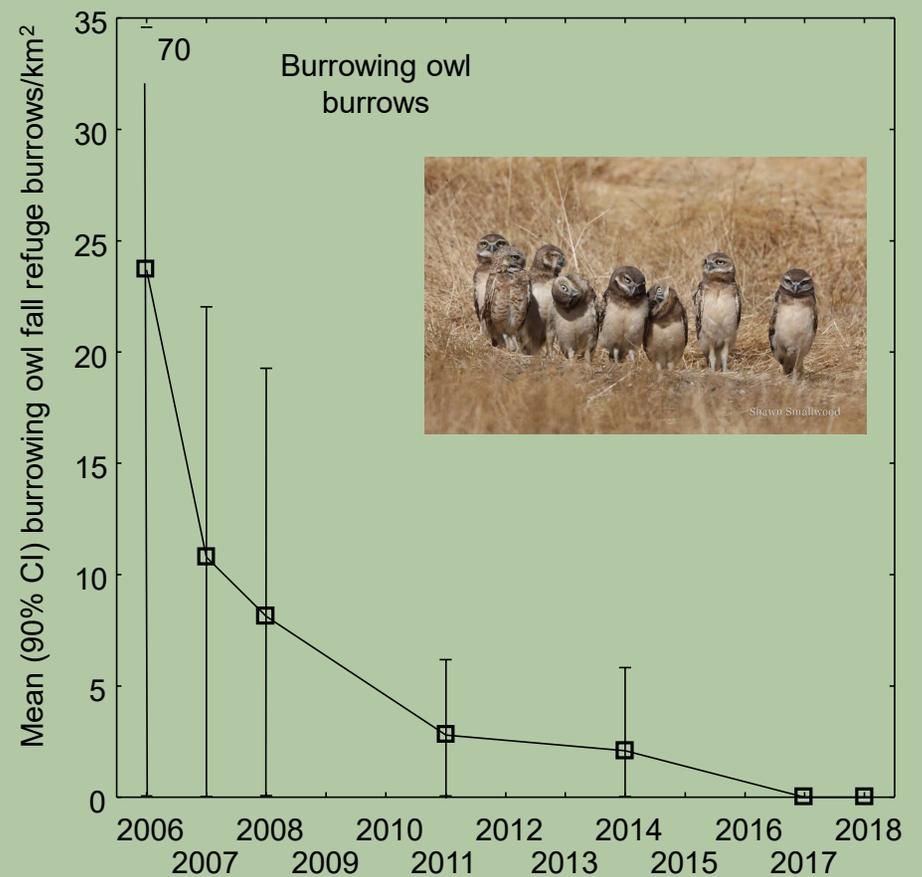
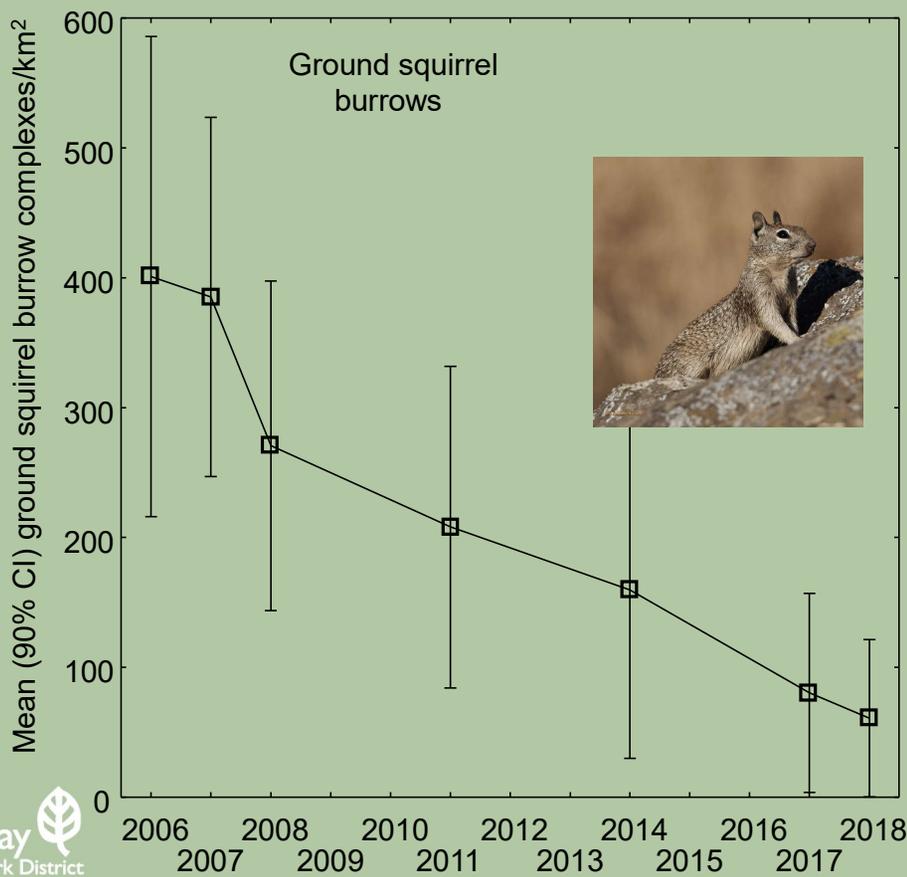


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Vasco Caves – 2006 - 2018



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Eagle Take Permits & Mitigation



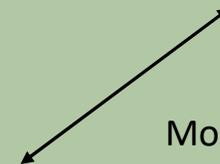
Squirrels/Eagle pair



Squirrels/AUM



Money/AUM



Measuring Health of Environment - Ground Squirrels as Indicator

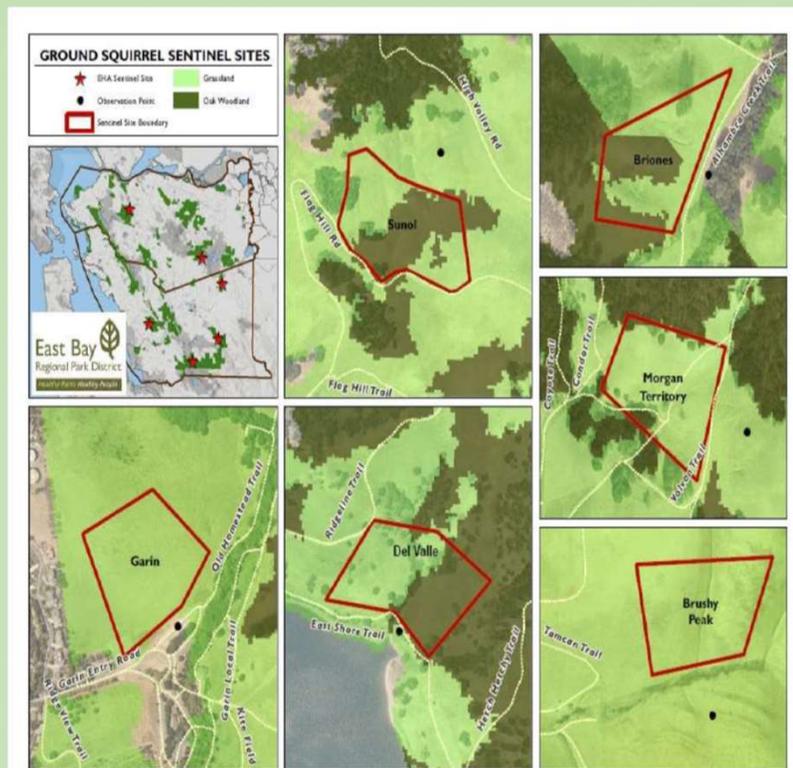
2022 – Ground Squirrels as Indicator

2021 - 2024

Assessed Sentinel Sites



NatureCheck:
Understanding Wildlife Health
on East Bay Lands in
Alameda and Contra Costa Counties
APRIL 2022



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Table 3: Assessment of habitat quality for ground squirrels (see Photographs and notes on habitat condition)

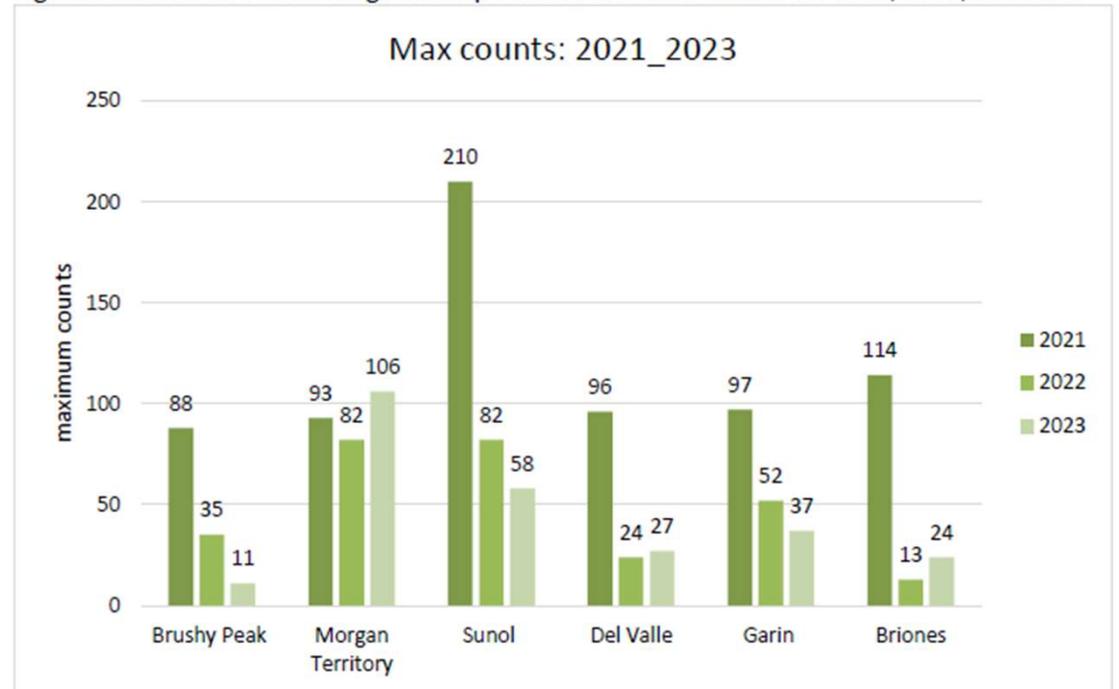
SENTINEL SITE	2021	2022	2023
BRUSHY PEAK	Good	Moderate	Low
MORGAN TERRITORY	Good	Good	Good
SUNOL	Good	Good	Good
DEL VALLE	Good	Moderate	Low
GARIN	Good	Moderate	Low
BRIONES	Good	Low	Low



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Figure 2: Maximum counts for ground squirrels at each sentinel site for 2021, 2022, and 2023



Where we WANT Ground Squirrels



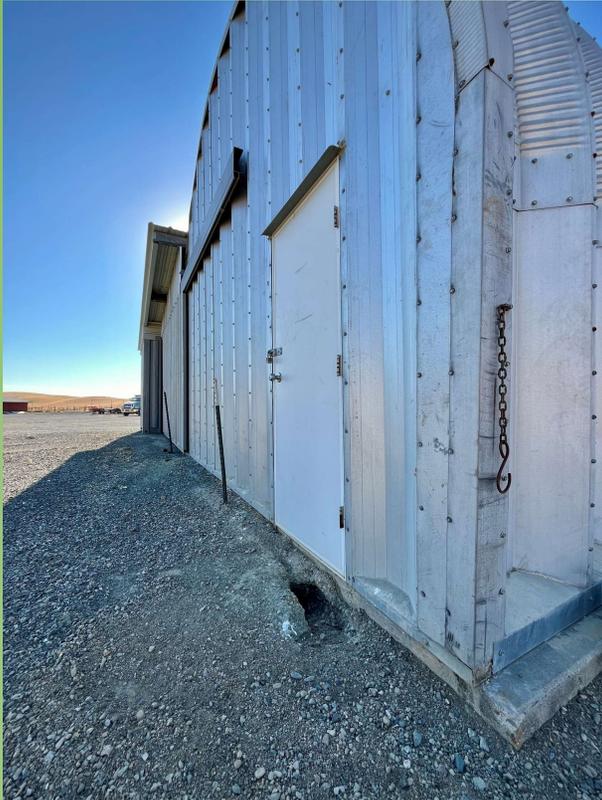
Western Burrowing Owl (*Athene cunicularia hypugea*)
Albany Bulb

Controlling Squirrels where they are NOT wanted

- Squirrels create infrastructure damage on levees, shorelines and irrigated turf areas
- Staff time spent on addressing damage and control



Controlling Ground Squirrels where they are NOT wanted



Examples of Damage

Capture and Relocation?



Translocation Model for the California Ground Squirrel
(*Otospermophilus beecheyi*) to Facilitate California Grassland
Ecosystem Recovery



Prepared by:

Debra M. Shier, J.P. Montagne, Sarah M. Hennessy, Colleen Wisinski, Lisa A. Nordstrom
and Ronald R. Swaisgood

March 2016

Capture and Relocation is PROHIBITED*

*(for the most part)

Illegal to relocate ground squirrels in California without a permit from the California Department of Fish and Wildlife

Other control methods are needed

Limited Control Options



- NEVER control squirrels in Wildlands
- State restrictions on rodenticides
- Avoid impacts to other species
- Emphasis on Exclusion
- Understand Irrigated turf will attract squirrels

Education – External



NOTICE

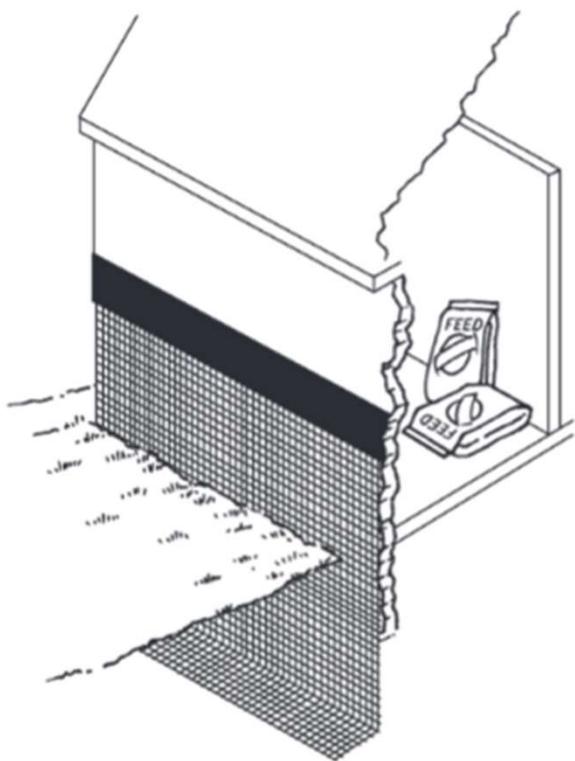
Feeding of wild or domestic animals is a violation of EBRPD Ordinance 38 and subject to fine

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Regional Park District



Do not feed wildlife

Prevention – Internal



Preventative Building Design

Modify our land management practices
Minimize Human-Wildlife Conflict

- Replace turf with native landscape
- Preventative building design
- Trash management
- Avoid “outposts”

What YOU can do



The screenshot shows the iNaturalist project page for the California Ground Squirrel Census. At the top left is the iNaturalist logo and navigation links for 'Explore', 'Community', and 'More'. Below this is a large image of a California ground squirrel with the text 'California Ground Squirrel Census' overlaid. To the right of the image is an 'About' section with a 'Members' count of 32 and a 'Project Journal' link. Below the image and text is a statistics bar with the following data:

Overview	2,873 OBSERVATIONS	1 SPECIES	475 IDENTIFIERS	1,283 OBSERVERS	Stats

California Ground Squirrel Census · iNaturalist

Use iNat to document Burrows and Squirrels in Parks

Adopt a New Attitude?





Thank You!

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