

Badger ecology in coastal California: implications for corridor design

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CDFG/UCD WHC Resource
Assessment Program Competitive
Grant Project, 2004-2007

- Why do badgers matter?

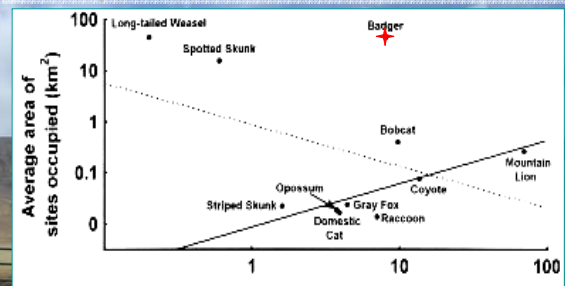
- Badger ecology
 - Movement
 - Habitat preferences



- What makes a good badger corridor?

- Listed as a Species of Special Concern
- Not often considered in environmental review process
- How should they be considered??

- Sensitive to human impact and development

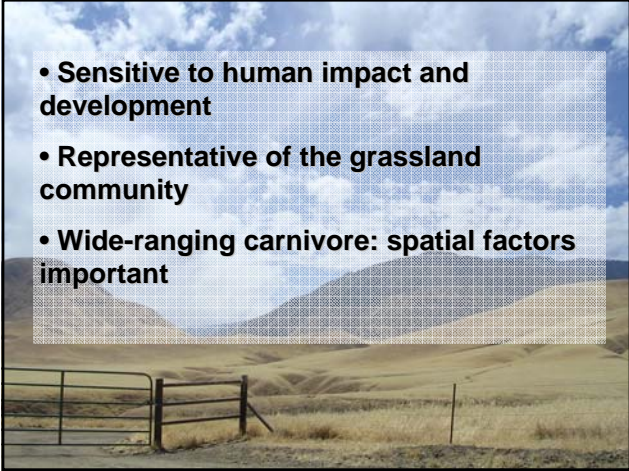


*Crooks 2002

- Sensitive to human impact and development
- Representative of the grassland community



- Sensitive to human impact and development
- Representative of the grassland community
- Wide-ranging carnivore: spatial factors important



Research in California

- California Department of Fish and Game
UC Davis Wildlife Health Center Resource Assessment Program 2003-2007
- GOAL: Determine conservation status of badgers in California
 - Population distribution
 - Behavioral ecology
- PRODUCTS:
 - Species status report
 - Reassessment of CWHR model for badgers




About badgers...








- Mustelids
- 6 species worldwide
- Carnivorous-omnivorous
- Semi-fossorial

About American badgers

- *Taxidea taxus* (4 subspecies)
- Range across the western U.S., southern Canada, and northern Mexico
- Associated with grasslands, open habitats
- Semi-fossorial



About American badgers

- Females ~ 7 kg, males ~ 15 kg.
- 1-4 kits per year (avg. 2).
- Polygamous
- Delayed implanters
- Solitary
- Mainly carnivorous
- Eat burrowing rodents, lizards, birds and bird eggs



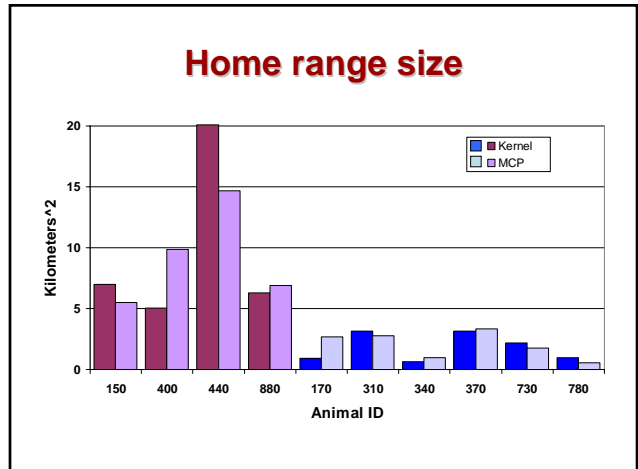
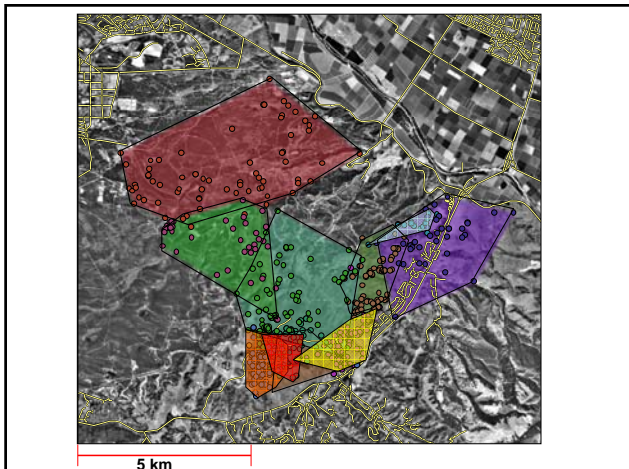
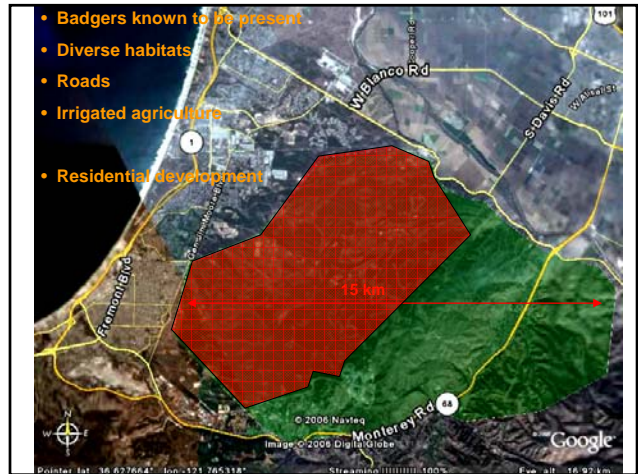
Movements

- Movements vary...
2 km² → >200 km²
↓
100 km dispersal
- In California, home ranges between 1 and 24 km²



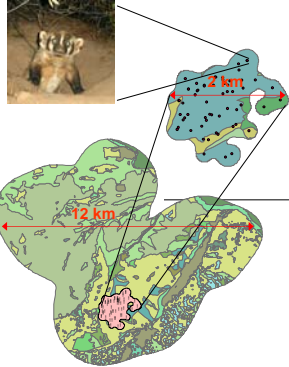
Movements

- Home ranges larger where prey is patchier
- Home ranges larger where population density is lower



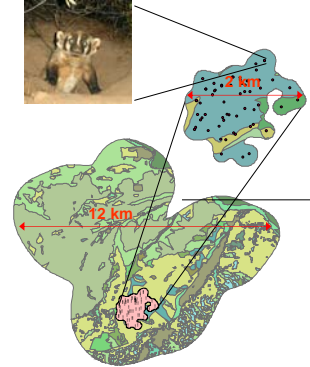
Habitat preference

- **Habitat preference**
 - Locations within home range compared to home range composition (3rd order)
 - Composition of home range compared to composition of study site (2nd order)
 - Dens, active, and pooled locations



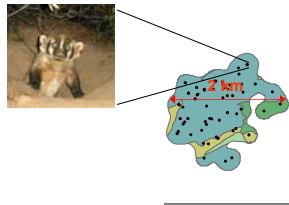
Habitat preference

- **Vegetation type**
- **Distance from roads**
- **Distance from trails**



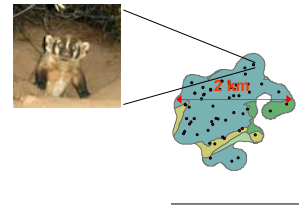
Habitat selection

- **Active locations**
 - Preferred to be distant from roads
 - No preference for other factors



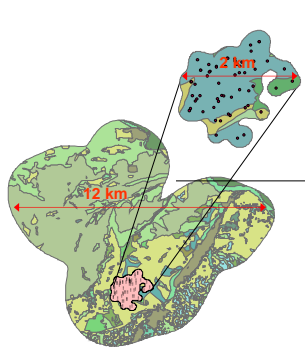
Habitat selection

- **Den locations**
 - Preferred to be distant from roads, trails
 - Preferred scrub, grassland, riparian/ marsh
 - Least preferred urban and oak woodland



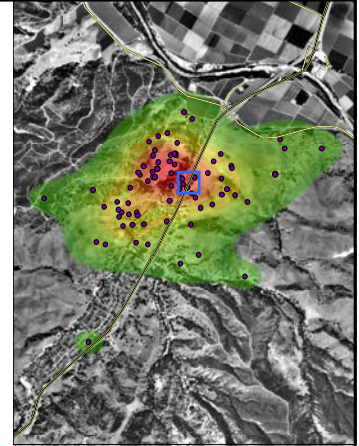
Habitat selection

- All locations
 - Preferred to be distant from roads, close to trails
 - Preferred annual grassland, native grassland, scrub
 - Least preferred urban and maritime chaparral



Movement paths

- Up to 2 km/night
- Will cross busy road
- Perhaps follow linear landscape features?
- Or don't follow them at all.



Implications for corridor design

- Badgers will site their home ranges in grasslands, but can use a mosaic of habitats within it
 - More selective for den locations
- Habitat itself won't serve as a "funnel"
- More important to have
 - A very wide corridor
 - And/or many crossings with physical funnels

Implications for corridor design

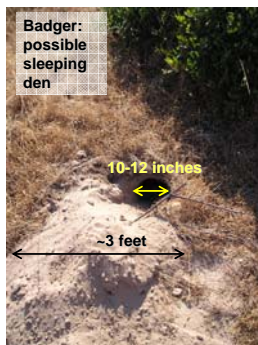
- Fortunately...
 - Badger activity is easy to locate and identify
 - You put a corridor **near where they are**
 - Male badgers may track each other's movements
 - Once one animal uses the corridor, others may follow

Implications for corridor design

- Highest amounts of badger movement are likely to be in the late summer and early fall
- Very little movement in the winter
- Female badgers will be denning or with kits February – July
 - Disturbance in core area and corridor should be minimized during this time

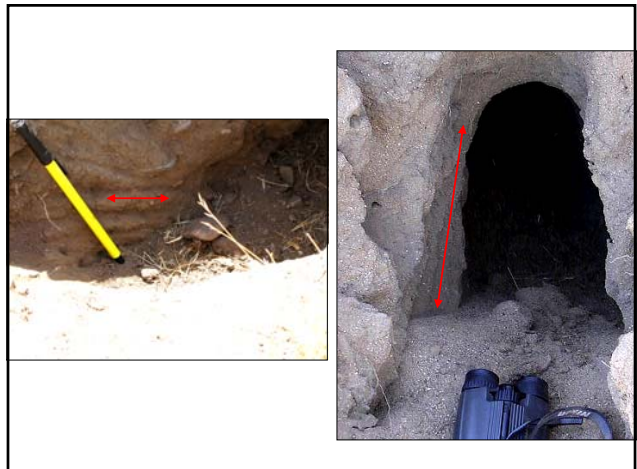
What does a badger burrow look like?

Badger:
possible
sleeping
den



coyote

Badger:
hunting
holes



Project support

- CDFG/UC Davis Wildlife Health Center Resource Assessment Program
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- UC Davis Ecology Graduate Group



Cooperators

- Sierra Foothills Conservancy
- Sequoia Riverlands Trust
- Sacramento Valley Conservancy
- Pacheco State Park
- BLM Carrizo Plain Natl. Monument
- US Army National Guard Camp Roberts
- City of San Luis Obispo
- NPS Point Reyes National Seashore
- Big Sur Land Trust
- Las Palmas Development
- UCNRS
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Thank you!

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Collaborators

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