

# **Improving Wildlife-Roadway Interactions for Land Use Entitlements in Ventura County, California**

*A UCSB Donald Bren School of  
Environmental Science and Management  
Master's Project*

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# Problem Background

- ◆ Roads and highways affect wildlife through:
  - Fragmentation of habitat and territories
  - Source of mortality
  - Disruption movement and dispersal
- ◆ Isolated habitat remnants suffer predictable, cumulative losses of species (Soule, 2000)

# Crossing Structures



Photo credit: US DOT Federal Highway Administration-Critter Crossings



Banff wildlife overpass

# Current Knowledge and Approaches

- ◆ Recognition of wildlife movement corridors
- ◆ General understanding of road impacts
- ◆ Current mitigation efforts
- ◆ Need for better understanding of:
  - Small mammals, reptiles, amphibians
  - Secondary roadways

# South Coast Concerns

## ◆ Regional Issues:

- Urbanization and roadway development
- High traffic volumes
- Loss of wetlands
- Species of concern

## ◆ Concerns specific to Ventura County:

- Significant roadkill problem areas
- Degradation of wetland/riparian habitats
- Severe development pressures
- Mitigation for future development

# CEQA Review of Migration Corridors in the County of Ventura

- ◆ *Initial Study Assessment Guidelines* provides guidance for the protection of wildlife migration corridors; however,
  - there is not a working definition of corridors nor a widely used corridors map
  - there are no standards to measure impacts to corridors or recommended mitigations to minimize impacts

# Ventura County Approaches

## ◆ Current research

- Sandra Ng: Roadkill and crossing surveys
- Ray Sauvajot: Wildlife movement
- CalTrans: Roadkill and crossing surveys
- Conception Coast Project: Modeling wildlife corridors
- South Coast Wildlands Project: Modeling, verification, and planning for landscape linkages and wildlife corridors

## ◆ Past and current mitigation efforts

- Oak Park, Lake Sherwood, Newhall Ranch

# Literature Review

- ◆ Crossing structure characteristics influence effectiveness:
  - Type (e.g. box culvert, pipe, bridge)
  - Size
  - Location and surrounding habitat
  - Fencing
- ◆ Traffic volume and road density affect wildlife movement
- ◆ Additional useful mitigation measures

# Project Approach

- ◆ Develop predictions about mitigation effectiveness
- ◆ Field assessment of structures and usage within riparian areas
- ◆ Collect data on roadkill location and frequency
- ◆ Prepare recommended mitigations for *Initial Study Guidelines*

# Assessment of Structures

- ◆ Existing culverts may not be conducive to movement
  - Perched pipes
  - Size and accessibility
- ◆ General observations of presence and movement


# Final Products

- ◆ Literature synthesis and incorporation of field assessment
- ◆ *Initial Study Guidelines* document to assist project conditioning
- ◆ Recommendations to improve existing structures


# Work To Be Completed

- ◆ Continuation of field work and collection of roadkill data
- ◆ Wet season field surveys
  - Storm event observations
  - Frog loggers

# Limitations

- ◆ Limited data collection for amphibians and reptiles
  - ◆ Small sample set
  - ◆ Restricted time frame
  - ◆ Scarce information on traffic volume
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- A decorative silhouette of a mountain range in shades of teal, located at the bottom right of the slide.

This project has been made possible  
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The background is a solid teal color. At the bottom right corner, there is a silhouette of a mountain range in a slightly darker shade of teal.