Applying science, planning, and partnerships to reduce roadway impacts on wildlife near Los Angeles

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Roads and Wildlife near L.A.
- Setting the Context: the Santa Monica Mountains National Recreation Area
- Understanding the Issues: Wildlife Conservation Science
- Reducing the Threats: Planning and Partnerships

Santa Monica Mountains National Recreation Area

Ecologically fragmented & jurisdictionally fragmented

Habitat fragmentation... including fragmentation by roads
Wildlife Conservation Science

- Telemetry studies of bobcats and coyotes.
- Genetic consequences of roads.
- Monitoring highway underpasses.
- Mountain lion research.

Female bobcats (blue) use urban areas much less than male bobcats (red and orange)

Radio telemetry studies of bobcats and coyotes

- "Urban" coyotes rely on natural areas

Roads as sources of mortality
Genetic consequences of roads for bobcats and coyotes

- Genetic effects of freeway isolation for bobcats

- Genetic effects of freeway isolation for coyotes

Territory "pile-up": animals may move across the freeway, but they don’t reproduce.
- Freeway is a physical and social barrier.
- Migration rates may be poor indicators of gene flow

Monitoring Highway Underpasses

- Existing underpasses are utilized
Opportunities exist to improve available options.

Mountain Lion Research

Mountain lion home ranges are enormous and straddle transportation infrastructure.

Mountain lions readily cross secondary roads – not always successfully.

Cross-highway movements

Mountain lion crossing Highway 118 – eighteen times!
Mountain lion survival will depend on regional connectivity and ability to cross highways.

Reducing Threats through Planning and Partnerships
- Regional connectivity analyses: Missing Linkages Project.
- S.R. 118 Wildlife Corridor Working Group
- Collaborative mitigation design and monitoring.
- Constructing movement corridors.

Regional Connectivity Analyses
- Interagency effort to identify critical “missing linkages”

Highway 118 Wildlife Corridor Working Group
“Timely delivery of safe transportation improvements while preserving and enhancing wildlife corridor integrity in the vicinity of State Route 118.”

Information-sharing, analysis, and planning

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<th>Species</th>
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<th>Openness Ratio</th>
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Collaborative Mitigation Design and Monitoring
- Clear culverts and install fencing
Pre- and post-construction roadkill surveys
- 222 deaths over 34 months, including 43 coyotes (1.26 per month)

Pre- and post-construction culvert monitoring

Collaborative efforts to protect adjoining habitat

Constructing Movement Corridors?

Wildlife viability depends on connectivity.
Restoring connectivity requires collaborative science, interagency planning, and cooperation.

Caltrans-NPS Collaborative Projects