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An Analytical Framework for Wildlife Crossing Policy in California

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Abstract

This abstract reports on the results of a California joint DOT-university project to develop database, modeling, and GIS tools and to publish an electronic manual and digital library to address animal-vehicle collision reduction and connectivity issues in the state.

Despite the potentially large impacts of roads on wildlife movements and mortality, California has historically lacked standardized information tools to enable wildlife and transportation planners and managers to best identify and mitigate those impacts. These issues are being addressed by several California Department of Transportation research and development initiatives, including Animal Vehicle Collision Reduction and Connectivity Issues, Fish Passage, and Advanced Mitigation, much in collaboration with the University of California. Goals include addressing:

- Developing Useful Metrics, Standardizing Data Collection Techniques and Data Analysis Models/Tools for Assessment
- Improving Safety and Delivery in the Caltrans Planning and Project Development Process
- Strategic Outreach and Engagement
- Development of Guidance Documents and Support Tools for Analysis based on the developed Metrics, Standards, and models
- Working at a program level to optimize and leverage funding opportunities for collision reduction and connectivity issues

Elements of a new analytic framework to address this need include integrative GIS tools to identify, on both local and regional scales, locations of core wildlife populations, mapping of least-cost-path movement corridors to identify locations posing high risks of crossing mortality, a library of species-specific information on movement patterns and models, tools to develop more systematic documentation of road-related wildlife mortality, and a clearinghouse for evaluating structures, technologies and networking approaches to remotely detecting the presence of wildlife around transportation facilities, evaluating impacts, and mitigating the effects. Improved data from remote sensing and GIS clearinghouses, new methods and sensors for detecting animals and movement, emerging technologies for networking distributed and heterogeneous data, new data standards and models, and better integration with other information sources can all contribute to decreasing road impacts on animal populations and movements. Results of this project include a newly published California manual for managing wildlife crossing issues and GIS, database, and supporting digital library tools on-line at the Information Center for the Environment (http://ice.ucdavis.edu).