



MORONGO BASIN ALTERNATIVE FUTURES

Mountain Lion - *Puma concolor*

About the Species:

The mountain lion is a large carnivore capable of long distance travel, yet particularly vulnerable to fragmentation of habitat and impacts of paved roads. The animal is not found in large numbers (estimates in California in 1990 were 2,500-5,000 individuals), but plays an important role as a large carnivore in the ecosystem. While some permits are issued by the California Department of Fish and Wildlife (CDFW) to kill the animals (as well as to study them), hunting of mountain lions is prohibited and CDFW classifies the species as a Specially Protected Mammal.



Threats:

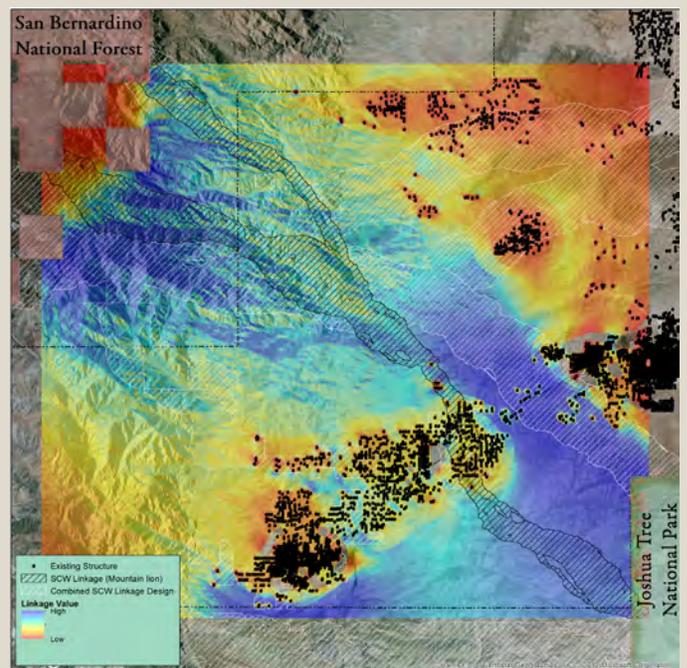
Urban development and improved roads are the largest threats to the survival and movement of mountain lions, which need large areas without roads to survive, and room to migrate to ensure genetic diversity. Development that impacts connectivity and increases the potential for conflicts between mountain lions and domestic livestock and pets is ultimately threatening to the long term survival of the species. The mapped mountain lion corridor connecting the San Bernardino Mountains and Joshua Tree National Park traverses protected habitat for the species along much of the connection, however scattered development and State Highway 62 threaten connectivity.

Habitat:

The mountain lion can live in a variety of habitats that provide good cover; these include brushy or forested areas. Cliffs and outcrops may be used as areas for hunting, or as den sites. Travel is often along water routes or vegetated ridge tops.

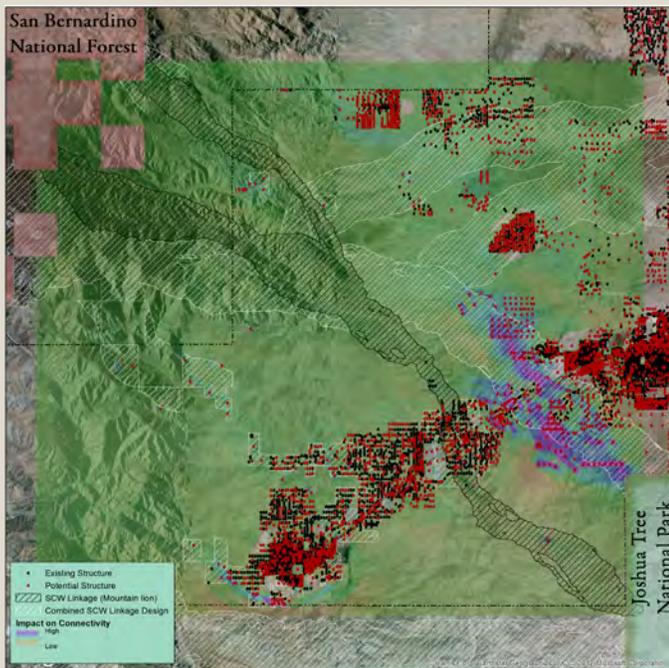
Potential Development Impacts:

Currently there are no areas of core habitat large enough for the mountain lion home range in the Morongo Basin. The SC Wildlands linkage analysis identifies a mountain lion linkage that follows canyons north and south of Morongo Valley. That linkage minimizes the distance across the valley floor and maximizes the ability of mountain lions to remain concealed within high quality habitat. The Wild Planner analysis indicates that the area where the linkage crosses the valley is already relatively densely developed and is likely compromised with respect to mountain lion usage, as illustrated below.



Colors in the map above represent relative value of current density. Areas of high current density indicate where animal movement is likely to be concentrated. Mountain lions may be more likely to use the SC Wildlands linkage because of terrain and habitat preference, but development along the linkage may impede movement. Current density indicates an alternative route that may get less frequent use, but contains fewer obstacles to movement.

Wild Planner further indicates that a gap in development east of the mapped linkage zone may be crucial for maintaining connectivity for mountain lions across the valley and should be maintained as a fail-safe for the original linkage. The map below shows the potential impacts to connectivity in this area as modeled by full build out.



Strategies for Protection:

Protection of this species could be greatly enhanced through studies of the population dynamics of the remaining southern California mountain lions populations, and avoidance of development in the few areas of connectivity remaining. In the meantime, education of residents in areas likely to be traversed by mountain lions should include stewardship and provision of secure areas for domestic livestock and pets, as well as avoidance of lighting and impacts of roads to the extent possible, to allow individuals to maintain connections between subpopulations.



References:

- Penrod, K., C.R. Cabañero, P. Beier, C. Luke, W. Spencer, and E. Rubin. 2005. South Coast missing linkages project: A linkage design for the San Bernardino-Little San Bernardino connection. *Idyllwild: SC Wildlands*.
- Penrod, K., C.R. Cabañero, P. Beier, C. Luke, W. Spencer, E. Rubin, and C. Paulman. 2008. South Coast missing linkages project: A linkage design for the Joshua Tree-Twenty-nine Palms connection. *Idyllwild: SC Wildlands*.
- Weigel, S., Ellis C. and B. Brock. 2013. Integrating Scenario Planning Tools with Wildlife Planning Tools: Informing Land Use Planning in a Rural Desert Landscape via the Morongo Basin Alternative Futures Project. Lincoln Institute of Land Policy Working Paper.

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Map Credit: Brent Brock, Craighead Institute.

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