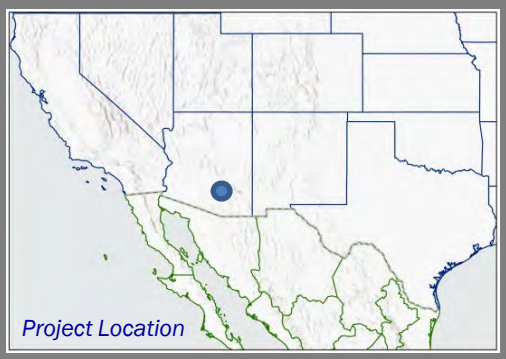
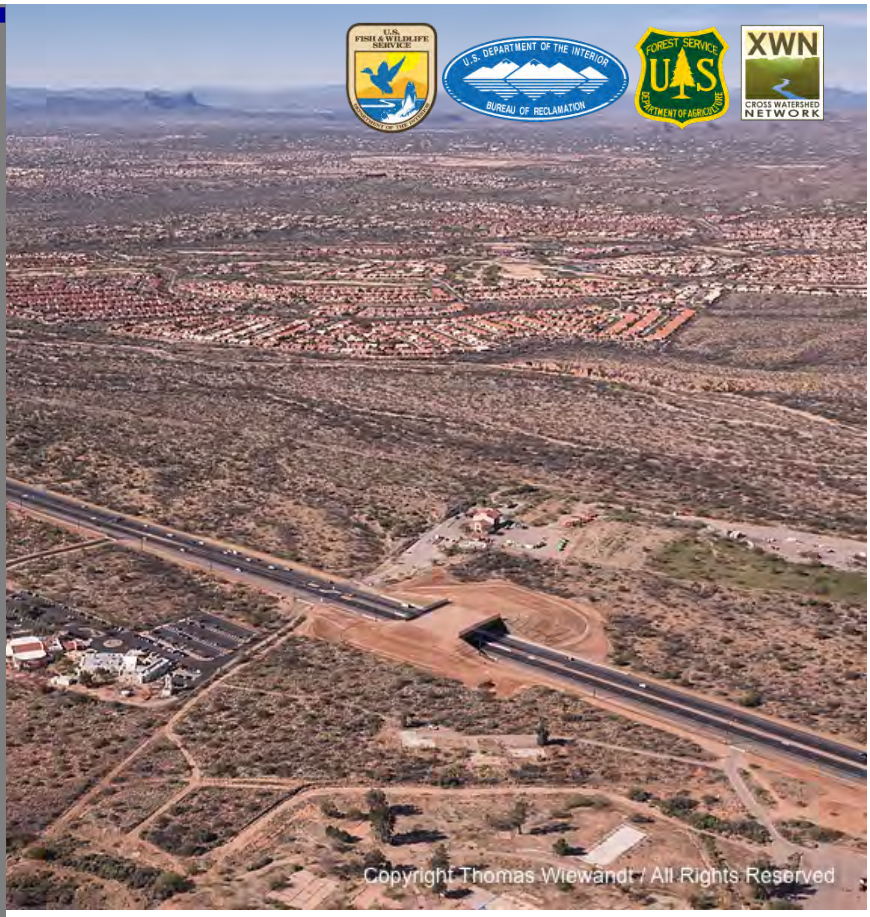
HABITAT CONNECTIONS

Oracle Road Wildlife Crossings: Promoting Habitat Connectivity

ADOT | Coalition for Sonoran Desert Protection | RTA Regional Transportation Authority

Wildlife linkages are the pathways wildlife travel between large, separated wildland areas. Oracle Road/State Route 77, a busy six-lane highway, crosses a major wildlife linkage that connects the Tortolita and Santa Catalina Mountains at the edge of the Tucson, Arizona metropolitan area. The Regional Transportation Authority partnered with the Arizona Department of Transportation—with the support of community partners such as the Coalition for Sonoran Desert Protection, Pima County, and Arizona Game and Fish Department—to construct two wildlife crossing structures with adjacent wildlife-funnel fencing on Oracle Road to help wildlife move between protected habitat areas.



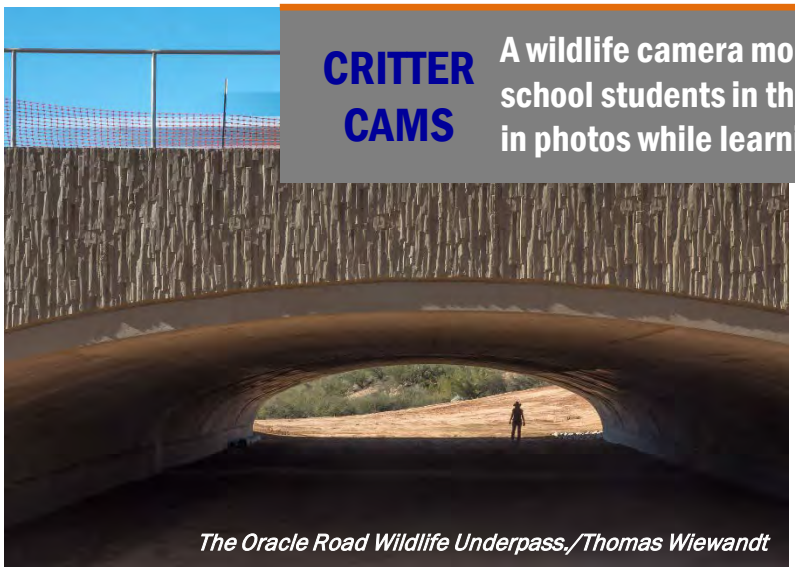


KEY ISSUES ADDRESSED

Landscape-wide habitat connectivity (connected habitat) is essential for healthy wildlife populations. Without connected habitat, wildlife diversity decreases, genetic health declines, and species are eventually lost. Habitat fragmentation due to increased human development poses a significant threat to wildlife populations by reducing habitat connectivity. Additionally, traffic collision with wildlife pose a threat to both humans and animals, with an average of nearly 2,000 wildlife-vehicle collisions reported in Arizona each year. The linkage between the Santa Catalina and Tortolita Mountains has been recognized as one of the most compromised and threatened wildlife corridors in Arizona. Well-designed wildlife crossings can promote habitat connectivity while reducing wildlife-vehicle collisions.

PROJECT GOALS

- Design and construct an overpass and underpass for safe wildlife passage, along with wildlife funnel-fencing to direct animals to crossing structures
- Complete post-construction monitoring to evaluate usage of the crossings
- Engage and educate the local community through community science and outreach



The Oracle Road Wildlife Underpass./Thomas Wiewandt

CRITTER CAMS A wildlife camera monitoring program engages local elementary school students in the project. The students sort and identify wildlife in photos while learning about linkages and Sonoran Desert wildlife.

PROJECT HIGHLIGHTS

Making Way for Wildlife: Two wildlife crossing structures – an overpass and an underpass – with adjacent wildlife-funnel fencing were located and designed based on the best available science and to accommodate a wide range of Sonoran Desert wildlife species. The wildlife underpass was located in an existing wash, and the wildlife bridge was integrated with an existing hill on one side of the road. Both crossing structures were seeded with a native plant seed mix after construction and boulders were placed on one side of both structures to discourage vehicle use.

Recognizing an Opportunity: The crossings were planned and constructed in tandem with the widening of Oracle Road from four to six lanes. This produced significant cost savings since the crossings were incorporated into the overall design and construction schedule.

Monitoring Effectiveness: Beginning in 2016, project partners engaged in a 4-year program with Arizona Game and Fish to monitor effectiveness of crossings with wildlife surveillance cameras, roadkill surveys, and tracking of 20 nearby desert tortoises.

Collaborators

- Coalition for Sonoran Desert Protection
- Arizona Department of Transportation
- Regional Transportation Authority
- Pima County
- Arizona Game and Fish Department (AGFD)

Funding Partners

- Regional Transportation Authority

Case study support provided by US Fish and Wildlife Service, US Bureau of Reclamation, US Forest Service, and Cross Watershed Network. Updated November 2018.
Photos courtesy of Coalition for Sonoran Desert Protection

LESSONS LEARNED

In the first two years following construction, 16 different wildlife species were documented using the two crossings equaling over 4,400 animal crossings as of June 2018. Animals began using the crossings much sooner and in higher numbers than biologists predicted.

A roadkill "hot-spot" exists where fencing gaps allow wildlife to access the roadway. To fill in these gaps, wildlife fencing needs to be attached to private properties. The Coalition is working with the surrounding homeowners to reach a compromise in fence location and type that will respect private property rights and also effectively keep wildlife off the roadway.

Educating and engaging the community has been essential to the success of this project. However, it can be challenging to convey complicated information about wildlife linkages and the need for wildlife crossings. Project partners are working with local media outlets to create timely and engaging stories that include the project goals and updates.

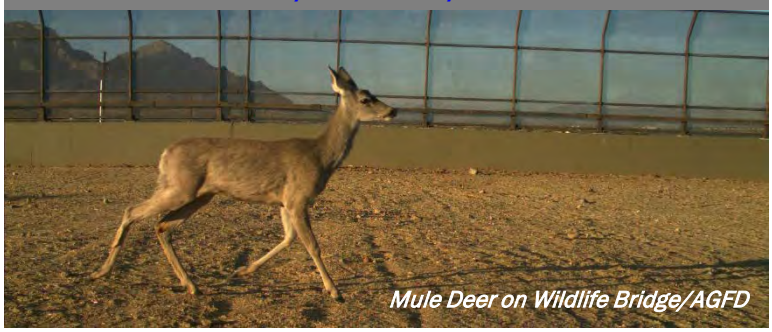
NEXT STEPS

- Work with nearby homeowners to close remaining gaps in wildlife fencing
- Continue monitoring the effectiveness of the structures with Arizona Game and Fish Department

PROJECT RESOURCES

For more information on this project, contact Carolyn Campbell: Carolyn.Campbell@sonorandesert.org

For additional project resources and case studies, visit the Collaborative Conservation and Adaptation Strategy Toolbox: WWW.DESERTLCC.ORG/RESOURCE/CCAST



Mule Deer on Wildlife Bridge/AGFD