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INTEGRATING TRANSPORTATION AND RESOURCE CONSERVATION PLANNING

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Abstract

The arroyo toad was federally listed as an endangered species in 1994. For the last 10 years, the Cleveland National Forest in southern California has been evaluating and mitigating the effects of roads and road crossings on this species. To date, we have closed five miles of roads within toad habitat and have constructed seven crossings to reduce or eliminate the effect of the crossings on toads.

Prior to this effort, most of the stream crossings in toad habitat were unimproved and vehicles drove directly through the stream. This caused several problems for toads:

1. While crossing the stream, vehicles would often proceed to drive up and down the stream, causing considerable disturbance of the stream bed and increasing turbidity in the stream.
2. Vehicles would often become stuck in the stream or hit a rock while attempting to cross the stream, which could result in spillage of oil or other toxic substances into the stream.
3. Tadpoles present in the stream could be crushed by vehicles driving through the crossing.

Two different types of stream crossings were constructed to separate vehicle traffic from contact with the streams. The first type was an "Arizona" crossing, which is a raised concrete ford with culverts. This type of crossing was constructed with adjacent partially buried k-rail or fencing to ensure that vehicles stayed on the road surface. The second type of crossing was a precast concrete 93 feet span designed to accommodate a 50-year flood and to eliminate vehicles from driving 400 feet up of the stream. Our poster will illustrate these two types of crossings. Since 1999, the Cleveland National Forest has been monitoring Forest roads/road crossings after rainfall events and we have not observed any arroyo toads killed or injured by vehicle traffic.