

A case study on desert tortoise (*Gopherus agassizii*)



Gopherus agassizii

Class: Reptilia
Order: Chelonia
Suborder: Cryptodira

Super Family: Testudinoidea
Family: Testudinidae

Genus: Gopherus
Species: agassizii

Weight: 8-15 lbs.
Length (carapace): 9-15"
Height: 4- 6"
Sexual Maturity: 15-20 years
Mating Season: Aug.-Oct.
Incubation Period: 90-120 days
No. Of Eggs: 4-8
Birth Interval: 2-3/year
Lifespan: 80-100 years
Typical diet: Herbs, grasses, wildflowers

Curious Facts

The Desert Tortoise is able to live where ground temperature may exceed 140 degrees F.

95% of a Desert Tortoise's life is spent in underground burrows

Ravens have caused more than 50 percent of juvenile Desert Tortoise deaths in some areas of the Mojave Desert.

Adult tortoises may survive a year or more without access to water.

Desert Tortoise populations have declined by 90 percent since the 1980s

Ravens are now one of the Desert turtle's primary predators.

Much of the tortoise's water intake comes from moisture in the grasses and wildflowers they consume in the spring.
It is unlawful to touch, harm, harass or collect a wild Desert Tortoise

Project description and location

- Add an additional lane on both sides of Interstate 15 and widen shoulders on a 21 mile stretch of the freeway between Barstow and Victorville in San Bernardino County.
- The project will permanently impact 74 Acres of desert tortoise habitat, as well as, 61 Acres of temporary impacts.

Applicable Laws

The Federal
Endangered Species
Act of 1973 (16
U.S.C. 1531-1543)
50 CFR Part 402 and
50 CFR Part 17.3,

The California
Endangered Species
Act, Section 2080
and Section 2081.1

Construction Activity In Habitat Area

This project is within or near identified desert tortoise (*Gopherus agassizii*) habitat. The habitat includes areas within the Department of Transportation's (DOT) right of way.

Construction activity includes, but is not limited to, temporary haul and access roads, staging/storage areas and batch plant.

If evidence of a desert tortoise is discovered within the work area during construction activities, the Contractor shall immediately stop work and notify the Engineer.

Monitoring work

- In general every week the temporary tortoise fence from Bell Mountain (PM 47.4) to Lenwood Wash (PM68.8) was monitored for the proper functioning of the fence.
- The monitoring work took place on each day of construction (including some weekends) and there was no monitoring when there was no construction taking place (including some holidays).

Monthly Detection/Mitigation

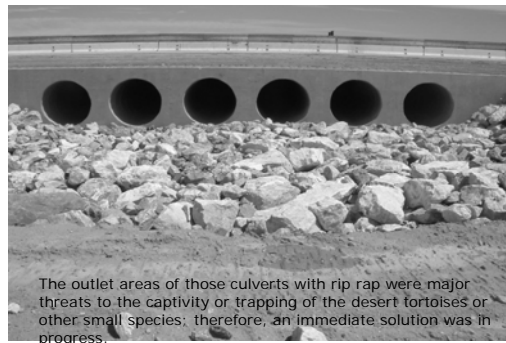
- We relocated a hatchling tortoise from the southbound side at PM 61.65 and we relocated a hatchling from the right of way to an existing burrow about 885 meters west of the right of way.
- We relocated an adult male tortoise on the southbound at PM 59.46 and the tortoise was relocated 900 meters west of the right of way fence; released in the shade of a Yucca tree.
- We relocated an adult male tortoise from the southbound side: PM 61.78 and it was relocated it to a site 950 meters west of right of way fence; released tortoise in shade of a Creosote bush.
- There were a location of an adult desert tortoise, sex unknown on the southbound side at PM 58.94 and the tortoise was allowed to walk off the right of way by its own.
- An adult desert tortoise; sex is unknown on the southbound side at PM 59.46. Tortoise was allowed to walk off the right of way on its own.
- A tortoise was located in area of operations on the right of way heading in direction of highway. This tortoise was relocated to opposite side of freeway away from activity about ½ mile west in an appropriate habitat.

Data collection results

A total of 399 desert tortoise sign was observed during the survey period. This total sign was corrected to consolidate associated sign for individual animals.

A total of 249 corrected desert tortoise sign were observed for the entire survey area. From this point forward all reference to total sign will indicate "corrected sign".

Data segments into west half (southbound) and east half (northbound) totals further divided the collected data.



The outlet areas of those culverts with rip rap were major threats to the captivity or trapping of the desert tortoises or other small species; therefore, an immediate solution was in progress.



Finally it was agreed and decided among Caltrans, CDFG, and USFWS to place gravel within the rip raps of those culverts that had created a major threat.

Providing DT accessibility

- Caltrans Monitors identified and evaluated the potential culverts. A request to amend the contract to make proper changes (Change Order) was recommended to the Project Resident Engineer to correct the rip rap problem by placing gravel in all rip rap.
- Because of a smaller population density south of Dale Evens (PM 51.8), it was agreed to provide accessibility south of Dale Evens for the desert tortoise only on a ½ mile basis.
- And based on the formula, a total of 94 culverts had to become accessible by gravel placement.

Data interpretation

- In general, the distribution of desert tortoise sign within the survey area was widespread, but localized or "clumped" with the majority of sign occurring in the northern half of the survey area.
- The exception is the southern most portion of the survey area from Boulder Road to the Mojave River. This area was completely devoid of tortoise sign on the east side of I-15 and only 12 sign (7 carcasses or fragments) were present on the west side.

More than twice the amount of total observed tortoise sign was located on the west side of I-15 (176) as compared to the east side (73).

Live tortoise sign (tortoises, burrows, scat, etc.) increased at distances of 250 feet and farther from the highway. Only 12 burrows (8 west side) and 6 pellets (5 west side) were found within the 100% coverage area extending 150 feet for the highway edges.

The highest totals of tortoise sign were found between Lenwood Road and Hodge Road.

A total of 152 desert tortoise sign (97 west side) were observed in this 8-mile section. This represents 60% of the total observed sign within 30% the total survey area. Habitat in this area did not appear marginally better than other areas along the survey corridor. Live tortoise sign were generally concentrated where there were small amounts of relief, i.e., low hills.

End result

- The collected data provided adequate information to make sure not only we complied with the Resource agencies, provided accessibility across the highway which in turn increased the biodiversity in the region.
- Now the tortoises can and will cross the highway without any danger.