

Date of Issuance: July 27, 2022

DESERT CONSERVATION PROGRAM PROJECT COMPLETION SUMMARY:
CONNECTIVITY MOVEMENT SIMULATION
2015-ALTA-1580K

The work for the above reference project has been completed. Below is a summary of project related information.

The purpose of the above referenced project was:

Maintaining connectivity for Mojave Desert tortoises is critical to allow for maintaining genetic diversity and to allow physical movement and demographic rescue by individual tortoises among subpopulations. The purpose of this project was to perform a connectivity simulation in order to establish better movement corridors for tortoises.

The major accomplishments or findings of this project include:

This connectivity simulation project used movement data from local GPS-tagged desert tortoises to populate multistate random walk models to approximate the movements of local desert tortoises. We then allowed simulated desert tortoises to move around the landscape in response to a heterogeneous surface reflecting landform connectivity for desert tortoises and monitored the rates at which simulated desert tortoises used culverts to cross the highway. A key novel component of the simulation was the inclusion of an impermeable barrier, the fenced highway. This meant that although simulated desert tortoises could approach the highway, they could only walk alongside it until they reached a culvert. We also varied the density and width of culverts in the simulated landscape to evaluate whether an increased culvert density or size would more effectively ensure functional connectivity of desert tortoise populations across the highway. Our results indicate that when planning for infrastructure and conservation of desert tortoise populations, transportation planners and wildlife managers should consider the densities and widths of culverts used in road improvement projects. The implications are that connectivity across highways for desert tortoises would benefit from increasing the density and/or width of under-highway culverts.

For more information about this project and/or for other Project Reports or Symposium Reports, please visit our [website](#)

If you have any questions about this project please contact DCP Project Manager Scott Cambrin at (702) 455-3859.

DESERT CONSERVATION PROGRAM PROJECT COMPLETION NOTICE

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General Project Information

Project Category	Conservation
Compliance Category	9d-Research/Inventory/Monitoring
Project Level	Level 2
Project Title	CLOSED Connectivity Movement Simulation
Project Number	2015-ALTA-1580K
Contractor	Alta Sciences & Engineering, Inc.
DCP Project Manager	Scott Cambrin
DCP Contract Manager	Sara Carrizal
Contract Start Date	11/1/2021
Purchase Order Number	4500339272-028
Contract End Date	6/30/2022

Financial Breakdown

Funding Source	SNPLMA R16
Original Contract Amount	\$84,100.00
Funds not used in Contract	\$0
Final Payout Amount	\$84,100.00

Performance Information

Total Number of Change Requests	0
Total Number of Deliverables	5
Number of Deliverables Accepted	5
Number of Deliverables Rejected	0
Number of Delinquent Deliverables	1
Total Number of Milestones	4
Number of Delinquent Milestones	1
Number of Milestones Met on Time	3
Total Number of Invoices Submitted	4
Number of Rejected Invoices	0