

Quarterly Report

Agency/Organization: The Great Basin Institute

Project Name: Desert Tortoise Range-Wide Monitoring (Year 1)

Project Number: 2023-GBI-2325A

Reporting Period: 1 April – 30 June 2024

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QUESTION 1: What did you accomplish during this reporting period? How did these accomplishments help you reach the goal of your project? If relevant, what indicators or benchmarks were used to determine your progress?

This quarterly report documents the status of the Desert Tortoise Range-Wide Monitoring Project conducted by the Great Basin Institute (GBI) for the second quarter of project number 2023-GBI-2025A; 1 April – 30 June 2024. GBI was contracted by the Clark County Desert Conservation Program (DCP) to conduct line-distance sampling (LDS) surveys and telemetry surveys to estimate the population of the Mojave desert tortoise (*Gopherus agassizii*) in pre-determined strata in Clark County, Nevada.

Project Goals and Objectives:

- Train monitors on project protocols, handling, and desert safety.
- Complete assigned transect surveys and submit data as assigned in the deliverable schedule.
- Complete telemetry surveys to correspond with transect surveys.
- Collect monthly locations on telemetered tortoises in Gold Butte and Halfway Wash.
- Write reports as assigned in the deliverable schedule.

Objectives Completed this Quarter:

- Finalized training of monitors on project protocols, handling, and desert safety.
- Completed 213 transects in three strata.
- Submitted regular data uploads to Clark County.
- Completed telemetry surveys that corresponded with transect surveys.
- Collected monthly locations on telemetered tortoises in Gold Butte and Halfway Wash.
- Submitted reports as assigned in the deliverable schedule.

The majority of the project objectives were completed in the second quarter. Training primarily took place during the first quarter, and was finalized at the beginning of the second quarter. Transect monitors completed their training by walking training and practice transects. Telemetry monitors completed their training by recording field observations. Data recorded by monitors at the end of training were assessed by the project coordinator and data specialist at GBI.

Surveys began on 2 April and were conducted through 13 May. Surveys were completed in Piute Valley, Coyote Springs, and Beaver Dam strata. Nine teams of two each walked a single 12-kilometer transect per day, four days a week, following LDS protocol. Transect monitors completed 213 transects and observed 52 live tortoises and 68 carcasses on transects, plus 10 live tortoises and 8 carcasses opportunistically within the monitoring strata.

Telemetry surveys corresponded with transect surveys in both location and time (referred to as G_0 monitoring). Two telemetry monitors recorded multiple observations per day for a set of tortoises equipped with radio antennae in Piute-Mid (corresponding with Piute Valley stratum) and Halfway Wash (corresponding with Coyote Springs and Beaver Dam Slope strata). Telemetry surveys began each day roughly 30 minutes before transect start times, and continued until transects were concluded or about 4 PM, whichever came first. Telemetry monitors recorded 1,345 G_0 observations plus 30 non- G_0 observations (including 9 transmitter replacements, 2 new transmitter attachments, and 1 transmitter removed with the tortoise released).

QUESTION 2: What, if any, problems were encountered? Briefly describe those problems and the manner in which they were dealt.

Due to unexpected illness early in the field season, we had to proceed with reduced staffing but were able to adjust transects to proceed with the planned transects.

QUESTION 3: What, if any, proposed activities were not completed? Briefly describe those activities, the reasons they were not completed and your plans for carrying them out.

Project activities are on track at this time.

QUESTION 4: What is the calculated percent of work completed?

Project activities for this quarter began on 1 April 2024. It is estimated that 75% of the project has been completed for year 1 at this time. More progress is expected in the next quarter, as GBI will submit an annual report and give a presentation of the project, in addition to continuing monthly observations at established telemetry sites.

QUESTION 5: Do you foresee any upcoming problems with future project activities? If so, how do you propose to overcome those problems?

No future problems are foreseen for upcoming project activities at this time.

QUESTION 6: Is there anything else you want to tell the DCP about this project?

LDS surveys for this project consisted of two-person teams walking 12-kilometer transects single file, separated by 25 meters between the two team members. All transects were square (3 kilometers on each side) and walked in cardinal directions, unless reflection was required due to human-made obstacles (private property, major highways, etc.) or stratum boundaries. In some cases rugged terrain required transect interruptions for team safety. To assure that transects were walked on the assigned bearings, waypoints were taken every 500 meters. When either a live or deceased tortoise was sighted, the team made a series of measurements from the transect line to the tortoise. These measurements will be used in data analysis. Size,

sex, and a simple body condition assessment were recorded for each tortoise when possible. Tortoises were handled with minimal contact by one individual in the team wearing single-use gloves. When possible, all live tortoises were marked using a paper tag with a unique number provided by the US Fish and Wildlife Service (USFWS).

Telemetered tortoises were monitored using a VHF receiver and directional antenna. Information on location and behavior was collected for each individual multiple times per day, every day that transect surveys took place. Telemetry technicians changed sites as transect survey locations changed.

All data were recorded in the field on paper datasheets and electronically using iPads with ESRI Survey123 data forms. Data were downloaded into a master database each week and assessed for consistency and errors following procedures established by the USFWS.

QUESTION 7: What was produced during the reporting period?

In the second quarter, GBI successfully completed the training of 18 transect monitors and two telemetry monitors for the Desert Tortoise Range-Wide Monitoring Project. Transect monitors completed 213 transects and observed 52 live tortoises and 68 carcasses on transects, plus 10 live tortoises and 8 carcasses opportunistically within the monitored strata. Telemetry monitors recorded 1,345 G₀ observations of tortoises plus 30 non-G₀ observations (including 9 transmitter replacements, 2 new transmitter attachments, and 1 transmitter removed with the tortoise released). All required deliverables were submitted.

Please report on the status of each Milestone and Deliverable, indicate whether they are not started, in progress, or completed and provide comments on the status as necessary

Date Due	Deliverable / Milestone #	Deliverable / Milestone Title	Status
April 24, 2024	M01	Contract Award and Mobilization	Complete
April 30, 2024	M02	Project Kick-off Meeting	Complete
May 5, 2024	D01	Data Management Plan	Complete
May 5, 2024	M03	Training	Complete
April 5, 2024	D02	Quarterly Progress Report (Project start— March)	Cancelled
May 10, 2024	D02	Permits	Complete
May 15, 2024	M04	Begin Field Work	Complete
May 20, 2024	D03	Training Data Upload	Complete
May 27, 2024	D04	Digital Data Upload	Complete
June 4, 2024	D05	Digital Data Upload	Complete
June 11, 2024	D06	Digital Data Upload	Complete
June 18, 2024	D07	Digital Data Upload	Complete
May 24, 2024	D09	Digital Data Upload (If Necessary)	Cancelled
June 20, 2024	M05	Completion of Field Work	Complete
May 31, 2024	D10	Digital Data Upload (If Necessary)	Cancelled
July 5, 2024	D08	Annual Project Data	Complete
July 5, 2024	D09	Quarterly Progress Report (April Project start – June)	Complete
August 7, 2024	D10	Annual Project Report	
August 10, 2024	M06	End of Season Debriefing Meeting	
TBD	M07	2024 Annual Project Review Presentation (If requested)	
October 5, 2024	D11	Quarterly Progress Report (July – Sept)	
December 1, 2024	D12	Project Summary Form and Claims Release	
December 31, 2024		Year 1 Closeout	