

# Desert Tortoise Monitoring

PROJECT NUMBER: 2015-GBI-1545A

PROJECT NUMBER: 2013-GBI-1451A

PROJECT NUMBER: 2015-GBI-1540A



# AGENCY PARTICIPANTS



This work was supported by the Clark County Desert Conservation Program and Southern Nevada Public Land Management Act as project to further implement or develop the Clark County Multiple Species Habitat Conservation Plan



# **Boulder City Conservation Easement Desert Tortoise Telemetry Year 2**

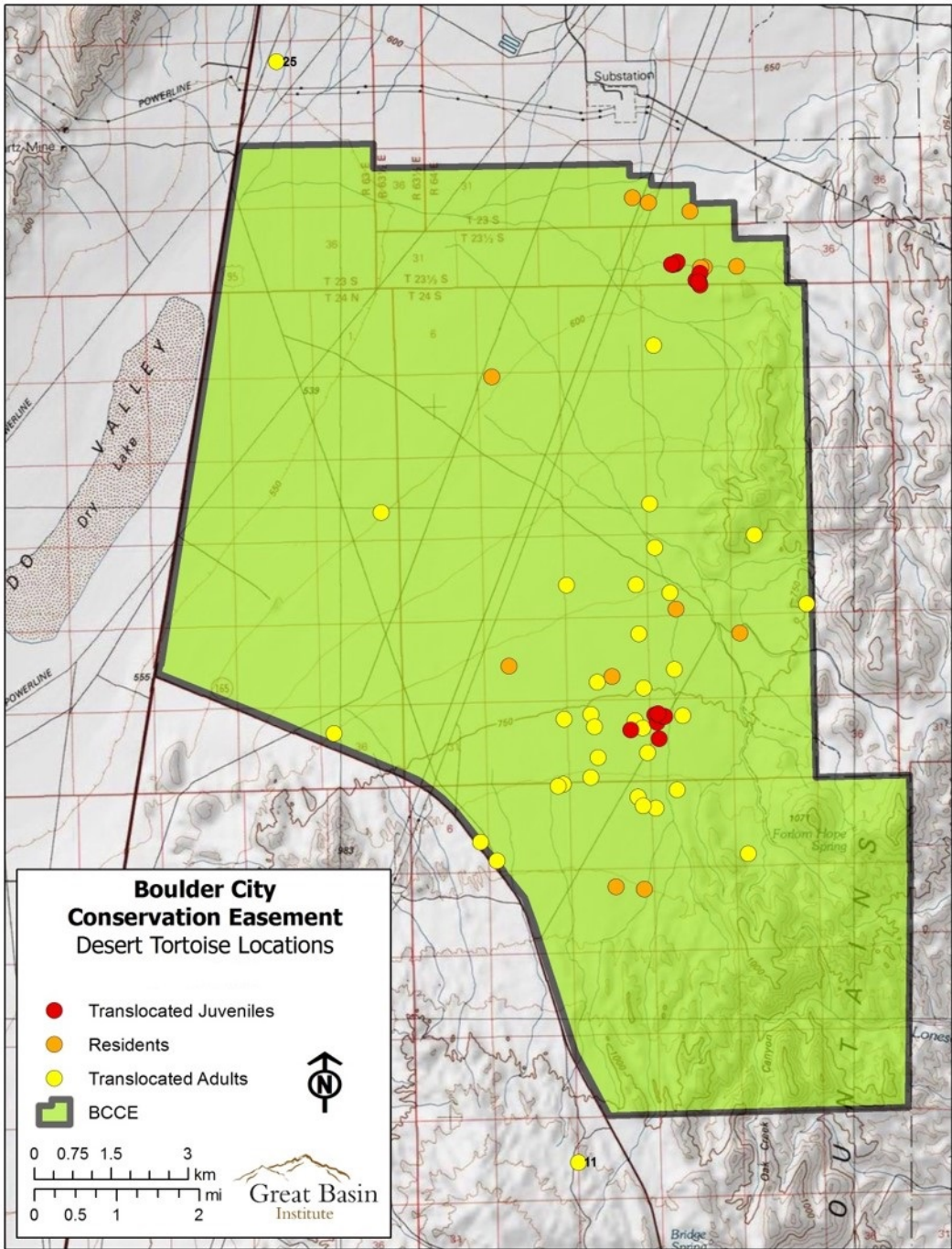


**PROJECT NUMBER: 2015-GBI-1545A**

# PROJECT OVERVIEW



- PART OF A LARGER POPULATION AUGMENTATION STUDY
- DETERMINE SURVIVORSHIP AND MOVEMENT PATTERNS OF TRANSLOCATED AND RESIDENT DESERT TORTOISE
- MONITOR FOR FOUR YEARS POST TRANSLOCATION



# SUMMARY OF PROJECT TO DATE



- **Monthly observations Nov-Feb, Weekly observations Mar-Oct**
- **Original transmittered 13 Resident, 40 Translocated tortoises**
- **Followed in Year 2**
  - **11 Resident tortoises**
  - **17 Translocated tortoises**
  - **6 Missing tortoises (1 Resident, 5 Translocated)**
  - **Dropped transmitters, Transmitters removed**

**DELIVERABLE/MILESTONE**

Begin Monitoring

Year one monitoring completed

Monthly observations completed

Weekly observations and data submission

Quarterly report submitted

Weekly observations submitted

Data to be submitted continue

*Year 3*

*Year 4*

**Fall  
2014**

**Fall  
2015**

**Nov  
15-Feb  
16**

**Mar-  
July  
2015**

**Dec  
2015,  
Apr, July  
2016**

**July-  
Oct  
2015**

**July-  
Oct  
2016**

**2017**

**2018**

**TIMELINE**

**PROJECT NUMBER: 2013-GBI-1451A**



**Eldorado Desert Tortoise Monitoring**

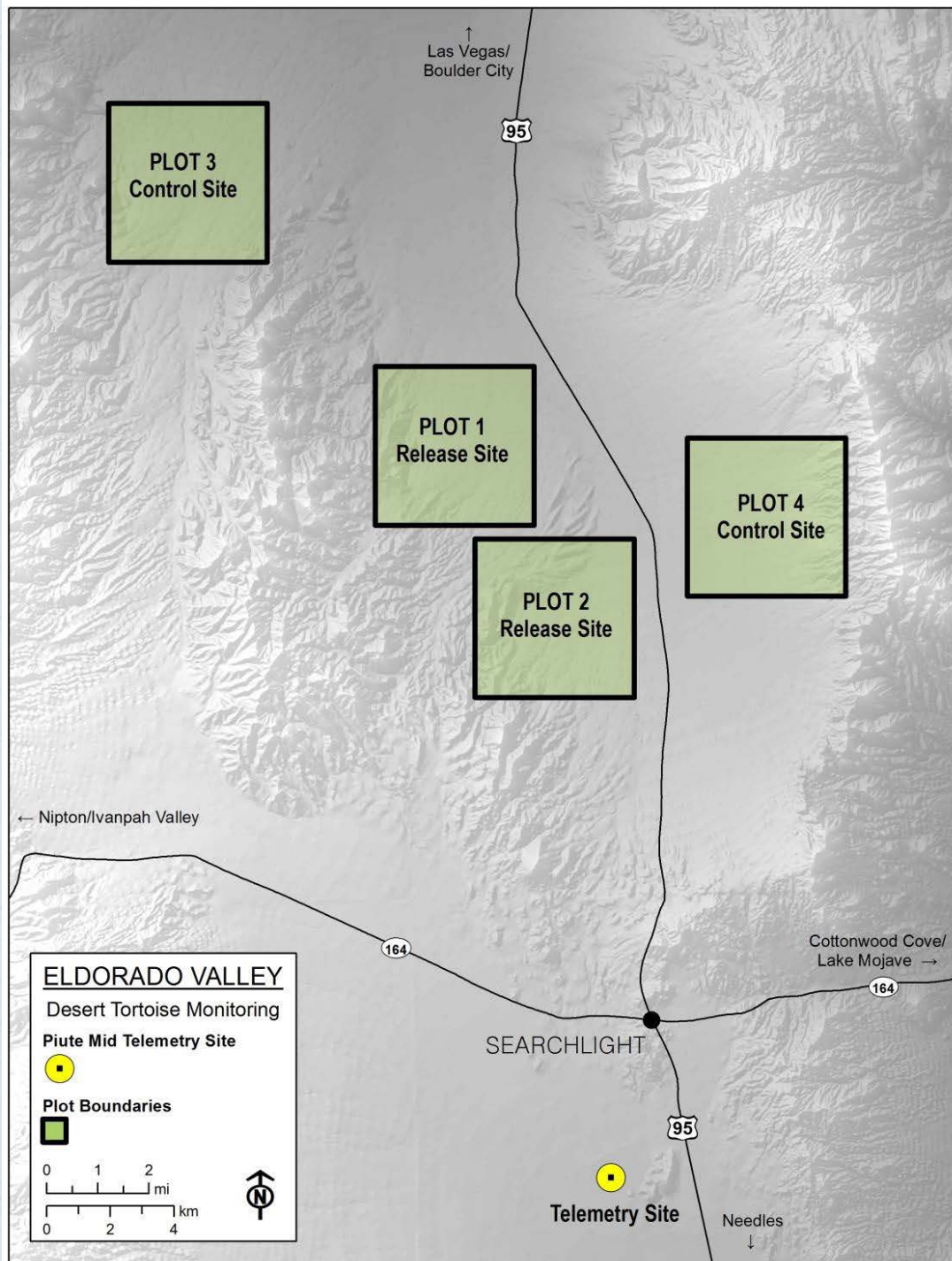
**Year 2**



# PROJECT OVERVIEW



- Part of a larger population augmentation study
- Monitor the effectiveness of translocation by comparing two control sites to two release sites
- Collect data on resident tortoises prior to translocation, Year 0
- Collect data on residents and translocated tortoises post translocation, Year 1 -2015 and Years 2 -2016



# 2016 SEASON

- Crew members were provided training prior to the season
- Practice transect conducted to ensure adherence to protocols
- 5 km parallel transects oriented east and west and 50 m apart
- 2 transects per day
- Tortoise data included location, sex, MCL, BCS and tags
- Unmarked tortoises were tagged, Carcass data collected

# Surveys completed from 5 April - 19 May 2016



- Four plots completed, 413 transect lines walked, plots 1, 4, 3, 2
- 102 Total live tortoises found
  - 95 transect live tortoise observations (74 new, 21 recaptures)
  - 7 opportunistic tortoise observations
- 97 Total carcasses found
  - 95 transect carcass observations (2 with existing tag)
  - 2 opportunistic carcass observations

# TELEMETRY

- **Conducted telemetry at one site in Piute Valley (Piute-Mid) to estimate the proportion of tortoises active or visible during transect surveys. Data used to calibrate the results of transect surveys**



# Telemetry monitored from 5 April - 19 May 2016



- **Average number of observations = 42.9/day**
  - 12-15 previously transmittered tortoises were monitored
  - 1,245 total observations over 29 days

# **SUMMARY OF PROJECT TO DATE**



- **Surveys completed, data and reports submitted to DCP for Year 0, 1 and 2. Project complete**

**DELIVERABLE/MILESTONE**

*Year 0 Completed*

*Year 1 Completed*

*Project Kick-Off, Year 2*

*Refresher Training, Begin Surveys*

*Complete All Plots*

*Project Debrief*

*Submit Final Data and Report*

*Final Project Summary*

**May  
2014**

**May  
2015**

**March  
2016**

**April  
2016**

**May  
2016**

**June  
2016**

**June  
2016**

**July  
2016**

**TIMELINE**



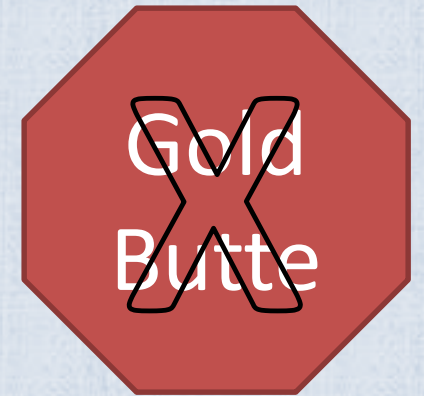
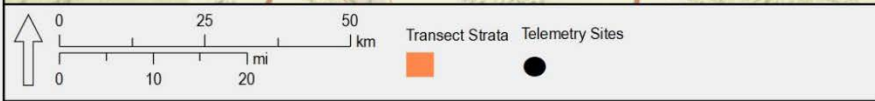
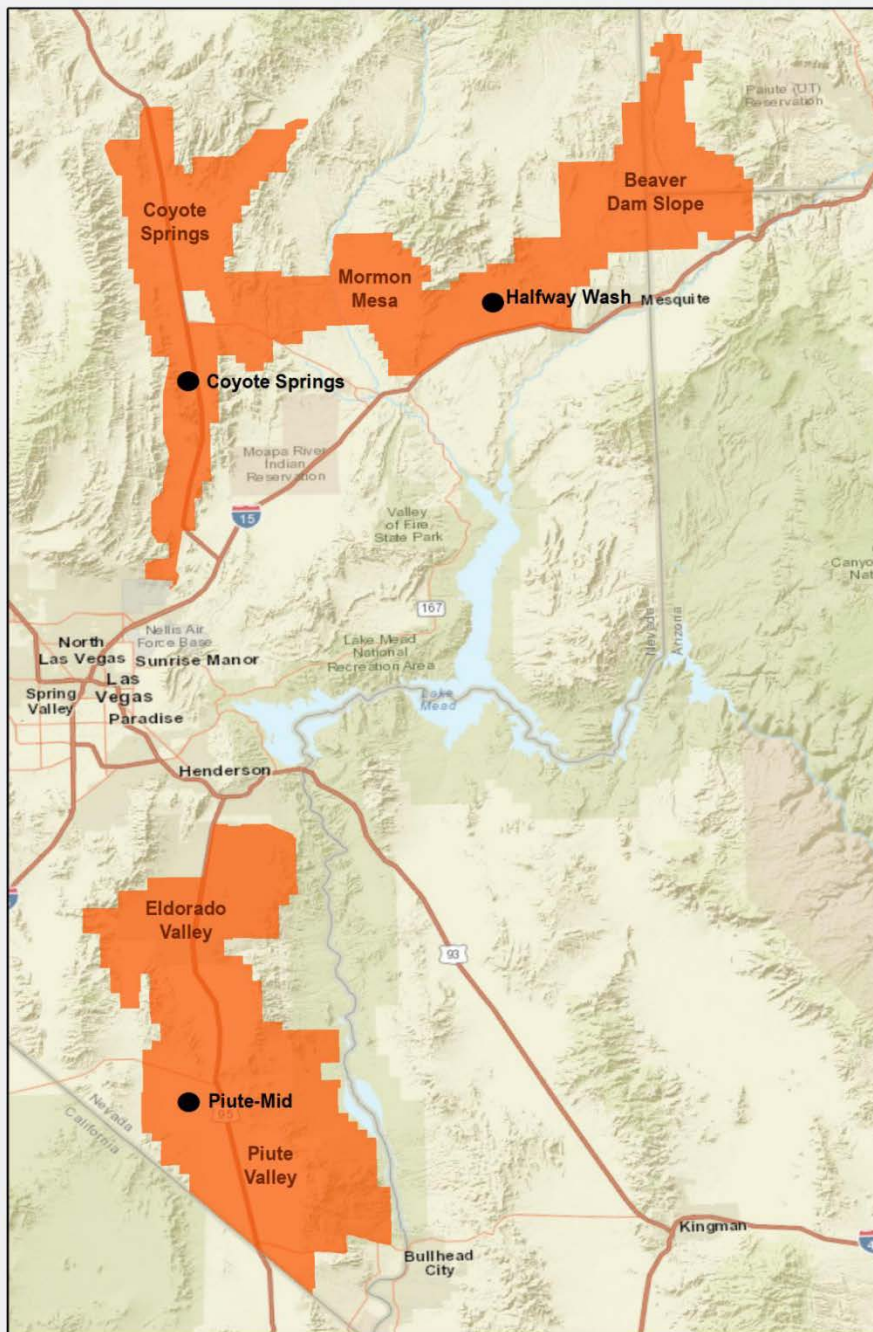
**PROJECT NUMBER: 2015-GBI-1540A**

A photograph of a desert tortoise in its natural habitat. The tortoise is positioned in the lower center of the frame, facing left. It has a dark, textured shell and thick, wrinkled skin. The ground is a mix of light-colored soil and small rocks. Scattered throughout the landscape are numerous bright yellow flowers, likely cholla cholla. In the background, there are various desert shrubs and a clear blue sky. The overall scene is a typical desert environment.

**Range-Wide Desert  
Tortoise Monitoring  
Year 1**

# PROJECT OVERVIEW

- **Generate three yearly estimates of population density for each TCA (6) over a five year period.**
- **Support recovery program efforts for the desert tortoise through range-wide monitoring using LDS**
- **Completed year 1, monitored 5 TCA**



# TRANSECTS



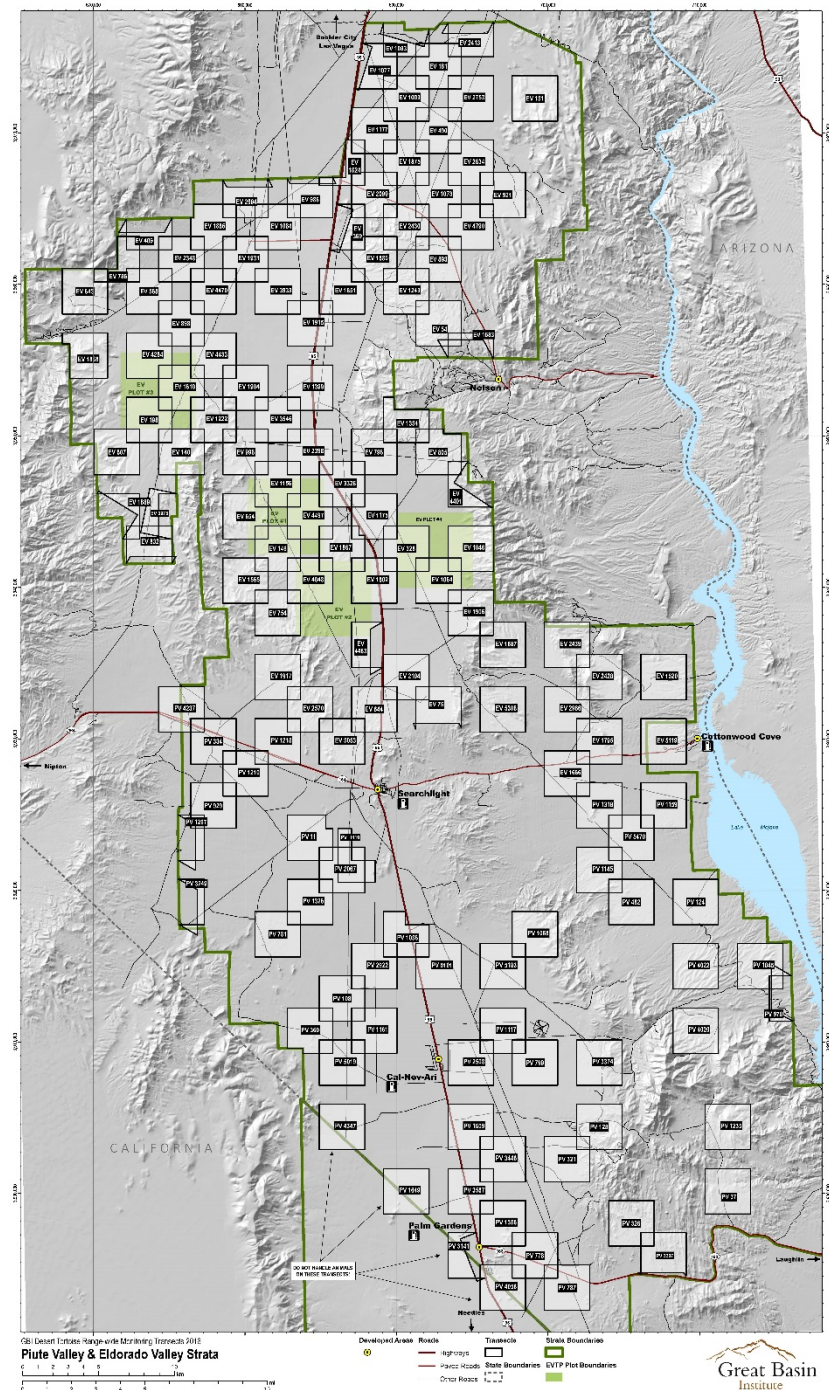
- 12 km square transects, teams of 2 (25 meters apart)
- Randomly assigned walk order
- Tortoise data included location, sex, MCL, BCS and tags
- Unmarked tortoises were tagged
- Carcass data collected

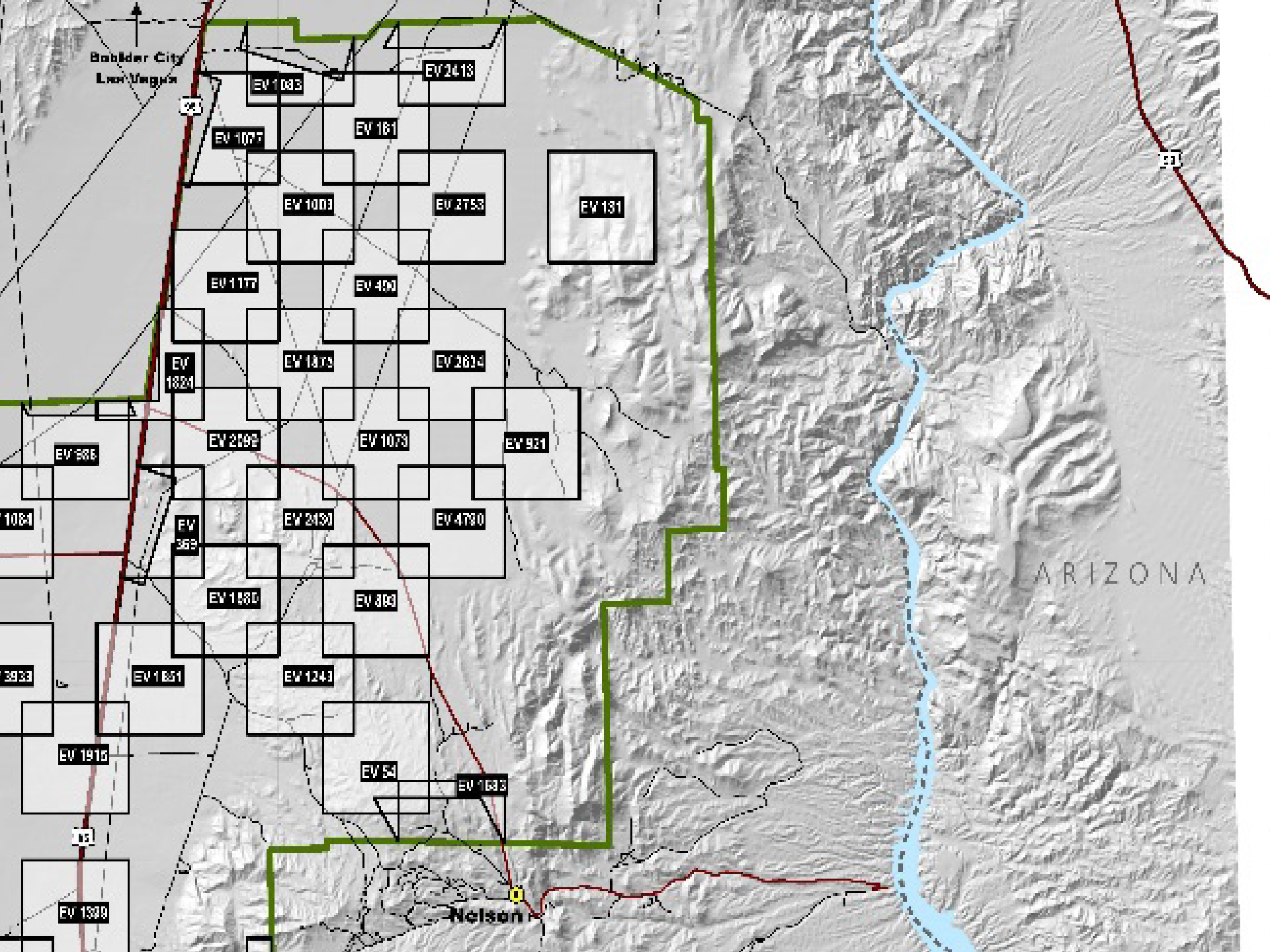
## Piute Valley 52

- 44 Assigned
- 8 Alternate

## Eldorado Valley 89

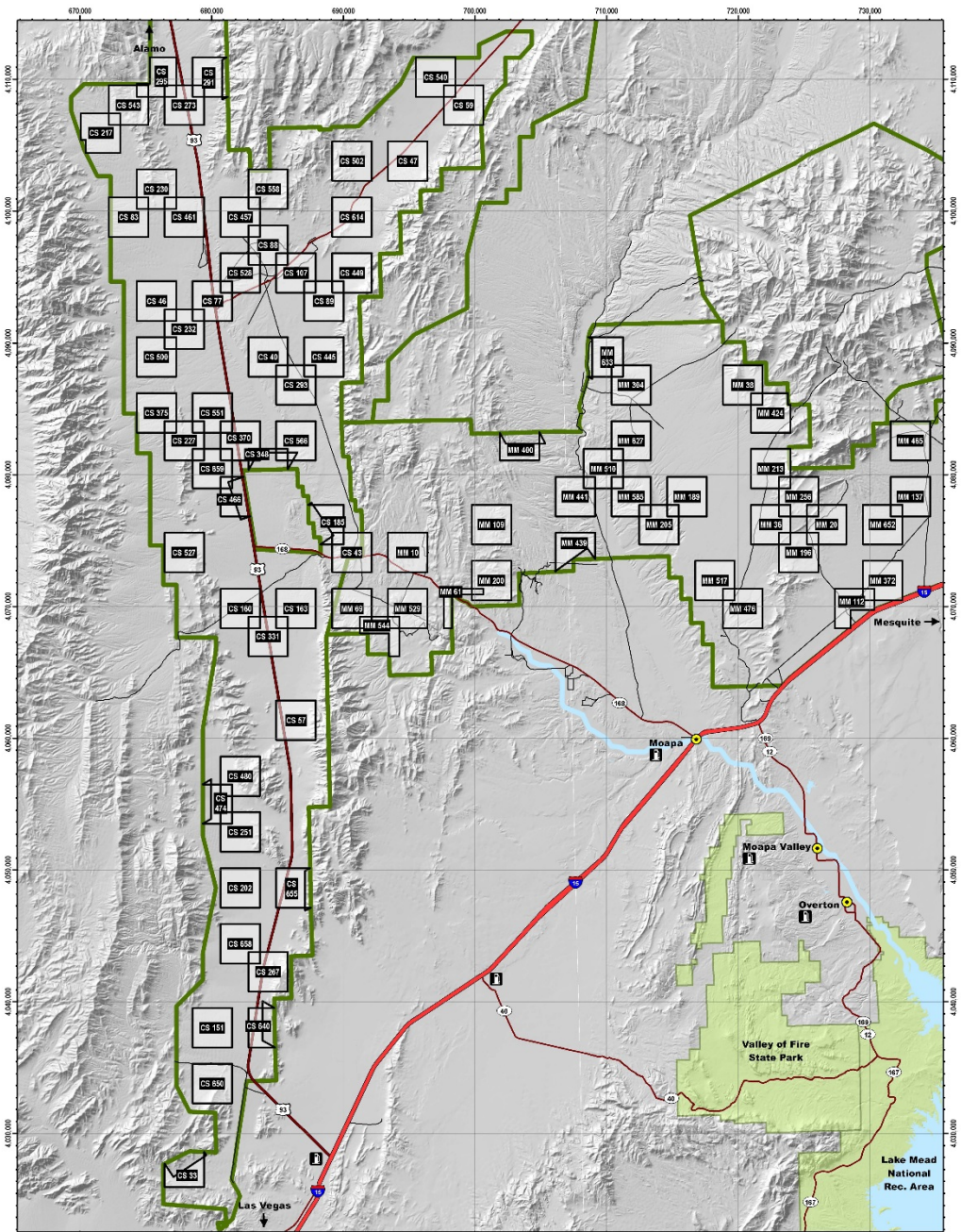
- 81 Assigned
- 8 Alternate





# Coyote Springs 54

- 38 Assigned
- 16 Alternate



GBI Desert Tortoise Range-wide Monitoring Transects 2016  
**Coyote Springs Stratum**

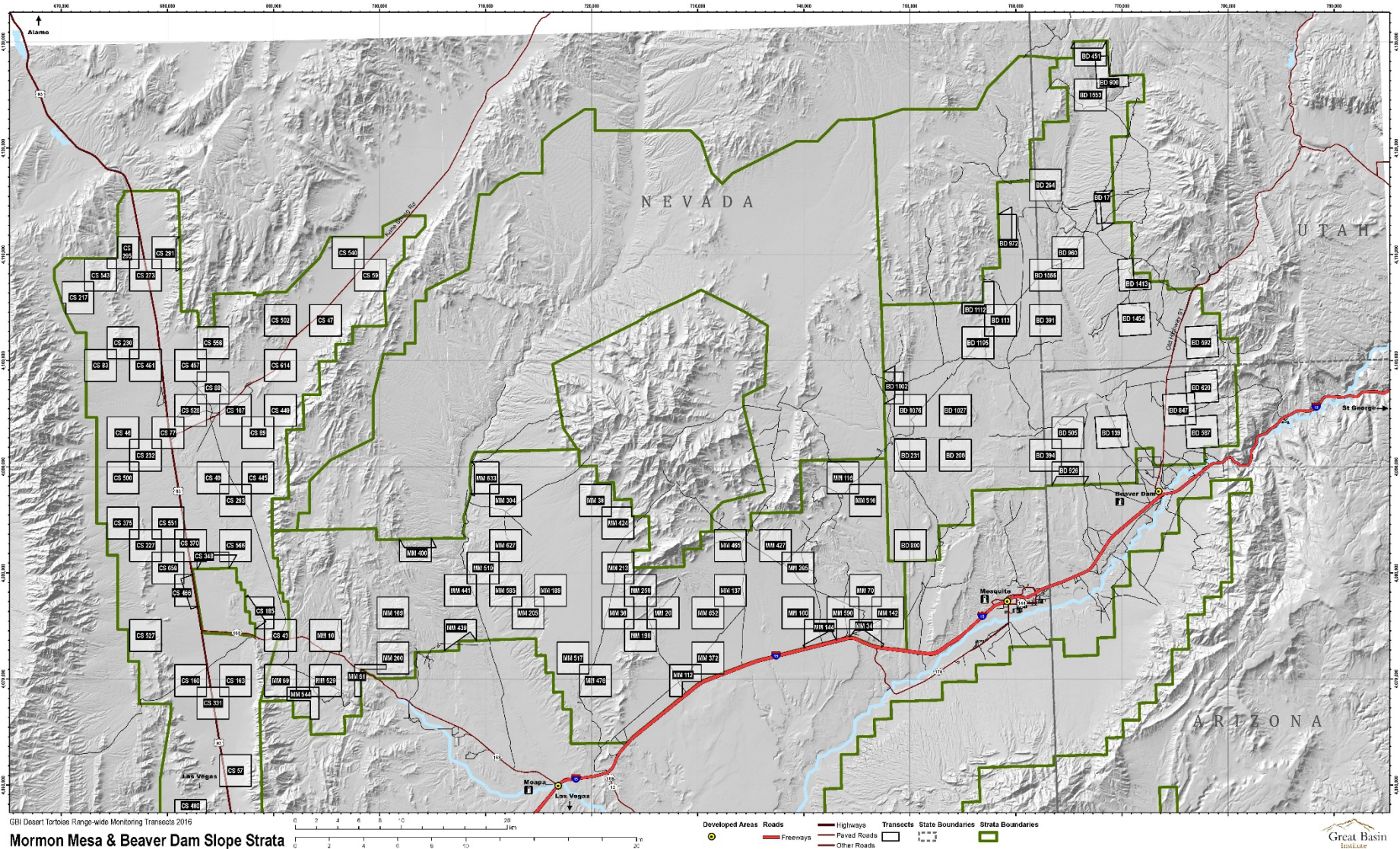


# Mormon Mesa 42

- 37 Assigned
- 5 Alternate

# Beaver Dam Slope 28

- 28 Assigned
- 0 Alternate



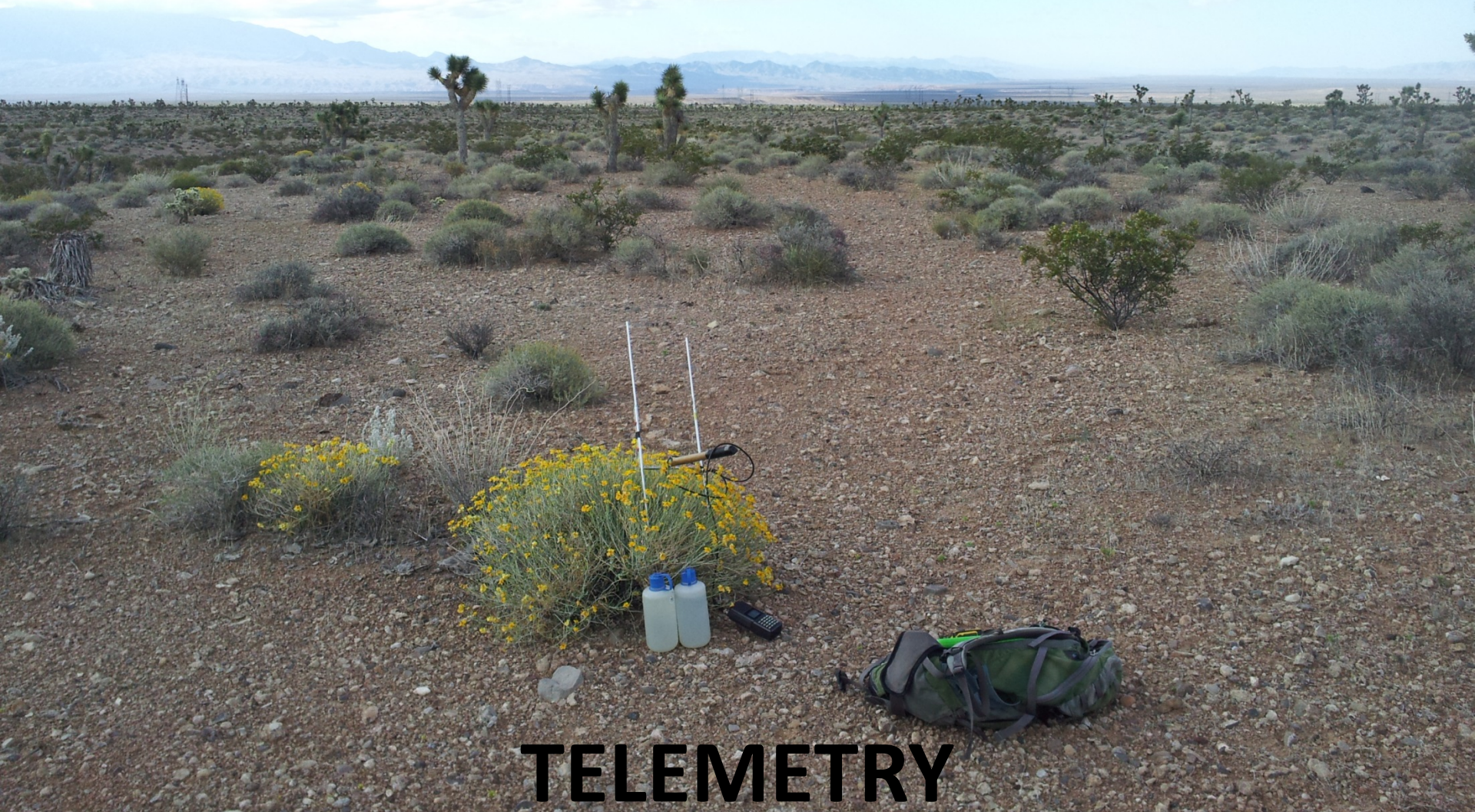


# Surveys completed from 4 April - 28 May 2016



- 265 transects walked, 5 strata
- 127 Total live tortoises found (119 new, 8 recaptures)
  - 104 transect live tortoise observations
  - 23 opportunistic tortoise observations
- 103 Total carcasses found (No existing tag)
  - 97 transect carcass observations
  - 6 opportunistic carcass observations

**Conducted telemetry at Go site Piute-Mid, Coyote Springs and Halfway Wash to estimate the proportion of tortoises active or visible during transect surveys. Data used to calibrate the results of transect surveys**



**TELEMETRY**

# Telemetry monitored from 4 April - 28 May 2016

- 
- A large tortoise is shown in a natural, dry, grassy environment. The tortoise's shell is dark brown with distinct scutes. A small, grey, circular transmitter is attached to the shell. The tortoise is looking towards the camera.
- **Average number of observations = 39.0/day**
    - 11-15 previously transmittered tortoises were monitored
    - 1,328 total observations over 34 days

# SUMMARY OF PROJECT TO DATE



- Crew members were provided training prior to the season
- Practice transect conducted to ensure adherence to protocols
- Surveys completed, data and reports submitted to DCP for Year 1
- Post season telemetry monitoring June 2016 – March 2017

**DELIVERABLE/MILESTONE**

Contract Award

Project Kick Off

Training

Surveys and Telemetry begins

Complete All Transects

Annual Project Data Submitted

Project Debrief

Annual Project Report

Years 2-5

**Jan  
2016**

**Jan  
2016**

**March  
2016**

**April  
2016**

**May  
2016**

**June  
2016**

**June  
2016**

**July  
2016**

**2017-  
2020**

**TIMELINE**

# VALUE TO MSHCP IMPLEMENTATION



**OBJECTIVE 1: Collect transect and telemetry data on resident and translocated tortoises for 2 years after translocation. Monitor resident and translocated tortoises over 4 years.**

**CURRENT MSHCP CONSERVATION EFFORT: Improve effectiveness of translocation methods and monitoring**

**OBJECTIVE 2: Collect transect and telemetry data on tortoises to estimate population density**



**CURRENT MSHCP CONSERVATION EFFORT: Protect existing desert tortoise populations and monitor to detect trends**



**THANK YOU**



**QUESTIONS?**

(Permission to use photographs provided by The Great Basin Institute)