

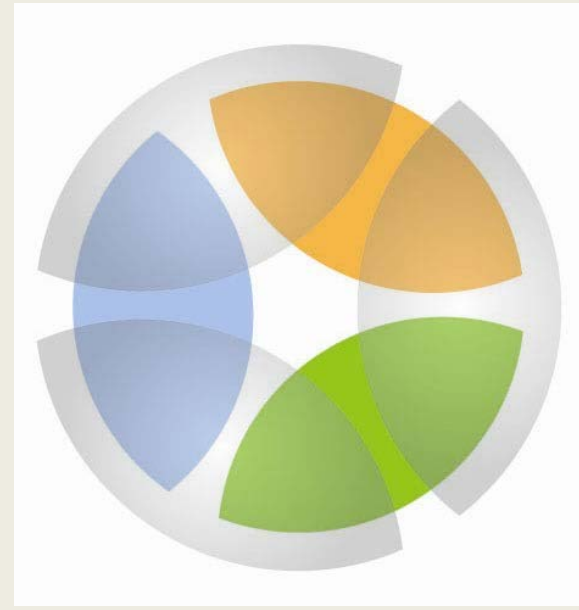
# DESERT TORTOISE MONITORING

**BCCE TELEMETRY – PROJECT #: 2017-GBI-1740A**

**RANGE-WIDE MONITORING – PROJECT #: 2015-GBI-1541B**



# 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 4**



**PROJECT #: 2017-GBI-1740A**

# PROJECT OVERVIEW



- Part of a larger population augmentation study
- Determine survivorship and movement patterns of translocated and resident desert tortoise
- Monitor for 4 years post translocation

# PROJECT OVERVIEW



- Original transmittered 13 Resident, 40 Translocated tortoises
- Monthly observations Nov-Feb, Weekly observations Mar-Oct
- Dropped transmitters, transmitters removed, deceased tortoises

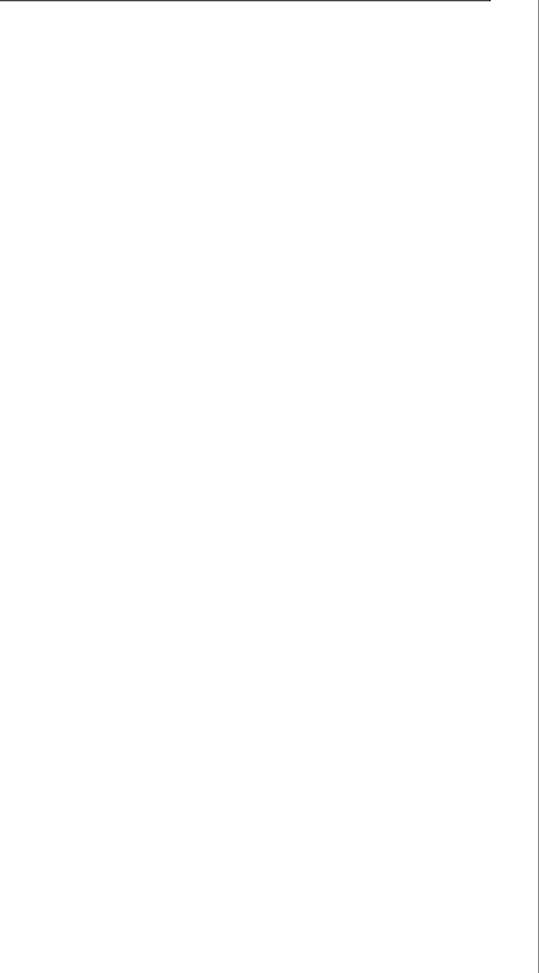
# Translocation - September 2017



- **Visual health assessments of all translocated tortoises (38)**
- **Transmitted 16 tortoises**
- **Daily observations until movement settled**

# BCCE OBSERVATIONS OCT 2014 – JUL 2018

Observations by Living Status



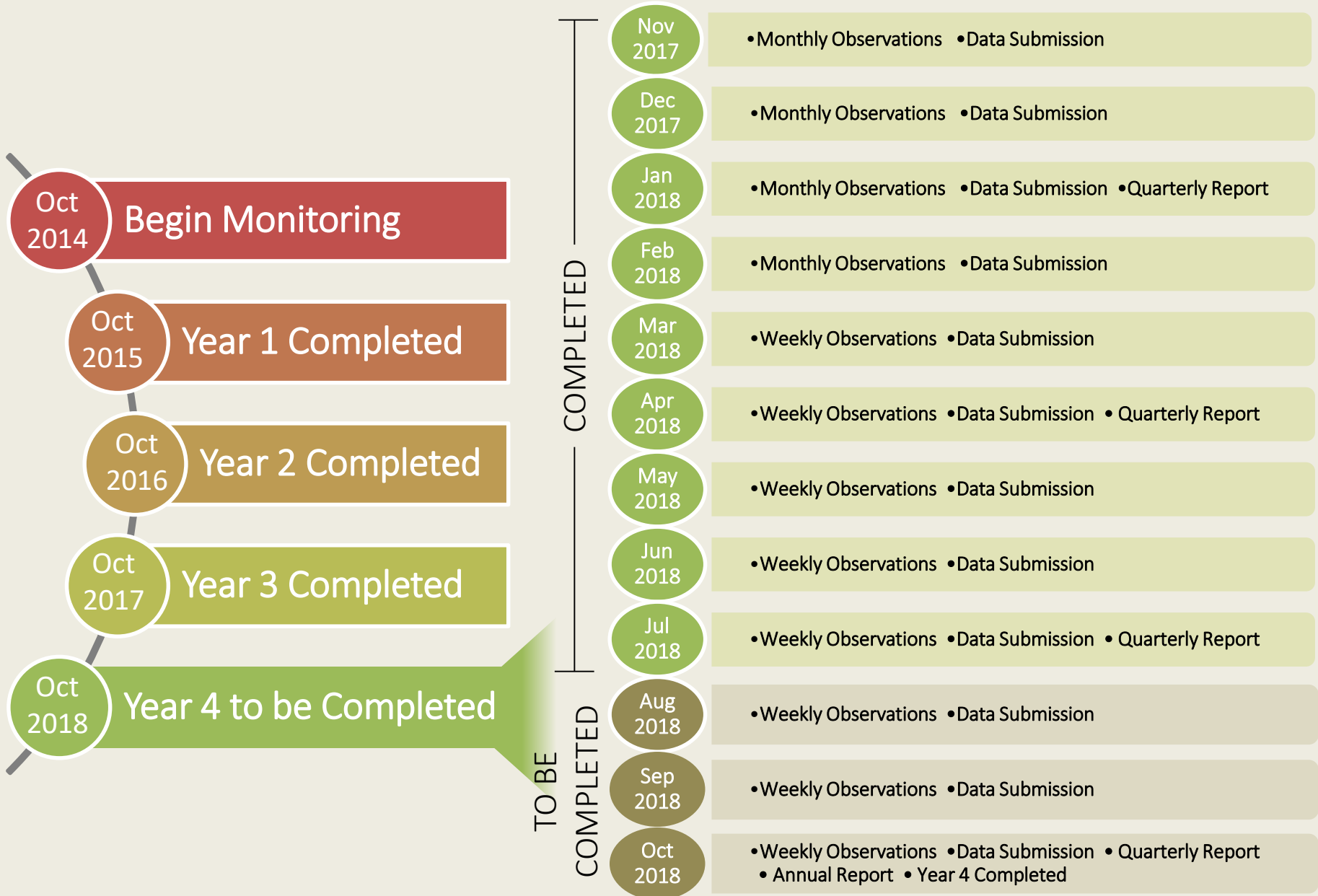
# PROJECT SUMMARY – YEAR 4



- **Followed:**
  - **48 tortoises tracked (18 resident, 30 translocated)**
  - **Daily observations first weeks following translocation**
  - **Monthly observations Nov-Feb**
  - **Weekly observations Mar-Oct**



# TIMELINE OF DELIVERABLES



# What's next?



# Range-Wide Desert Tortoise Monitoring Year 3



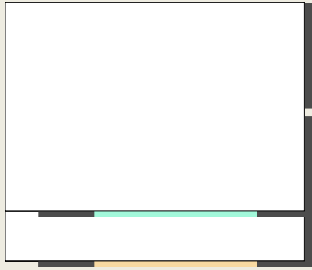
**PROJECT #: 2015-GBI-1541B**

# 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 Line Distance Sampling**
- **Monitored Year 1 - 5 TCA, Year 2 - 4 TCA. Year 3 – 3 TCA**

# SURVEY STRATA



# PRESEASON



- Review walk order, scout access, generate transect maps and directions.
- Partner with DCP and FWS to train surveyors on handling and survey protocols, data collection, QA/QC, field readiness.
- Training line, practice transects and handling protocols

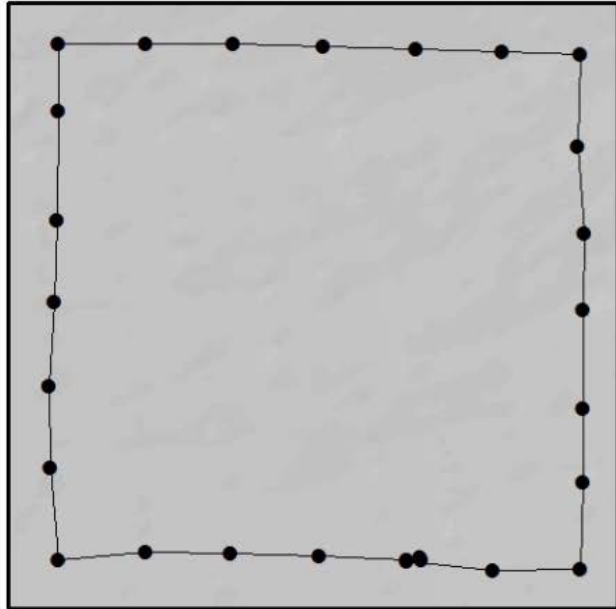
# TRANSECTS



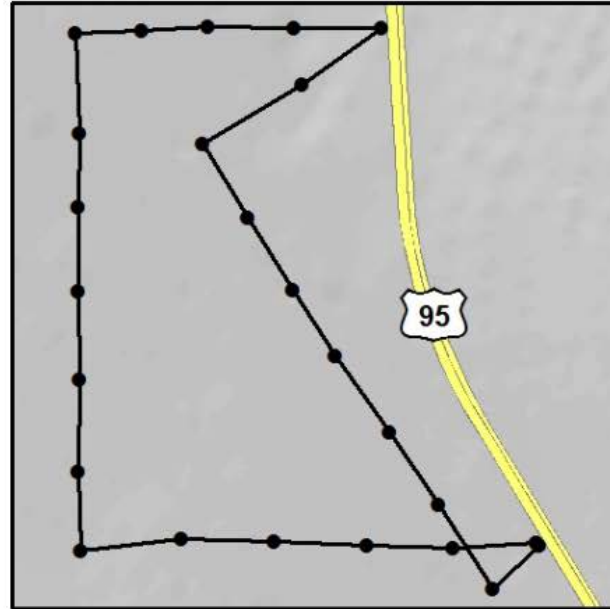
- **12 km square transects, teams of 2 (25 meters apart)**
- **Randomly assigned walk order**
- **Tortoise data included location, sex, MCL, BCS and tags**
- **Unmarked tortoises were tagged**
- **Carcass data collected –ID, condition, sex and MCL when possible**

# TRANSECTS

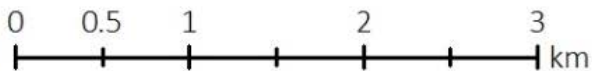
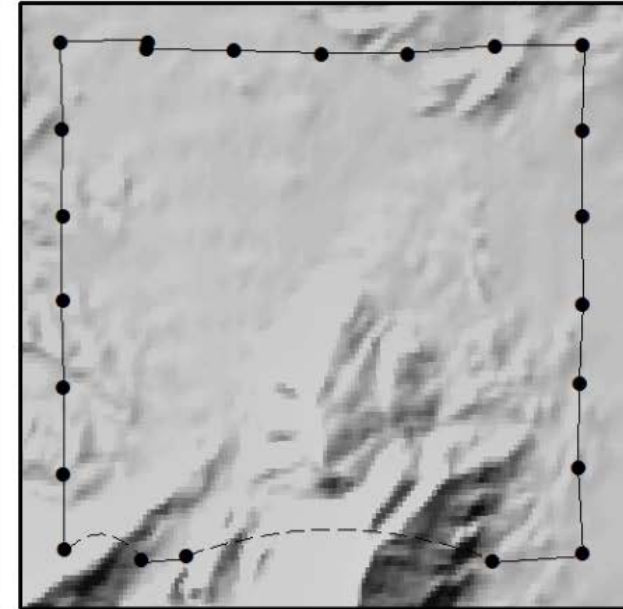
Standard Transect



Non-Standard Transect: Reflected



Non-Standard Transect: Interrupted



• Waypoint — Transect Path --- Interrupted Path

- Transects are not perfect squares
- Reflected for stratum boundaries and man-made obstacles
- Interrupted for non surveyed terrain

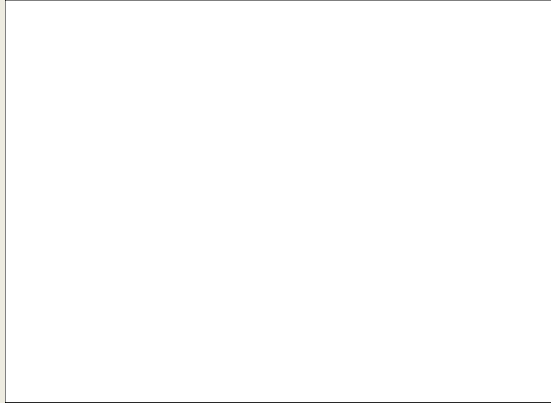
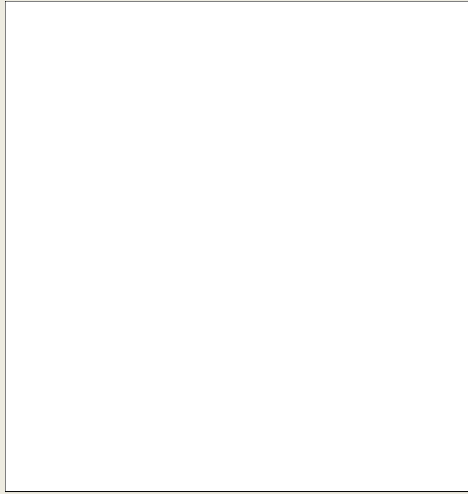


# TRANSECTS

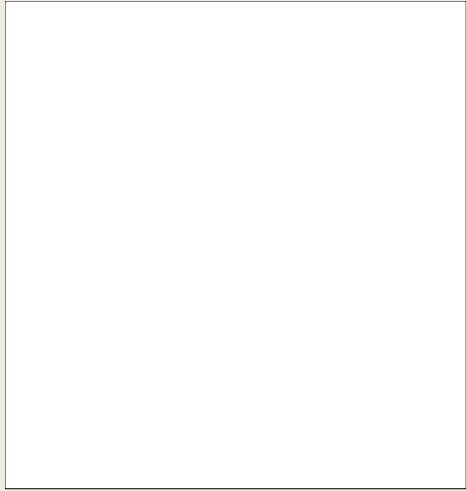


- **Transects walked 3 April – 9 May**
- **190 transects walked, 3 strata**
- **85 Total live tortoises found**
  - **76 transect live tortoise observations**
  - **9 opportunistic tortoise observations**
- **49 Total carcasses found (1 with existing tag)**
  - **42 transect carcass observations**
  - **7 opportunistic carcass observations**

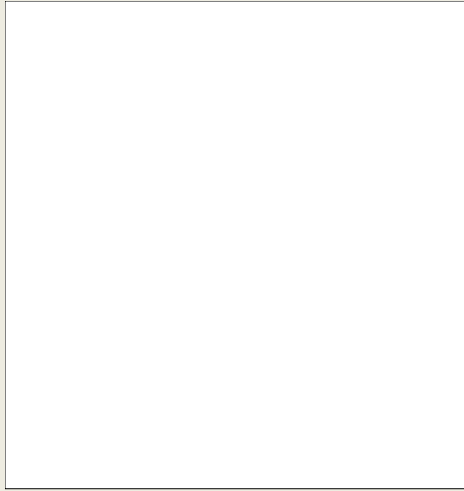
# TRANSECTS: GOLD BUTTE



# TRANSECTS: MORMON MESA



# TRANSECTS: COYOTE SPRINGS



# TELEMETRY

- Conducted telemetry at Gold Butte and Halfway Wash sites
- To estimate the proportion of tortoises active or visible during transect surveys
- Data was used to calibrate the results of transect surveys
- Monitoring took place 3 April – 9 May 2018



# REESTABLISH GOLD BUTTE TELEMETRY SITE



# TELEMETRY

Stratum	Transmitter Equipped Tortoises	Days Surveyed	Observations	Average Observations per Day
Gold Butte	12	11	506	46
Halfway Wash	11	13	425	33
Total	23	24	931	39



# 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 have been submitted to DCP for Years 1 to 3
- Post season telemetry monitoring June 2018 – March 2019



# TIMELINE OF DELIVERABLES





















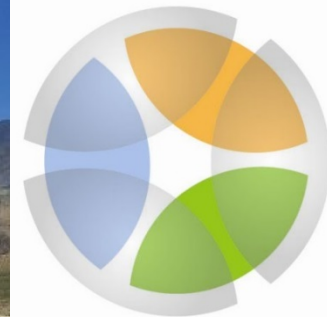








# THANK YOU



# QUESTIONS?

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