

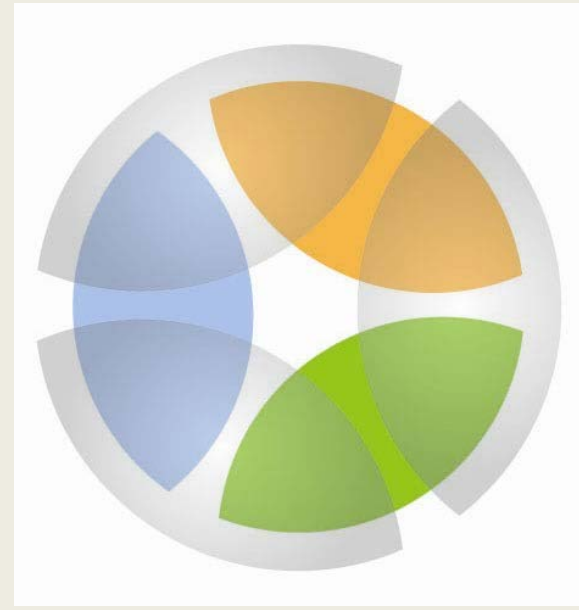
# DESERT TORTOISE MONITORING

BCCE TELEMETRY – PROJECT #: 2015-GBI-1545A

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 3**



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

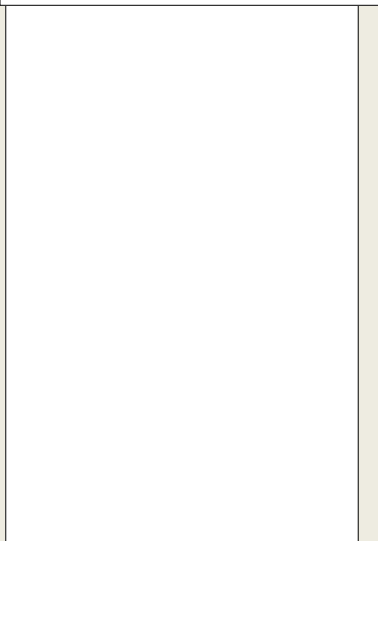
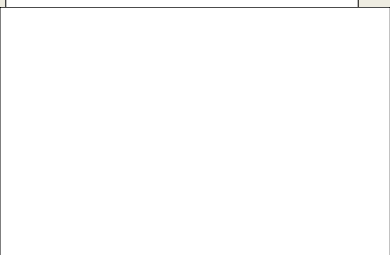


# PROJECT OVERVIEW



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

# BCCE OBSERVATIONS OCT 2014 – JUL 2017



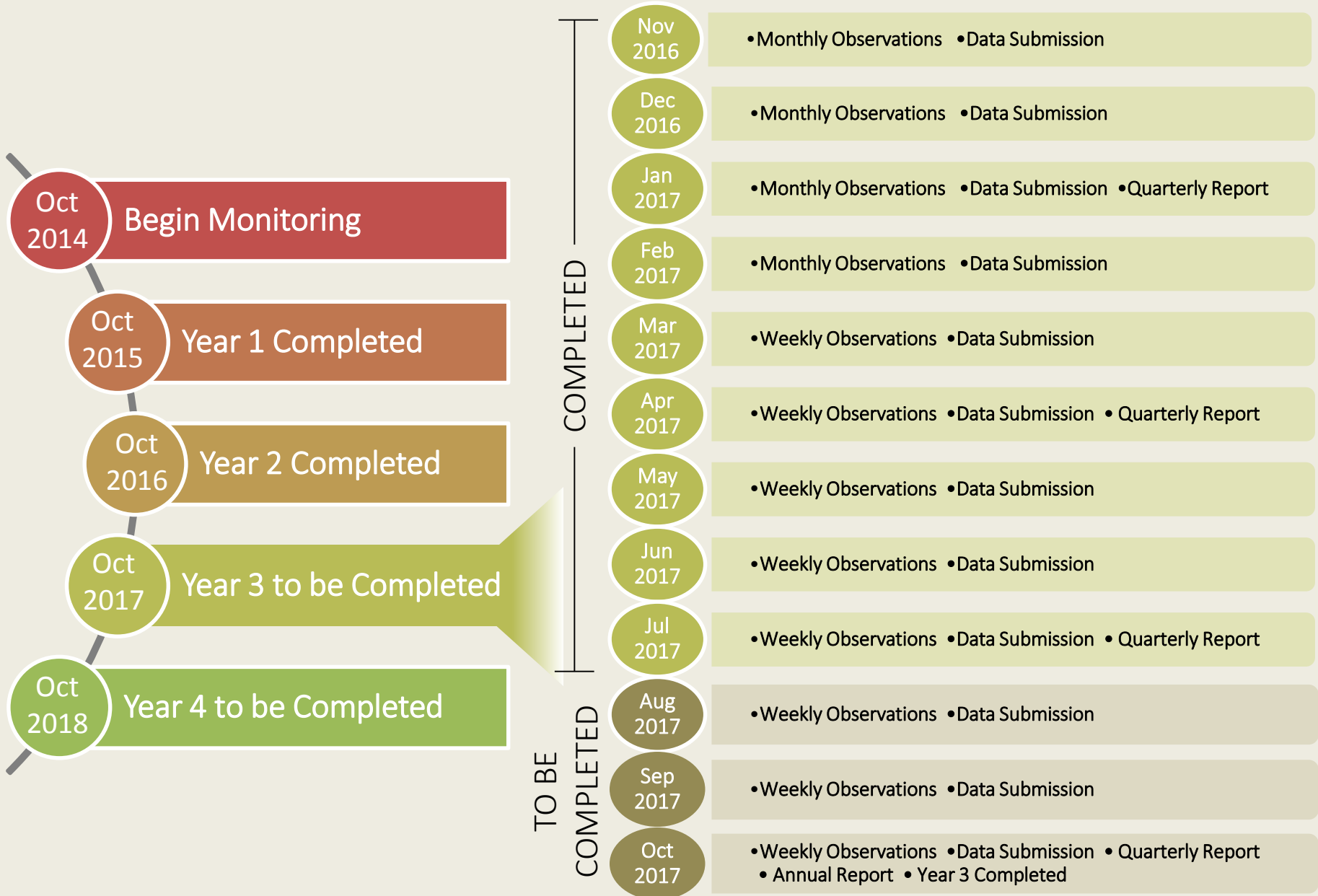


# SUMMARY OF PROJECT TO DATE



- **Monthly observations Nov-Feb, Weekly observations Mar-Oct**
- **Original transmittered 13 Resident, 40 Translocated tortoises**
- **Followed in Year 3**
  - **39 tortoises tracked**
  - **7 Missing tortoises**
  - **Dropped transmitters, Transmitters removed**

# TIMELINE OF DELIVERABLES



# Range-Wide Desert Tortoise Monitoring Year 2



**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 LDS**
- **Year 1, monitored 5 TCA. Year 2, monitored 4 TCA.**

# SURVEY STRATA





# 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**



# TRANSECTS

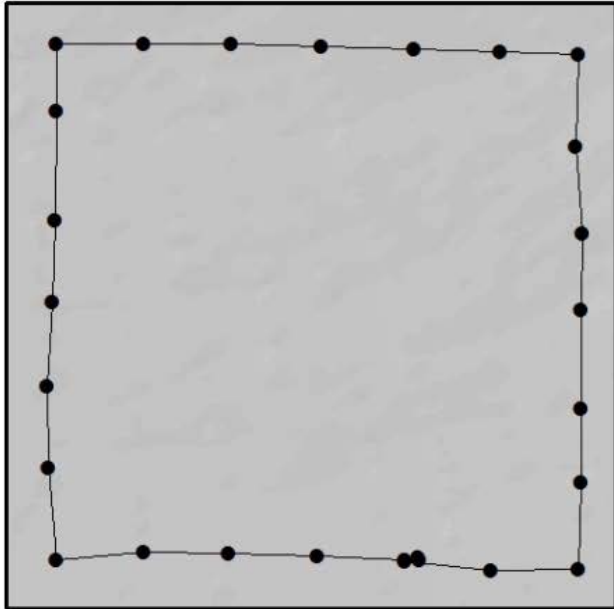


- **Transects walked 3 April – 12 May**
- **241 transects walked, 4 strata**
- **112 Total live tortoises found (108 new, 4 recaptures)**
  - **95 transect live tortoise observations**
  - **17 opportunistic tortoise observations**
- **70 Total carcasses found (1 with existing tag)**
  - **60 transect carcass observations**

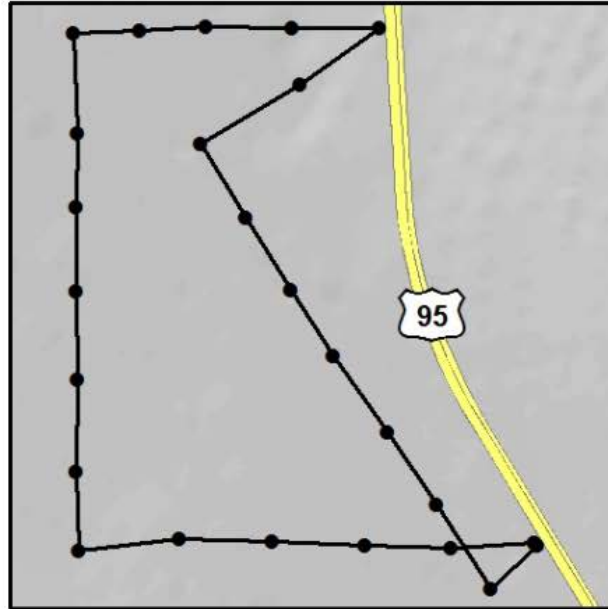


# TRANSECTS

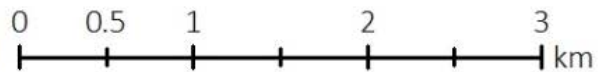
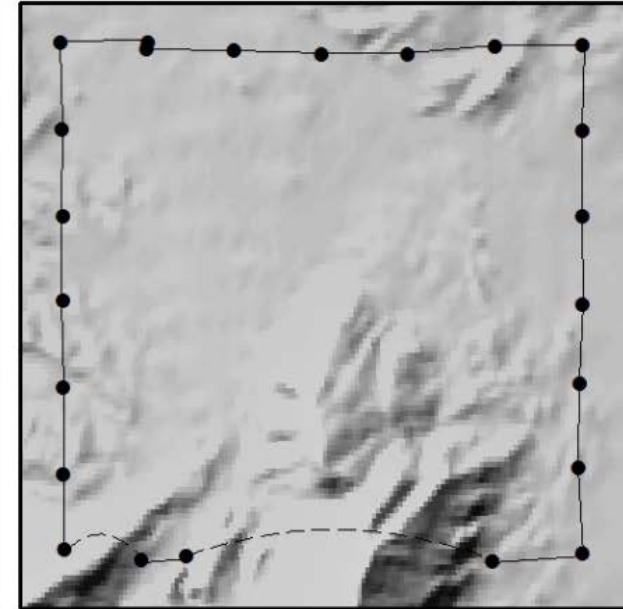
Standard Transect



Non-Standard Transect: Reflected

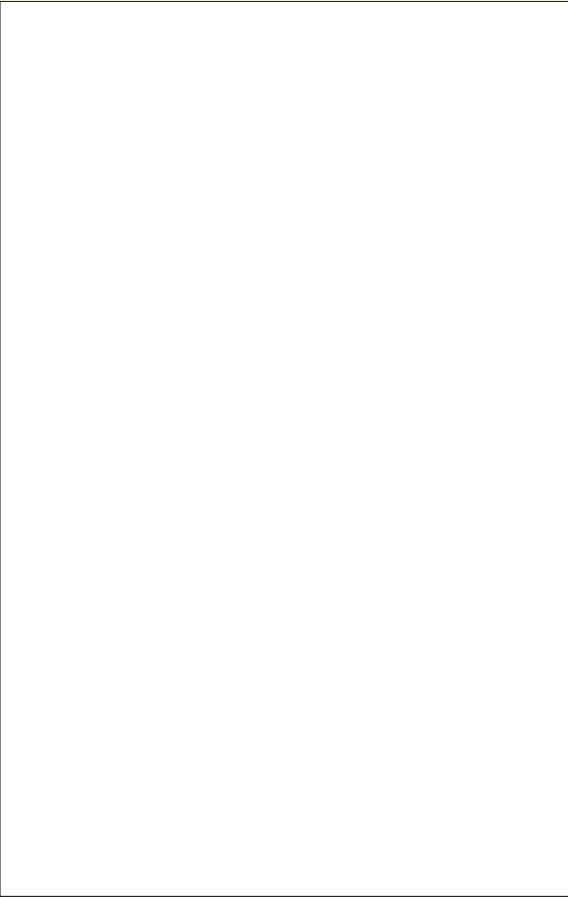


Non-Standard Transect: Interrupted



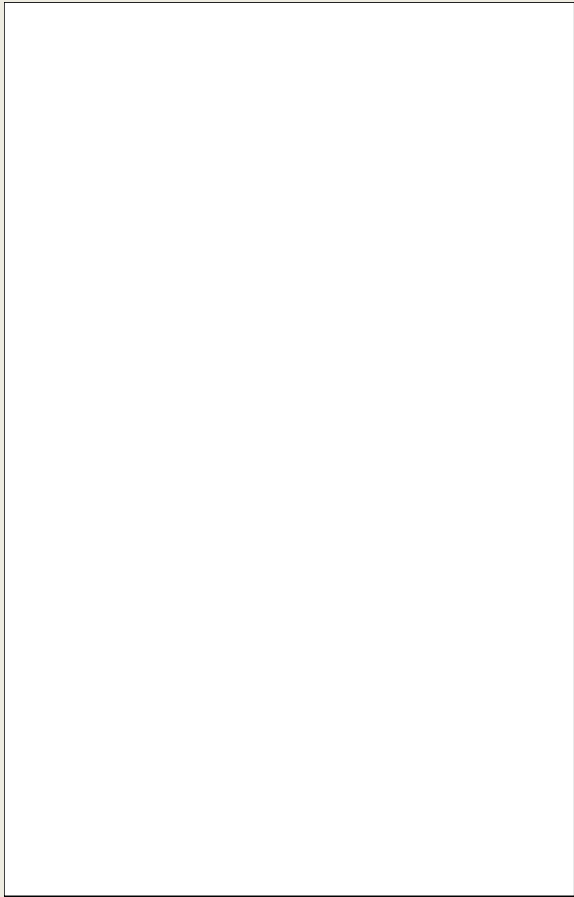
● Waypoint — Transect Path --- Interrupted Path

# TRANSECTS: PIUTE VALLEY

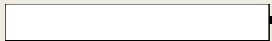
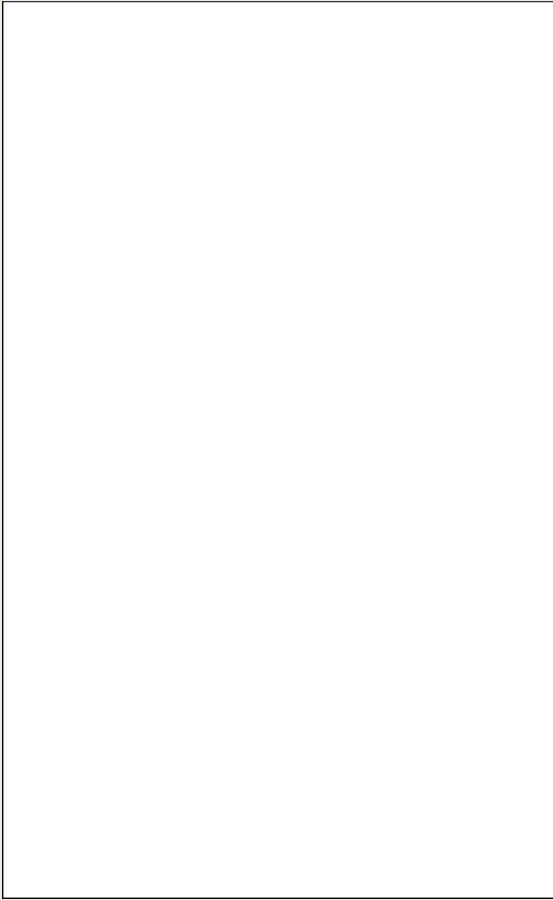




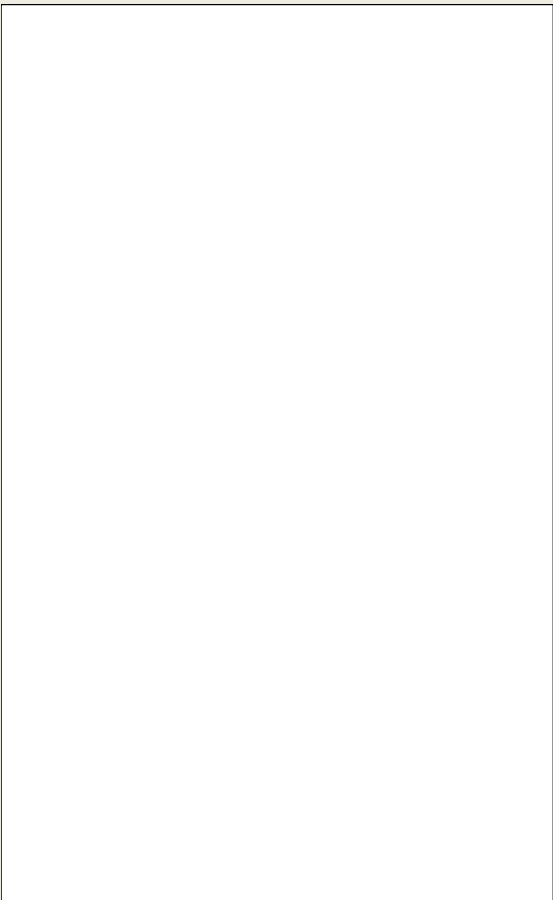
# TRANSECTS: ELDORADO VALLEY



# TRANSECTS: GOLD BUTTE

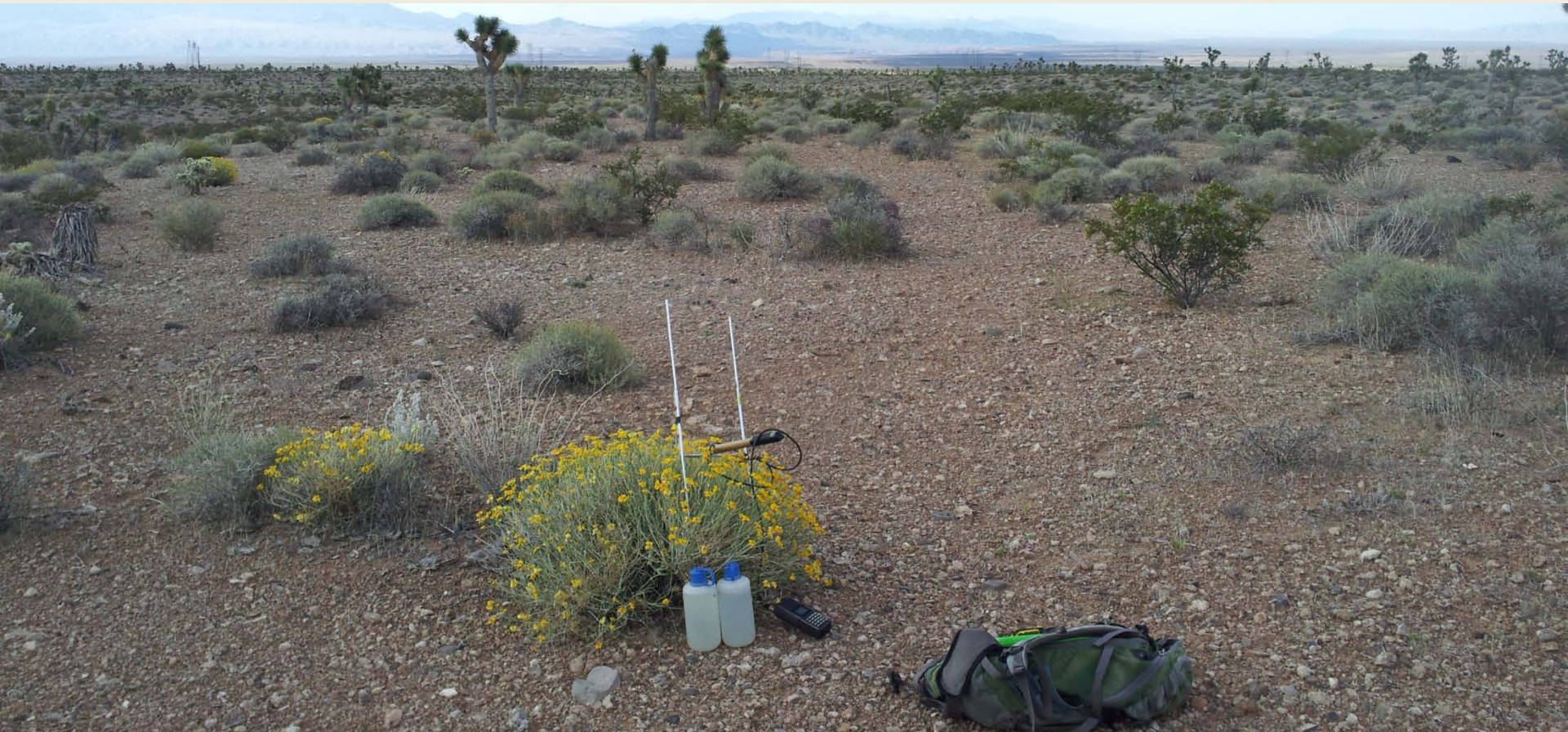


# TRANSECTS: BEAVER DAM SLOPE





# TELEMETRY



- **Conducted telemetry at Piute-Mid 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 – 12 May**



# TELEMETRY

Stratum	Transmitter Equipped Tortoises	Days Surveyed	Observations	Average Observations per Day
Piute-Mid	15	15	853	57
Halfway Wash	12	11	461	42
Total	27	26	1,314	50



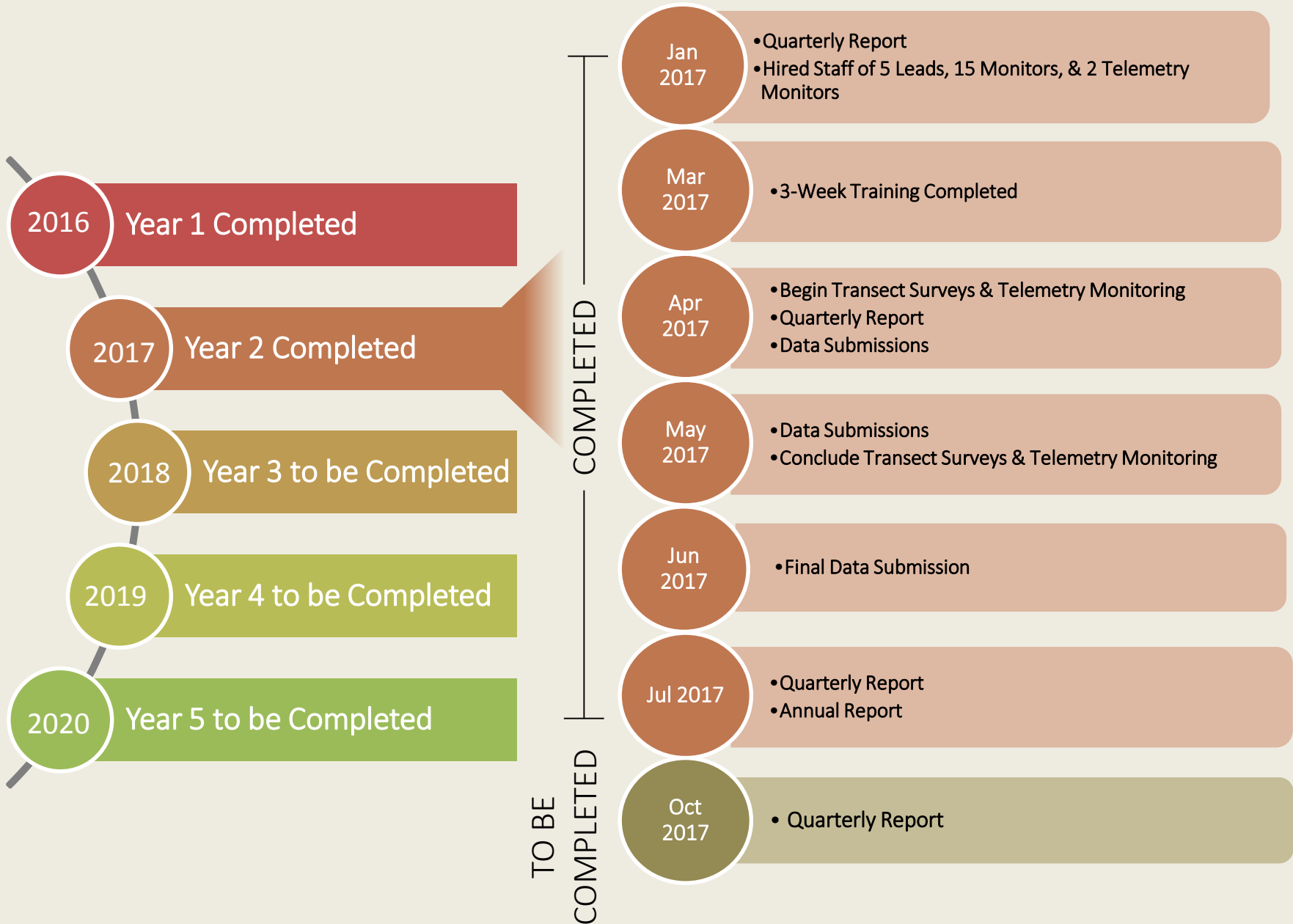


# SUMMARY OF PROJECT TO DATE



- Crew members were provided training prior to the season
- Practice transect conducted to ensure adherence to protocols
- Surveys completed and data and reports have been submitted to DCP for Years 1 & 2
- Post season telemetry monitoring June 2017 – March 2018

# TIMELINE OF DELIVERABLES





# 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**



# VALUE TO MSHCP IMPLEMENTATION



**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)