



# BOULDER CITY CONSERVATION EASEMENT UPDATE

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desert conservation  
PROGRAM

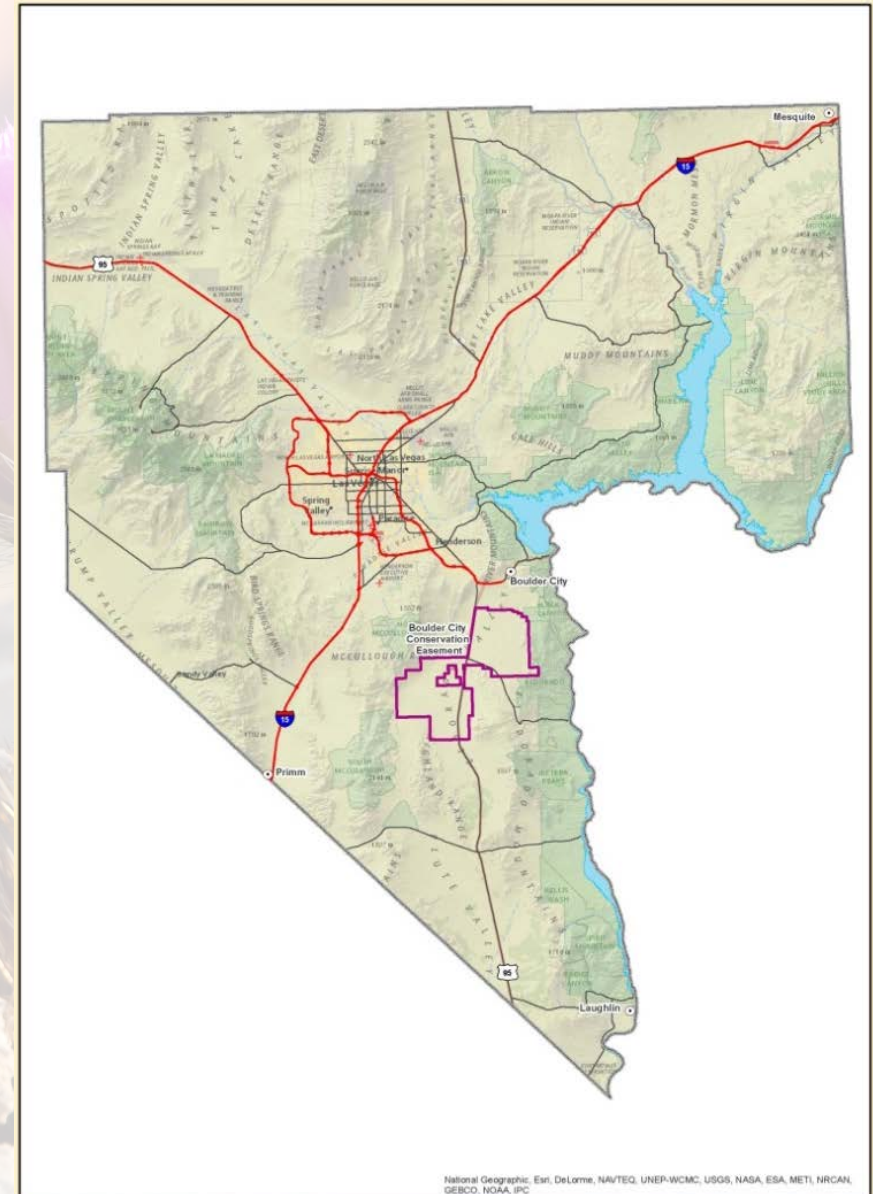
# BACKGROUND



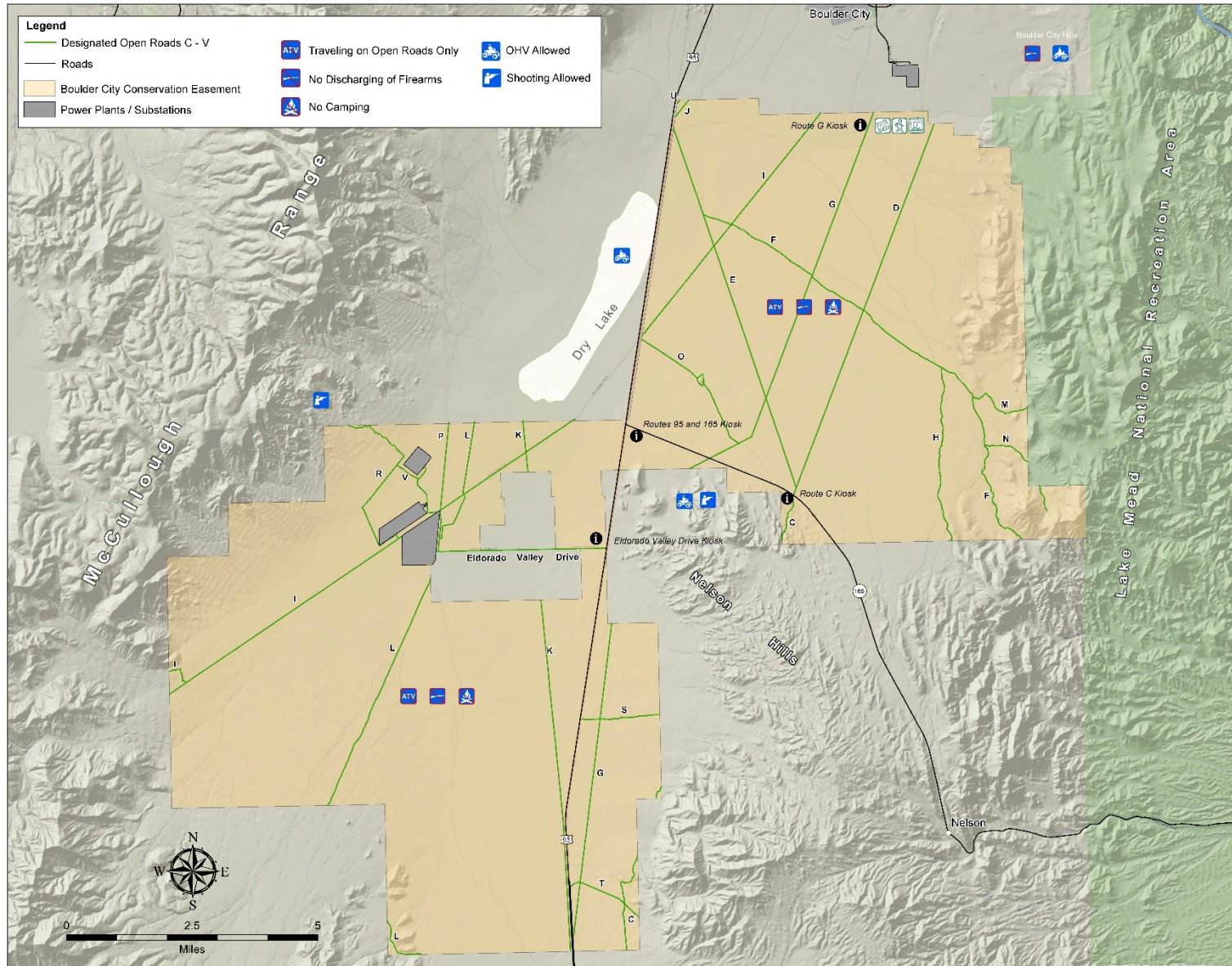
- Clark County acquired the easement in 1995 as a permit condition
- Purpose:
  - “...ensure that the property is retained in a natural condition, and to prevent any uses that will impair the conservation, protection, restoration and enhancement of the natural resource values, especially those values associated with habitat for the desert tortoise and other indigenous flora and fauna.”
- Boulder City Conservation Easement = BCCE or The Easement (within the DCP)

# BACKGROUND

- Approximately 86,540 acres
- Bisected by U.S. 95 and S.R. 165
- Highly accessible to the public (95 miles of open roads)
- Limited use area
- Energy zone, substations, and switching yards
- 58+ rights-of-way



# BACKGROUND



# MANAGEMENT ACTIVITIES



- Completed installation of fencing around the Energy Zone
  - 11 miles of fencing
  - 5 desert tortoise guards
  - 1 desert tortoise culvert
- Monitor and work with energy developers
- Completed installation of 3 new interpretive kiosks at key entry points



# MANAGEMENT ACTIVITIES



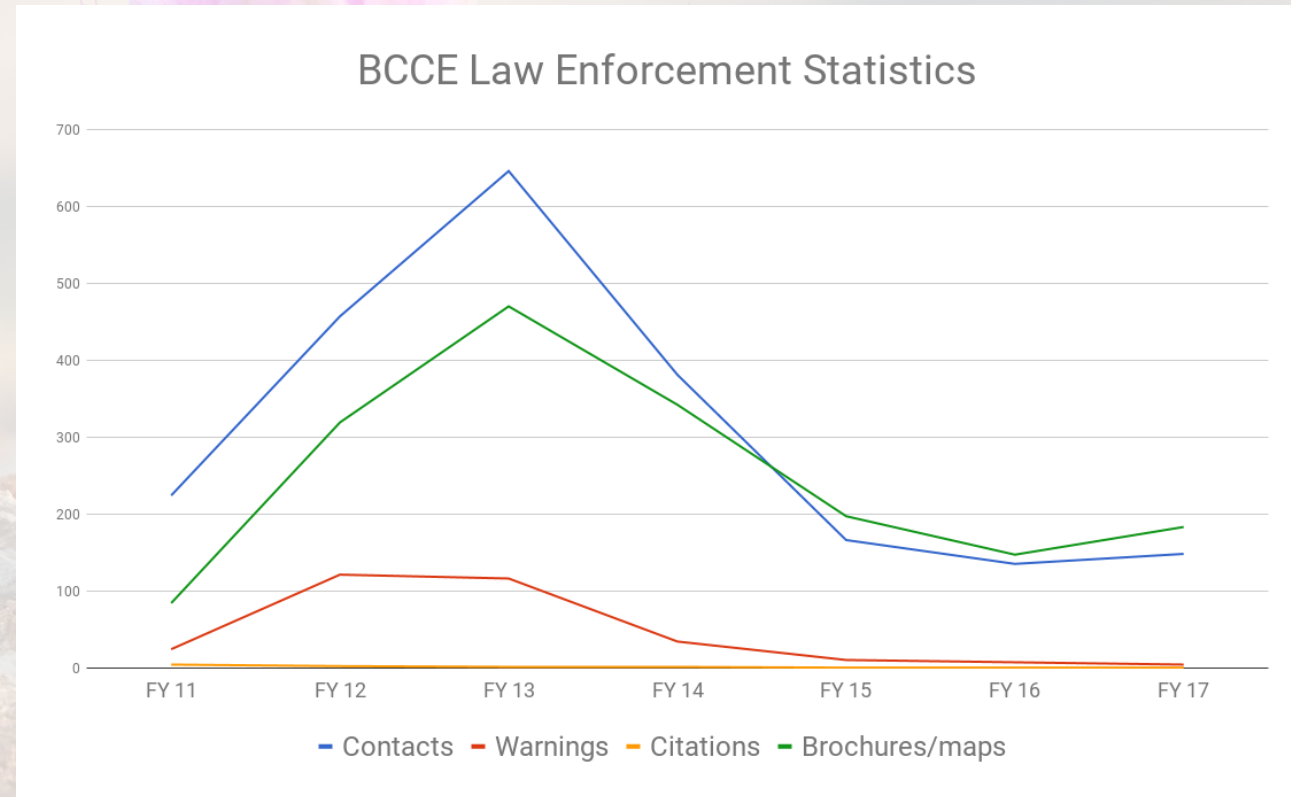
- Ongoing signage, fencing, gate, trash, cattle and tortoise guard maintenance
- Installation of carsonite signs at washes and newly identified off-road tracks
- Motorized vehicle activity monitoring with traffic counters



# MANAGEMENT ACTIVITIES



- Law enforcement by Boulder City Police
- Off-road traffic has diminished over the past year
  - Fewer warnings and no citations issued
  - Fewer new incidents of trespass observed



# NOTABLE PROJECTS

- Range-wide desert tortoise monitoring
- Desert tortoise predator studies
- Weed inventory and treatment
- Avian surveys
- Desert tortoise occupancy surveys
- Small mammal surveys





# TORTOISE OCCUPANCY



- This marks the end of the fifth and final year of our desert tortoise occupancy study.
- We will continue to monitor desert tortoise occupancy on the BCCE, but methods may be adjusted.



# TORTOISE OCCUPANCY



## Summary of Live Tortoise Observations

Year of Survey	2015	2016	2017	2018
Number of tortoise observations (not unique tortoises)	63	52	79	95
Number of unique newly tagged tortoises	41	33	49	40
Number of tortoises observed multiple times	6	1	3	2
Maximum number of times the same tortoise was observed (tag CC0016 year 2015) (tag FW9143 and CC0105 year 2016) (tag 18195 and CC0143 year 2018)	4	2	2	3
Number of tortoises observed tagged prior to this project	6	5	13	25
Number of tortoises observed that were not tagged	7	11	10	27
Number of tortoise observations where crews were unable to determine if a tag was present	3	5	4	17
Males	15	18	16	24
Females	23	13	35	36
Number of tortoise with indeterminate sex	25	21	28	35
Number of tortoises $\geq$ 180 mm	37	29	54	62
Number of tortoises $<$ 180 mm	17	16	19	17
Number of tortoise unable to measure	9	7	6	16

# TORTOISE OCCUPANCY



## Summary of Burrow Observations

Year of Survey	2015	2016	2017	2018
<b>Burrow Observations (not unique burrows)</b>				
Occupied burrow observations (not unique burrows)	14	15	22	31
Not occupied burrow observations (not unique burrows)	249	334	500	491
Unknown occupancy burrow observations (not unique burrows)	46	0	4	2
<b>Total Burrow Observations</b>	<b>306</b>	<b>349</b>	<b>526</b>	<b>524</b>



# SMALL MAMMAL SURVEY



## Goal:

- Compile a comprehensive list of small mammal (rodent) species occupying the BCCE

## Methods:

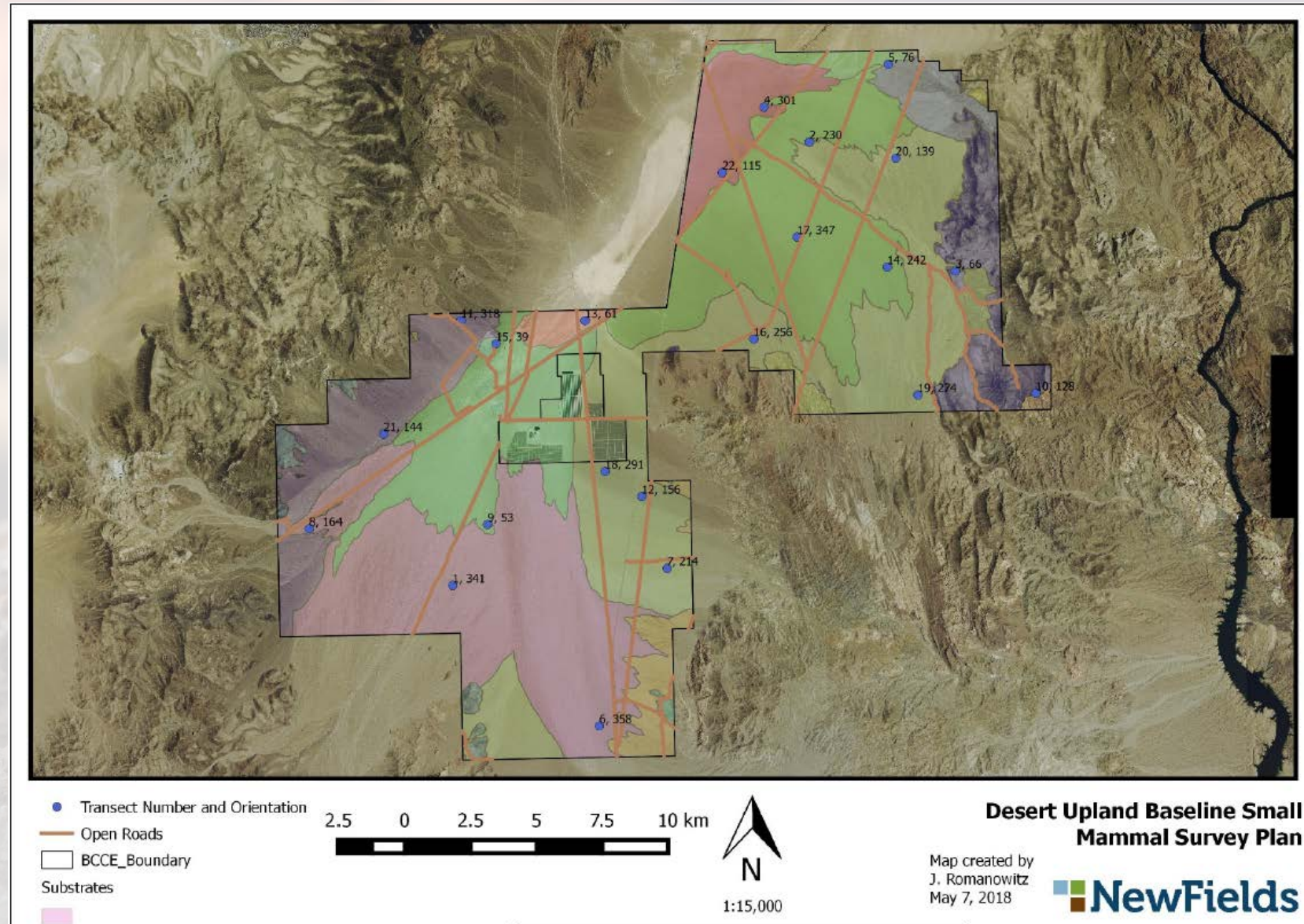
- Live trapping transects
- camera traps
- 11 days
- 22 sites

# SMALL MAMMAL SURVEY



## Transect Selection:

- 30 points were randomly generated, 8 of those were eliminated
- Transect directions were randomized



# SMALL MAMMAL SURVEY



## Survey and Trapping Protocol:

- Transects were set in the evening
- 15 baited aluminum Sherman traps per transect
- Traps were checked the following morning at sunrise
- Every small mammal encountered was documented
- Traps were collected for the next evening

Fieldwork was conducted from May 17 to May 29, 2018

Sherman Live Trap



# SMALL MAMMAL SURVEY

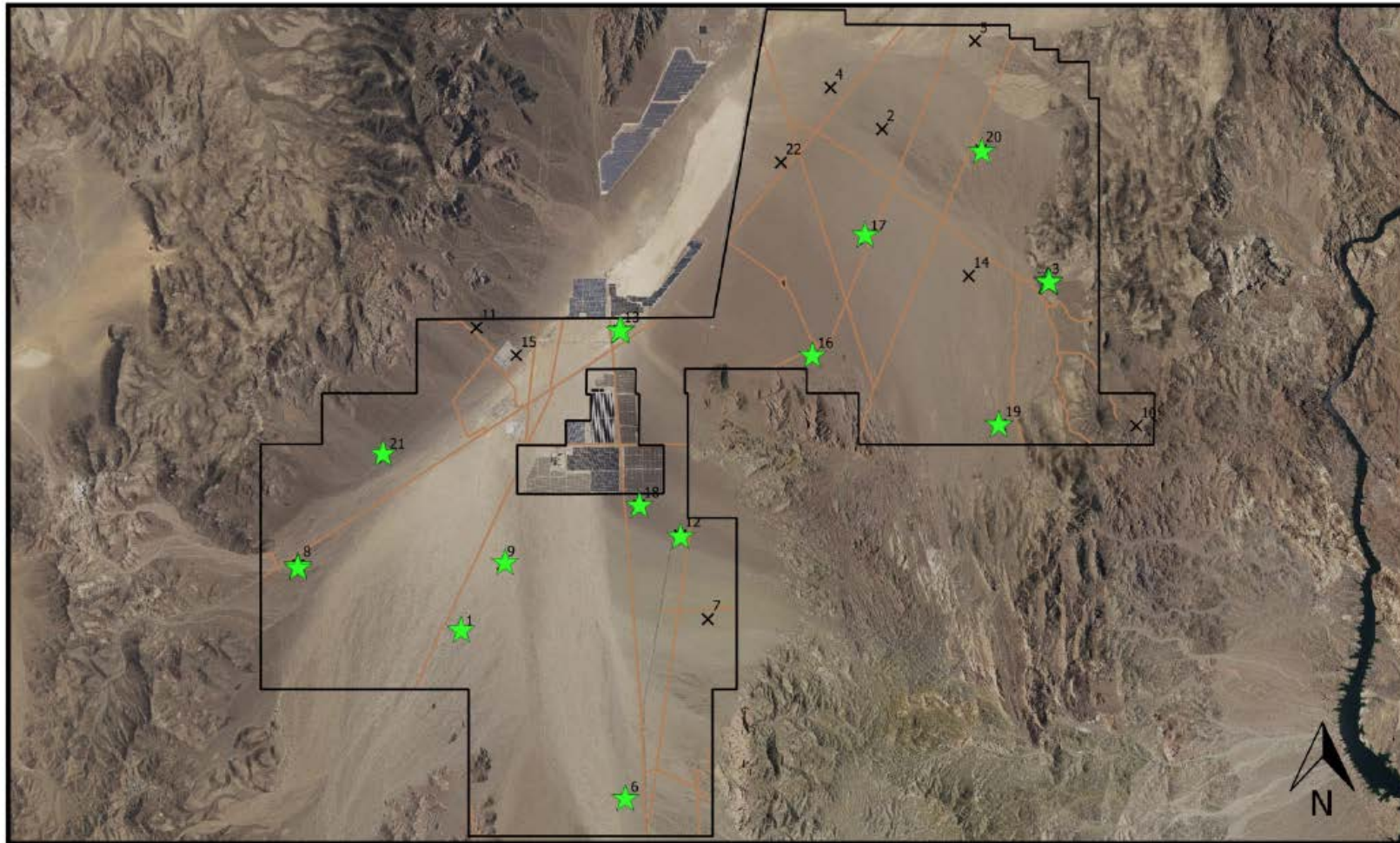


## Challenges and Changes:

- First six transects of the survey trapped only four animals of a single species
- New baits were tried – bacon bits, blue cheese, vanilla extract, peanut butter, and crackers
  - No additional trapping success
- Started leaving traps at the same location for two nights in a row
  - Improved trapping success



# SMALL MAMMAL SURVEY



- ★ Transect with Successful Trap
- × Transect with No Successful Trap
- Designated Roads
- Boulder City Conservation Easement Boundary

0 2.5 5 7.5 10 km



0 1 2 3 4 Miles



## Results of Small Mammal Transects



June 2018



# SMALL MAMMAL SURVEY

## Trapping Results

Common Name	Scientific Name	No. Trapped
Long-tailed pocket mouse	<i>Chaetodipus formosus</i>	10
Desert kangaroo rat	<i>Dipodomys deserti</i>	7
Bushy-tailed woodrat	<i>Neotoma lepida</i>	3
Cactus mouse	<i>Peromyscus eremicus</i>	2



# SMALL MAMMAL SURVEY



## Camera Trap Results

Common Name	Scientific Name
Round-tailed ground squirrel	<i>Spermophilus tereticaudus</i>
Spotted skunk	<i>Spilogale gracilis</i>
American badger	<i>Taxidea taxus</i>
Blacktail jackrabbit	<i>Lepus californicus</i>
Unidentified rodents	multiple



# SMALL MAMMAL SURVEY



## Conclusions:

- Five species of small mammals were documented
- Limited trapping success
- Drought - No rainfall from September 9<sup>th</sup> 2017 through January 9<sup>th</sup> 2018, resulting in fewer native annuals and smaller plants
- We may attempt this survey again in the future using adjusted methods



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# THANK YOU TO THE PERMITEES



# QUESTIONS?

