Tortoise Occupancy on the BCCE

Project 2021-BIO-2020D

Presented By:

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bio-logical™

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Funding and Agency Partners:

- SOUTHERN NEVADA PUBLIC LAND MANAGEMENT ACT (SNPLMA)
- AGREEMENT #L08AC13225 (CLARK COUNTY AND BLM)
- LAND SALES THROUGH SNPLMA FUND MULTIPLE SPECIES HABITATCONSERVATION PLAN (MSHCP)

desert conservation PROGRAM

CLARK COUNTY 1909 NV 2009

U.S. DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT

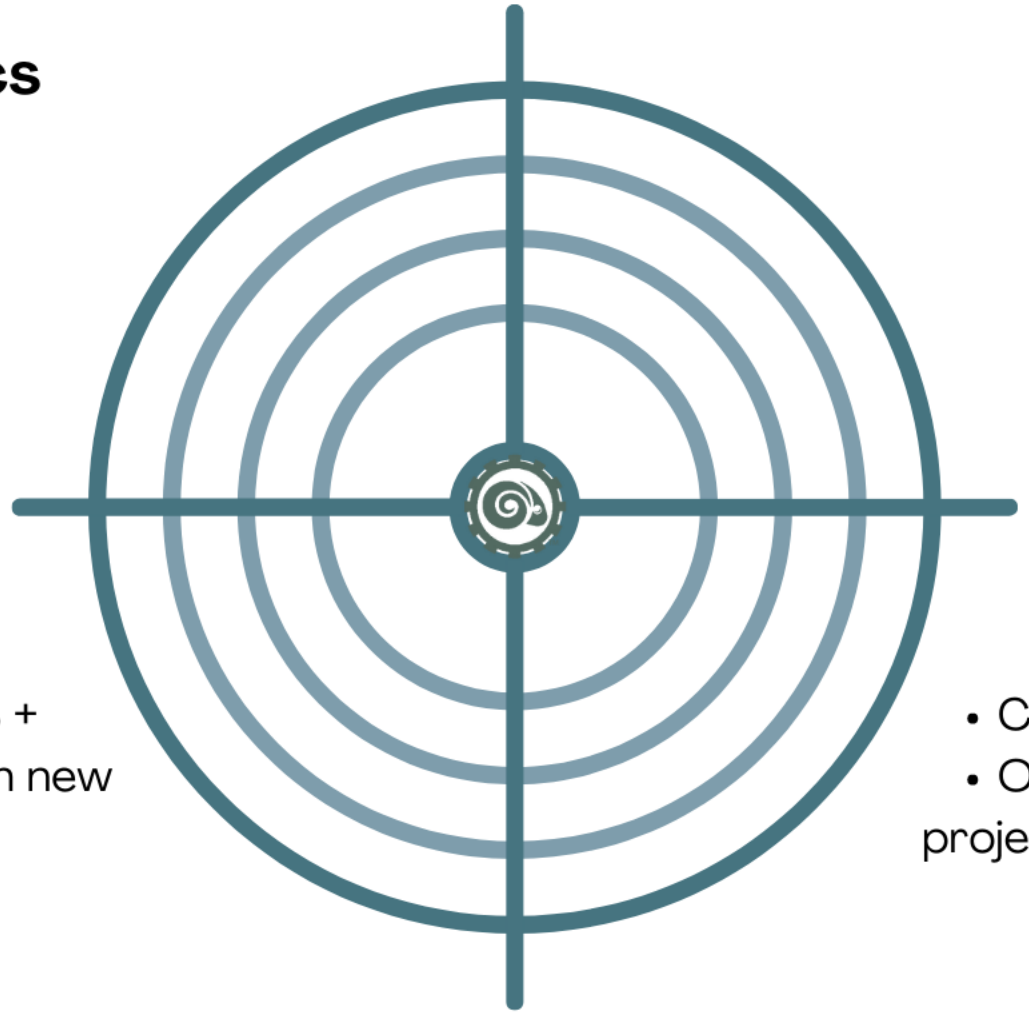
Objectives and Assumptions

Demographics

- Size
- Gender

Occupancy

- Analyze status & change



Change

- Previous years: 20% +
- What do we see with new data methods?

Habitat

- Correlations with patterns
- Overlapping data from other projects in BCCE

Indicators

Reptiles
Carcasses
Recording & mapping of tortoise burrows
Measurement & tagging of live Desert Tortoises
0
20
40
60

Purpose

The data from this project can be used to develop a statistical model to understand and predict the occurrence of desert tortoises in similar landscapes and supports conservation of the species as required by the MSHCP.

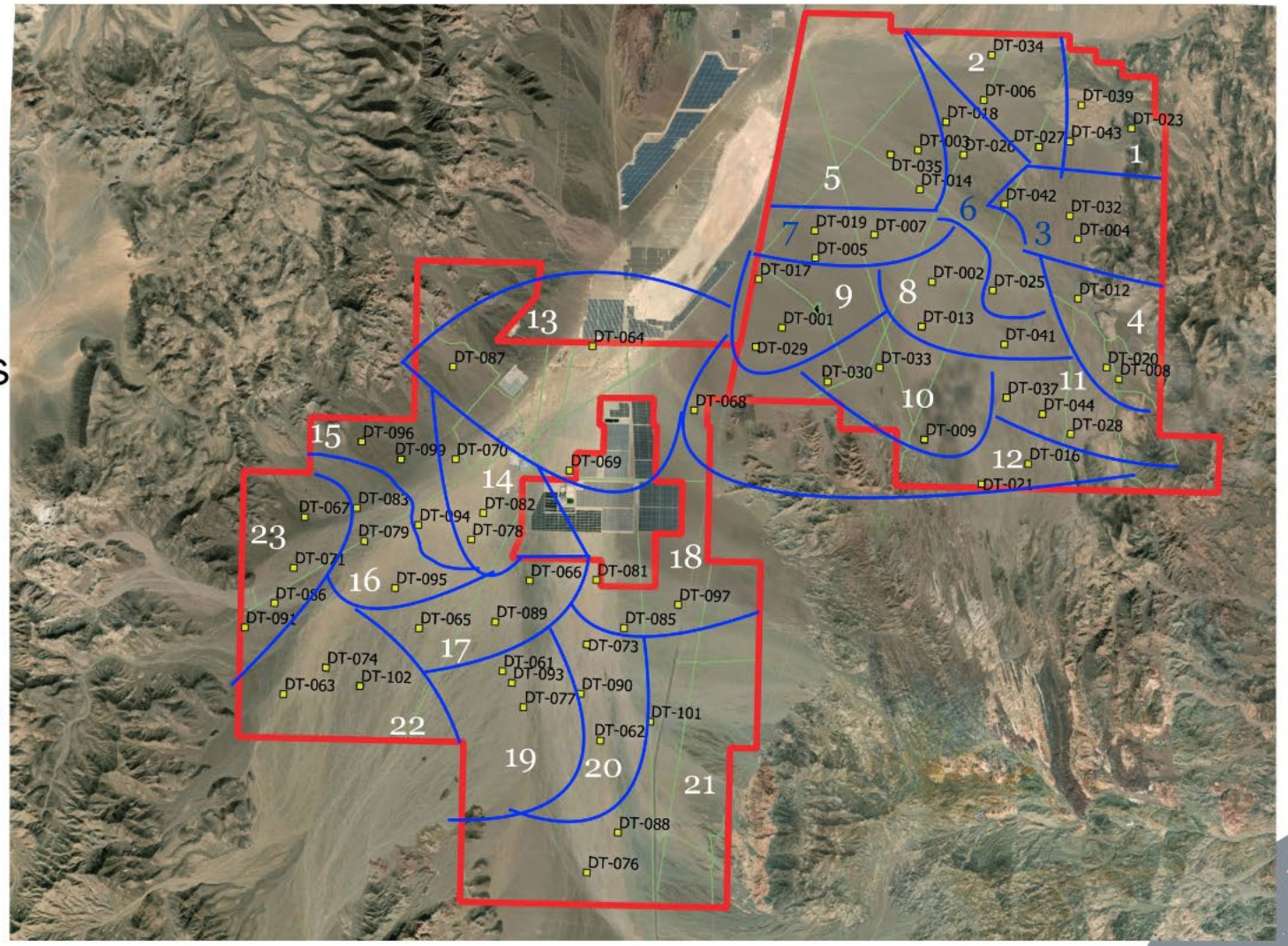
Methods:

SITE

- 70 unique Plots
- 3 Rotations Each
- 210 Total survey plots

Boulder City
Conservation Easement

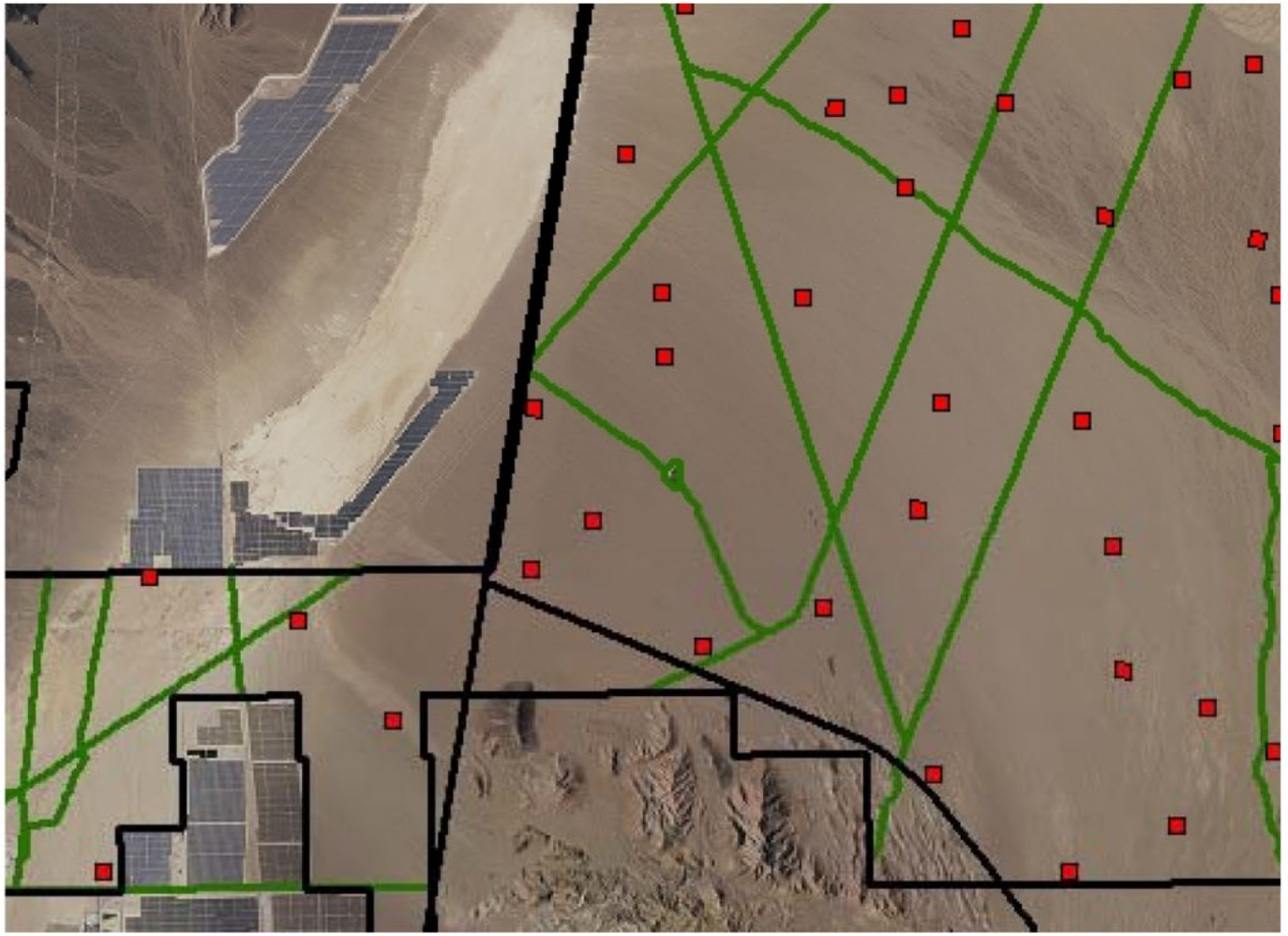
North and South divisions



Methods:

SITE

- One DTAB
- One Monitor
- 10 m transects
- alternating start directions- N/S, E/W
- incidental observations between plots



Methods:

RECORDABLE DATA

Live Tortoises

Burrows

Reptiles

Carcasses

Methods:

SAMPLES

Data Sheets

Data Software

QA/QC

Tort ID Tags

Live Tortoise Data Sheet

Unique No ID: T012INC220328 (T+(Tort##)+(Team#)+(Plot###/INC)+YYMMDD)

Date: 2022/03/28 (YYYY/MM/DD) Time: 11:58 (standard time) (AM)/ PM Plot ###/INC: INC Round: 1

Tort##: 01 Team#: 2

Air Temperature: 25 °C

Digital Data Recorder: Dan Roadhouse Data Sheet Recorder: Marcel Gucu

Backup UTMs: E 689884 N 3965533

Location of Tortoise (circle one): (Burrow) Open Rock Vegetation Pallet Other: _____

Cloud Cover (circle one): (Cloudy) Overcast Sunny Raining Other: _____

Sex (circle one): Male Female (Unknown) Photograph #s: T012INC220328

MCL: N/A mm MCL Recorded (circle one): Yes Stress (Burrow) Other

Tag # (if present): N/A New Tag # (if applied): N/A

Comments

DR 218613

H8

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	Survey ID	Unique ID:	Survey Date	User	Date:	Time:	Plot # or INC:	Round #:	Tortoise #:	Team #:	Air Temperature (*C):	Digital Data Recorder:	Paper Data Recorder:	GPS Point: (latituc
2	218613	T012INC220328	03/28/2022	Dan Roadhouse	03/28/2022	11:58 AM	INC	1	01	2	25.0	Dan Roadhouse	Marcel Gucu	35.815
3	219529	T011034220330	03/30/2022	Data Collection	03/30/2022	02:09 PM	034	1	01	1	28.4	Katie Callihan	Gene Drollinger	35.818
4														
5														
6														
7														
8														

Data Protocol

- Field Data
- End of Day Entry
- QA/QC

Data Summary:

TORTOISE DATA 2022

	Live torts	Male	Female	Unknown	Largest MCL	Smallest MCL	Average MCL	Already Tagged	New Tags	No Tags
Totals	29	7	5	17	238	119	189	2	13	14
Male					238	185	211	2	2	3
Female					225	191	207	0	5	0
Unk					193	119	158	0	6	11
New Tags Placed					225	119	185			

Data Summary:

TORTOISE DATA 2021

	Live torts	Male	Female	Unknown	Largest MCL	Smallest MCL	Average MCL	Already Tagged	New Tags	No Tags
Totals	30	11	10	9	294	115	197	10	17	3
Male					294	181	228	3	8	
Female					230	165	207	5	5	
Unk					194	115	139.7	2	4	
New Tags Placed					252	131	207	201		

Data Summary:

TORTOISE DATA 2020

	Live torts	Male	Female	Unknown	Largest MCL	Smallest MCL	Average MCL	Already Tagged	New Tags	No Tags
Totals	44	10	16	18	270	65	193.2	10	22	12
Male					270	195	236	2	8	
Female					239	165	212.5	5	9	
Unk					172	65	139.7	2	5	
New Tags Placed					270	157	207			

Data Summary:

TORTOISE DATA COMPARISON

	Live torts	Male	Female	Unknown	Largest MCL	Smallest MCL	Average MCL	Already Tagged	New Tags	No Tags
2022 Totals	29	7	5	17	238	119	189	2	13	14
2021 Totals	30	11	10	9	294	115	197	10	17	3
2020 Totals	44	10	16	18	270	65	193.2	10	22	12

Trends in juveniles?

Drought- Predation and Emergence

Data Summary:

TORTOISE DATA COMPARISON

	2015	2016	2017
Total Number of DT Observations	63	52	79
Male	15	18	16
Female	23	13	35
Indeterminate sex	25	21	28
Number of Tortoises >=180 mm	37	29	54
Number of Tortoises <180 mm	17	16	19
Number Unable to Measure	9	7	6

Data Summary:

REPTILE DATA 2022

Sidewinder	0
Mojave Rattlesnake	1
Western Patch-Nosed Snake	0
Other	6
Total	7
INC	2
In Plots	5

Reptile Species:
Phrynosoma platyrhinos / Desert horned lizard
Phrynosoma platyrhinos / Desert horned lizard
Dipsosaurus dorsalis / Desert iguana
Gambelia wislizenii / Long-nosed leopard lizard
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Data Summary:

SNAKE & REPTILE DATA

Type	2020 Count	2021 Count	2022 Count
Desert Iguana	2	3	1
Desert Horned Lizard	6	1	2
Leopard Lizard	10	2	3
Coachwhip	2	1	0
Sidewinder	4	3	0
Mojave Rattlesnake	1	0	1
Western Patch-Nosed	2	1	0
Other	1	1	0
Total	28	12	1
INC	11	3	0
In Plots	17	9	1

Data Summary:

CARCASS DATA

*No Carcass Data for 2020

2021

Carcass_Condition	Sex	Comments
Intact	Unknown	intact hatchling 50mm, freshly deceased. no tag but noted due to its state.

2022

Carcass Condition:	Sex:	Tag #:
Intact	Male	CC0808

Data Summary

Burrows

2020:

Nine (9) active burrows were recoded, with 4 of them being listed as INC observations. Six (6) of the burrows recorded contained a tortoise.

2021:

Twenty-five (25) active burrows were recoded, with 12 of them being listed as INC observations. Twenty-two (22) of the burrows recorded contained a tortoise.

Burrow Data	2020	2021	2022
Occupied By tortoise	6	22	22
Unoccupied	3	3	19
Total	9	25	41
Ave Height (cm)			13
Ave Width (cm)			40

2022:

Fourty One (41) active burrows were recoded, with 21 of them being listed as INC observations.
Twenty-two (22) of the burrows recorded contained a tortoise.

Project Summary and Year Review

WORKPLAN

- 3 plots (one group)/day/team
- Contingency plots

The project was broken into groups using GIS and a work plan was developed based on:

- Plot locations in relation to other plots
- Crew work assignments in relation to the other crews

Issues?

Limited road access- some days are longer than others

Temps/Ambient weather

Tech

Fieldwork Timeline:

- Started March 28, 2022
- Completed May 15, 2022
- QA/QC

Project Summary and Year Review

DATA PLAN

An unweighted 'line item' only calculation of project completed currently sits at 100% (21 of 21 task items) for years one, two. For year three in 2022, 15 out of 24 (62.5%) are now complete upon this submittal. All tasks are on schedule as described in deliverable schedule.

For the next year of the project, no problems are anticipated.

Many possible improvements from the prior year were rendered obsolete by Bio Logical's internal switch to **Wildnote software** for data collection purposes.

Improvements for next year's field season to operate even more efficiently regarding the data collection and field management operations.

Acknowledgements

- BLM Logo. Digital image. N.p., n.d. Web. <https://commons.wikimedia.org/wiki/File%3AUS-DOI-BureauOfLandManagement-Logo.svg>.
- Clark County Logo. Digital image. N.p., n.d.Web. Aug 2022. <https://en.wikipedia.org/wiki/File:Seal_of_Clark_County,_Nevada.svg>.
- Desert Conservation Program Logo. Digital image. N.p., n.d.Web. Aug 2022. <https://mojavemax.com/wp-content/uploads/2016/12/DCP_Logo_Small.jpg>.
- Desert Tortoise Occupancy Sampling at the Boulder City Conservation Easement; D25 Year 3, Annual Project Report. June 15, 2022. PN 2021-BIO-2020D , Bio Logical.
- Mantanona, Sherri. “Desert Tortoise Occupancy Sampling”. 2017. Power Point Presentation
- MSHCP https://www.clarkcountynv.gov/government/departments/environment_and_sustainability/desert_conservation_program/current_mshcp.php. Web, Aug 2022

This work was supported by the Clark County Desert Conservation Program and funded by Southern Nevada Public Land Management Act as project #22021-BIO-2020D, to further implement or develop the Clark County Multiple Species Habitat Conservation Plan

That's all for today!

Questions?