



**San Diego Zoo  
Wildlife Alliance**

# **2021 BUOW Nesting Ecology & Node Expansion**

6 December 2021

# Overview

- Otay Mesa Population Monitoring Update
- Node Expansion Update
  - RJER
  - Ramona
  - Conservation Breeding
- Future Planned Activities



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# Acknowledgements



Timothy Gaffney, Mike Stevens, Colleen Wisinski, Danielle Angel, Ron Swaisgood, Melissa Merrick, Daniel Banyai-Becker, Masha Gulak, Kendall Hines, Susanne Marczak



Metropolitan Airpark, LLC

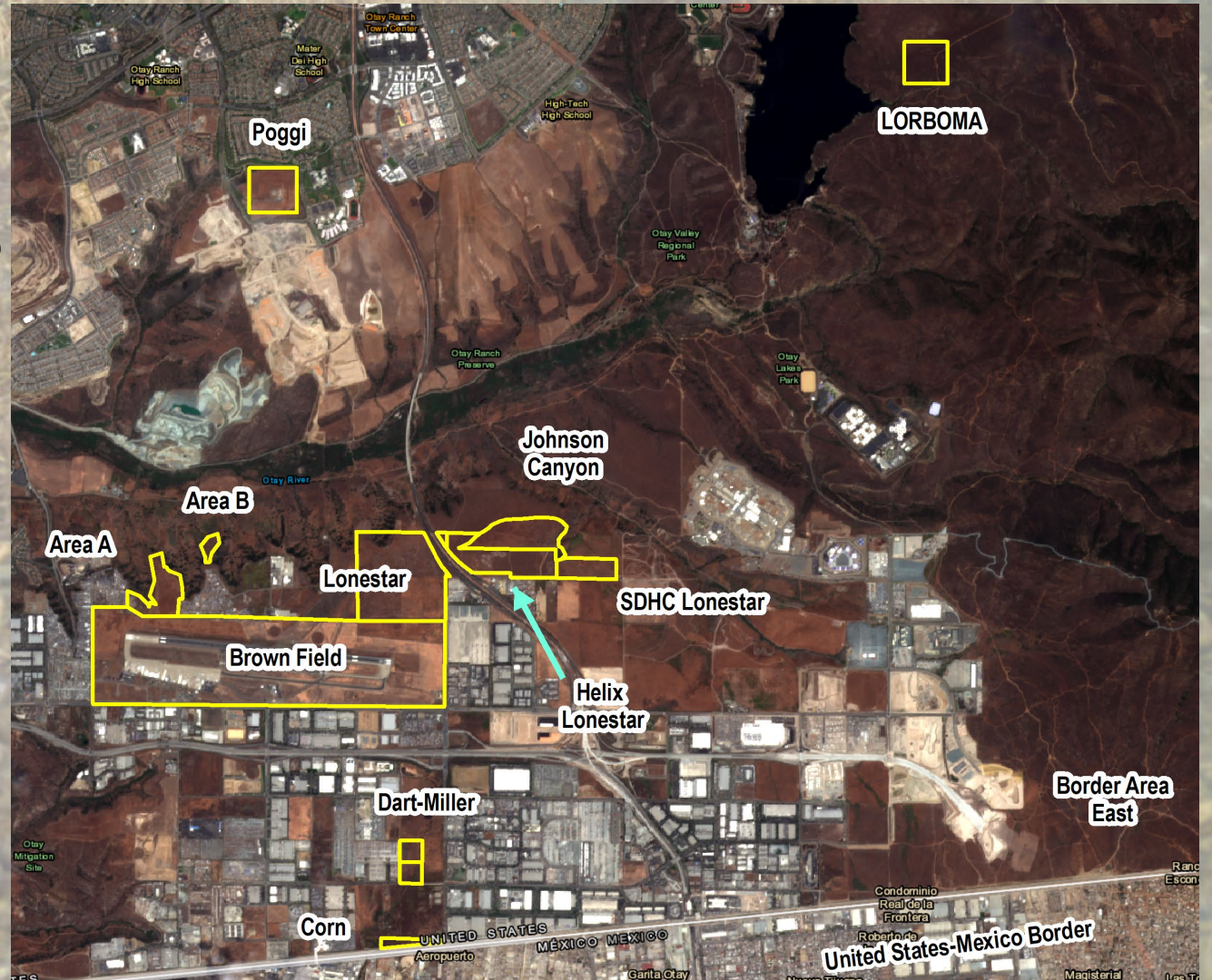


# Otay Mesa Update



# Otay Nesting

- 58-59 nesting attempts by 126 adults
- Banded 152 BUOW
  - 19 adults, 133 juveniles





# Otay Nesting

Site	# Adults		# Nesting Attempts		# Nests with confirmed juveniles		# Fledged (of # emerged)	
	2021	2020	2021	2020	2021	2020	2021	2020
Brown Field	20	11	11	6	9	6	40/46	26/29
Lonestar	54	36	30 <sup>1</sup>	27 <sup>1</sup>	22	21	46/88	60/68
Helix/SDHC Lonestar	10	4	5	3	4	3	14/16	10/10
Johnson Canyon	1	0	0	--	0	--	0	--
Border (Barrier + Otay Crossings)*	35	18	10-11	9	10	9	26/34	34/34
Private Lands*	5	10	2	5	2	5	7/8	9/9
Off the Mesa*	1	4	--	2	--	2	--	8/8
<b>Total</b>	<b>126</b>	<b>83</b>	<b>58-59</b>	<b>52</b>	<b>47</b>	<b>46</b>	<b>133/192</b>	<b>147/158</b>

\*These areas not monitored with cameras—estimates less accurate

<sup>1</sup>2020: 15 initial with 12 renests; 2021: 27 initial with 3 renests

- Proportion fledged (all Otay)
  - 2021: 0.69
  - 2020: 0.93 (high)
  - 2014: 0.44 (low)
- Sticktight fleas documented, but no outbreak



# Otay Nesting – Brown Field Airport

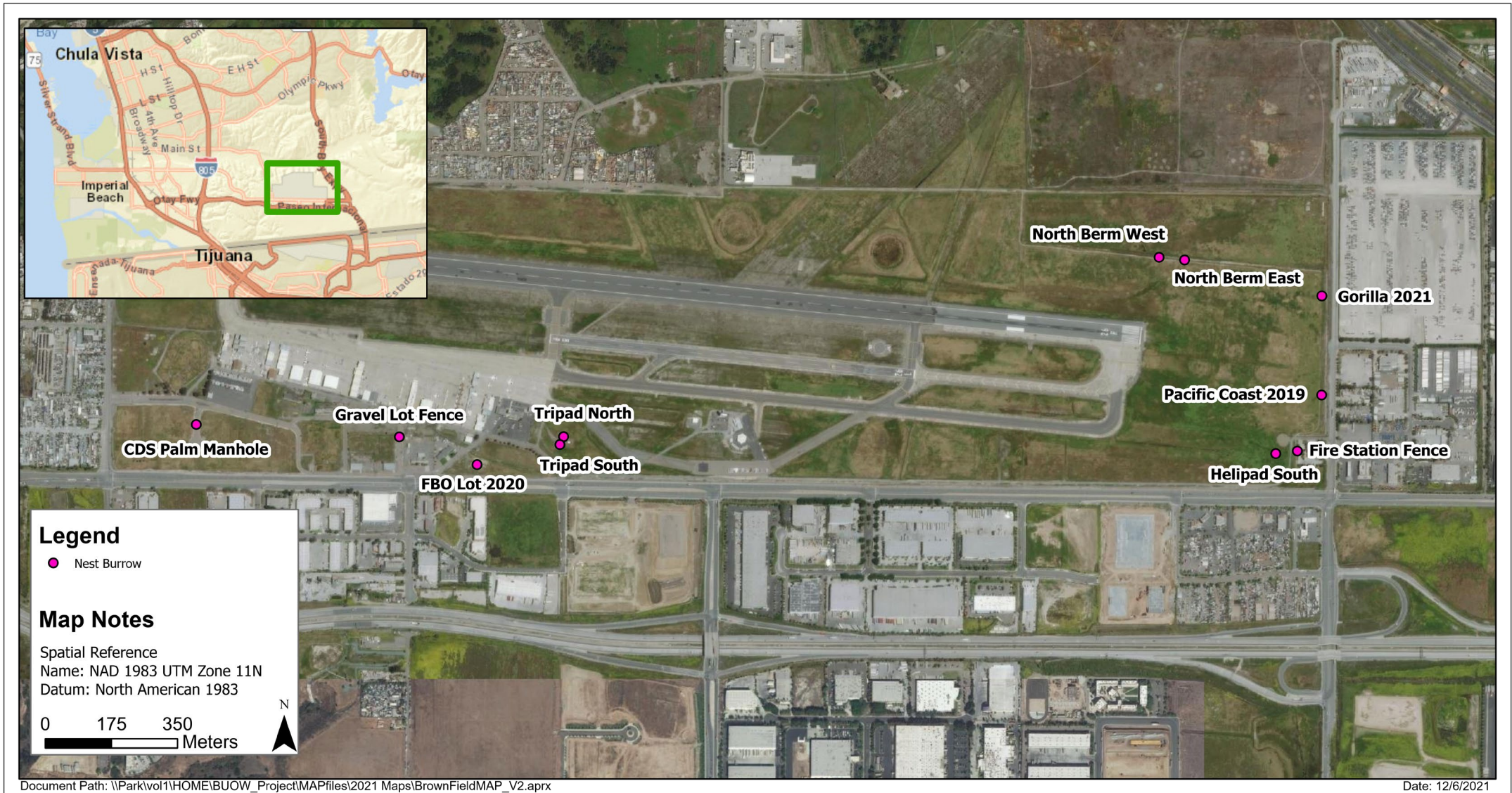
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<sup>1</sup>2020: 15 initial with 12 renests; 2021: 27 initial with 3 renests

- Twice the number of adults in 2021 vs. 2020
- High productivity and nest success
- Upcoming MAP development impacts in Fall 2022







# Otay Nesting – Lonestar West (Caltrans)

Site	# Adults		# Nesting Attempts		# Nests with confirmed juveniles		# Fledged (of # emerged)	
	2021	2020	2021	2020	2021	2020	2021	2020
Brown Field	20	11	11	6	9	6	40/46	26/29
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<sup>1</sup>2020: 15 initial with 12 renests; 2021: 27 initial with 3 renests

- Most BUOW we've seen at LS
  - At/over carrying capacity?
- Low proportion fledged relative to other sites
  - High juvenile mortality (mostly ravens, infanticide)



# Otay Nesting – Lonestar East (Helix / SDHC + JC)

Site	# Adults		# Nesting Attempts		# Nests with confirmed juveniles		# Fledged (of # emerged)	
	2021	2020	2021	2020	2021	2020	2021	2020
Brown Field	20	11	11	6	9	6	40/46	26/29
Lonestar	54	36	30 <sup>1</sup>	27 <sup>1</sup>	22	21	46/88	60/68
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Private Lands*	5	10	2	5	2	5	7/8	9/9
Off the Mesa*	1	4	--	2	--	2	--	8/8
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- Most BUOW recorded
- First nest documented at SDHC LS
- Area has high potential for more BUOW, needs vegetation mgmt and more CAGS burrows
- Proximity to LS
- No breeding at JC
  - ABs are not in suitable condition for BUOW
  - Still good wintering and foraging habitat



# Otay Nesting – Border/Otay Crossings

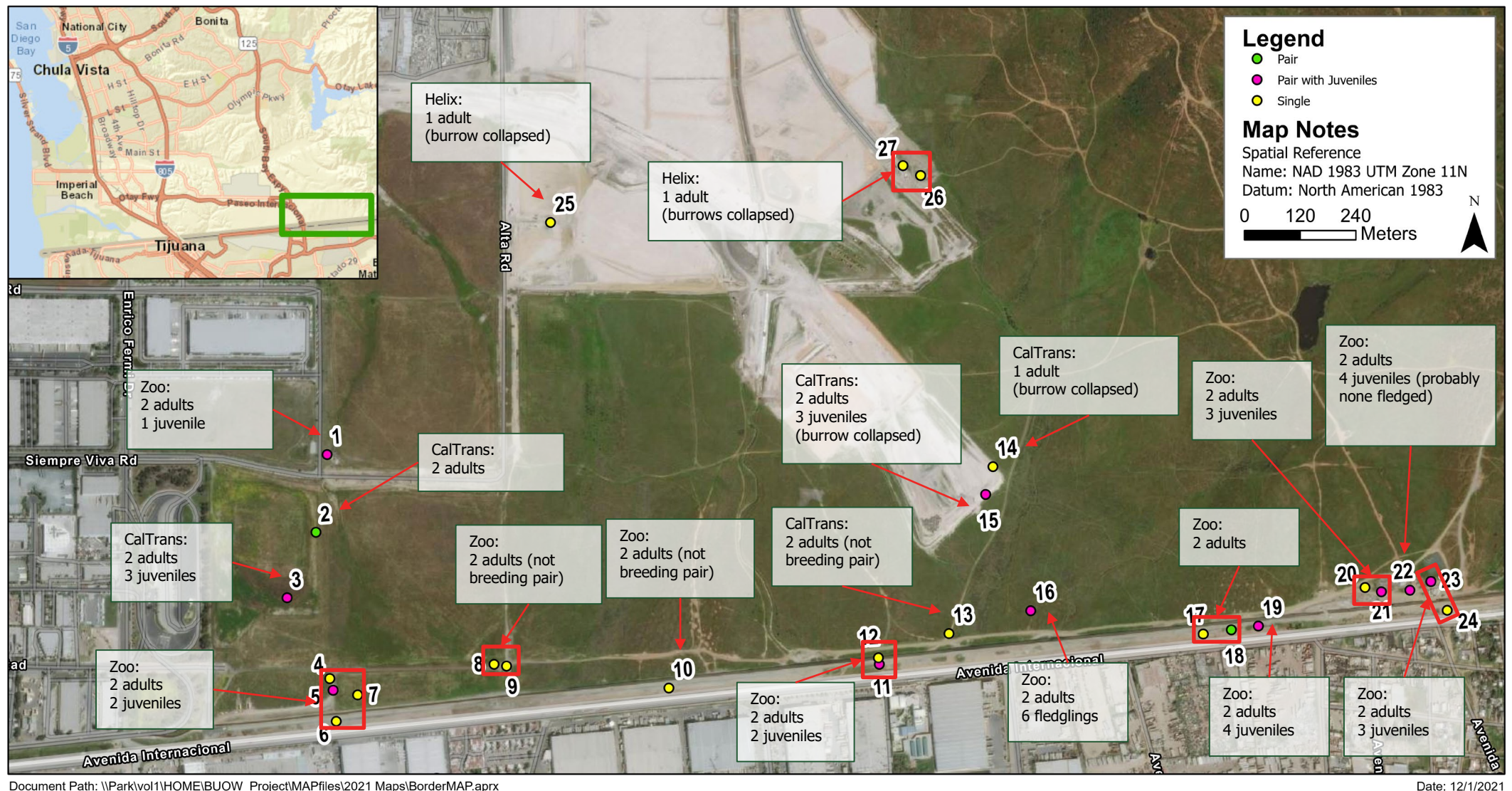
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- Most BUOW monitored in area (since 2018)
- Current/Future Development
  - Grading at SR-11 and OC project areas on-going
  - Construction at POE expected Summer/Fall 2022?
- Large # of BUOW will be impacted





Document Path: \\Parkvol1\HOME\BUOW\_Project\MAPfiles\2021 Maps\BorderMAP.aprx

Date: 12/1/2021



# Border/East Otay



# Otay Nesting – Private Lands

Site	# Adults		# Nesting Attempts		# Nests with confirmed juveniles		# Fledged (of # emerged)	
	2021	2020	2021	2020	2021	2020	2021	2020
Brown Field	20	11	11	6	9	6	40/46	26/29
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- Changing land-use across Otay Mesa
- Fewer nests than prior years on private lands
  - Development and lack of veg mgmt. in those areas



# Otay Conclusions

- Increased development = increased pressure on conservation areas
- Annual vegetation management critical
  - Need for timely veg mgmt at all sites
  - Most effective when tightly coupled with breeding / weather events
- Lots of potential in conservation areas outside of Lonestar West
- Opportunities for more communication and collaboration on vegetation mgmt. needs across Otay Mesa?



# Node Expansion Update

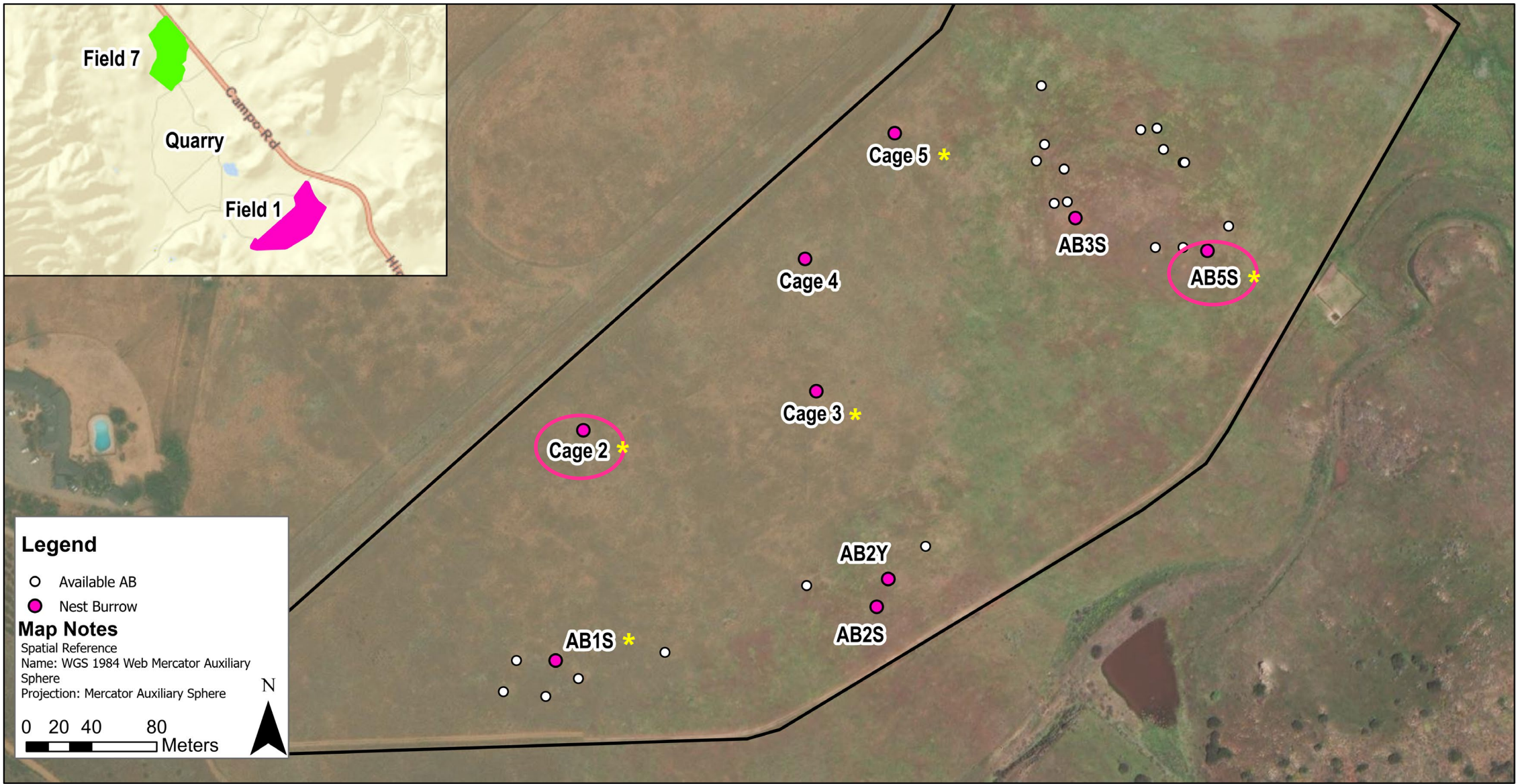
## Jamul



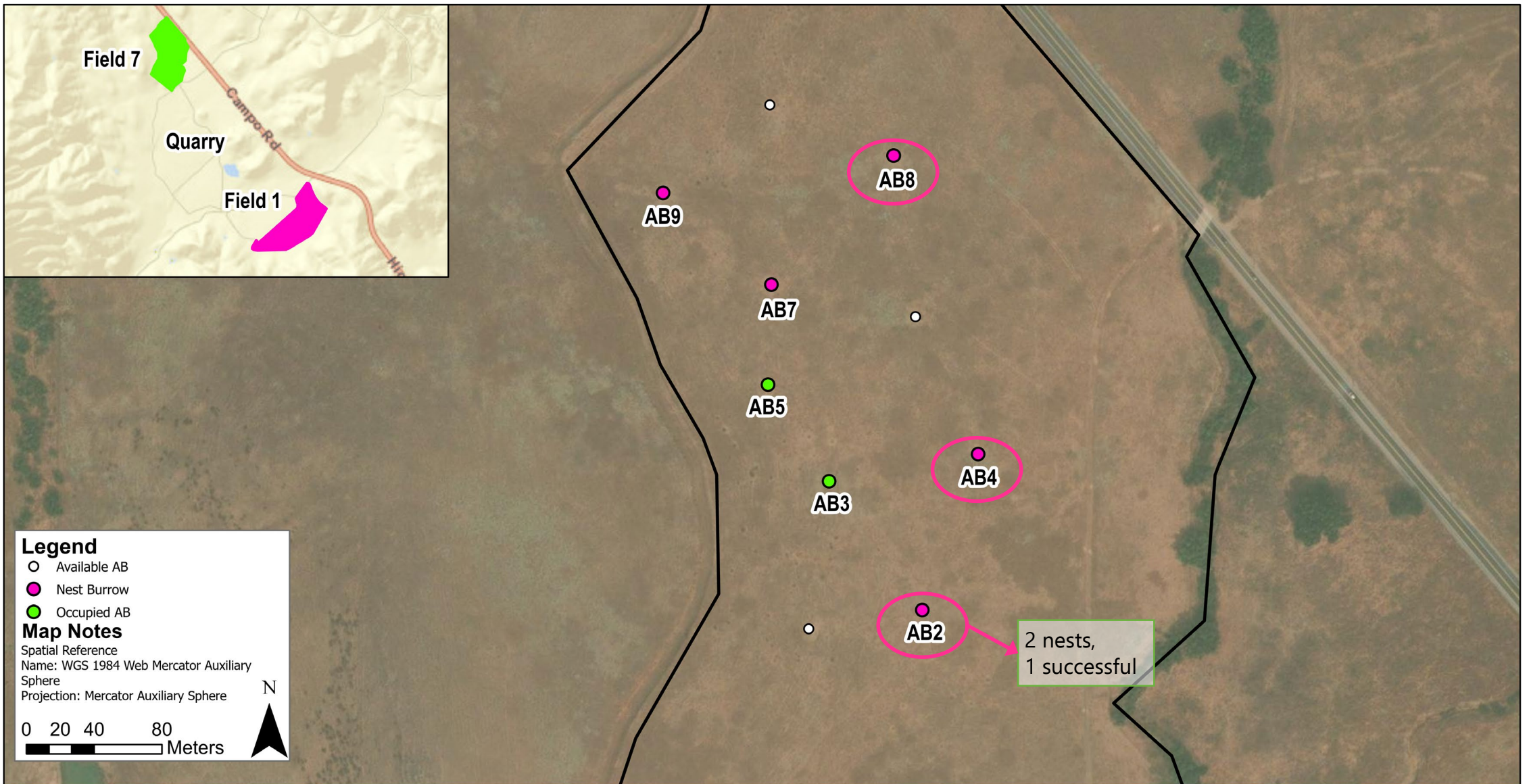
# 2021 Breeding and Current Status

- 39 ABs (29 @F1, 10 @F7)
- 5 successful nests (of 19 attempts): 2 @ F1, 3 @ F7
- 18 fledglings
- Supplemental feeding
- Sticktight fleas
- ~9 owls on-site (as of 11/1), next visit 12/13
- Dispersal of 4 BUOW to Otay Mesa









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Date: 12/1/2021



# Node Expansion Update

## Ramona



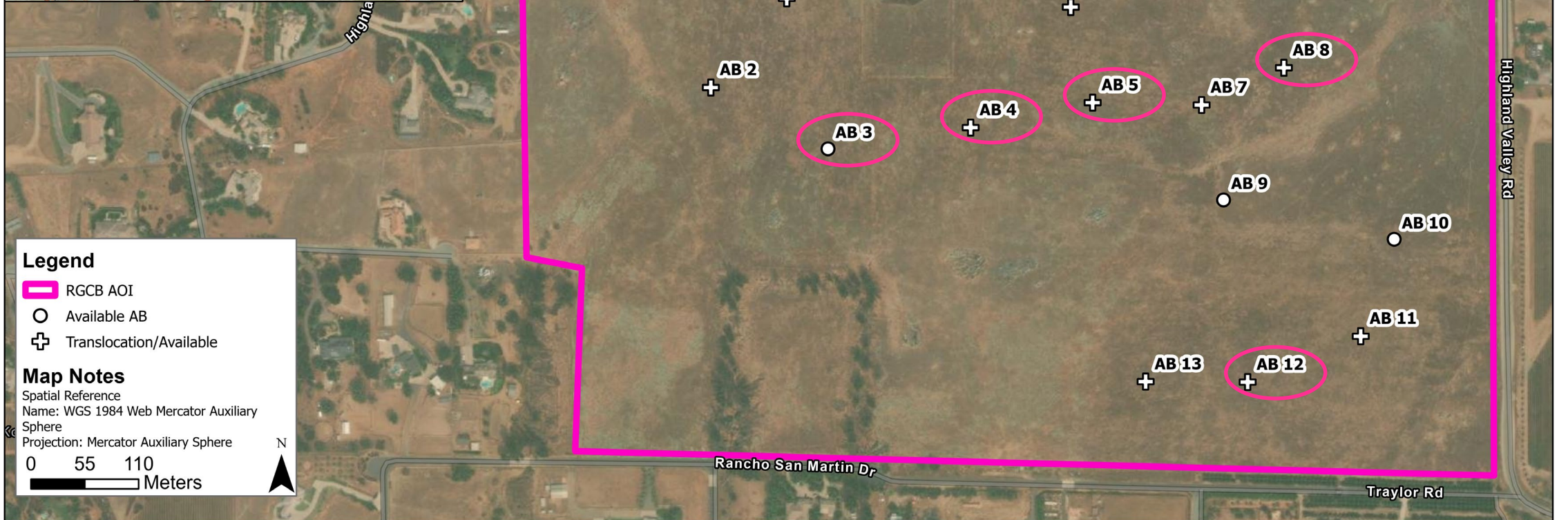
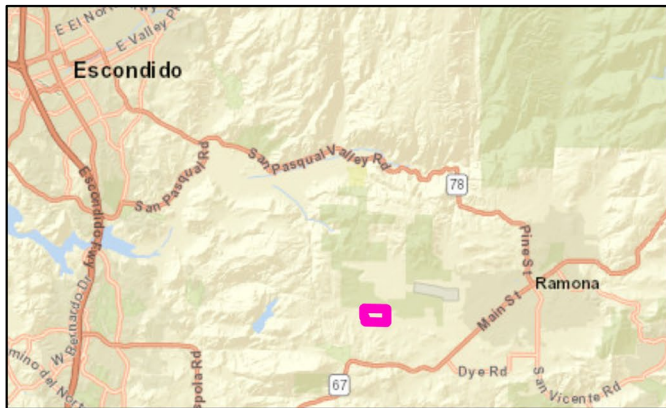
# 2021 Breeding and Current Status

- 13 sets of ABs
- 24 BUOW translocated from Safari Park in Jan 2021
  - 5 pairs, 14 singles
- 13 of 24 settled/survived (30 days)
- 5 successful nests (of 13 attempts)
  - 20 fledglings
- 6-8 owls on-site (as of 10/7), next visit 12/7



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Date: 11/30/2021



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# Year 1 Outcomes

## RJER (Jamul)

- 2018:
  - 10 translocated (5 pairs)
  - Nest success\* = 3/5
  - 16 fledglings
- 2019:
  - 1 adult (F) retained (10%)
  - 4 juveniles recruited (25%)
  - 2 wild recruited

## RGCB (Ramona)

- 2021:
  - 24 translocated (4 pairs +)
  - Nest success\* = 5/13
  - 20 fledglings
- “Expected” 2022:
  - 10% retained ~ 2-3
  - 25% recruited ~ 5
  - 1 wild recruit?
  - Total: ~ 7-9 owls



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\* Includes renests





# Conservation Breeding Update



# 2021 Breeding Summary

- 4 Pairs in Breeding Program
  - 3 pairs at Safari Park
    - Pair #1: 10 offspring (6 F, 4 M)
      - Pair + offspring to be released
    - Pair #2: 8 offspring (7 F, 1 M)
      - Offspring to be released
    - Pair #3: 7 offspring (5 F, 2 M)\*
      - Offspring to be released (except 1 M)
    - Produced 25 offspring total
  - 1 pair at LCDC
    - Pair #4: Did not breed (2020 or 2021)
      - Male to be released

27 BUOW to be released in 2022



# 2022 Breeding Plan

- Reduce to 3 Breeding Pairs
  - 2 pairs at Safari Park
    - Pair #2
      - Hold both (M: wild-born 2017\*, F: SP-born 2020)
    - Pair #3
      - Hold both (brought in from border 2020)
  - 1 pair at LCDC
    - Pair #4b
      - Hold female (SP-born 2019\*)
      - New male (SP-born 2021)



# 2022 Release Plan

- 27 owls to be released in 12 aviaries
  - 13 singles housed in 5 aviaries
  - 12 of 13 are females
  - 7 pairs housed in 7 aviaries
- 17 owls to be released at RGCB (SDHC)
  - 6 F, 1 M, 5 pairs
- 10 owls to be released at RJER (CDFW)
  - 3 F, 1 pair @F1; 3 F, 1 pair @F7

Given current numbers, we think both sites can handle this plan, but ultimately depends on numbers & locations of extant owls at time of translocation...

- Monitoring 2x in Dec
- Burrow inspections/ maintenance in Dec
- Cameras at Ramona



# Future Planned Activities

# Future Planned Activities (Funded)

- Metropolitan Airpark Project (MAP) tasks – Year 5
  - A. Passive and Active Translocation
  - B. BUOW Breeding Node – RJER, RGCB
  - C. BUOW Survey – Pre-construction
  - D. BUOW Monitoring – Across Otay Mesa
  - E. Habitat and Burrow Assessments
  - F. Ground Squirrel Establishment
- Conservation Breeding and Release of BUOW (SDZWA, SDF)
- LAG (Western Riverside)
  - Habitat Suitability Model – done
  - Rapid Assessments – done, data analysis in progress
  - Conservation and Management Plan



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# Future Directions

- Maintain commitment to Otay Mesa
  - Monitor BUOW across mesa
  - MAP construction and restoration
- Border area and POE construction
  - Timing of impacts
  - # BUOW affected, plans for mitigation
- Further research of sticktight fleas, mgmt. implications

# Future Directions

- Population Expansion
  - Continue monitoring nodes at RJER & RGCB
    - Supplemental translocations
    - Advise/assist with habitat management
      - Vegetation, ABs, CAGS expansion, etc.
- Future node sites
  - Plans and preparations
- Regional BUOW Planning



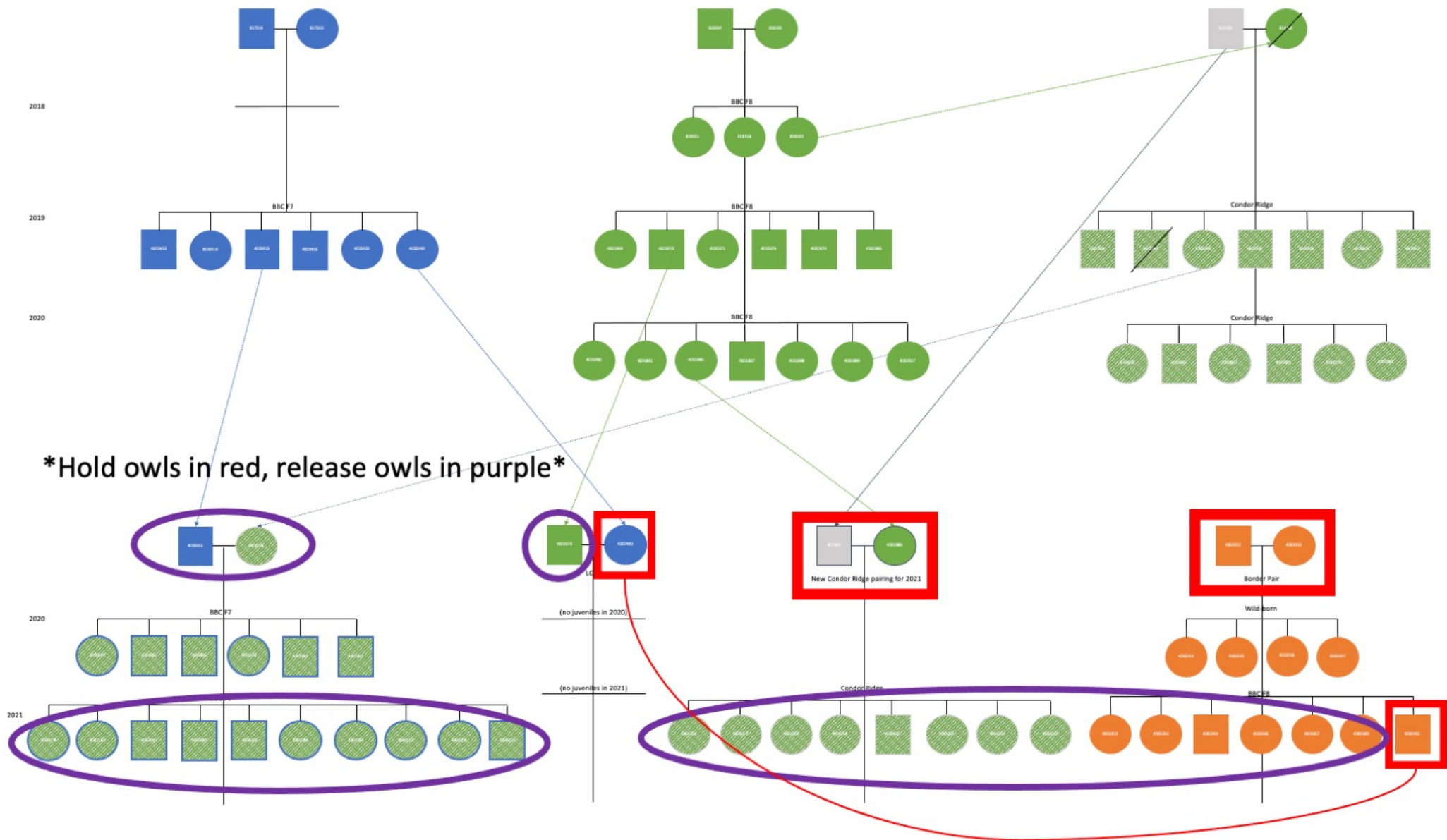
# Questions?



Badger caught on camera at RGCB, reported to USGS & CDFW

Type	BUOW	Female Origin	Male Origin	Aviary #	Timing	Hold Length	Release Site	Target Aviary Set-up Date	Target Move Date	Target Release Date
Single	3 F	F7		1	Feb	14-day	Ramona	~Jan 31 (3 days)	~Feb 16	~Mar 2
Single	3 F	F7		2	Jan	14-day	RJER	~Jan 6	~Jan 12	~Jan 26
Single	3 F	CR		3	Feb	14-day	Ramona	~Jan 31 (3 days)	~Feb 16	~Mar 2
Single	3 F	CR		4	Jan	14-day	RJER	~Jan 6	~Jan 12	~Jan 26
Single	1 M		F7	5	Feb	14-day	Ramona	~Jan 31 (3 days)	~Feb 16	~Mar 2
Pair	1 F, 1 M	F7	F7	2	Feb-Mar	30-day	RJER	~Jan 26	~Feb 16	~Mar 17
Pair	1 F, 1 M	F8	LCDC	4	Feb-Mar	30-day	RJER	~Jan 26	~Feb 16	~Mar 17
Pair	1 F, 1 M	F8	F7 or CR	6	Feb-Mar	30-day	Ramona	~Jan 31 (3 days)	~Feb 16	~Mar 15
Pair	1 F, 1 M	F8	F7 or CR	7	Feb-Mar	30-day	Ramona	~Jan 31 (3 days)	~Feb 16	~Mar 15
Pair	1 F, 1 M	F8	F7 or CR	8	Feb-Mar	30-day	Ramona	~Jan 31 (3 days)	~Feb 16	~Mar 15
Pair	1 F, 1 M	F8	F7 or CR	9	Feb-Mar	30-day	Ramona	~Jan 31 (3 days)	~Feb 16	~Mar 15
Pair	1 F, 1 M	F7 or CR	F8	10	Feb-Mar	30-day	Ramona	~Jan 31 (3 days)	~Feb 16	~Mar 15





Release "green/gray" and  
"green/gray/blue" offspring  
as singles (unless paired  
with orange)

Release "green" male as single,  
pair "blue" female with "orange" male

Pair "orange" offspring  
with "green/gray" and  
"green/gray/blue"