

# Results of Five MGS Studies in 2019

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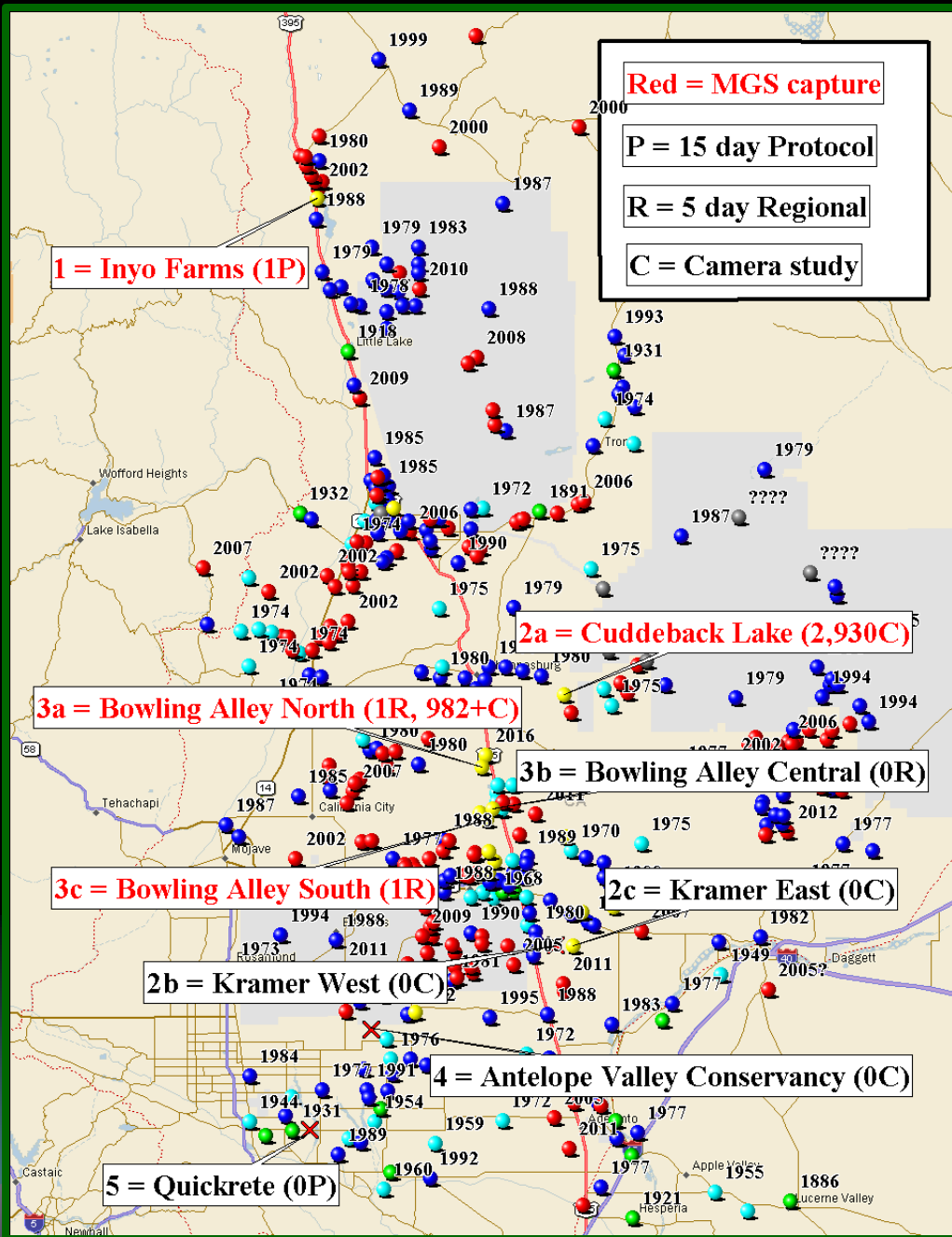
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# 9 Sites in 6 Regions



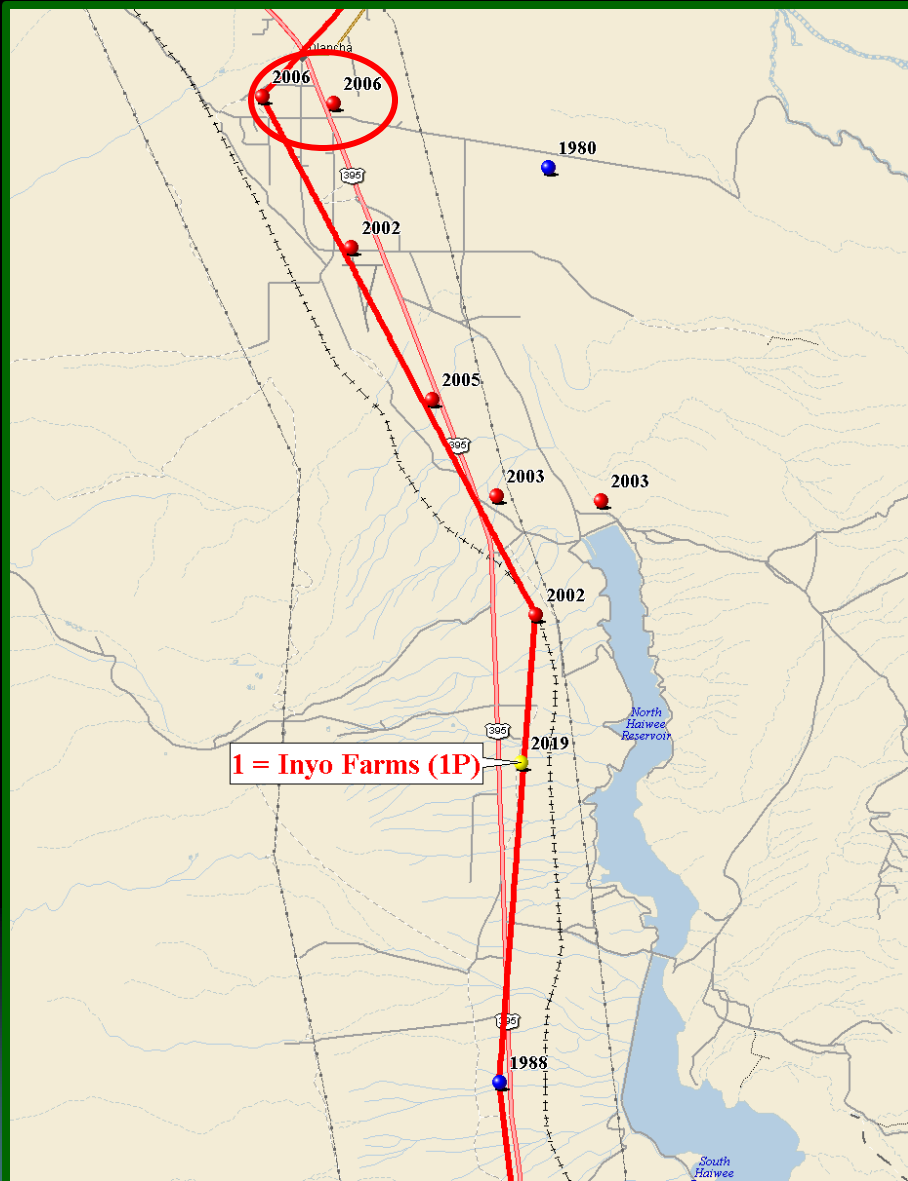
**Olancha** (1 protocol)  
**Cuddeback Lake** (1 camera)  
**Bowling Alley** (3 regional/1 camera)  
**Kramer Junction** (2 camera)  
**South of EAFB** (1 camera)  
**Palmdale** (1 protocol)

**3 MGS live trapped @ 1, 3a, & 3c**

**3,900+ MGS images @ 2a & 3a**

# Site 1 = Inyo Farms 34 acres

**84g Juvenile female on 7/1/2019**



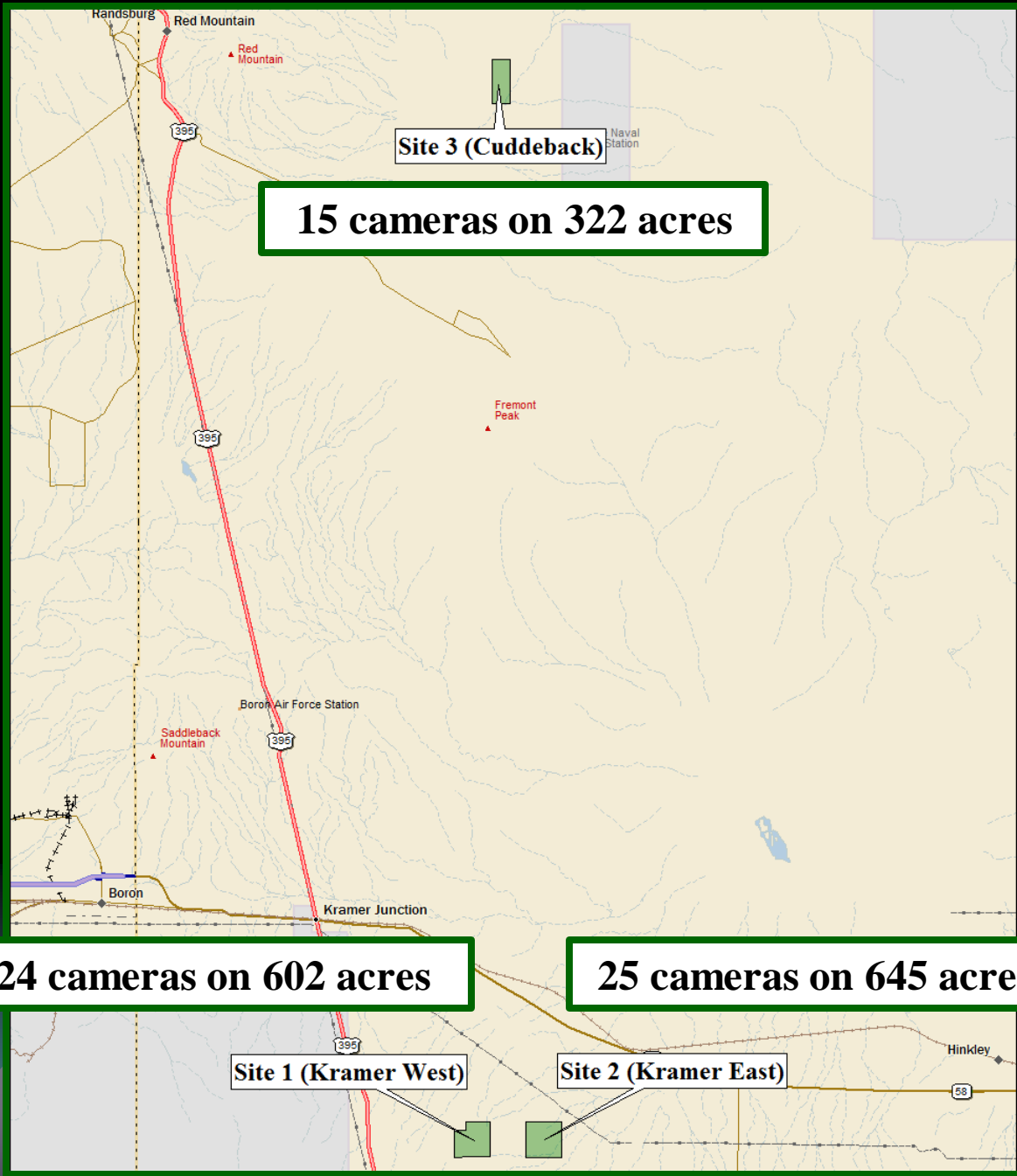
**1,250 BWS 40 mi N of known pop**

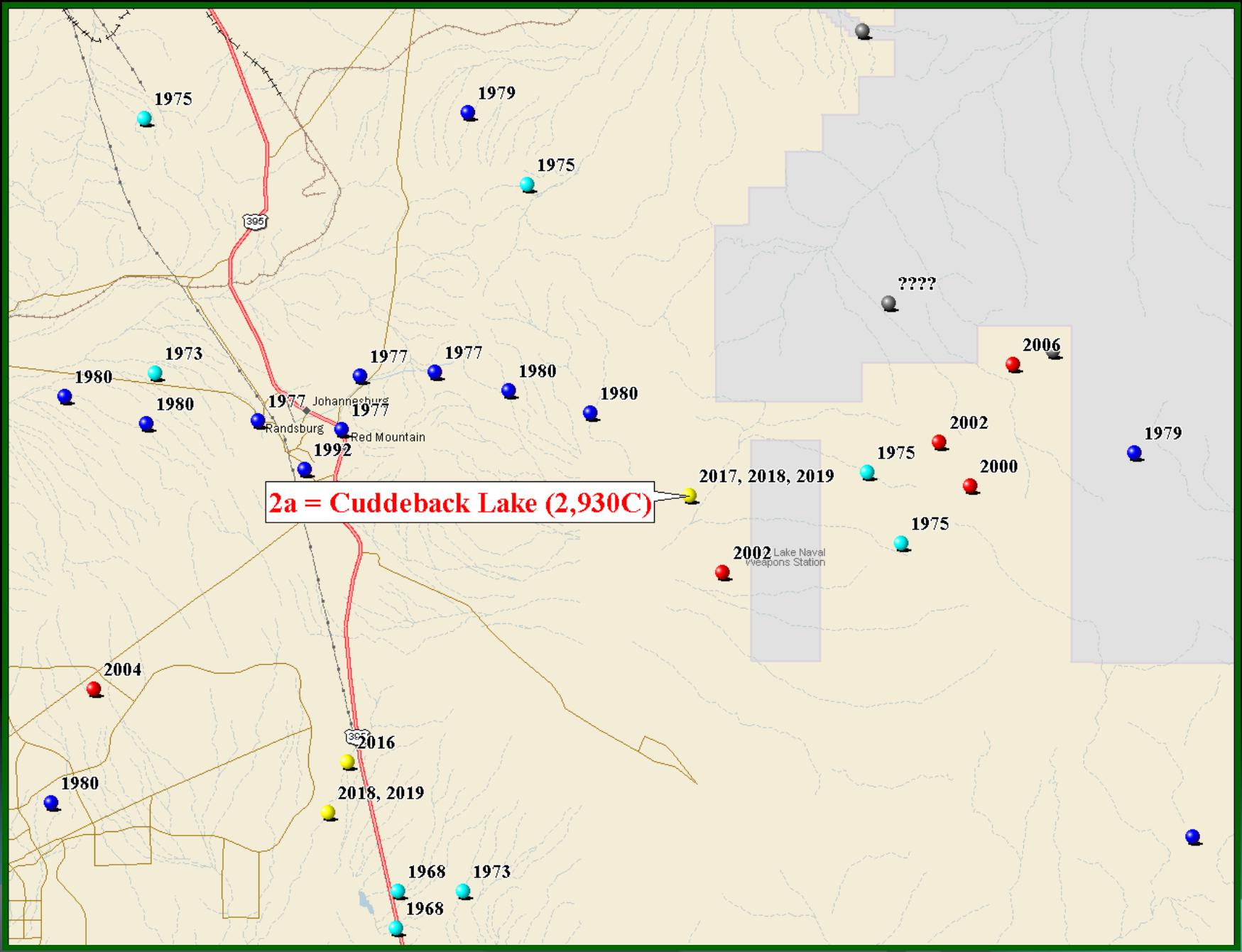
# Sites 2a, 2b, 2c

## Cuddeback/Kramer



- Implement requirements of Cuddeback-Kramer Preserve Management Plan (2016)
- 65 cameras April 30-May 31, 2019
- 3<sup>rd</sup> of 3 consecutive years
- Suggest all 3 in 1 year rather than 1 each over 3 years





# Site 2a. Cuddeback Lake

	<u>2017</u>	<u>2018</u>	<u>2019*</u>
Photos	122,211	54,813	58,627
MGS	2	1,195	2,930
AGS	973	23,250	9,708
%MGS/Photo	0.0016%	2.2%	5.0%
Empty	101,163 (83%)	11,571 (21%)	34,378 (59%)
<u>Precipitation</u>	<u>Wet</u>	<u>Dry</u>	<u>Wet</u>

\*Data from all 15 cameras included

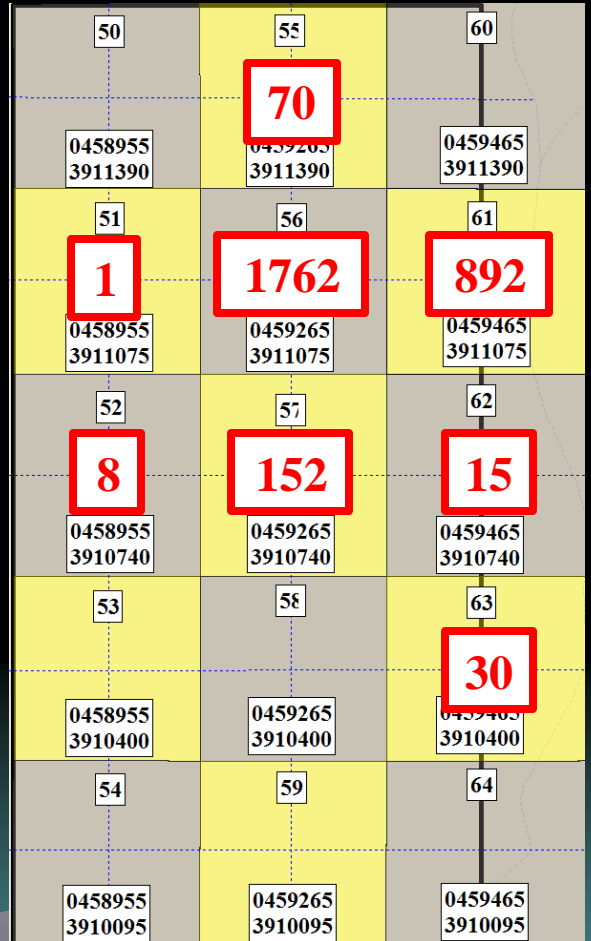
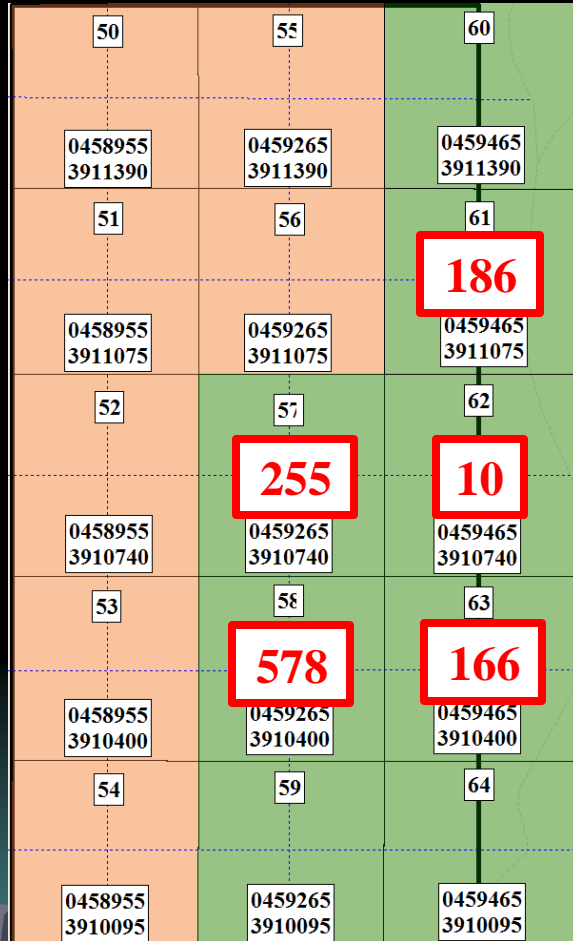
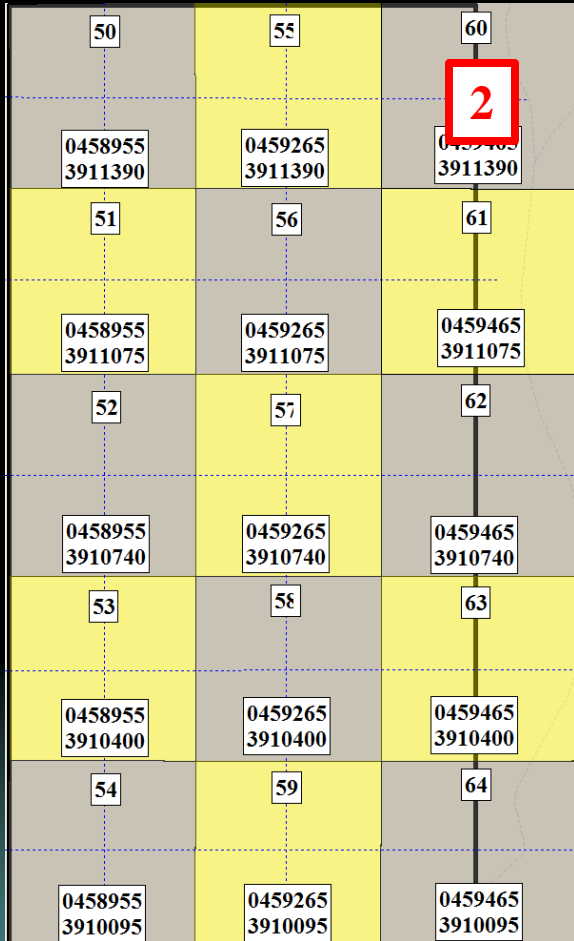


# MGS @ Cuddeback Lake

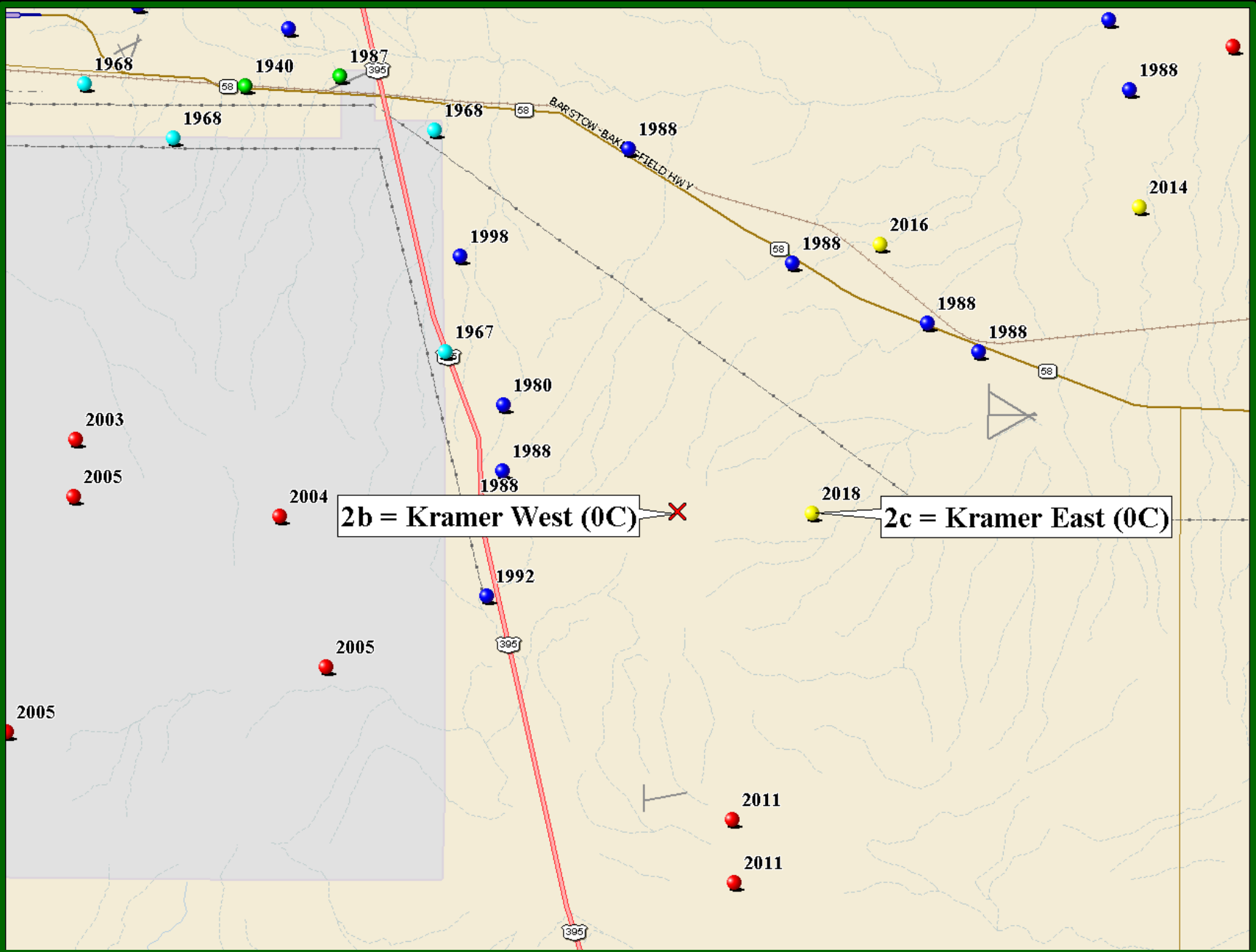
2017 = 2 @ 1 camera

2018 = 1,195 @ 5 cameras

2019 = 2,930 @ 8 cameras







# Site 2b. Kramer West

	<u>2017</u>	<u>2018</u>	<u>2019*</u>
Photos	186,847	143,843	41,715
MGS	0	0	0
AGS	1,997	67,760	8,036
%MGS/Photo	0%	0%	0%
Empty	148,761 (80%)	33,004 (23%)	17,245 (41%)
<u>Precipitation</u>	<u>Wet</u>	<u>Dry</u>	<u>Wet</u>

\*Data for 17 of 24 cameras



# Site 2c. Kramer East

	<u>2017</u>	<u>2018</u>	<u>2019*</u>
Photos	151,904	73,854	155,127
MGS	0	1,383	0
AGS	903	33,743	77,866
MGS/Photo	0	1.9%	0%
Empty	119,613 (79%)	17,922 (24%)	44,879 (29%)
<u>Precipitation</u>	<u>Wet</u>	<u>Dry</u>	<u>Wet</u>

\*Data for 24 of 25 cameras



# MGS @ Kramer East (only 2018)

25 0460290 3862860	30 0460610 3862860	35 0460925 3862860	40 0461255 3862860	45 501 3862860
26 0460290 3862545	31 0460610 3862545	36 0460925 3862545	41 0461255 3862545	46 882 3862545
27 0460290 3862220	32 0460610 3862220	37 0460925 3862220	42 0461255 3862220	47 0461570 3862220
28 0460290 3861900	33 0460610 3861900	38 0460925 3861900	43 0461255 3861900	48 0461570 3861900
29 0460290 3861590	34 0460610 3861590	39 0460925 3861590	44 0461255 3861590	49 0461570 3861590

2018 = 1,383 @ 2  
cameras

# All Sites 2a, 2b, & 2c

	<u>2017</u>	<u>2018</u>	<u>2019</u>
Photos	460,962	272,510	239,437
MGS	2	2,578	2,930
AGS	3,873	124,753	95,610*
MGS/Photo	0	0.9%	0.8%
Empty	119,613 (79%)	62,4971 (23%)	96,502 (40%)**
<u>Precipitation</u>	<u>Wet</u>	<u>Dry</u>	<u>Wet</u>

\*77,866 of 95,610 AGS (81%) @ Kramer East

\*\* Likely lower in 2019 due to raking each site







# Raven Results by Site

	<u>2017</u>	<u>2018</u>	<u>2019</u>
Cuddeback	469 (7.8%*)	1,165 (29.7%)	306 (3.9%)
Kramer West	5,115 (84.7%)	2,763 (70.3%)	5,820 (74.9%)
Kramer East	457 (7.5%)	0 (0%)	1,645 (21.2%)
Totals	<b>6,041</b>	<b>3,928</b>	<b>7,771</b>
<u>Precipitation</u>	<u>Wet</u>	<u>Dry</u>	<u>Wet</u>

\*Percent total within year ( $469/6,041 = 7.8\%$ )

Two known nests on Kramer West in 2017 but not 2018, ? 2019



# Raven Results for All Sites

	<u>2017</u>	<u>2018</u>	<u>2019</u>
Photos	460,962	272,510	239,437
Ravens	6,041	3,928	7,771
Ravens/Photo	1.3%	1.4%	3.2%
Precipitation	Wet	Dry*	Wet

\*Reduced raven nesting/foraging in dry years?





# Sites 3a, 3b, 3c: Bowling Alley

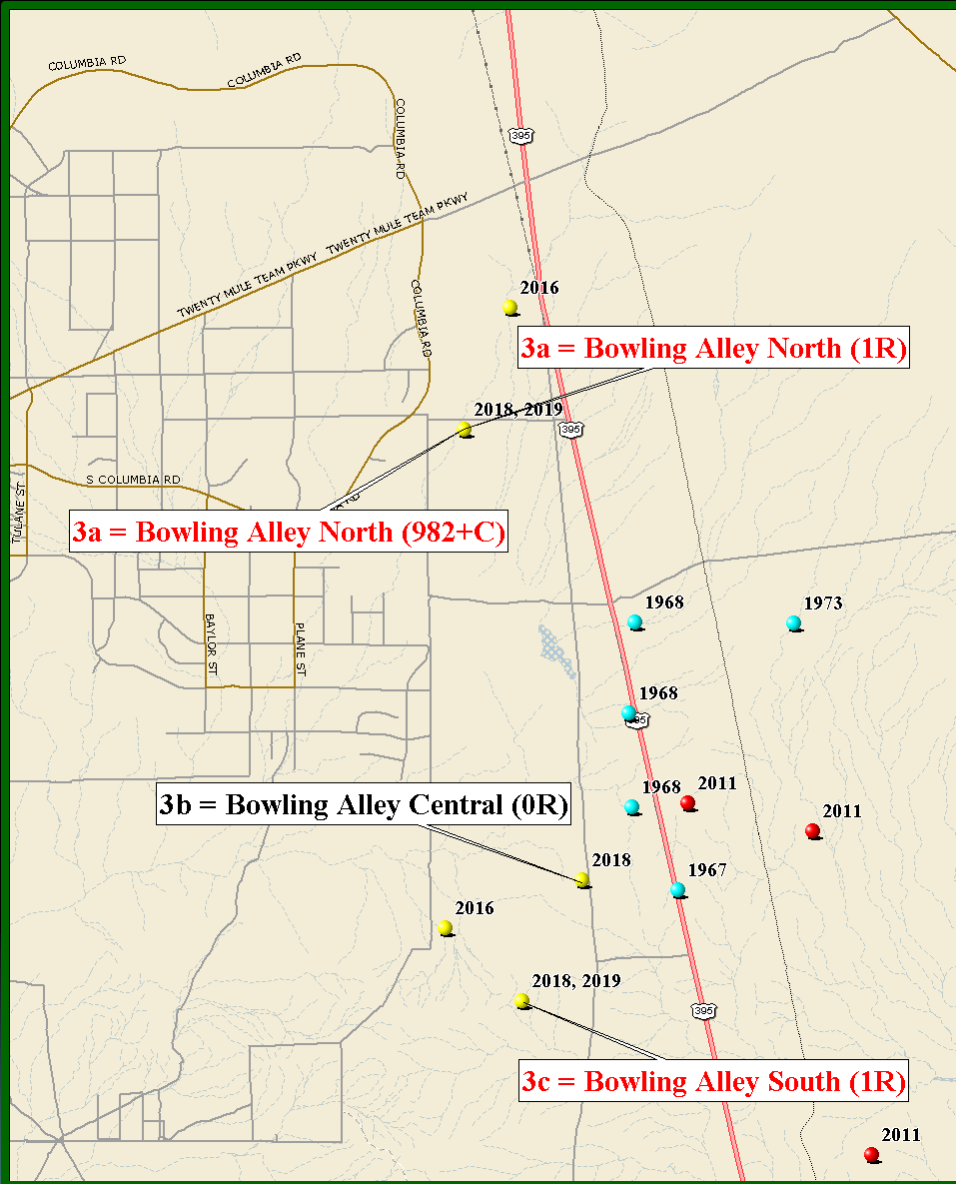
**Regional trapping 3 sites 5 days:  
6/1-6/5, 6/2-6/6, 6/6-6/10/2019**

**Camera trapping 1 site 17 days:  
5/27-6/12, 2019**

**15 Cameras:**

**5 block, 5 tube, 5 sandwich  
(1 sandwich nonfunctional)**

**Only 11 of 15 cameras assessed**





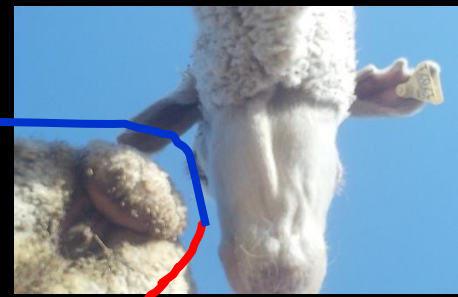




5/28



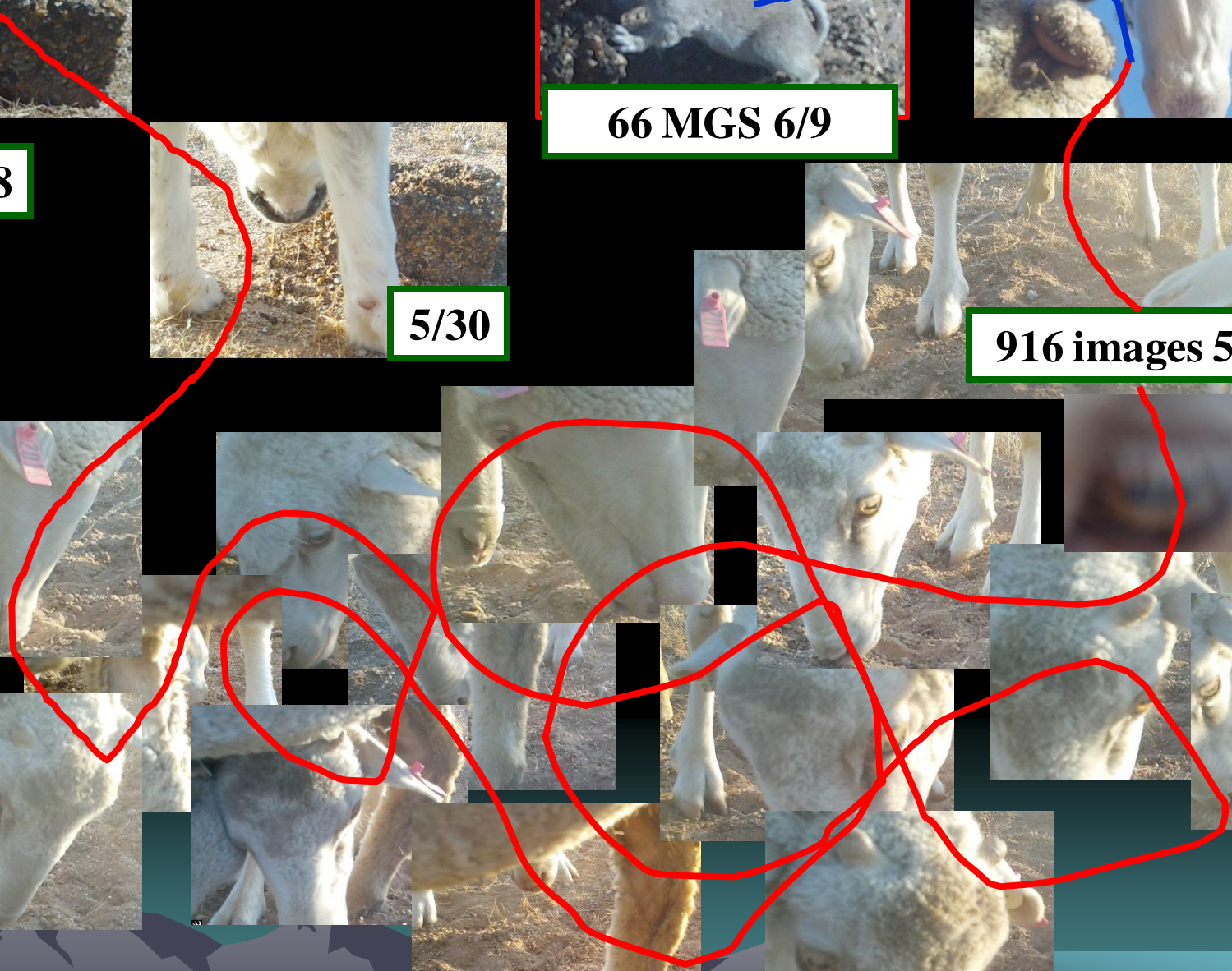
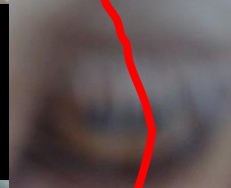
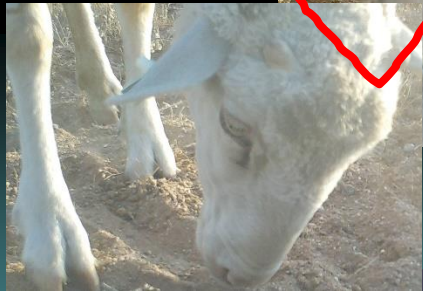
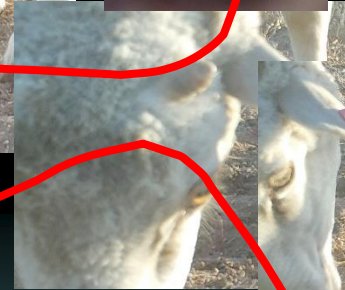
66 MGS 6/9



5/30

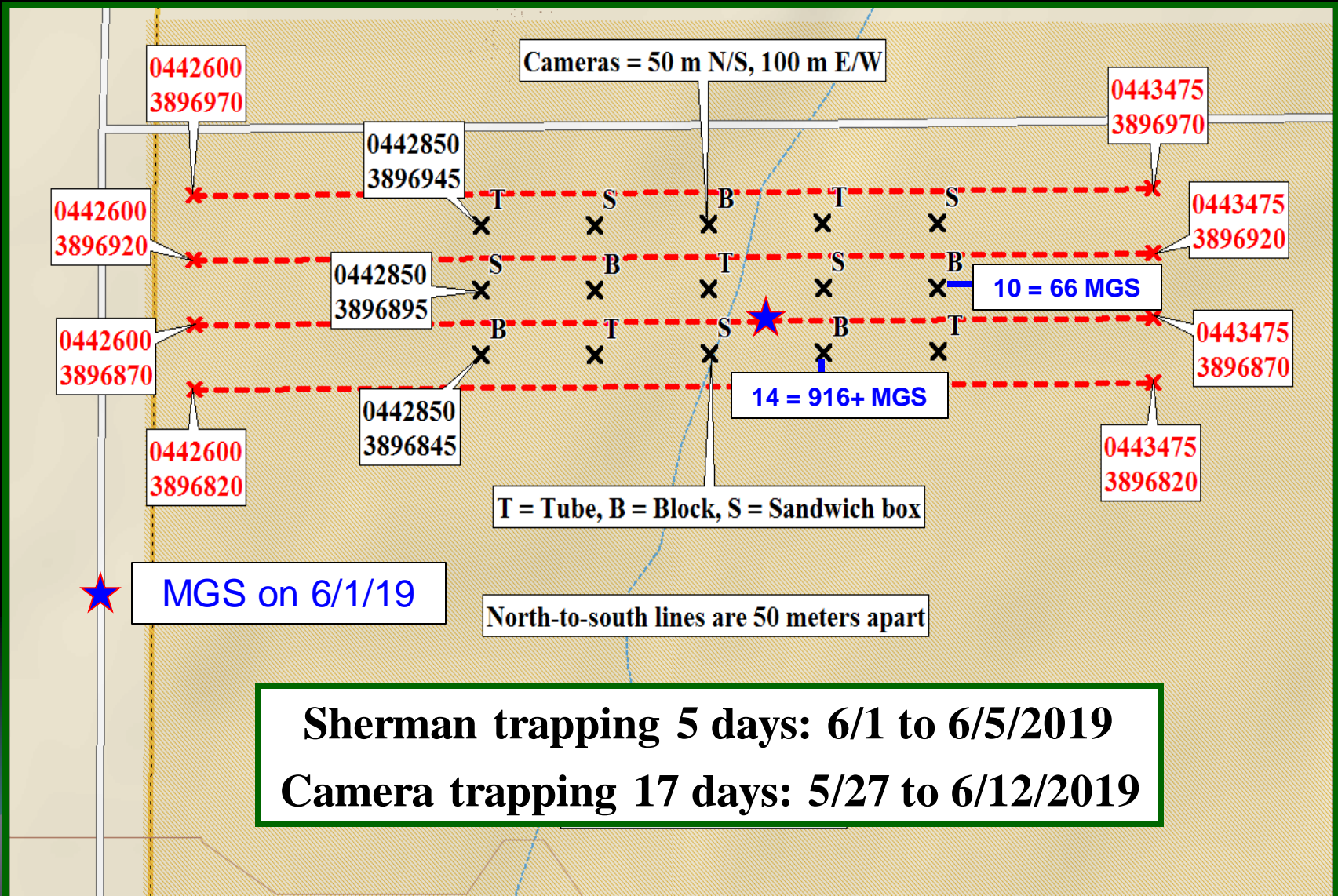


916 images 5/31





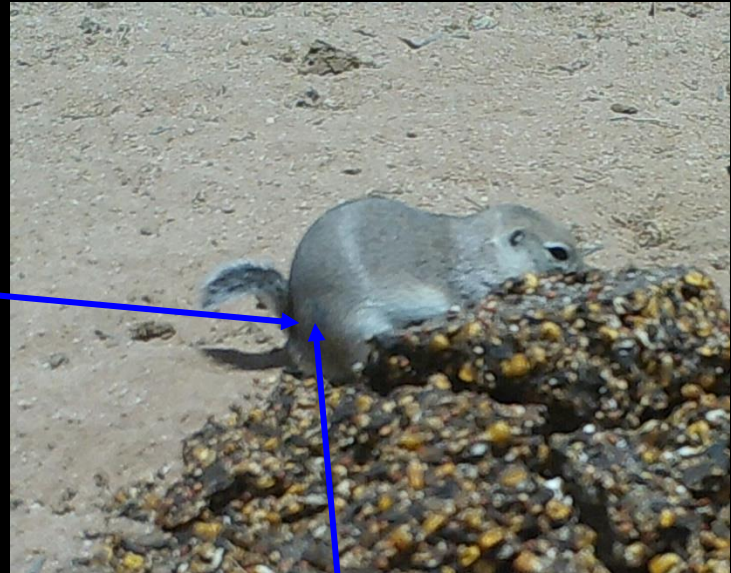
# Site 3a: Bowling Alley







Marked on 6/1/19



Visible on 6/2



Not visible on 6/5 or different?



Juvenile on 6/9

# Site 3a: Bowling Alley

<u>Presentation</u>	<u># Images</u>	<u># AGS</u>
Blocks (5)	35,141 (7,028*)	14,187 (2,837**)
Sandwich (4)	23,229 (5,824)	2,471 (618)
PVC Tube (3)	10,970 (3,656)	1,866 (622)

Of 14 presentations, only 12 assessed; 1 sandwich nonfunctional

\* Number of images per presentation (i.e.,  $35,141/5 = 7,028$ )

\*\* Number of AGS per presentation (i.e.,  $14,187/5 = 2,837$ )

CORA numbers negligible = 44 at 2 blocks

66 + 916 MGS only at 2 blocks

# Bowling Alley 2018 vs 2019

	<u>2018</u>	<u>2019</u>
North Grid	2♂3♀x9	1♂1x
Center Grid	1♀x3	0
South Grid	2♂2♀1?x1	1♀1x
<b>Totals</b>	<b>10 or 11 x 19</b>	<b>2 x 2</b>
Precipitation	Dry	Wet



# Site 3a, North Grid - 2018 & 2019 Results

5 MGS trapped 9 times in 2018

1 MGS trapped 1 time in 2019

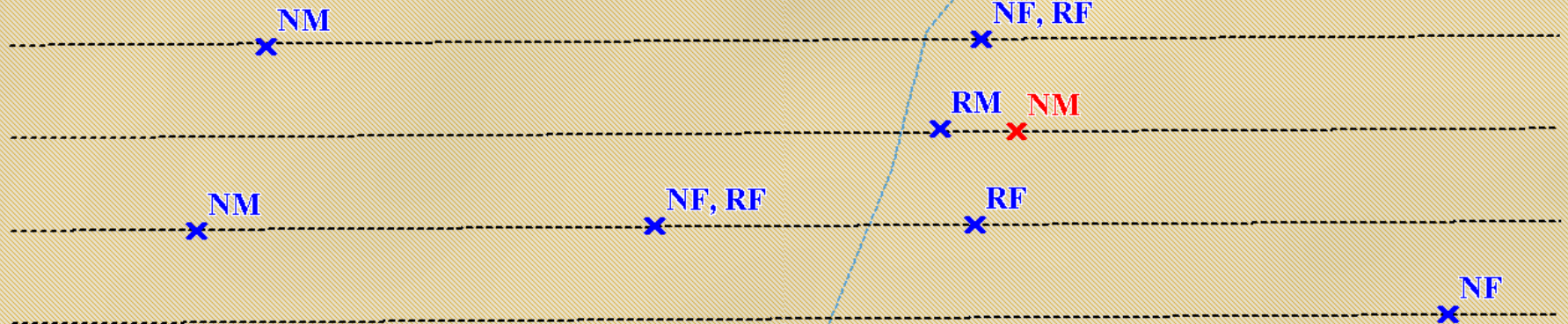
x NF = 3 New female in 2018

x RF = 3 Recap female in 2018

x NM = 1 male in 2019

x NM = 2 New male in 2018

x RM = 1 Recap male in 2018

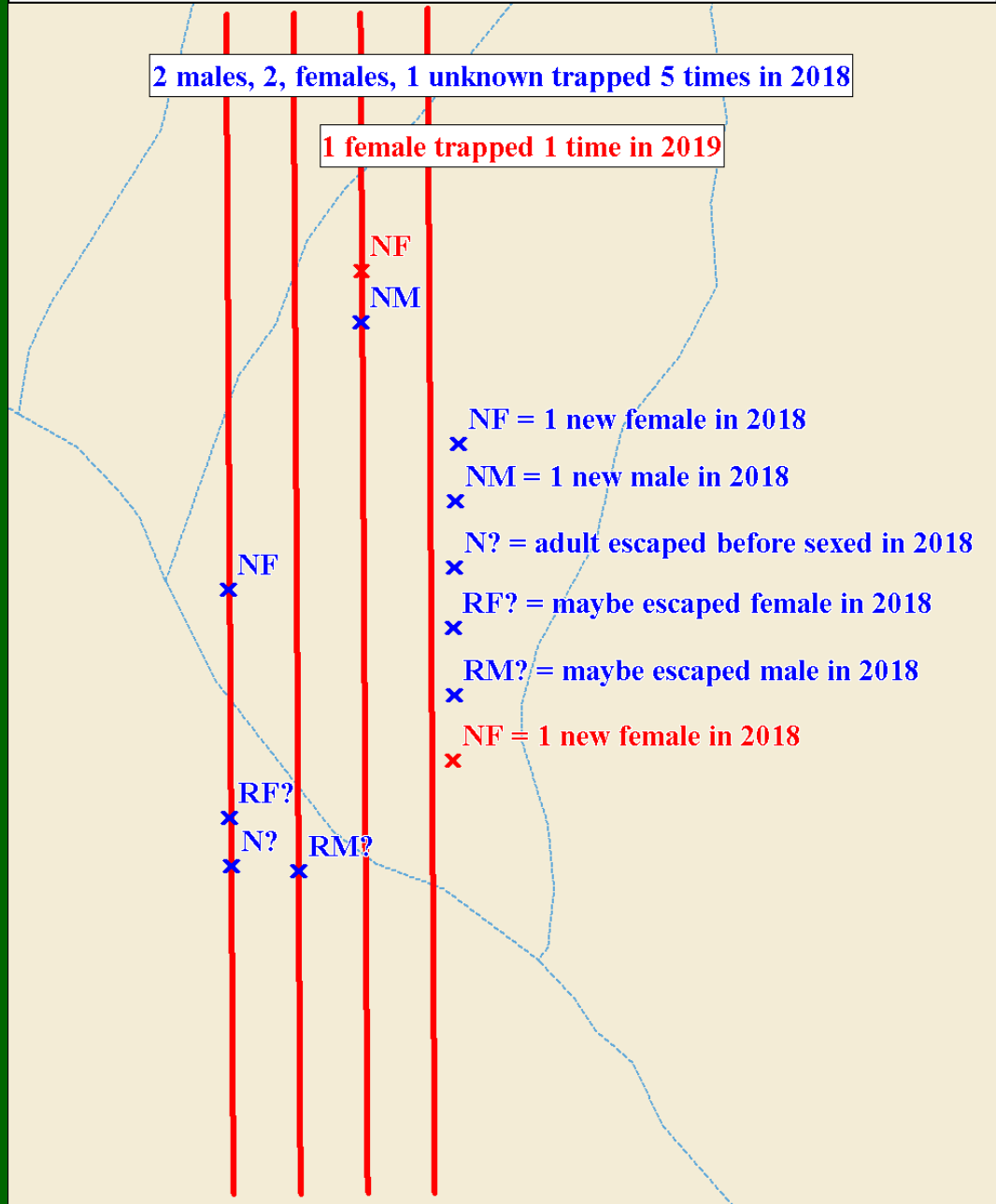




# Site 3c, South Grid - 2018 & 2019 Results

2 males, 2, females, 1 unknown trapped 5 times in 2018

1 female trapped 1 time in 2019



NF = 1 new female in 2018

x

NM = 1 new male in 2018

x

N? = adult escaped before sexed in 2018

x

RF? = maybe escaped female in 2018

x

RM? = maybe escaped male in 2018

x

NF = 1 new female in 2019

x

NF

x

NF

x

NM

x

RF?

x

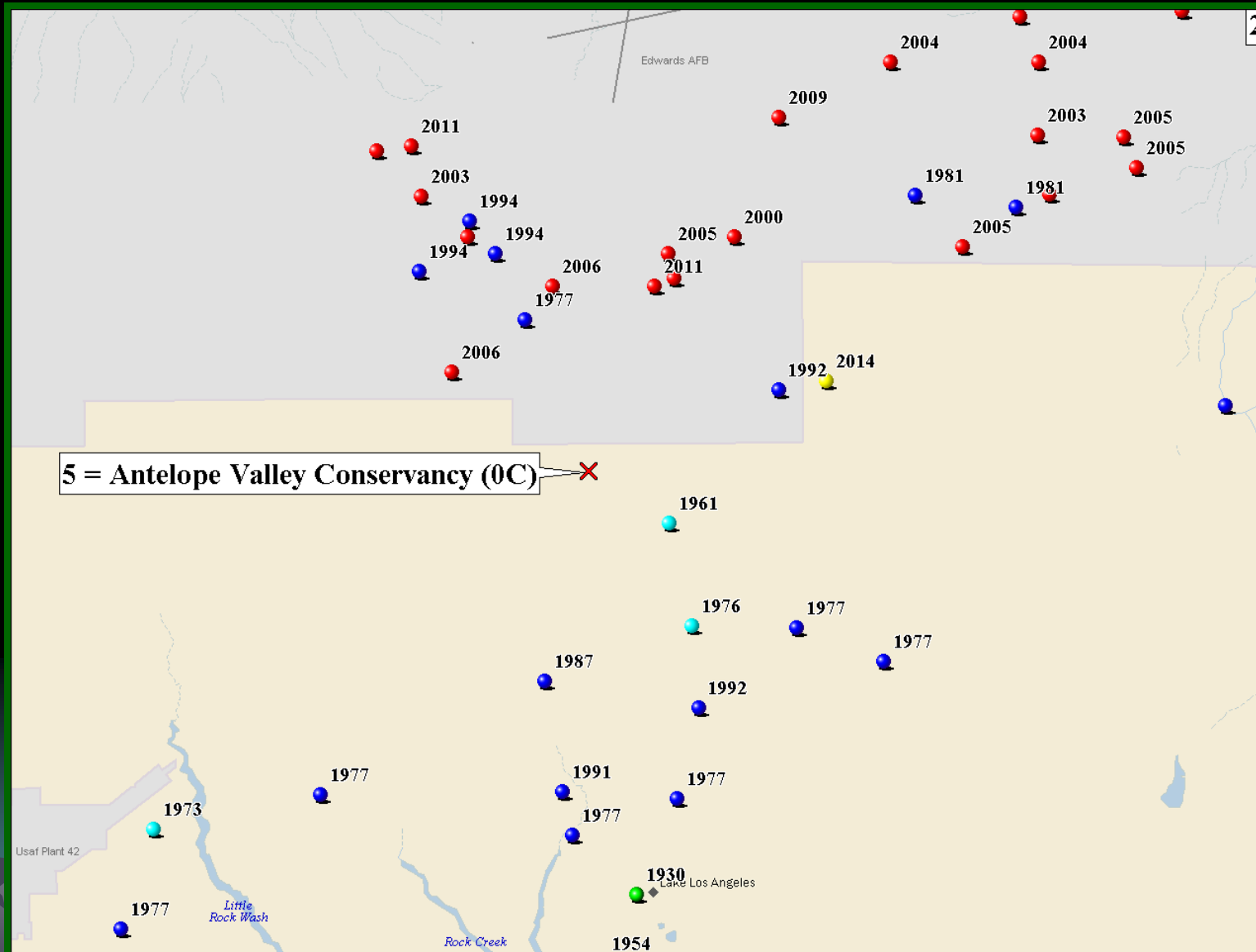
N?

x

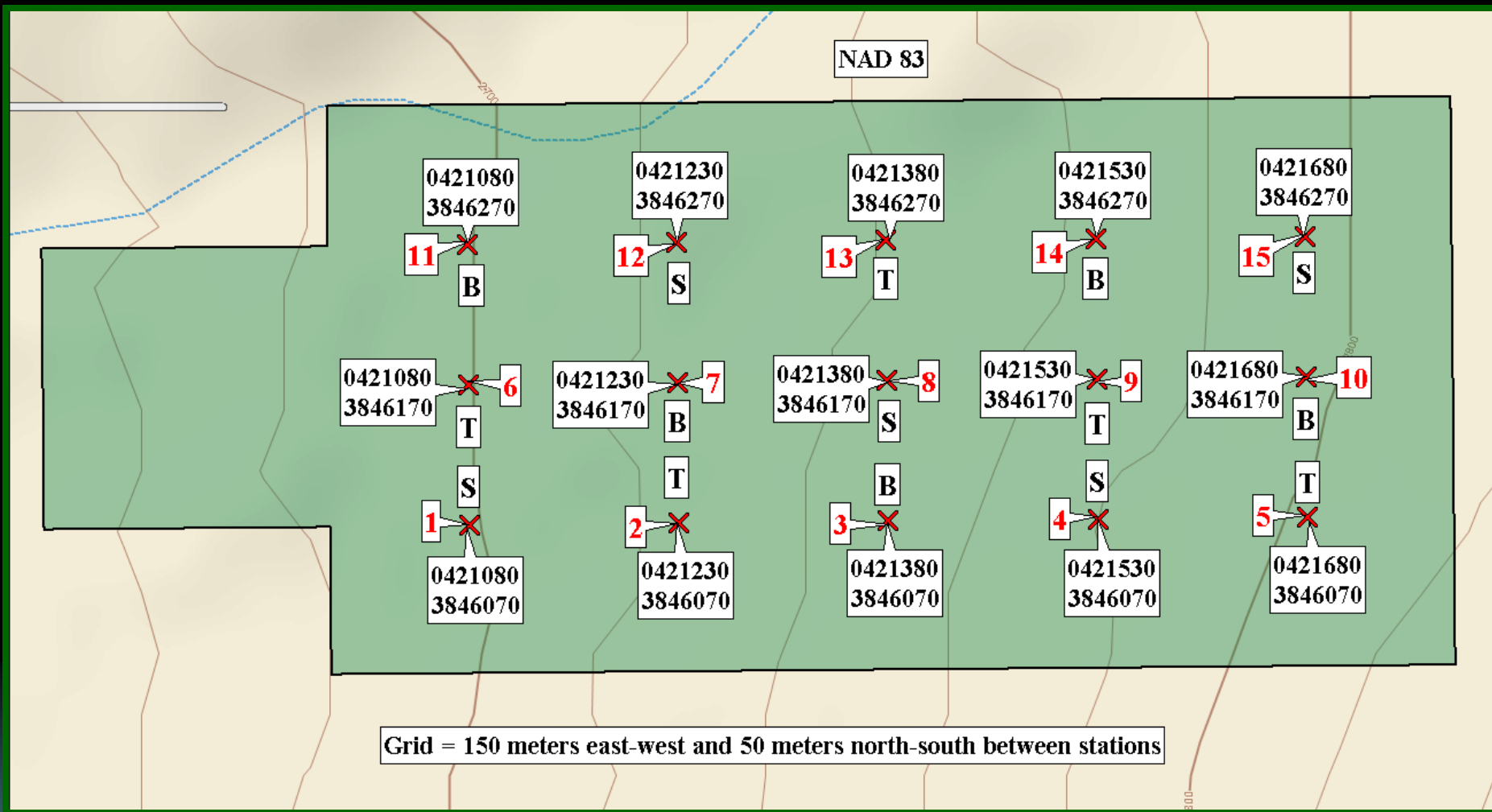
RM?

x

# Site 4: South of Edwards – 90 acres



# Site 5: South of Edwards – 90 acres\*




\*Volunteer effort conducted on behalf of Antelope Valley Conservancy

# Site 4: South of Edwards

## May 2 to 20, 2019

<u>Presentation</u>	<u>Images</u>	<u>AGS</u>	<u>CORA</u>
Blocks (5)	38,676	5,645	2,121
Sandwich (5)	31,427	172	1,486
PVC Tube (5)	33,051	77	228
<b><u>TOTALS</u></b>	<b><u>103,154</u></b>	<b><u>5,894</u></b>	<b><u>3,835</u></b>

Of 103,154 images 79,382 were empty (77%)

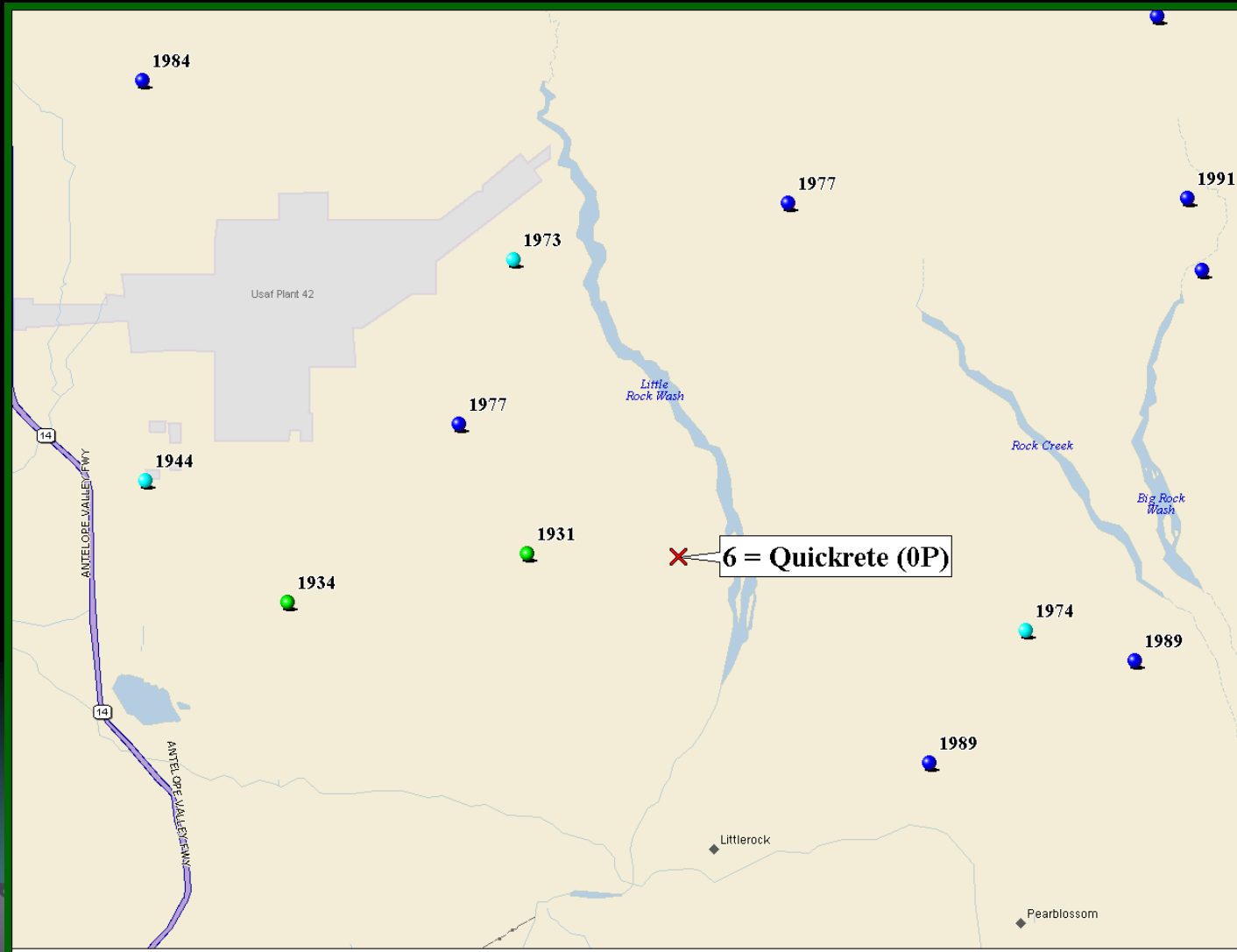








# Site 5: East Palmdale - 20 acres



# Site 5: East Palmdale 20 acres

