

Results of Camera Studies on Three Sites in 2018

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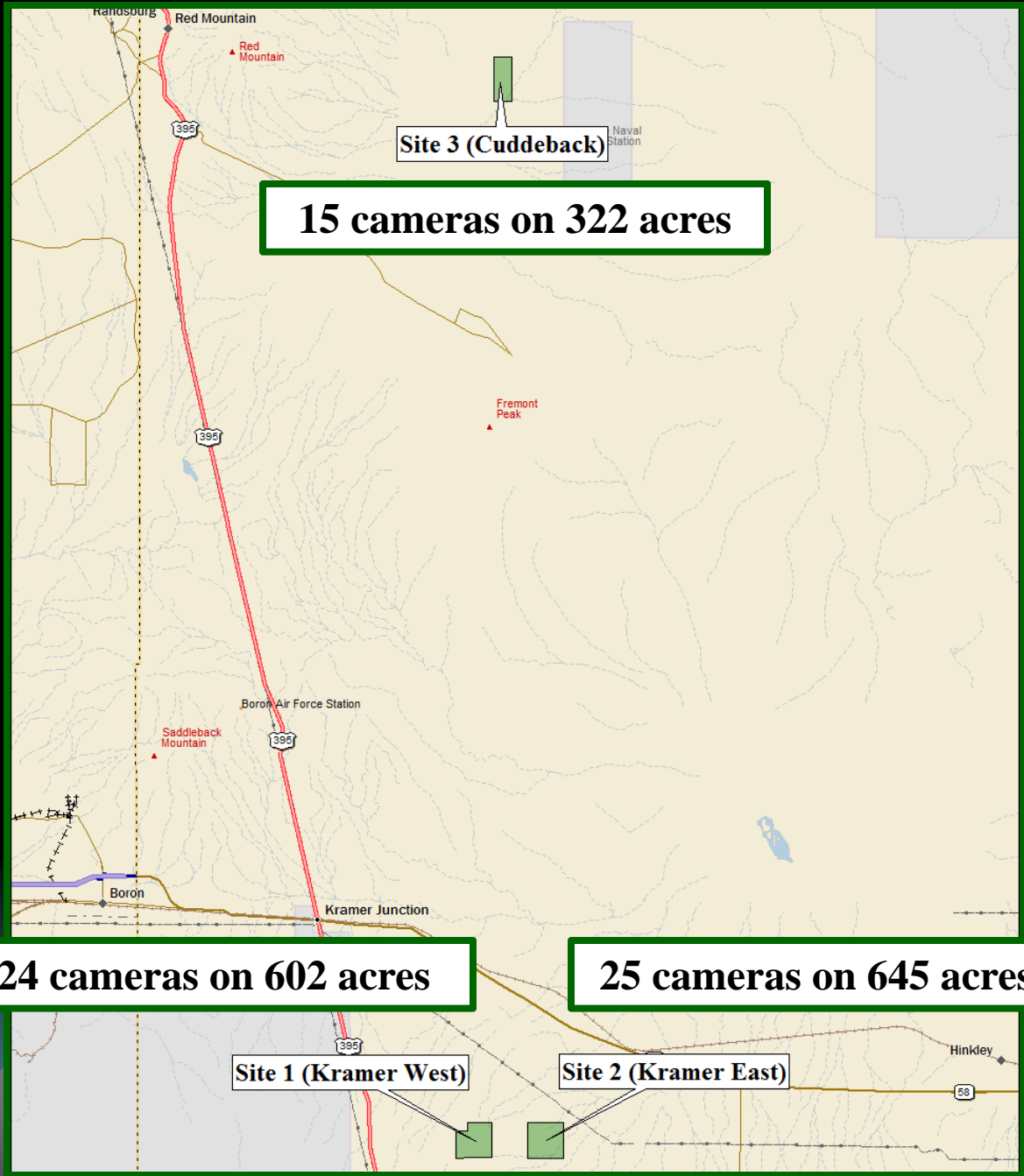


Purpose



- Implement requirements of Cuddeback-Kramer Preserve Management Plan (March 2016)





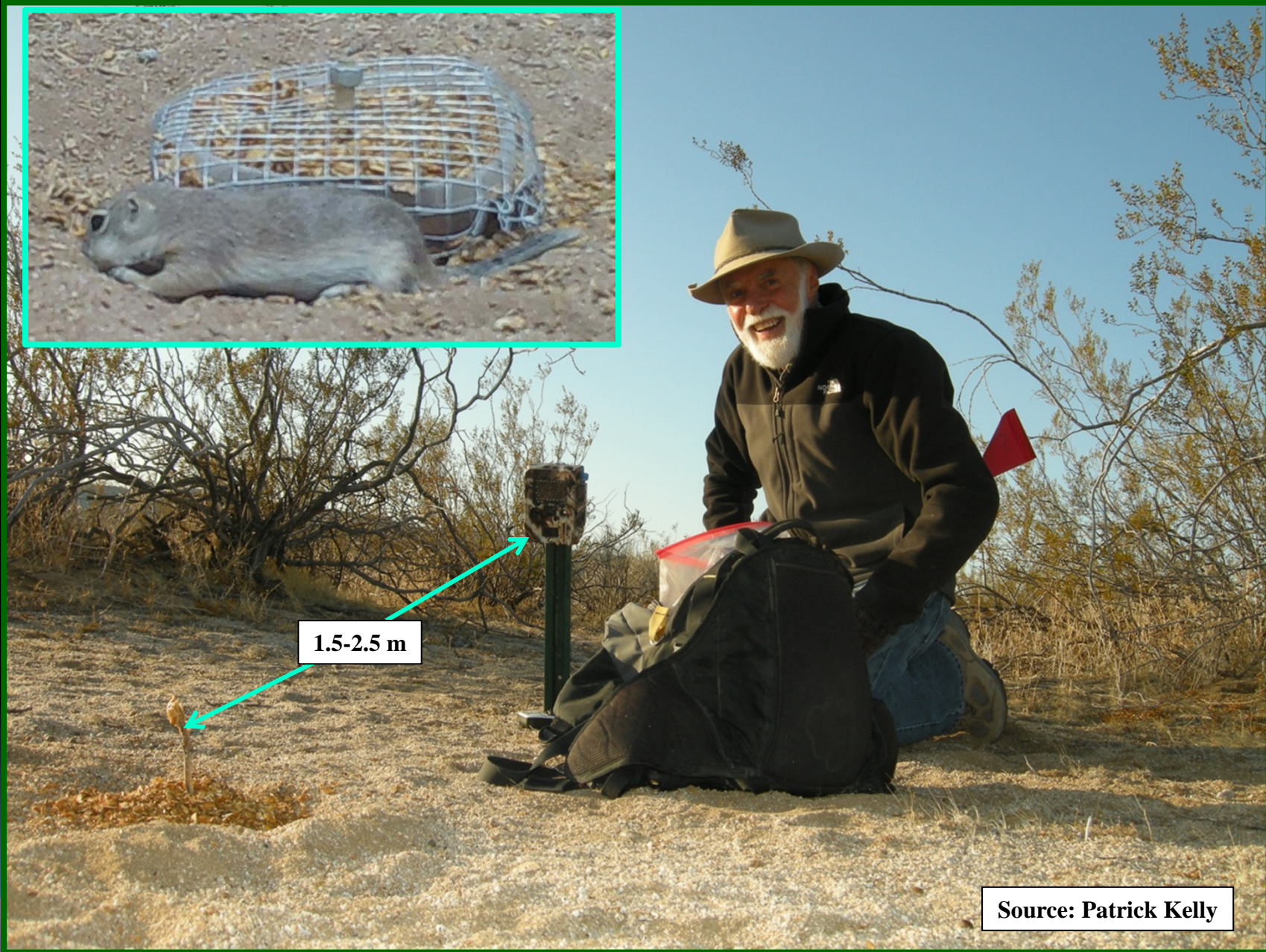
15 cameras on 322 acres

24 cameras on 602 acres

25 cameras on 645 acres

+/- 20 hrs set up, +/- 14 hrs check 64 cameras on 3 sites





1.5-2.5 m

Source: Patrick Kelly

Kramer/Cuddeback Methods

2016 Plan

1 camera/25 acres
5 consecutive days
Daily checks

$5 \times 64 = 320 \text{ CD}^*$

$460,960 / 2,358 \text{ CD} = 195 \text{ images/day}$

So, $320 \text{ CD} = 62,400 \text{ images vs } 460,960 \text{ images}$

2017 Implemented

1 camera/25 acres
49 consecutive days
9, 9, and 10 days

2,358 actual CD

*CD = Camera Days



Results

2017

April 15-June 2

49 Days

64 Cameras

460,960 Images

2,358 Camera Days

195 images/CD

2018

April 30-May 31

32 Days

34 Cameras*

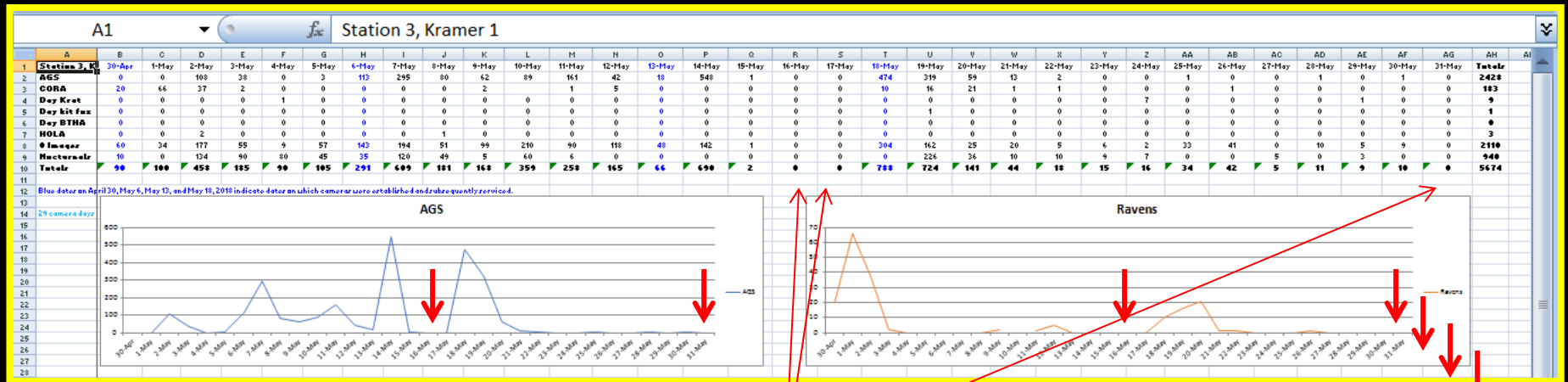
272,510 Images

809 Camera Days

337 Images/CD



Camera Days Concept

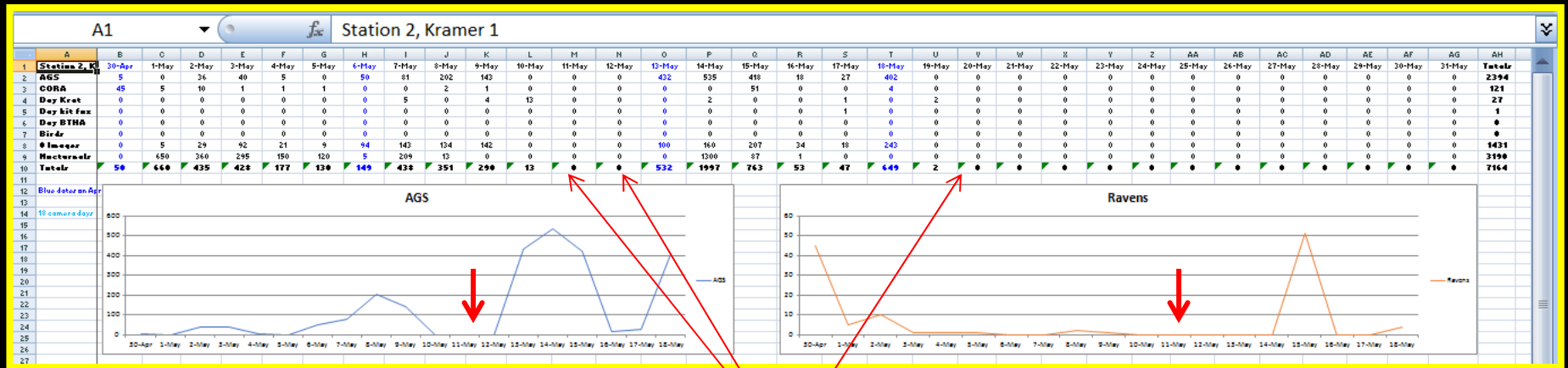


No images on May 16, 17, or 31

5,674 images on 29 of 32 days = 29 Camera Days

5,674 Images/29 Camera Days = 195 Images/Camera Day

Camera Days Concept



No images on May 11 or 12 or after May 19

7,164 images on 18 of 32 days = 18 Camera Days

7,164 Images/18 Camera Days = 398 Images/Camera Day

Environmental Factors Affecting Bait Attraction?

2017 wet, MGS reproductive year



**Need to measure rainfall
and annual plant growth**



2018 dry, non-reproductive year

AGS Results

2017

3,873 AGS

64 Cameras/49 days

2,358 Camera Days

1.64 AGS/CD

2018

124,751 AGS

34 Cameras/32 days

809 Camera Days

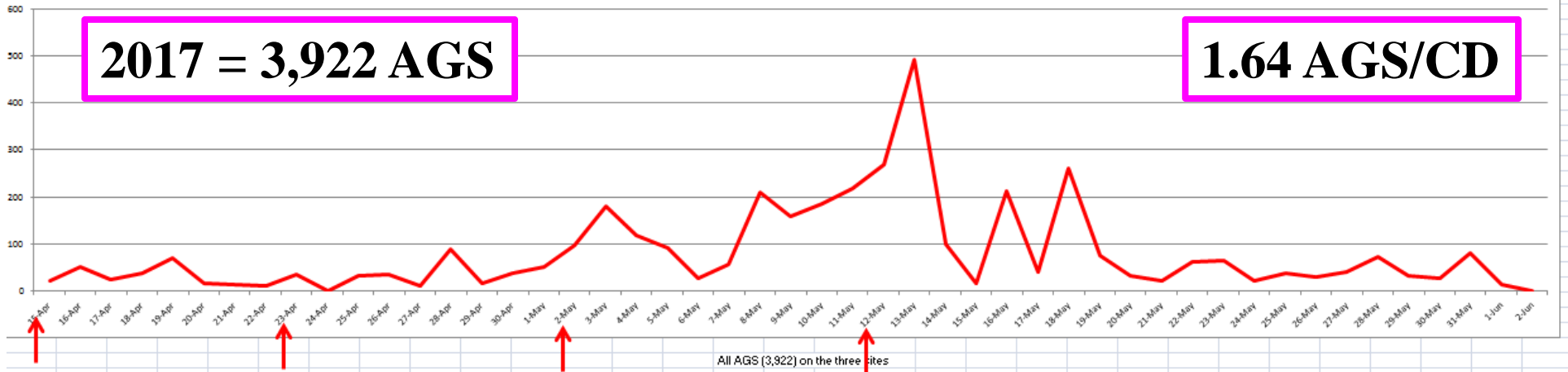
154.20 AGS/CD



AGS Results

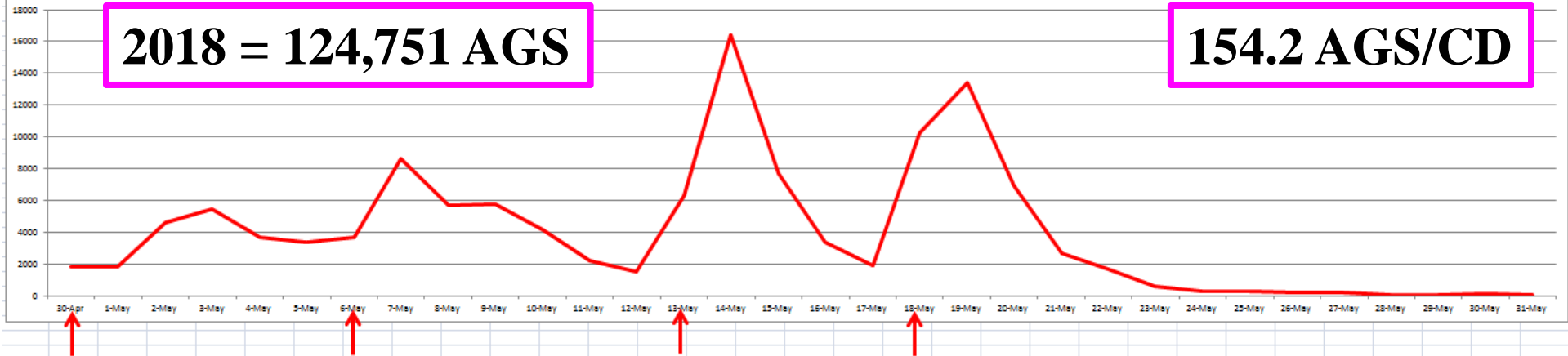
15-Apr	16-Apr	17-Apr	18-Apr	19-Apr	20-Apr	21-Apr	22-Apr	23-Apr	24-Apr	25-Apr	26-Apr	27-Apr	28-Apr	29-Apr	30-Apr	1-May	2-May	3-May	4-May	5-May	6-May	7-May	8-May	9-May	10-May	11-May	12-May	13-May	14-May	15-May
21	51	24	38	70	16	15	11	37	2	33	37	11	88	16	38	52	98	181	120	91	27	57	211	158	185	217	269	492	101	18

All AGS on 3 Sites



30-Apr	1-May	2-May	3-May	4-May	5-May	6-May	7-May	8-May	9-May	10-May	11-May	12-May	13-May	14-May	15-May	16-May	17-May	18-May	19-May	20-May	21-May	22-May	23-May	24-May	25-May	26-May	27-May	28-May	29-May	30-May	31-May
1819	1851	4596	5424	3646	3357	3657	8625	5723	5765	4107	2244	1552	6290	16446	7675	3401	1873	10242	13447	6886	2661	1650	616	261	265	184	216	81	62	92	37

All AGS on 3 Sites



MGS Results

2017

2 MGS

1 Camera Cuddeback

64 Cameras/49 days

2,358 Camera Days

0.0008 MGS/CD

2018

2,578 MGS

5 Cameras Cuddeback

2 Cameras Kramer East

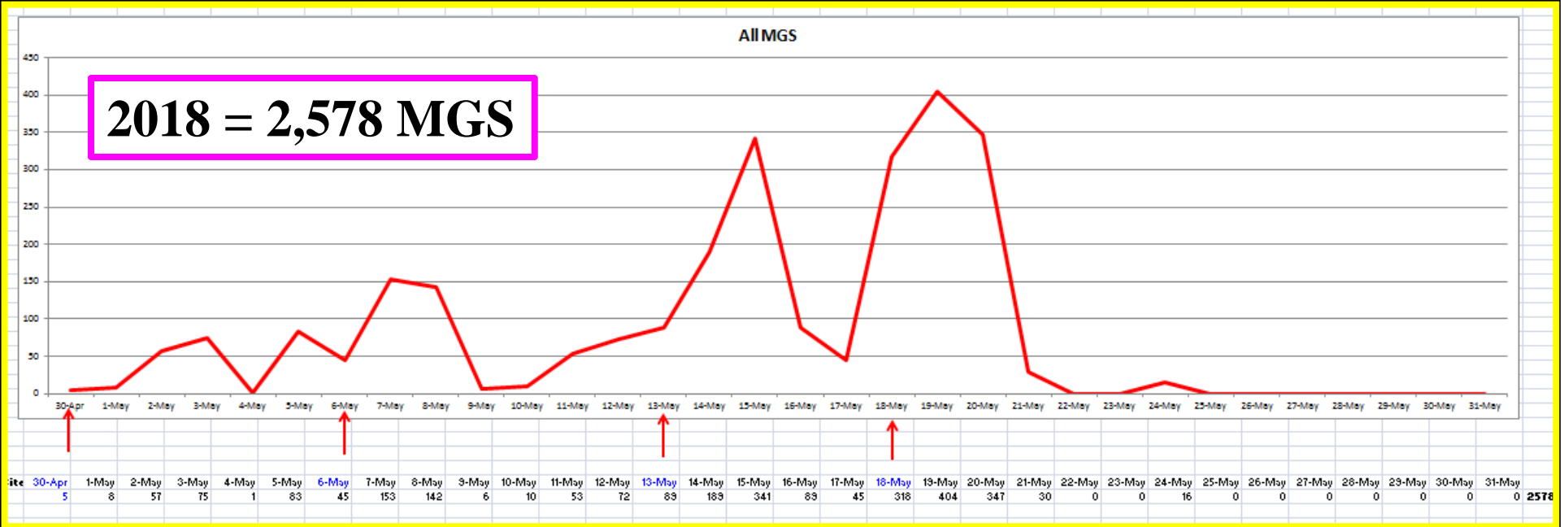
34 Cameras/32 days

809 Camera Days

3.19 MGS/CD



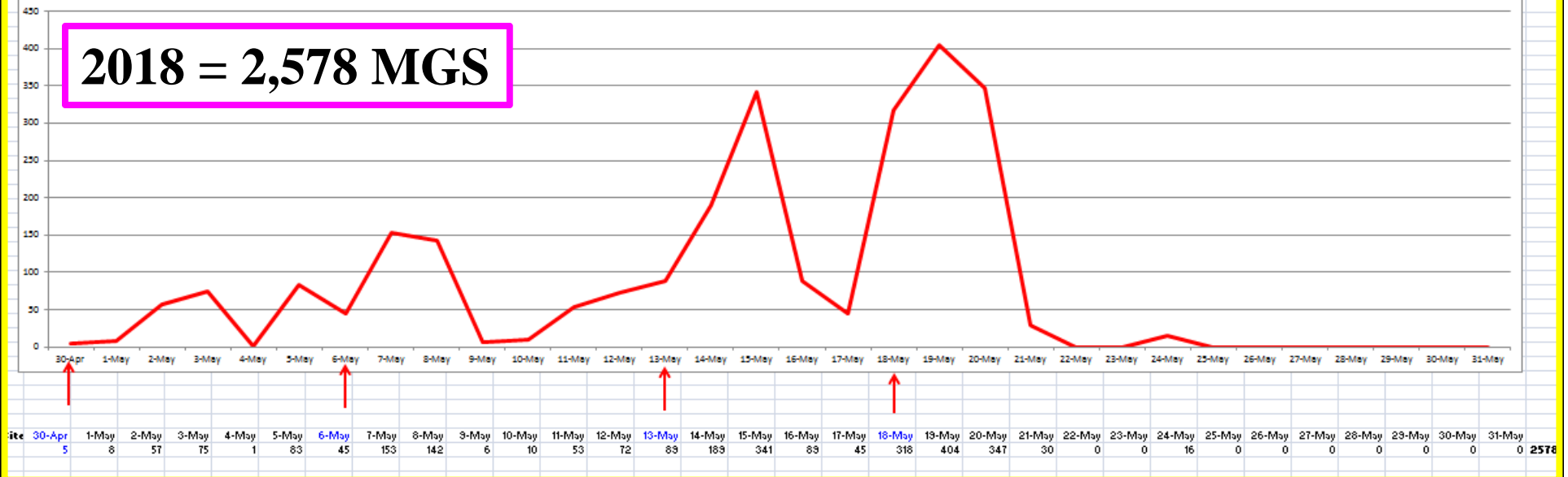
MGS Results



MGS & AGS 2018 Results

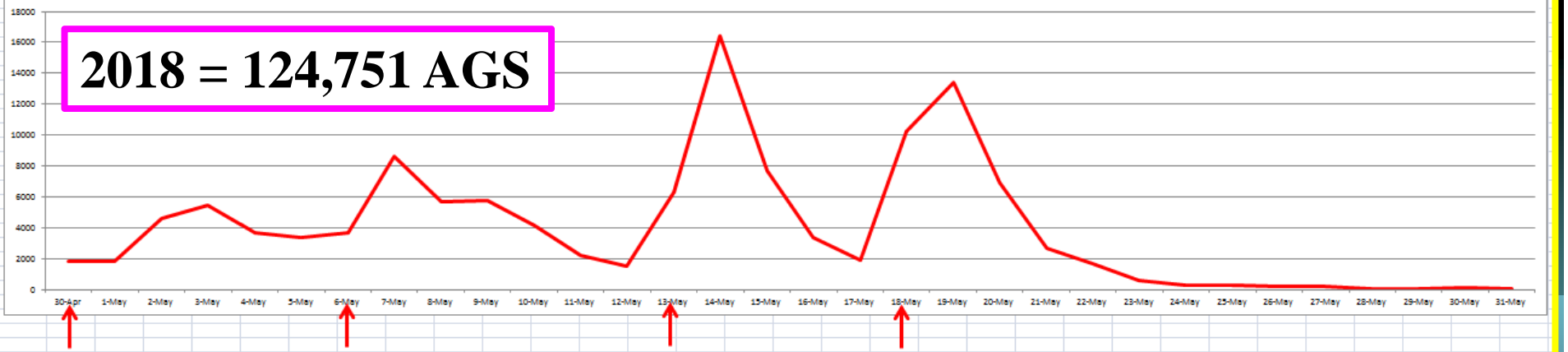
All MGS

2018 = 2,578 MGS



All AGS on 3 Sites

2018 = 124,751 AGS



Raven Results

2017

6,041 Ravens

64 Cameras/49 days

2,358 Camera Days

2.56 Ravens/CD

2018

3,928 Ravens

34 Cameras/32 days

809 Camera Days

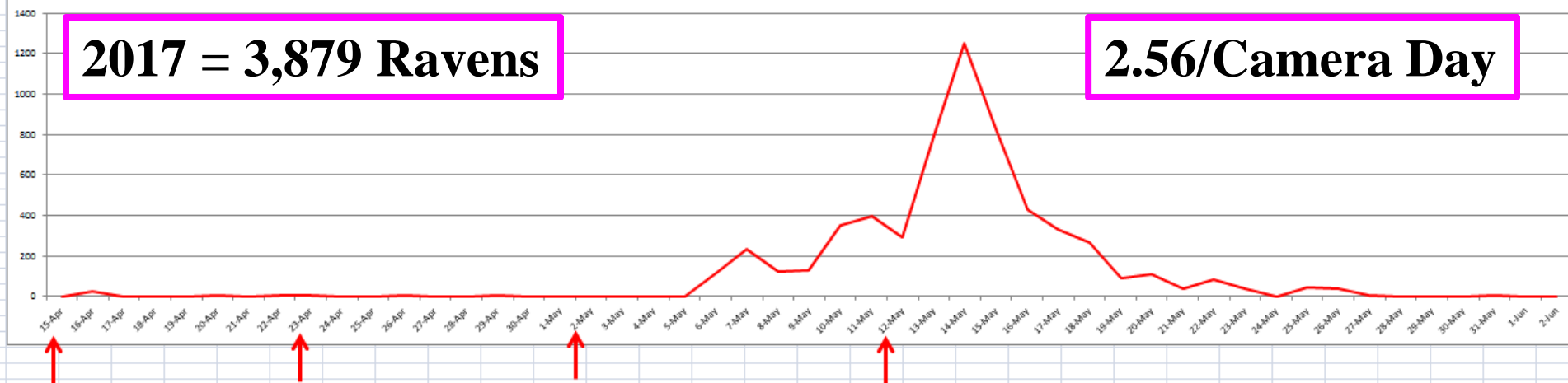
4.85 Ravens/CD



Raven Results

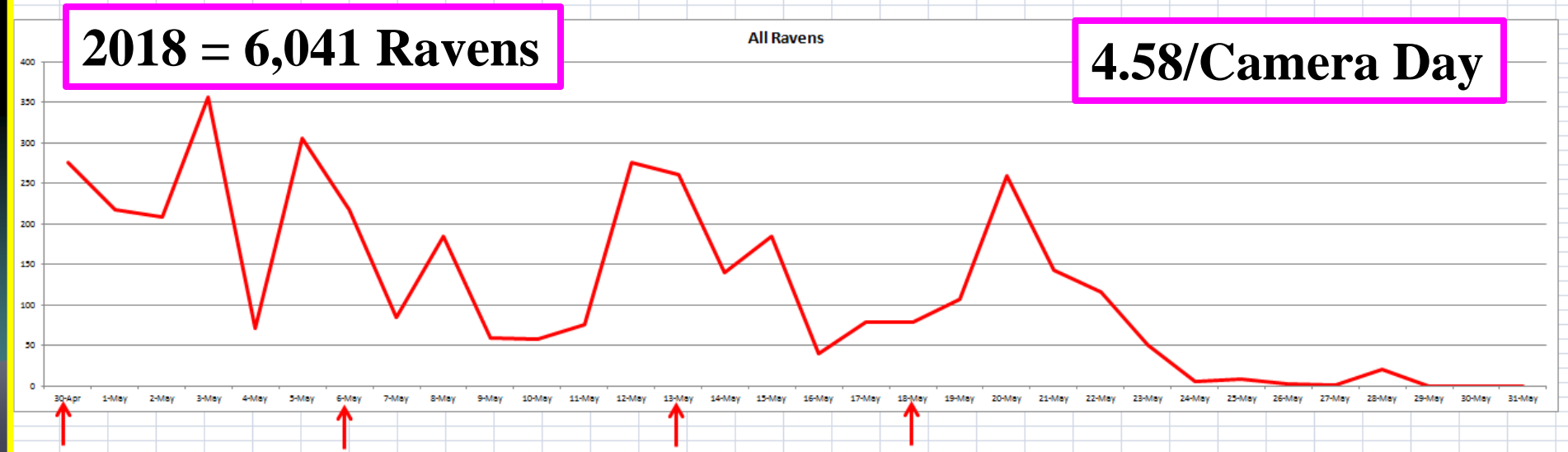
15-Apr 0 16-Apr 25 17-Apr 0 18-Apr 0 19-Apr 0 20-Apr 5 21-Apr 0 22-Apr 3 23-Apr 6 24-Apr 0 25-Apr 0 26-Apr 4 27-Apr 0 28-Apr 0 29-Apr 7 30-Apr 0 1-May 0 2-May 0 3-May 0 4-May 0 5-May 0 6-May 114 7-May 233 8-May 120 9-May 131 10-May 352 11-May 395 12-May 298 13-May 795 14-May 125

All Common Ravens on 3 Sites

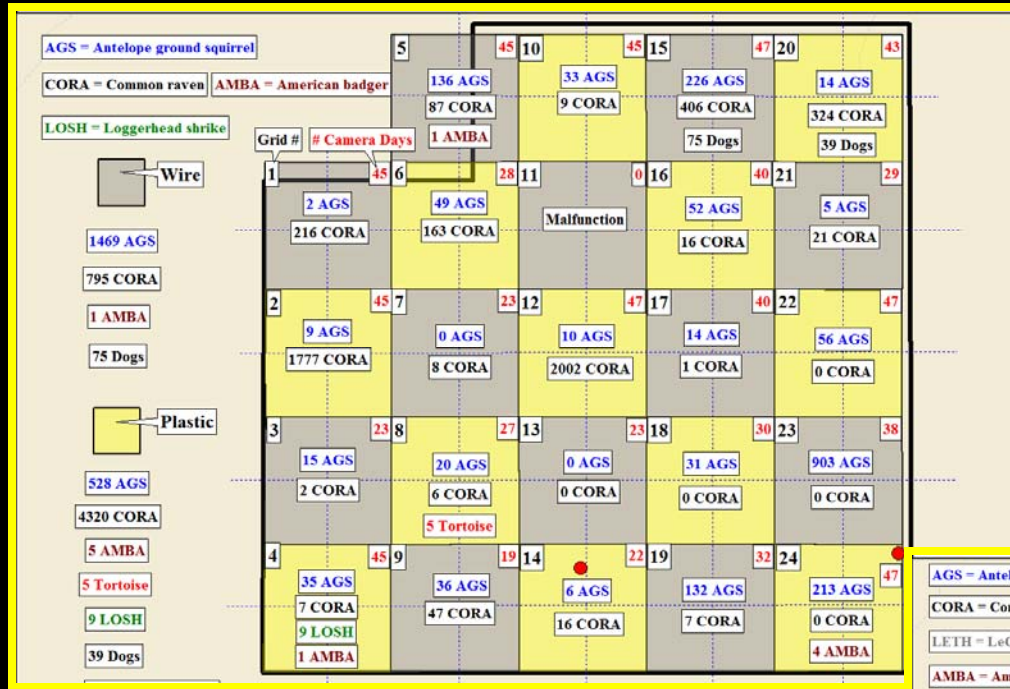


30-Apr 275 1-May 218 2-May 209 3-May 356 4-May 71 5-May 305 6-May 218 7-May 85 8-May 184 9-May 59 10-May 57 11-May 76 12-May 276 13-May 261 14-May 139 15-May 184 16-May 39 17-May 78 18-May 78 19-May 107 20-May 259 21-May 142 22-May 116 23-May 50 24-May 5 25-May 8 26-May 3 27-May 1 28-May 20 29-May 0 30-May 0 31-May 0

All Ravens



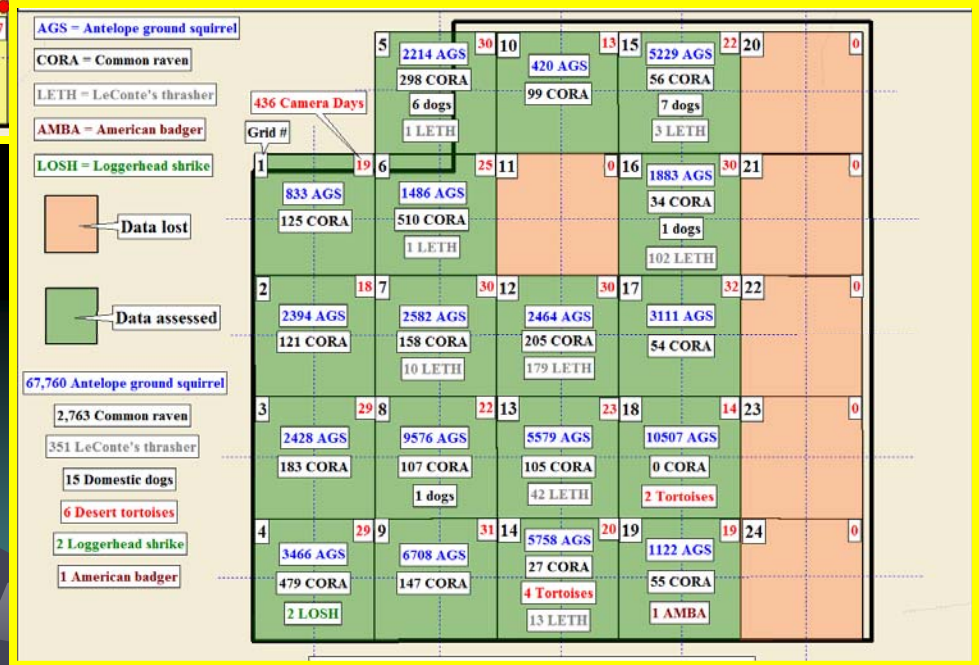
Results per 25-acre grids



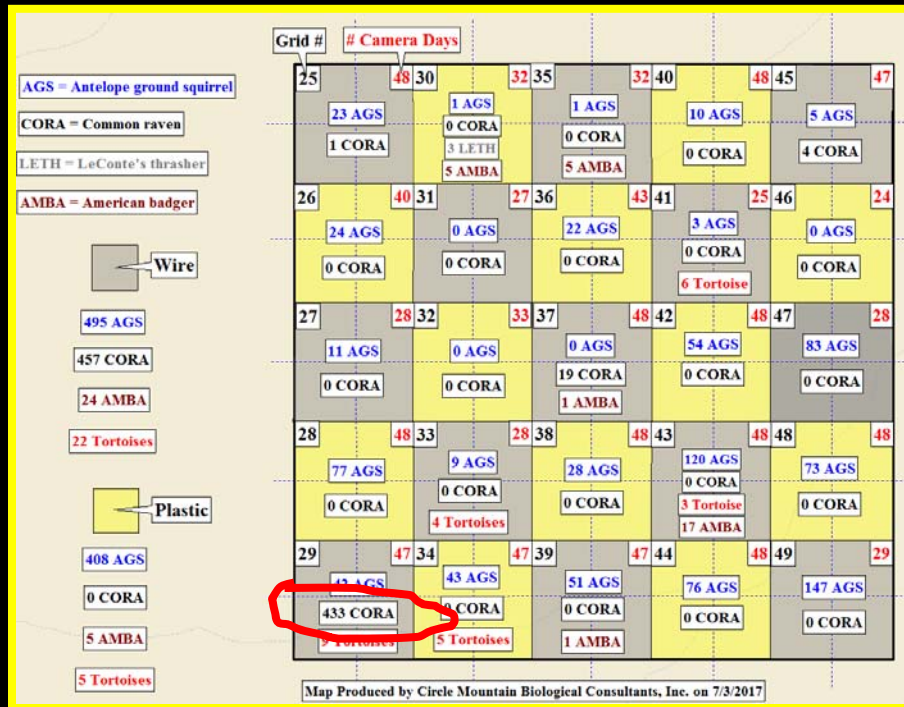
2017

Kramer West

2018



Results per 25-acre grids



2017

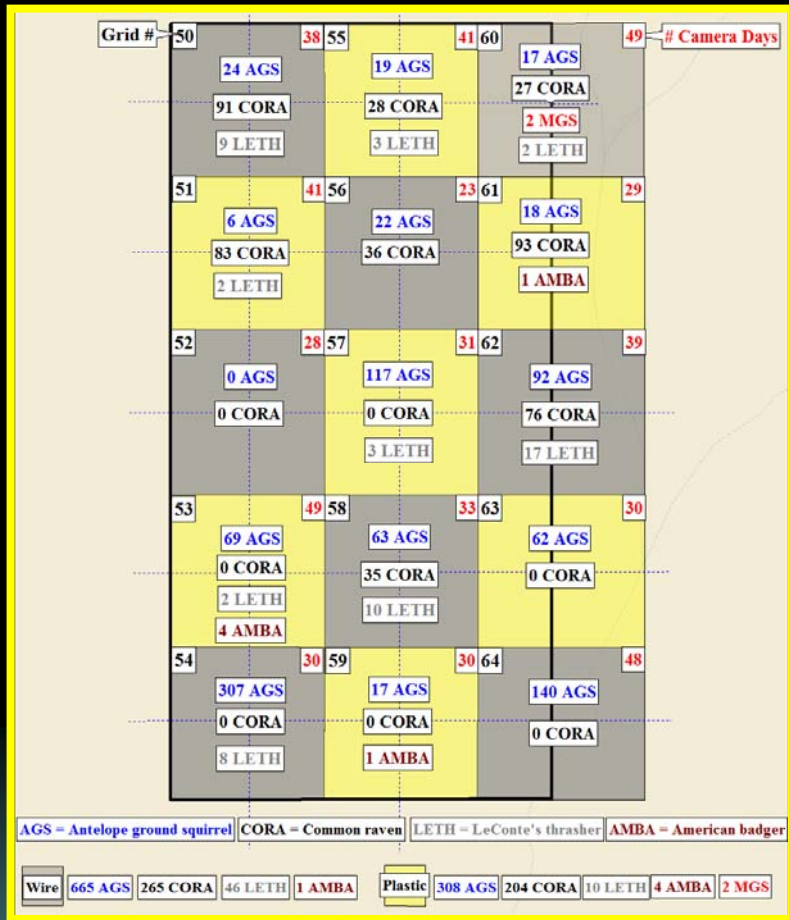
Kramer East

2018

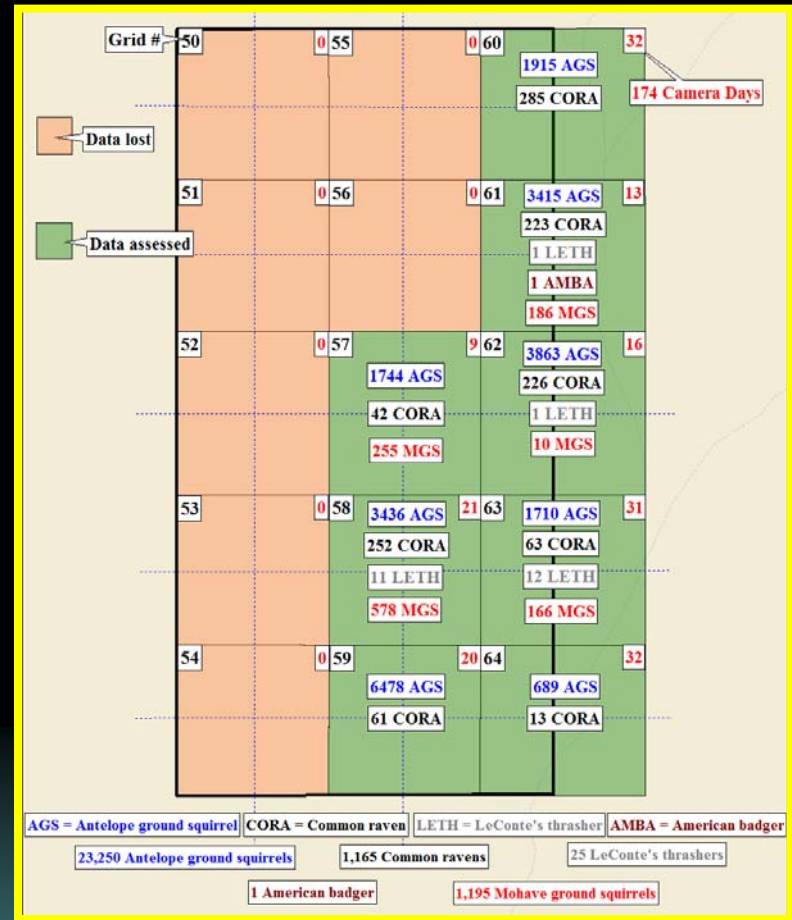


Results per 25-acre grids

Cuddeback



2017



2018

Environmental Factors Affecting Camera Function?

2017 wet, abundant annual growth



2018 dry, no annual growth

Camera Function

2017

2018

460,960 Images

272,510 Images

369,537 Empty day

62,497 Empty day

80% Empty

23% Empty

79,425 Night

76,516 Night

17% of total night

28% of total night



2019

- Same 64 camera stations
- Photos copied to TWO hard drives
- Feed blocks and sandwich boxes
- Live trap 1 grid Palmdale
- Live trap 3 5-day grids in Bowling Alley

