

Desert Tortoise Detection and Occurrence in the Morongo Basin



Yucca Valley
Joshua Tree
29 Palms

Ed LaRue, Circle Mountain Biological Consultants, Inc.

California Energy Commission
DOCKETED
09-RENEW EO-1

TN 70788

MAY 14 2013

29 Palms Marine Corps Air Ground Combat Center

2005: 1st Low Effect HCP/10a Permit in CA

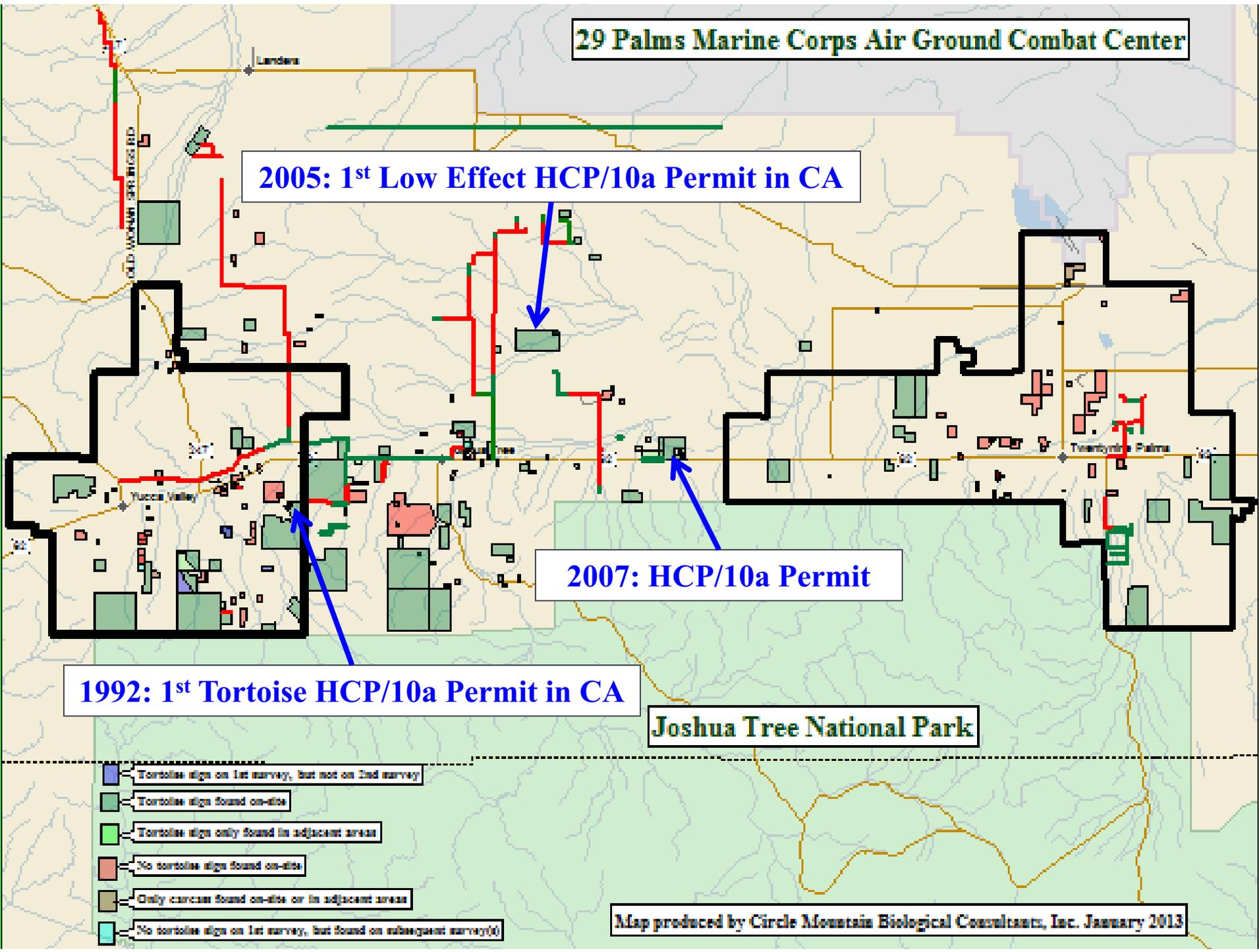
2007: HCP/10a Permit

1992: 1st Tortoise HCP/10a Permit in CA

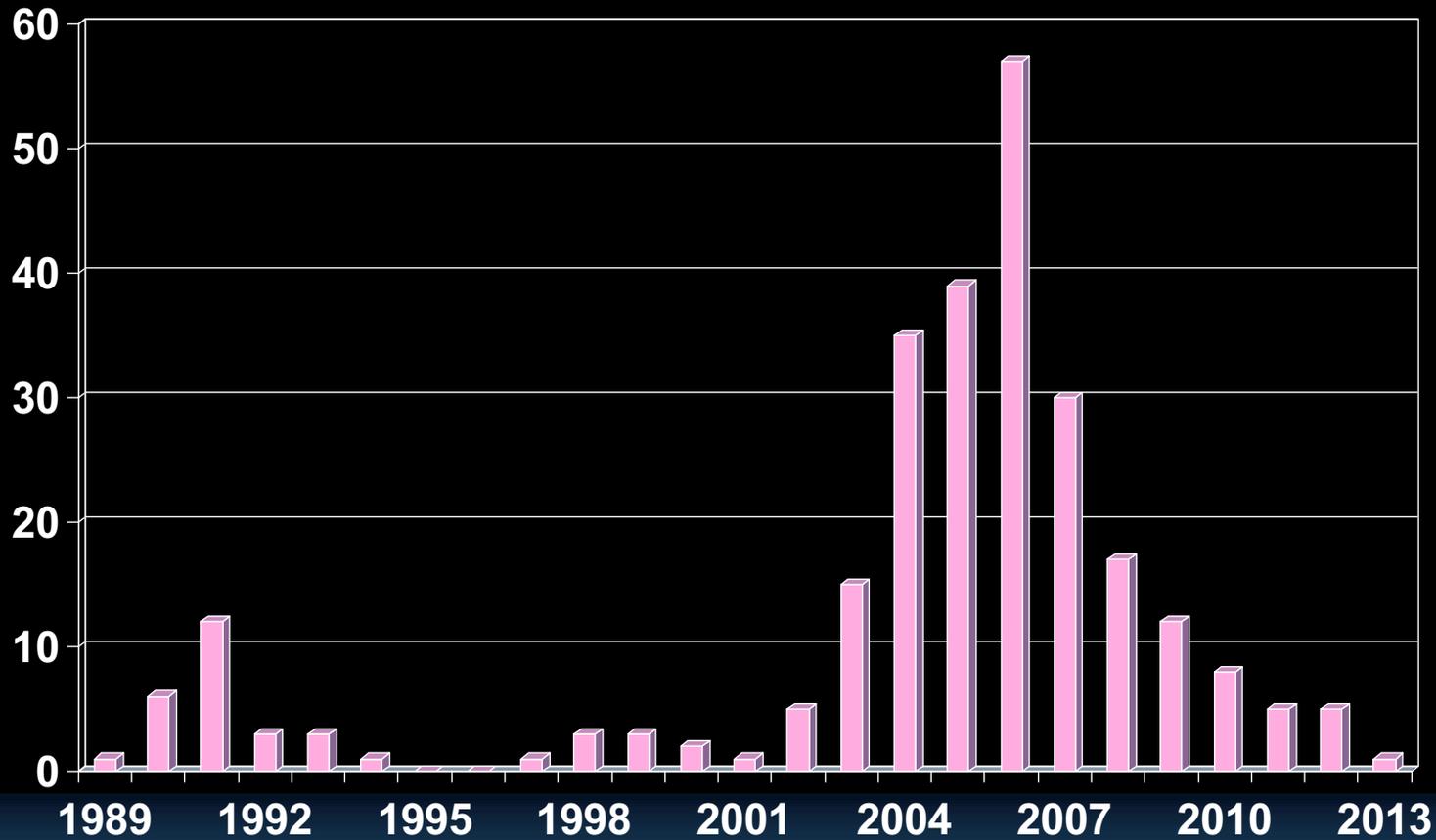
Joshua Tree National Park

-  Tortoise signs on 1st survey, but not on 2nd survey
-  Tortoise signs found on-site
-  Tortoise signs only found in adjacent areas
-  No tortoise signs found on-site
-  Only carcass found on-site or in adjacent areas
-  No tortoise signs on 1st survey, but found on subsequent survey(s)

Map produced by Circle Mountain Biological Consultants, Inc. January 2013



252 Tortoise Surveys 1989 to 2013



Cumulative Tortoise Findings

Scat Burrows Carcasses Tortoises

3,732

552

163

85

44

:

6

:

2

:

1



Tortoise Surveys in Morongo Basin from 1989 to 2013

11,579 acres, 252 surveys, 201 sites

5,109 acres (44%) in Yucca Valley

2,914 acres (25%) in Joshua Tree

3,556 acres (31%) in 29 Palms



Tortoise Occurrence by Site

Tortoise Sign Present

99 of 201 (49%) sites

Yucca Valley (82)

35 sites (43%)

Joshua Tree (65)

46 sites (71%)

29 Palms (54)

18 sites (33%)

Tortoise Sign Absent

102 of 201 (51%) sites

Yucca Valley

47 sites (57%)

Joshua Tree

19 sites (28%)

29 Palms

36 sites (67%)



Tortoise Occurrence by **Acreage**

Tortoise Sign Present

8,766 of 11,579 (76%)

Yucca Valley (5,109)

3,482 acres (68%)

Joshua Tree (2,914)

2,678 acres (92%)

29 Palms (3,556)

2,606 acres (73%)

Tortoise Sign Absent

2,813 of 11,579 (24%)

Yucca Valley

1,627 acres (32%)

Joshua Tree

236 acres (8%)

29 Palms

950 acres (27%)

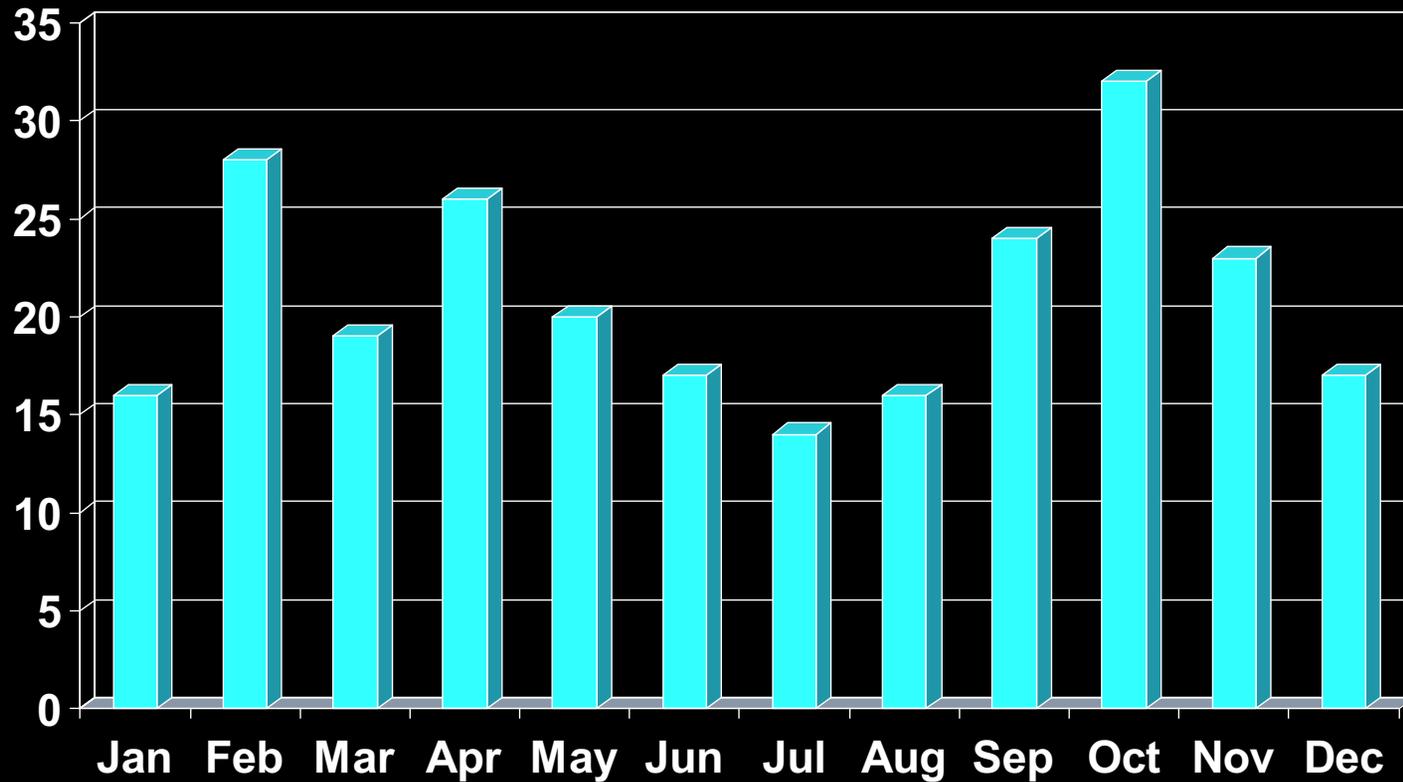


Relative Tortoise Occurrence

	<u>Yucca Valley</u>	<u>Joshua Tree</u>	<u>29 Palms</u>
Scat	1,117 0.32/acre	1,446 0.54/acre	1,169 0.45/acre
Burrows	126 0.04/acre	178 0.07/acre	248 0.09/acre
Carcasses	20 0.006/acre	43 0.016/acre	100 0.038/acre
Tortoises	19 0.005/acre	32 0.012/acre	34 0.013/acre



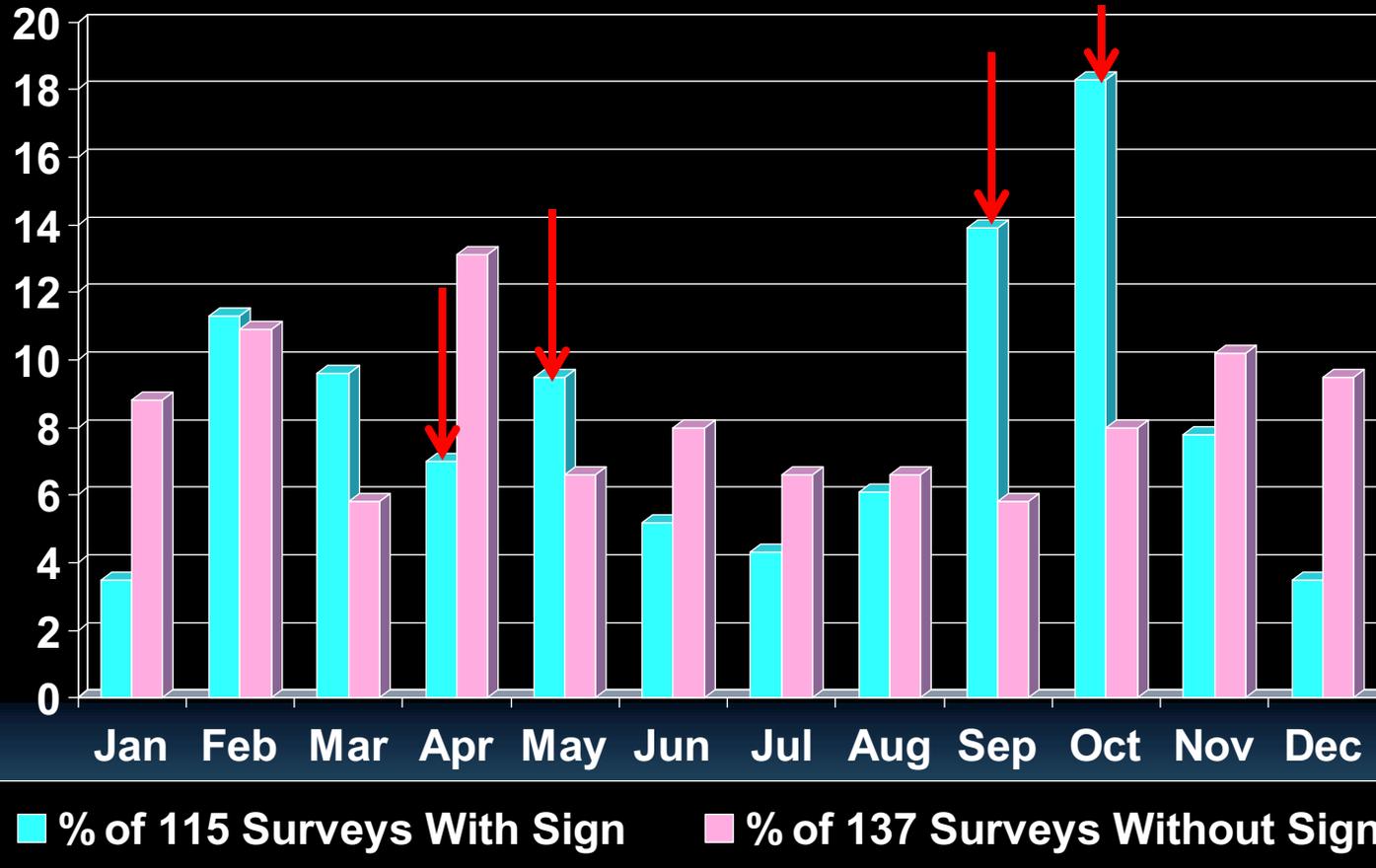
Seasonality of 252 Surveys



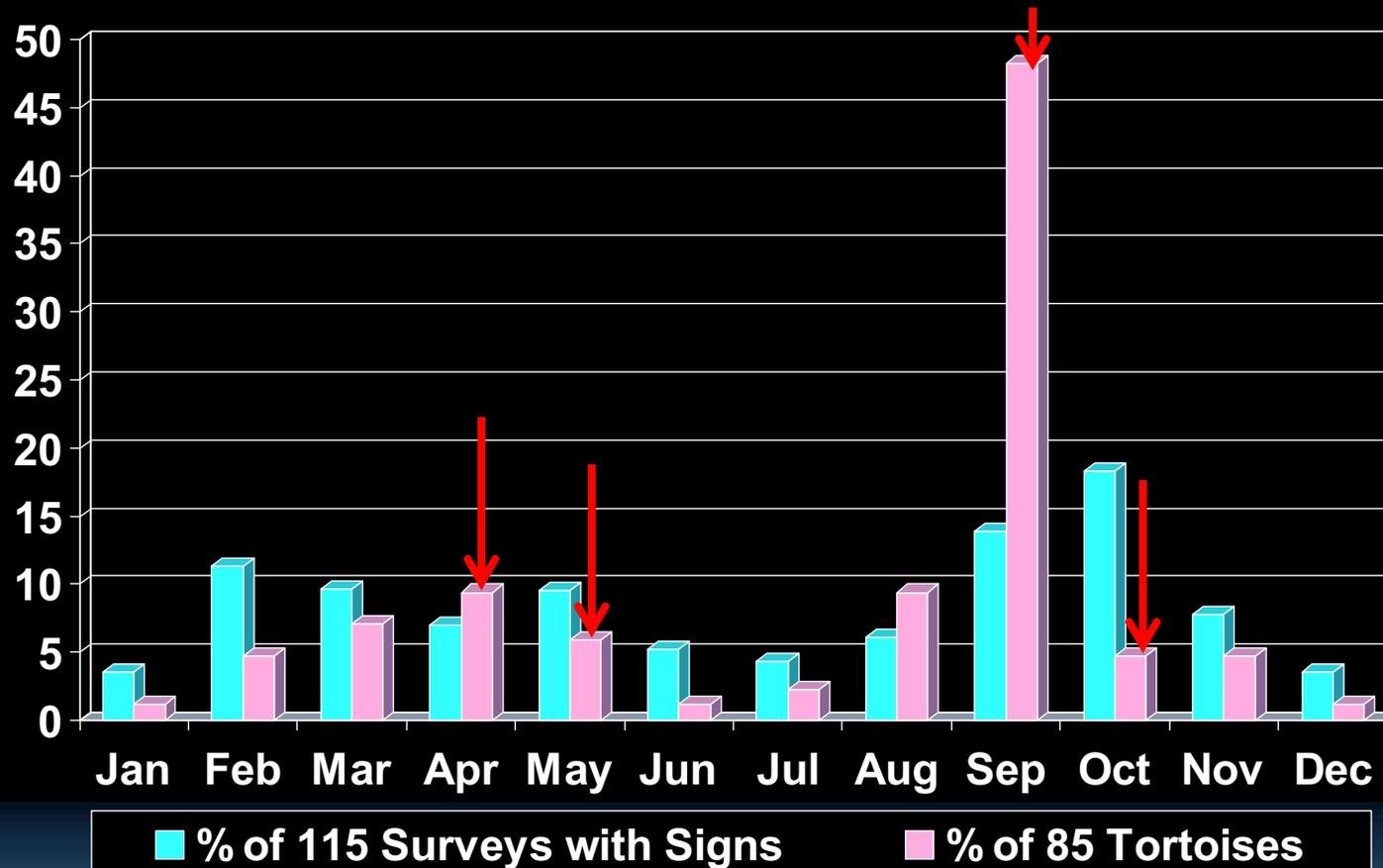
■ # Surveys/Month

115 Surveys with Sign

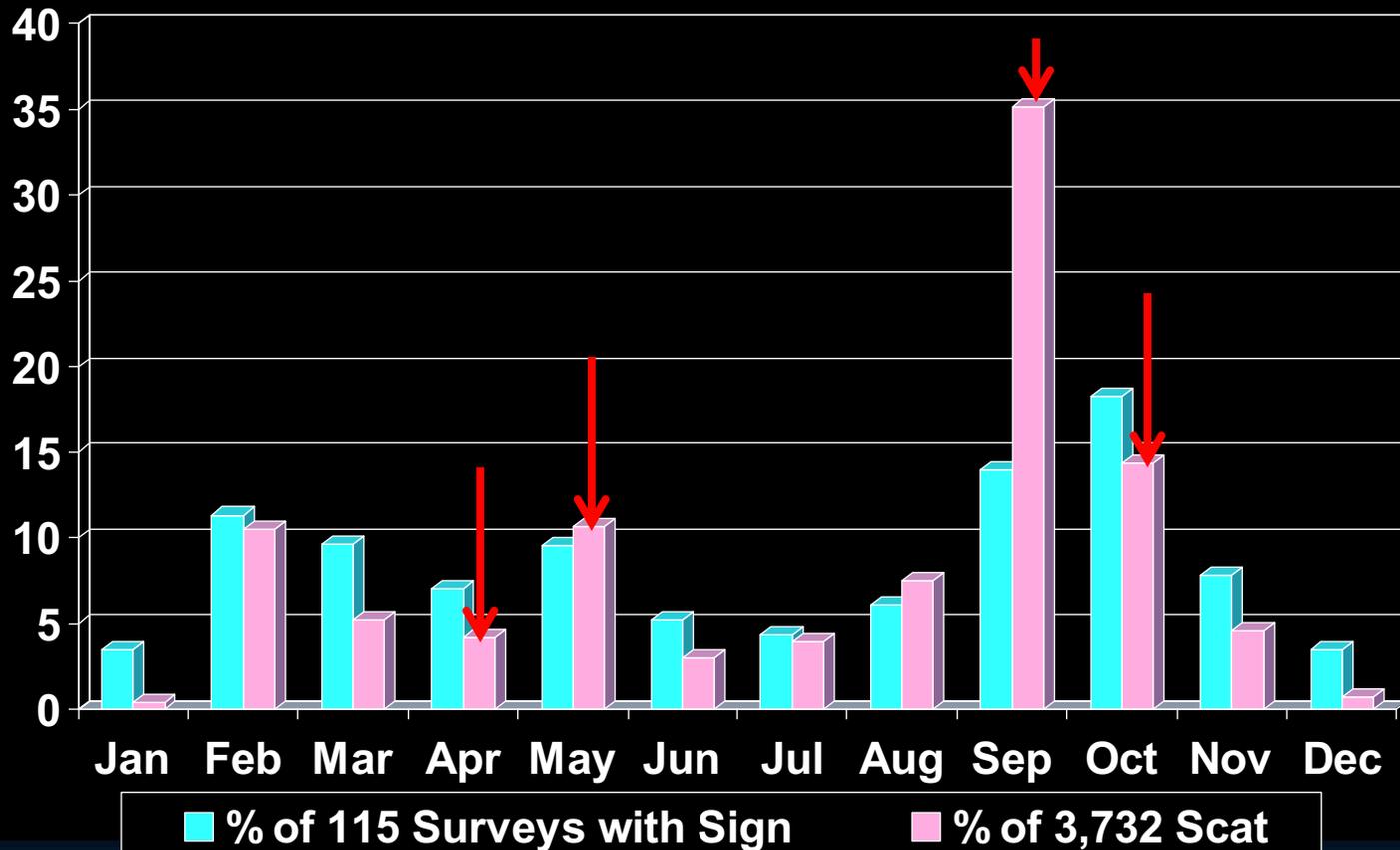
137 Surveys without Sign



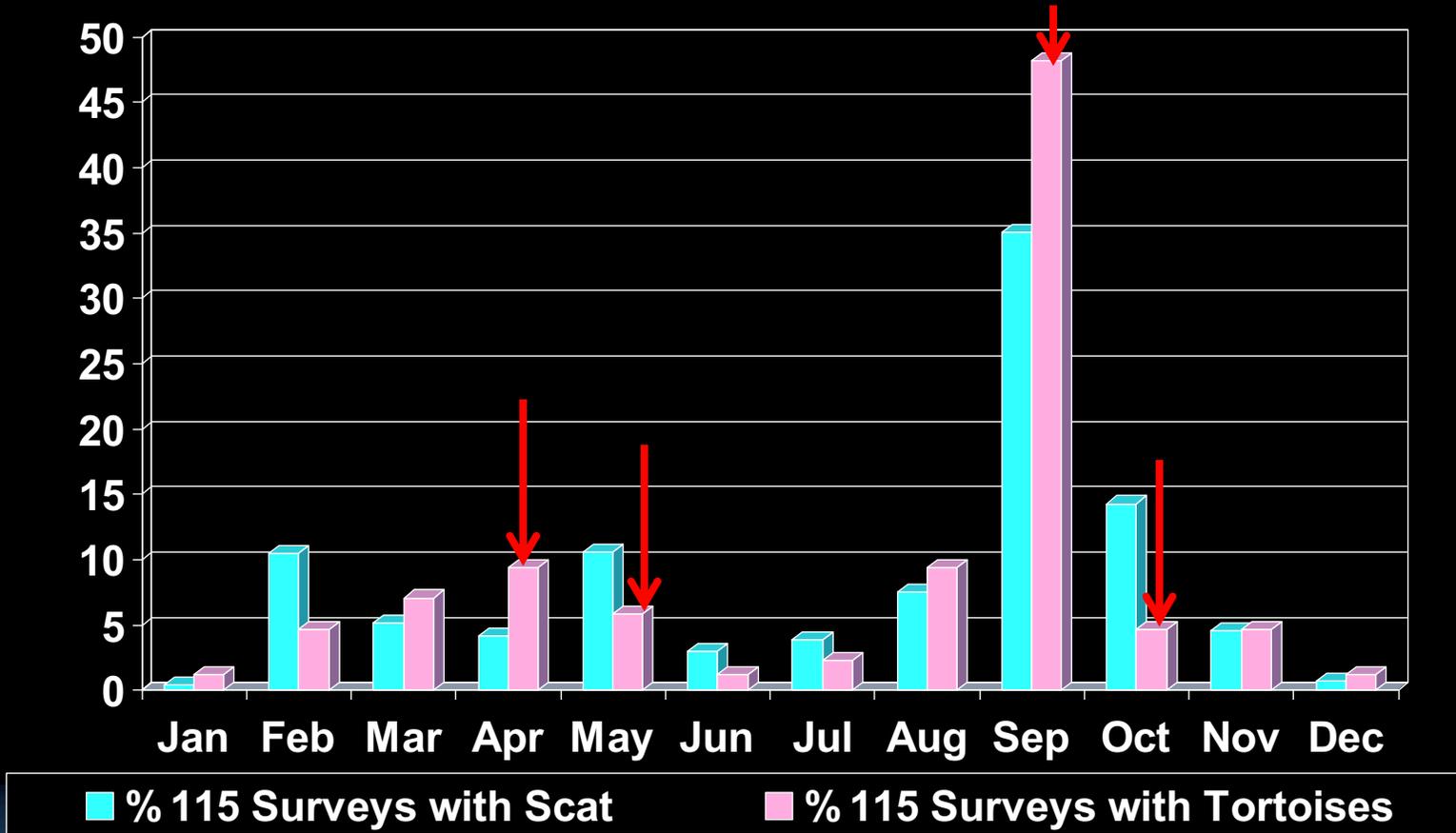
Seasonal Detection: 85 Tortoises



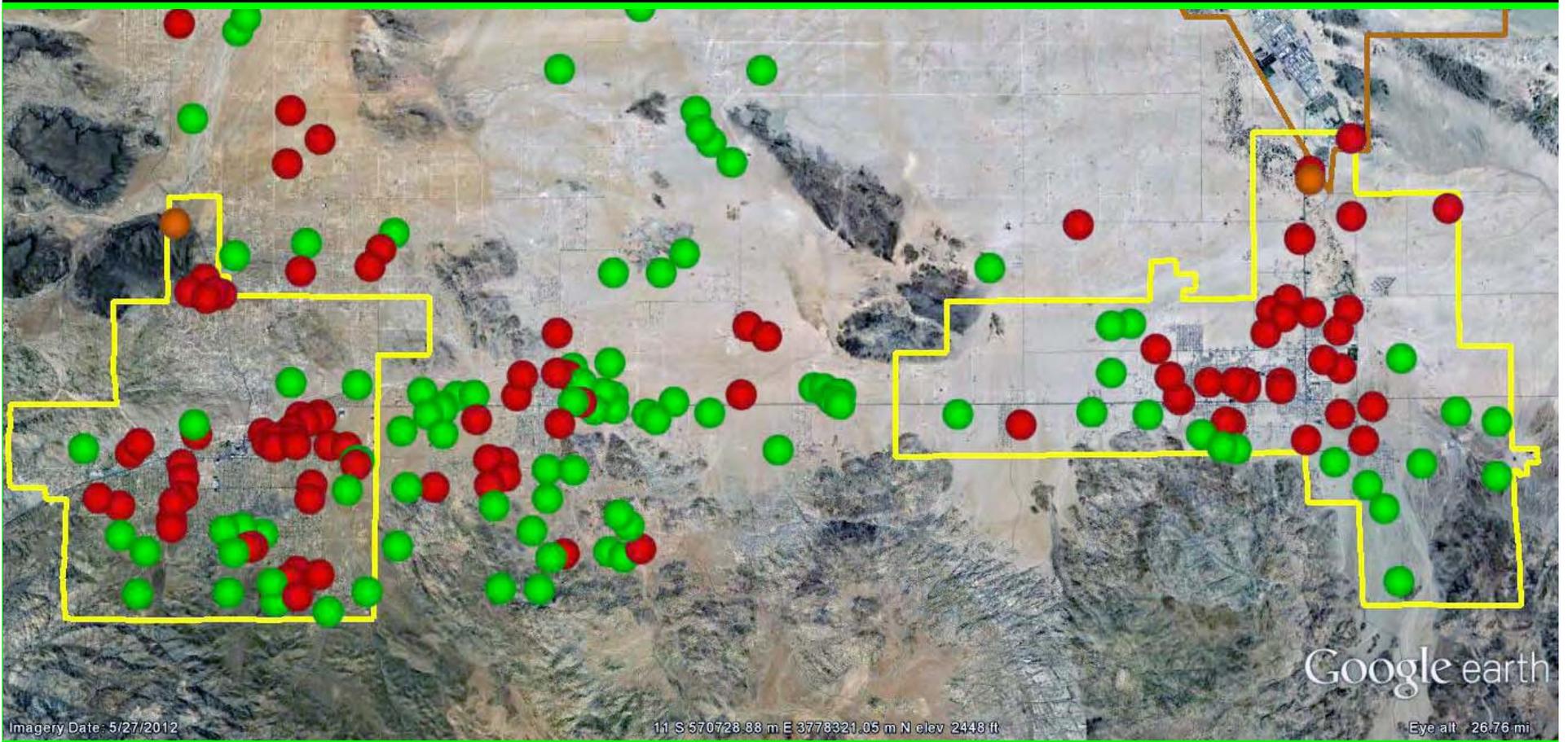
Seasonal Detection: 3,732 Scat



Seasonal Detection: Scat & Tortoises



All Surveys



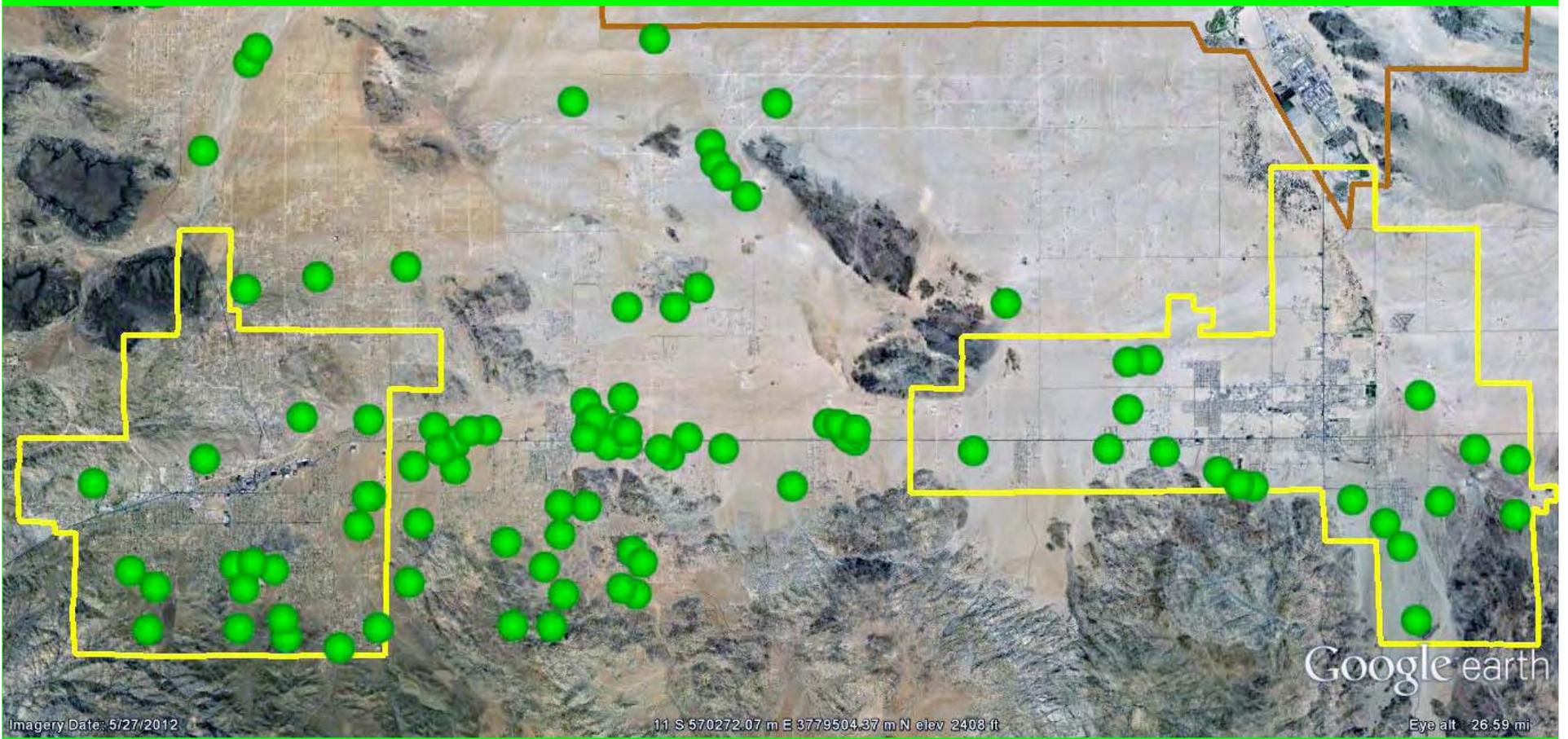
Imagery Date: 5/27/2012

11 S 570728.88 m E 3778321.05 m N elev 2448 ft

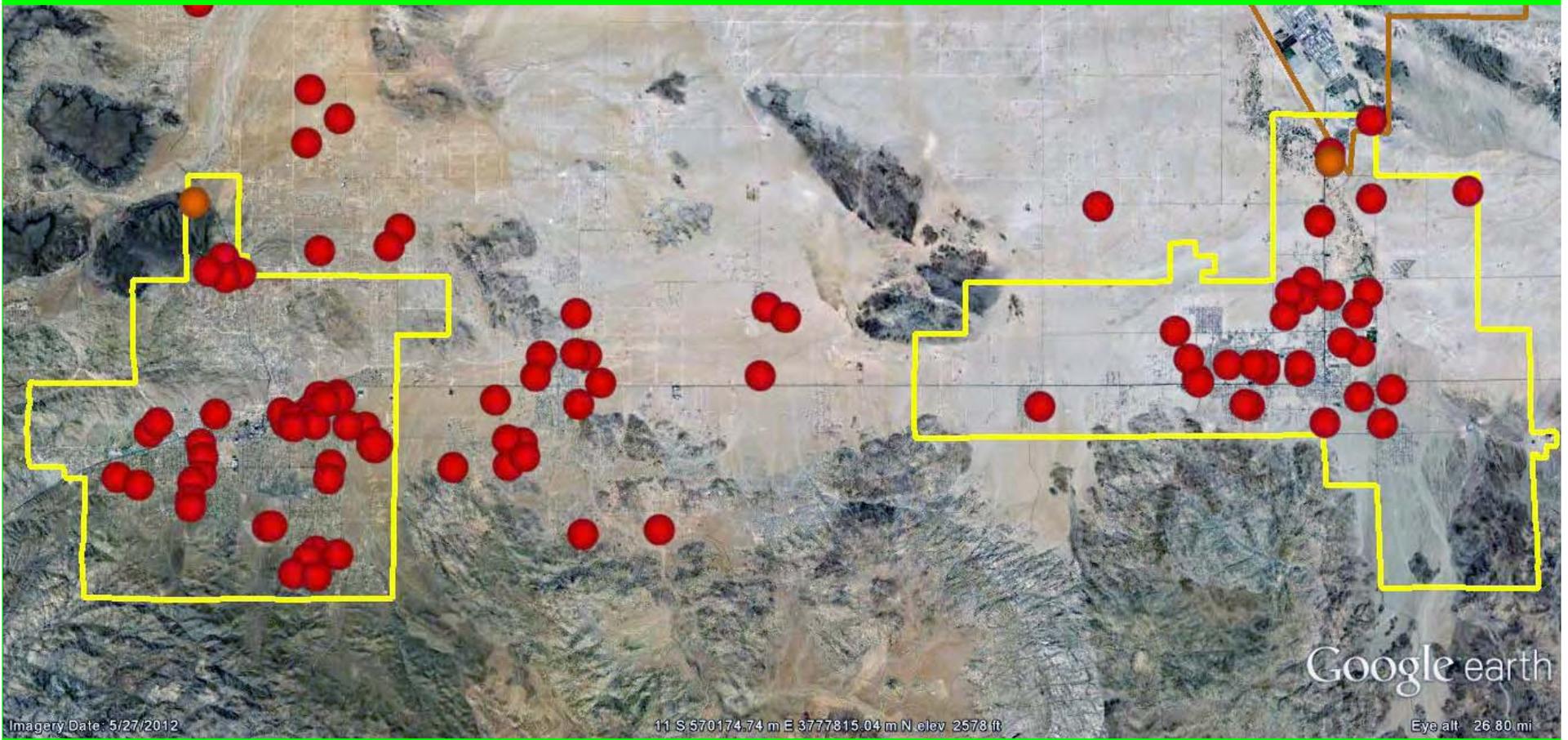
Eye alt 26.76 mi



Sign Present



Sign Absent



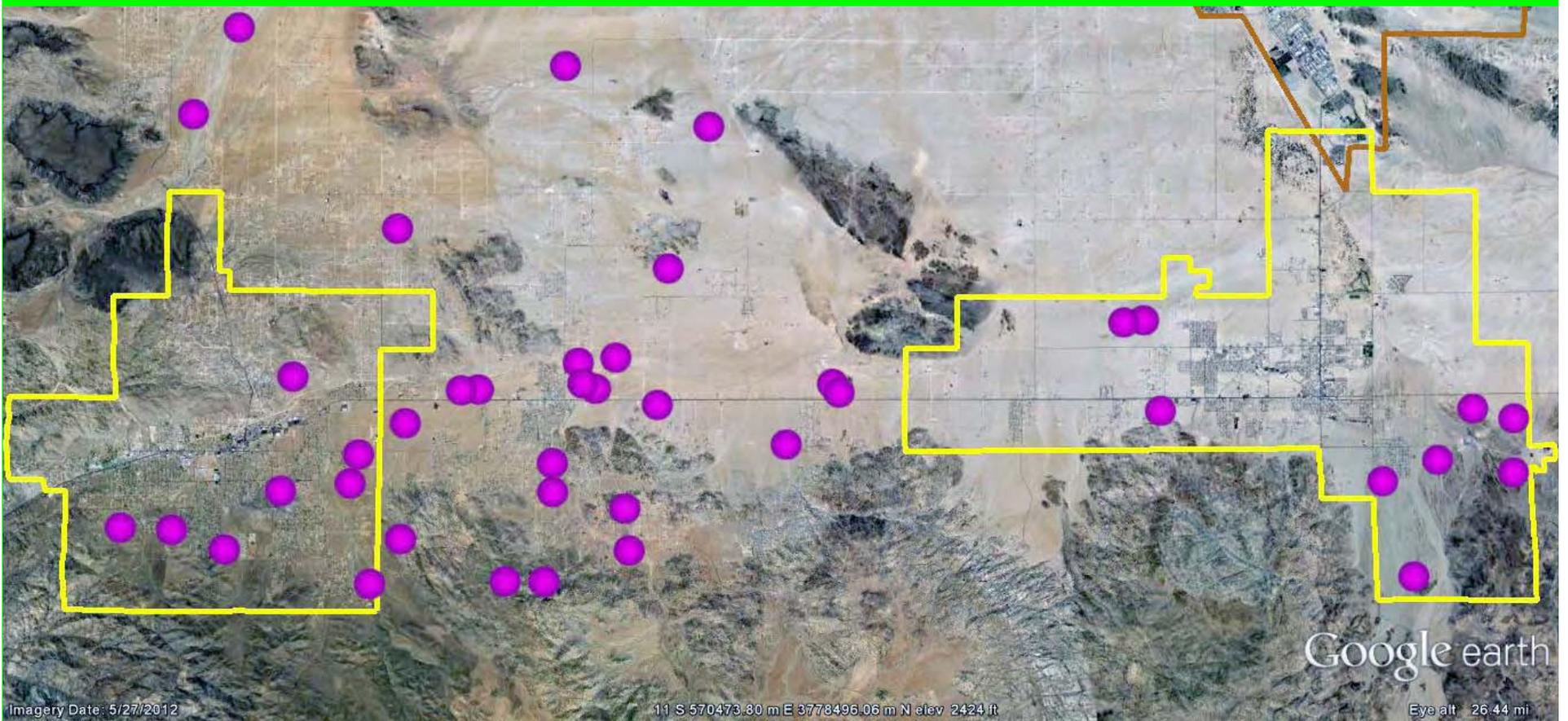
Imagery Date: 5/27/2012

11 S:570174.74 m E 3777815.04 m N elev 2578 ft

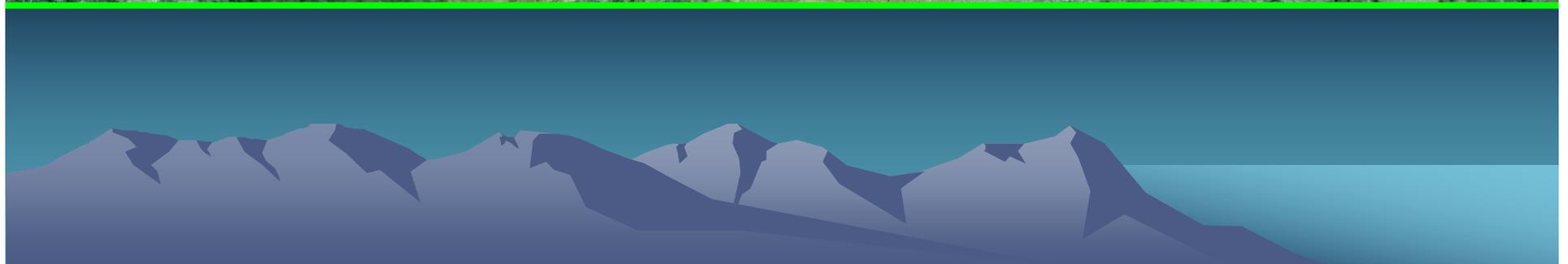
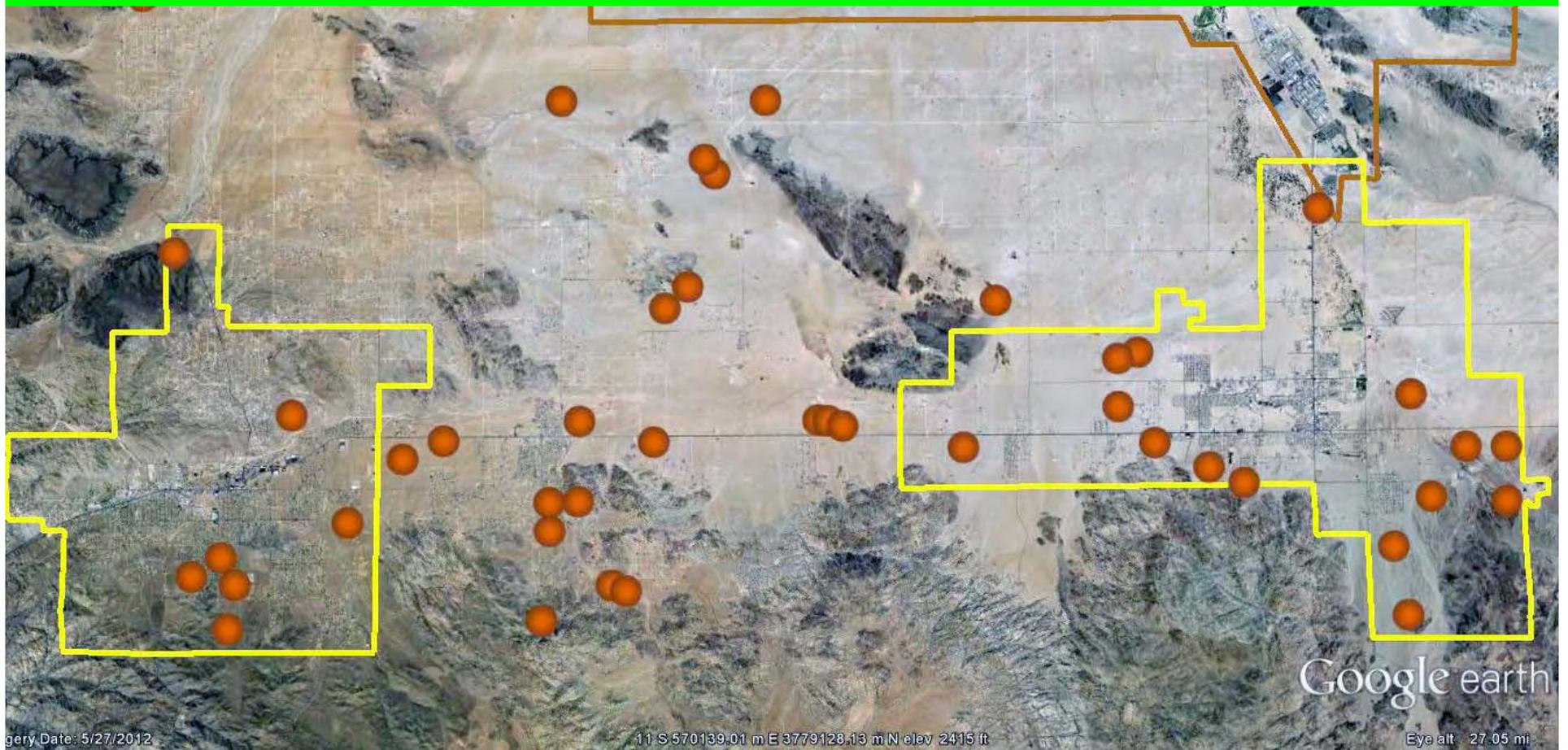
Eye alt: 26.80 mi



Tortoises



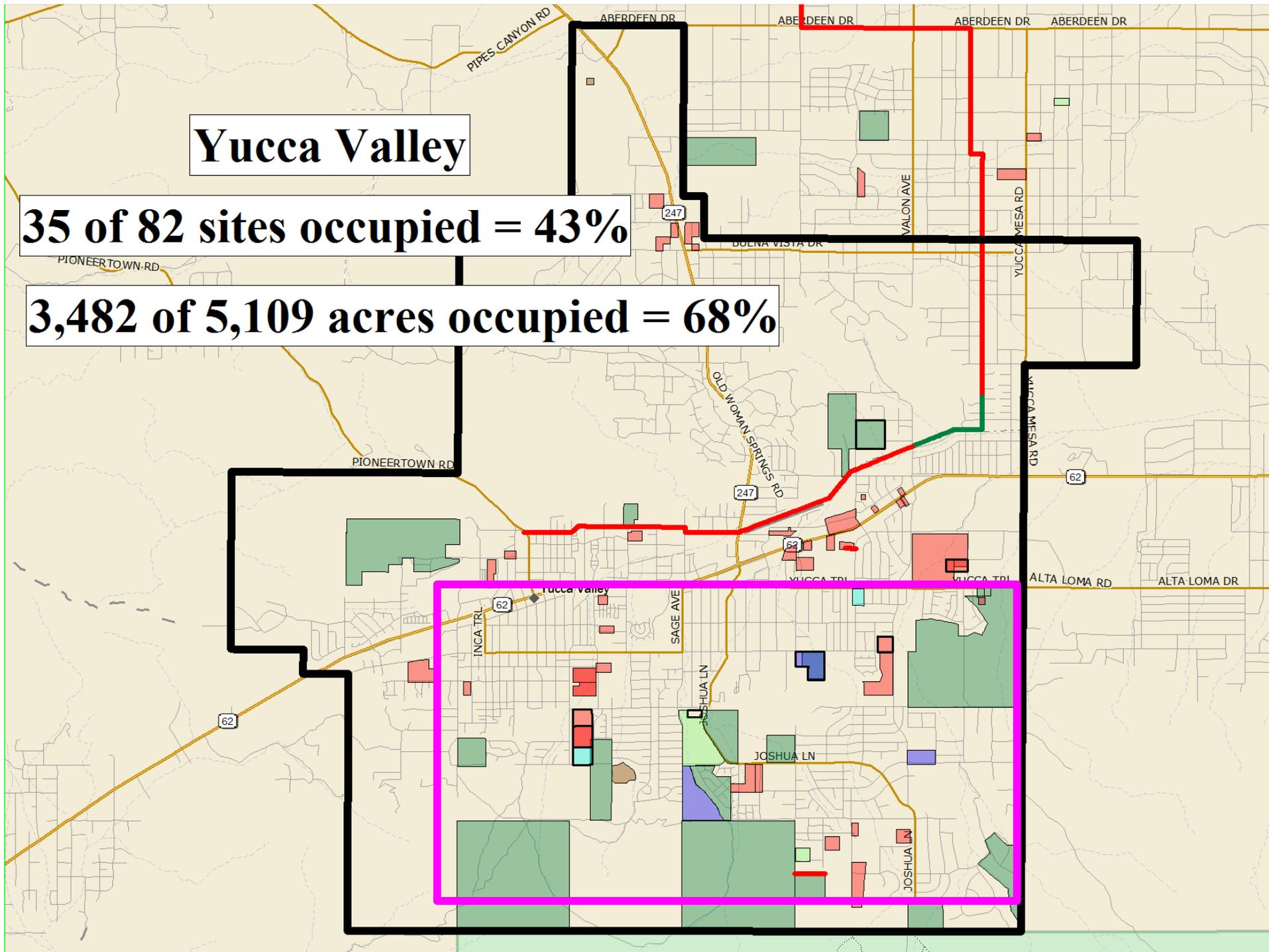
Carcasses



Yucca Valley

35 of 82 sites occupied = 43%

3,482 of 5,109 acres occupied = 68%



Yucca Valley Tortoises

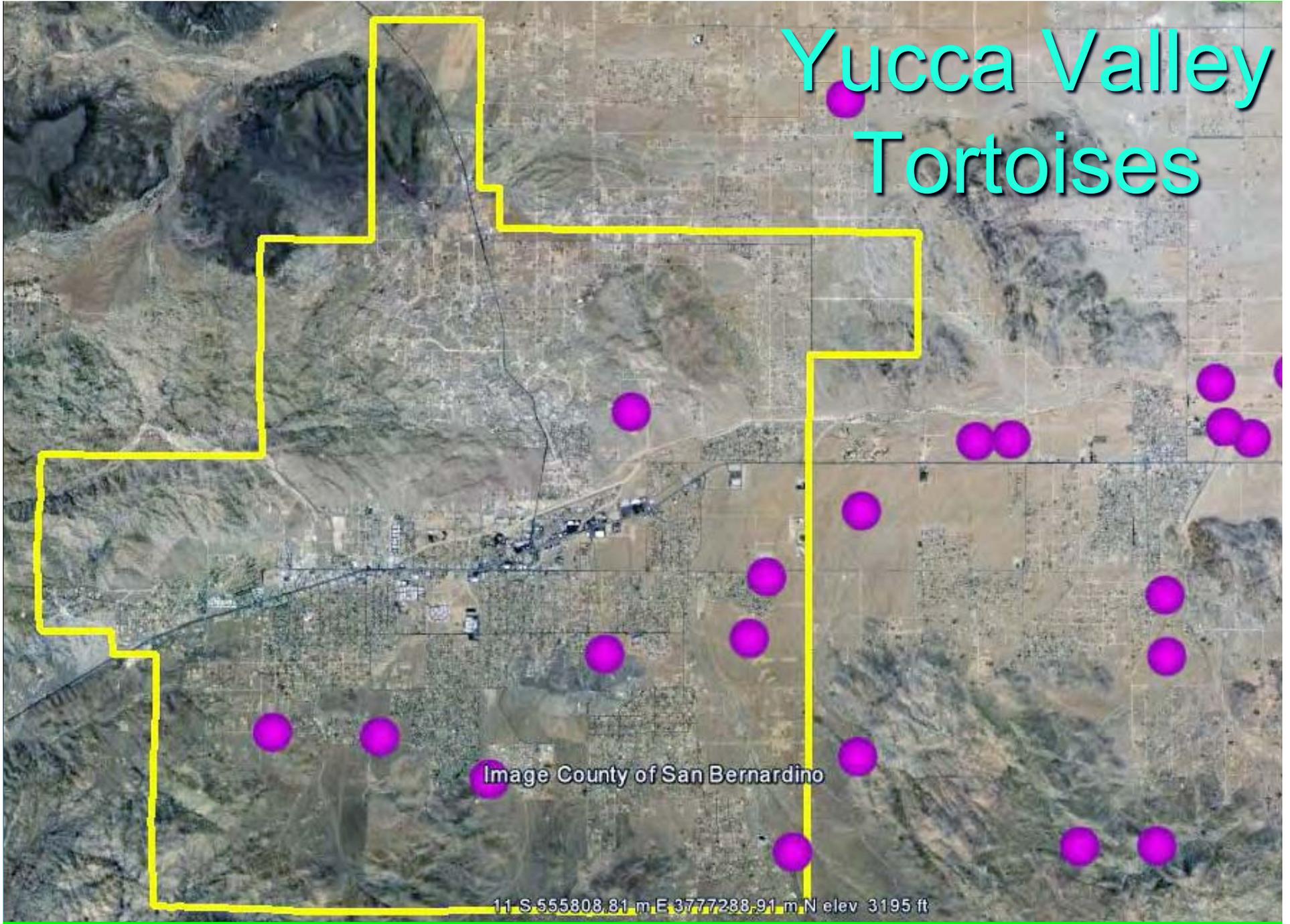


Image County of San Bernardino

11 S 555808.81 m E 3777288.91 m N elev 3195 ft

Yucca Valley Carcasses

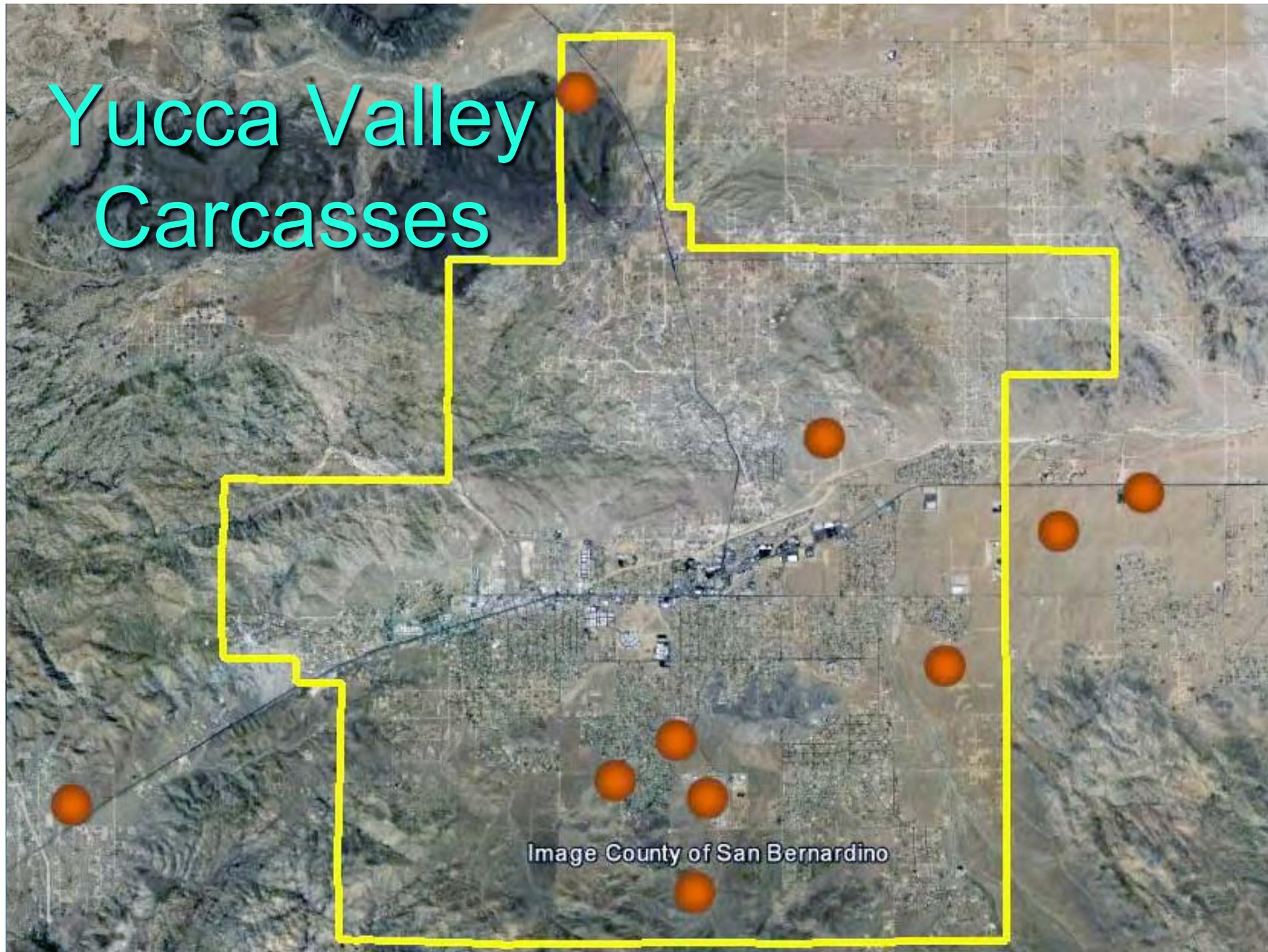


Image County of San Bernardino

Yucca Valley Overview

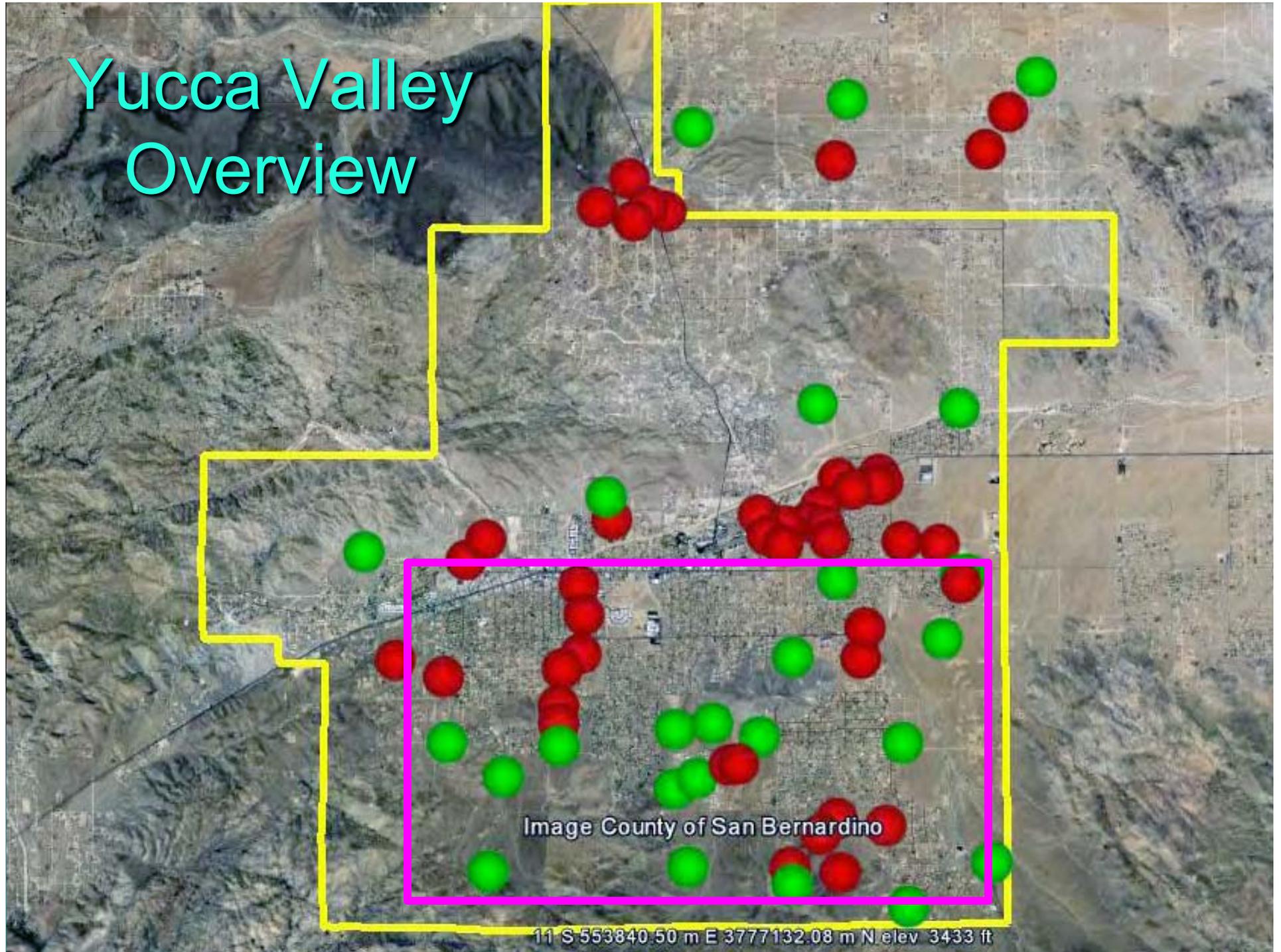
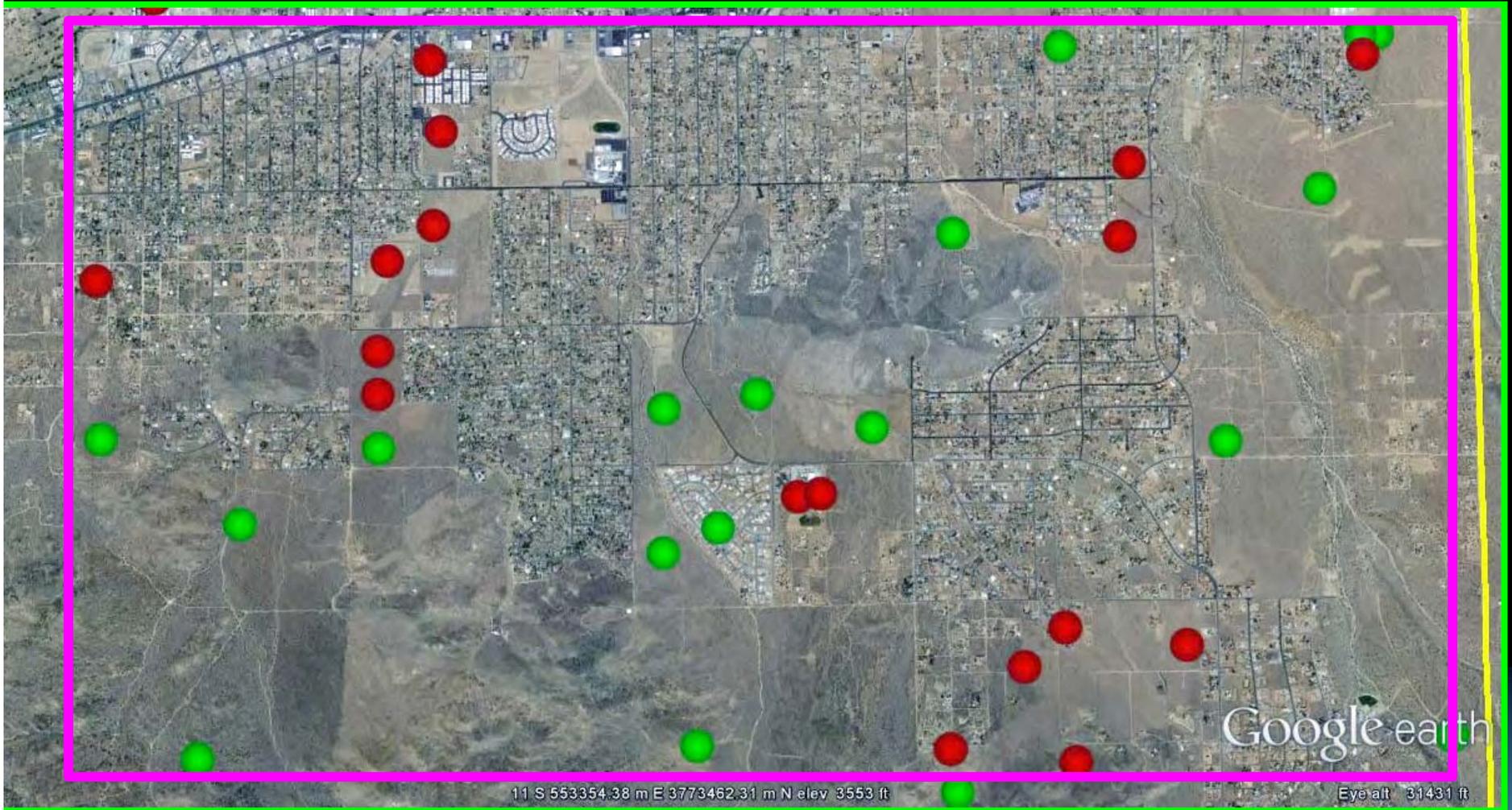


Image County of San Bernardino

11 S 553840.50 m E 3777132.08 m N elev 3433 ft

Yucca Valley Detail



Yucca Valley Sign Present

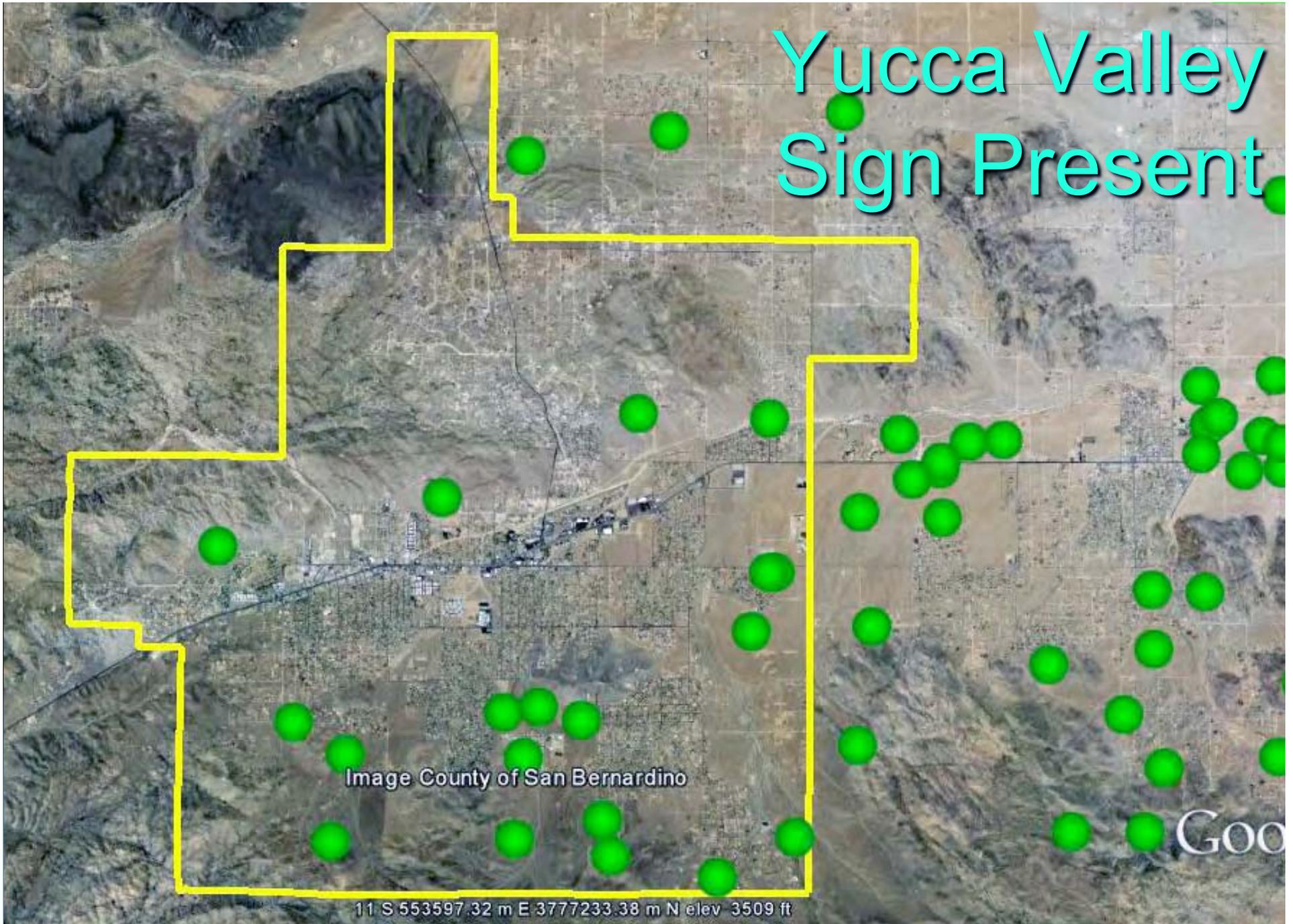


Image County of San Bernardino

11 S 553597.32 m E 3777233.38 m N elev 3509 ft

Google

Yucca Valley Sign Absent

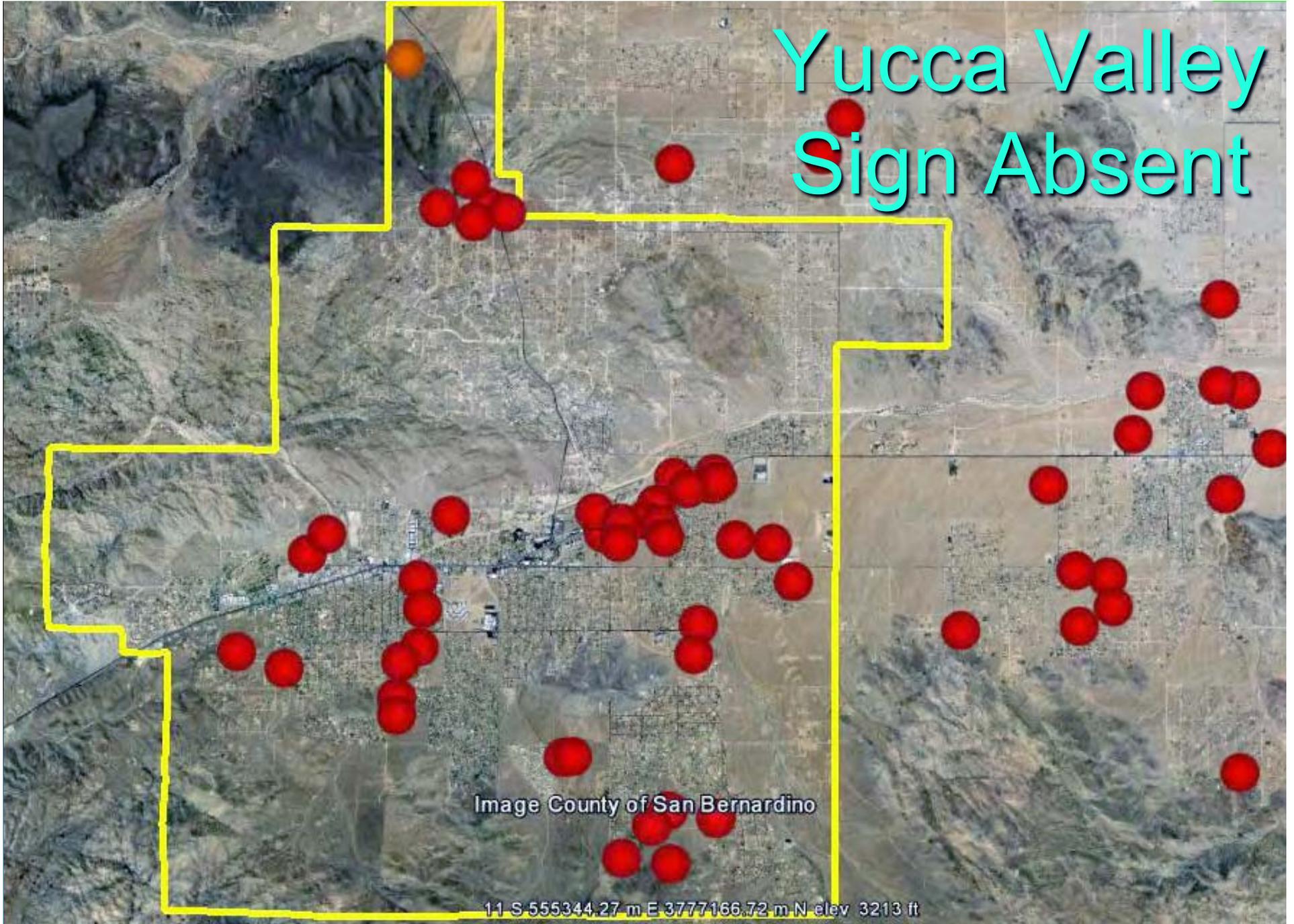


Image County of San Bernardino

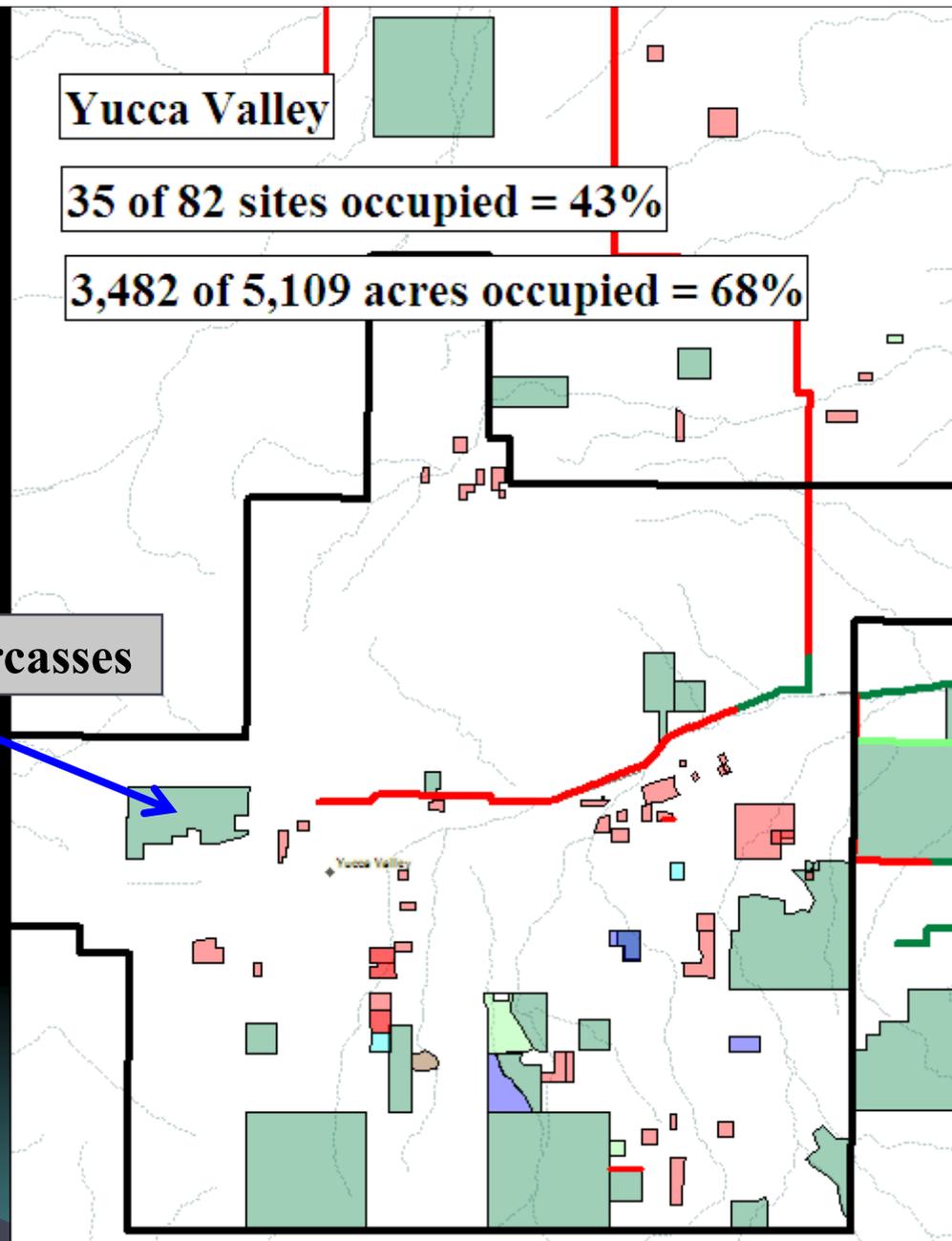
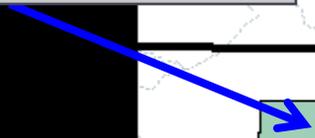
11 S 555344.27 m E 3777166.72 m N elev 3213 ft

Yucca Valley

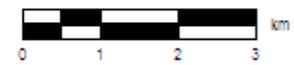
35 of 82 sites occupied = 43%

3,482 of 5,109 acres occupied = 68%

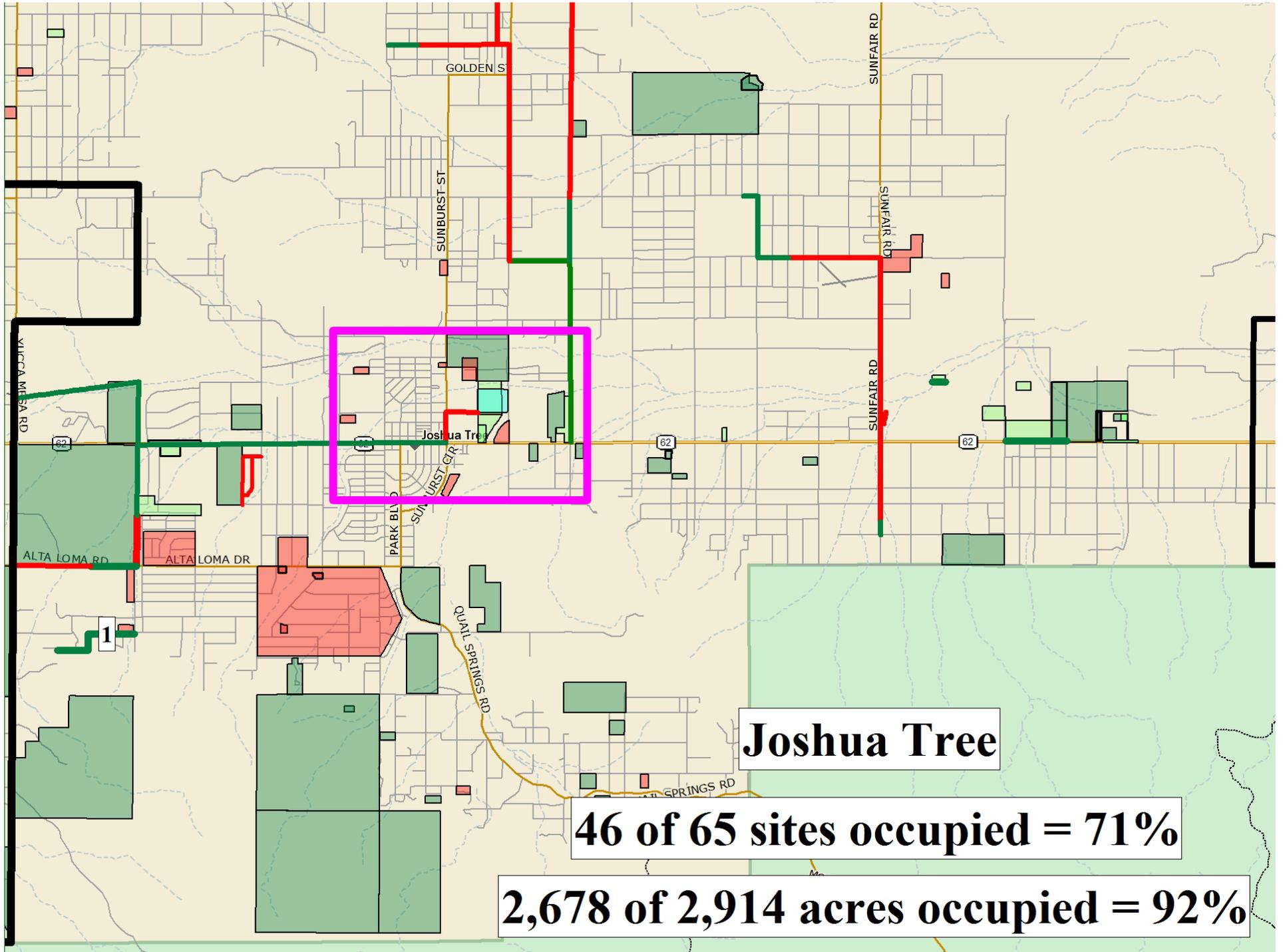
3 Non-native carcasses



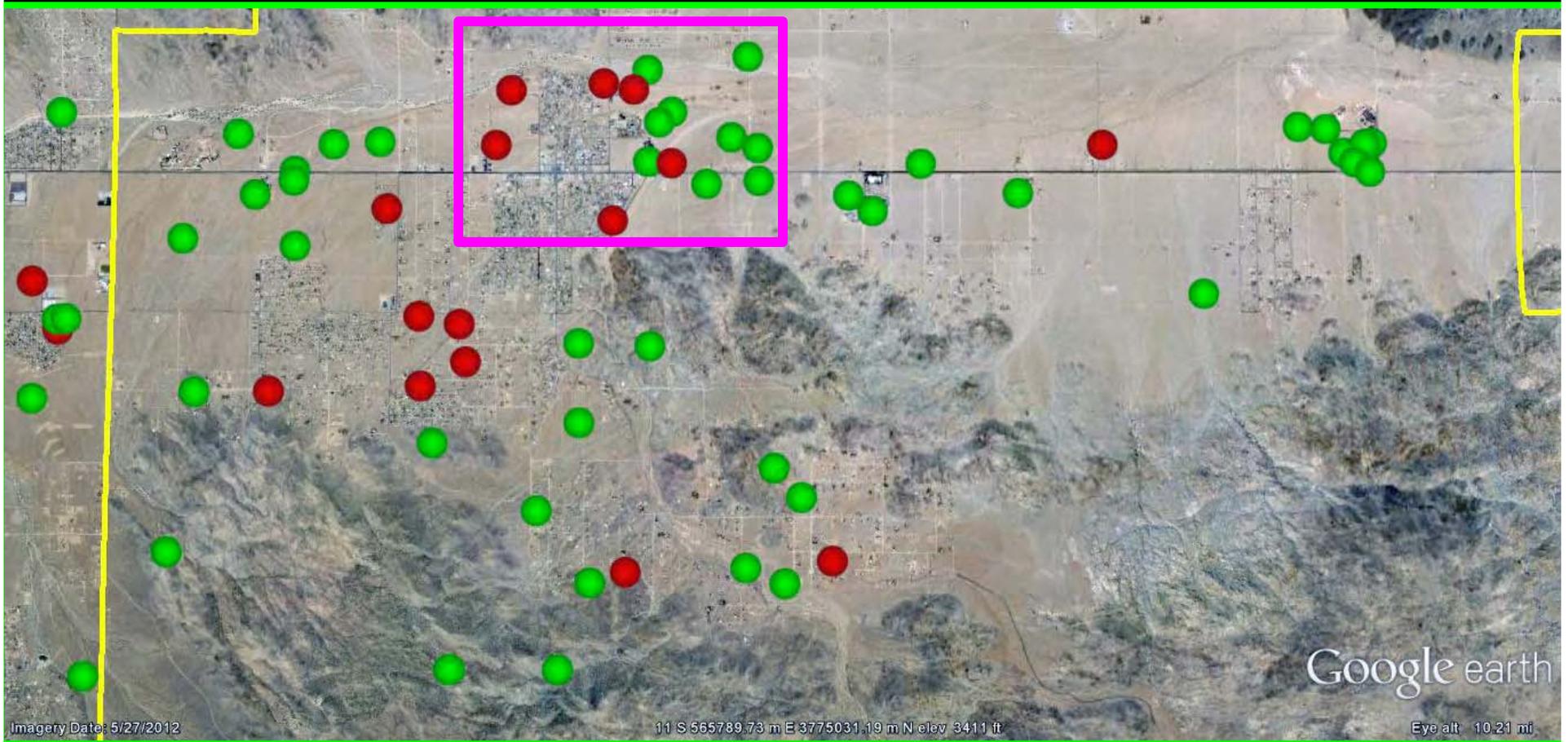
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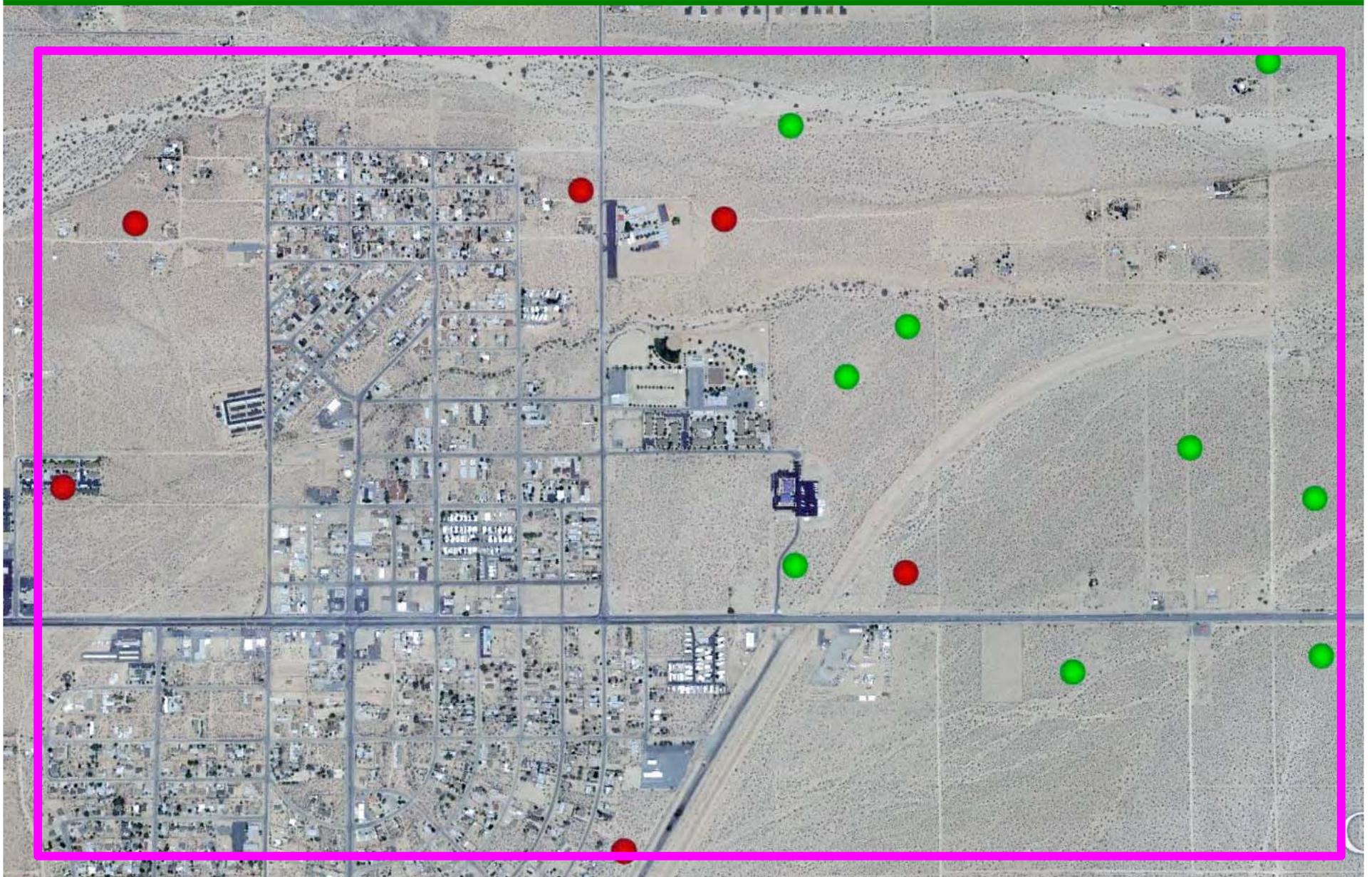
Data Zoom 11-5



Joshua Tree Overview



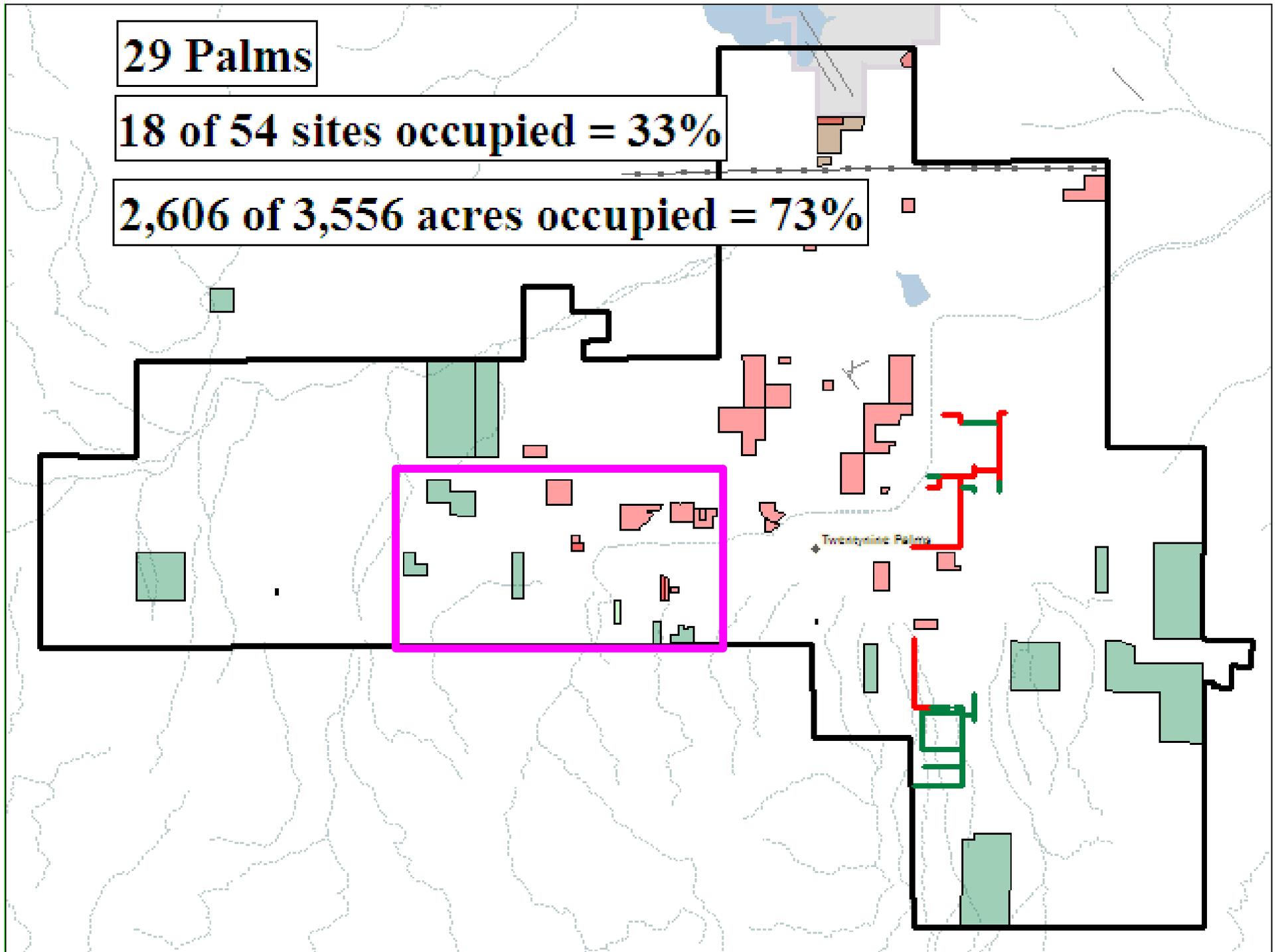
Joshua Tree Detail



29 Palms

18 of 54 sites occupied = 33%

2,606 of 3,556 acres occupied = 73%

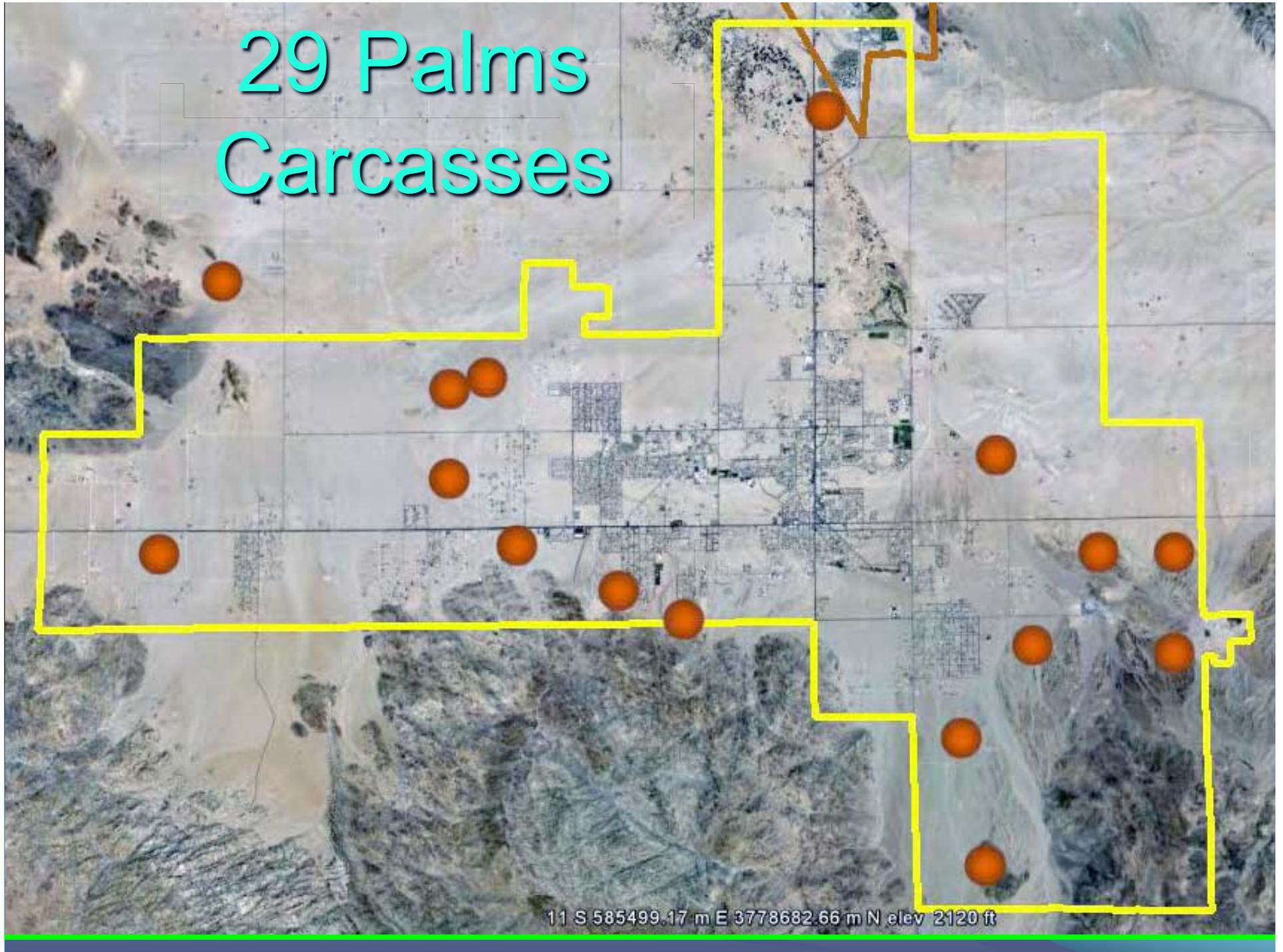


29 Palms Tortoises

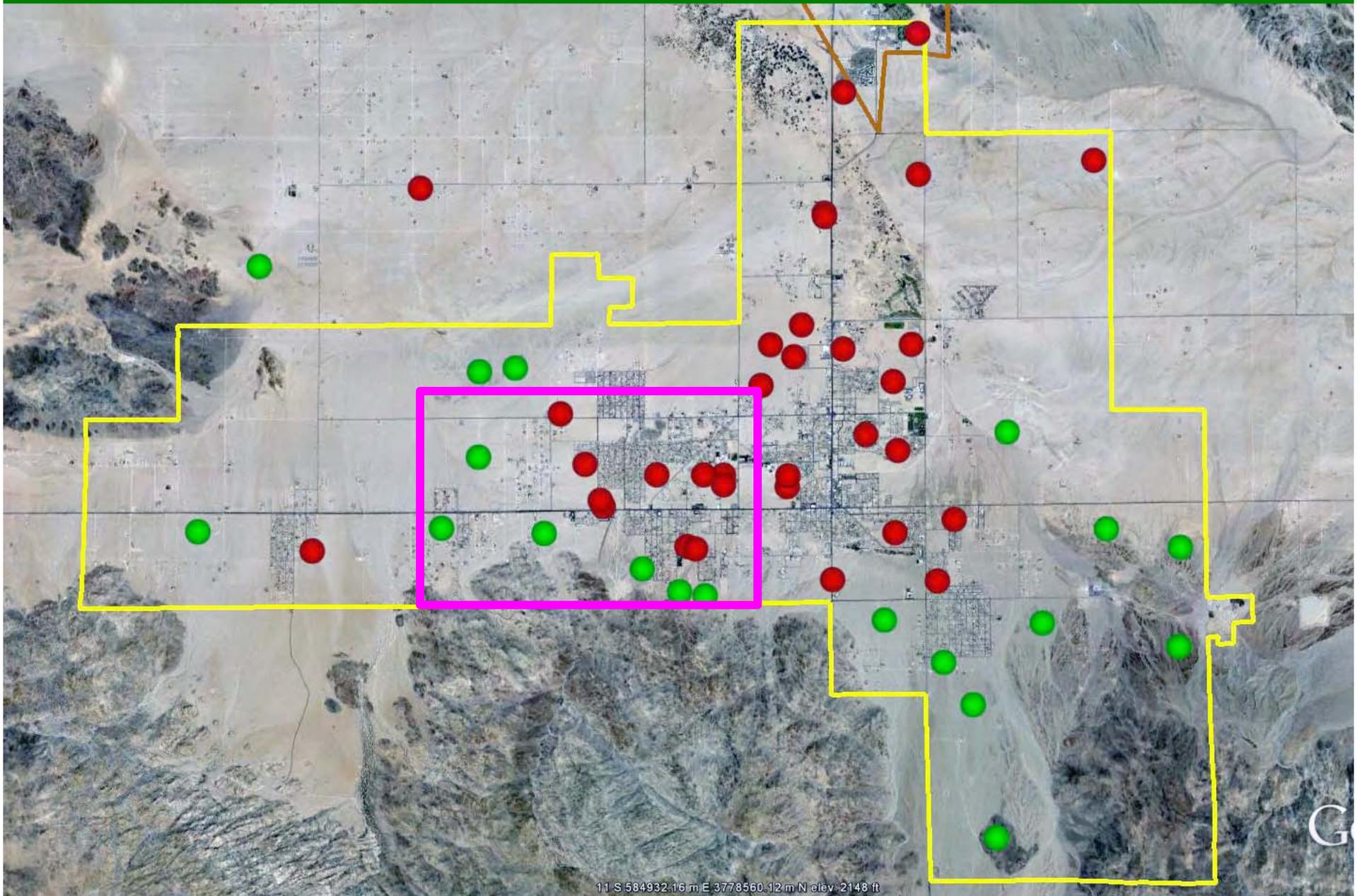


11 S 584163.29 m E 3778529.51 m N elev. 2172 ft

29 Palms Carcasses

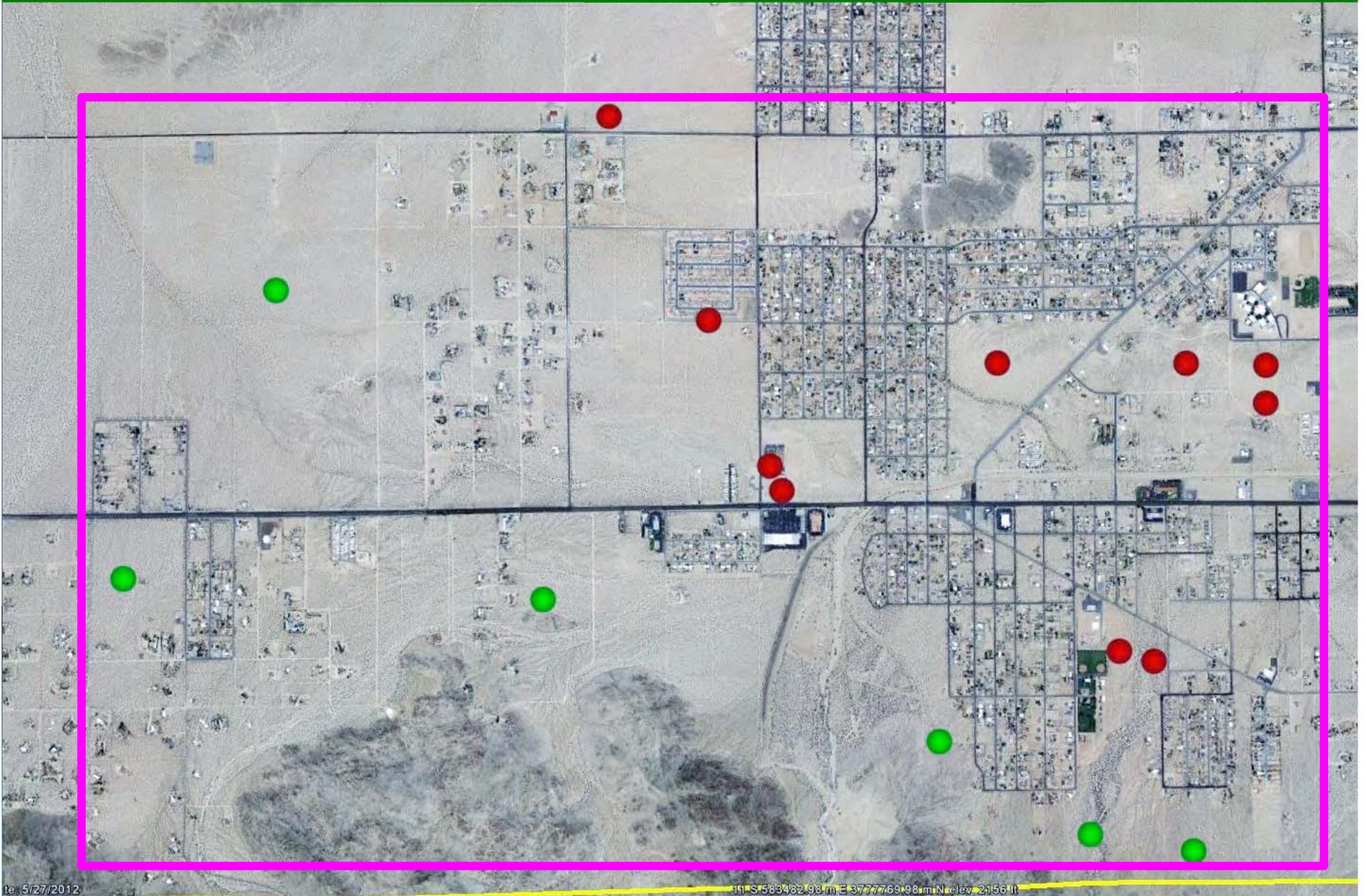


29 Palms Overview

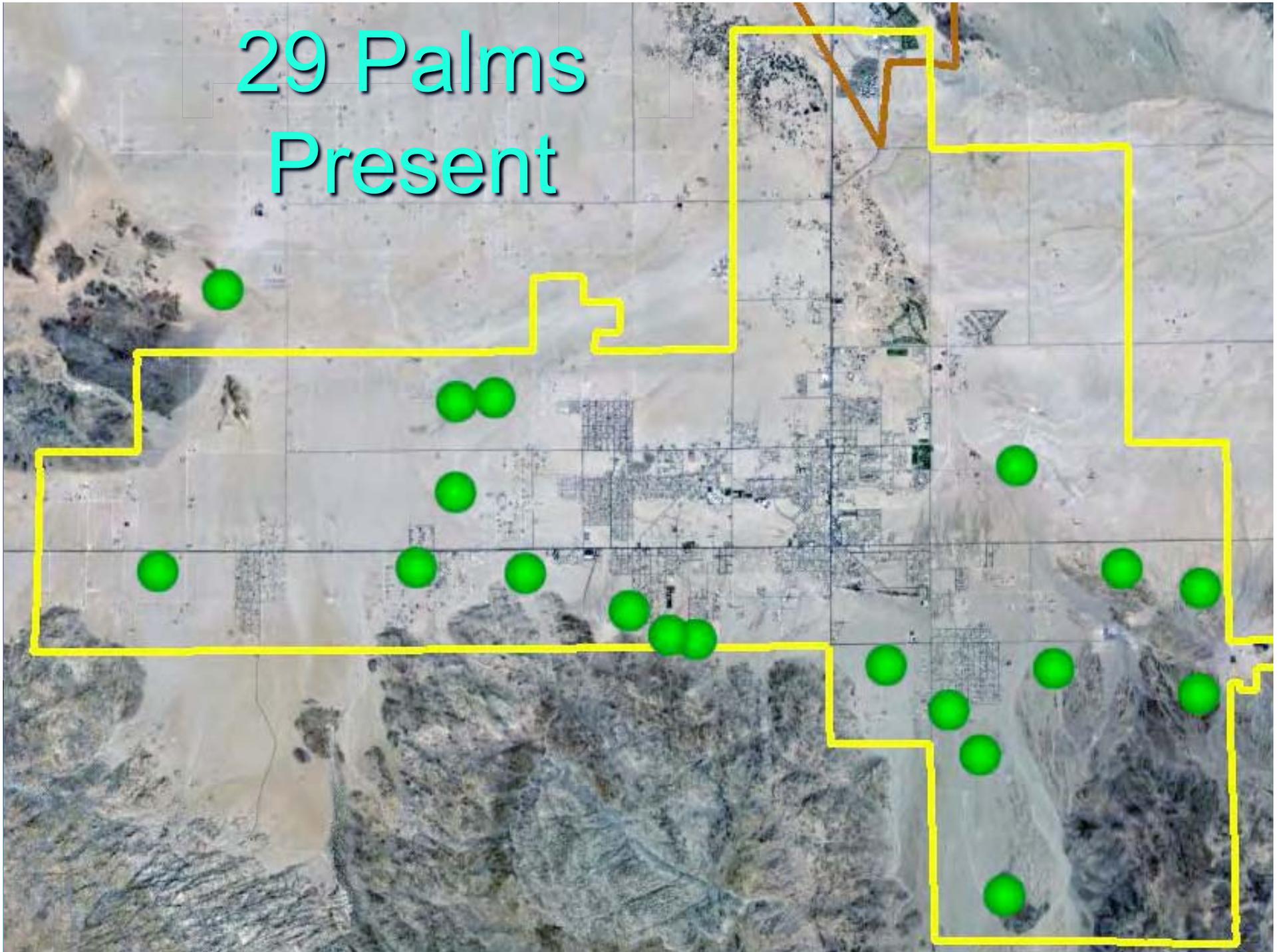


11 S 584932.16 m E 3778560.12 m N elev. 2148 ft

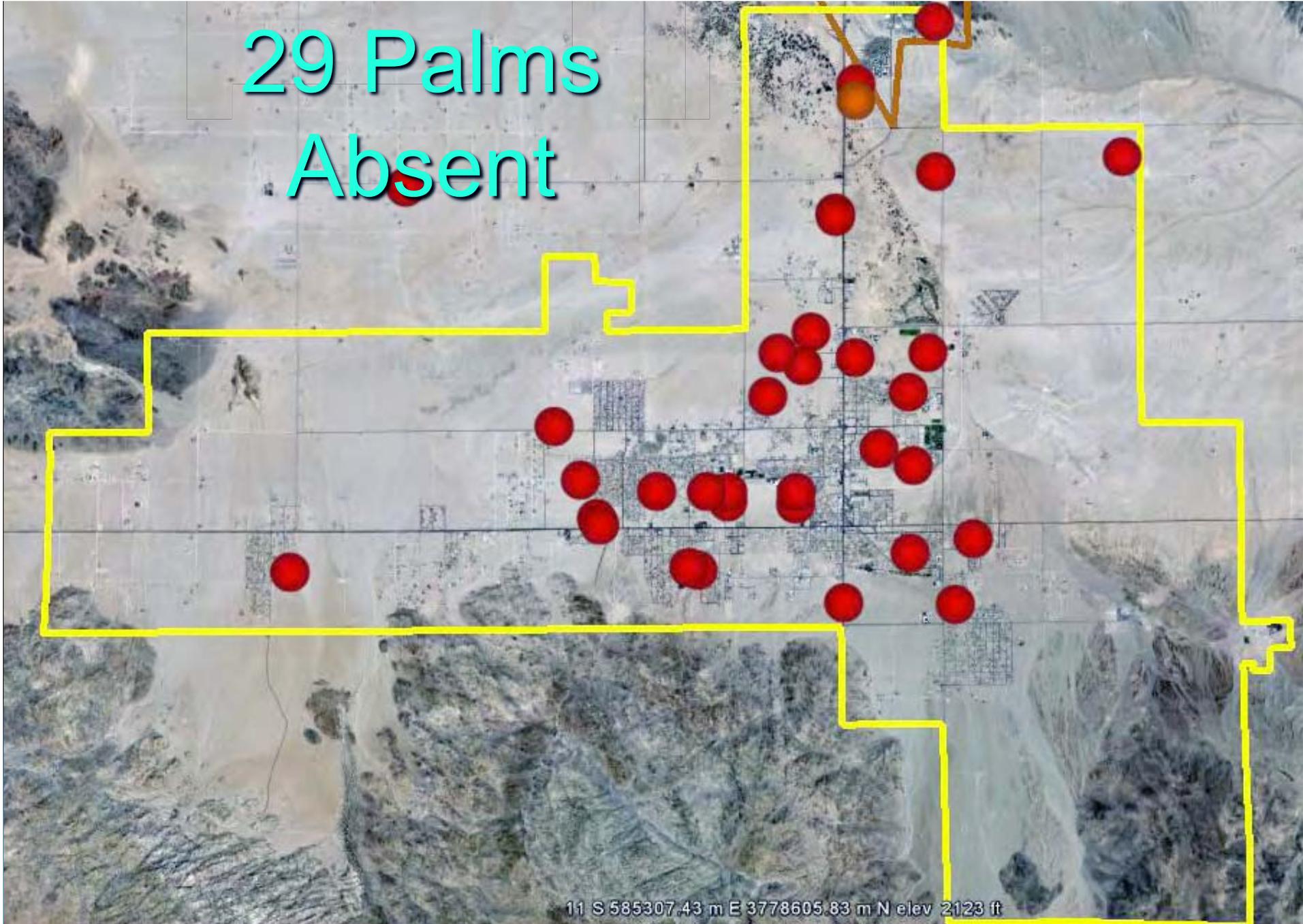
29 Palms Detail



29 Palms Present



29 Palms Absent



11 S 585307.43 m E 3778605.83 m N elev 2123 ft

