

**San Diego Association of Governments (SANDAG)
Memorandum of Understanding (MOU) #5004552**

Strategic Control of Invasive Weed Species

1st Quarter Report - FY 2022-23: Report #31 for Project

Funding in the amount of \$60,811.23 for all 1st Quarter work completed by The Department of Agriculture, Weights, & Measures staff (not including Dendra Inc.) as outlined in this report was supplied by The California Department of Food and Agriculture.

July 1st, 2022 – September 30th, 2023

Project: County of San Diego, Department of Agriculture, Weights & Measures –
Strategic Removal of Invasive Weed Species

To: Kim Smith
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Project:

Invasive plants are considered one of the biggest threats to endangered species and their habitats. A strategic plan for managing non-native invasive plant species in San Diego County was completed in 2012 through a SANDAG contract to the Conservation Biology Institute (CBI) (<http://sdmmp.com>). The Invasive Plant Strategic Plan (IPSP) is designed to develop a strategic approach towards the eradication and management of invasive plants in the San Diego region. The IPSP is meant to work in conjunction with the Management Strategic Plan for Conserved Lands in Western San Diego County (MSP) ([Management Strategic Plan](#)).

This Scope of Work will require the contractor to focus on the management of invasive plants identified in Levels 1, 2, and 3 of the IPSP. The following tasks have been identified as necessary to implement this effort:

This quarterly report covers work funded through the SANDAG Contract, which allowed work to occur from July 1st to September 30th 2022.

TASK 1 – Invasive Plant Species Coordinator:

Level of Effort: (25%) of overall contract

Right of Entry (ROE) work and coordination with property owners and crews:

Coordination with property owners, land managers and AWM crew occurred throughout the quarter. This supported work this quarter and preparation for the next quarter.

The coordinator worked on multiple species at sites across the county:

Current work sites were visited and assessed. These included: Limonium, yellow star thistle, and spotted knap weed.

Regulatory permits:

No new work.

Report preparation:

The quarterly report was prepared and submitted.

Mapping and occurrence data:

Reviewing iNaturalist EDRR observations (confirming and correcting IDs), as well as mapping and surveying for new populations occurred. GIS coverage of all sites was updated (points). GIS coverage of all work was updated (polygons).

Work plan:

Work crew species and sites to be treated was updated.

TASK 2 – AWM: Invasive Plant Level 1 Management

Level of Effort: (<10%) of overall contract.

Level 1 Management Species are EDRR targets that were **not known to occur** in the county when the IPSP was written (2012).

Crews surveyed and treated no level 1 species this quarter. Maps for site show treated areas (red polygons) and surveyed areas as white lines which track pathways used by crews to survey and control plants. AWM IPC carried out optimal plant control, either hand polling or using pesticide applications, protected the natural environment by preventing off-site movement of pesticides, and utilized Best Management Practices (BMPs) that prevented unintentional discharges to surface waters. For each site, AWM IPC followed the following procedures:

1. Identified the pest species to be treated.
2. Reviewed site conditions, such as soil texture, slope, standing water, irrigation, or storm drains.
3. Identified and avoided streamside management areas and surface waters to prevent drift and application of pesticides not labeled for aquatic use onto surface waters.
4. Identified most appropriate method of control based on integrated pest management methods, designed to minimize the scale and number of pesticide applications.
5. Applied the least persistent and least toxic pesticide that effectively mitigates the target pest.

Table 1. Summary of treatments performed by AWM on Level 1 species this quarter.

| Scientific Name | Common Name | # of Sites Worked | Acres Treated | Acres Surveyed | Plants Controlled |
|-----------------|-------------|-------------------|---------------|----------------|-------------------|
| <i>none</i> | | | | | |

TASK 3 – AWM: Invasive Plant Level 2 Management.

Level of Effort: (>40%) of overall contract

Level 2 Management Species are EDRR targets that were of limited distribution in the county when the IPSP was written (2012).

Crews surveyed and treated four invasive weed species (French broom, Spotted knapweed, Algerian sea lavender, and Yellow starthistle) at six sites this quarter. AWM IPC made optimal pesticide applications, protected the natural environment by preventing off-site movement of pesticides, and utilized Best Management Practices (BMPs) that prevented unintentional discharges to surface waters. For each site, AWM IPC followed the following procedures:

1. Identified the pest species to be treated.
2. Reviewed site conditions, such as soil texture, slope, standing water, irrigation, or storm drains.
3. Identified and avoided streamside management areas and surface waters to prevent drift and application of pesticides not labeled for aquatic use onto surface waters.
4. Identified most appropriate method of control based on integrated pest management methods, designed to minimize the scale and number of pesticide applications.
5. Applied the least persistent and least toxic pesticide that effectively mitigates the target pest.

Table 2. Summary of treatments performed by AWM on Level 2 species this quarter.

| Scientific Name | Common Name | # of Sites Worked | Acres Treated | Acres Surveyed | Plants Controlled |
|-------------------------------|-----------------------|--------------------------|----------------------|-----------------------|--------------------------|
| <i>Centaurea solstitialis</i> | Yellow starthistle | 4 | 0.9 | 14.1 | 464 |
| <i>Centaurea stoebe</i> | Spotted knapweed | 2 | 2.7 | 11.5 | 1,184 |
| <i>Genista monosperma</i> | Bridal broom | 2 | 0.2 | 3.5 | 80 |
| <i>Genista monspessulana</i> | French broom | 2 | 1.2 | 6.0 | 1,590 |
| <i>Limonium duriusculum</i> | European sea lavender | 4 | 0.8 | 3.7 | 1,818 |
| <i>Limonium ramosissimum</i> | Algerian sea lavender | 4 | 1.7 | 8.2 | 2,728 |

***Centaurea solstitialis*, Yellow starthistle:**

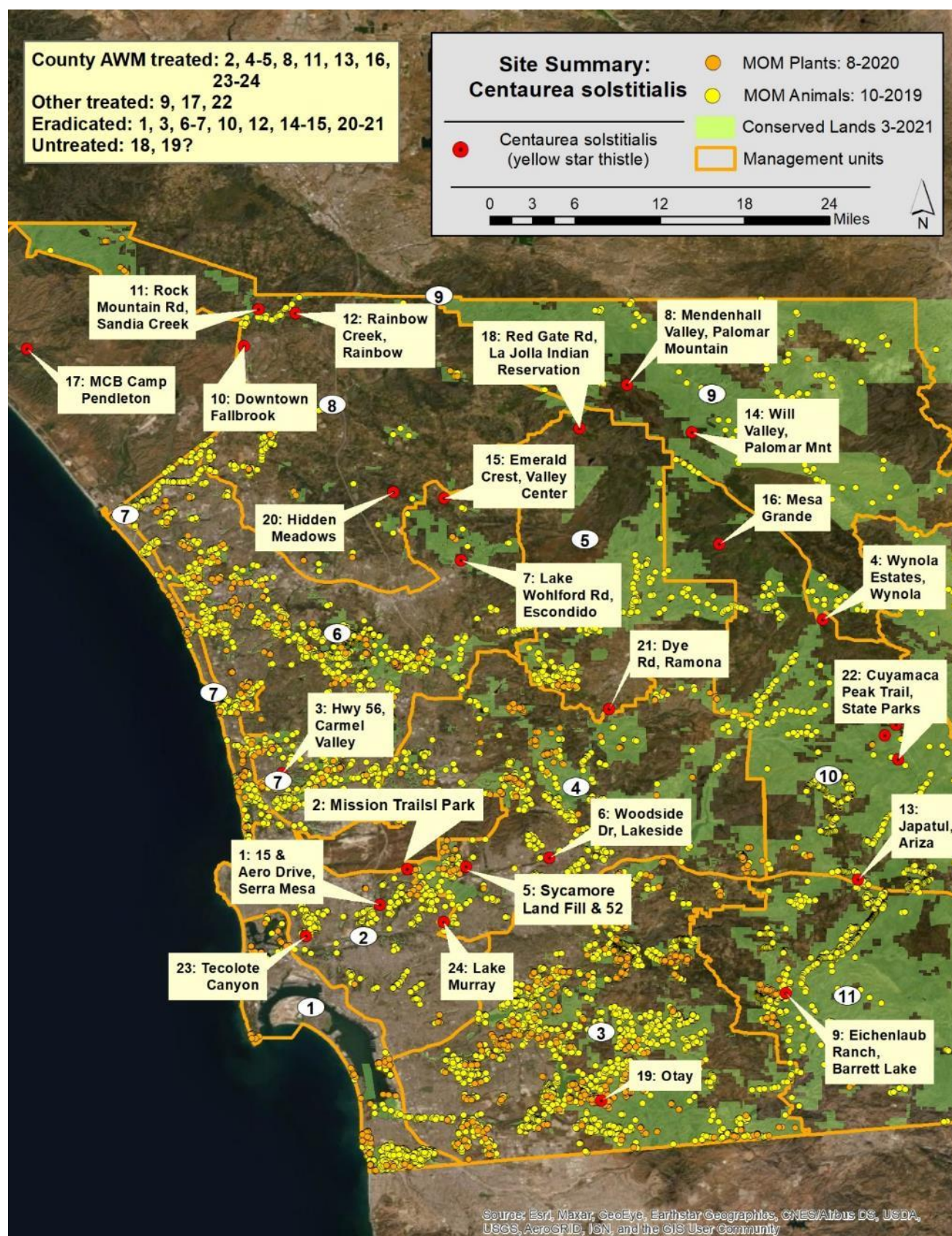
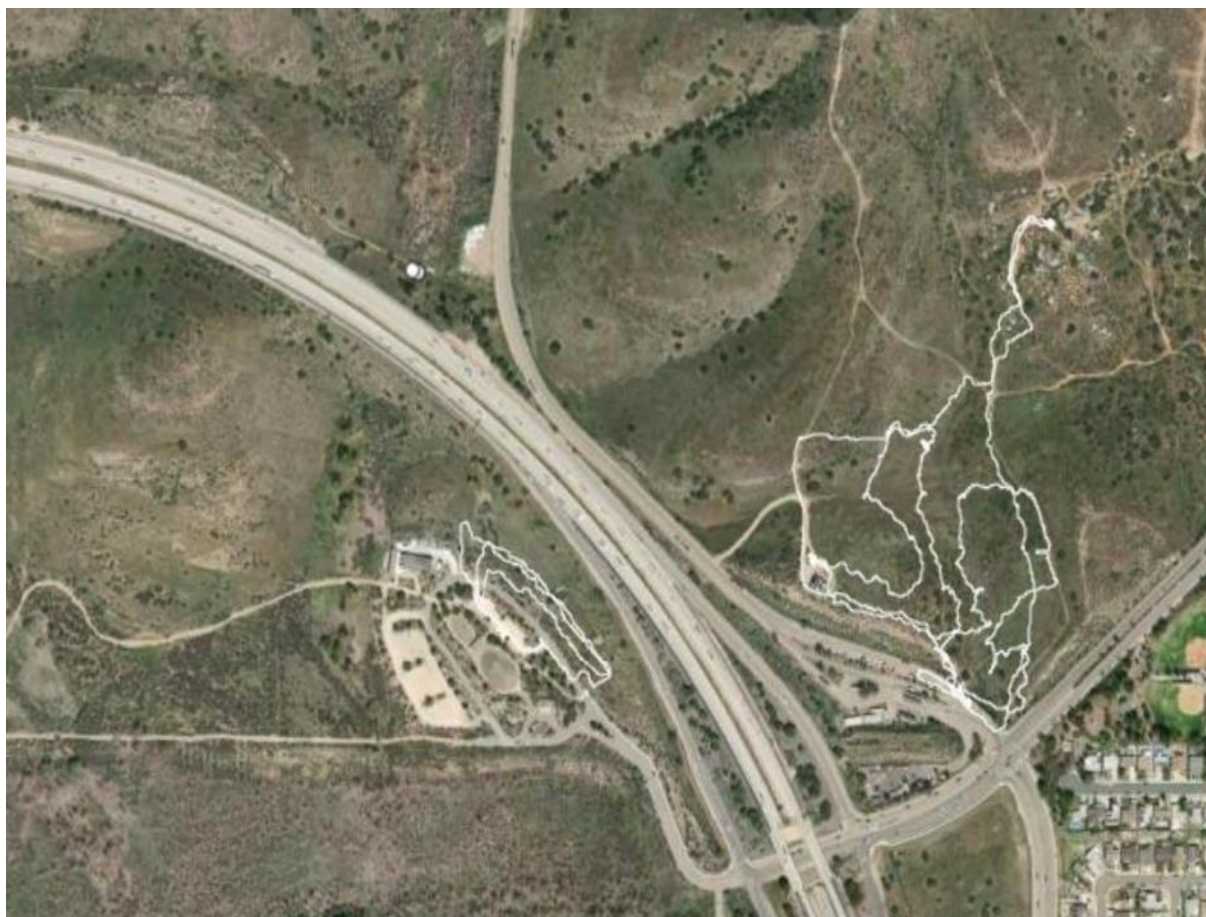


Table 3. Summary of treatments performed by AWM on *Centaurea solstitialis* (Yellow starthistle).

| Site Name | Common Name | # of Work Cycles | Acres Treated | Acres Surveyed | Plants treated |
|-------------------------------------|--------------------|------------------|---------------|----------------|----------------|
| Site #5, Sycamore Canyon, San Diego | Yellow starthistle | 1 | - | 1.0 | 0 |
| Site #8, Mendenhall, Palomar | Yellow starthistle | 1 | 0.6 | 12.6 | 265 |
| Site #13, Japatul, Ariza | Yellow starthistle | 1 | 0.2 | 0.3 | 204 |
| Site #16, Lake Murray | Yellow starthistle | 1 | 0.1 | 0.2 | 5 |

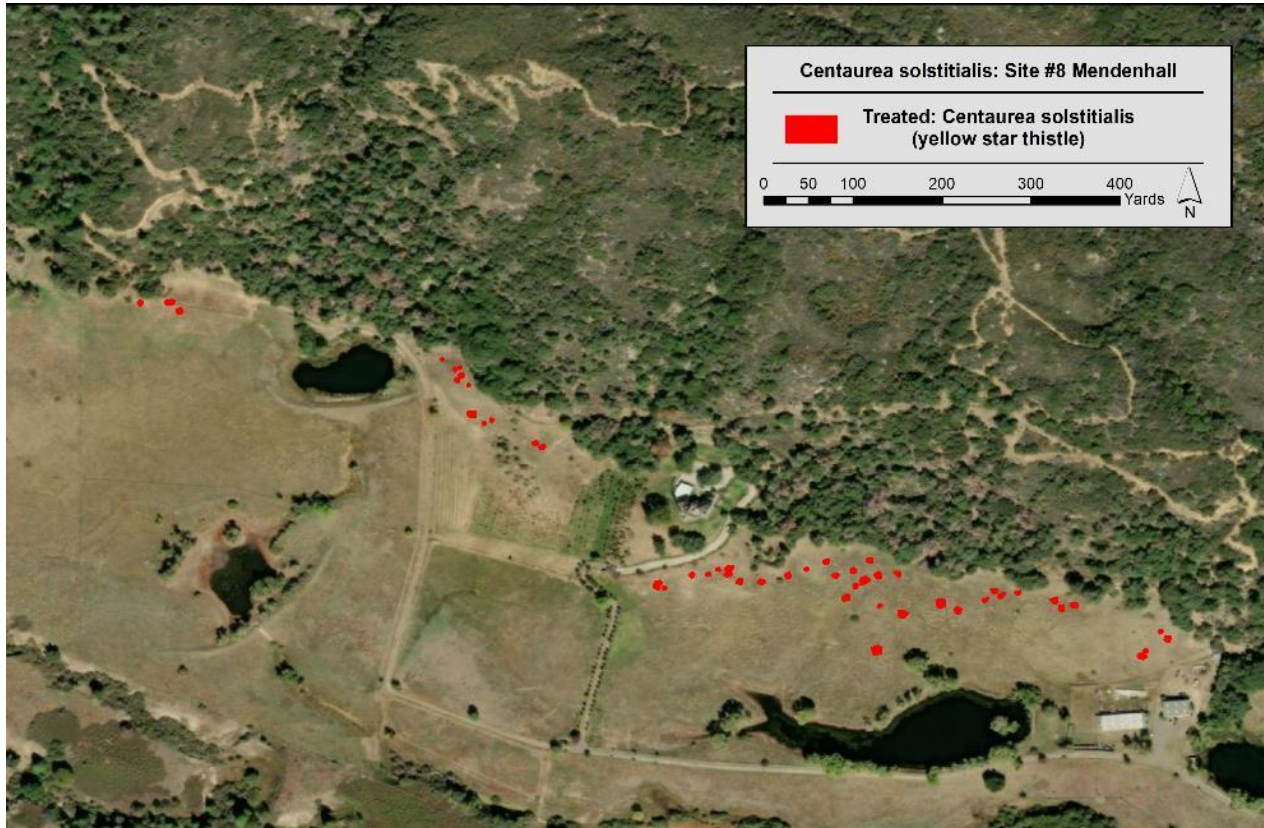
***Centaurea solstitialis*, Yellow starthistle: Site #5, Sycamore Canyon**

No plants were found during surveys. A crew of two individuals visited the site over one day on July 5th 2022. 2 plants were pulled in 2021.



***Centaurea solstitialis*, Yellow starthistle: Site #8 Mendenhall**

265 plants were found and either pulled or treated with a post emergent herbicide during a survey of the site. A crew of two individuals visited the site on eight days between July 6th through the 28th 2022. 1,005 plants were controlled in 2021.



Centaurea solstitialis, Yellow starthistle: Site #13 Japatul

204 plants were found and manually removed during a survey of the site. A crew of two individuals visited the site on July 29th and August 1st 2022. Part of the site could not be accessed; the property owner is being contacted to obtain an ROE agreement. 115 plants were controlled in 2021.



Centaurea solstitialis, Yellow starthistle: Site #24 Lake Murray

2 plants were removed by hand. A crew of two individuals visited the site on July 19th 2022. 28 plants were controlled in 2021.



Centaurea stoebe, Spotted knapweed:

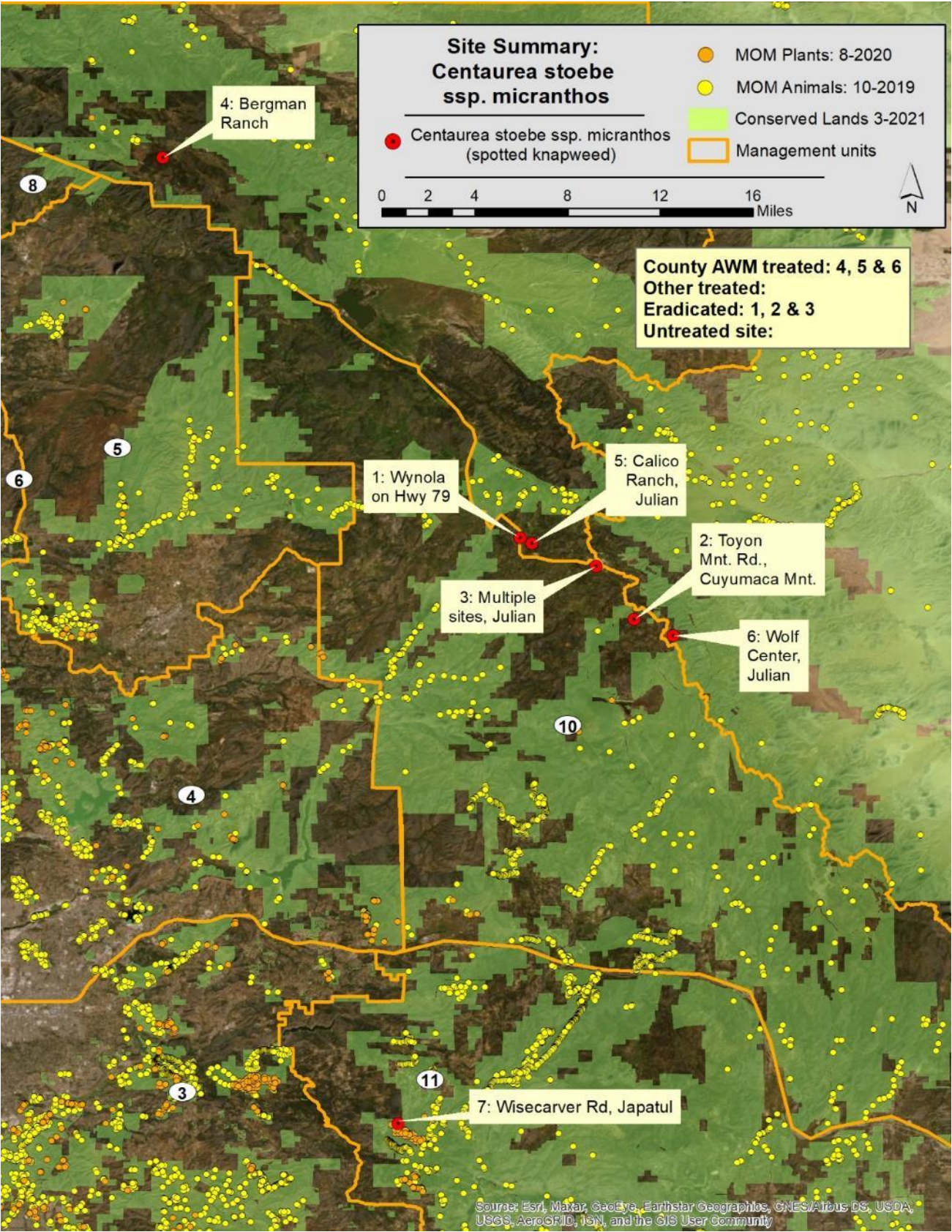
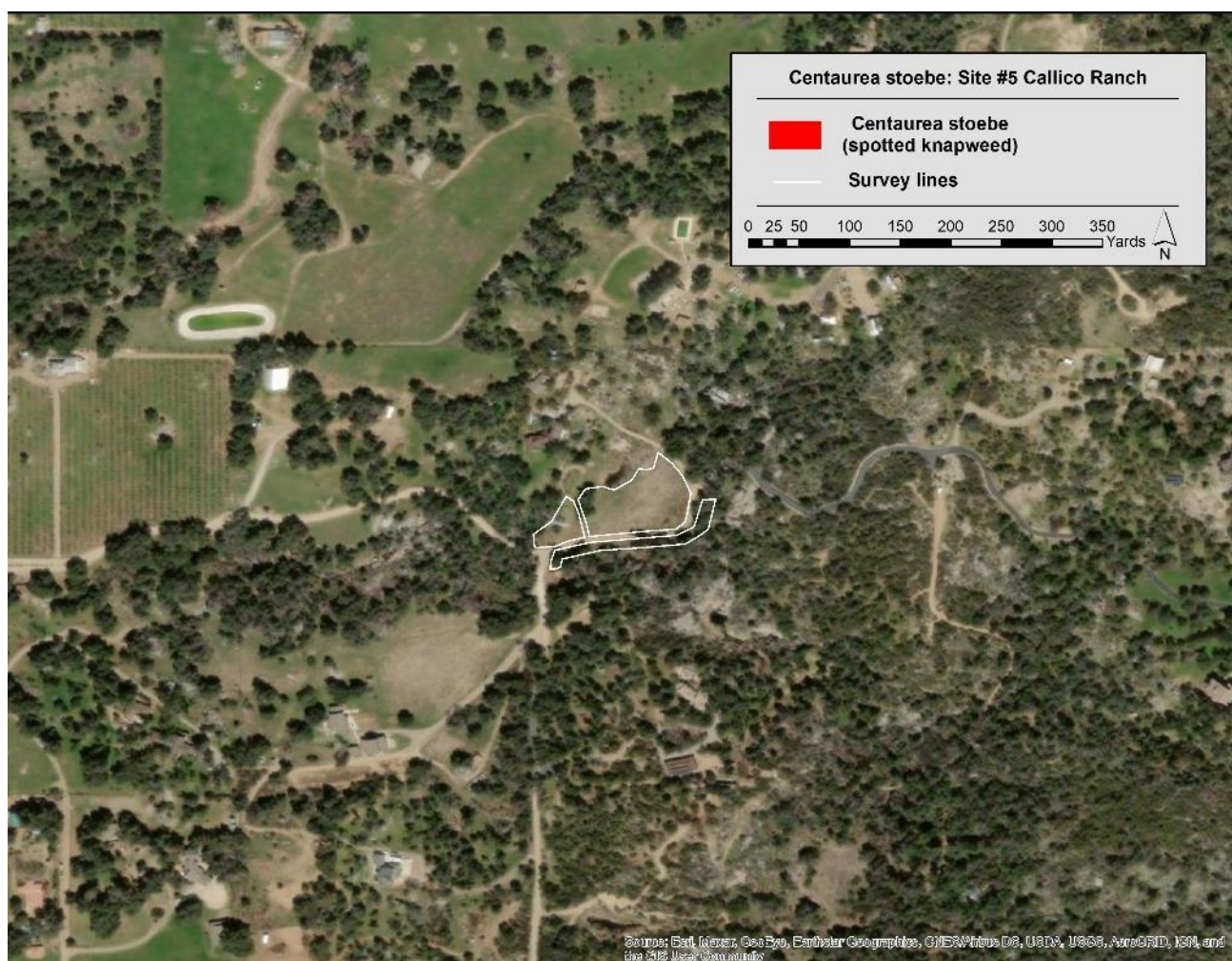


Table 4. Summary of treatments performed by AWM on *Centaurea stoebe* (Spotted knapweed).

| Site Name | Common Name | # of Visits | Acres Treated | Acres Surveyed | Plants treated |
|----------------------|------------------|-------------|---------------|----------------|----------------|
| Site #5 Calico Ranch | Spotted knapweed | 1 | - | 1.3 | 0 |
| Site #6, Wolf Center | Spotted knapweed | 1 | 2.7 | 11.5 | 1,184 |

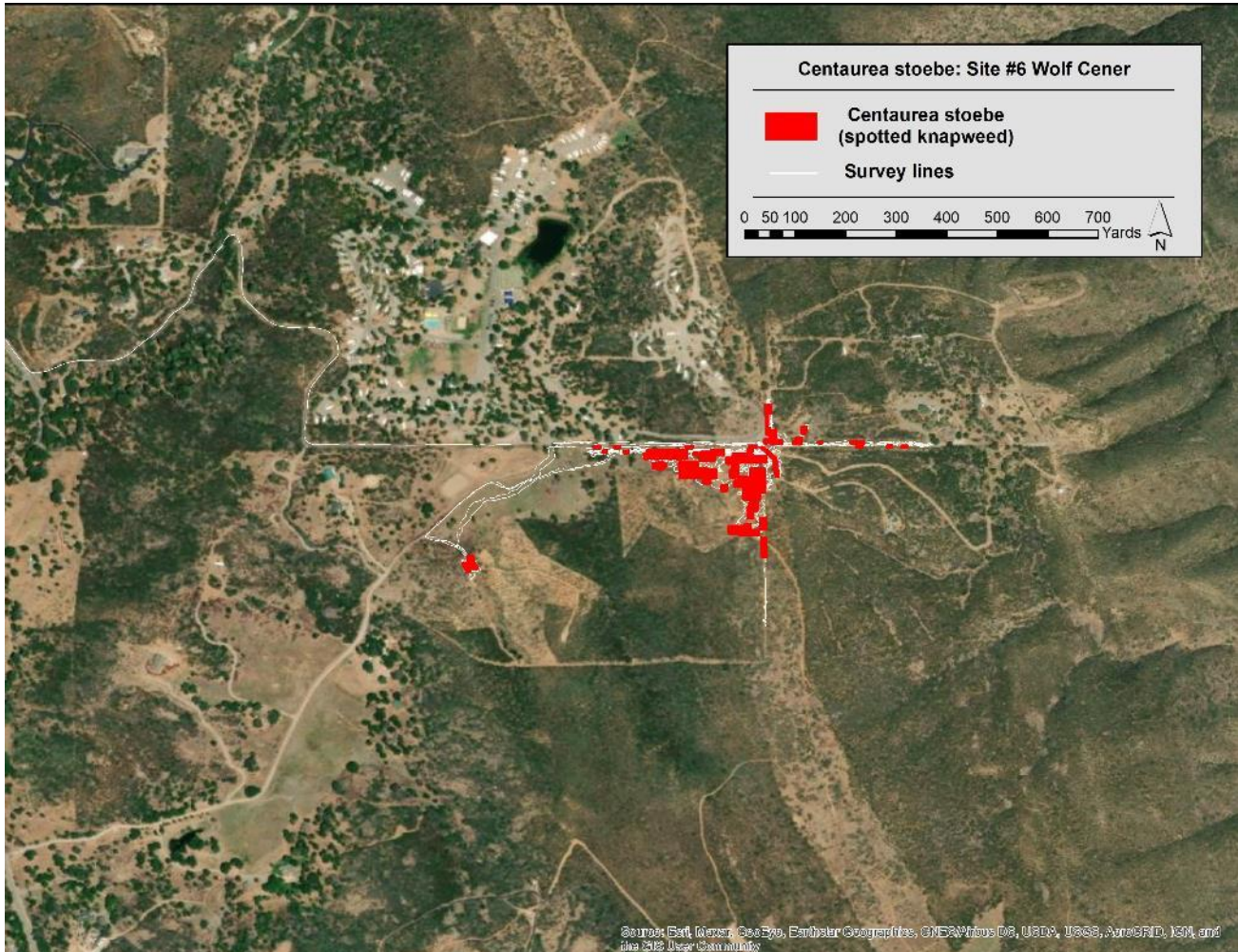
***Centaurea stoebe*, Spotted knapweed: Site #5 Calico Ranch, Julian**

No plants were found on one day of surveying on August 19th 2022. In June 2022 39 plants were hand pulled. 100 plants were controlled in 2021.



Centaurea stoebe, Spotted knapweed: Site #6 Wolf Center, Julian

1,184 plants were treated by a crew of two over fourteen days, between August 2nd and August 23rd 2022. Multiple treatment methods were used including hand pulling some mature plants and post emergent treatment. Additionally granular pre-emergent was used to help suppress the seedbank. 1,870 plants were controlled in 2021.



Genista monosperma, Bridal broom:

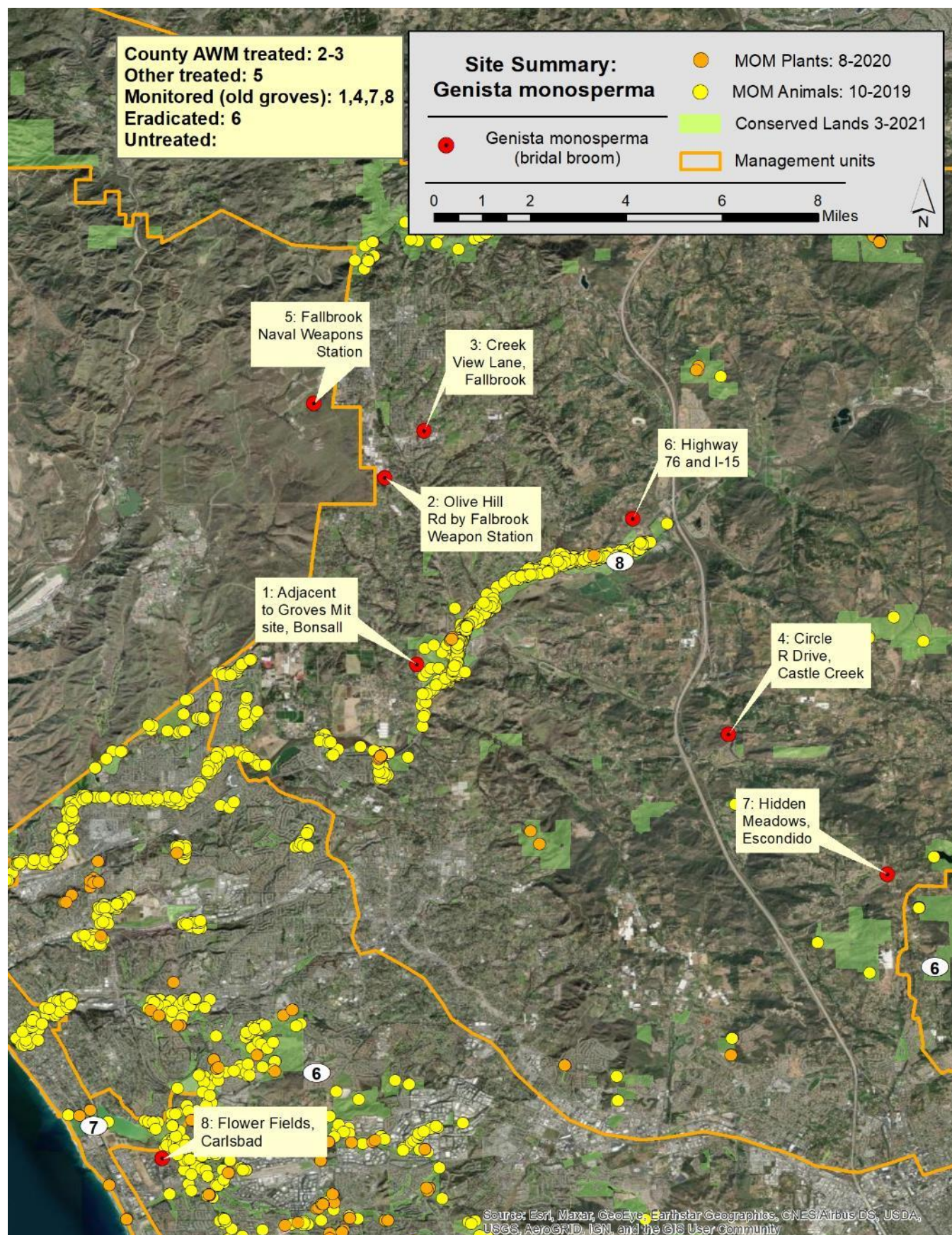


Table 5. Summary of treatments performed by AWM on *Genista monosperma*, Bridal broom:

| Site Name | Common Name | # of Work Cycles | Acres Treated | Acres Surveyed | Plants treated |
|------------------------------|--------------|------------------|---------------|----------------|----------------|
| <i>Site #2 Olive Hill Rd</i> | Bridal broom | 1 | 0.2 | 2.0 | 80 |

***Genista monosperma*, Bridal broom: Site #2 Olive Hill Rd**

80 plants were treated with post emergent herbicide. A crew of two individuals worked one day September 2nd 2022. No plants were detected last year, which is odd.



Table 6. Summary of treatments performed by AWM on *Genista monosperma*, Bridal broom:

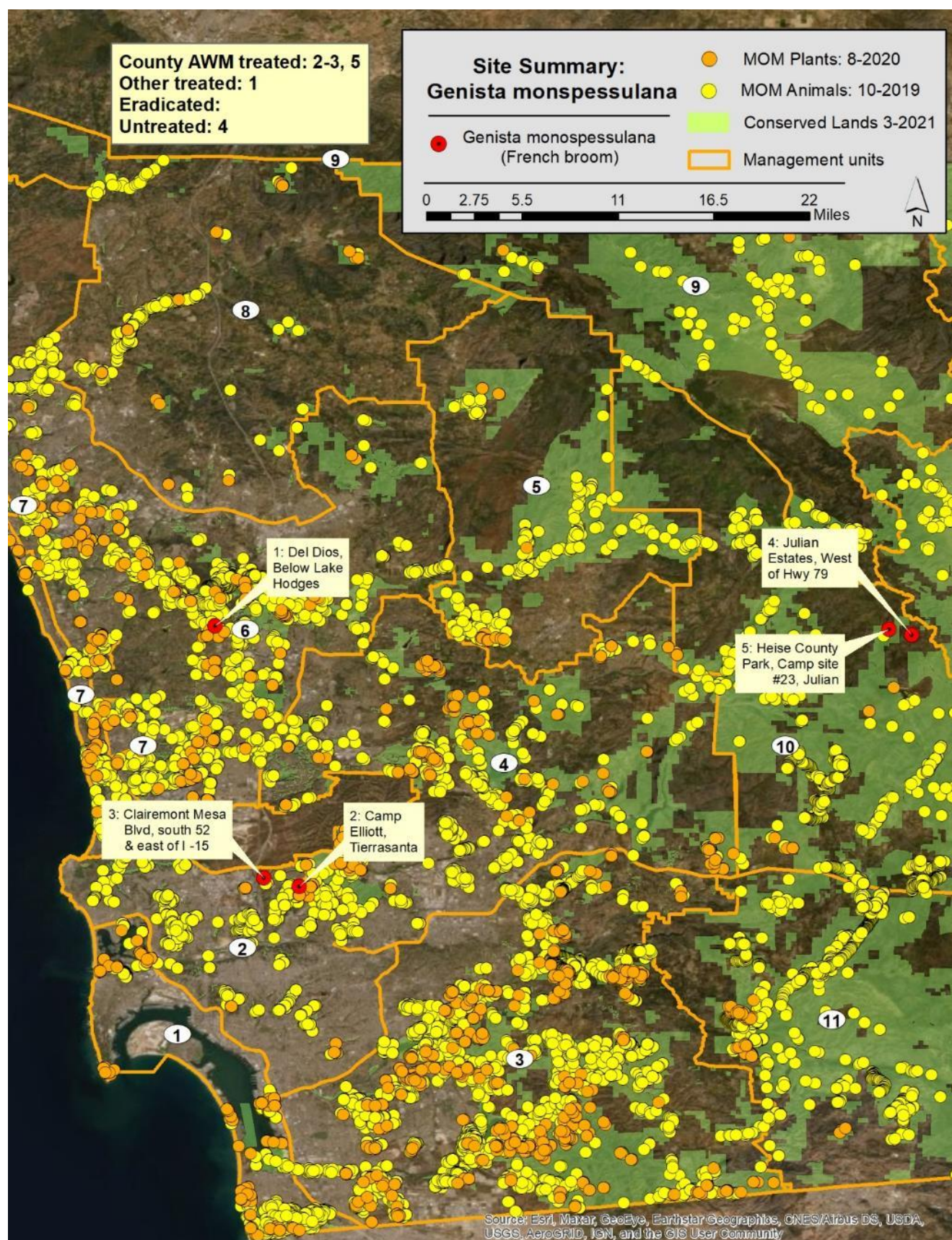
| Site Name | Common Name | # of Work Cycles | Acres Treated | Acres Surveyed | Plants treated |
|--------------------------------|--------------|------------------|---------------|----------------|----------------|
| <i>Site #3 Creek View Lane</i> | Bridal broom | 1 | - | 1.5 | 0 |

***Genista monosperma*, Bridal broom: Site #3 Creek View Lane**

The site was surveyed, no plants were detected. A crew of two individuals worked one day September 6th 2022. No plants were detected last year.



Genista monspessulana, French broom:



Genista monspessulana, French broom: Site #3 Clairemont Mesa Blvd.

***Genista monspessulana*, French broom: Site #3 Clairemont Mesa Blvd**

Table 7. Summary of treatments performed by AWM on *Genista monspessulana*, French broom.

| Site Name | Common Name | # of Work Cycles | Acres Treated | Acres Surveyed | Plants treated |
|-------------------------|--------------|------------------|---------------|----------------|----------------|
| Site #3 Clairemont Mesa | French broom | 1 | 0.1 | 0.5 | 72 |

72 scattered seedlings and small plants were foliar treated with triclopyr. A crew of two individuals worked one day September 1st 2022. 240 plants were controlled in 2021.

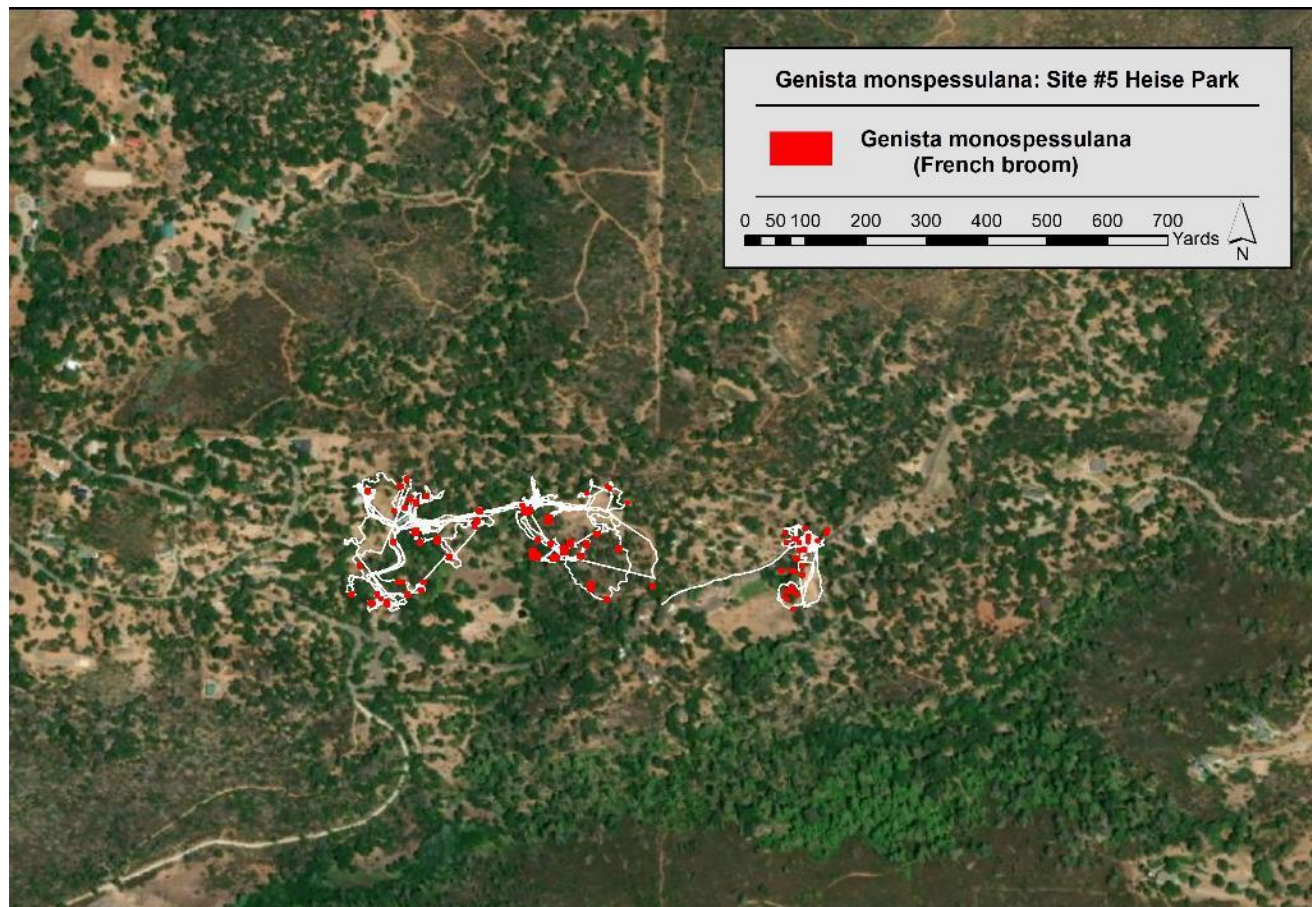


***Genista monspessulana*, French broom: Site #5 Heise County Park, Julian.**

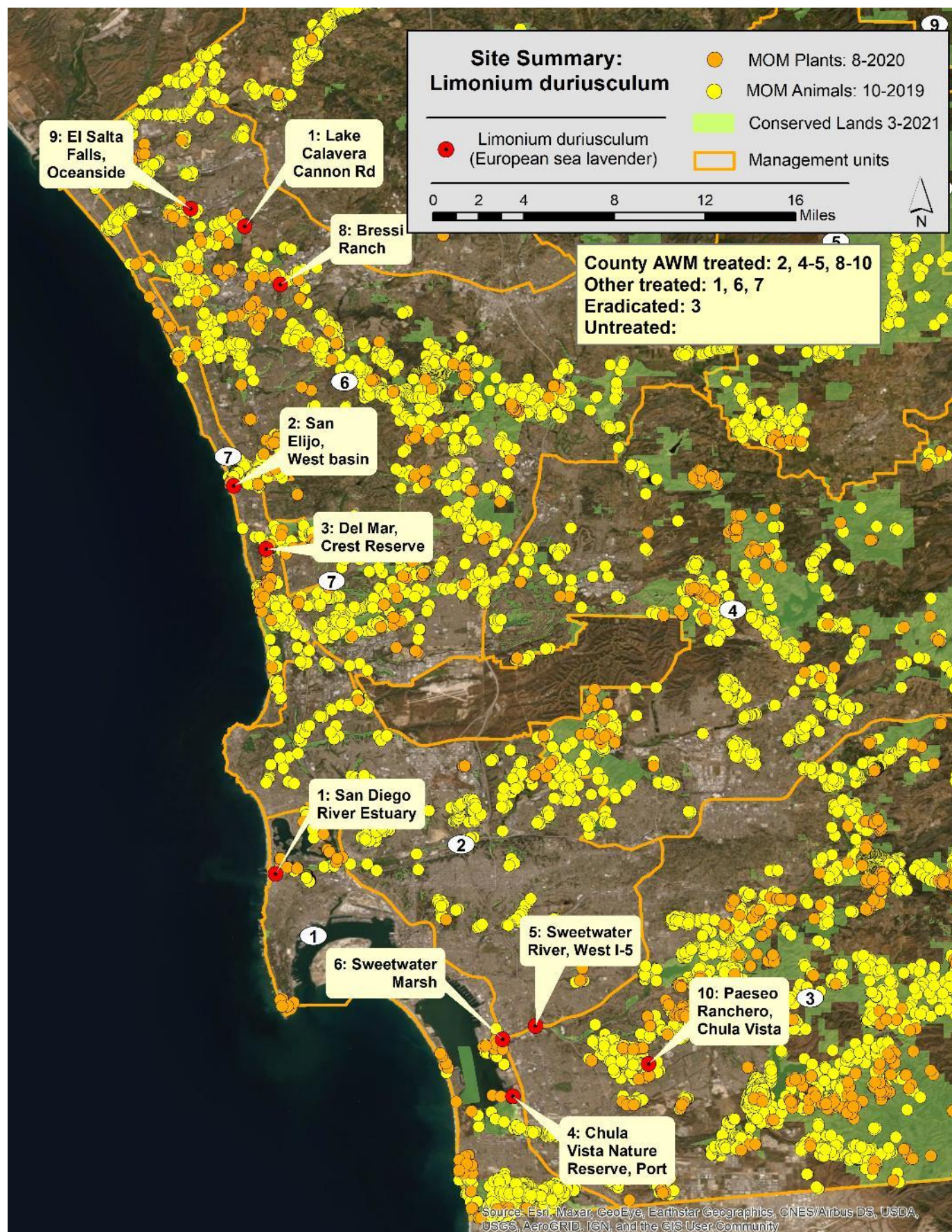
Table 8. Summary of treatments performed by AWM on *Genista monspessulana*, French broom.

| Site Name | Common Name | # of Work Cycles | Acres Treated | Acres Surveyed | Plants treated |
|---------------------------|--------------|------------------|---------------|----------------|----------------|
| Site #5 Heise County Park | French broom | 1 | 1.1 | 5.5 | 1,518 |

1,518 scattered seedlings and small plants were foliar treated with triclopyr. A crew of two individuals worked five days August 24th to 29th 2022. 2,335 plants were controlled in 2021.



Limonium duriusculum, European Sea lavender:

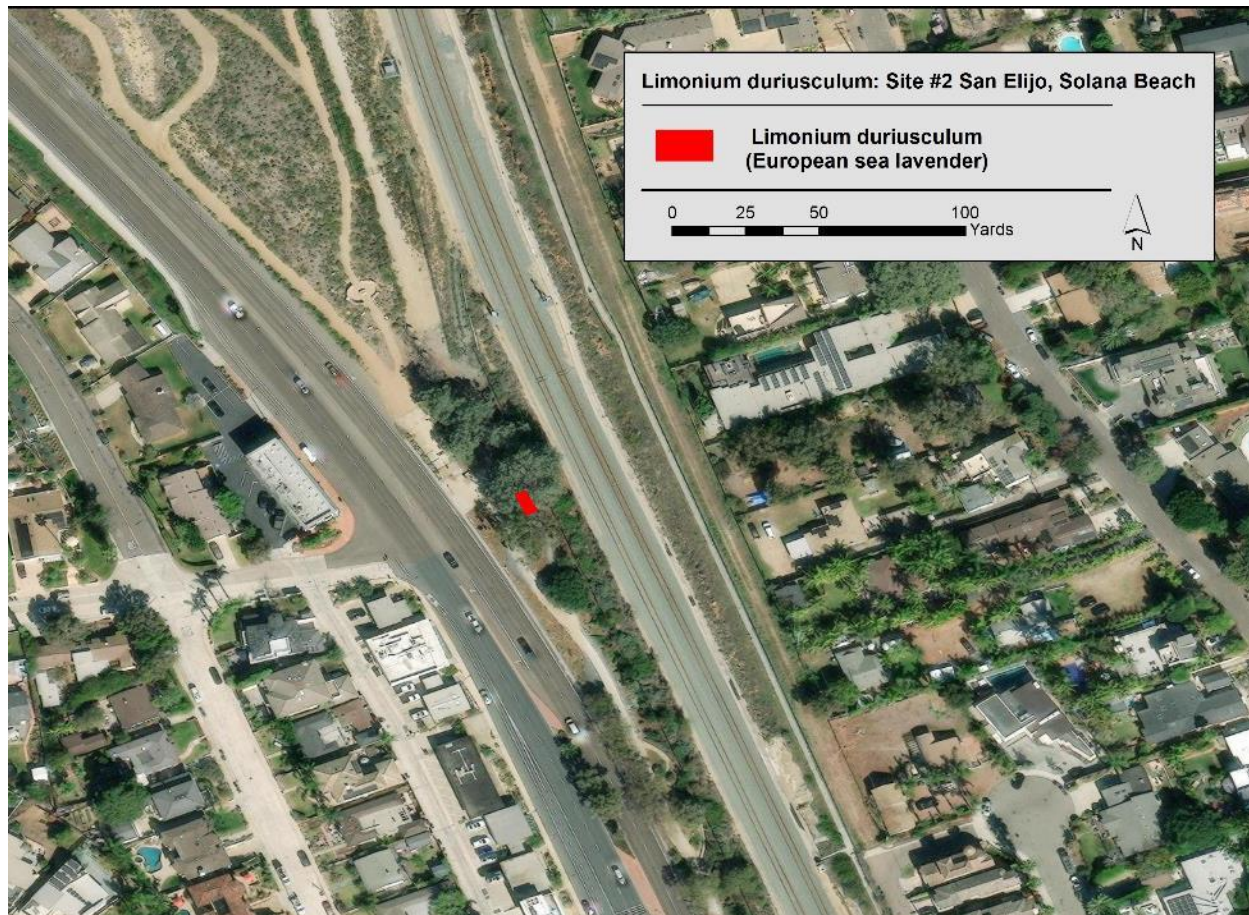


***Limonium duriusculum*, European Sea lavender: Site #2 Solana Beach**

Table 9. Summary of treatments performed by AWM on *Limonium duriusculum* (European Sea lavender).

| Site Name | Common Name | # of Work Cycles | Acres Treated | Acres Surveyed | Plants treated |
|---------------------------------------|-----------------------|------------------|---------------|----------------|----------------|
| Site #5 Sweetwater River, Chula Vista | European Sea lavender | 1 | 0.1 | 0.4 | 18 |

18 plants were pulled by a crew of two that worked one day September 22nd 2022.

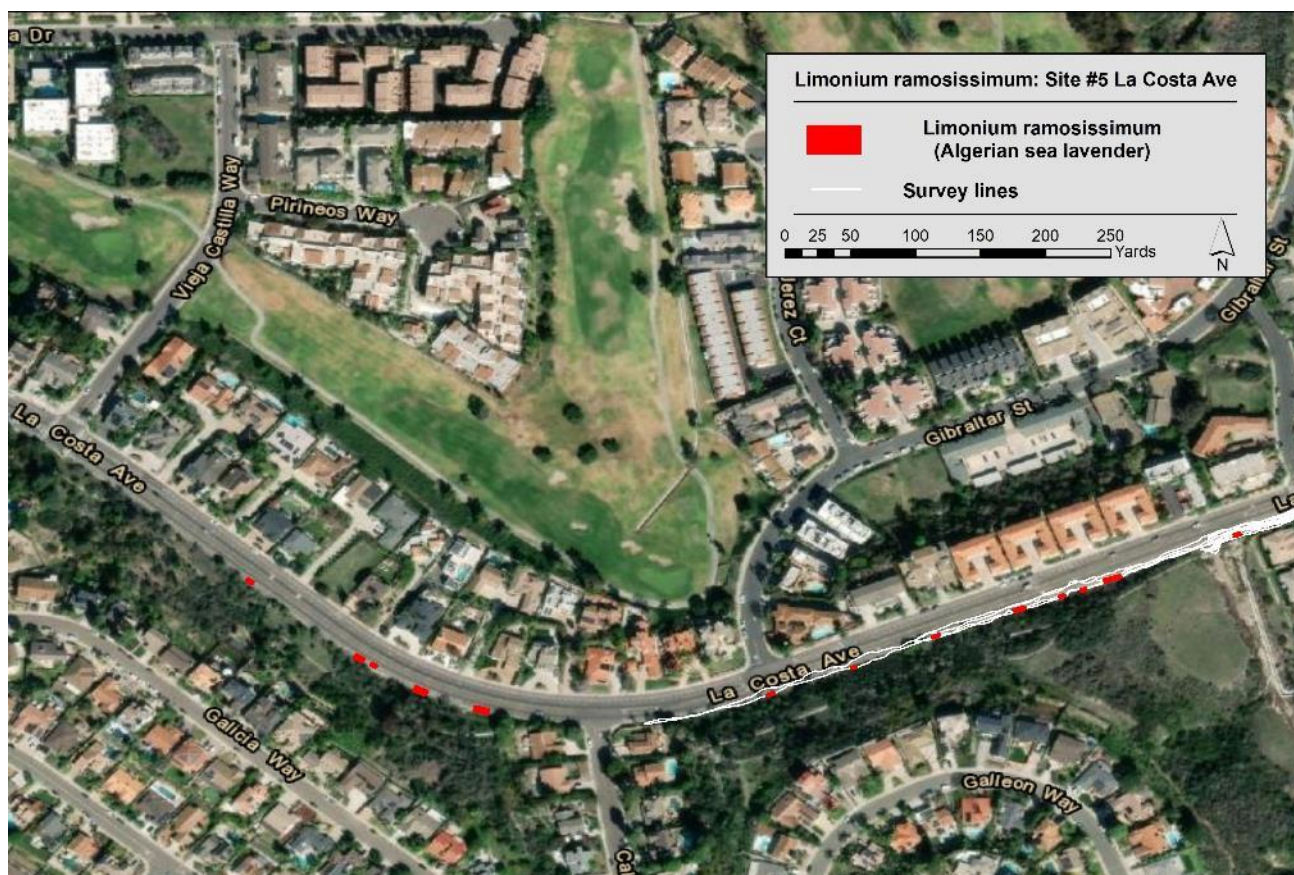


***Limonium duriusculum*, European Sea lavender: Site #8 Bressi Ranch**

Table 10. Summary of treatments performed by AWM on *Limonium duriusculum* (European Sea lavender).

| Site Name | Common Name | # of Work Cycles | Acres Treated | Acres Surveyed | Plants treated |
|----------------------|-----------------------|------------------|---------------|----------------|----------------|
| Site #8 Bressi Ranch | European sea lavender | 1 | 0.3 | 1.5 | 350 |

350 plants (5% mature/95% seedlings) were foliar treated by a crew of two individuals on September 12th 2022. Cover is greatly reduced in past treatment areas (>95% cover reduction), but there are still many seedlings sprouting. 900 plants were treated in 2021.



Limonium duriusculum, European sea lavender: Site #10 Paseo Ranchero, Chula Vista

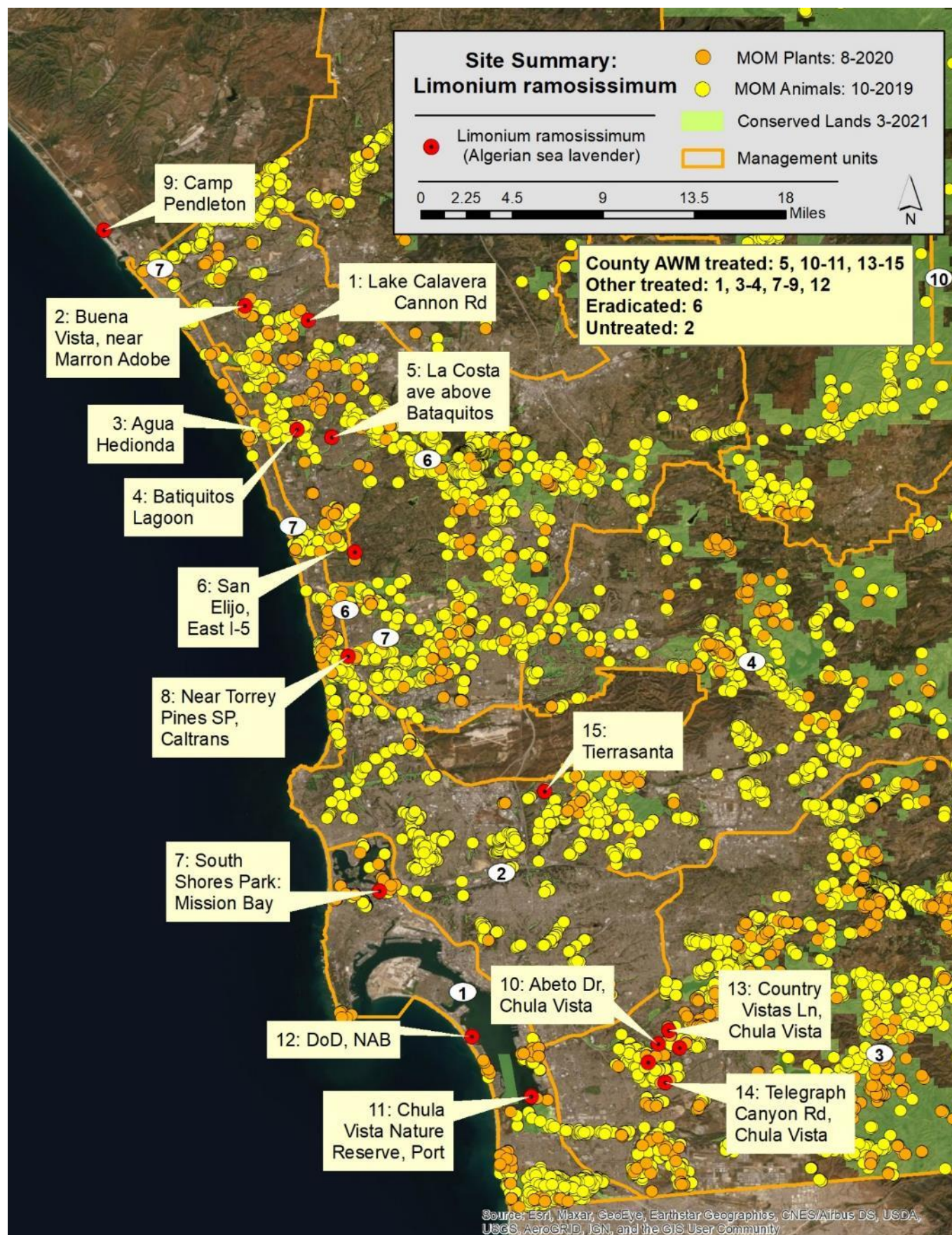
Table 11. Summary of treatments performed by AWM on *Limonium duriusculum* (European Sea lavender).

| Site Name | Common Name | # of Work Cycles | Acres Treated | Acres Surveyed | Plants treated |
|--------------------------------------|-----------------------|------------------|---------------|----------------|----------------|
| Site #10 Paseo Ranchero, Chula Vista | European Sea lavender | 1 | 0.2 | 0.8 | 1,100 |

1,100 plants were foliar treated by a crew of two individuals on one day, September 21st 2022. 5,000 plants were treated in 2021.



Limonium ramosissimum, Algerian Sea lavender:



Limonium ramosissimum, Algerian Sea lavender: Site #5 La Costa Ave Carlsbad

Table 12. Summary of treatments performed by AWM on *Limonium ramosissimum* (Algerian Sea lavender).

| Site Name | Common Name | # of Work Cycles | Acres Treated | Acres Surveyed | Plants treated |
|----------------------------|-----------------------|------------------|---------------|----------------|----------------|
| Site #5 La Costa, Carlsbad | Algerian Sea lavender | 1 | 0.3 | 1.2 | 428 |

350 scattered seedlings and small plants were foliar treated with glyphosate and imazapyr. A crew of two individuals worked two days September 22nd and 23rd 2022. 2,000 plants were treated in 2021.

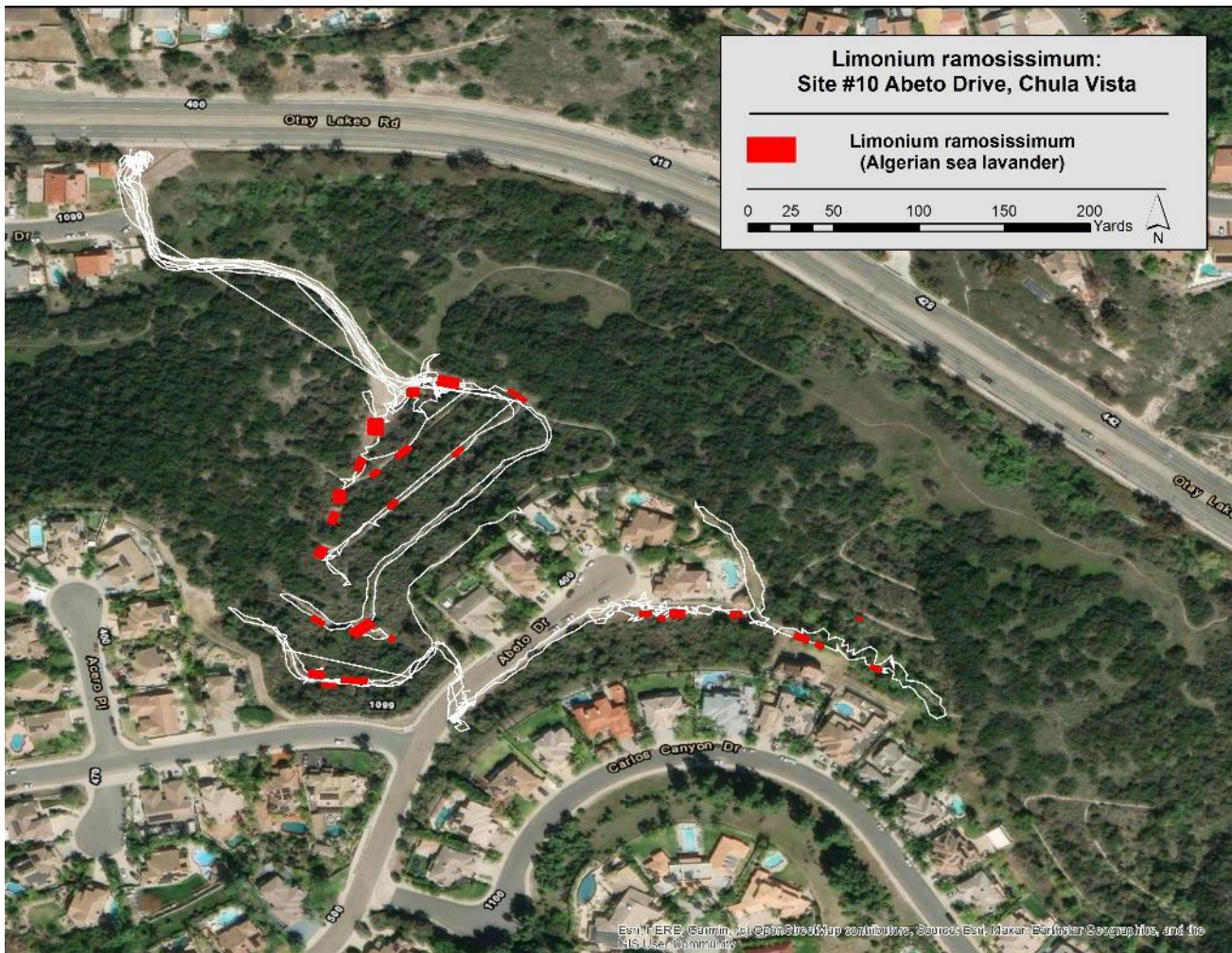


Limonium ramosissimum, Algerian sea lavender: Site #10 Abeto Dr, Chula Vista

Table 13. Summary of treatments performed by AWM on *Limonium ramosissimum* (Algerian Sea lavender).

| Site Name | Common Name | # of Work Cycles | Acres Treated | Acres Surveyed | Plants treated |
|--------------------------------|-----------------------|------------------|---------------|----------------|----------------|
| Site #10 Abeto Dr, Chula Vista | Algerian Sea lavender | 1 | 0.7 | 2.5 | 1,250 |

1,250 scattered seedlings and small plants were foliar treated with glyphosate, and imazapyr. A crew of two individuals worked two days September 13th and 14th 2022. 800 plants were controlled in 2021.

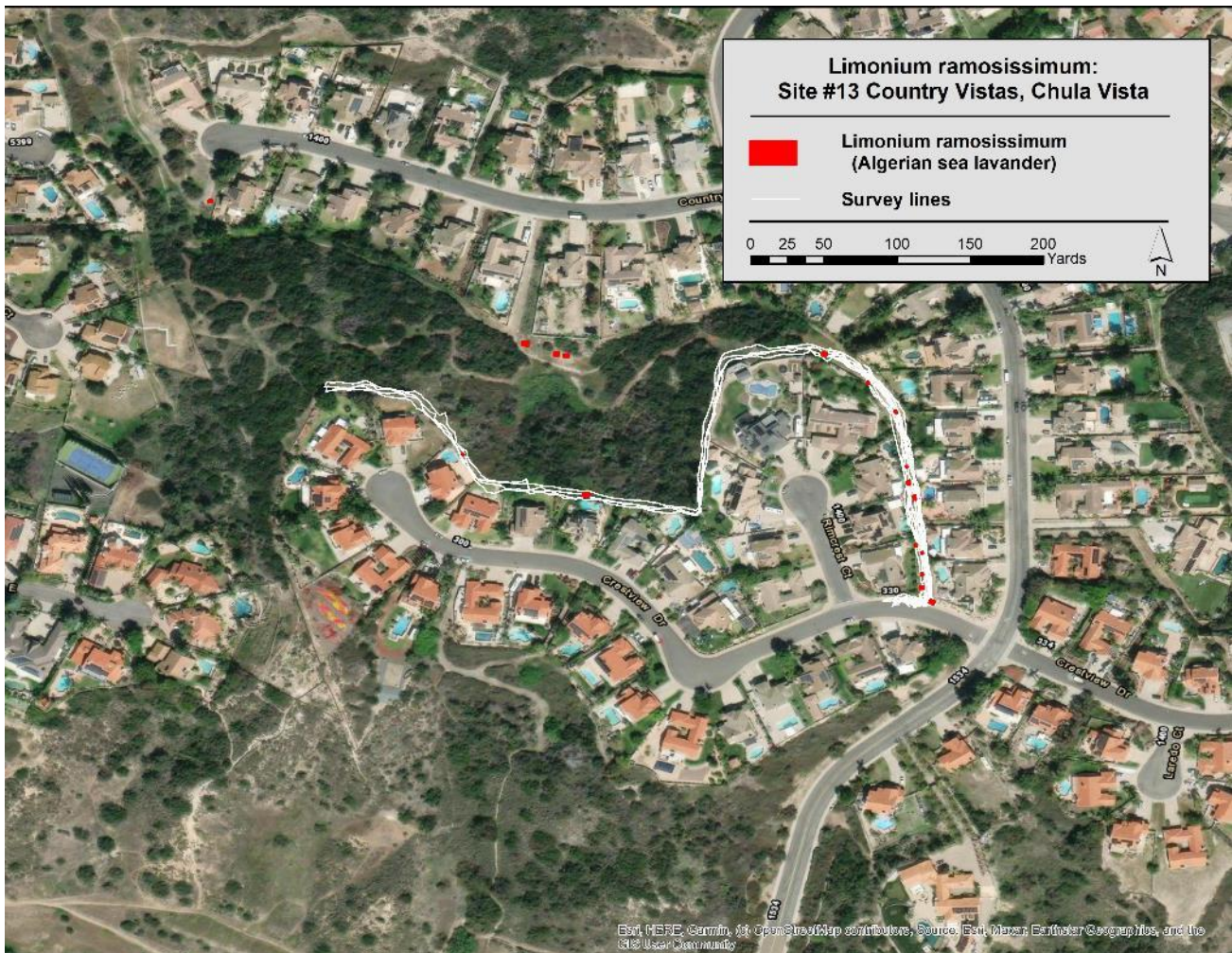


Limonium ramosissimum, Algerian Sea lavender: Site #13 Country Vistas Estates, Chula Vista

Table 14. Summary of treatments performed by AWM on *Limonium ramosissimum* (Algerian Sea lavender).

| Site Name | Common Name | # of Work Cycles | Acres Treated | Acres Surveyed | Plants treated |
|--|-----------------------|------------------|---------------|----------------|----------------|
| Site #13 Country Vistas Estates, Chula Vista | Algerian Sea lavender | 1 | 0.3 | 2.0 | 550 |

550 scattered seedlings and small plants were foliar treated with glyphosate, and imazapyr. A crew of two individuals worked two days September 15th and 19th 2022. 450 plants were controlled in 2021.



***Limonium ramosissimum*, Algerian Sea lavender: Site #14 Telegraph Canyon Rd, Chula Vista**

Table 15. Summary of treatments performed by AWM on *Limonium ramosissimum* (Algerian Sea lavender).

| Site Name | Common Name | # of Work Cycles | Acres Treated | Acres Surveyed | Plants treated |
|---|-----------------------|------------------|---------------|----------------|----------------|
| Site #14 Telegraph Canyon Rd, Chula Vista | Algerian Sea lavender | 1 | 0.2 | 1.0 | 350 |

350 scattered seedlings and small plants were foliar treated with glyphosate and imazapyr. A crew of two individuals worked one day September 20th 2022. 220 plants were controlled in 2021.



Limonium ramosissimum, Algerian sea lavender: Site #15 Tierra Santa, San Diego

Table 16. Summary of treatments performed by AWM on *Limonium ramosissimum* (Algerian Sea lavender).

| Site Name | Common Name | # of Work Cycles | Acres Treated | Acres Surveyed | Plants treated |
|---------------------------------|-----------------------|------------------|---------------|----------------|----------------|
| Site #15 Tierrasanta, San Diego | Algerian Sea lavender | 1 | 0.4 | 2.4 | 500 |

500 scattered seedlings and small plants were foliar treated with glyphosate and imazapyr. A crew of two individuals worked two days September 7th and 8th 2022. 340 plants were controlled in 2021.



TASK 4 – AWM: Invasive Plant Level 3 Management.

Level of Effort: (<20%) of overall contract

- No charges during this quarter.

TASK 5 – Coordinator: Tracking and Updating Invasive Species for Priority Removal.

Level of Effort: (5%) of overall contract

- Co-ordination to continue control of Ward's weed in Carlsbad.
- Surveying of reports from iNaturalist.
- Co-ordination with San Diego Weed Management Area at quarterly meeting.
- Co-ordination to survey and control European and Algerian Sea lavender species in South San Diego Bay. Managers from FWS, DoD, SDMMP and CBI discussed expanded and coordinated surveying and treatment.

Work Anticipated for 1st Quarter Period, October 1st – December 31st 2022:

This work will be under a new Agreement.

Task 1 – Invasive Plant Species Coordinator:

- Coordinate ROE work with AWM, update database.
- Monitor and coordinate with AWM during implementation.
- Survey and map sites as needed.
- Prepare quarterly report.

Task 2 – AWM: Invasive Plant Level 1 Management.

- Survey, map, and treat any reported sightings of target Level 1 plants.
- Supervision of staff, provide training, guidance, and preparation for field work.
- Collect GIS treatment polygons and survey routes (lines) of targeted weeds.

Task 3 – AWM: Invasive Plant Level 2 Management.

- Survey, map, and treat any reported sightings of target Level 2 plants: Spotted knapweed, Yellow Starthistle, and Limonium.
- Re-treatment of sites: Ward's weed, Limonium, Eupatory, and Volutaria.
- Supervision of staff, provide training, guidance, and preparation for field work.
- Coordinate and finalize tracking methods for work completed.

- Initiate and continue work outlined in work plan.
- Obtain signed ROEs.
- Collect GIS treatment polygons and survey routes (lines) of targeted weeds.

Task 4 – AWM: Invasive Plant Level 3 Management.

- No work planned.

Task 5 – Coordinator: Tracking and Updating Invasive Species for Priority Removal.

- Continue coordination with: Department of Defense, California State Parks, City Department of Parks and Recreation, San Diego Weed Management Area and County of Orange CNPS EDRR invasives group.
- Continue to aggregate data and track new prospective EDRR target species.
- Present at SDMMP land manager meeting, working group and other meetings as requested.
- Provide population status of EDRR regional targets to CDFA statewide assessment.