

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

**Strategic Removal of Invasive Weed Species
2nd Quarter Report - FY 2018-19: Report #16 for Project**

October 1st, 2018 – December 31st, 2018

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

To: Kim Smith and Sarah Pierce
San Diego Association of Governments (SANDAG)
401 B Street, Suite 800
San Diego CA 92101

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 October 1st to December 31st 2018.

TASK 1 – Invasive Plant Species Coordinator:

Level of Effort: (25%) of overall contract

Right of Entry (ROE) Work and Coordination With Property Owners:

Coordination with property owners, land managers and AWM crew occurred throughout the quarter.

The coordinator worked on six species at seven field sites:

Work tasks included monitoring field crews, assessing treatment success, and mapping and surveying target plants. Species and sites are presented under task 2 and 3.

Report preparation:

Quarterly report for Q2 FY 2018-19 was prepared.

Mapping and occurrence data:

Spatial data was updated.

Work plan:

Work plan was prepared for the third contract cycle covering 2019 and 2020 fiscal years.

TASK 2 – AWM: Invasive Plant Level 1 Management

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

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

Crews surveyed and treated, one invasive weed species (Carnation spurge) at two sites this quarter. Maps for sites now 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 pulling 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 Surveyed	Acres Treated	Plants Controlled
<i>Euphorbia terracina</i>	Carnation spurge	2	2.9	1.8	3,980

***Euphorbia terracina* (carnation spurge):**

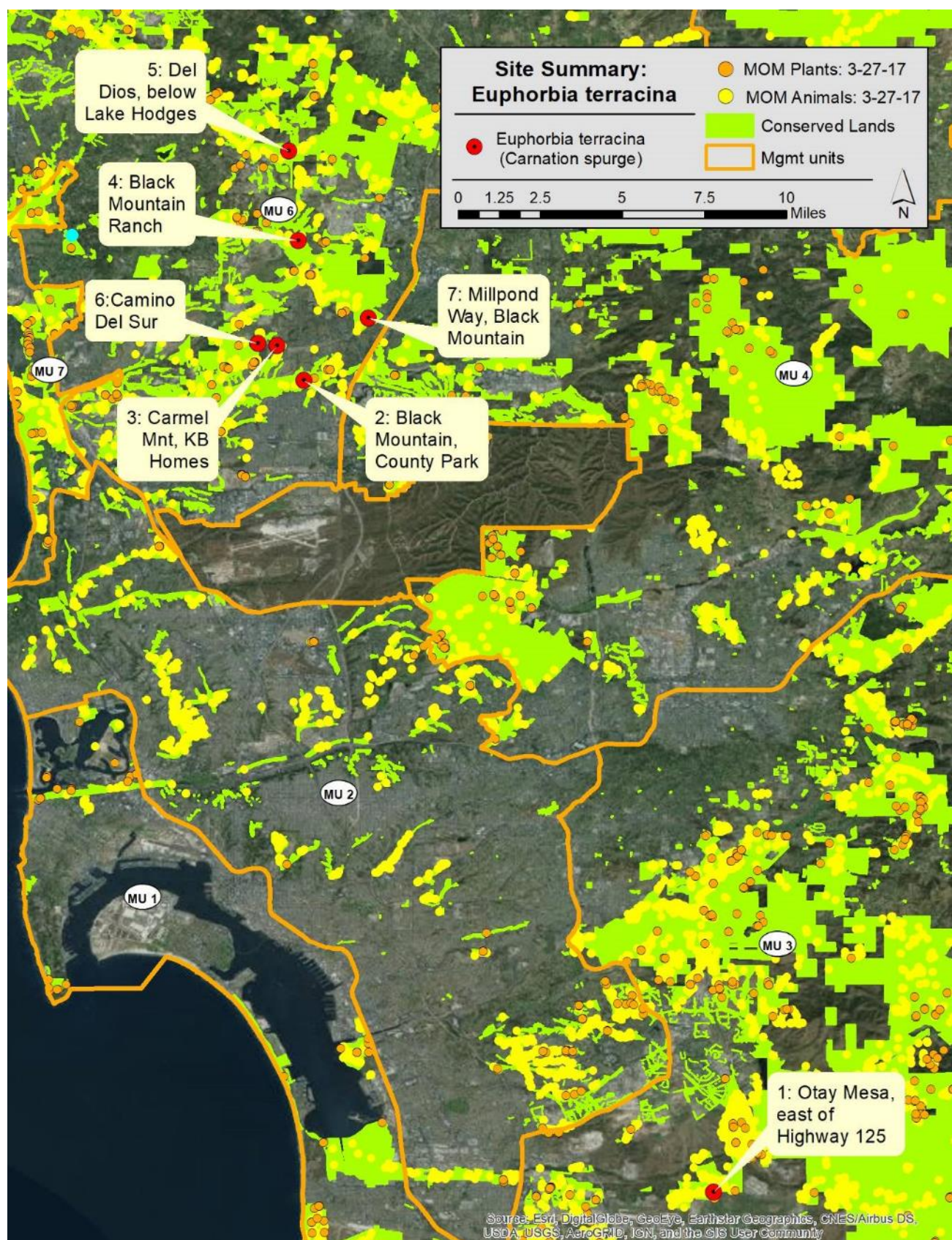
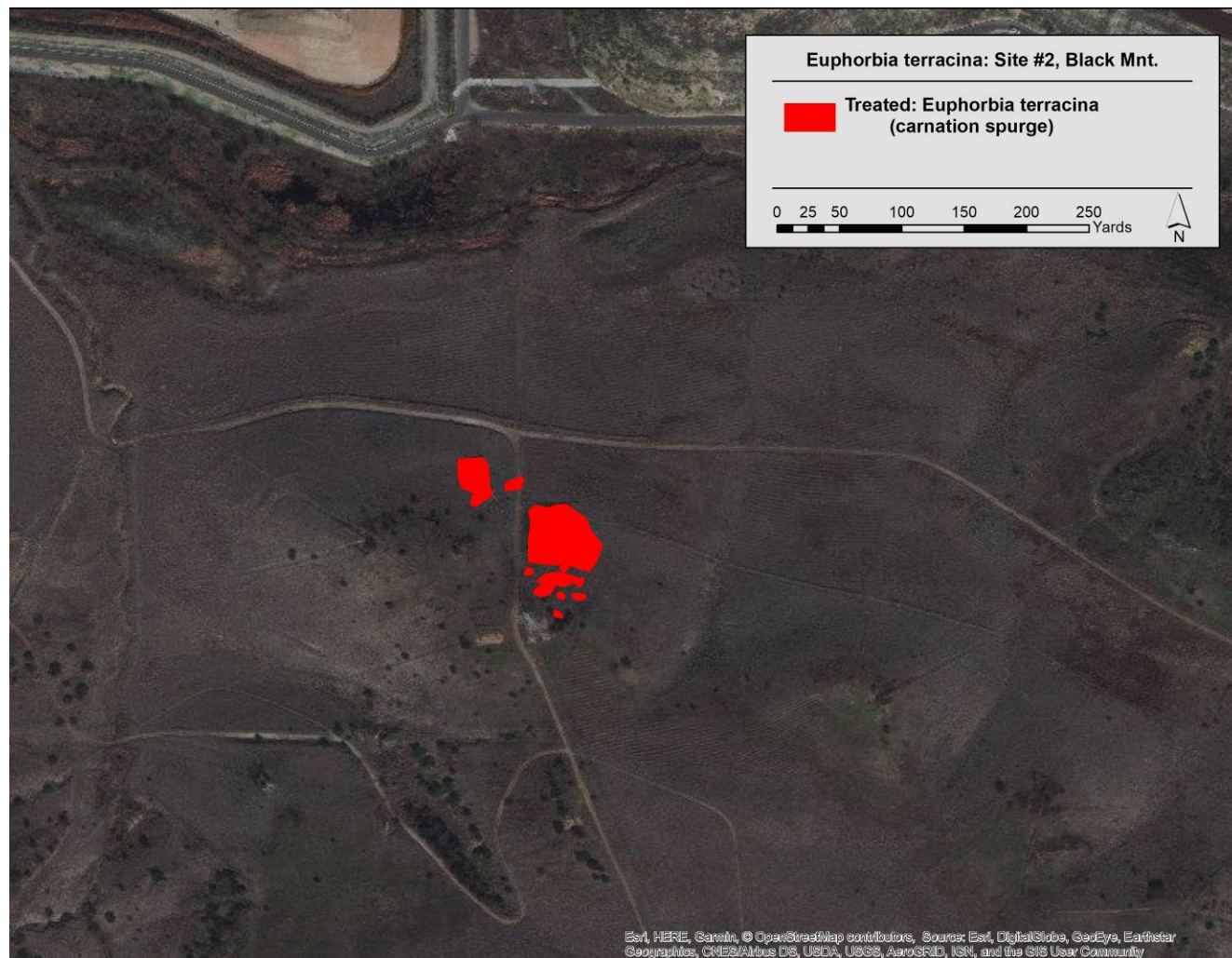


Table 2. Summary of treatments performed by AWM on *Euphorbia terracina* (carnation spurge).

Work Site	Common Name	# of Work Cycles	Acres Surveyed	Acres Treated	Plants Controlled
Site #2, Black Mnt	Carnation spurge	1	2.9	1.8	2,180

***Euphorbia terracina* (Carnation spurge): Site #2, Black Mnt.**

Mature plants and many seedlings were foliar treated with glyphosate. A crew of two individuals worked two days on 10/23 & 10/25/2018. There has been a reduction in cover (>80%), but there is an extensive seedbank that continues to generate new seedlings each spring.



Site #2: Treatments for Carnation spurge plants (treatment red).

Table 3. Summary of treatments performed by AWM on *Euphorbia terracina* (carnation spurge).

Work Site	Common Name	# of Work Cycles	Acres Surveyed	Acres Treated	Plants Controlled
Site #6, Camino Del Sur	Carnation spurge	1	0.4	0.3	1,800

***Euphorbia terracina* (Carnation spurge): Site #6, Camino Del Sur**

Mature plants and many seedlings were manually removed (1,800 plants). A crew of two individuals worked three days on 11/5 and 11/8-9/2018. There has been a reduction in cover (>80%), but there is an extensive seedbank that continues to generate new seedlings each spring.



Site #6: Treatments for Carnation spurge plants (treatment red).

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 five invasive weed species at five sites this quarter: Eupatory, Spotted knapweed, Ward's weed, Rattlebox, and European/Algerian sea lavender. 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 4. Summary of treatments performed by AWM on Level 2 species this quarter.

Scientific Name	Common Name	# of Sites Worked	Acres Surveyed	Acres Treated	Plants Controlled
<i>Ageritina adenophora</i>	Eupatory	1	1.7	0.3	455
<i>Carrichtera annua</i>	Ward's weed	1	2.5	2.5	Pre-emergent
<i>Centaurea stoebe ssp. micranthos</i>	Spotted knapweed	1	7.0	1.8	2,750
<i>Limonium duriusculum and ramosissimum</i>	European & Algerian sea lavender	1	4.2	2.9	3,600
<i>Sesbania punicea</i>	Rattlebox	1	2.6	0.2	48

Ageratina adenophora, Eupatory:

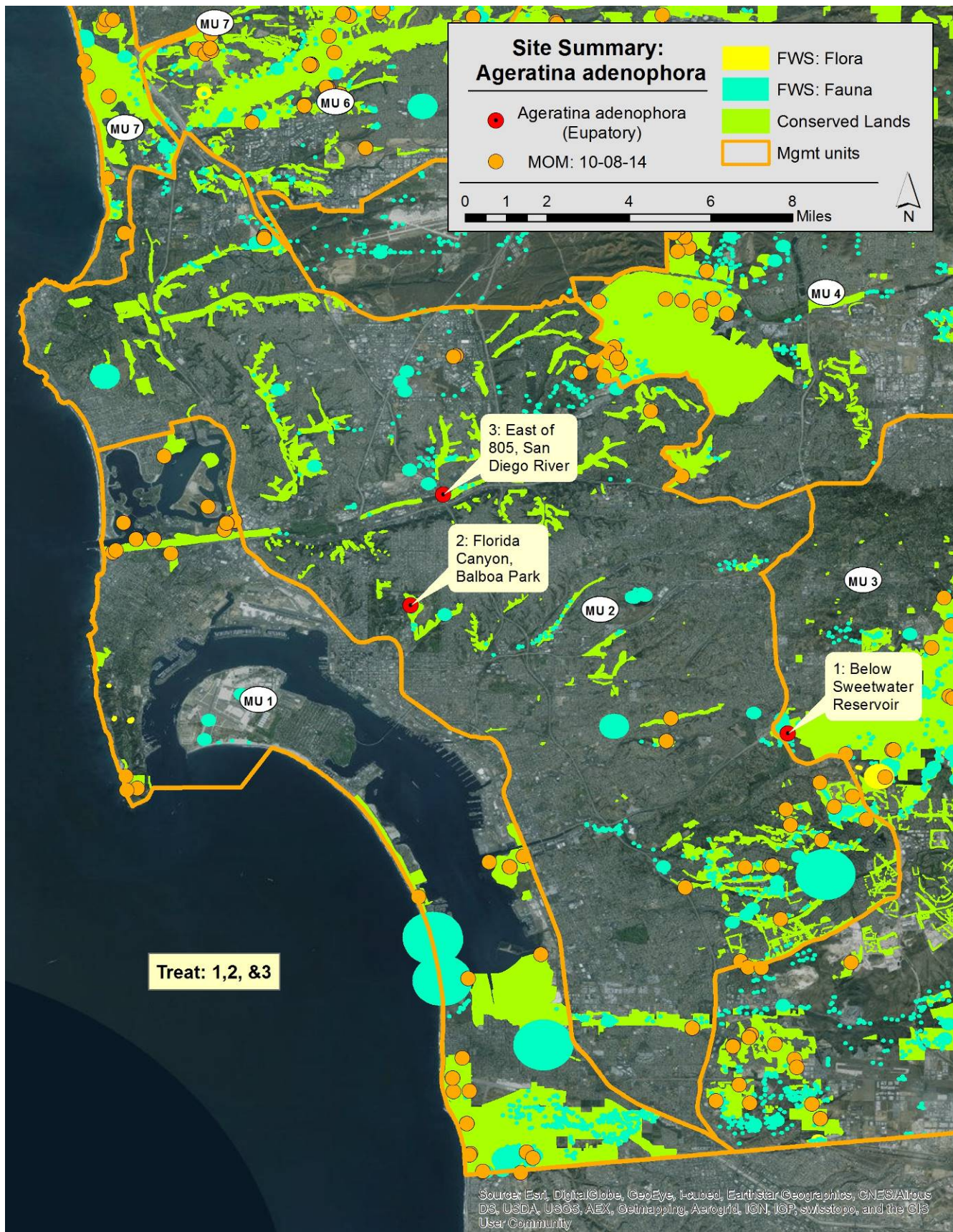
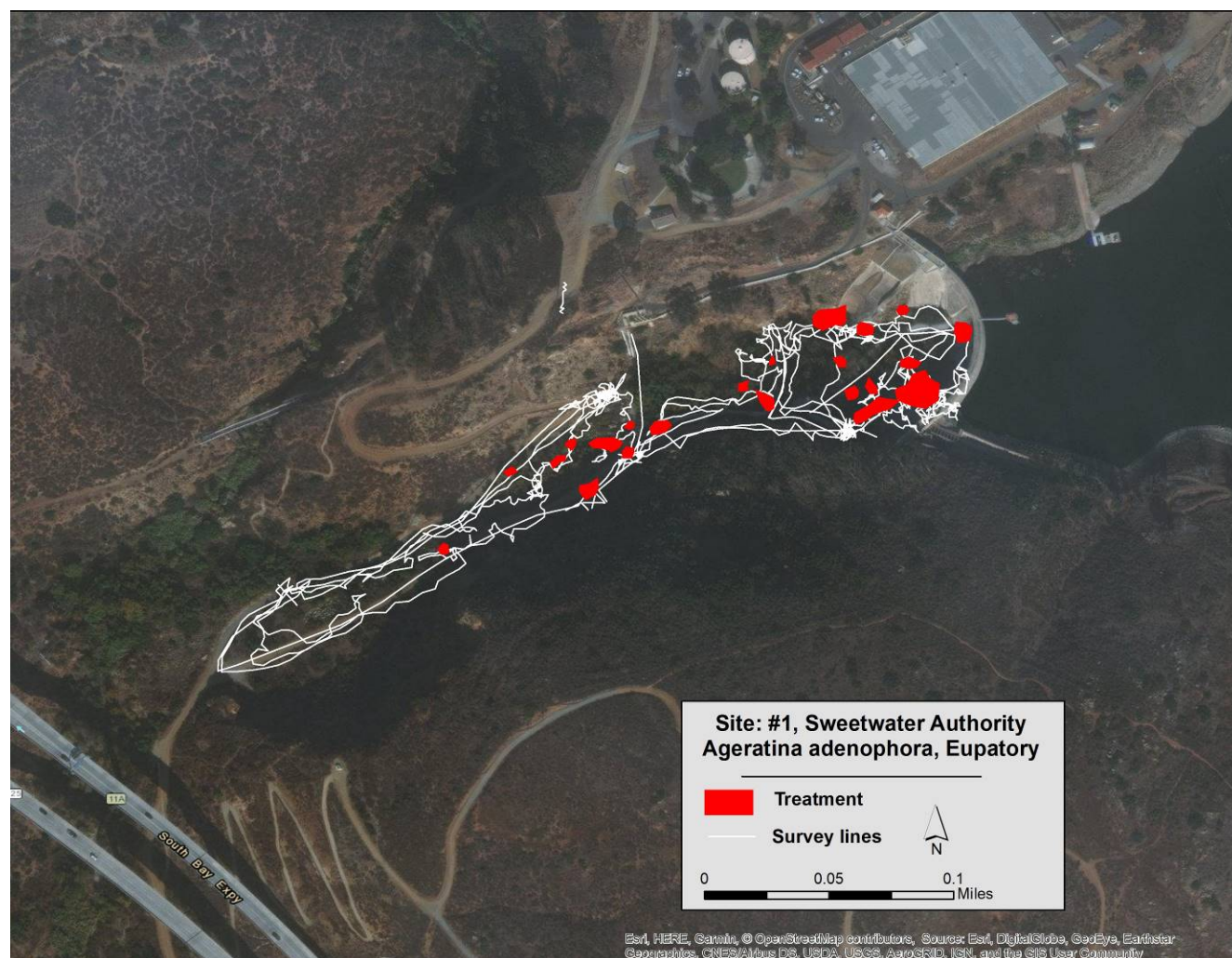


Table 5. Summary of treatments performed by AWM on *Ageratina adenophora*, Eupatory:

Site Name	Common Name	# of Work Cycles	Acres Surveyed	Acres Treated	Plants treated
Site #1: Sweetwater Authority	Eupatory	1	1.7	0.3	455

455 Re-sprouts were foliar treated with glyphosate/imazapyr. A crew of two individuals worked two days on 10-23 and 10-25, 2018.



Site #1: Treatments for Eupatory plants (survey white lines, treatment red).

***Carrichtera annua*, Ward's weed:**



Carrichtera annua, Ward's weed, Site #1 Rancho La Costa Greens

Table 6. Summary of treatments performed by AWM on *Carrichtera annua*, Ward's weed.

Site Name	Common Name	# of Work Cycles	Acres Surveyed	Acres Treated	Plants treated
Site #1 Rancho La Costa	Wards weed	1	2.5	2.5	Pre-emergent

A pre-emergent chemical (Gallery SC) was applied to the site for the second year in a row. The treatment area was the upper portion of the site, which is a fuel management zone adjacent to housing. Center for Natural Land Management(CNLM) also carried out pre and post-emergent treatments on the lower slope. Together most of the site was treated. A crew of two spent one day, 11-28-2018 making the application just before rains later in the week.



Site #2: Treatments for Ward's weed plants (treatment red).

Centaurea stoebe, Spotted Knapweed:

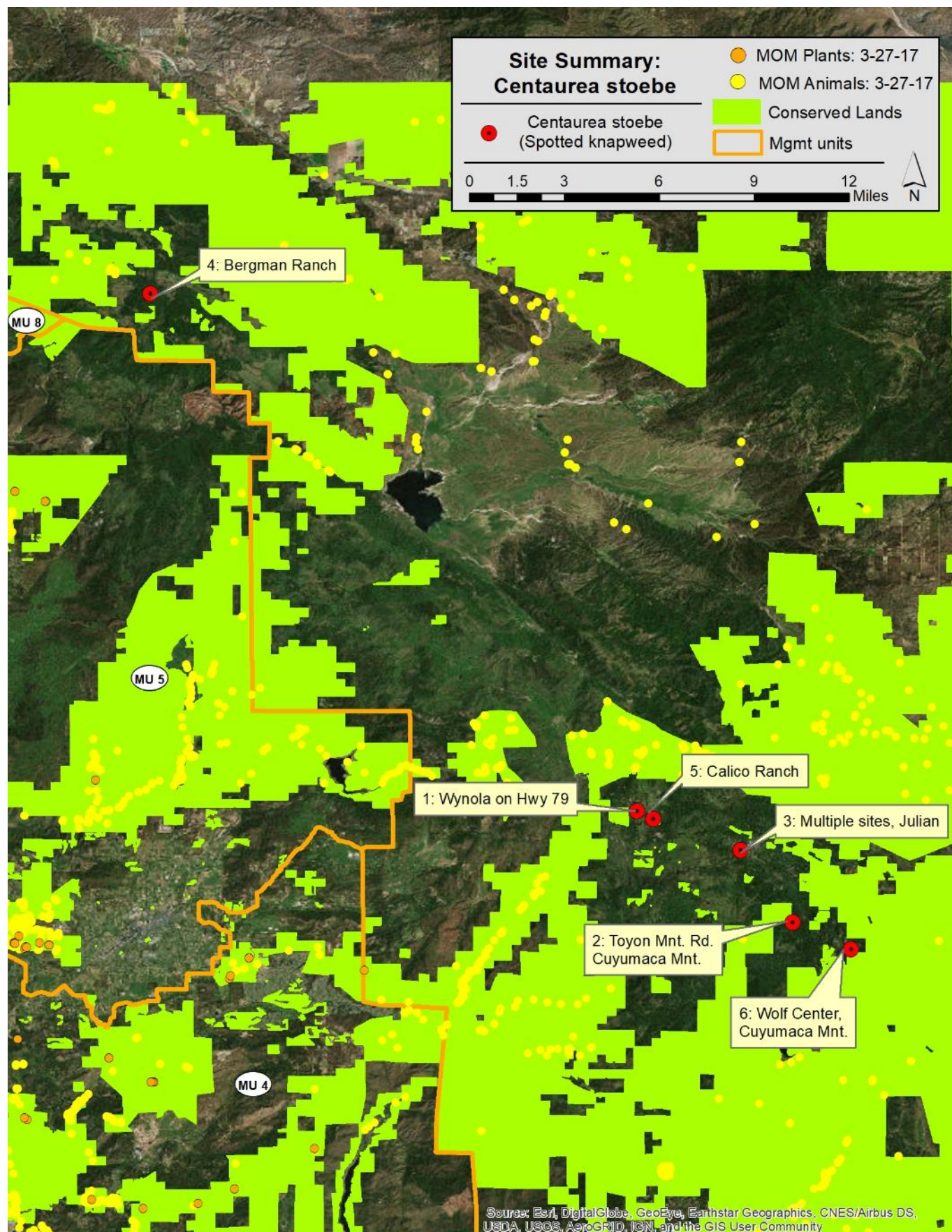
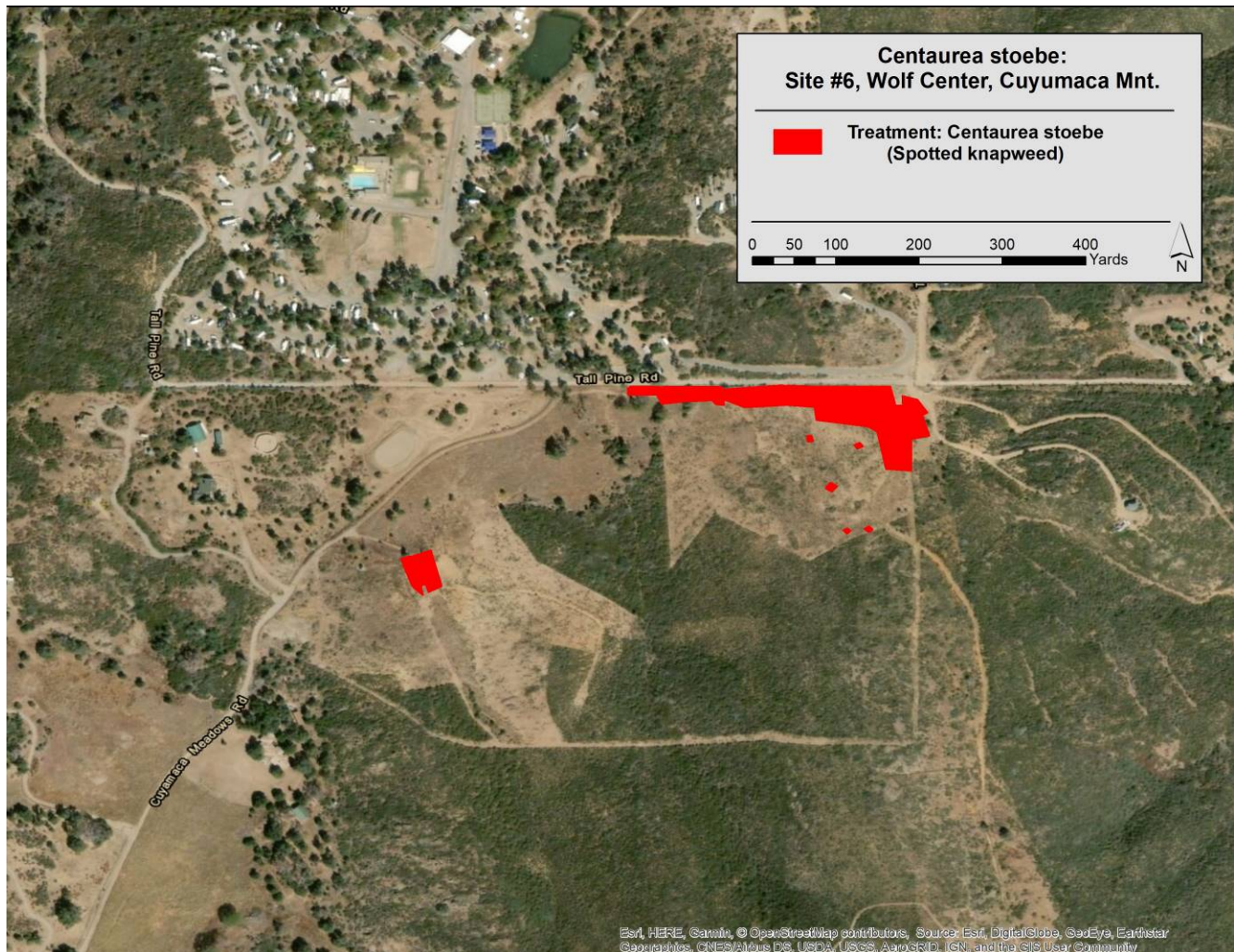


Table 7. Summary of treatments performed by AWM on *Centaurea stoebe* (spotted knapweed).

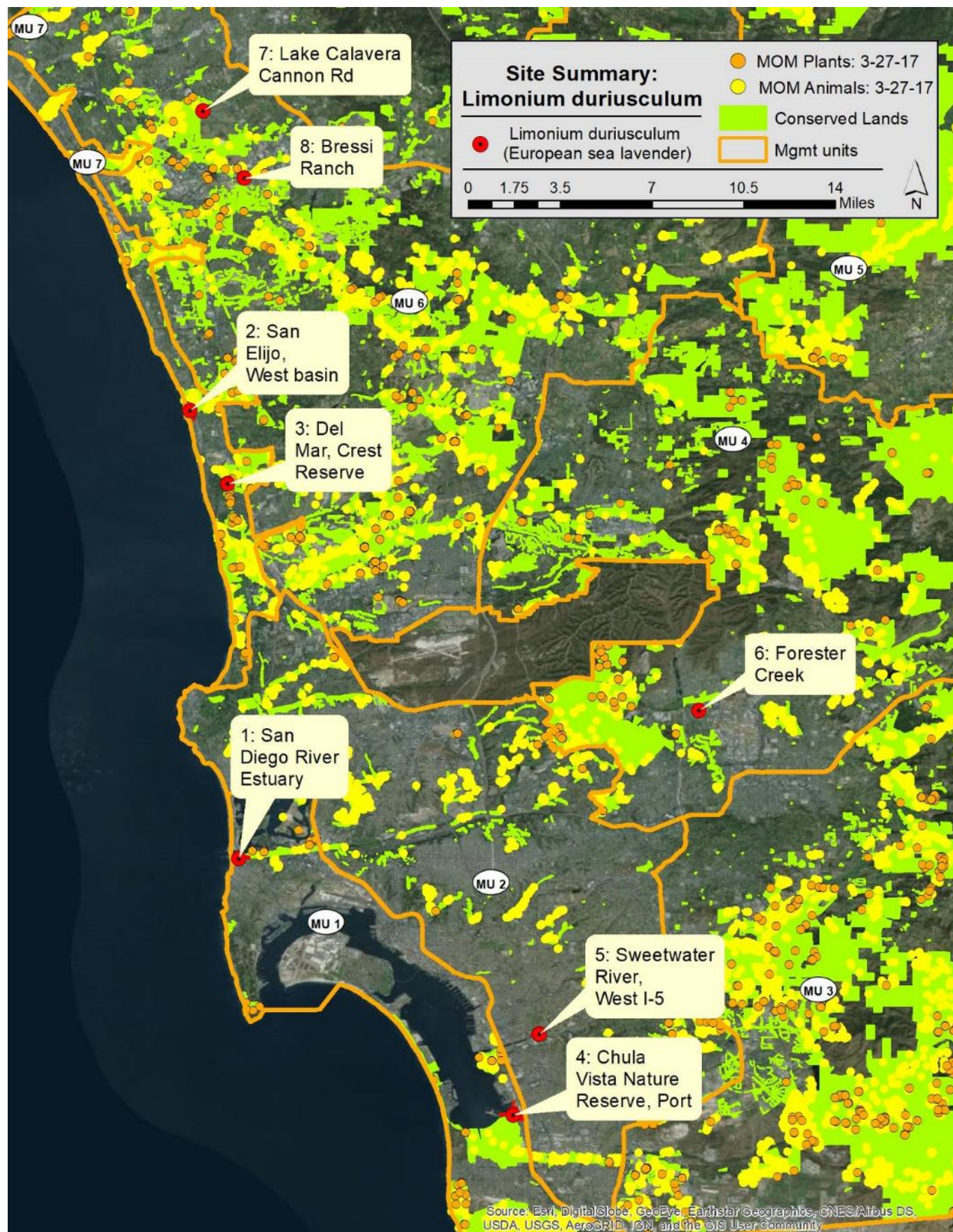
Site Name	Common Name	# of Visits	Acres Surveyed	Acres Treated	Plants treated
Site #6, Wolf Center	Spotted knapweed	1	7.0	1.8	2,750

The site was treated by a crew of two to three over nine days, between October 29th and December 12th 2018. Multiple treatment methods were used: hand pulling mature plants and herbicide application using Milestone and glyphosate. This EDRR treatment work was funded by California Department of Food and Agriculture, but is reported here as the species is a Level 2 EDRR target.



Site #6: Treatments for Spotted knap weed plants (treatment red).

***Limonium duriusculum*, European sea lavender:**

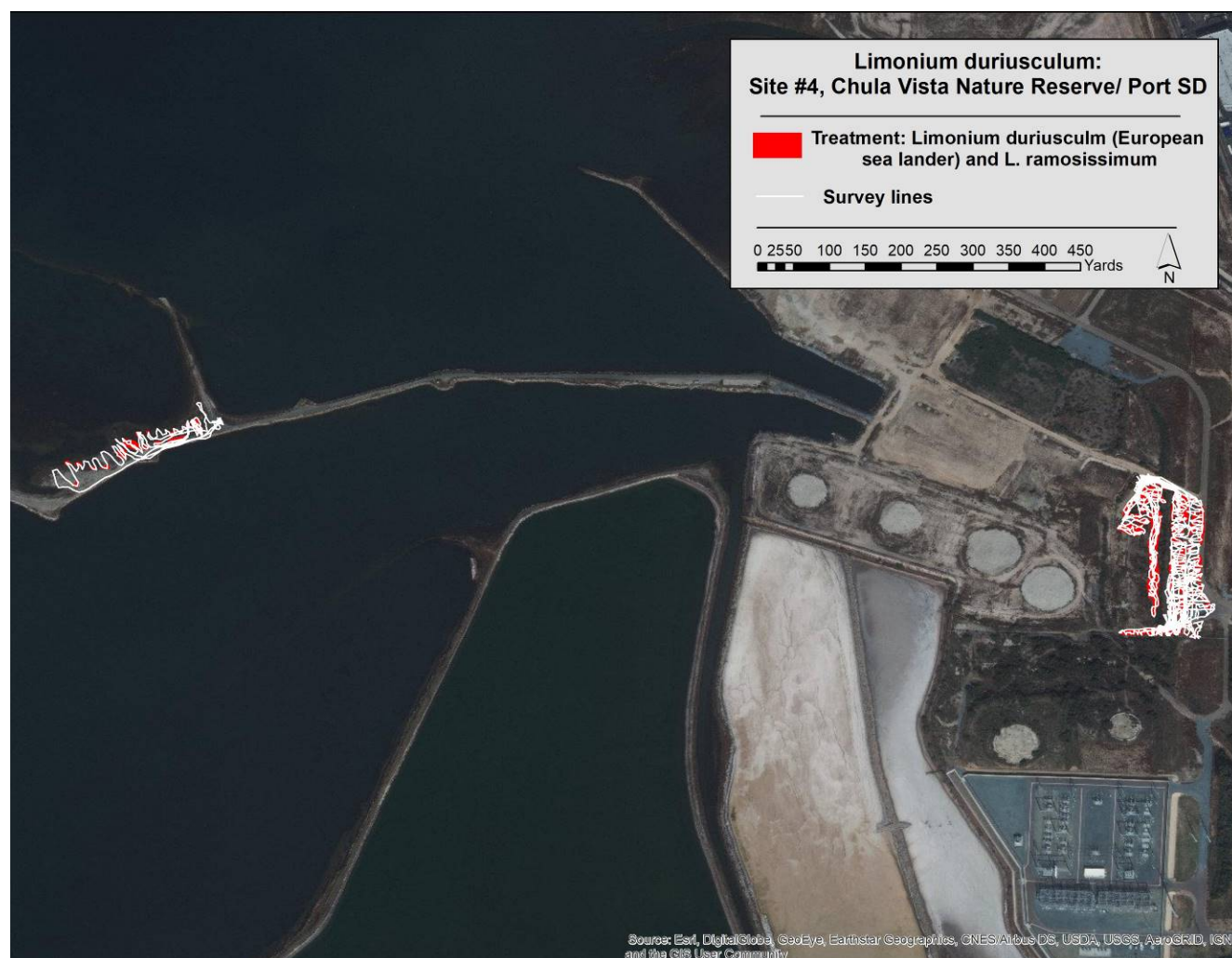


Limonium duriusculum, European sea lavender: Site #4 Chula Vista Nature Reserve, Port of SD

Table 8. Summary of treatments performed by AWM on *Limonium duriusculum* (European sea lavender).

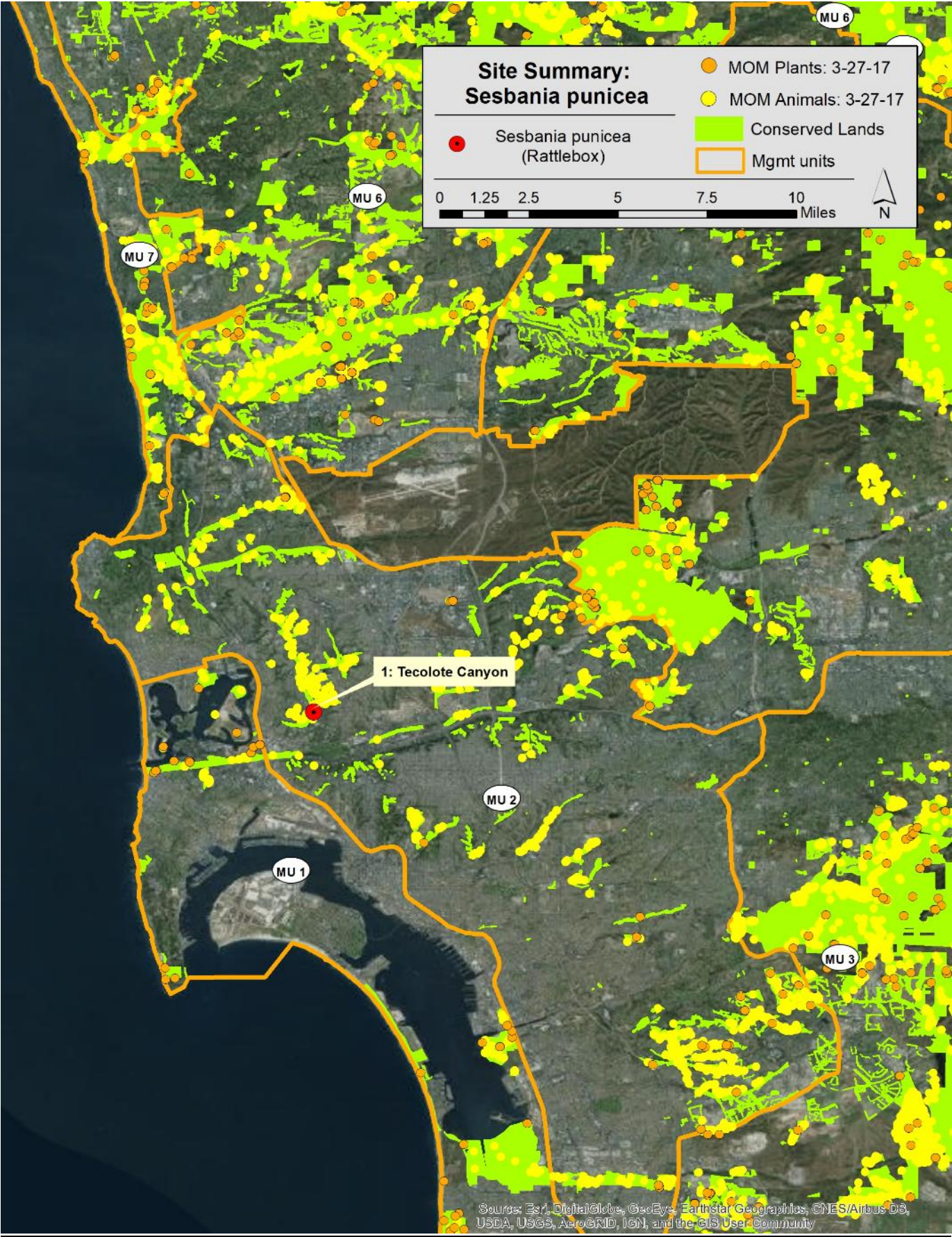
Site Name	Common Name	# of Work Cycles	Acres Surveyed	Acres Treated	Plants treated
Site #4, CVNR, Port of SD	European sea lavender	1	4.2	2.9	3,600

Mature plants and seedlings were treated. A crew of two individuals worked four days on 10/2-5/2018. Cover is reduced in past treatment areas (>90% cover reduction), but there are seedlings sprouting. New treatment areas on the east side of the site were accessed for the first time (powerline construction had excluded this portion of the site).



Site #4: *Limonium duriusculum* plants were treated (survey white lines, treatment red). Map shows a mix of European and Algerian sea lavender plants.

Sesbania punicea, Rattlebox:



Sesbania punicea, Rattlebox: Site #1 Tecolote Canyon

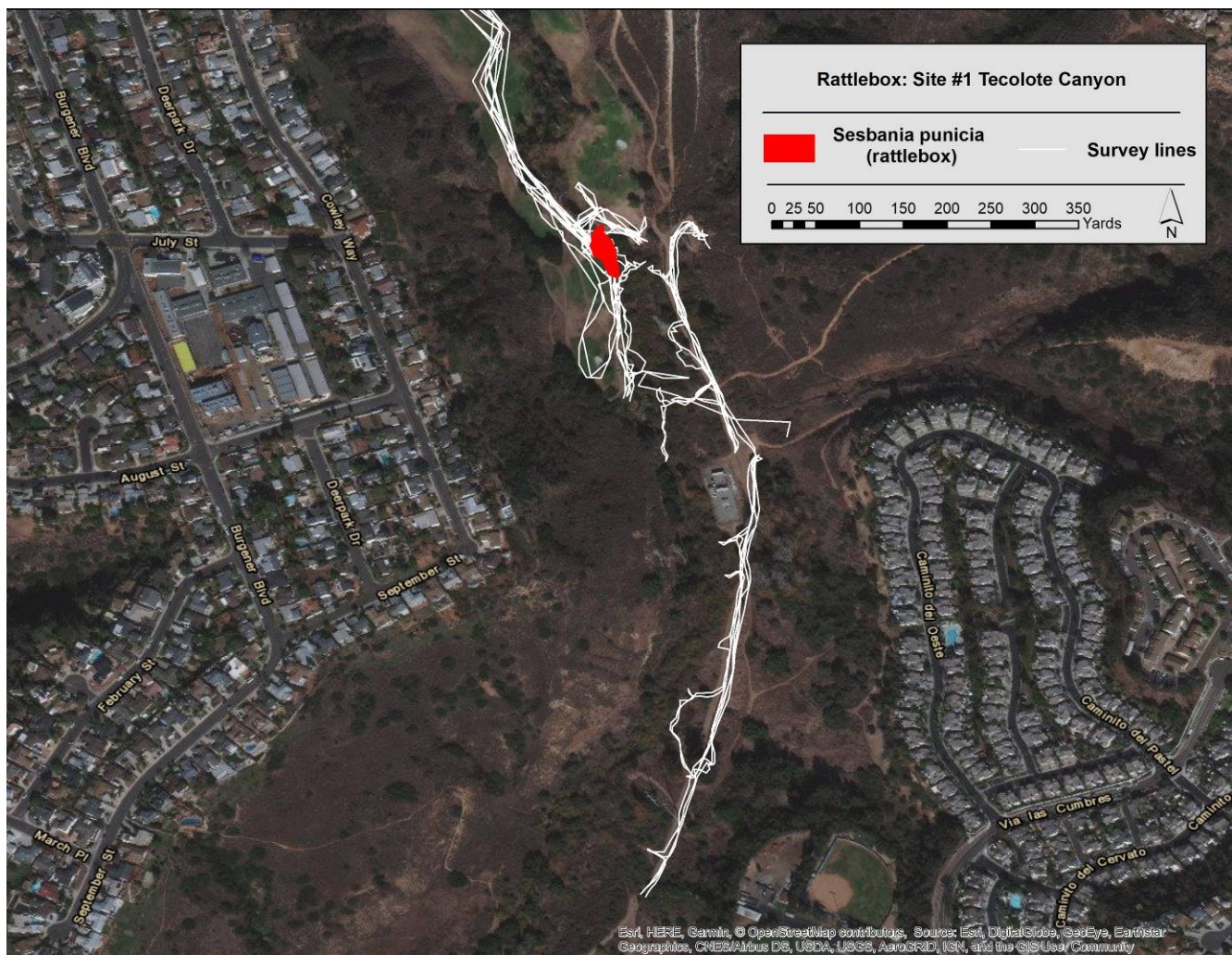
Table 9. Summary of treatments performed by AWM on *Sesbania punicea*, (rattlebox).

Site Name	Common Name	# of Work Cycles	Acres Surveyed	Acres Treated	Plants treated
Site #1 Tecolote Canyon	Rattlebox	1	2.6	0.2	48

Two crew members surveyed Tecolote Canyon for three days 10/16-19-22/2019. In one area on the golf course 48 seedlings and young plants were pulled and bagged.



Site #1: Tecolote Canyon, north end, Rattlebox survey and hand removal area (survey white lines).



Site #1: Tecolote Canyon, south end, Rattlebox survey and hand removal area (survey white lines).

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 for pulling together a team to start controlling Ward's weed in Carlsbad at Bressi Ranch started.
- Co-ordination for controlling Volutaria in Southern CA occurred.
- An update to the San Diego Weed Management Area stakeholders occurred at their quarterly meeting.

Work Anticipated for 3rd Quarter Period, January 1st – March 31st 2018:

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 and second work cycle report.
- Submit GIS data for target EDRR species and work with San Diego Management and Monitoring Program(SDMMP) of invasive mapping attribute data.

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.

- Re-treatment of sites.
- 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 Department of Parks and Recreation, San Diego Weed Management Area and Orange County California Native Plant Society EDRR invasives group.
- Continue to aggregate data and track new prospective EDRR target species.
- Attend SDMMP land manager, working group and other meetings as requested.