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

Strategic Control of Invasive Weed Species
2ndQuarter Report - FY 2020-21: Report #24 for Project

October 1st, 2020 – December 31st, 2020

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 October 1st to December 31st 2020.

Covid 19: The outbreak has modified work procedures. Small crews are continuing field work following County and State guidelines. County AWM is following these procedures as they complete work.

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. Covid 19 has required authorization and additional procedures for several municipalities.

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

Current work sites were visited and assessed. These included: barbed goat grass and spotted knap weed.

Regulatory permits:
No new work.

Report preparation:

The quarterly report was prepared.

Mapping and occurrence data:

Mapping and surveying for new observations from iNaturalist occurred. GIS data was updated and cleaned and uploaded to CalFlora.

Work plan:

Work occurred regarding work completed on current contract and work that would occur if the contract is renewed for another cycle.

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, one invasive weed species (barbed goatgrass) at one site this quarter. Map 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
Aegilops triuncialis	Barbed goatgrass	1	6.3	7.1	>100,000

***Aegilops triuncialis (barbed goatgrass*):**

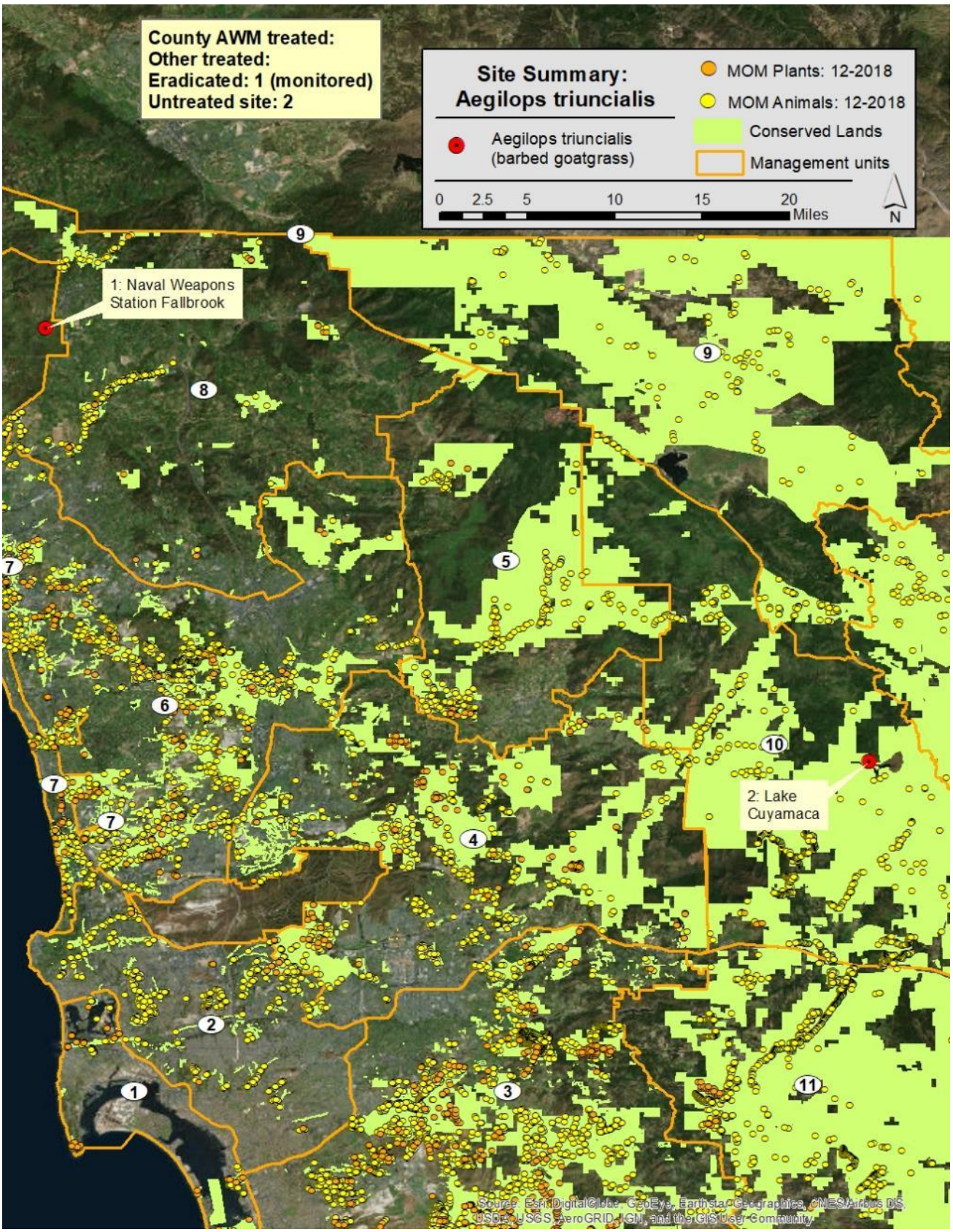
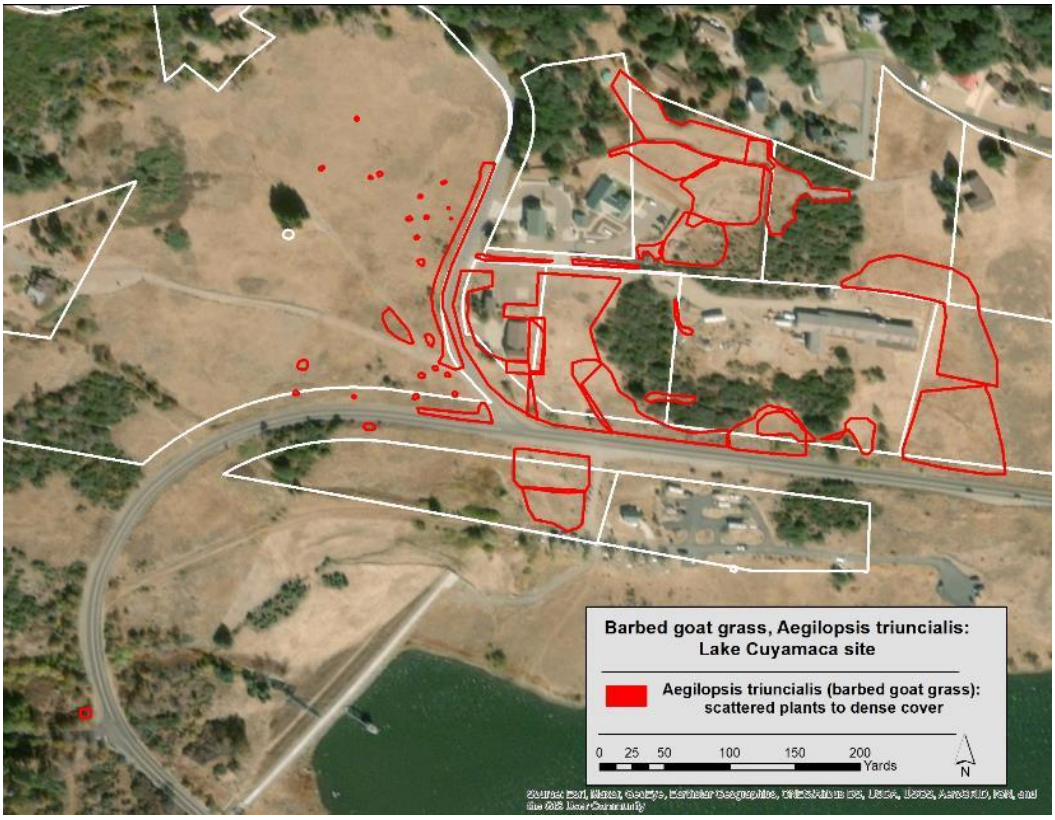


Table 2. Summary of treatments performed by AWM on *Aegilops triuncialis (barbed goatgrass*).

Work Site	Common Name	# of Work Cycles	Acres Treated	Acres Surveyed	Plants Controlled
Site #2 Lake Cuyamaca	Barbed goatgrass	1	6.3	7.1	>100,000

***Aegilops triuncialis (barbed goatgrass*): Site #2 Lake Cuyamaca**

CDFA Weed Management Area grant has provided funding for two years (2019/20 and 2020/21) to start control of this high priority EDRR target that was discovered in summer 2018. This is the only known active site in the county, a historic site (Navel Weapon Station, Fallbrook) is considered eradicated. All seven property owners have granted permission for work, including State Parks. A work crew of 1 to 3 individuals treated 6.3 acres over eleven days from November 16- December 2 2020. High winds typical in the area forced short days on three days. A split application (two treatments, fall and spring, at a lower rate than is used in a single application) using Method herbicide was used. (Note: The second application was completed in January 2021, this will be reported next quarter). Control from the first-year application was good in most areas, but scattered patches were still present. An estimate of 100,000 plants is being used to estimate seedling sprouting and patches of plants in areas where treatments did not occur (spot treatment was missed in spring 2020 due to Covid). Photos show efficacy of treatment, grey areas are dead stands of barbed goatgrass, tan areas are stands of barbed goat grass under a conifer where Method herbicide cannot be used. Patches of plants also came up around rocks and around some recreational use areas. Efficacy of 2020/2021 treatments will be assessed in Spring, with spot treatments of observed plants prior to seed set. It is challenging to detect all barbed goatgrass plants in treatment areas, which have other annual and perennial grasses. This is a common issue with goatgrass control in California.



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).

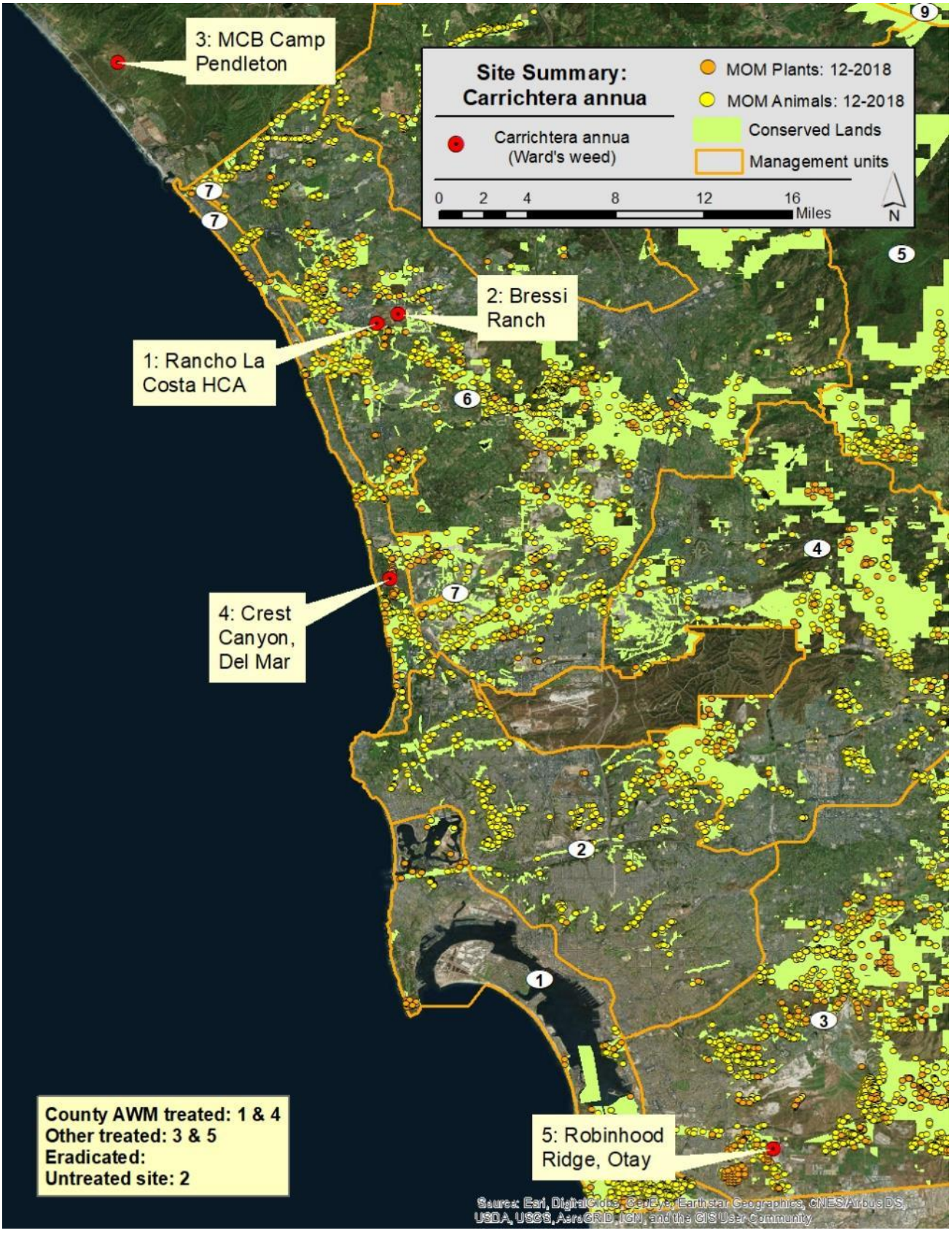
Crews surveyed and treated four invasive weed species (Ward's weed, bridal broom, European sea lavender and Algerian sea lavender) at eleven sites this quarter. AWM IPC made optimal pesticide applications, protected the natural environment by preventing off-site movement of pesticides, and utilized Best 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 3. 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
Carrichtera annua	Ward's weed	2	28.1	28.1	10,100
Genista monosperma	Bridal broom	2	0.3	2.6	90
Limonium duriusculum	European sea lavender	1	0.3	1.7	560
Limonium ramosissimum	Algerian sea lavender	6	3.0	7.8	13,140

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



***Carrichtera annua*, Ward's Weed, Site #2 Bressi Ranch**

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

Site Name	Common Name	# of Work Cycles	Acres Treated	Acres Surveyed	Plants treated
Site #2 Bressi Ranch, Carlsbad	Wards weed	1	27.1	27.1	Pre-emergent: 10,000

The Bressi Ranch in the City of Carlsbad Ward's weed site is a very large site (>100 acres) covering rolling hillsides with many property owners. A collaboration has started work on the site: City of Carlsbad and The Nature Collective are working on the northern and western portions of the site and County AWM has started on the southern and eastern portions of the site. CNLM is taking the lead on the eastern La Costa Greens site. A pre-emergent herbicide (Gallery) was applied to the site.

County AWM crews spent 13 days in December treating two areas. Portions of these areas were treated last year, but some plants germinated in spring 2021, so they were treated again. New treatment areas will be treated in January 2021 (to be reported next quarter). A crew of 3 to 4 was used to manage spray lines, treat the area, and manage trail closures during treatment work. The project required extensive coordination with the City of Carlsbad and partners.

***Carrichtera annua*, Ward's Weed, Site #4 Crest Canyon, Del Mar**

Table 7. Summary of treatments performed by AWM on *Carrichtera annua*, Ward's Weed.

Site Name	Common Name	# of Work Cycles	Acres Treated	Acres Surveyed	Plants treated
Site #4, Crest Canyon, Del Mar	Wards weed	1	1.0	1.0	100

This site footprint was treated for the second time with Gallery pre-emergent herbicide by a crew of four on December 29th 2020. There were probably some scattered seedlings, although none were directly identified. A plant count of 100 was used as an estimate.

***Retama monosperma*, Bridal broom:**

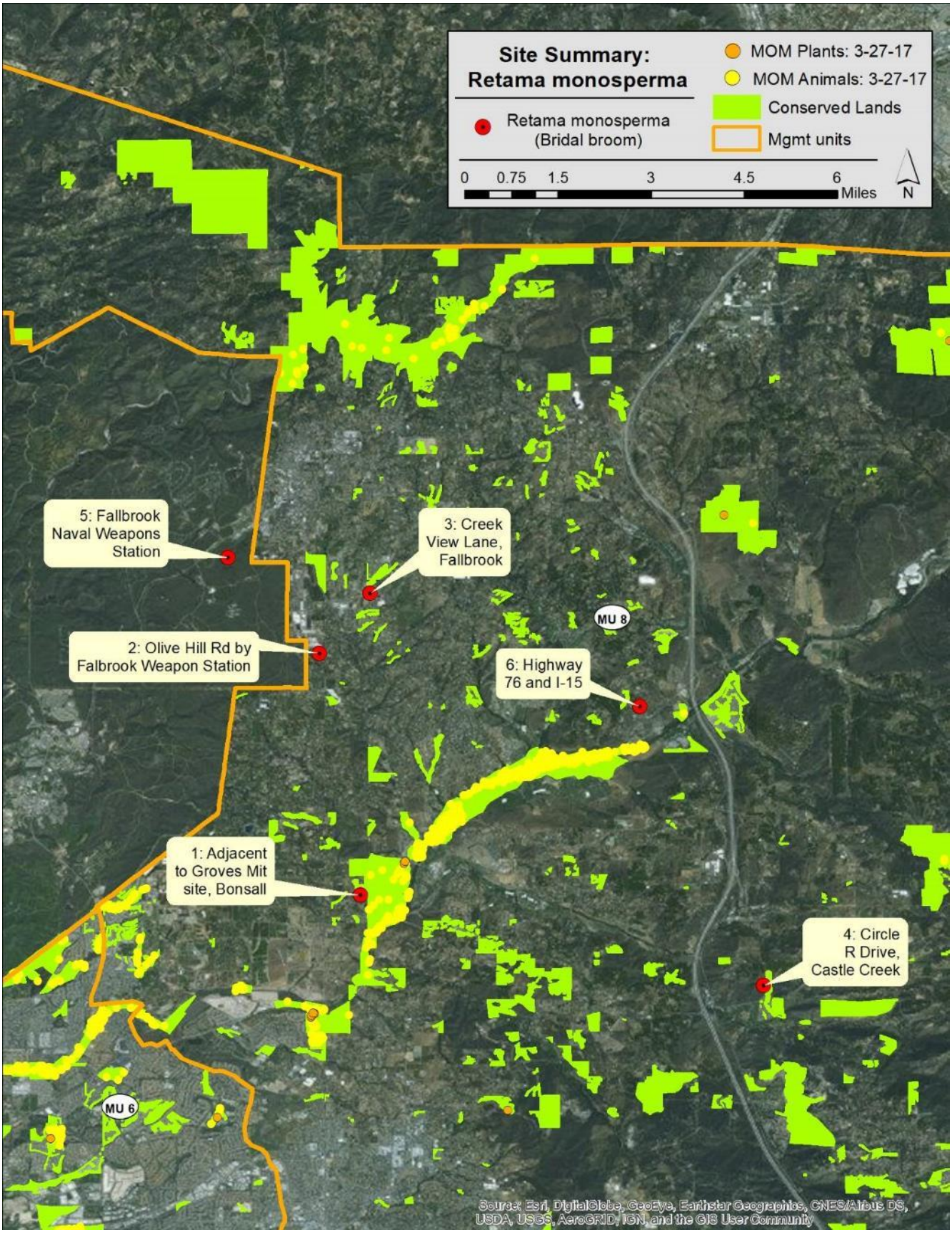


Table 7. Summary of treatments performed by AWM on *Retama monosperma*, Bridal broom:

Site Name	Common Name	# of Work Cycles	Acres Surveyed	Acres Treated	Plants treated
Site #2 Olive Hill Rd	Bridal broom	1	1.6	0.2	80

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

There 80 plants, 95% seedlings and 5% re-sprouts, that were foliar treated with Garlon (Triclopyr). A crew of one individual worked two days 11-6 and part of 11-12 2020.

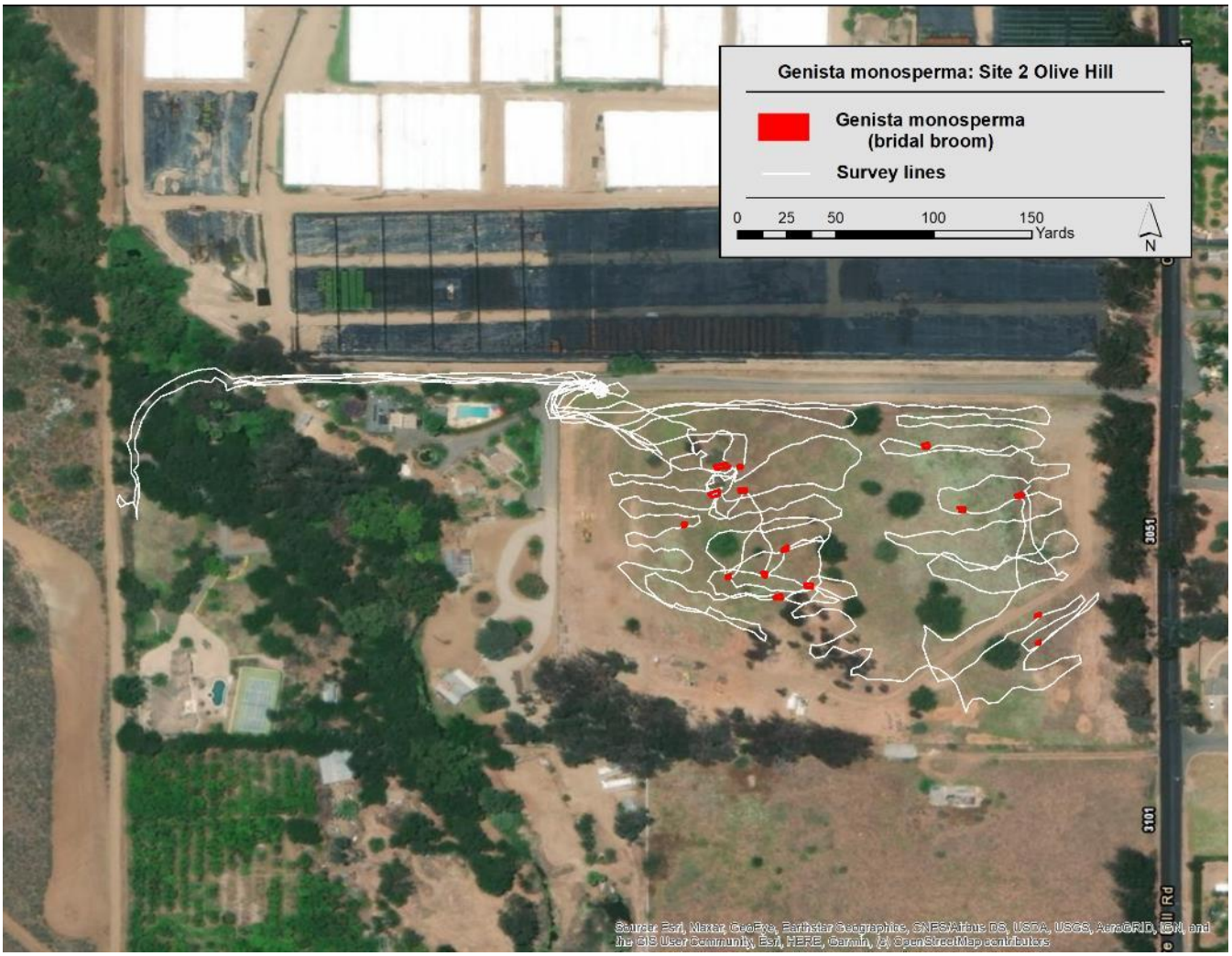
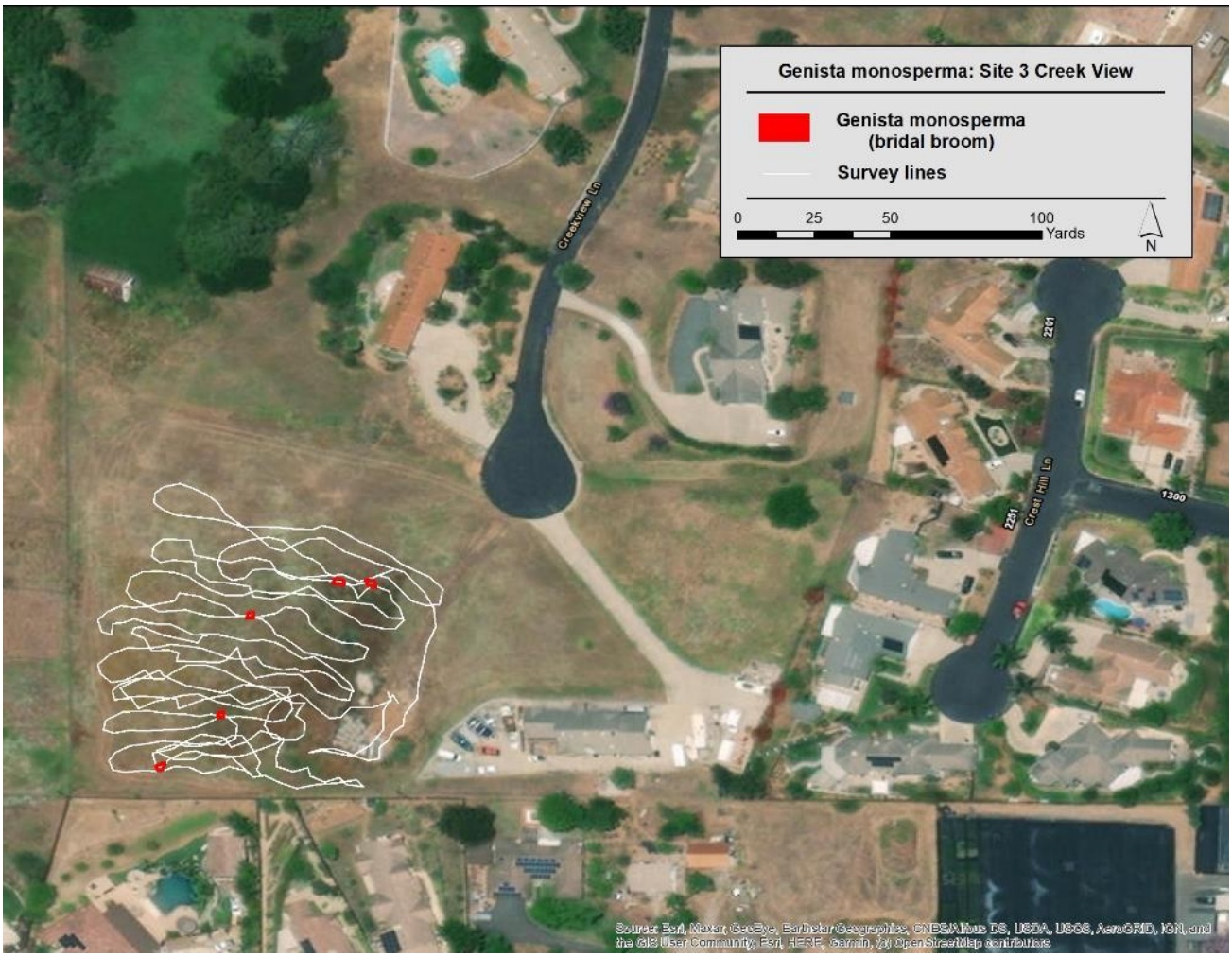


Table 7. Summary of treatments performed by AWM on *Retama monosperma*, Bridal broom:

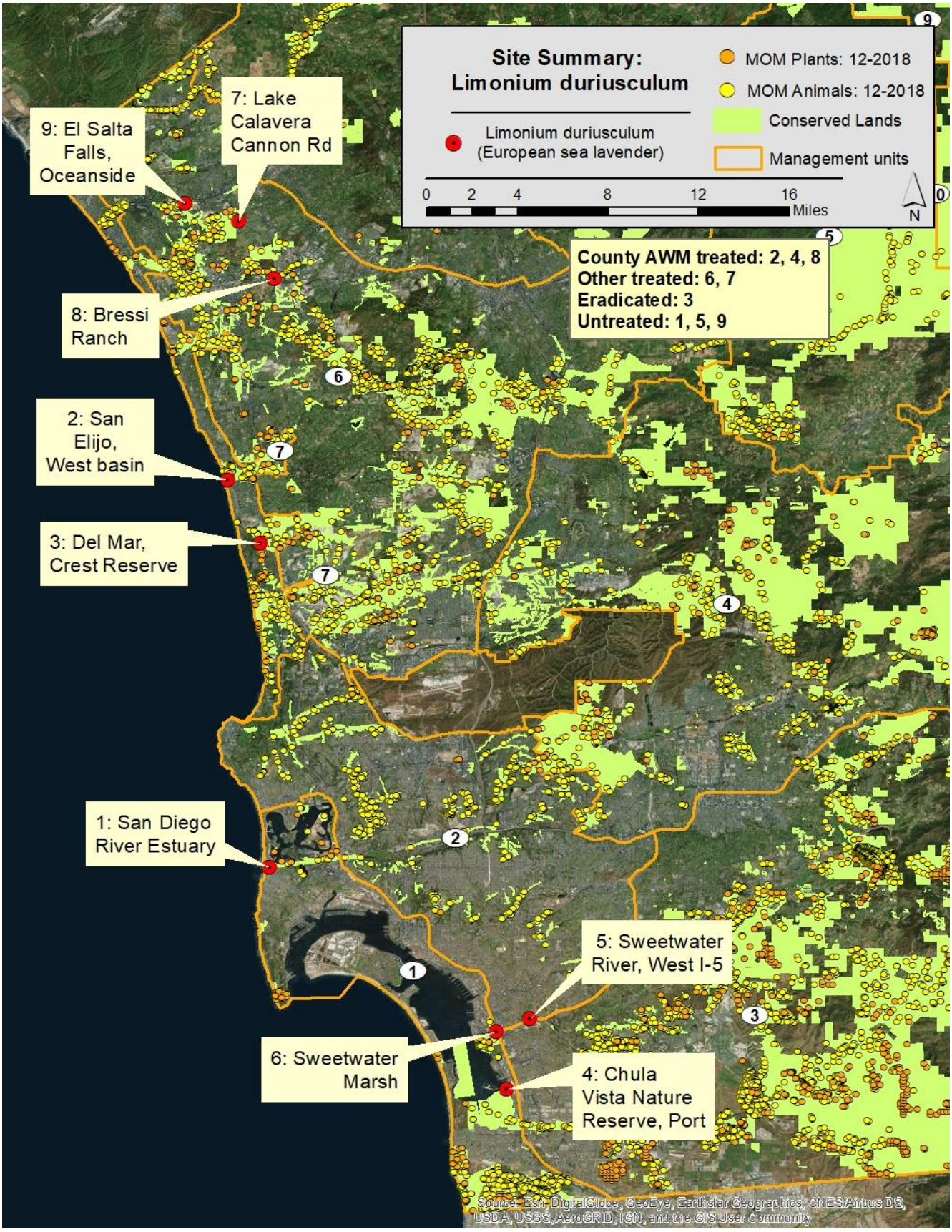
Site Name	Common Name	# of Work Cycles	Acres Surveyed	Acres Treated	Plants treated
Site #3 Creek View Lane	Bridal broom	1	1	0.1	10

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

There were 10 seedlings that were pulled and bagged. A crew of one individual worked part of one day 11-12-2020.



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

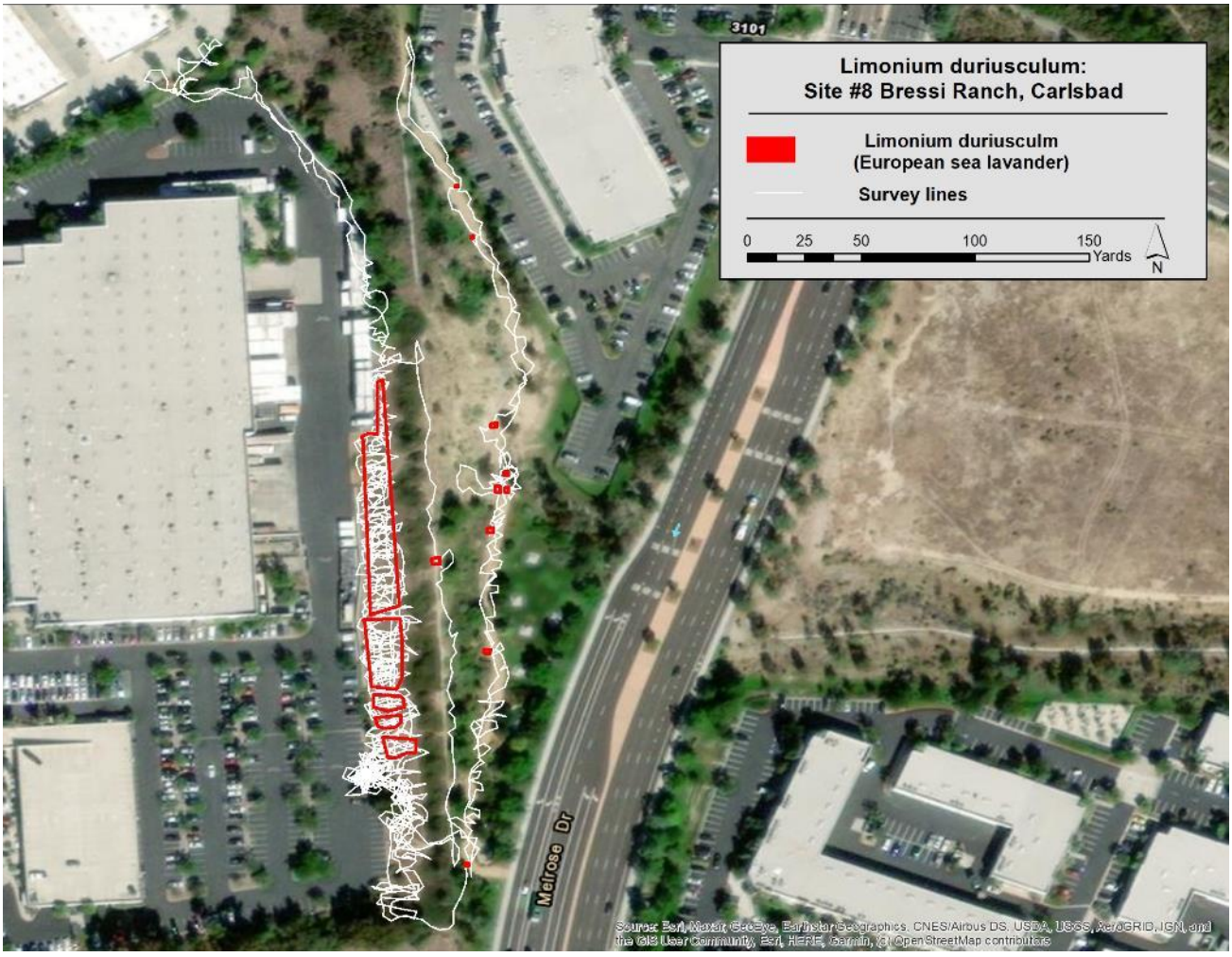


***Limonium duriusculum*, European sea lavender: Site #8 Bressi Ranch**

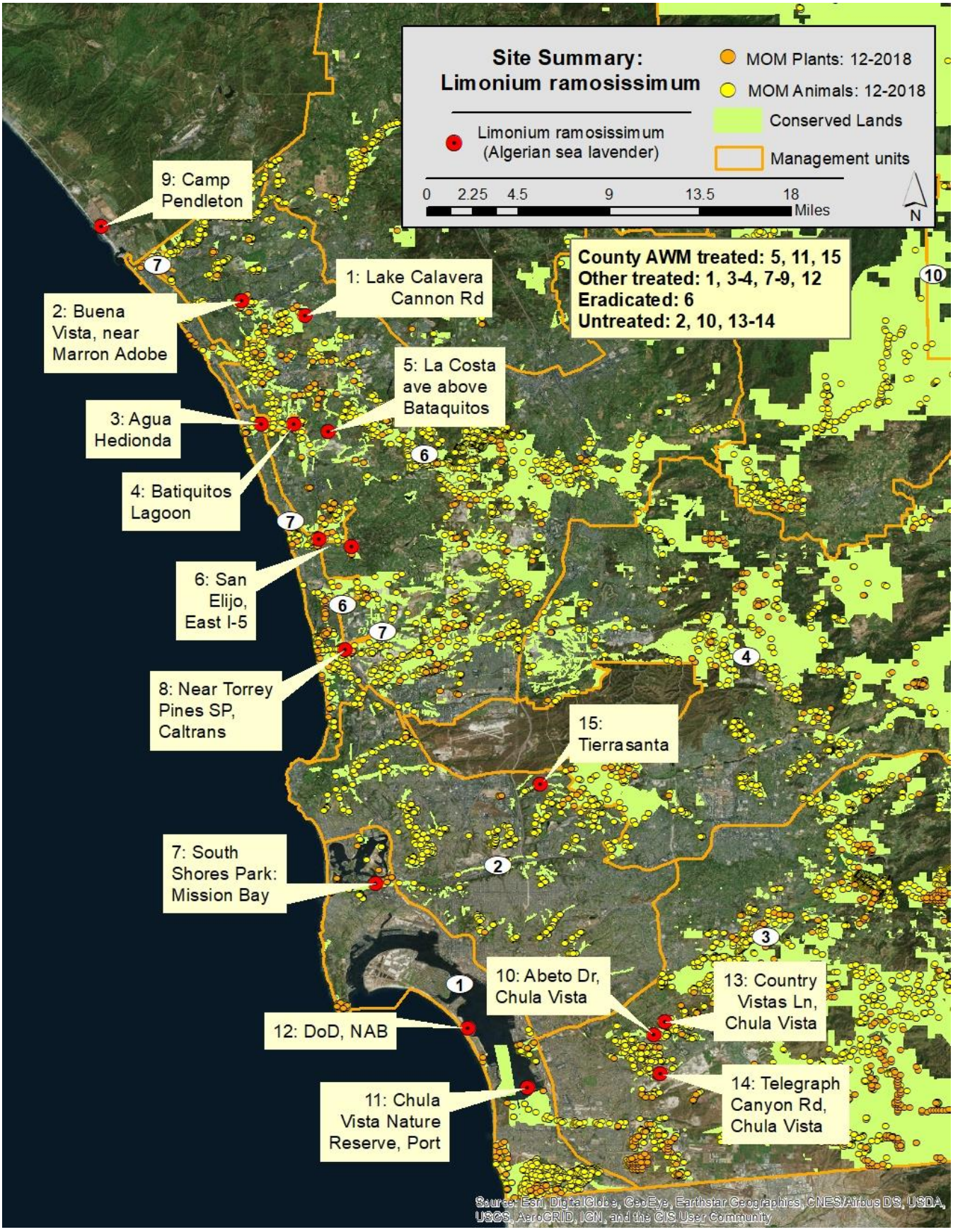
Table 10. Summary of treatments performed by AWM on *Limonium duriusculum* (European sea lavender).

Site Name	Common Name	# of Work Cycles	Acres Treated	Acres Surveyed	Plants treated
Site #8 Bressi Ranch	European sea lavender	1	0.3	1.7	560

560 plants (5% mature/95% seedlings) were foliar treated by a crew of one individual on October 15th and 16th 2020. Cover is greatly reduced in past treatment areas (>95% cover reduction), but there are still many seedlings sprouting.



***Limonium ramosissimum*, Algerian sea lavender:**



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

Table 11. 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	0.5	1.0	3,000

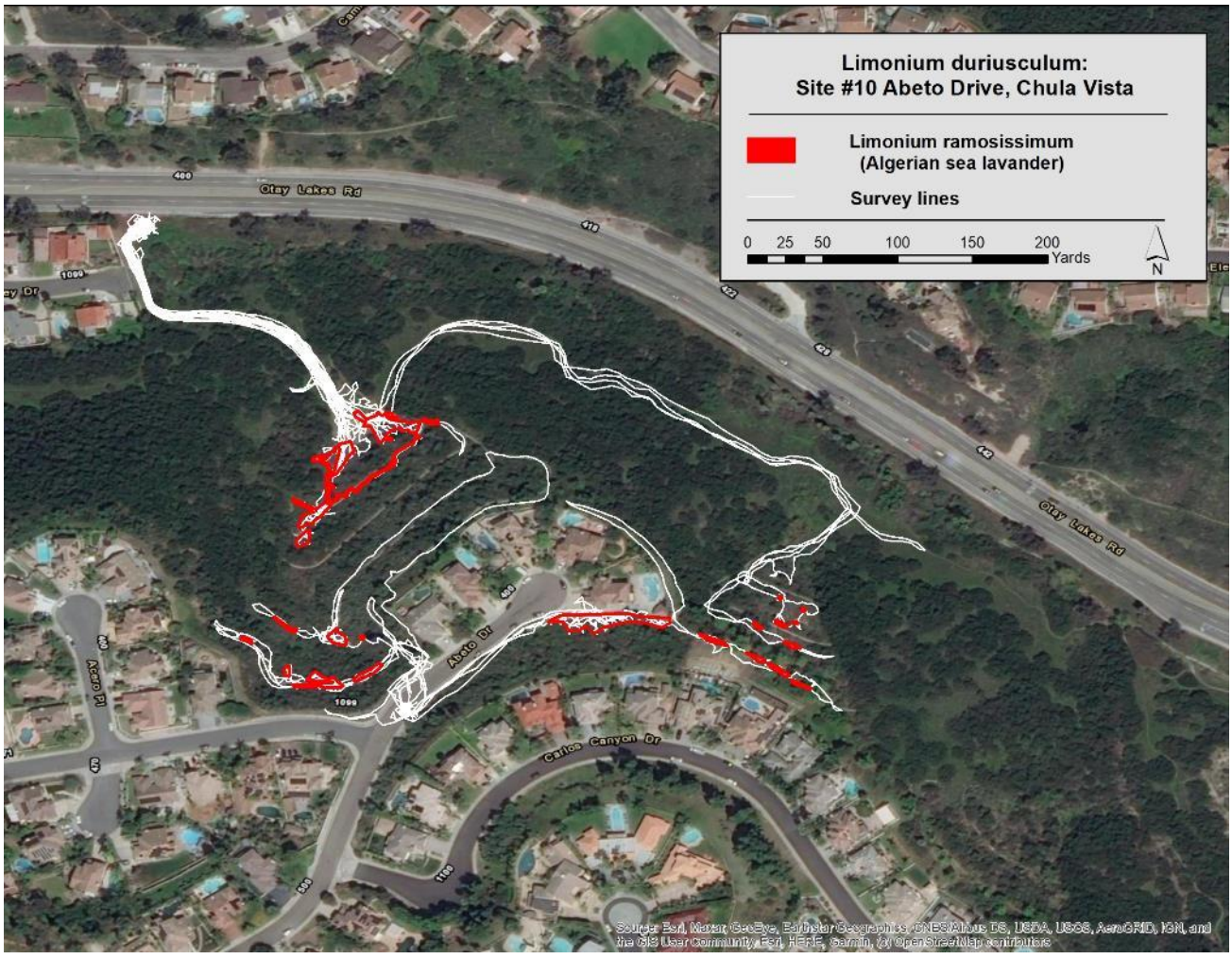
This was the third treatment of this site that was initially dense mats of plants. Initial control was very good at over 95%, but seedlings are still sprouting. A crew of one individual worked one day November 5th 2020.

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

Table 11. 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	1.4	3.1	>7,400

This was the second treatment of this large and heavily invaded site. Initial control was very good at over 90%, but seedlings are sprouting and there were some missed plants (see photos). Plants were dense monotypic patches forming a carpet, now there are scattered plants and many seedlings. Crews foliar treated with backpacks. A crew of one individual worked four days October 21st to 27th 2020.



***Limonium ramosissimum*, Algerian sea lavender: Site #13 Country Vistas, Chula Vista**

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 #13 Country Vistas, Chula Vista	Algerian sea lavender	1	0.5	1.5	>2,200

This was the second treatment of this large heavily invaded site. The first treatment was very effective (>90%) but scattered plants survived, and many seedlings sprouted (see photos below). A crew of one foliar treated with a backpack on two days October 29th and November 3rd 2020.

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

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 #14 Telegraph Canyon Rd, Chula Vista	Algerian sea lavender	1	0.1	0.5	200

This was the second treatment of this lightly invaded site. The first treatment was effective (>90%) but scattered plants survived and many seedlings sprouted. A crew of one foliar treated with a backpack on one day November 11th 2020.

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

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 #15 Tierra Santa, San Diego	Algerian sea lavender	1	0.5	1.5	340

This was the second treatment of this large heavily invaded site. The first treatment was very effective (>90%) but scattered plants survived, and many seedlings sprouted (see photos below). A crew of one foliar treated with a backpack on two days October 29th an November 3rd 2020.

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

- Assistance in Regional EDRR co-ordination with Nature Collective to address Oncosiphon, difficult EDRR sites (heavy cover of woody species, poison oak, complex property owner requirements/authorizations).
- Co-ordination to continue control on the only known population of barbed goat grass in San Diego County at Lake Cuyamaca occurred.
- Co-ordination to continue control of Ward's Weed in Carlsbad.
- Co-ordination to continue control of Oncosiphon in Chula Vista.

Work Anticipated for 4th Quarter Period, April 1st – June 30th 2020:

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.

- 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 County of Orange CNPS 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.
- Provide population status of EDRR regional targets to CDFA statewide assessment.