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

Strategic Control of Invasive Weed Species
2nd Quarter Report - FY 2021-22: Report #28 for Project

October 1st, 2021 – December 31st 2021

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

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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 2021.

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. This supported work this quarter and preparation for the next quarter. ROEs for Ward's weed work on private property was a significant effort this quarter.

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

Current work sites were visited and assessed. These included: Limonium, Boneseed, Ward's Weed, and Eupatory.

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' invasive weed species this quarter.

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
NA	NA				

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 (Algerian Sea lavender, European Sea Lavender, Eupatory, Bridal Broom, and Ward's Weed) 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 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
Ageratina adenophora	Eupatory	1	< 0.1	3.0	250
Carrichtera annua	Ward's Weed	2	31.3	31.3	>10,000
Genista monosperma	Bridal Broom	1	0	2.0	0
Limonium duriusculum	European Sea Lavender	3	1.25	2.6	14,800
Limonium ramosissimum	Algerian Sea Lavender	4	0.6	3.3	970

***Ageritina adenophora*, Eupatory:**

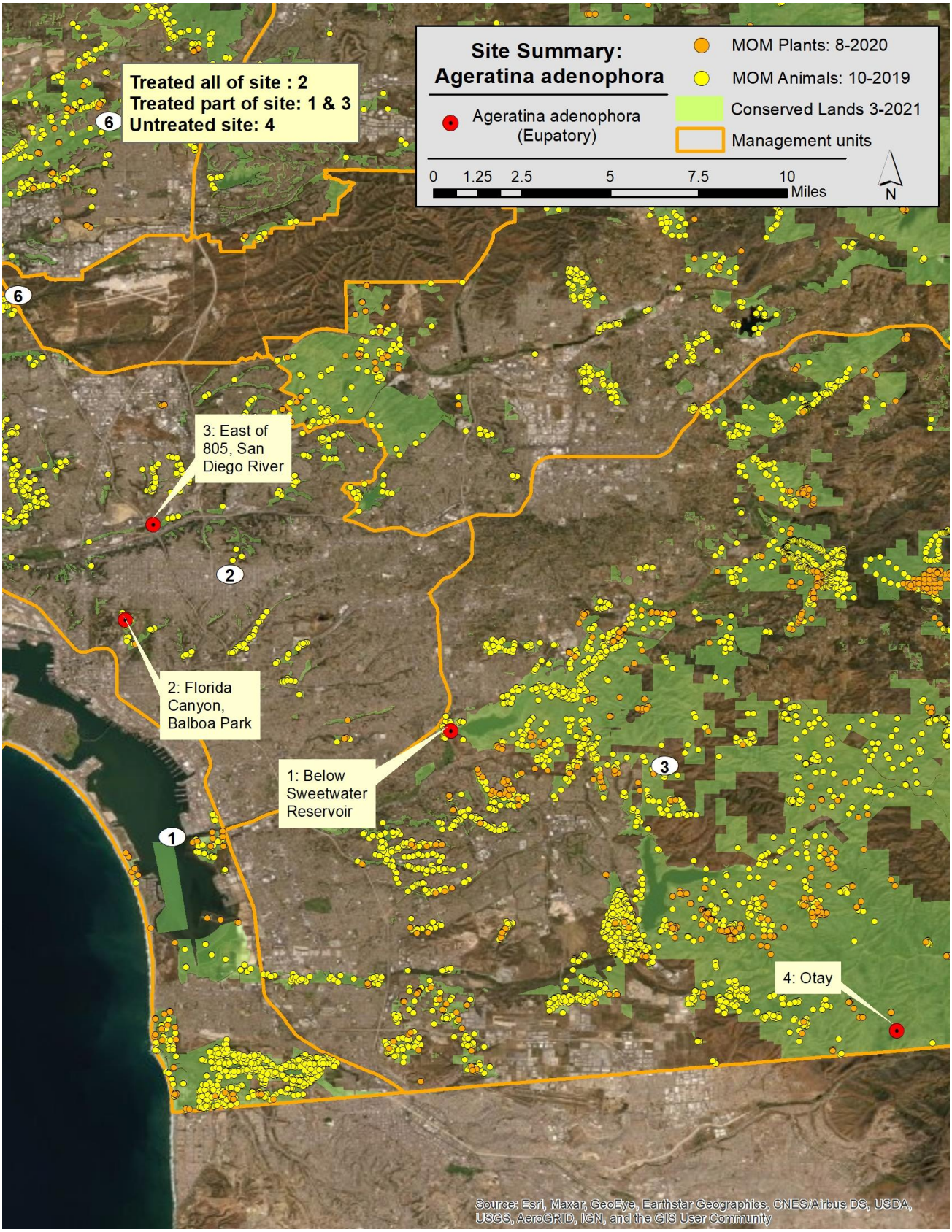
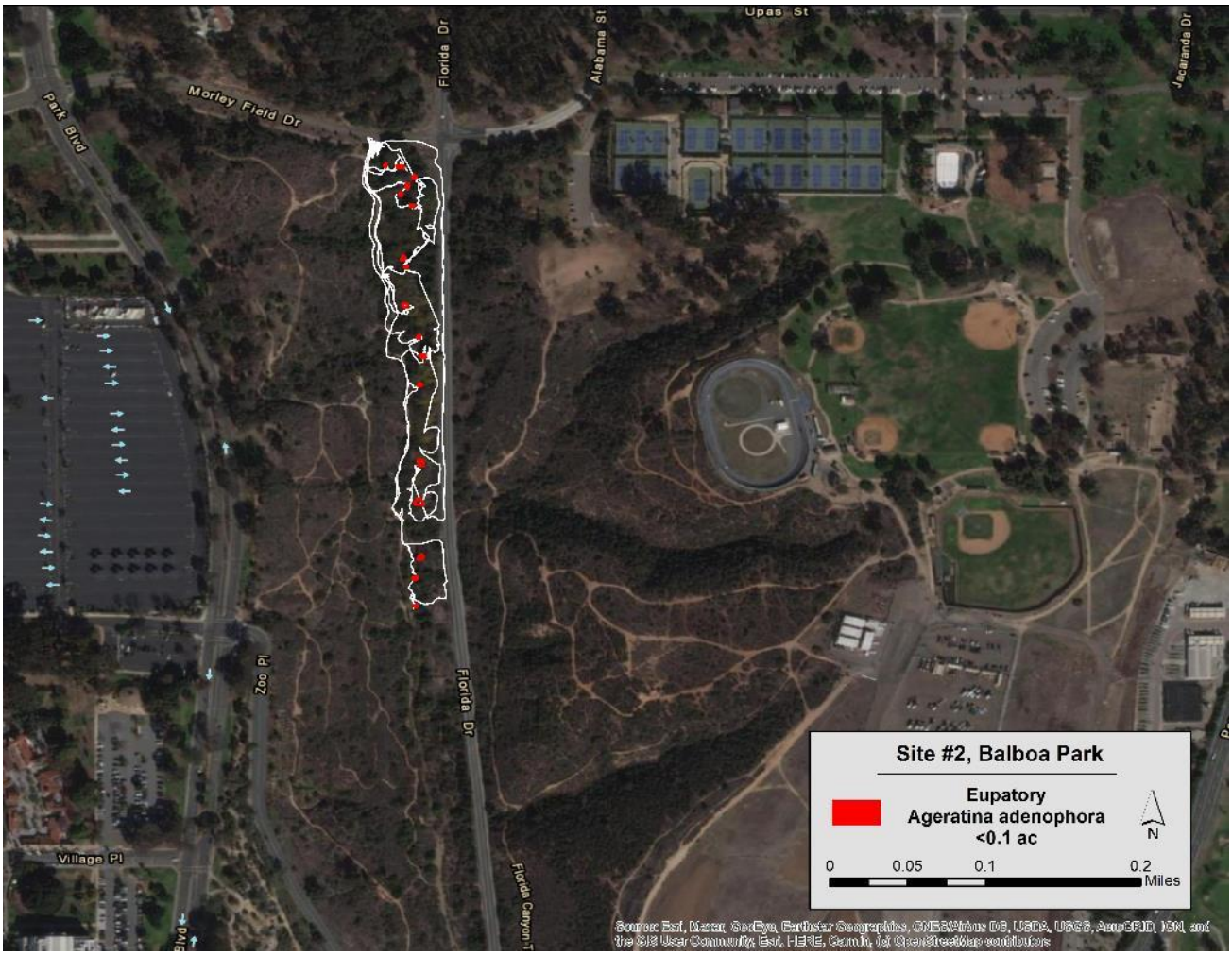


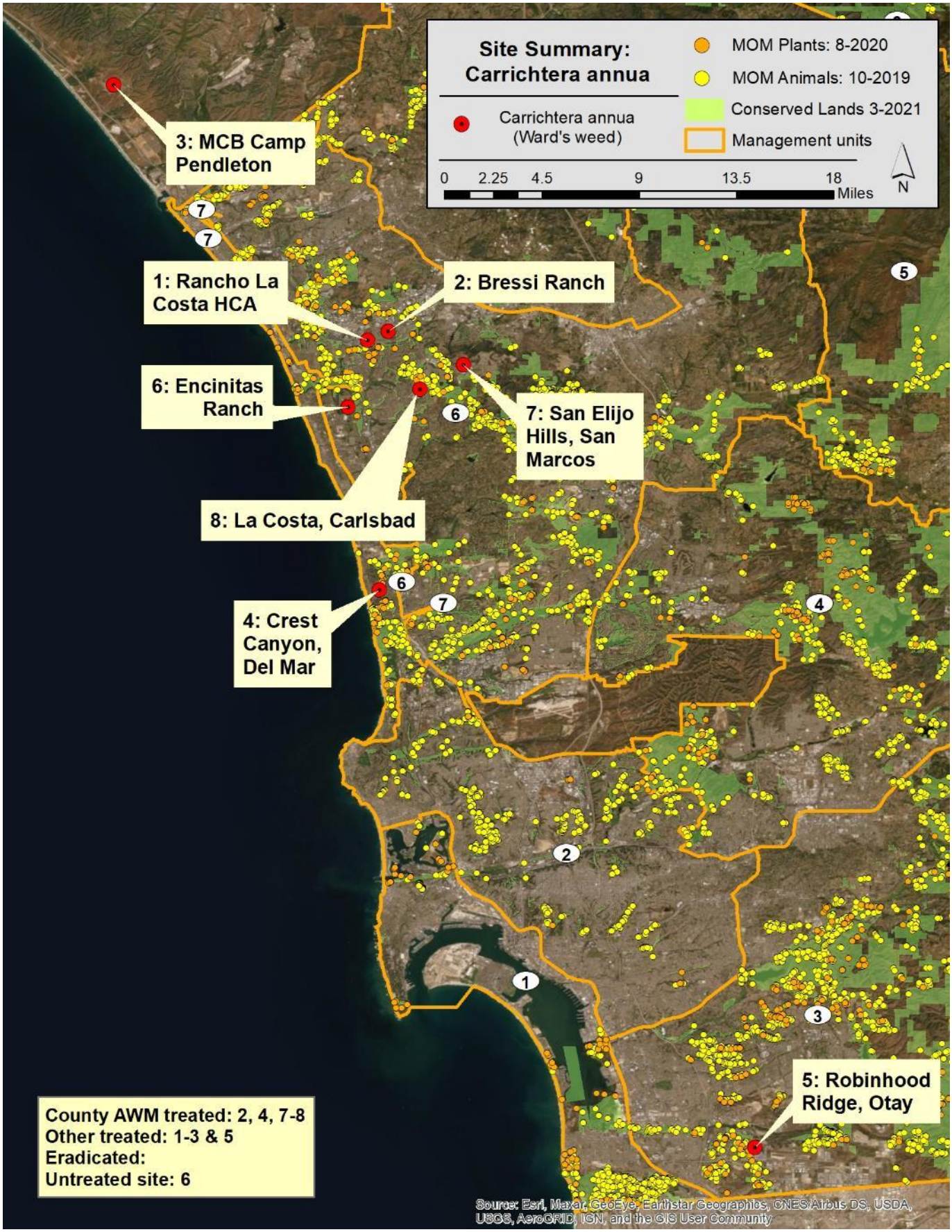
Table 3. Summary of treatments performed by AWM on *Ageratina adenophora,* Eupatory:

Site Name	Common Name	# of Work Cycles	Acres Treated	Acres Surveyed	Plants treated
Site #2: Balboa Park	Eupatory	1	0.1	2.0	250

250 Eupatory plants were foliar treated with glyphosate/imazapyr (520 were treated in 2020 and 1,350 were treated in 2019). A crew of two individuals worked one day on October 13th 2021.



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



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

Table 4. 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	30	30	Pre-emergent: 10,000

The Bressi Ranch (City of Carlsbad) Ward's Weed site is a very large site (>200 acres) covering rolling hills with many property owners (city, open space, and private yards). A group collaboration has been working on the site since 2019: City of Carlsbad and The Nature Collective are working on the northern and western portions of the site and County AWM has worked 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 SC) was applied to the site in winter 2020/2021 and 2021/2022.

County AWM crews (2-4 personnel) spent 29 days in November and December treating the area. Most of these areas were treated in past years, but scattered Ward's Weed occurrences were still germinating, typically where soil disturbance occurred (natural erosion, foot traffic and animal activity). New treatment areas were treated in the back yards of 14 homes. These areas were steep slopes behind houses. Funding was a mixture of CDFA and SANDAG.

***Carrichtera annua*, Ward's Weed, Site #8 La Costa, Carlsbad**

Table 5. 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 #8 La Costa, Carlsbad	Wards Weed	1	1.3	1.3	Pre-emergent

This is a newer site first identified by an iNaturalist report in early 2021. This site footprint was treated for the first time with Gallery SC pre-emergent herbicide by a crew of two on November 3rd 2021. It had been treated once previously with post emergent herbicide in summer 2021.

***Genista monosperma*, Bridal Broom:**

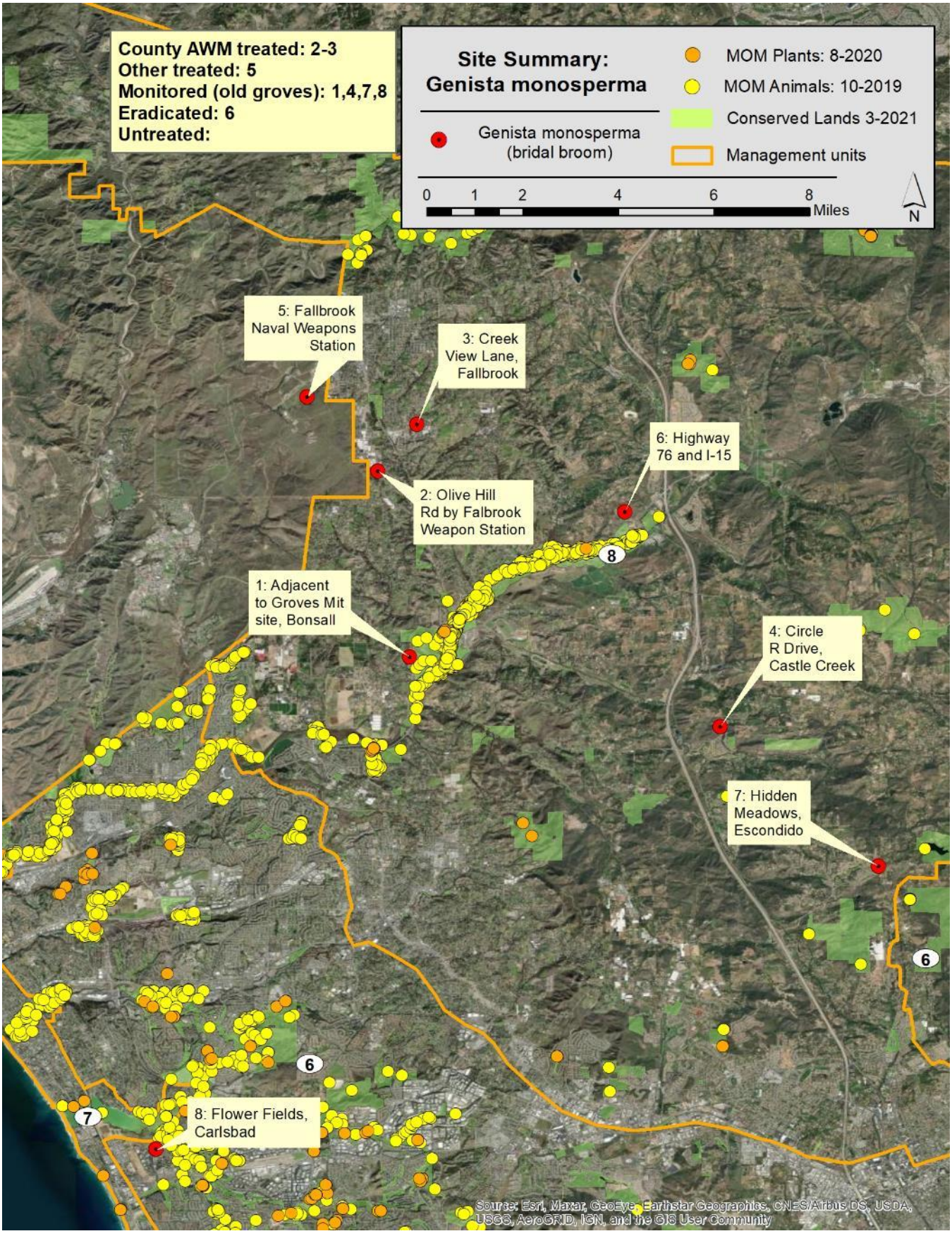


Table 6. Summary of treatments performed by AWM on *Genista monosperma*, Bridal Broom:

Site Name	Common Name	# of Work Cycles	Acres Surveyed	Acres Treated	Plants treated
Site #2 Olive Hill Rd	Bridal Broom	1	1.6	0	0

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

The site was surveyed, no plants were detected. A crew of two individuals worked one day October 11th 2021.

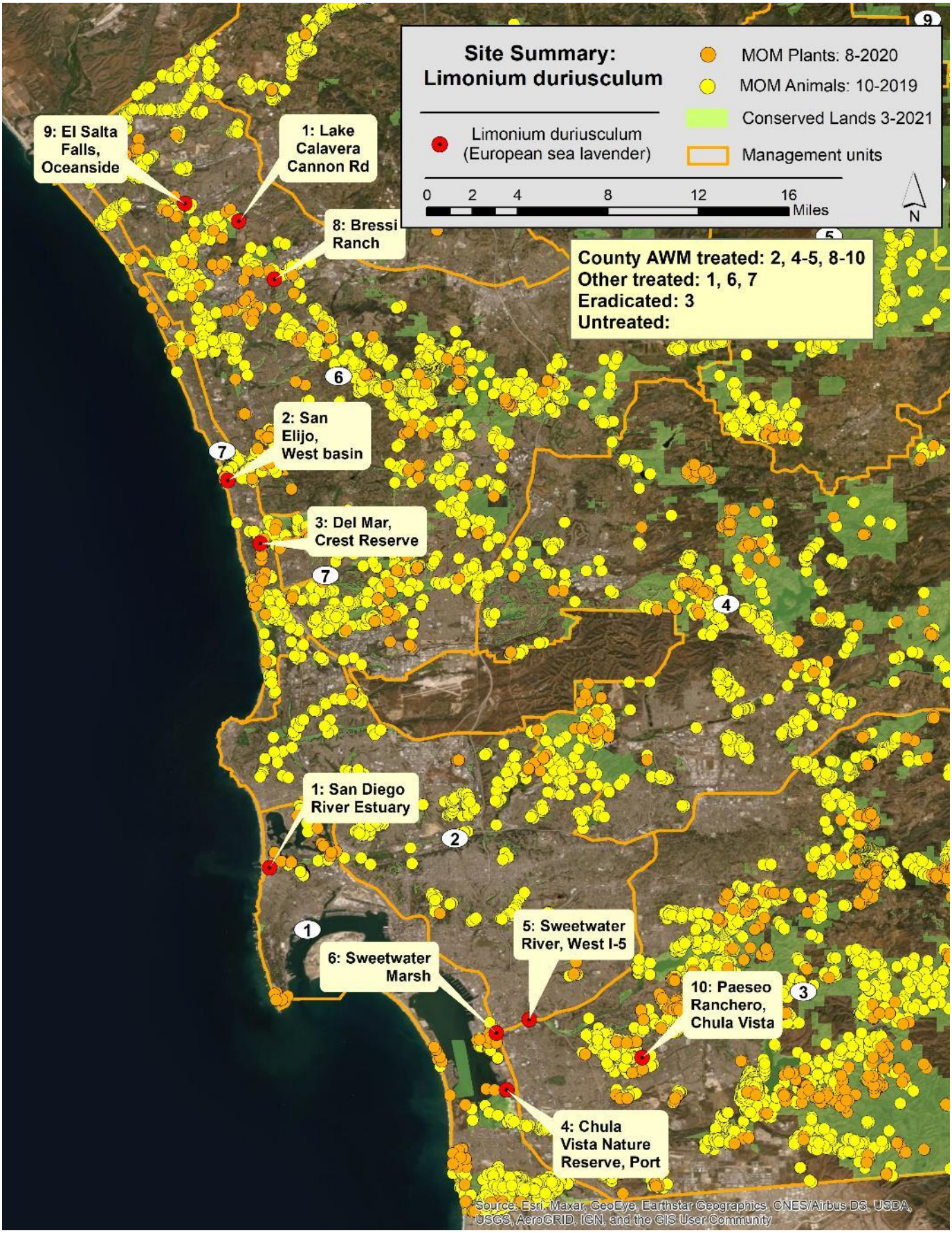
Table 7. Summary of treatments performed by AWM on *Genista monosperma*, Bridal Broom:

Site Name	Common Name	# of Work Cycles	Acres Surveyed	Acres Treated	Plants treated
Site #3 Creek View Lane	Bridal Broom	1	1.6	0.2	80

***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 October 11th 2021.

***Limonium duriusculum*, European Sea Lavender:**



***Limonium duriusculum*, European Sea Lavender: Site #5 Sweetwater River, Chula Vista**

Table 8. 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	0.8	2.0	9,000

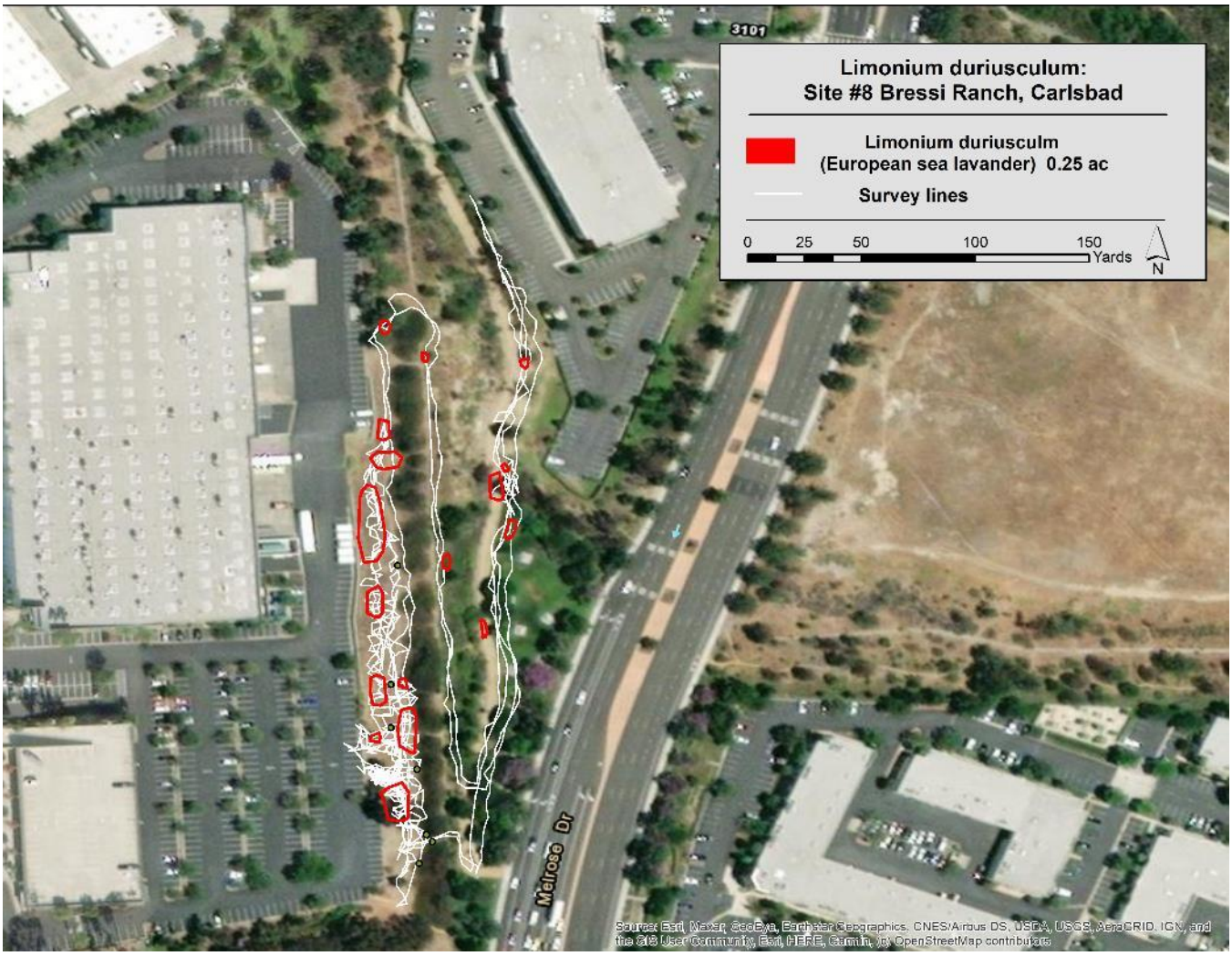
This is a new treatment area that drains into southern San Diego Bay. Over 9,000 mature plants were foliar treated by a crew of two individuals over four days (October 22 to 27th 2021). Additional areas were identified upslope, Caltrans will be contacted, and treatment should occur next quarter.

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

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 #8 Bressi Ranch	European Sea Lavender	1	0.25	0.8	800

900 plants (5% mature/95% seedlings) were foliar treated by a crew of two individuals on October 7th 2021. Cover is greatly reduced in past treatment areas (>95% cover reduction), but there are still many seedlings sprouting.



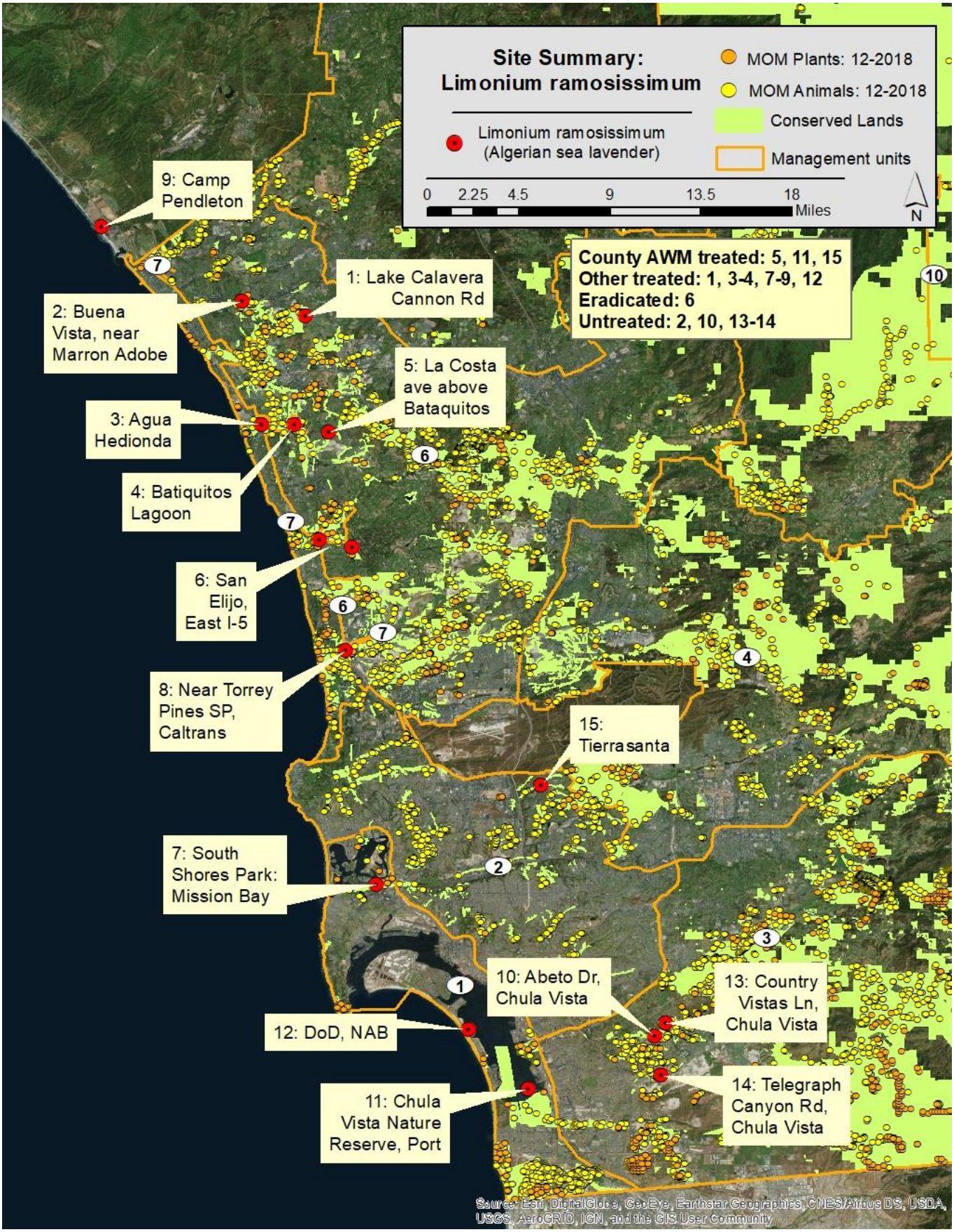
***Limonium duriusculum*, European Sea Lavender: Site #10 Paseo Ranchero, Chula Vista**

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 #10 Paseo Ranchero, Chula Vista	European Sea Lavender	1	0.25	0.7	5,000

This newly reported site was treated for the first time. Over 5,000 mature plants were foliar treated by a crew of two individuals over two days (October 29th and November 1st 2021).

***Limonium ramosissimum*, Algerian Sea Lavender:**



***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	0.1	1	250 (800)

This was the third treatment of this large and heavily invaded site. Initial control was very good at over 95%, but seedlings are still sprouting in areas, but these have also dropped from over 7,400 plants in 2020 to 800 (450 this quarter) in 2021. Plants were dense monotypic patches forming a carpet, now there are scattered plants and seedlings. The crew foliar treated with backpacks. A crew of two individuals worked one day October 1st 2021.

***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	500

This was the third treatment of this large and heavily invaded site. Initial control was very good at over 95%, but seedlings are still sprouting in areas, but these have also dropped from over 2,200 plants in 2020 to 450 in 2021. Plants were dense monotypic patches forming a carpet, now there are scattered plants and seedlings. The crew foliar treated with backpacks. A crew of two individuals worked two days October 4-5th 2021. A smaller site to the south was also treated for the first time by the crew on October 5th, 50 plants were treated.

***Limonium ramosissimum*, Algerian sea lavender: Site #14 Telegraph Canyon Rd, 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 #14 Telegraph Canyon Rd, Chula Vista	Algerian Sea Lavender	1	0.03	0.8	220

This was the third treatment of this lightly invaded site. The first treatment was effective (>90%) but scattered plants survived, and many seedlings sprouted (200 in 2020 and 220 in 2021). A crew of two foliar treated with backpacks on one day October 6th 2021.9

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. Existing location data will be aggregated, new surveying in summer 2022 will occur, treatments in some areas will also occur.

Work Anticipated for 3rd Quarter Period, January 1st – March 31st 2022:

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, Yellowstar Thistle, and Limonium.
- Re-treatment of sites: Spotted Knapweed, Yellowstar Thistle, Bridal Broom, French Broom, and Limonium.
- 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.