

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

**Strategic Control of Invasive Weed Species
4th Quarter Report - FY 2023-24: Report #38 for Project**

April 1st, 2024 – June 30th, 2024

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 April 1st to June 30th 2024.

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. Recent ROEs over the past two years were grouped together and will be provided to SANDAG as a deliverable. A Temporary Access Permit (TAP) was obtained from City of San Diego Public Works for Lake Murray Reservoir.

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

Current work sites were visited and assessed (Ward's Weed, Canary Island St John's Wort, Barbed Goatgrass, and Volutaria). The coordinator pulled and bagged plants at some of these sites and directed Nature Collective crews to control sites in some situations (Ward's Weed at Bressi Ranch Carlsbad).

Planning for field site treatments by crew occurred. Sites were ordered by priority and field day estimates generated.

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). These will be submitted to SANDAG as a deliverable.

Work plan:

Work crew priorities by species and sites 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 two Level 1 species this quarter: Barbed Goatgrass and Desert Knapweed. 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 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>Aegilops triuncialis</i>	Barbed Goatgrass	1	6.0	1.0	7,000
<i>Volutaria tubuliflora</i>	Desert Knapweed	1	1.0	0.4	1,000

***Aegilops triuncialis* (Barbed Goatgrass):**

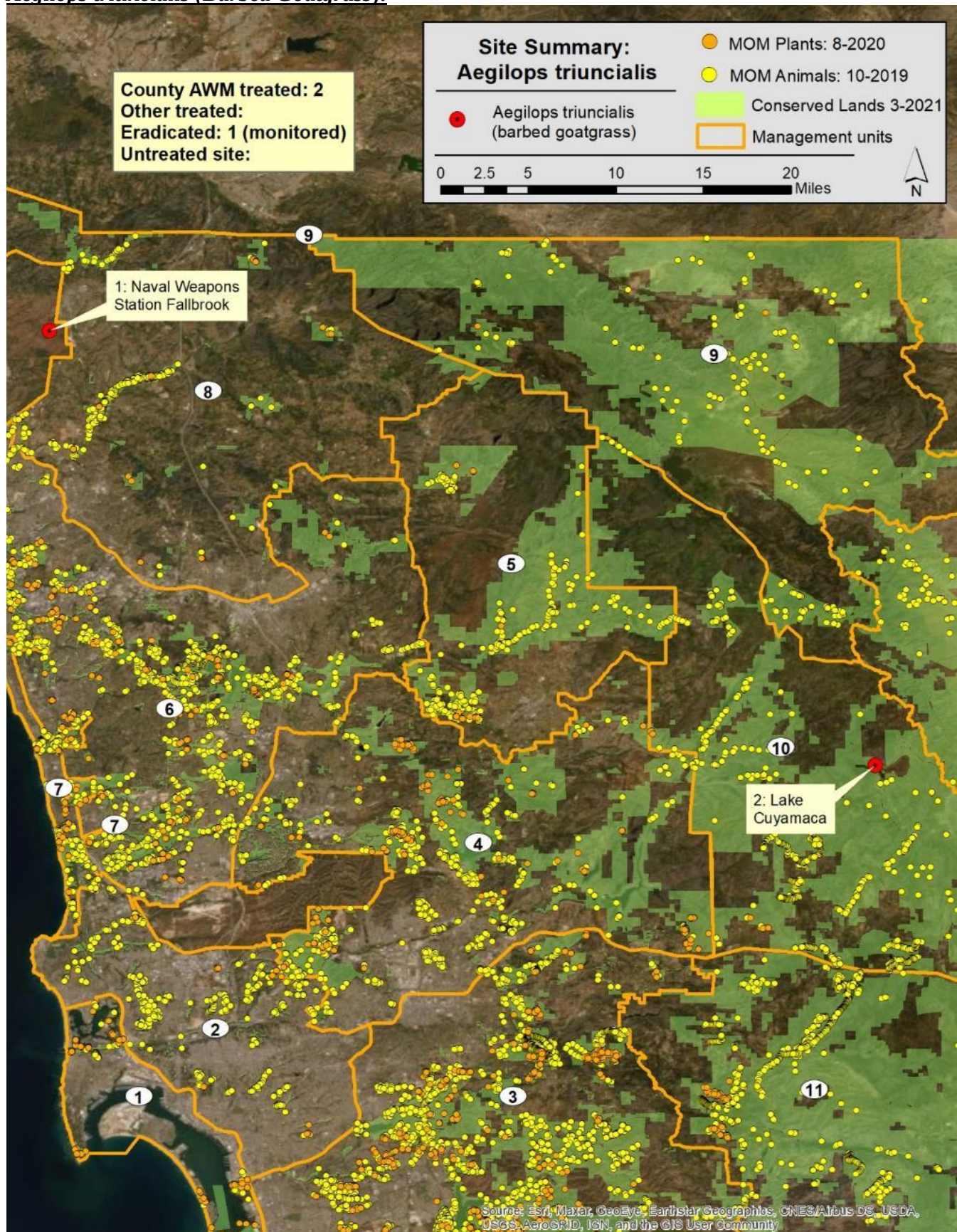


Table 2. Summary of treatments performed by AWM on *Aegilops triuncialis* (Barbed Goatgrass).

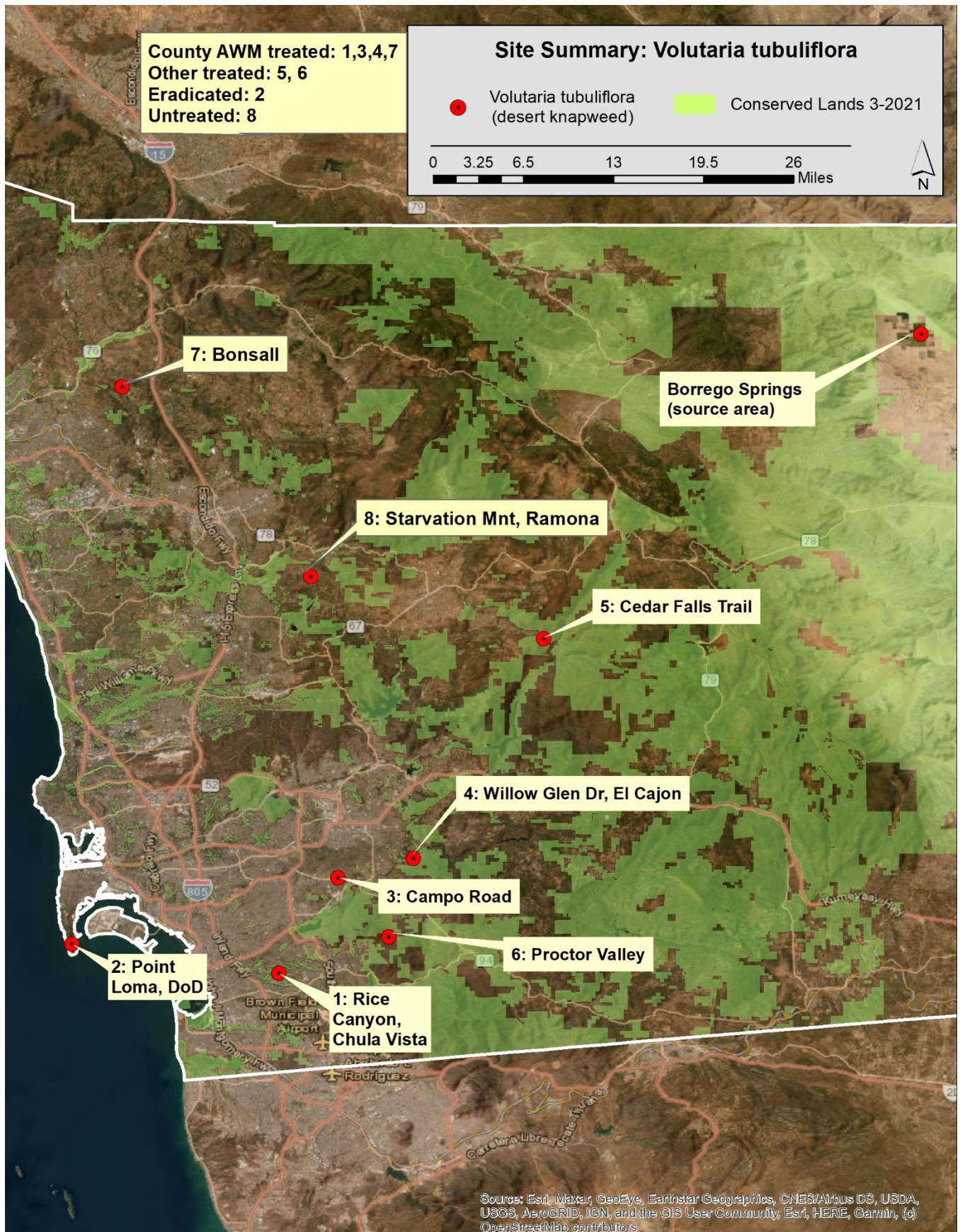
Work Site	Common Name	# of Work Cycles	Acres Surveyed	Acres Treated	Plants Controlled
Site #2 Lake Cuyamaca	Barbed Goatgrass	1	6.0	1.0	7,000

***Aegilops triuncialis* (Barbed Goatgrass): Site #2 Lake Cuyamaca**

An AWM crew of one to two individuals controlled Barbed Goatgrass over 13 days between May 1st and June 3rd 2024. The crew started treatments early, so that plants were not setting seed by the time treatments ended, but this made treatments harder as plants were often at basal growth stage, making detection more difficult and time consuming (distinguishing targets from other annual and perennial grasses). The crew spot treated plants with post-emergent. This remains the only site in the County, but control has been very challenging.



***Volutaria tubuliflora*, Desert Knapweed:**

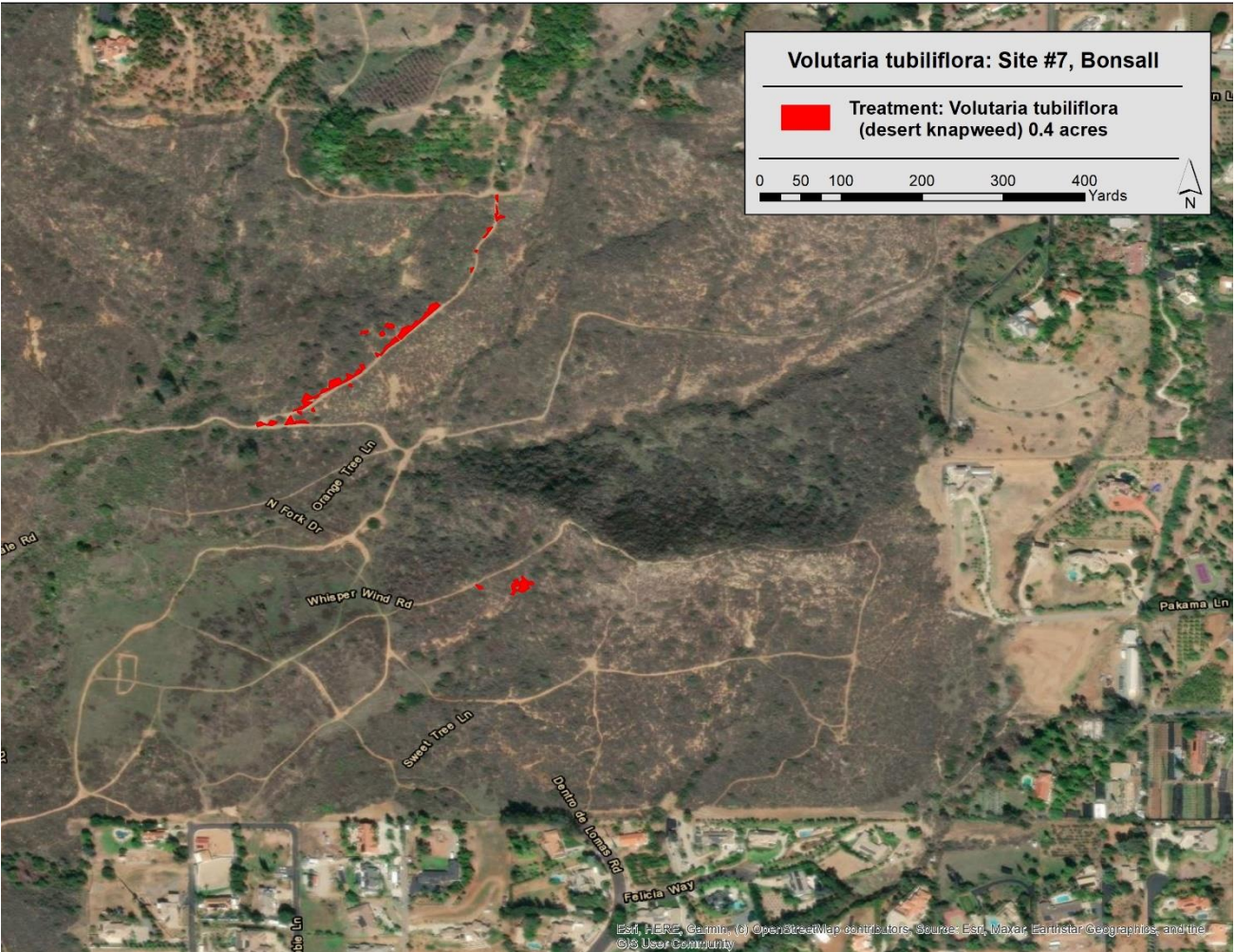


Volutaria tubuliflora, Desert knapweed:

Table 3. Summary of treatments performed by AWM on Volutaria tubuliflora (Desert Knapweed).

Site Name	Common Name	# of Work Cycles	Acres Surveyed	Acres Treated	Plants treated
Site #7 Bonsall	Desert Knapweed	1	1.0	0.4	1,000

The AWM crew (two workers) completed work that started last quarter, when they visited the site on April 2nd 2024. Plants were treated with a mix of pre and post emergent herbicide. This is a new site reported on iNaturalist. An additional site has also been recently reported east of Ramona by Starvation Mountain.



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 two Level 2 invasive weed species (Yellow Starthistle and Canary Island St. John's Wort) at two 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 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>Centaurea solstitialis</i>	Yellow Starthistle	1	0.3	0.1	25
<i>Hypericum canariense</i>	Canary Island St. John's Wort	1	6.2	0.9	1,745

Centaurea solstitialis, Yellow Starthistle:

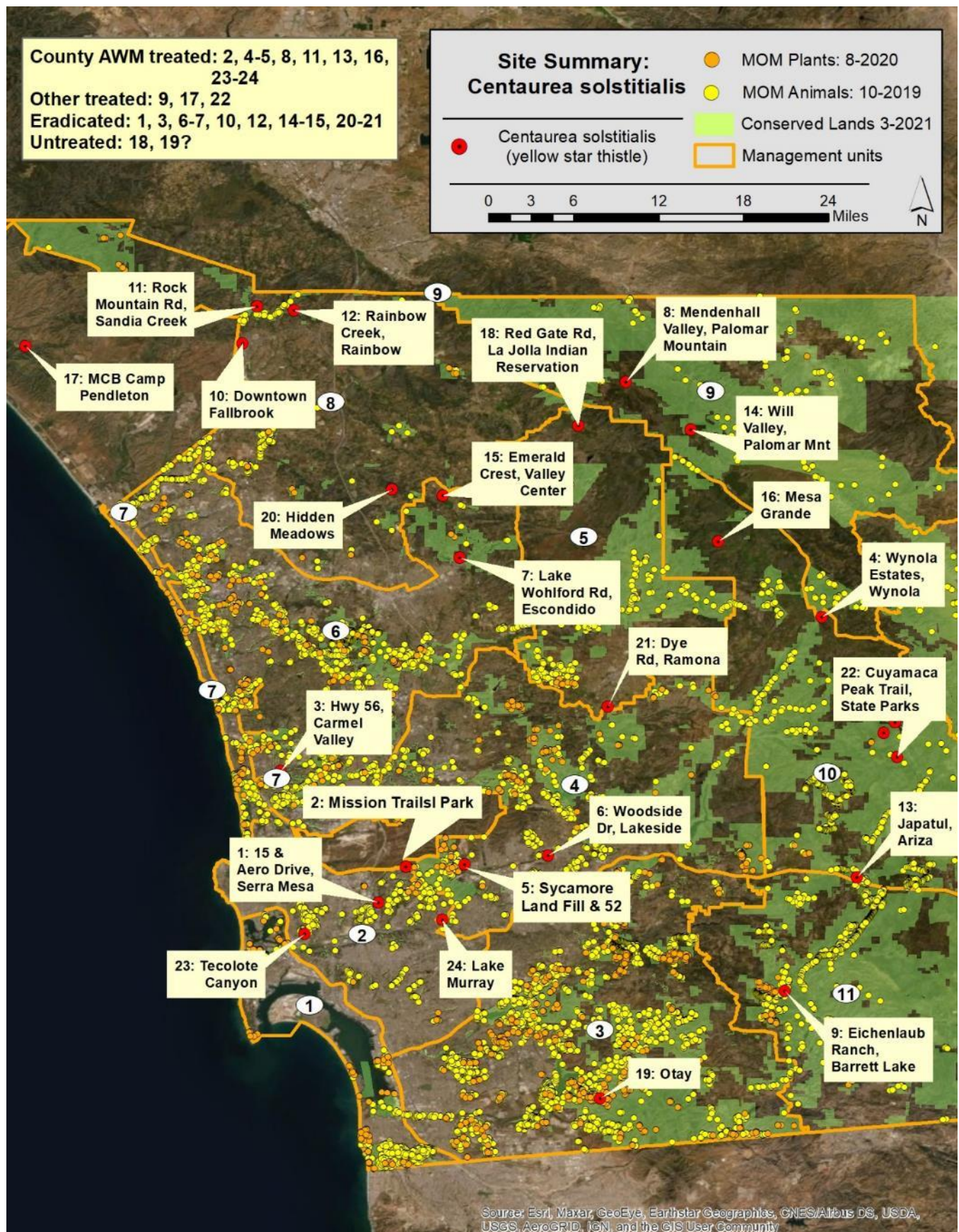


Table 5. Summary of treatments performed by AWM on *Centaurea solstitialis* (Yellow Starthistle).

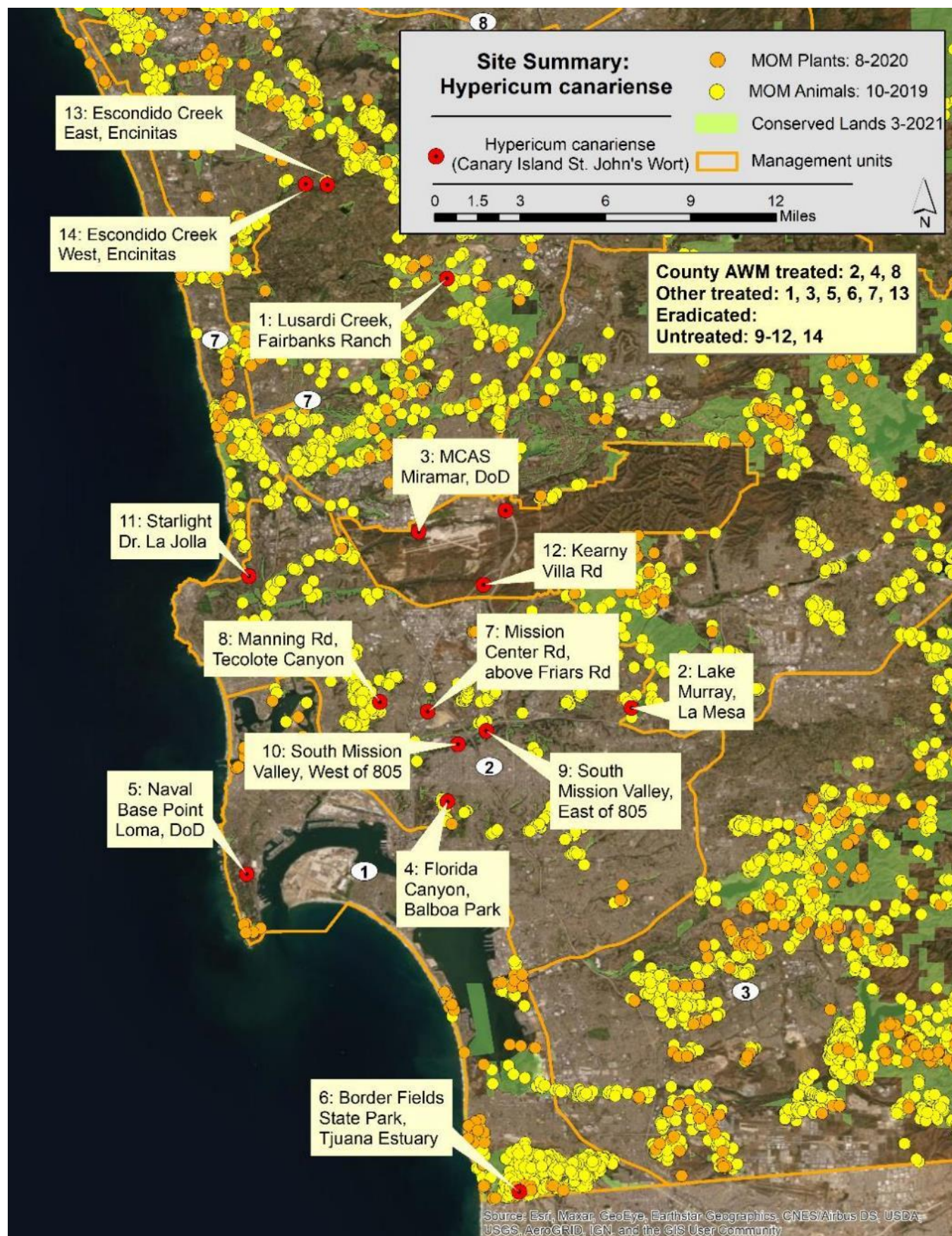
Site Name	Common Name	# of Work Cycles	Acres Surveyed	Acres Treated	Plants treated
Site #2, Mission Trails, San Diego	Yellow star thistle	1	0.3	0.1	25

***Centaurea solstitialis*, Yellow Starthistle: Site #2, Mission Trails Park**

An AWM crew of one individual worked at the site on June 10th 2023. 25 plants were hand pulled. There were 300 plants controlled in 2023, no plants seen in 2022 and 86 plants controlled in 2021.



Hypericum canariense, Canary Island St. John's Wort



Hypericum canariense, Canary Island St. John's Wort: Site #4 Balboa Park

Table 6. Summary of treatments performed by AWM on *Hypericum canariense*, Canary Island St. John's Wort.

Site Name	Common Name	# of Visits	Acres Surveyed	Acres Treated	Plants treated
Site #4, Balboa Park	Canary Island St. John's Wort	1	6.2	0.9	1,745

A crew of one to two individuals visited the site over nine days between June 12th and 26th 2024. Work at the site continued into July. Small plants (40%) and seedlings (60%) were foliar treated with herbicide (Garlon 4 Ultra). Cover is greatly reduced (>95% cover reduction), but there were scattered seedlings still emerging and a few resprouts.



TASK 4 – AWM: Invasive Plant Level 3 Management.

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

Level 3 Management Species are invasive non-native targets that of a wider distribution in the county (they cannot be eradicated), but still limited enough that they can be contained to portions of the county or they may be eradicated from watersheds or large landscape level units, when the IPSP was written (2012). These species may also be worked on to suppress them in high resource value areas.

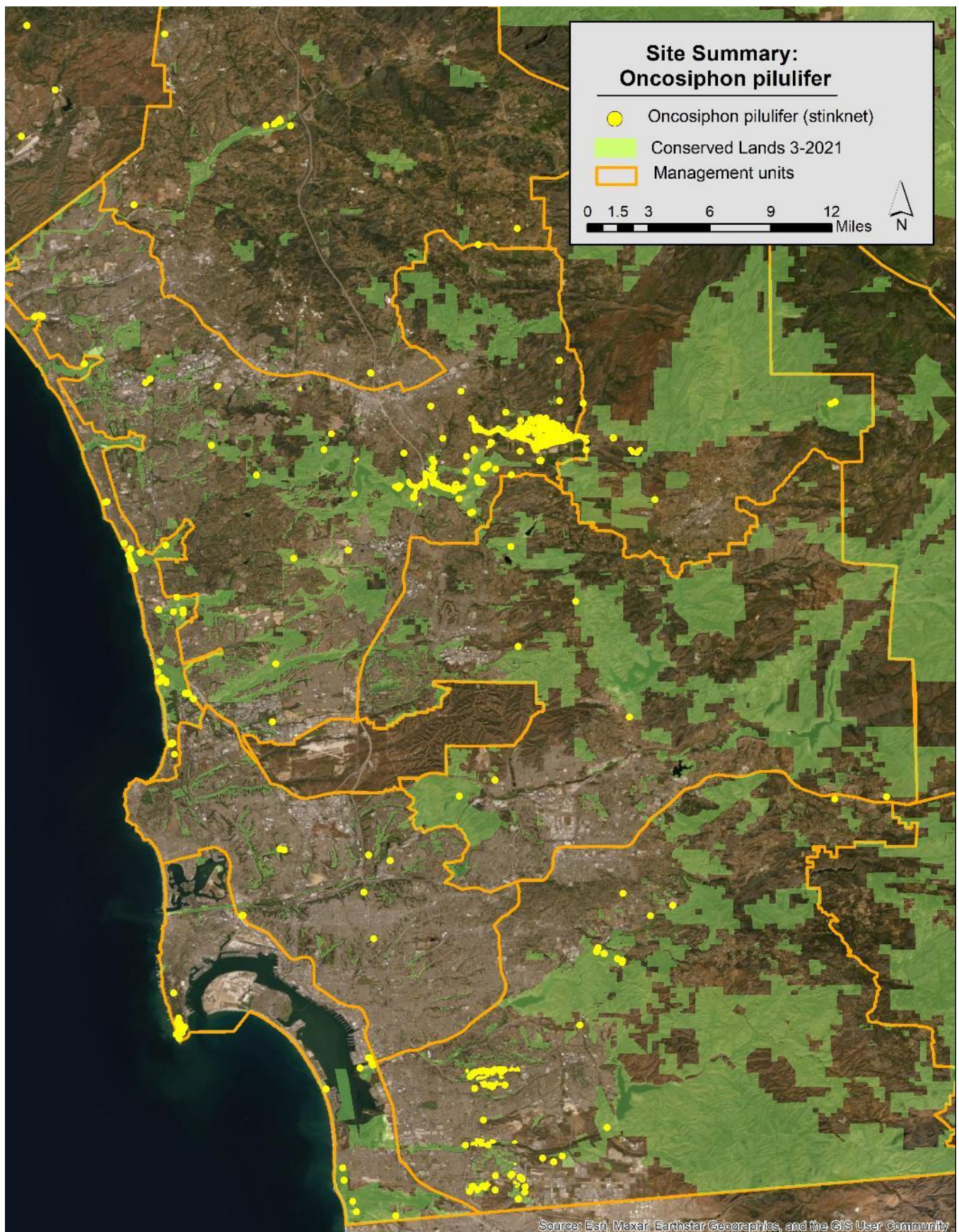
Crews surveyed and treated one invasive weed species (Stinknet) at two sites this quarter. AWM IPC made optimal pesticide applications, protected the natural environment by preventing off-site movement of pesticides, and utilized Best Management Practices (BMPs) that prevented unintentional discharges 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 7. Summary of treatments performed by AWM on Level 3 species this quarter.

Scientific Name	Common Name	# of Sites Worked	Acres Surveyed	Acres Treated	Plants Controlled
<i>Oncosiphon pilulifer</i>	Stinknet	2	8.0	3.4	10,000

Oncosiphon pilulifer, Stinknet:



Oncosiphon pilulifer, Stinknet: Site #1 Furby North Preserve, Otay

Table 8. Summary of treatments performed by AWM on *Oncosiphon pilulifer* (Stinknet).

Site Name	Common Name	# of Work Cycles	Acres Surveyed	Acres Treated	Plants Controlled
Site #1 Furby North Preserve	Stinknet	1	4.0	2.7	8,000

The County AWM crew completed treatments at Furby North Preserve. Two crew members worked four days from April 18th to 24th 2024. Over 8,000 plants were treated with pre and post emergent herbicide. Plant cover was much higher than expected, indicating that the pre-emergent applied last year did not work that well.

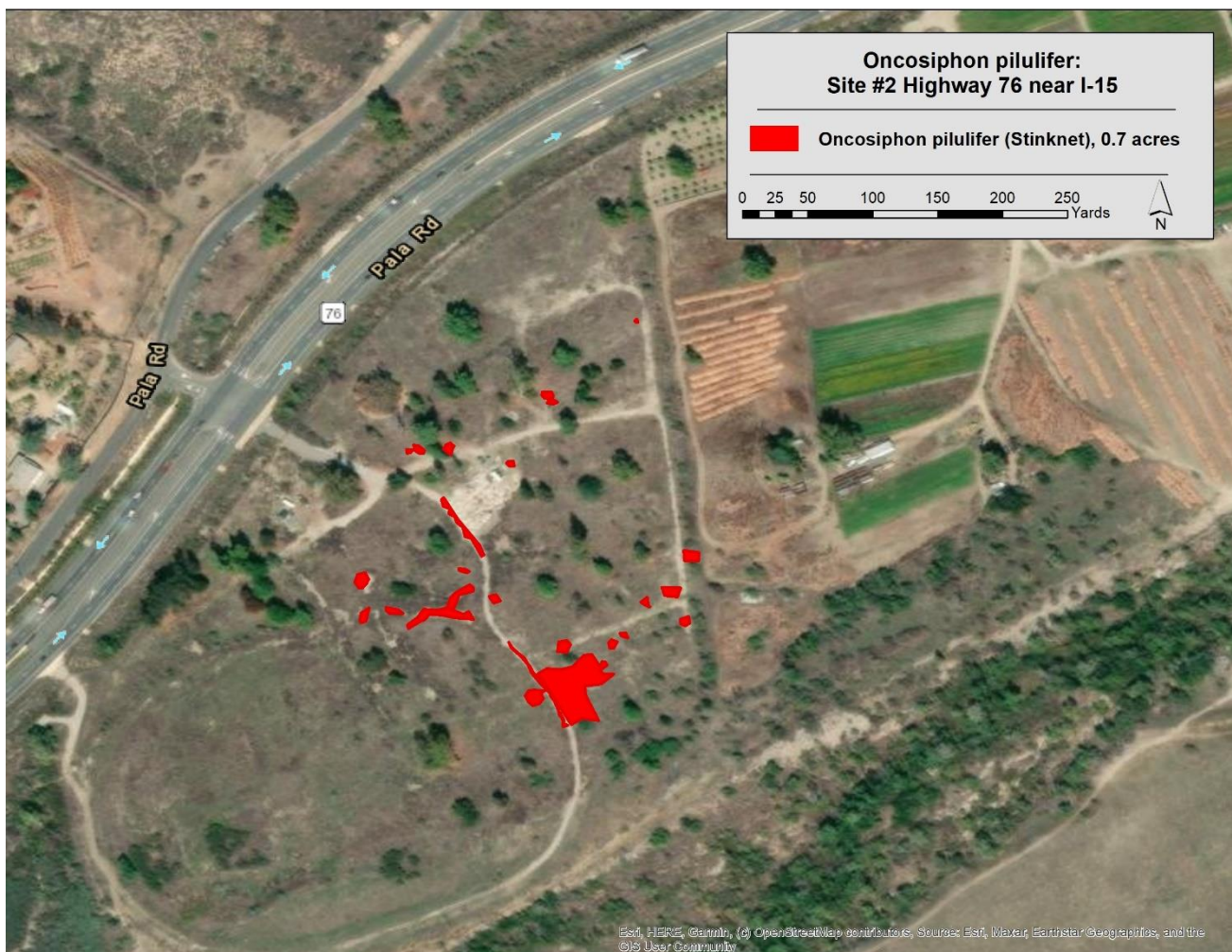


Oncosiphon pilulifer, Stinknet: Site #2 Highway 76 near I-15

Table 9. Summary of treatments performed by AWM on *Oncosiphon pilulifer* (Stinknet).

Site Name	Common Name	# of Work Cycles	Acres Surveyed	Acres Treated	Plants Controlled
Site #2 Highway 76 near I-15	Stinknet	1	4.0	0.7	2,000

The County AWM crew completed treatments that were started last quarter on an area south of Highway 76 just west of I-15. This was Caltrans excess mitigation lands that are now held by the County of San Diego Parks and Open-space Division. Two crew members worked one day on April 3rd 2024. Over 2,000 plants were treated with pre and post emergent herbicide. Nature Collective treated extensive areas along highway 76, which is adjacent to the site.



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.
- Co-ordination with the City of San Diego, considering control of *Myoporum acuminatum*, work on stinknet.
- Surveying of reports from iNaturalist.
- Co-ordination with San Diego Weed Management Area at quarterly meeting. Presentation on EDRR and stinknet work at San Diego Weed Management Area 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, July 1st – September 30th 2024:

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 sp.
- Re-treatment of sites: Ward's weed, Limonium sp., 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.
- Work with the Natural History Museum ‘Urban Canyons Survey Project’, provide EDRR materials to facilitate reporting of EDRR targets.