

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

**Strategic Removal of Invasive Weed Species
4th Quarter Report - FY 2018-19: Report #18 for Project**

April 1st, 2019 – June 30th, 2019

Project: County of San Diego, Department of Agriculture, Weights & Measures (AWM) –
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 MOU, which allowed work to occur from April 1st to June 30th, 2019.

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 two species at four field sites:

Work tasks included checking in with field crews, assessing treatment success, and mapping and surveying target plants. Species and sites are presented under task 2 and 3. The coordinator hand pulled the plants at the La Costa *Limonium ramosissimum* site.

Report preparation:

Quarterly report for Q4 FY 2018/19 was prepared. Summary report for the second contract was completed for field seasons 2017 and 2018.

Mapping and occurrence data:

Spatial data was updated (treatment areas and treatment status) for the entire second contract. This data set will be submitted to San Diego Management and Monitoring Program (SDMMP) program staff.

Work plan:

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

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 invasive weed species (Carnation spurge and Desert knapweed) at four 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 Integrated Pest Control Technicians (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 Surveyed | Acres Treated | Plants Controlled |
|----------------------------|------------------|-------------------|----------------|---------------|-------------------|
| <i>Euphorbia terracina</i> | Carnation spurge | 1 | 0.5 | 0.1 | 130 |

***Euphorbia terracina* (Carnation spurge):**

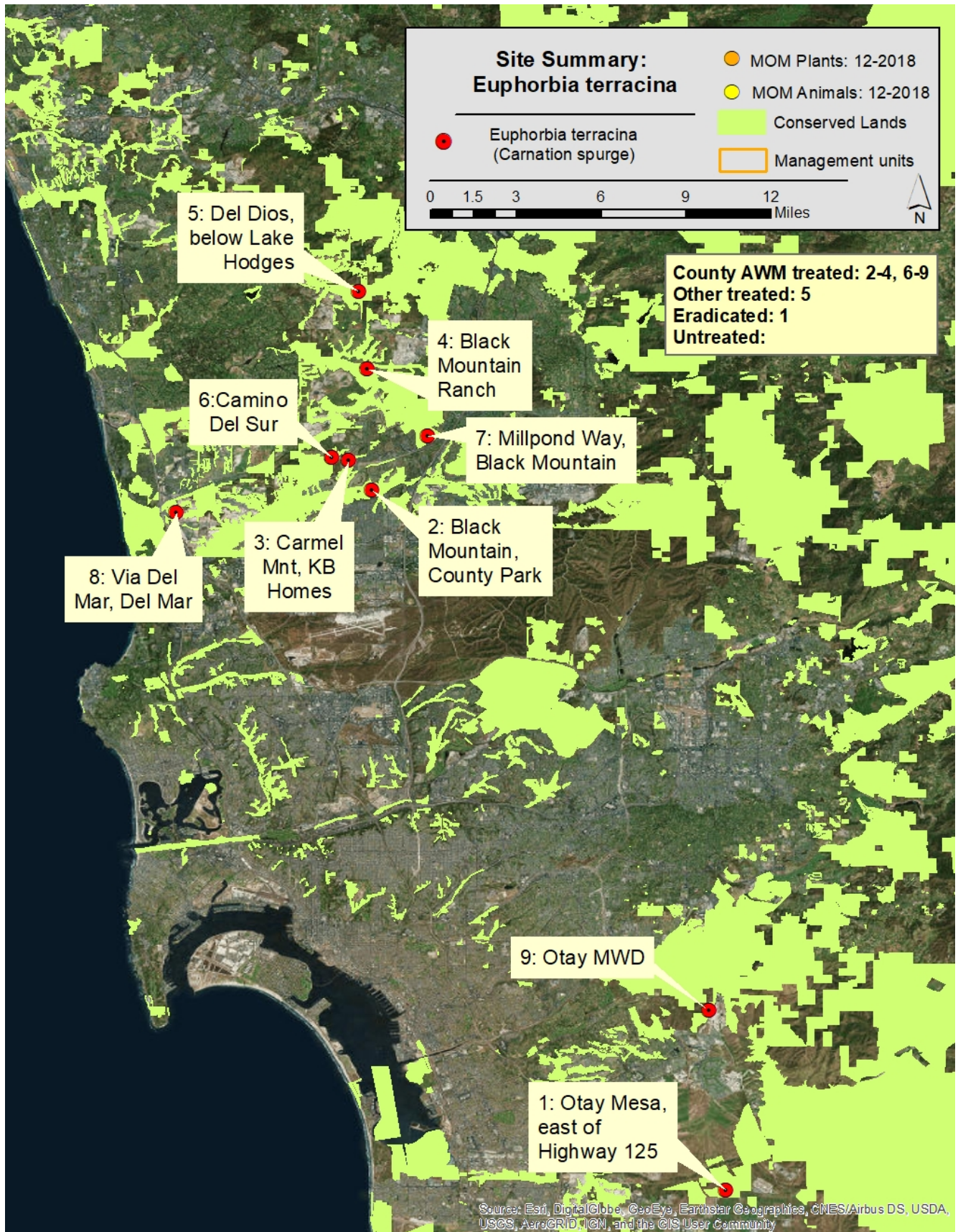
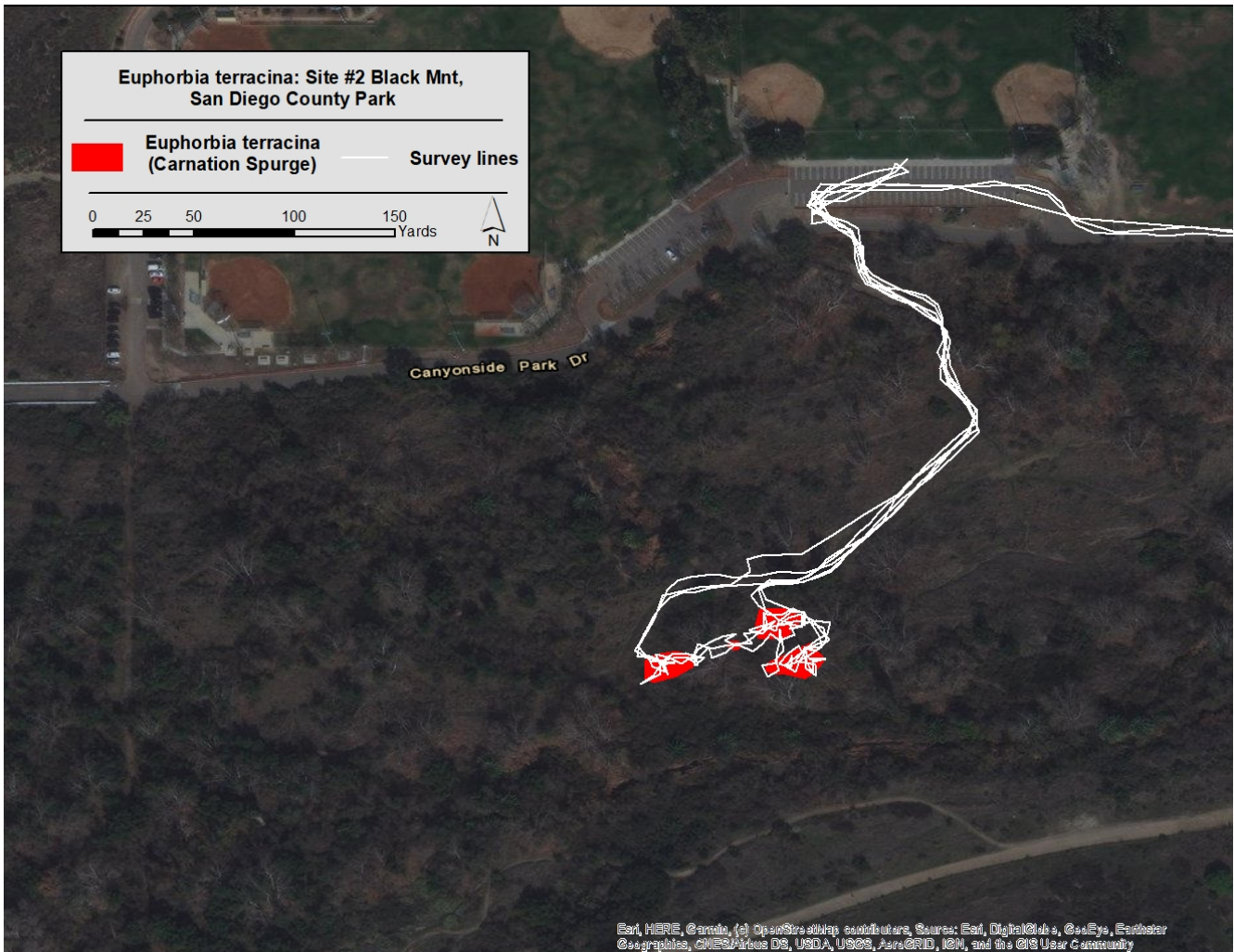


Table 2. Summary of treatments performed by AWM on *Euphorbia terracina* (carnation spurge).

| Work Site | Common Name | # of Work Cycles | Acres Surveyed | Acres Treated | Plants Controlled |
|-------------------------------------|------------------|------------------|----------------|---------------|-------------------|
| Site #2, Black Mountain County Park | Carnation spurge | 1 | 0.5 | 0.1 | 130 |

***Euphorbia terracina* (Carnation spurge): Site #2, Black Mountain. County Park**

Seedlings were pulled and bagged. A crew of three individuals worked 5/22/2019. There has been a reduction in cover (>80%), but there is an extensive seedbank that continues to generate new seedlings each spring.



Site #2: Control of Carnation spurge plants.

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).

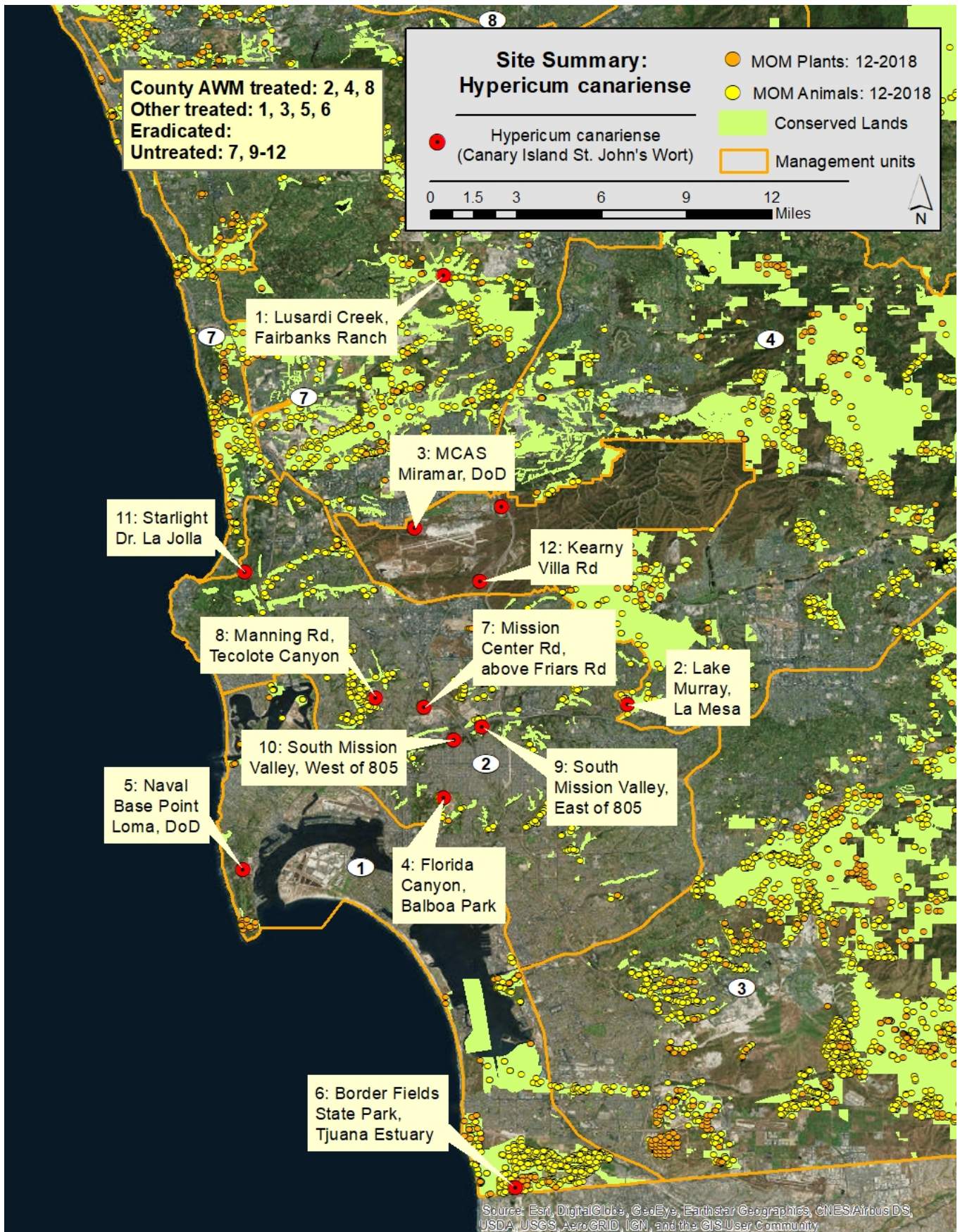
Crews surveyed and treated two invasive weed species (Canary Island St. John’s Wort and Algerian sea lavender) at four sites this quarter. AWM IPC made optimal pesticide applications, protected the natural environment by preventing off-site movement of pesticides, and utilized Best Management Practices (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 6. 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>Hypericum canariense</i> | Canary Island St. John’s Wort | 3 | 42.6 | 8.3 | 4,680 |
| <i>Limonium ramosissimum</i> | Algerian sea lavender | 1 | 1.0 | 0.1 | 750 |

***Hypericum canariense*, Canary Island St. John's Wort**

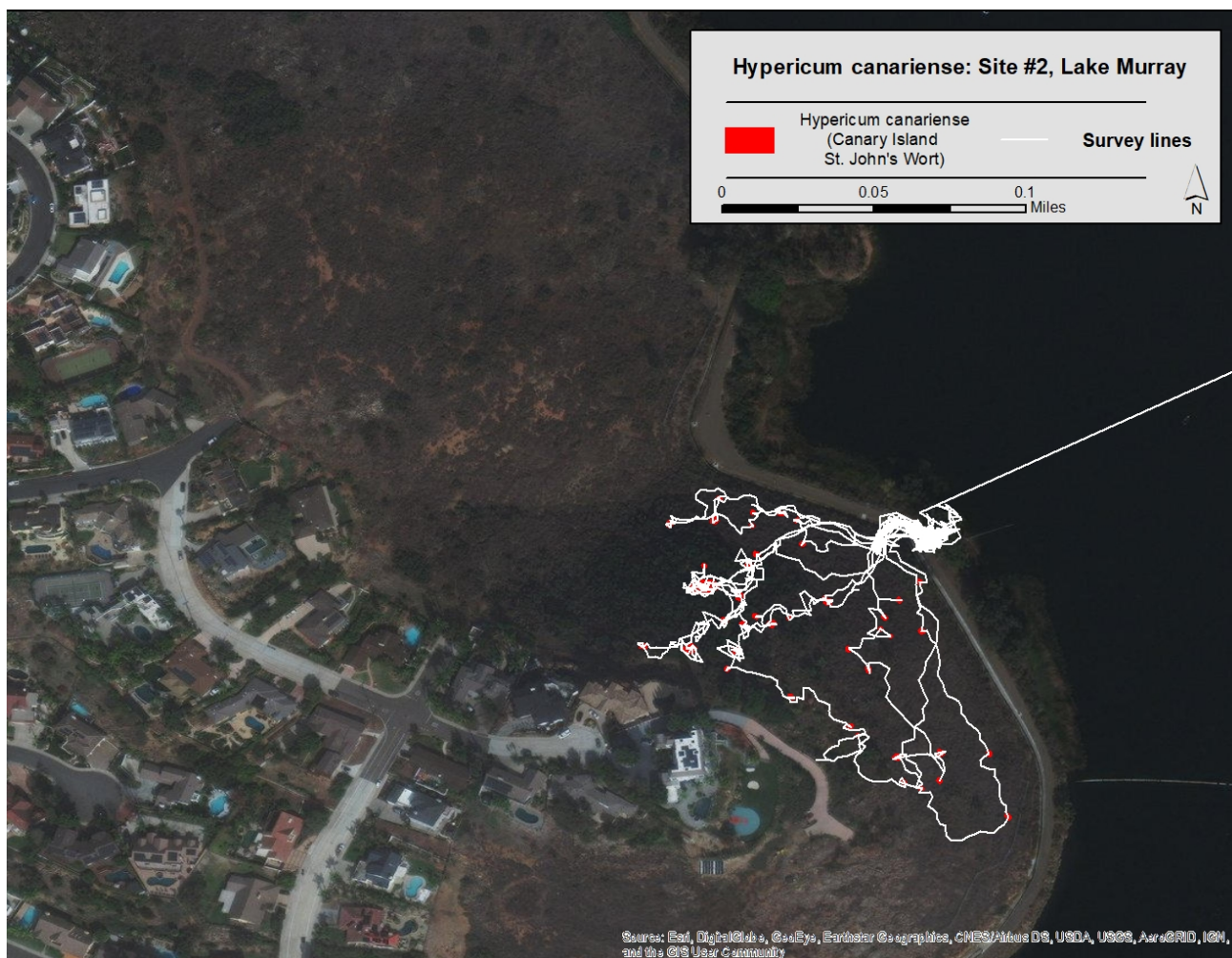


Hypericum canariense, Canary Island St. John's Wort: Site #2 Lake Murray

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 #2, Lake Murray | Canary Island St. John's Wort | 1 | 0.5 | 2.0 | 350 |

This site was started at the end of the quarter, most work will be in the next quarter. Re-sprouting plants, seedlings and mature plants were foliar treated with herbicide (imazapyr and glyphosate). A crew of three individuals visited the site on 6/28/2019. Cover is greatly reduced (>90% cover reduction), but there were scattered re-sprouts and seedlings.



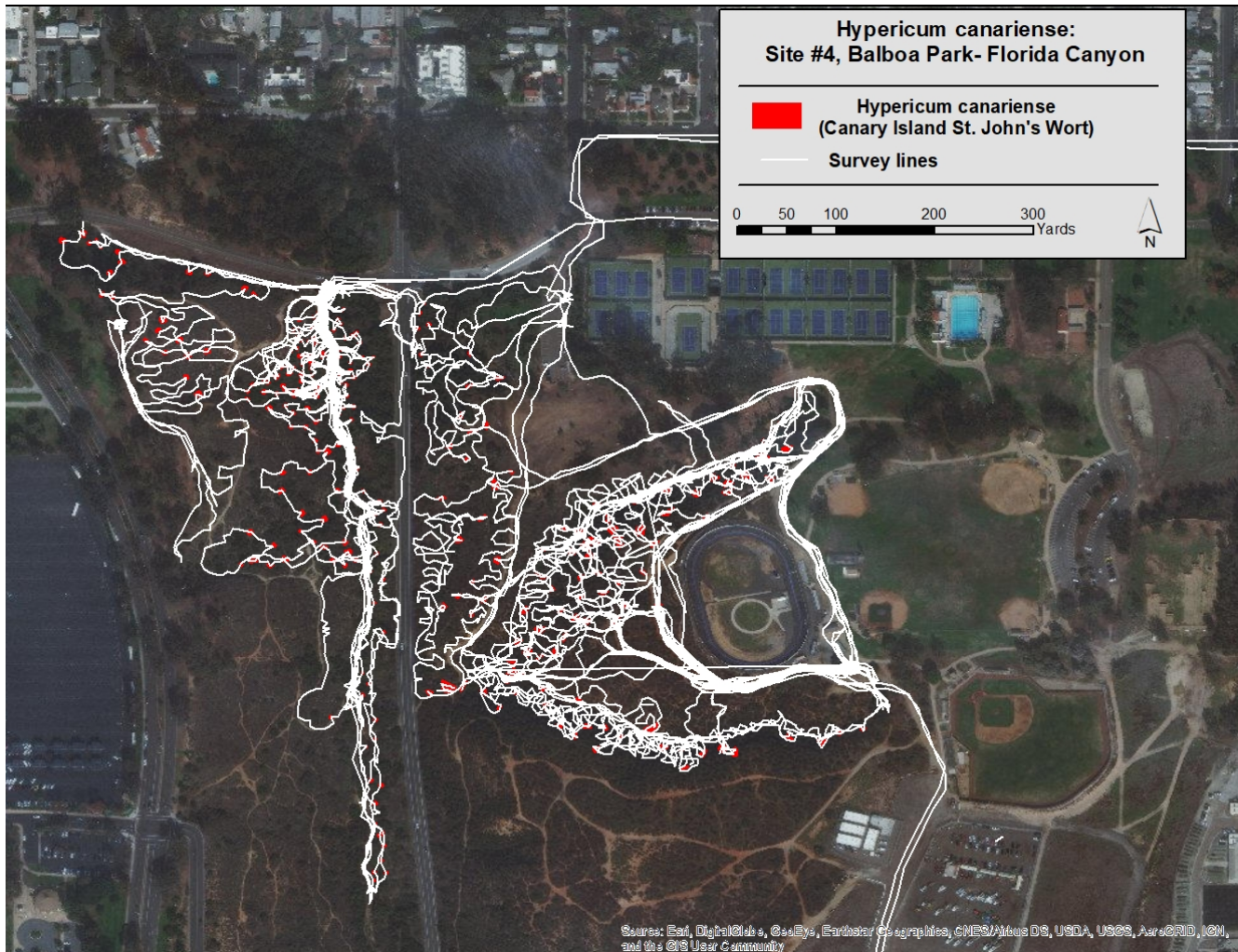
Site #2 Lake Murray.

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

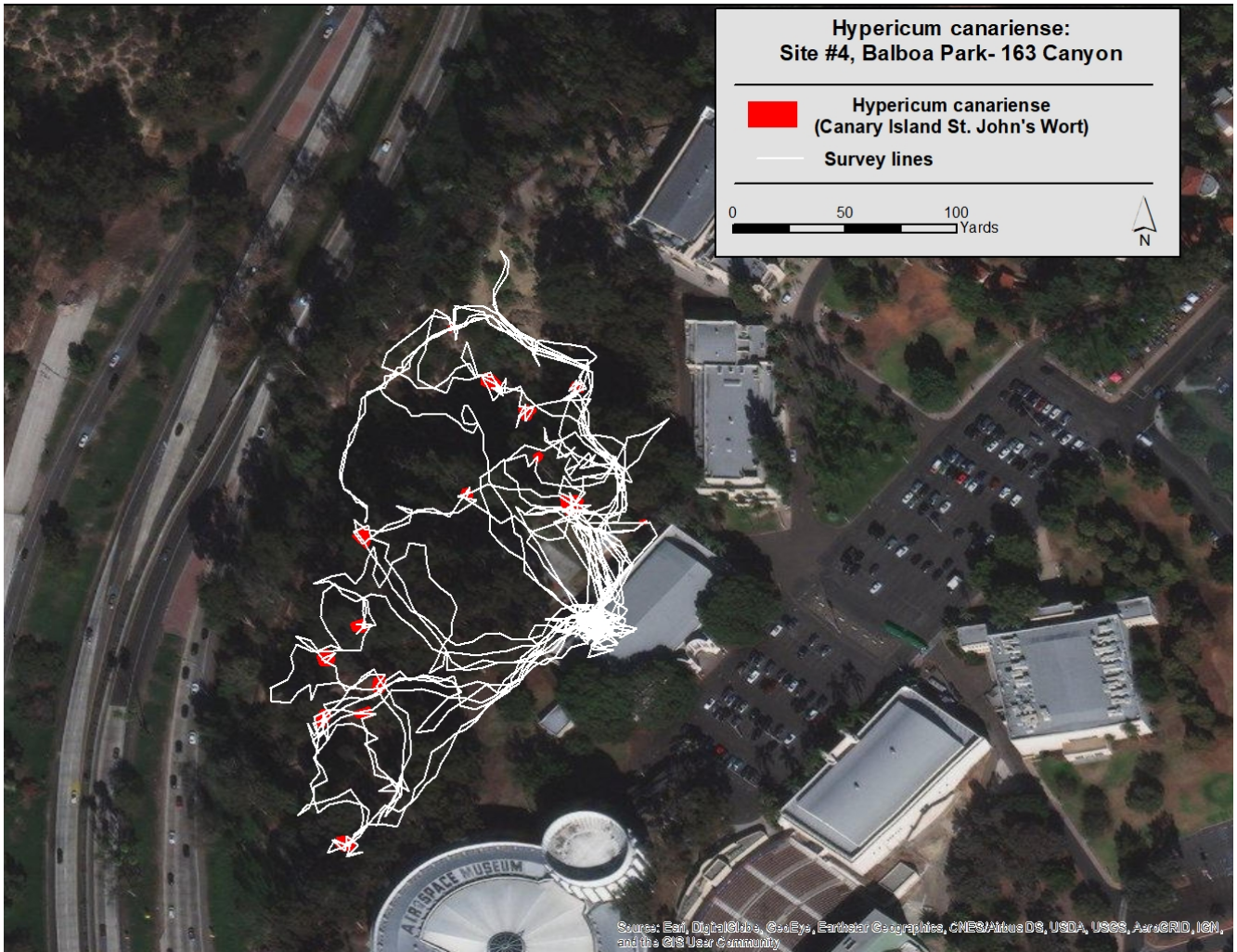
Table 7. Summary of treatments performed by AWM on *Hypericum canariense*, Canary Island St. John's Wort.

| Site Name | Common Name | # of Visits | Acres Surveyed | Acres Treated | Plants treated |
|--|-------------------------------|-------------|----------------|---------------|----------------|
| Site #4, Florida Canyon, Balboa Park | Canary Island St. John's Wort | 1 | 25.5 | 5.1 | 2,065 |
| Site #4, 163/Air and Space Museum, Balboa Park | Canary Island St. John's Wort | 1 | 2.0 | 0.3 | 110 |

Re-sprouting plants (45%) and seedlings (40%) were treated with herbicide (Element 4, triclopyr) as well as scattered adult plants (5%) missed in previous treatments. A crew of one to four individuals visited the site over seventeen days between 3/28/2019 and 5/3/2019. Cover is significantly reduced (>85% cover reduction), but there were many scattered re-sprouts and many seedlings. There are two portions of the site: Florida Canyon and a smaller area to the west by the Air and Space Museum.



Site #4 Balboa Park, east and west of Florida Canyon.



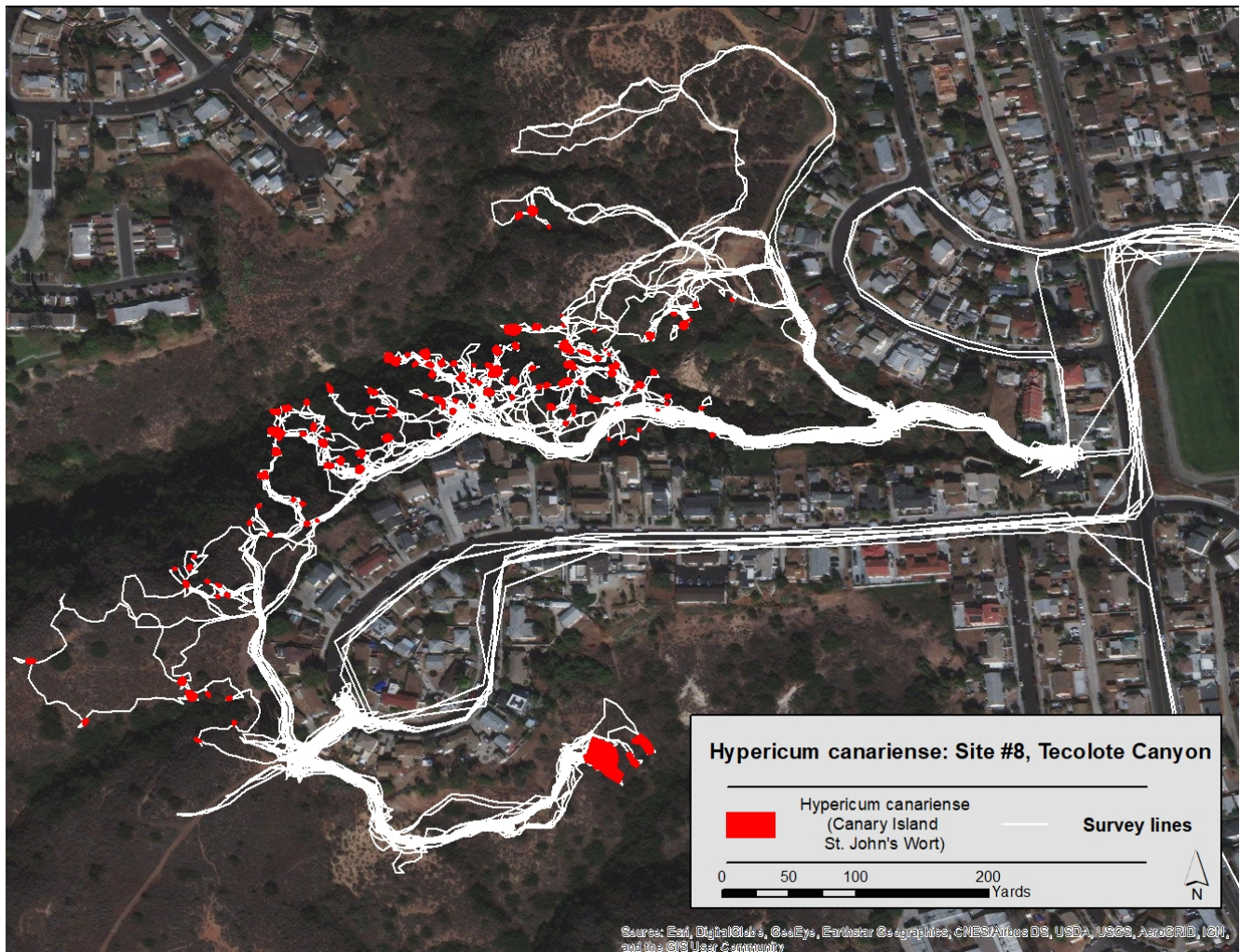
Site #4 Balboa Park, by the 163 and the Air and Space Museum.

Hypericum canariense, Canary Island St. John's Wort: Site #8 Tecolote Canyon

Table 7. Summary of treatments performed by AWM on *Hypericum canariense*, Canary Island St. John's Wort.

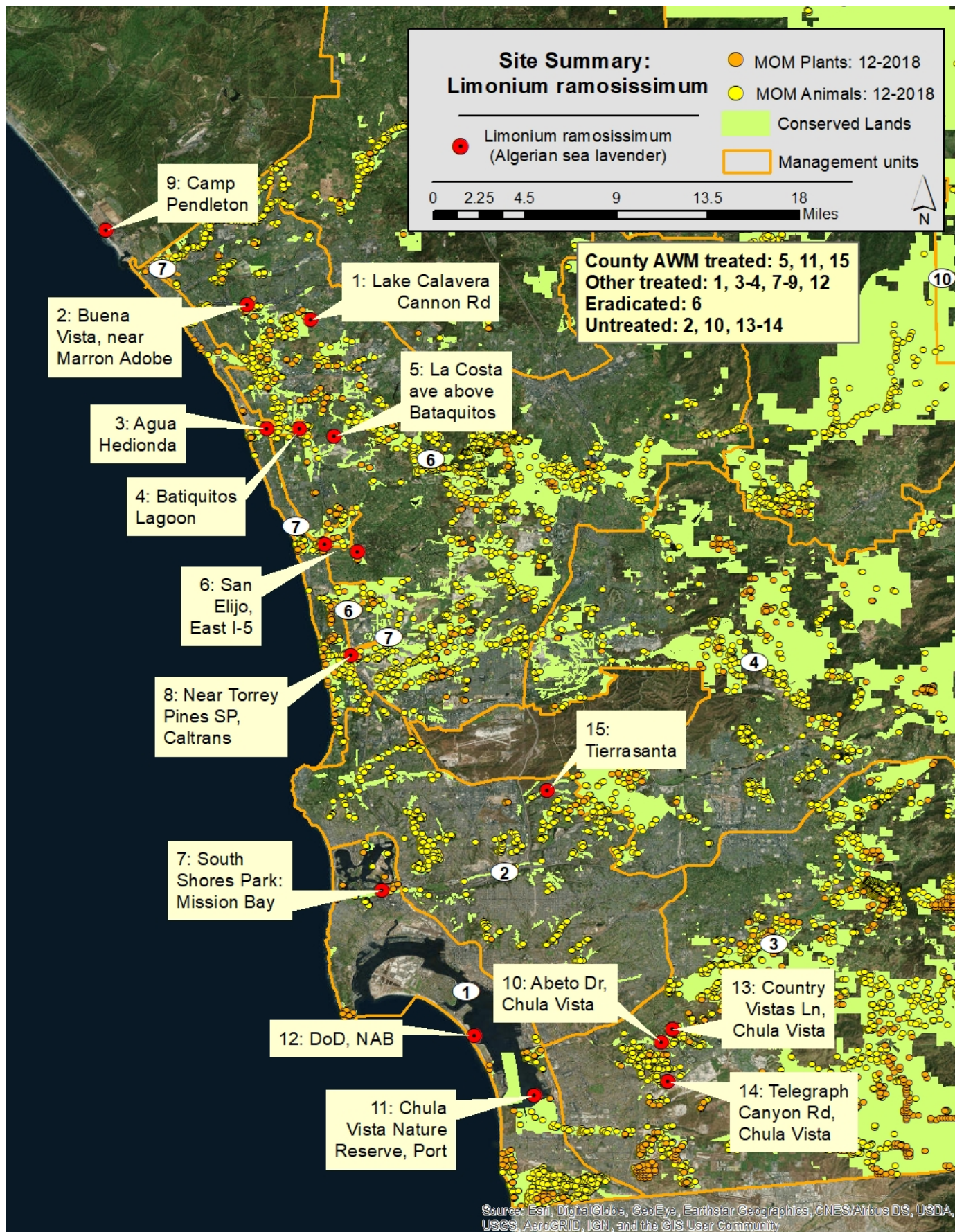
| Site Name | Common Name | # of Visits | Acres Surveyed | Acres Treated | Plants treated |
|--------------------------|-------------------------------|-------------|----------------|---------------|----------------|
| Site #8, Tecolote Canyon | Canary Island St. John's Wort | 1 | 15.1 | 2.7 | 2,265 |

Re-sprouting plants (40%), seedlings (40%) and mature plants (20%) were foliar treated with herbicide (imazapyr and glyphosate). A crew of two to four individuals visited the site over thirteen days from June 3rd to the 27th -2019. Cover is greatly reduced (>90% cover reduction), but there were scattered re-sprouts and seedlings. The southern area is a newly treated stand, reported by City of San Diego Park staff. Another stand may occur on the opposite north facing hill. This will be confirmed and may be treated later in the season or next year.



Site #8 Tecolote Canyon.

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



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

Table 6. Summary of treatments performed by AWM on *Limonium ramosissimum* (Algerian sea lavender).

| Site Name | Common Name | # of Work Cycles | Acres Surveyed | Acres Treated | Plants treated |
|--------------------------------|-----------------------|------------------|----------------|---------------|----------------|
| Site #5 La Costa Ave, Carlsbad | Algerian sea lavender | 1 | 1.0 | 0.1 | 750 |

Mature plants (10%) and seedlings (90%) were pulled and bagged. A single individual, the coordinator, worked two days on 6/22-23/2019. Cover is greatly reduced in past treatment areas (>90% cover reduction), but there are seedlings sprouting.



Site #5 La Costa Avenue Carlsbad.

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

- An update on Environmental Mitigation Program funded Early Detection Rapid Response work was presented at the San Diego Weed Management Area annual stakeholders meeting on June 6th, 2019. Over 100 regional managers attended. The presentation is located on the SDWMA.org website.
- Co-ordination with the ‘Ward’s weed control team’ in Carlsbad at Bressi Ranch continued. Significant progress has been made outlining a strategy to initiate Ward’s weed control at Bressi Ranch, the largest invaded side in North America. Carlsbad, The Nature Collective, Center for Natural Land Management, City of Carlsbad, and The County of San Diego AWM are the primary team members. AWM has secured \$60k to start work, the City is pursuing \$100k, and Nature Collective will direct \$100k in current Wildlife Conservation Board funding to the site. Additional funding may also be sought by Nature Collective (about \$200k). The long term goal is to eradicate Ward’s weed from the site.
- Nine San Diego Plant Assessment Forms were prepared. This information was used to update the strategic plan: ‘Management Priorities for Invasive Non-native Plants, A Strategy for Regional Implementation, San Diego County, CA.’
- Updates to the strategic plan: ‘Management Priorities for Invasive Non-native Plants, A Strategy for Regional Implementation, San Diego County, CA’ were initiated.

Work Anticipated for 4th Quarter Period, April 1st – June 30th 2019:

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 Orange County, California Native Plant Society EDRR invasive weed group.
- Present on EDRR Ward's Weed project in Carlsbad at Land Managers Meeting (Wild Animal Park).
- Continue to aggregate data and track new prospective EDRR target species.
- Attend SDMMP land manager, working group and other meetings as requested.