

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

**Strategic Control of Invasive Weed Species
*4th Quarter Report - FY 2019-20: Report #22 for Project***

April 1st, 2020 – June 30th, 2020

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 April 1st to June 30th 2020.

Covid 19: The outbreak has modified work procedures. Small crews are continuing field work following County and State guidelines. Special permission and authorizations are also being required by municipalities. 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 Ward's weed sites, Barbed goat grass, Carnation spurge and Canary Island St. John's wort.

New sites were identified after reviewing iNaturalist and Calflora. iNaturalist generated multiple new sites for several species. This resource is proving very useful. A few users are actively forwarding species observation to SDEDRR, which is being used to confirm, comment and clarify observations. Highlights include a large new CISJW site near Escondido Creek, multiple carnation spurge sites in Poway, a bone seed report at Torey Pines, several Algerian sea lavender sites, and a few potential French broom sites. Most of these have been visited and surveyed. Two Ward's weed sites were reported, one is a new known site in Encinitas, and a second was visited near San Elijo Hills, but no plants were found (the observer pulled the plants and no additional plants were found).

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.

Work plan:

Work occurred regarding work completed on current contract and work that would occur if a contract was 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 Level 1 invasive weed species (carnation spurge) at two sites this quarter. Maps for sites 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 Treated	Acres Surveyed	Plants Controlled
<i>Euphorbia terracina</i>	Carnation spurge	2	1.0	1.7	3,740

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

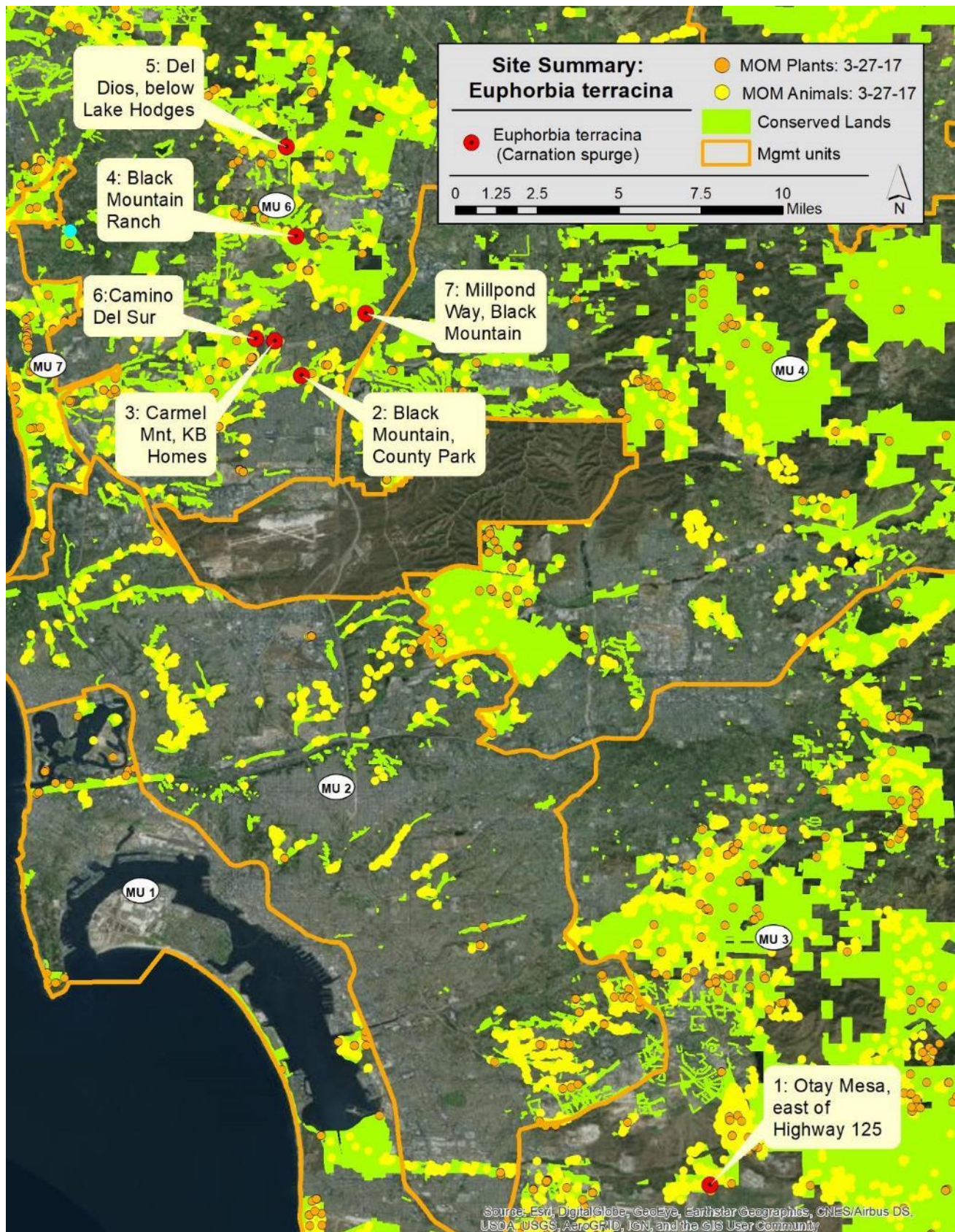


Table 2. Summary of treatments performed by AWM on *Euphorbia terracina* (carnation spurge).

Work Site	Common Name	# of Work Cycles	Acres Surveyed	Acres Treated	Plants Controlled
Site #3, KB Homes	Carnation spurge	1	1.1	0.5	1,070

***Euphorbia terracina* (Carnation spurge): Site #3, KB Homes**

Mature plants and many seedlings were manually removed (1,070 plants). A crew of one individual worked three days (4/1-15/2020). There has been a reduction in cover (>80%), but there is an extensive seedbank that continues to generate new seedlings each spring.

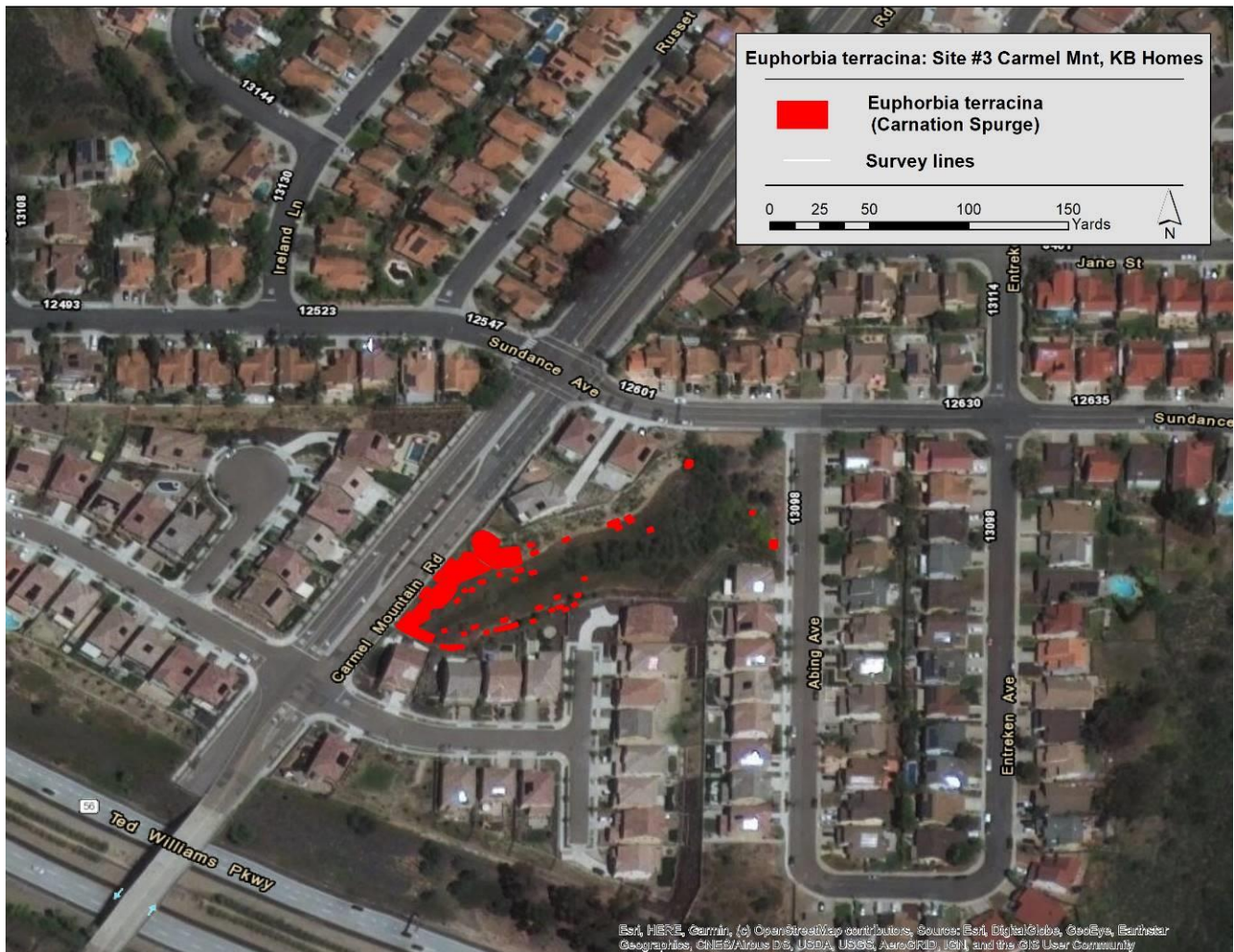


Table 3. Summary of treatments performed by AWM on *Euphorbia terracina* (carnation spurge).

Work Site	Common Name	# of Work Cycles	Acres Surveyed	Acres Treated	Plants Controlled
Site #6, Camino Del Sur	Carnation spurge	1	0.6	0.5	2,670

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

Mature plants and many seedlings were manually removed (2,670 plants). A crew of three to one individuals worked five days (6/23-30/2020). There has been a reduction in cover (>80%), but there is an extensive seedbank that continues to generate new seedlings each spring. Work at this site was suspended to mobilize crews to work in other high elevation areas (Yellow starthistle and Potted knap weed sites). It is hoped that crews can return in late fall and apply Gallery SC pre-emergent to the site, which will hopefully more effectively suppress the seedbank at this difficult site. The site will eventually be developed.



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).

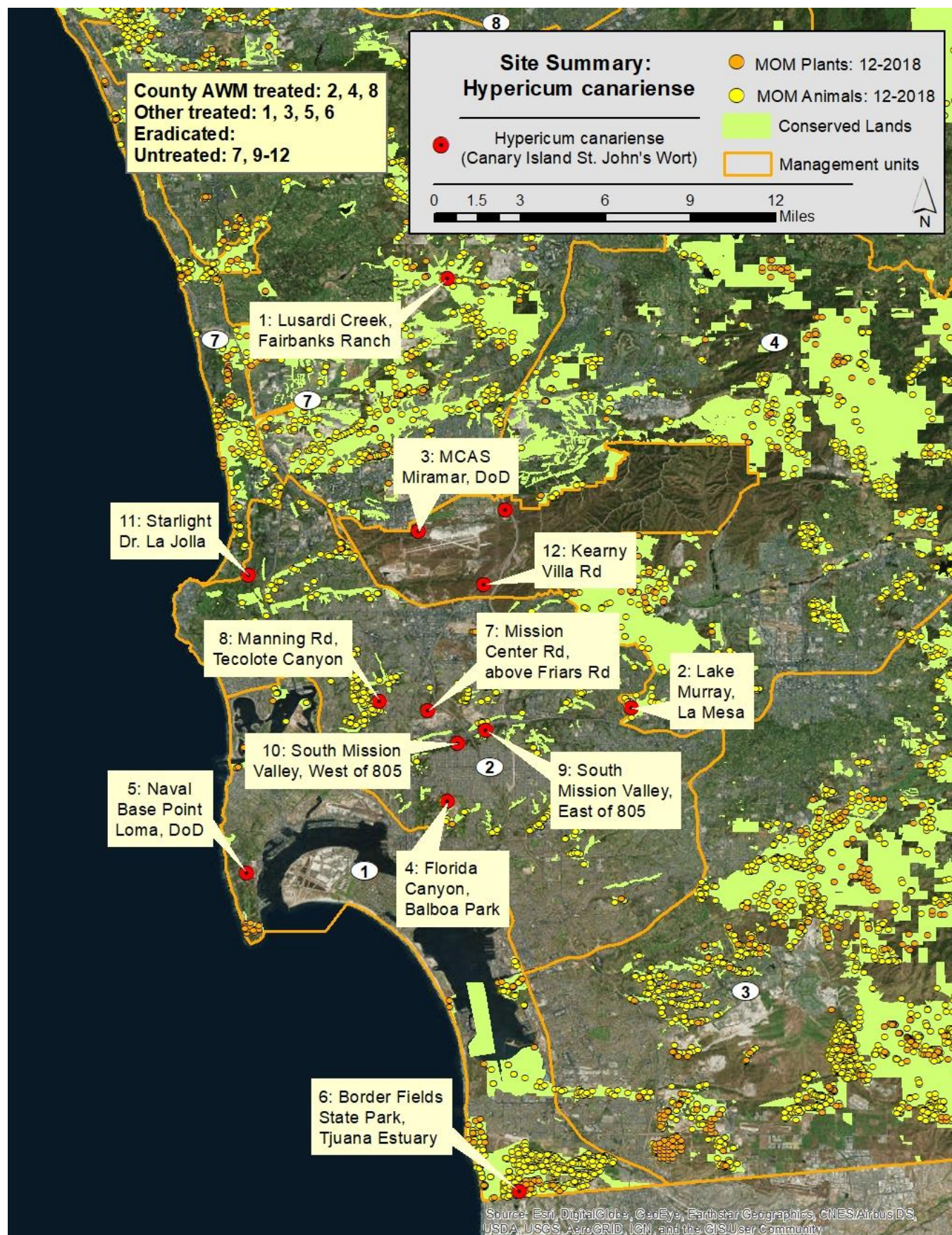
Crews surveyed and treated one Level 2 invasive weed species (Canary Island St. John's wort) at three sites this quarter. AWM IPC made optimal pesticide applications, protected the natural environment by preventing off-site movement of pesticides, and utilized Best Management Practices (BMPs) that prevented 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
<i>Hypericum canariense</i>	Canary Island St. John's wort	3	4.9	21.6	4,174

Hypericum canariense, Canary Island St. John's wort

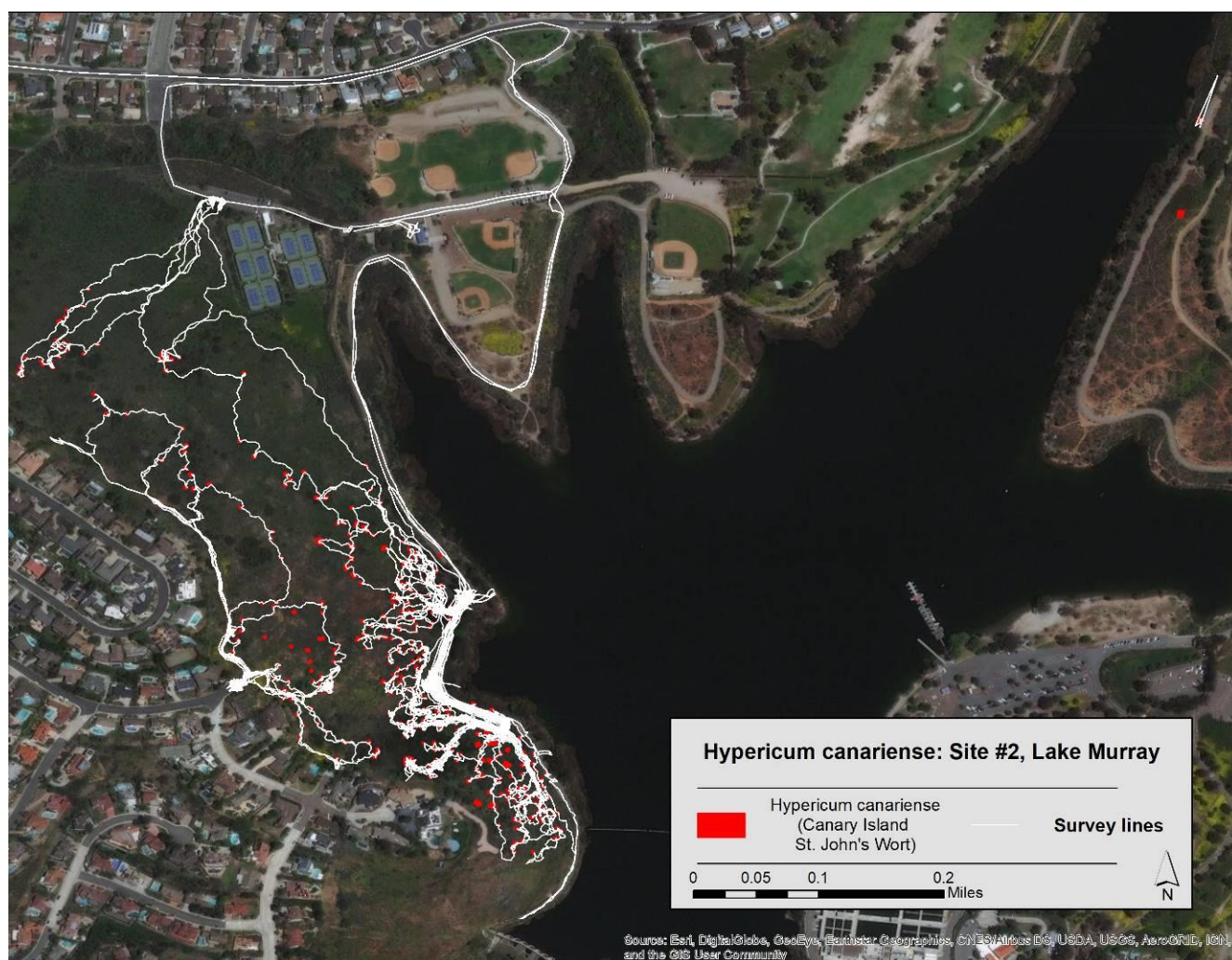


Hypericum canariense, Canary Island St. John's wort: Site #2 Lake Murray

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 #2, Lake Murray	Canary Island St. John's Wort	1	9.8	2.1	1,984

Small plants (40%) and seedlings (60%) were foliar treated with herbicide (imazapyr and glyphosate). A crew of one to three individuals visited the site over fifteen days from May 9th to June 22nd 2020. Cover is greatly reduced (>90% cover reduction), but there were scattered seedlings still emerging. Two mature plants were also reported on iNaturalist on the east side of the lake. This area was surveyed and the two plants were treated. No additional plants were observed.



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, Balboa Park	Canary Island St. John's Wort	1	10.75	2.7	2,110

Small plants (40%) and seedlings (60%) were foliar treated with herbicide (imazapyr and glyphosate). A crew of one to two individuals visited the site over twelve days from April 16th to May 21st 2020. Covid 19 restricted access, but the City of San Diego established procedures to allow County AWM to continue work after a brief interruption of work in April. Cover is greatly reduced (>90% cover reduction), but there were scattered seedlings still emerging.

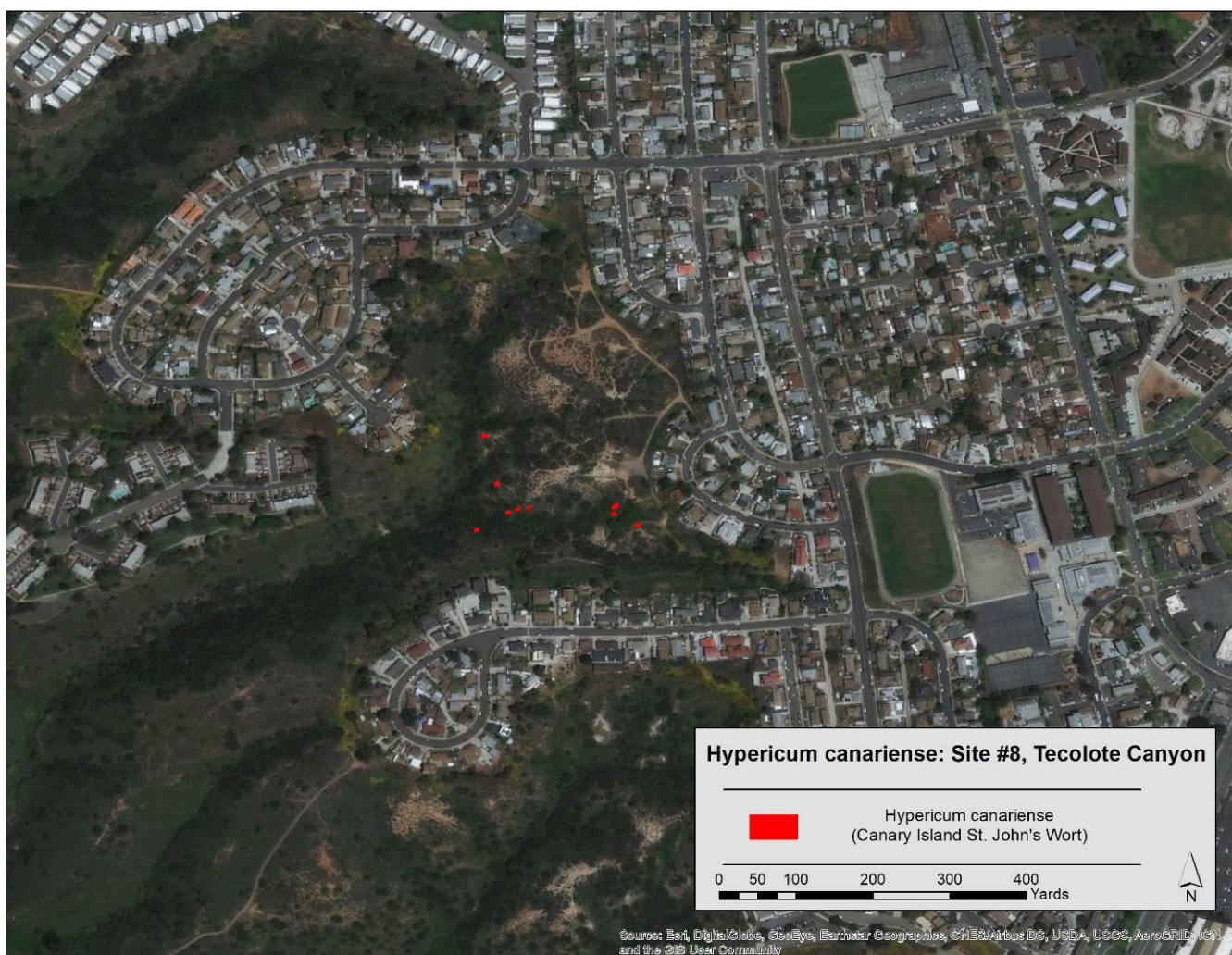


Hypericum canariense, Canary Island St. John's wort: Site #8 Tecolote Canyon

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	1.0	0.1	80

Small plants (40%) and seedlings (60%) were foliar treated with herbicide (imazapyr and glyphosate). A crew of two individuals visited the site over one day on April 15th 2020. This continued work from last quarter. Cover is greatly reduced (>90% cover reduction), but there were scattered seedlings still emerging.



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

- San Diego EDRR information was provided for an EDRR white paper. This will help other programs in setting up EDRR programs. It also highlights our regions support of this critical effort.
- Co-ordination to continue control on the only known population of barbed goat grass in San Diego County at Lake Cuyamaca occurred.
- DoD was contacted (Camp Pendleton) to get an update on their EDRR work and discuss EDRR targets that they should be ‘on the lookout for’. Camp Pendleton is an important land management entity as several EDRR targets are located in South Orange County, so if they are to be kept out of San Diego County, Camp Pendleton is the first and most likely area to be invaded.

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.
- Submit a San Diego EDRR presentation for the Cal-IPC Symposium, which will be online.