IRVINE RANCH WATER DISTRICT INTEGRATED PEST MANAGEMENT PLAN 2020 ANNUAL REPORT

IPM PLAN IMPLEMENTATION

IRVINE, CALIFORNIA

LSA

April 2021

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EXECUTIVE SUMMARY

LSA has prepared this annual report for the implementation of the Irvine Ranch Water District (IRWD) Integrated Pest Management (IPM) Plan. IPM is defined as managing pests in a way that protects human health and the surrounding environment in an economically responsible way through the most effective, least-risk option. IRWD's IPM Plan was designed to guide the use of environmentally sensitive pest management strategies and least-toxic control methods at facilities IRWD maintains and manages, and it focuses on long-term prevention or suppression of pests while protecting human health, the environment, and nontarget organisms. IPM Plan strategies were executed beginning in September 2019. A report encompassing the first 4 months of the program, from September through December 2019, was prepared last year. This report covers 1 calendar year, from January 2020 to December 2020.

IRWD facilities described in this report include Rattlesnake Reservoir, San Joaquin Reservoir, Sand Canyon Reservoir, Syphon Reservoir, San Joaquin Marsh, and 33 Natural Treatment System (NTS) basins. LSA biologists surveyed San Joaquin Marsh and IRWD's NTS basins monthly to map locations of invasive plant species using ArcGIS Collector software and to provide treatment recommendations accordingly. Treatment methods focused primarily on nonchemical removal methods, including manual removal, weed trimming, mowing, mulching, and soil solarization. Removal methods were escalated to chemical treatment methods only for persistent invasive species that could not be eradicated using nonchemical treatment methods. Data collected from San Joaquin Marsh and the NTS basins were used to analyze the number of invasive species and treatment methods recommended for each basin, as well as to extrapolate approximate percent cover by invasive species. An overlap analysis was also conducted to visualize areas that have recurring invasive plant cover over time. LSA personnel did not survey Rattlesnake Reservoir, San Joaquin Reservoir, Sand Canyon Reservoir, and Syphon Reservoir, which are managed by IRWD's Facilities/Fleet Manager, but acreage and pesticide usage totals from those facilities have been included in this report. There are also 147 other facilities managed by IRWD's Facilities/Fleet Manager that are not individually described in this report but have been included in acreage totals. No pesticides were applied at these 147 facilities.

During the first full calendar year of IPM Plan implementation, treatment targeted invasive perennial species. Several species were identified to be resistant to nonchemical removal methods; therefore, chemical pesticides were spot sprayed for these species. Chemical pesticide usage in 2018 totaled 78.34 gallons (gal) for the NTS basins and San Joaquin Marsh, which the NTS department manages. Over the same period, chemical pesticide usage for other IRWD facilities managed by the Facilities/Fleet Manager totaled 84 gal. From January through June 2019, 60.53 gal of glyphosate were applied in the NTS basins and San Joaquin Marsh. From September through December 2019, following IPM Plan implementation, 0.05 gal of glyphosate and 1.20 gal of organic pesticides were applied in the NTS basins and San Joaquin Marsh, and 0.72 gal of glyphosate was applied to other IRWD facilities, representing a significant reduction in the amount of pesticides used throughout all IRWD facilities. From January through December 2020, the first full calendar year of IPM Plan implementation, 13.45 gal of chemical pesticides (glyphosate, diquat dibromide, and glufosinate-ammonium) were applied in the NTS basins and San Joaquin Marsh, and 2.25 gal of glyphosate were applied to other IRWD facilities.

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LIST OF ABBREVIATIONS AND ACRONYMS

ac	acre(s)
af	acre-foot/acre-feet
Cal-IPC	California Invasive Plant Council
EPA	United States Environmental Protection Agency
ft	foot/feet
gal	gallon(s)
I-5	Interstate 5
I-405	Interstate 405
IPM	Integrated Pest Management
IRWD	Irvine Ranch Water District
NTS	Natural Treatment System
SR-133	State Route 133
SR-261	State Route 261

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INTRODUCTION

The Irvine Ranch Water District (IRWD) Integrated Pest Management (IPM) Plan was designed to guide the use of environmentally sensitive pest management strategies and least-toxic control methods at facilities maintained and managed by IRWD. IPM is a process used to solve pest problems through cost-effective means while minimizing risks to people and the environment. It is an ecosystem-based strategy that focuses on long-term prevention of pests or their damage through a combination of techniques such as cultural control and mechanical control. Chemical pesticides are used only when necessary and are applied in a manner that minimizes their possible harm to people, nontarget organisms, and the environment (e.g., soil and water quality).

This second annual report describes IPM activities conducted from January through December 2020 and is the first report to cover 1 calendar year. The previous report only covered 4 months of IPM activities, from September through December 2019.

Guiding Principles

Following the lead of other public entities such as the City of Irvine and Irvine Unified School District, IRWD is implementing this IPM Plan, which focuses on long-term prevention or suppression of pests while protecting human health, the environment, and nontarget organisms. IRWD—as the steward of numerous facilities, wetlands, and habitat, much of which is maintained in a native, natural state—adopts this organic-first policy for landscaping and pest control, with specific limitations on the use of pesticides and chemicals.

Integrated Pest Management Plan Components

The IPM Plan includes several components:

- A framework for implementing IPM practices at IRWD facilities and properties
- Consistency with other Orange County-area agencies' IPM approaches
- Training of staff members to encourage a mind-set of progressive pest management principles
- Sharing the IPM program with the public for transparency
- Monitoring and reporting of actions associated with implementation of the IPM Plan

The focus of this IPM Plan is on the pesticides (rodenticides, insecticides, and herbicides) used to control pests and noxious-weed infestations at IRWD facilities. The purpose of this plan is to guide the use of environmentally sensitive pest management strategies and least-toxic control methods at facilities maintained and managed by IRWD. IPM is defined as managing pests (plants, fungi, insects, and animals) in a way that protects human health and the surrounding environment in an economically responsible way through the most effective, least-risk option. Core elements of IPM include the following:

- Pest prevention to avoid the use of pesticides or other pest control methods
- Nonchemical methods as the first choice for pest control
- Use of organic or least-toxic chemical pesticides
- Use of chemicals and pesticides only in target locations and for targeted species
- Prohibition of dangerous pesticides at parks, playgrounds, or other areas where the public congregates
- Routine inspection and monitoring
- Transparent and proactive communication

When pest prevention is unsuccessful or when noxious weeds are already established, the approach to eliminate these species from an area should follow a systematic decision-making process. Use of nonchemical control methods should first be exercised. When physical control methods are not an option, organic control methods may be needed. High-potential-hazard pesticide applications may only be considered in emergency situations that present a public health or environmental threat.

METHODS

San Joaquin Marsh and IRWD's Natural Treatment System (NTS) basins were surveyed monthly, on foot, to map locations of invasive plant species. Figure 1 (all figures are in Appendix A) shows the locations in San Joaquin Marsh and the NTS basins surveyed by LSA personnel. Locations of infestations were recorded as points or polygons using ArcGIS Collector software. Only species that posed a threat to native habitat were recorded. Other species that were determined not to be particularly disruptive to the overall environment were omitted. Omitted species were typically low-growing, noninvasive plant species such as matted sandmat (*Euphorbia serpens*) and spotted spurge (*Chamaesyce maculata*). Species that are listed on the California Invasive Plant Council (Cal-IPC) Inventory were specifically targeted, although there are many other nonnative species targeted for IPM activities that have not yet been listed on the Cal-IPC Inventory. At the direction of IRWD's Natural Resources Manager, treatment for the 2020 calendar year focused primarily on nonnative perennial species and less so on widespread nonnative annual species. Treatment methods were recommended for each data point or polygon, prioritizing nonchemical removal methods. Nonchemical treatment methods consist of manual removal, weed trimming, mowing, disking, mulching, and soil solarization. Seeding is another method that may be implemented in areas that necessitate higher percent cover by native species to prevent invasive nonnatives from establishing. Chemical treatment methods include organic chemical control and prioritized chemical pesticide control. Chemical treatment was prescribed for persistent invasive species that could not be eradicated using nonchemical treatment methods.[1] See Appendix B for memoranda addressing the decision-making process justifying chemical pesticide usage for the perennial pepperweed (*Lepidium latifolium*), Spanish false fleabane (*Pulicaria paludosa*), curly dock (*Rumex crispus*), and Bermuda

[1] While LSA personnel recommended certain treatment methods for specific infestations, some methods may not have been implemented by the landscape contractor staff. Chemical pesticides were not used unless recommended.

grass (*Cynodon dactylon*). Data collected through ArcGIS Collector were used to analyze the number of invasive species identified within each basin from January through December 2020, as well as which treatment methods were recommended for each basin. Polygon data were used to extrapolate an approximate percent cover by invasive species throughout each NTS basin. An overlap analysis was conducted to visualize areas within the NTS basins and San Joaquin Marsh that have recurring invasive plant cover over time.

Rattlesnake Reservoir, San Joaquin Reservoir, Sand Canyon Reservoir, and Syphon Reservoir were not visited by LSA personnel during monthly surveys. These reservoirs are managed by IRWD's Facilities/Fleet Manager. This report includes chemical pesticide usage totals for these reservoirs. Data for the reservoirs were collected by IRWD's Facilities/Fleet Manager and provided to LSA for the purposes of this report.

INTEGRATED PEST MANAGEMENT APPLICATION SITES

Recycled Water Reservoirs

IRWD owns and operates a robust recycled water system, which includes four seasonal-storage reservoirs: Rattlesnake, San Joaquin, Sand Canyon, and Syphon. IRWD's recycled water is not for drinking. It is used primarily for irrigating public and commercial landscape. It also is used for toilet-flushing and cooling towers in some commercial buildings, and for dust control on construction sites and industrial processes such as concrete production and composting. The reservoirs are pumped full of recycled water from IRWD's recycling plants during the cooler, wetter winter months when irrigation demands are low. The water is stored in the reservoirs and then withdrawn in the summer when demand is high. The reservoirs feature dams, which are inspected regularly, are certified safe, and are not accessible to the public.

Rattlesnake Reservoir

Rattlesnake Reservoir is a recycled water storage reservoir owned and operated by IRWD. It formerly was used to supply water for agricultural irrigation. The reservoir retains most dry- and wet-weather flows. A small amount of chemical pesticides was used at Rattlesnake Reservoir to control weeds in cracks of the reservoir liner. Mechanical weeding was not possible without the use of fall protection, and the installation of fall protection systems was not practical.

San Joaquin Reservoir

San Joaquin Reservoir was built in 1966 and was originally used as a drinking-water reservoir by seven cities and water districts. The reservoir is currently used to store recycled water. It provides 3,080 acre-feet (af) (about 1 billion gallons [gal]) of seasonal storage. Operation of the reservoir maximizes storage during the winter months when irrigation demands are lower. Water is then withdrawn in the summer months to provide landscape irrigation water for Irvine, Newport Coast, and portions of Newport Beach.

Chemical pesticides were applied to vegetation on the dam face of San Joaquin Reservoir, as well as within the reservoir to control weeds in cracks of the reservoir liner. Due to safety hazards associated with physically reaching plants for mechanical removal, it was determined that spraying chemical pesticides was the only viable option for treating vegetation.

Sand Canyon Reservoir

Sand Canyon Reservoir is adjacent to the Strawberry Farms Golf Club near the San Diego Freeway (Interstate 405 [I-405]). The reservoir has a surface area of 42 acres (ac), a storage capacity of 768 af (250 million gal), and an average depth of 18 feet (ft). The watershed area is approximately 6.7 square miles (4,288 ac). The reservoir is used for both seasonal and operational storage. No chemical pesticides were used at Sand Canyon Reservoir.

Syphon Reservoir

Syphon Reservoir, in northern Irvine, began operations in 1949 and historically was used to store irrigation water. It has been integrated into the IRWD recycled water system as a seasonal storage facility, with a capacity of 535 af (174 million gal). Chemical pesticides were used at Syphon Reservoir to control weeds in cracks of the reservoir liner. Mechanical weeding was not possible without the use of fall protection, and the installation of fall protection systems was not practical.

San Joaquin Marsh

The San Joaquin Marsh and Wildlife Sanctuary encompasses 281.58 ac of coastal freshwater wetlands, half of which have been restored to a natural state. San Joaquin Marsh is a vital component of the overall NTS, as water from San Diego Creek is cycled through wetlands and naturally treated before it reaches the environmentally sensitive Upper Newport Bay and the ocean.

IPM activities in San Joaquin Marsh focused on mechanical removal of invasive plants. Chemical pesticides were necessary to remove plants that were resistant to nonchemical removal methods or were in such densities that they would be difficult to remove without disrupting surrounding native plants, such as perennial pepperweed, curly dock, and Spanish false fleabane. A total of 69 nonnative plant species were identified in San Joaquin Marsh between January and December 2020. San Joaquin Marsh is divided into four zones for landscape maintenance purposes (Figure 2). Refer to Table A for the number of invasive species identified, an approximate percent cover by invasive species, and treatment methods recommended within each zone. San Joaquin Marsh Zone 3 exhibited the highest percent cover by invasive species, at 19.0 percent, due to the presence of herb-of-grace (*Bacopa monnieri*) within several ponds. Herb-of-grace was not treated, as IRWD drains those ponds once a year, which desiccates the obligate wetland plant.

Natural Treatment Systems

IRWD's NTS is a cost-effective, environmentally sound method for treating dry-weather runoff. The NTS basins throughout IRWD's wider territory are modeled after the successful system of natural treatment ponds that remove nitrogen, phosphorus, and bacteria from surface water entering San Joaquin Marsh. The NTS basins work much like San Joaquin Marsh, only using smaller man-made wetlands placed strategically throughout the San Diego Creek Watershed (Figure 1). Low-flow natural and urban runoff, as well as smaller storm flows, is diverted into these man-made wetlands, where contaminants are removed and prevented from reaching Upper Newport Bay. Thirty-three NTS basins were incorporated into IPM activities from September through December 2019, which are described below. Refer to Table A for a summary of the number of invasive species identified, an approximate percent cover by invasive species, and methods recommended for treatment per basin. Representative photos of the basins are provided in Figure 3.

Table A: Summary of Invasive Plants and Treatment Methods in NTS Basins

Basin ID	Basin Name[1]	Number of Invasive Species (2019)	Number of Invasive Species (2020)[2]	Approximate Percent Cover by Invasive Plants (2019)	Approximate Percent Cover by Invasive Plants (2020)[3]	Treatment Methods Recommended
1	San Joaquin Marsh—Zone 1	14	23	0.1%	0.3%	Manual Removal, Chemical Pesticides, No Treatment
	San Joaquin Marsh—Zone 2	15	42	1.6%	2.0%	Manual Removal, Chemical Pesticides, Mulch, No Treatment
	San Joaquin Marsh—Zone 3	23	44	21.9%	19.0%	Manual Removal, Chemical Pesticides, Weed Trimmer, No Treatment
	San Joaquin Marsh—Zone 4	17	34	1.9%	5.3%	Manual Removal, Chemical Pesticides, No Treatment
2	Quail Springs	12	16	14.1%	48.3%	Manual Removal, Chemical Pesticides, Mulch, No Treatment
3	Quail Meadow	5	13	5.4%	79.0%	Manual Removal, Chemical Pesticides, No Treatment
4	Old Laguna	10	12	5.4%	12.4%	Manual Removal, Chemical Pesticides, No Treatment
5	Turtle Ridge	6	18	0.6%	19.3%	Manual Removal, No Treatment
6	Forge Meadow	9	18	8.8%	74.9%	Manual Removal, Chemical Pesticides, No Treatment
7	Port Culver	13	24	20.6%	69.6%	Manual Removal, Chemical Pesticides, No Treatment
8	Orchard Meadow	10	21	11.2%	53.9%	Manual Removal, Chemical Pesticides, No Treatment
9	Lower Eastfoot	5	13	0.4%	38.1%	Manual Removal, Chemical Pesticides, No Treatment
10	El Modena	10	15	7.2%	9.4%	Manual Removal, Chemical Pesticides
11	Trabuco	12	18	2.7%	12.2%	Manual Removal, Chemical Pesticides
12	Marshburn	17	24	13.5%	7.2%	Manual Removal, Chemical Pesticides, No Treatment
13	Los Olivos Meadow	4	9	42.6%	51.6%	Manual Removal, Chemical Pesticides, No Treatment, Other (Drain Water)
14	Laguna Altura North	10	20	6.0%	17.8%	Manual Removal, No Treatment
15	Laguna Altura South	3	10	13.7%	31.4%	Manual Removal, Chemical Pesticides, Mowing, No Treatment
16	Cypress Meadow A	6	18	7.4%	32.1%	Manual Removal, Chemical Pesticides, No Treatment
17	Cypress Meadow B	6	13	8.7%	27.6%	Manual Removal, Weed Trimmer, No Treatment
18	Cypress Meadow C	10	18	10.4%	55.0%	Manual Removal, Weed Trimmer, Mowing, No Treatment
19	Cypress Meadow D	20	12	7.5%	30.5%	Manual Removal, No Treatment
20	Portola Springs Meadow	5	14	3.2%	36.3%	Manual Removal, Chemical Pesticides, No Treatment
21	Eastwood Meadow	7	18	5.8%	25.0%	Manual Removal, Chemical Pesticides, No Treatment

Table A: Summary of Invasive Plants and Treatment Methods in NTS Basins

Basin ID	Basin Name[1]	Number of Invasive Species (2019)	Number of Invasive Species (2020)[2]	Approximate Percent Cover by Invasive Plants (2019)	Approximate Percent Cover by Invasive Plants (2020)[3]	Treatment Methods Recommended
22	Middle Eastfoot	11	19	52.1%	60.5%	Manual Removal, Chemical Pesticides, No Treatment
23	Eastfoot Retarding Basin	7	19	6.8%	10.8%	Manual Removal, Chemical Pesticides, No Treatment
24	Upper Eastfoot	9	15	16.8%	60.9%	Manual Removal, Chemical Pesticides, No Treatment
25	Hidden Canyon	15	23	44.0%	56.3%	Manual Removal, Chemical Pesticides, Weed Trimmer, Mulch, No Treatment
26	Ridge Valley A	7	29	15.3%	40.6%	Manual Removal, Chemical Pesticides, No Treatment
27	Ridge Valley B	7	16	13.1%	20.2%	Manual Removal, Chemical Pesticides, No Treatment
28	Ridge Valley C	12	38	14.7%	47.5%	Manual Removal, Chemical Pesticides, No Treatment
29	Floral View	10	15	9.0%	12.4%	Manual Removal, Chemical Pesticides, No Treatment
30	Parasol Park	6	15	25.9%	39.3%	Manual Removal, Chemical Pesticides, No Treatment
31	Twisted Oak	6	10	76.7%	54.6%	Manual Removal, Chemical Pesticides, No Treatment
32	Iluna Springs	10	23	11.6%	31.0%	Manual Removal, Chemical Pesticides, No Treatment
33	Aquila Springs	11	19	25.6%	22.5%	Manual Removal, Chemical Pesticides, No Treatment
34	Sports Park	14	16	18.6%	71.1%	Manual Removal, Chemical Pesticides, No Treatment

1 Refer to Figure 1 in Appendix A for a map of basin locations.

2 2019 data was collected from September–December, whereas 2020 data constituted the full January–December calendar year. Because data was collected during the spring and summer of 2020 but not of 2019, the number of invasive species and approximate percent cover by invasive plants are significantly higher for 2020.

3 The approximate percent cover was extrapolated using polygon data. Point data was not utilized in the extrapolation.

NTS = Natural Treatment System

Quail Springs

Quail Springs is a 10.86 ac basin located adjacent to Shady Canyon Drive in central Irvine. This basin consists of several ponds and channels. This basin suffers from infestations of Spanish false fleabane, which is expected to return in following years based on the existing seed bank and lack of native plants throughout portions of the basin bottom. Chemical pesticides were spot sprayed to remove Spanish false fleabane. Mulching with black plastic was recommended for one portion of the basin that had an infestation of grass poly (*Lythrum hyssopifolia*). This basin also exhibits high cover by nonnative annual species, particularly sourclover (*Melilotus indicus*).

Quail Meadow

Quail Meadow is a 1.40 ac NTS basin located north of Quail Hill Shopping Center in Irvine. This basin consists of a small sediment catchment pond at the inlet, after which water percolates into the ground. The basin bottom supports a good diversity of native riparian plants; however, the slopes of the basin exhibit high cover by nonnative annual species. Notably, Pacific bentgrass (*Agrostis avenacea*) was identified at this basin. Chemical pesticides were applied to a small amount of Spanish false fleabane at this site.

Old Laguna

Old Laguna is a 2.81 ac basin located west of Laguna Canyon Road and south of I-405. This basin consists of two small channels flowing into one large pond. Yellow waterweed (*Ludwigia peploides* ssp. *peploides*), an invasive plant with a High Cal-IPC rating, was observed growing along the margins of the channels and pond in 2019. Recurrences of this invasive species were mapped in 2020, and manual removal efforts were implemented to continue to diminish the presence of yellow waterweed. A small amount of Spanish false fleabane was spot sprayed with chemical pesticides. LSA personnel only completed surveys until September 2020; the locks on the gates were changed following that date, and biologists were unable to access the basin to conduct surveys.

Turtle Ridge

Turtle Ridge is a 1.97 ac basin located north of Shady Canyon Drive in south Irvine. This basin consists of a single large pond. Surveys at this location were conducted from September through November in 2019. In December 2019, the basin was dredged and the basin was mostly bare, so surveys for invasive plants were not conducted. Surveys were resumed starting in February 2020. As the basin was dredged recently, there were very few invasive species detected at this basin. Invasive species identified at Turtle Ridge were all common annuals. Chemical pesticides were not applied at this basin.

Forge Meadow

Forge Meadow is a 2.38 ac NTS basin located adjacent to Portola Parkway in north Irvine. This basin consists of two ponds connected by a long channel. Beginning in December 2019, a majority of the vegetation in Forge Meadow was removed in preparation for a restoration event. As the basin was mostly bare, data was not collected until March 2020. This basin exhibited high cover by nonnative annual species on both the slopes and basin bottom. Prevalent species included common burclover (*Medicago polymorpha*), perennial rye (*Festuca perennis*), and flax-leaved horseweed (*Erigeron* *bonariensis*). Several patches of Spanish false fleabane, especially on the western side of the basin, were spot treated with chemical pesticides.

Port Culver

Port Culver is a 1.74 ac basin located north of Portola Parkway and adjacent to a large agricultural area in north Irvine. This basin consists primarily of a pilot channel, but water often overflows from the channel and spreads throughout the bottom of the basin. The slopes of this basin exhibit high cover by annual nonnative species; however, cover by nonnatives is expected to decrease as installed natives from the 2019 restoration effort increase in cover. Chemical pesticides were applied to control a small amount of Spanish false fleabane and Bermuda grass at this basin.

Orchard Meadow

Orchard Meadow is a 2.30 ac basin located at the intersection of Portola Parkway and Orchard Hills in north Irvine. This basin consists of a channel with a small pond at the center. IRWD personnel conducted habitat restoration on the upland slopes of the basin in 2019. Cover by nonnative annuals at the bottom of the basin was high. Prevalent species included common burclover, red brome (*Bromus madritensis* ssp. *rubens*), sow-thistles (*Sonchus* spp.), and white sweetclover (*Melilotus albus*). Several patches of Spanish false fleabane, particularly on the southern half of the basin, and a small patch of Bermuda grass required spot spraying by chemical pesticides.

Lower Eastfoot

Lower Eastfoot is a 2.13 ac NTS basin located adjacent to Portola Parkway and State Route 261 (SR-261). This basin consists of a channel with a small pond at the center. The bottom of this basin has very good cover by native plant components; however, the slopes of the basin exhibit high cover by nonnative annuals. Cover by nonnatives is expected to decrease as installed natives from the 2019 restoration effort increase in cover. No chemical pesticides were applied at this basin.

El Modena

El Modena is a 1.61 ac NTS basin located within a park adjacent to South Hewes Street in Orange. This basin consists of one large pond with a narrow strip of riparian vegetation lining the water. As the basin is isolated in a park and adjacent to residential areas, nonnative ornamental species are the most common invasive plants identified at this basin. Bird’s foot trefoil (*Lotus corniculatus*) was the most prevalent species at this basin. No chemical pesticides were applied at this basin.

Trabuco

Trabuco is an 18.07 ac basin located east of Jeffrey Road and north of Trabuco Road in Irvine. This basin serves as a flood retention basin and is managed in a different way than the typical NTS basins. IPM activities are conducted adjacent to any riparian areas. The slopes and fields not immediately adjacent to the channels and ponds containing dry-weather runoff are mowed every quarter and were not included in IPM monthly surveys. This basin suffers from an infestation of Spanish false fleabane, which required spraying of chemical pesticides. While cover by Spanish false fleabane decreased throughout the duration of the 2020 calendar year, reoccurrences are expected due to the large seed bank.

Marshburn

Marshburn is a 14.04 ac basin located at the intersection of Irvine Boulevard and Ridge Valley in Irvine. This basin also serves as a flood retention basin and is managed in the same way as Trabuco, detailed above. It consists of two inlet channels flowing into one large pond. This basin supports a relatively high diversity of native riparian plant species. Barnyard grass (*Echinochloa crus-galli*) and sourclover were the most prevalent nonnatives at this basin. Several patches of yellow waterweed were also identified and manually removed from the channels and pond. Very little chemical pesticides were applied at this site for a few individuals of Spanish false fleabane and one patch of Bermuda grass.

Los Olivos Meadow

Los Olivos Meadow is a 3.19 ac NTS basin located adjacent to the Los Olivos housing development and east of San Diego Creek. This basin has two inlet channels flowing into one pond. The slopes of Los Olivos Meadow have good diversity and cover by desirable native species; however, much of the basin bottom is dominated by Spanish false fleabane, sourclover, and nonnative grasses. The presence of Spanish false fleabane required spot spraying with chemical pesticides. An occurrence of a new aquatic invasive species, water spangles (*Salvinia minima*), was identified at this basin in October 2020; therefore, draining of the water at this basin was recommended to desiccate the floating aquatic plant.

Laguna Altura North

Laguna Altura North is a 0.86 ac basin located north of the Laguna Altura housing development and south of I-405. This basin exhibits high percent cover and good diversity of native-plant components on both the slopes and the basin bottom. No chemical pesticides were applied at this basin in 2020.

Laguna Altura South

Laguna Altura South is a 0.75 ac basin located west of the Laguna Altura housing development and east of State Route 133 (SR-133). This basin exhibits high percent cover by native plant species on the slopes, but the basin bottom is dominated by annual nonnative species during the growing season. Spanish false fleabane was spot sprayed with chemical pesticides at this basin.

Cypress Meadow A

Cypress Meadow A is a 6.04 ac basin located next to several apartment complexes as well as Interstate 5 (I-5) and Jeffrey Road in central Irvine. This NTS basin has three inlet channels converging at one pond. The slopes of the basin exhibit high diversity and cover by native species; however, the basin bottom suffers from infestations of Spanish false fleabane. A few small patches of perennial pepperweed were also found throughout the basin bottom. Chemical pesticides were applied to treat these two resistant invasive species.

Cypress Meadow B

Cypress Meadow B is a 2.07 ac NTS basin located adjacent to multiple apartment complexes and north of I-5. It is also neighboring another NTS basin, Cypress Meadow C. This basin consists of two small ponds connected by a channel. While the slopes of this basin exhibit good cover by native plants, the basin bottoms are dominated by annual invasive species during the growing season. Prevalent nonnatives include common burclover, Pacific bentgrass, red brome, and sow-thistles. A minor amount of chemical pesticides was spot sprayed to control Spanish false fleabane.

Cypress Meadow C

Cypress Meadow C is a 2.63 ac basin located between Cypress Meadow B and Cypress Meadow D, adjacent to I-5. This basin consists of two small ponds connected by a long channel. Similar to Cypress Meadow B, the bottom of this basin also exhibits high cover by many annual invasive species. No chemical pesticides were applied at this basin.

Cypress Meadow D

Cypress Meadow D is a 3.18 ac basin located immediately adjacent to Cypress Meadow C and bordered to the east by Sand Canyon Avenue. This NTS basin typically does not receive enough flow for water to reach the outlet structure. The slopes of Cypress Meadow D exhibit good cover by native grass species. No chemical pesticides were applied at this basin in 2020.

Portola Springs Meadow

Portola Springs Meadow is a 0.89 ac NTS basin located north of Irvine Boulevard and east of SR-133. This basin consists of two inlets. Both the basin bottom and slopes exhibit high diversity and cover by native species. Some chemical pesticides were applied at this basin to remove Spanish false fleabane and Bermuda grass.

Eastwood Meadow

Eastwood Meadow is a 1.89 ac basin located north of Irvine Boulevard in north Irvine. This basin consists of two small ponds connected by one channel. In 2019, the bottom of the basin was almost entirely dominated by slender aster (*Symphyotrichum subulatum*)—while native, it outcompeted most other native plant species on the basin bottom. Because very few perennial natives are present in the basin bottom, opportunistic invasive species exploit the bare areas during the growing season. Spanish false fleabane, curly dock, and white sweetclover are among the 18 nonnative species identified at this site in 2020. A persistent patch of perennial pepperweed was identified in the southern half of the basin. Chemical pesticides were applied to treat Spanish false fleabane and perennial pepperweed.

Middle Eastfoot

Middle Eastfoot is a 3.17 ac NTS basin located west of Woody Knoll and east of SR-261. This basin consists of a long channel with a small pond at the center. The west side of this basin was heavily dominated by slender aster. Similar to Eastwood Meadow, slender aster outcompeted many native plant species and facilitated invasions by opportunistic nonnatives in the basin bottom. A significant amount of Spanish false fleabane was identified and treated with chemical pesticides at this basin.

Eastfoot Retarding Basin

Eastfoot Retarding Basin is a 9.97 ac flood retention basin located east of Leafy Pass in north Irvine. This basin consists of a series of ponds and is managed in the same manner as Trabuco and

Marshburn, detailed above. Nonnative annual species, such as bristly ox-tongue (*Helminthotheca echiodes*), wild oat (*Avena fatua*), and common burclover, are prevalent at this basin. A small amount of chemical pesticides was applied to several patches of Spanish false fleabane along the channels and ponds.

Upper Eastfoot

Upper Eastfoot is a 1.35 ac basin located east of SR-261 and south of English Saddle in north Irvine. This basin consists of one large pond—water often does not flow into the outlet. Chemical pesticides were applied to control patches of Spanish false fleabane and Bermuda grass. Cover by Spanish false fleabane this year was reduced from the previous year; however, reoccurrences are still expected due to the existing seed bank. An infestation of grass poly was detected this year during the growing season.

Hidden Canyon

Hidden Canyon is a 3.31 ac NTS basin located adjacent to the Hidden Canyon residential development and south of Lake Forest Drive. It consists of two inlets flowing into one pond. This basin exhibits high percent cover by nonnative species on both the basin bottom and the south-facing slopes. Curly dock in particular is highly prevalent in this basin. Due to the high density of the species, and in hopes of reducing disturbance to native plants, chemical pesticides were used to control curly dock at this basin.

Ridge Valley A

Ridge Valley A is a 6.44 ac basin located east of SR-133. It consists of two inlets flowing into one pond. Most of the basin bottom was dominated by slender aster in 2019, which outcompeted most other native plant species. Several persistent patches of perennial pepperweed were identified in this basin and required repeat applications of chemical pesticides. Chemical pesticides were also applied to control Spanish false fleabane and Bermuda grass.

Ridge Valley B

Ridge Valley B is a 1.65 ac basin located east of SR-133 and adjacent to Ridge Valley A. It consists of a channel that flows into Ridge Valley A. The slopes of Ridge Valley B exhibit relatively good cover by native-plant components. Some areas in this basin exhibit infestations of Bermuda grass and Spanish false fleabane, which were treated with chemical pesticides. One small patch of perennial pepperweed was also mapped and sprayed at this basin—this patch looks to have been sufficiently treated with one application of pesticides.

Ridge Valley C

Ridge Valley C is a 4.68 ac NTS basin located east of SR-133 and adjacent to Ridge Valley B. It consists of one long channel with a pond in the center. The west-facing slope of this basin has high cover by nonnative annual species. Similarly to Ridge Valley A and Ridge Valley B, this basin had some occurrences of perennial pepperweed, Spanish false fleabane, and Bermuda grass, which were spot sprayed with chemical pesticides.

Floral View

Floral View is a 2.98 ac basin located east of SR-133 and west of Floral View. It consists of one channel leading to a circular pond. This basin exhibits very good cover by native plant species on both the slopes and basin bottom. A portion of the channel has reoccurring instances of water speedwell (*Veronica anagallis-aquatica*); repeated manual removal efforts are expected to eradicate this invasive species. A very small amount of Spanish false fleabane was spot treated with chemical pesticides at this basin.

Parasol Park

Parasol Park is a 2.69 ac NTS basin located east of SR-133 and north of Great Park Boulevard. It consists of two inlet channels that converge at the NTS basin's outlet structure. While the upland slopes of Parasol Park exhibit very good diversity and cover by native-plant components, the basin bottom suffers from infestations by sow-thistles. No chemical pesticides were applied at this basin.

Twisted Oak

Twisted Oak is a 0.33 ac NTS basin located northeast of Northwood High School. It consists of one circular pond. This basin had less cover by nonnatives in 2020; however, English plantain (*Plantago lanceolata*) was still prevalent in some parts of the basin. The rest of the basin is nearly devoid of native vegetation. No chemical pesticides were applied at this basin.

Iluna Springs

Iluna Springs is a 2.68 ac basin located in the Altair Community development north of Irvine Boulevard in the northeastern corner of Irvine. This basin consists of two inlet channels. Iluna Springs exhibits relatively low cover by nonnative species, as the basin is dominated by beardless wild-rye (*Elymus triticoides*) and marsh fleabane (*Pluchea odorata*). One patch of perennial pepperweed was identified and required repeat treatments of chemical pesticides. Pesticides were also applied to treat one patch of Bermuda grass and a small amount of Spanish false fleabane.

Aquila Springs

Aquila Springs is a 1.17 ac basin located in the Altair Community development east of Irvine Boulevard, consisting of one channel. This basin exhibits good diversity by native vegetation on slopes; however, portions of the basin bottom are bare or dominated by invasive plants. Flax-leaved horseweed and weedy cudweed (*Pseudognaphalium luteoalbum*) were the most prevalent nonnative species. A small amount of chemical pesticides was spot sprayed to manage Spanish false fleabane.

Sports Park

Sports Park is a 1.95 ac NTS basin located adjacent to the Orange County Great Park north of Marine Way. It consists of a channel with a small central pond. While the slopes of the basin exhibit high diversity and cover by desirable native plants, the basin bottom has relatively more invasive species. A relatively high amount of Spanish false fleabane was identified at this site and required spot spraying with chemical pesticides. A persistent patch of perennial pepperweed required repeat treatments with pesticides.

RESULTS OF 2020 INTEGRATED PEST MANAGEMENT PRACTICES

Program Cost Impacts

IPM Plan implementation resulted in additional maintenance costs for landscaping activities within the NTS basins, San Joaquin Marsh, and other IRWD facilities. Refer to Table B for maintenance costs for regular work and IPM work (if applicable) for calendar years 2018, 2019, and 2020.

Table B: Landscaping Budget Impacts from IPM Plan Implementation

	SJM/NTS Basins				Other IRWD Facilities		
Reporting Year	**Regular Maintenance Cost**	**IPM Implementation Cost[1]**	**Biological Consultant Cost**	**Total Maintenance Cost**	**Regular Maintenance Cost**	**IPM Implementation Cost[2]**	**Total Maintenance Cost**
2018	$1,377,186.46	–	–	**$1,377,186.46**	N/A	–	**N/A**
2019	$2,310,245.91	$51,413.00	$53,606.27	**$2,415,265.18**	$508,308	N/A	**$508,308**
2020	$1,228,467.78	$82,822.25	$114,868.77	**$1,426,158.80**	$597,504	$145,800	**$743,304**

[1] This cost is for additional man-hours/site visits required to complete IPM invasive plant removal activities. When feasible, invasive plant removal would occur during regularly scheduled maintenance visits.

[2] This cost is an estimate based on contract costs pre- and post-implementation, minus a factor for inflation. Invoices specifically reflecting additional costs incurred in order to implement the IPM were not available.

IPM = Integrated Pest Management
IRWD = Irvine Ranch Water District
N/A = Not Available
NTS = Natural Treatment System
SJM = San Joaquin Marsh

Summary of Integrated Pest Management Usages

Following the commencement of IPM activities, quantities of chemical pesticides applied at IRWD's facilities, including San Joaquin Marsh and the NTS basins, have been greatly reduced from pre-implementation years. Table C provides a comparison of pesticide usage before and after implementation of the IPM Plan, with IPM activities beginning in September 2019. San Joaquin Marsh and the NTS basins, managed by the NTS department, total 409.52 ac. Other IRWD facilities, which include Rattlesnake Reservoir, San Joaquin Reservoir, Sand Canyon Reservoir, Syphon Reservoir, and 147 other sites, are managed by the Fleet/Facilities Manager and total 279.99 ac. A summary of prioritized chemical pesticides used in IRWD facilities is provided below.

San Joaquin Marsh

2.08 gal of Roundup Custom Aquatic Herbicide (active ingredient: glyphosate) and 1.77 gal of Diquat SPC 2L (active ingredient: diquat dibromide) were spot sprayed using a backpack sprayer. LSA biologists avoided prescribing chemical pesticides to areas within 10 ft of trails in San Joaquin Marsh; however, if necessary, areas open to public traffic were cordoned off for 24 hours after chemical pesticide application. Refer to Figure 4 to see locations of chemical pesticide applications and Appendix C for the pesticide application forms.

Table C: Pesticide Usage Comparison

	2018		January–June 2019		September–December 2019		January–December 2020	
	SJM/NTS Basins	Other IRWD Facilities	SJM/NTS Basins	Other IRWD Facilities	SJM/NTS Basins	Other IRWD Facilities	SJM/NTS Basins	Other IRWD Facilities
Prioritized chemical pesticides (gal)	78.34	84.00	60.53	N/A[1]	0.05	0.72	13.45	2.25
Organic pesticides (gal)	–	–	–	N/A	1.20	–	–	–
Total	**162.34**		**60.53**		**1.97**		**15.70**	

[1] This information was not tracked by the Fleet/Facilities Manager in 2019.
gal = gallon(s)
IRWD = Irvine Ranch Water District
N/A = Not available
NTS = Natural Treatment System
SJM = San Joaquin Marsh

Natural Treatment Systems

The amounts of chemical pesticides spot sprayed at the NTS basins were 0.70 gal of Roundup Custom Aquatic Herbicide, 5.39 gal of Diquat SPC 2L, and 3.51 gal of Lifeline (active ingredient: glufosinate-ammonium). Table D shows the amounts of chemical pesticides applied at the NTS basins—refer to Figure 4 to see the locations of chemical pesticide applications and Appendix C for the pesticide application forms. Chemical pesticides were spot sprayed at 24 of the 33 NTS basins surveyed for the IPM Plan implementation program.

Other Irvine Ranch Water District Facilities

Roundup Pro Max (active ingredient: glyphosate) was used at Rattlesnake Reservoir (0.25 gal), Syphon Reservoir (1.00 gal), and San Joaquin Reservoir (1.00 gal). At all three locations, the herbicide was applied inside the reservoir to control weeds in cracks of the reservoir liner. At San Joaquin Reservoir, the product was also applied to control weeds on the downstream dam face. In each location, mechanical weeding is not possible without the use of fall protection, and the installation of fall protection systems at these facilities is not practical.

DISCUSSION AND RECOMMENDATIONS

IPM activities in 2020 focused on reducing the density of aggressive perennial species, some of which required the use of pesticides. Chemical pesticides were applied to specific species based on past experience and/or observations that infestations were not reduced through nonchemical methods. Because the first annual report covered only 4 months, from September through December of 2019, and the second annual report covers a full calendar year and growing season, from January through December 2020, it is expected that approximate cover by invasive species would be higher compared to the first 4 months and that more chemical pesticides would be applied over the full calendar year. Nevertheless, chemical pesticide usage has been greatly reduced from years prior to IPM implementation. The use of chemical pesticides to spot treat invasive species should be reduced in time as infestations are managed and the existing seed bank is exhausted.

Table D: Pesticide Usage in the NTS Basins

Basin Name	Pesticide Name	Amount Applied (gal)	Total (gal)
Aquila Springs	Roundup	0.05	0.17
	Diquat SPC 2L	0.06	
	Lifeline	0.06	
Cypress Meadow A	Diquat SPC 2L	0.31	0.64
	Lifeline	0.33	
Cypress Meadow B	Diquat SPC 2L	0.11	0.16
	Lifeline	0.05	
Eastfoot Retarding Basin	Lifeline	0.13	0.13
Eastwood Meadow	Diquat SPC 2L	0.22	0.34
	Lifeline	0.13	
Floral View	Diquat SPC 2L	0.06	0.06
Forge Meadow	Diquat SPC 2L	0.13	0.19
	Lifeline	0.06	
Hidden Canyon	Roundup	0.25	0.45
	Diquat SPC 2L	0.14	
	Lifeline	0.06	
Iluna Springs	Diquat SPC 2L	0.08	0.14
	Lifeline	0.06	
Laguna Altura South	Roundup	0.09	0.34
	Diquat SPC 2L	0.14	
	Lifeline	0.11	
Los Olivos Meadow	Roundup	0.05	0.63
	Diquat SPC 2L	0.39	
	Lifeline	0.19	
Marshburn	Diquat SPC 2L	0.38	0.44
	Lifeline	0.06	
Middle Eastfoot	Roundup	0.03	0.61
	Diquat SPC 2L	0.30	
	Lifeline	0.28	
Old Laguna	Diquat SPC 2L	0.16	0.22
	Lifeline	0.06	
Orchard Meadow	Diquat SPC 2L	0.25	0.27
	Lifeline	0.02	
Port Culver	Diquat SPC 2L	0.06	0.06
Portola Springs Meadow	Diquat SPC 2L	0.19	0.25
	Lifeline	0.06	
Quail Meadow	Diquat SPC 2L	0.06	0.06
Quail Springs	Diquat SPC 2L	0.56	0.98
	Lifeline	0.42	
Ridge Valley A	Roundup	0.09	0.69
	Diquat SPC 2L	0.34	
	Lifeline	0.25	
Ridge Valley B	Diquat SPC 2L	0.06	0.12
	Lifeline	0.06	
Ridge Valley C	Diquat SPC 2L	0.20	0.39
	Lifeline	0.19	
Sports Park	Diquat SPC 2L	0.23	0.50
	Lifeline	0.27	

Table D: Pesticide Usage in the NTS Basins

Basin Name	Pesticide Name	Amount Applied (gal)	Total (gal)
Trabuco	Roundup	0.14	1.42
	Diquat SPC 2L	0.77	
	Lifeline	0.52	
Upper Eastfoot	Diquat SPC 2L	0.19	0.33
	Lifeline	0.14	
		Total Pesticides Applied	**9.60**

Note: The numbers in this table have been rounded.
NTS = Natural Treatment System

Restoration has taken place and is planned at several NTS basins, which is expected to increase native species cover and in turn reduce nonnative species cover over time.

An overlap analysis (Figure 5) was conducted to visualize areas in the NTS basins and San Joaquin Marsh that harbor nonnative species. A gradient from red to dark green, with redder colors indicating overlapped polygons that were mapped from January to December 2020, indicates areas that have repetitive infestations. It should be noted that the overlap analysis includes nonnative annual species that were prescribed "no treatment," under the direction of IRWD's Natural Resources Manager. While these species were not treated for the 2020 calendar year, it is still important to record locations of such nonnative annuals to aid in future removal efforts. This analysis will help with focusing efforts to reduce nonnatives in hot spots, eventually reducing overall nonnative cover and therefore the need to control them.

Following the first full calendar year of IPM implementation, several recommendations are suggested to streamline IPM implementation activities:

- Currently available organic pesticides are not an effective option for treating invasive plant infestations within NTS basins; therefore, they should not be listed as a preferred method in the IPM Plan. The cost of organic pesticides is higher than that of glyphosate: higher per application and more applications per year, resulting in higher labor expenses (Smith-Fiola and Gill 2017; Barker and Prostak 2008). Organic pesticides are less effective than conventional pesticides at controlling weed growth (Ferguson 2004; Snell 2016). Because organic pesticides are best suited for newly emerged weeds and treat mainly above-ground biomass, many of the invasive species identified in the NTS basins would not be successfully killed. Due to the necessity of repeated applications of organic pesticides that require physical contact with all portions of the plant, there may be higher environmental impacts on nontarget invertebrates, soil, and water quality. Many organic pesticides are exempt from United States Environmental Protection Agency (EPA) pesticide registration; as a result, little ecotoxicity or worker exposure data are available (Smith-Fiola and Gill 2017). Since the NTS basins support aquatic habitat and are utilized by wildlife, spot spraying small amounts of prioritized chemical pesticides rather than repeated, concentrated applications of organic pesticides is recommended should mechanical removal methods fail. If new organic pesticides become available in the future, they may be tested for effectiveness.

- Flaming should not be considered as a treatment method for invasive plant infestations within NTS basins in future years. It is ineffective for many of the perennial plant species that occur within IRWD's facilities. Flaming in Southern California also poses dangers associated with wildfires. As many of the NTS basins are located adjacent to sensitive areas, flaming is not recommended.

- The field-monitoring forms should be amended to better quantify the amounts of chemical pesticides used and to make sure comparable data is collected by all pesticide applicators. It would be helpful in tracking the locations and species to which chemical pesticides were applied if the form had a field to record the object ID corresponding to maps. LSA also recommends updating the fields for chemical pesticides to incorporate an estimate of the amount of chemical pesticide used, rather than the application rate for the total area. Chemical pesticides are usually spot sprayed on individual plants rather than broadcasted, so quantifying by the total area applied is not practical. A one-time training to cover what information needs to be recorded could also be helpful in ensuring that data collection is standardized.

- LSA recommends that maintenance crews keep control of certain native, annual species that would facilitate invasions of other nonnative species. Particularly, slender aster was noted to have dominated several basins. This species grows dense and tall and may outcompete other native, perennial species. When this annual species dies and the dead brush is removed, portions of the basin are left bare and devoid of other native species that would reduce the likeliness of nonnative species to establish within the basin. Therefore, nonnative species become established in these areas.

- While restoration has occurred or is planned to occur at several basins, including Lower Eastfoot, Orchard Meadow, Turtle Ridge, and Los Olivos Meadow (planned), many other NTS basins would benefit from restoration, particularly in the basin bottoms. Some basins that exhibit low cover by perennial native species in the basin bottoms that would be crucial in outcompeting invasive plants include Eastwood Meadow, Quail Springs, Twisted Oak, Hidden Canyon, Laguna Altura South, Ridge Valley A, Upper Eastfoot, Middle Eastfoot, and Cypress Meadow C. Conducting restoration events at these basins would diminish cover by nonnatives in the long term. Furthermore, establishing native species would reduce the necessity of using chemical pesticides.

- At the direction of IRWD's Natural Resources Manager, LSA biologists do not survey or prescribe treatment methods for parts of the basins that are not immediately adjacent to channels or ponds at Eastfoot Retarding Basin, Marshburn, and Trabuco. These basins are managed differently because they are flood retention basins, and to LSA's understanding, they are mowed every quarter. Following the first full year of IPM implementation, LSA recommends adaptively managing how often these basins are mowed. During the growing season, these basins harbor significant amounts of nonnative species. Mowing the basin once during the growing season may not be sufficient to keep these nonnative species from flowering and seeding, thus adding to the existing seed bank. Because of the immense nonnative seed bank in these adjacent areas, keeping invasives from recurring in the riparian areas becomes difficult, particularly after precipitation events. Mowing more often to keep the seed bank under control would be beneficial in ensuring that invasives do not establish in riparian areas in the long term.

- LSA biologists currently visit NTS basins and San Joaquin Marsh 2 weeks before maintenance crews are scheduled to visit. Following the early stages of IPM implementation, and now that staff members have become accustomed to the process of surveying for nonnatives, coordinating with the landscape maintenance crew, determining if extra work crews are needed to complete IPM activities, and submitting extra work proposals, it would be beneficial to adjust the biologists' visits to 1 week prior to scheduled maintenance. Reducing the time lag between surveys and treatment of invasives would aid in addressing infestations before plants flower and set seed.

IPM Plan implementation processes are expected to improve in efficiency and effectiveness in the following years.

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Smith-Fiola, Deborah, and Stanton Gill. 2017. Vinegar: An Alternative to Glyphosate? Website: https://extension.umd.edu/sites/extension.umd.edu/files/_docs/programs/ipmnet/Vinegar-AnAlternativeToGlyphosate-UMD-Smith-Fiola-and-Gill.pdf (accessed February 2020).

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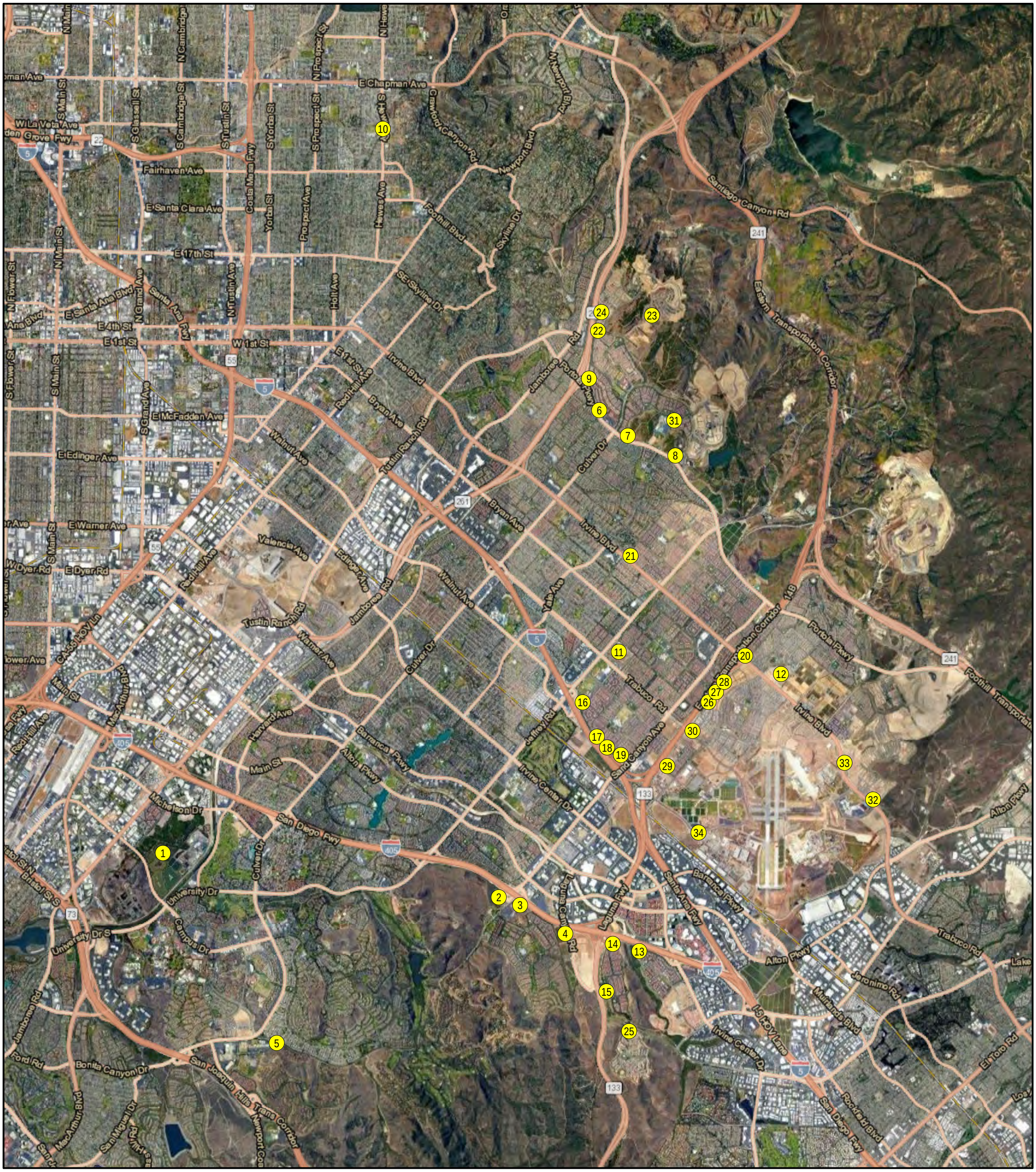
APPENDIX A

FIGURES 1 THROUGH 5



LSA

LEGEND

Site Location

FIGURE 1

0 0.75 1.5

MILES

SOURCE: Google Maps (2019); IRWD (7/2019)

IRWD IPM Plan 2020 Annual Report

Project Site Overview

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LSA

LEGEND

San Joaquin Marsh

Zone 1

Zone 2

Zone 3

Zone 4

0 375 750

FEET

FIGURE 2

IRWD IPM Plan 2020 Annual Report

San Joaquin Marsh Zones 1 - 4

SOURCE: Google Maps (2019); IRWD (9/2019)

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View of Quail Springs, looking west. A mix of nonnative and native annual species cover the basin bottom during the growing season. While the slopes support good diversity and coverage of perennial native species, much of the basin bottom lacks perennials.

View of Cypress Meadow D, looking east. The upland slopes of this basin exhibit good coverage by native species.

LSA

APPENDIX A
FIGURE 3
PAGE 1 of 4

IRWD IPM Plan 2020 Annual Report
Representative Site Photographs

View of Lower Eastfoot, looking south. This basin currently exhibits high cover by nonnative annuals, especially on the slopes; however, recent restoration efforts are expected to improve cover by native species.

View of Parasol Park, looking west. The slopes exhibit good native diversity and cover; however, sow-thistles are prevalent throughout the basin bottom.

LSA

APPENDIX A
FIGURE 3
PAGE 2 of 4

IRWD IPM Plan 2020 Annual Report
Representative Site Photographs

View of Twisted Oak, looking south. While cover by invasive species has improved from 2019, this basin still lacks native vegetation.

View of Marshburn, looking west. IPM activities occur primarily around the edges of the ponds and channels—the rest of the basin is mowed yearly.

LSA

APPENDIX A
FIGURE 3

View of Eastwood Meadow, looking west. Much of the basin bottom was dominated by a native annual species, eastern annual saltmarsh aster, which outcompeted other species.

View of Orchard Meadow, looking east. Restoration was conducted on the slopes of this site in 2019, and cover by native perennial species is expected to continue to improve.

LSA

APPENDIX A
FIGURE 3
PAGE 4 of 4

LSA

Site Boundary

(1066) [Chemical Pesticides] Curly dock (30%)
(1724) [Chemical Pesticides] Spanish false fleabane (10%)
(1742) [Chemical Pesticides] Curly dock (70%)
(1751) [Chemical Pesticides] Curly dock, Fat-hen, Spanish false fleabane (70%)
(1767) [Chemical Pesticides] Spanish false fleabane (10%)
(1770) [Chemical Pesticides] Spanish false fleabane, Sow-thistles, London rocket, Jersey cudweed (40%)
(1779) [Chemical Pesticides] Spanish false fleabane (10%)
(1780) [Chemical Pesticides] Spanish false fleabane (10%)
(1896) [Chemical Pesticides] Perennial pepperweed (5%)
(1897) [Chemical Pesticides] Perennial pepperweed (5%)
(1900) [Chemical Pesticides] Perennial pepperweed (10%)
(2062) [Chemical Pesticides] Spanish false fleabane (20%)
(2066) [Chemical Pesticides] Spanish false fleabane (10%)
(2832) [Chemical Pesticides] Perennial pepperweed (5%)
(2834) [Chemical Pesticides] Spanish false fleabane (10%)

0 150 300
FEET

FIGURE 4
Sheet 1 of 29

IRWD IPM Plan 2020 Annual Report

San Joaquin Marsh (Zones 1) Pesticide Application Locations

SOURCE: Google Maps (2019); IRWD (9/2019)

LSA

Site Boundary

(1066) [Chemical Pesticides] Curly dock (30%)
(1176) [Chemical Pesticides] Spanish false fleabane (5%)
(1734) [Chemical Pesticides] Spanish false fleabane (10%)
(1742) [Chemical Pesticides] Curly dock (70%)
(1751) [Chemical Pesticides] Curly dock, Fat-hen, Spanish false fleabane (70%)
(2834) [Chemical Pesticides] Spanish false fleabane (10%)
(2837) [Chemical Pesticides] Spanish false fleabane (10%)
(2838) [Chemical Pesticides] Spanish false fleabane (5%)
(2876) [Chemical Pesticides] Spanish false fleabane, Curly dock, Common fig (20%)
(2896) [Chemical Pesticides] Perennial pepperweed (10%)

0 120 240
FEET

FIGURE 4
Sheet 2 of 29

IRWD IPM Plan 2020 Annual Report

San Joaquin Marsh (Zones 2) Pesticide Application Locations

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LSA

Site Boundary

(1066) [Chemical Pesticides] Curly dock (30%)
(1724) [Chemical Pesticides] Spanish false fleabane (10%)
(1742) [Chemical Pesticides] Curly dock (70%)
(1751) [Chemical Pesticides] Curly dock, Fat-hen, Spanish false fleabane (70%)
(1767) [Chemical Pesticides] Spanish false fleabane (10%)
(1770) [Chemical Pesticides] Spanish false fleabane, Sow-thistles, London rocket, Jersey cudweed (40%)
(1779) [Chemical Pesticides] Spanish false fleabane (10%)
(1780) [Chemical Pesticides] Spanish false fleabane (10%)
(1896) [Chemical Pesticides] Perennial pepperweed (5%)
(1897) [Chemical Pesticides] Perennial pepperweed (5%)
(1900) [Chemical Pesticides] Perennial pepperweed (10%)
(2062) [Chemical Pesticides] Spanish false fleabane (20%)
(2066) [Chemical Pesticides] Spanish false fleabane (10%)
(2832) [Chemical Pesticides] Perennial pepperweed (5%)
(2834) [Chemical Pesticides] Spanish false fleabane (10%)
(2876) [Chemical Pesticides] Spanish false fleabane, Curly dock, Common fig (20%)
(2896) [Chemical Pesticides] Perennial pepperweed (10%)

0 150 300
FEET

FIGURE 4
Sheet 3 of 29

IRWD IPM Plan 2020 Annual Report

San Joaquin Marsh (Zones 3) Pesticide Application Locations

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SOURCE: Google Maps (2019); IRWD (9/2019)

LSA

Site Boundary

(1066) [Chemical Pesticides] Curly dock (30%)
(1176) [Chemical Pesticides] Spanish false fleabane (5%)
(1734) [Chemical Pesticides] Spanish false fleabane (10%)
(1742) [Chemical Pesticides] Curly dock (70%)
(1751) [Chemical Pesticides] Curly dock, Fat-hen, Spanish false fleabane (70%)
(1767) [Chemical Pesticides] Spanish false fleabane (10%)
(2834) [Chemical Pesticides] Spanish false fleabane (10%)
(2837) [Chemical Pesticides] Spanish false fleabane (10%)
(2838) [Chemical Pesticides] Spanish false fleabane (5%)
(2876) [Chemical Pesticides] Spanish false fleabane, Curly dock, Common fig (20%)
(2896) [Chemical Pesticides] Perennial pepperweed (10%)

0 150 300
FEET

FIGURE 4
Sheet 4 of 29

IRWD IPM Plan 2020 Annual Report

San Joaquin Marsh (Zones 4) Pesticide Application Locations

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LSA

Site Boundary

(2233) [Chemical Pesticides] Spanish false fleabane (5%)
(2238) [Chemical Pesticides] Spanish false fleabane, Curly dock (40%)
(2424) [Chemical Pesticides] Spanish false fleabane, Black mustard (10%)
(2425) [Chemical Pesticides] Spanish false fleabane, Grass poly (25%)
(2428) [Chemical Pesticides] Spanish false fleabane (5%)
(2430) [Chemical Pesticides] Spanish false fleabane (10%)
(2431) [Chemical Pesticides] Spanish false fleabane (10%)
(2588) [Chemical Pesticides] Spanish false fleabane (10%)
(2592) [Chemical Pesticides] Spanish false fleabane (10%)
(2741) [Chemical Pesticides] Spanish false fleabane (5%)
(2745) [Chemical Pesticides] Spanish false fleabane (5%)
(3300) [Chemical Pesticides] Spanish false fleabane, Short-pod mustard, Sweet fennel (15%)
(3301) [Chemical Pesticides] Spanish false fleabane, Short-pod mustard (10%)
(3304) [Chemical Pesticides] Spanish false fleabane, Curly dock (5%)
(3305) [Chemical Pesticides] Spanish false fleabane, Curly dock (10%)
(3306) [Chemical Pesticides] Spanish false fleabane, Curly dock (10%)
(3307) [Chemical Pesticides] Spanish false fleabane, Curly dock (10%)
(3308) [Chemical Pesticides] Spanish false fleabane, Curly dock (10%)
(3309) [Chemical Pesticides] Spanish false fleabane, Curly dock (10%)
(3310) [Chemical Pesticides] Spanish false fleabane, Curly dock (25%)
(3311) [Chemical Pesticides] Spanish false fleabane, Curly dock (10%)

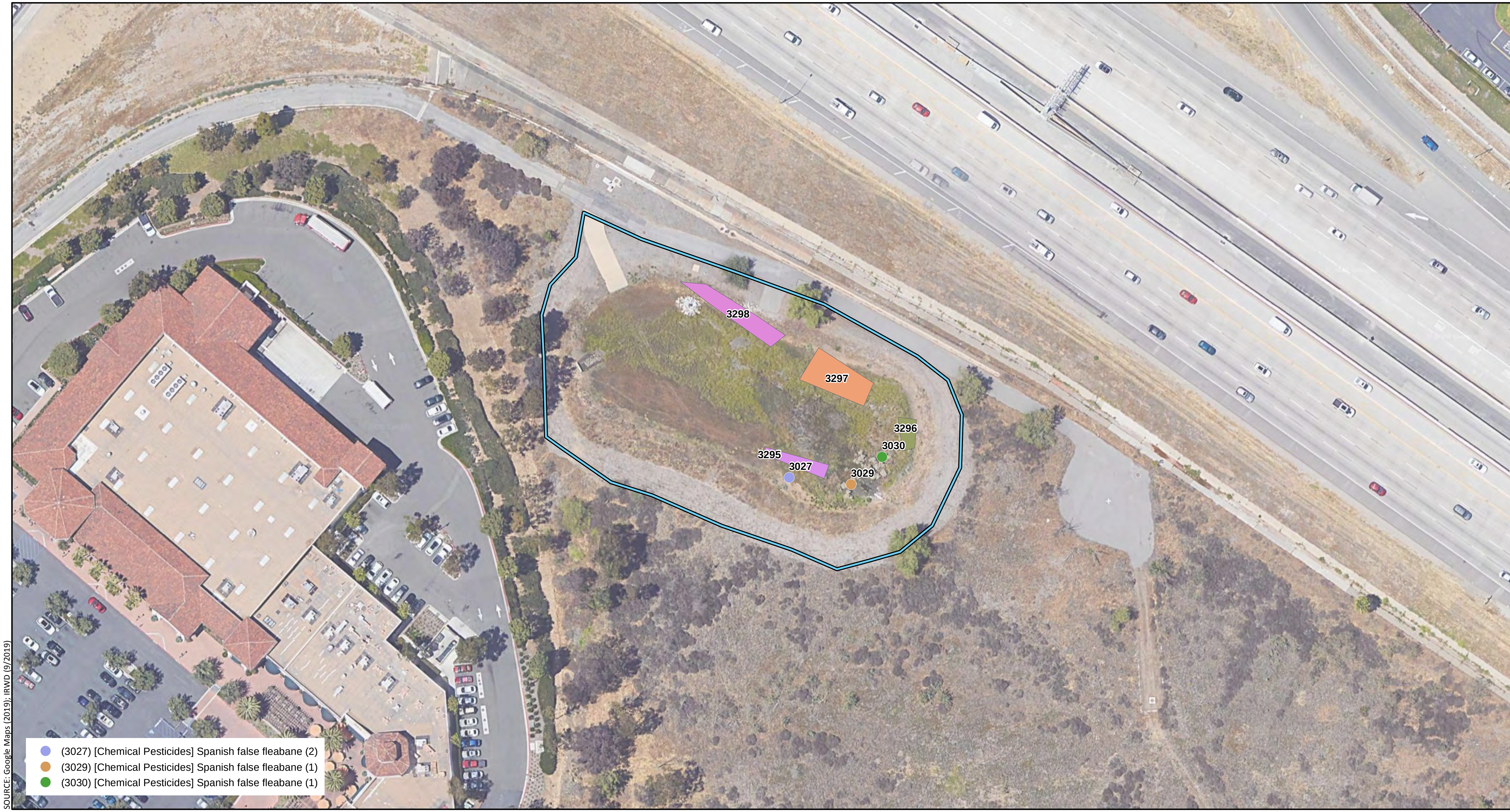
0 50 100
FEET

FIGURE 4

IRWD IPM Plan 2020 Annual Report

Quail Springs Pesticide Application Locations

I:\IRW1901\GIS\MXD\2020 Annual Report\Pesticide_Use.mxd (2/6/2021)



LSA

Site Boundary

(3295) [Chemical Pesticides] Spanish false fleabane, Curly dock (10%)

(3296) [Chemical Pesticides] Spanish false fleabane, Curly dock (10%)

(3297) [Chemical Pesticides] Spanish false fleabane, Curly dock (10%)

(3298) [Chemical Pesticides] Spanish false fleabane, Curly dock, Prickly lettuce (10%)

0 37.5 75
FEET

FIGURE 4
Sheet 6 of 29

IRWD IPM Plan 2020 Annual Report

Quail Meadow Pesticide Application Locations

LSA

Site Boundary
(1960) [Chemical Pesticides] Spanish false fleabane (5%)
(2218) [Chemical Pesticides] Spanish false fleabane, Grass poly (10%)
(2628) [Chemical Pesticides] Spanish false fleabane (5%)

0 30 60
FEET

FIGURE 4
Sheet 7 of 29

IRWD IPM Plan 2020 Annual Report

Old Laguna Pesticide Application Locations

I:\IRW1901\GIS\MXD\2020 Annual Report\Pesticide_Use.mxd (2/6/2021)

LSA

FIGURE 4

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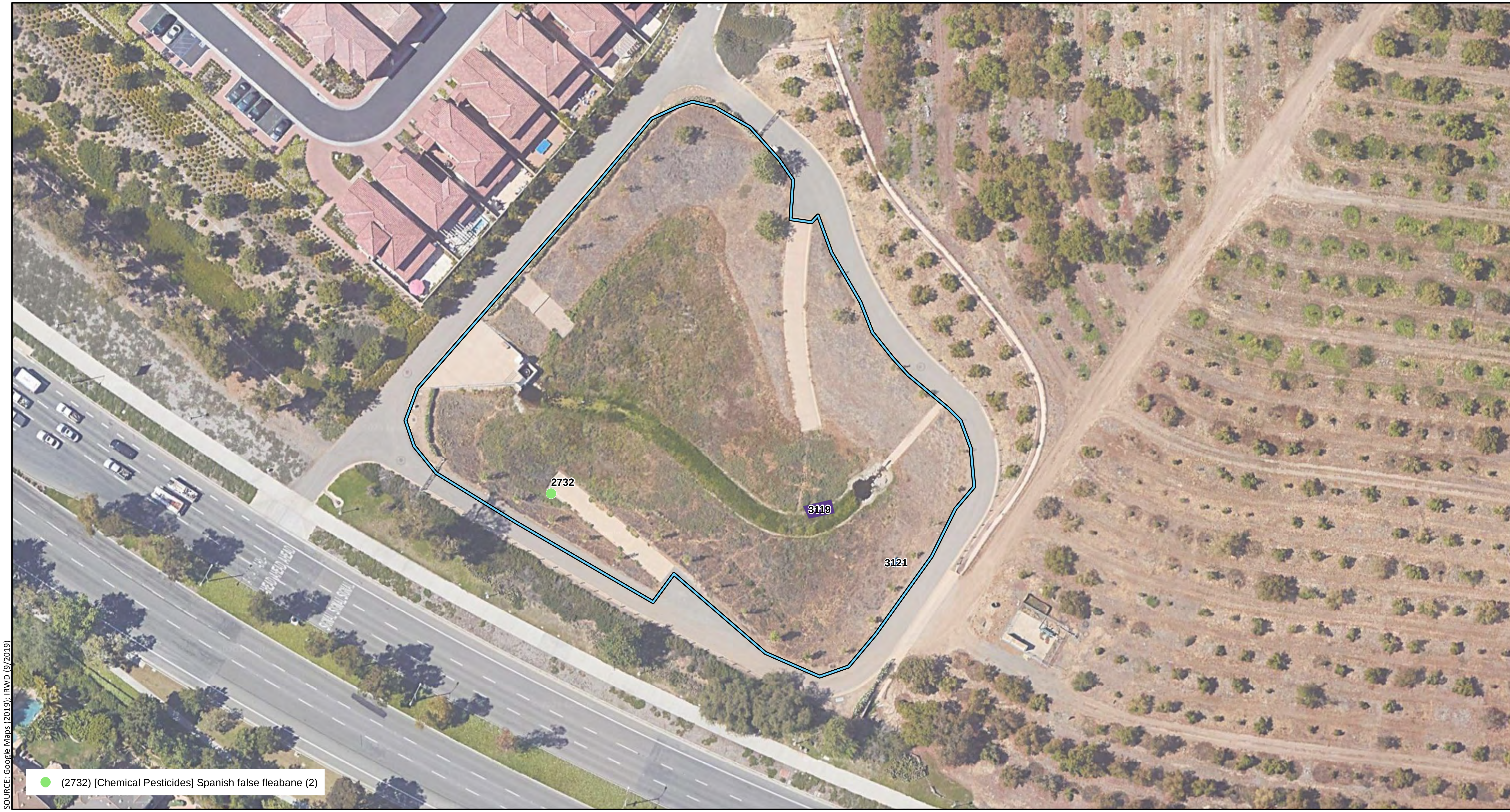
IRWD IPM Plan 2020 Annual Report

Forge Meadow Pesticide Application Locations

I:\IRW1901\GIS\MXD\2020 Annual Report\Pesticide_Use.mxd (2/6/2021)



LSA

Site Boundary

(3119) [Chemical Pesticides] Spanish false fleabane (5%)

(3121) [Chemical Pesticides] Bermuda grass (10%)

FIGURE 4

Sheet 9 of 29

0 30 60

FEET

IRWD IPM Plan 2020 Annual Report

Port Culver Pesticide Application Locations

I:\IRW1901\GIS\MXD\2020 Annual Report\Pesticide_Use.mxd (2/6/2021)

SOURCE: Google Maps (2019); IRWD (9/2019)

LSA

Site Boundary

(2136) [Chemical Pesticides] Spanish false fleabane (10%)
(2138) [Chemical Pesticides] Spanish false fleabane (20%)
(2560) [Chemical Pesticides] Spanish false fleabane (20%)
(2561) [Chemical Pesticides] Spanish false fleabane (20%)
(3184) [Chemical Pesticides] Spanish false fleabane (20%)
(3185) [Chemical Pesticides] Spanish false fleabane (20%)
(3186) [Chemical Pesticides] Bermuda grass (30%)
(3187) [Chemical Pesticides] Spanish false fleabane, Field bindweed (20%)
(3188) [Chemical Pesticides] Spanish false fleabane (10%)
(3189) [Chemical Pesticides] Spanish false fleabane (20%)
(3190) [Chemical Pesticides] Spanish false fleabane (5%)
(3404) [Chemical Pesticides] Spanish false fleabane (5%)
(3405) [Chemical Pesticides] Spanish false fleabane (5%)

0 30 60
FEET

FIGURE 4
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IRWD IPM Plan 2020 Annual Report

Orchard Meadow Pesticide Application Locations

I:\IRW1901\GIS\MXD\2020 Annual Report\Pesticide_Use.mxd (2/6/2021)

LSA

Site Boundary

FIGURE 4

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0 100 200

FEET

IRWD IPM Plan 2020 Annual Report

Trabuco Pesticide Application Locations

I:\IRW1901\GIS\MXD\2020 Annual Report\Pesticide_Use.mxd (2/6/2021)

SOURCE: Google Maps (2019); IRWD (9/2019)

LSA

Site Boundary

(1935) [Chemical Pesticides] Spanish false fleabane (5%)
(2207) [Chemical Pesticides] Spanish false fleabane (5%)
(2492) [Chemical Pesticides] Spanish false fleabane, Black mustard (10%)
(2637) [Chemical Pesticides] Spanish false fleabane, Black mustard (10%)
(3108) [Chemical Pesticides] Bermuda grass (10%)
(3116) [Chemical Pesticides] Spanish false fleabane (5%)

N

0 75 150
FEET

FIGURE 4
Sheet 12 of 29

IRWD IPM Plan 2020 Annual Report

Marshburn Pesticide Application Locations

I:\IRW1901\GIS\MXD\2020 Annual Report\Pesticide_Use.mxd (2/6/2021)

SOURCE: Google Maps (2019); IRWD (9/2019)

LSA

Site Boundary

(1213) [Chemical Pesticides] Spanish false fleabane (30%)
(1214) [Chemical Pesticides] Spanish false fleabane (30%)
(1215) [Chemical Pesticides] Spanish false fleabane (20%)
(1216) [Chemical Pesticides] Spanish false fleabane (20%)
(2208) [Chemical Pesticides] Spanish false fleabane (5%)
(2209) [Chemical Pesticides] Spanish false fleabane (5%)
(2210) [Chemical Pesticides] Spanish false fleabane (5%)
(2211) [Chemical Pesticides] Spanish false fleabane (5%)
(2213) [Chemical Pesticides] Spanish false fleabane (5%)
(2214) [Chemical Pesticides] Spanish false fleabane (5%)
(2215) [Chemical Pesticides] Spanish false fleabane (5%)
(2216) [Chemical Pesticides] Spanish false fleabane (5%)
(2439) [Chemical Pesticides] Spanish false fleabane (10%)
(2440) [Chemical Pesticides] Spanish false fleabane (5%)
(2441) [Chemical Pesticides] Spanish false fleabane (5%)
(2442) [Chemical Pesticides] Spanish false fleabane (5%)
(2443) [Chemical Pesticides] Spanish false fleabane (5%)
(2444) [Chemical Pesticides] Spanish false fleabane (5%)
(2631) [Chemical Pesticides] Spanish false fleabane (5%)
(2632) [Chemical Pesticides] Spanish false fleabane (5%)
(2633) [Chemical Pesticides] Spanish false fleabane (50%)

0 30 60
FEET

FIGURE 4
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IRWD IPM Plan 2020 Annual Report

Los Olivos Meadow Pesticide Application Locations

I:\IRW1901\GIS\MXD\2020 Annual Report\Pesticide_Use.mxd (2/6/2021)

LSA

Site Boundary
(1789) [Chemical Pesticides] Spanish false fleabane, Rabbitsfoot grass, California burclover, Scarlet pimpernel, Sow-thistles (65%)
(1790) [No treatment] Scarlet pimpernel, Rabbitsfoot grass, California burclover, Spanish false fleabane, Sow-thistles (60%)
(2535) [Chemical Pesticides] Spanish false fleabane (5%)

FIGURE 4
Sheet 14 of 29

0 30 60
FEET

IRWD IPM Plan 2020 Annual Report

Laguna Altura South Pesticide Application Locations

LSA

Site Boundary

(2164) [Chemical Pesticides] Spanish false fleabane (10%)
(2168) [Chemical Pesticides] Spanish false fleabane (5%)
(2392) [Chemical Pesticides] Spanish false fleabane (10%)
(2393) [Chemical Pesticides] Spanish false fleabane (5%)
(2596) [Chemical Pesticides] Spanish false fleabane (5%)
(2597) [Chemical Pesticides] Spanish false fleabane (5%)
(2598) [Chemical Pesticides] Spanish false fleabane (5%)
(2599) [Chemical Pesticides] Spanish false fleabane (5%)
(2600) [Chemical Pesticides] Spanish false fleabane (5%)
(2601) [Chemical Pesticides] Spanish false fleabane (5%)
(2602) [Chemical Pesticides] Spanish false fleabane (5%)
(2707) [Chemical Pesticides] Perennial pepperweed (5%)
(2708) [Chemical Pesticides] Spanish false fleabane (5%)
(2709) [Chemical Pesticides] Spanish false fleabane (10%)
(3262) [Chemical Pesticides] Spanish false fleabane (10%)
(3263) [Chemical Pesticides] Spanish false fleabane (10%)
(3264) [Chemical Pesticides] Spanish false fleabane (10%)
(3265) [Chemical Pesticides] Spanish false fleabane (5%)
(3266) [Chemical Pesticides] Spanish false fleabane (20%)
(3267) [Chemical Pesticides] Spanish false fleabane (10%)

0 37.5 75
FEET

FIGURE 4
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IRWD IPM Plan 2020 Annual Report

Cypress Meadow A Pesticide Application Locations

LSA

Site Boundary

FIGURE 4

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0 30 60

FEET

IRWD IPM Plan 2020 Annual Report

Cypress Meadow B Pesticide Application Locations

LSA

Site Boundary

(2105) [Chemical Pesticides] Spanish false fleabane (5%)

(2564) [Chemical Pesticides] Spanish false fleabane (30%)

(2850) [Chemical Pesticides] Bermuda grass (10%)

0 30 60
FEET

FIGURE 4
Sheet 17 of 29

IRWD IPM Plan 2020 Annual Report

Portola Springs Meadow Pesticide Application Locations

SOURCE: Google Maps (2019); IRWD (9/2019)

LSA

Site Boundary

(2111) [Chemical Pesticides] Spanish false fleabane (10%)
(2112) [Chemical Pesticides] Spanish false fleabane (10%)
(2114) [Chemical Pesticides] Spanish false fleabane (5%)
(2702) [Chemical Pesticides] Perennial pepperweed (5%)
(2704) [Chemical Pesticides] Perennial pepperweed (10%)
(2846) [Chemical Pesticides] Spanish false fleabane (5%)
(2847) [Chemical Pesticides] Perennial pepperweed (5%)
(3407) [Chemical Pesticides] Spanish false fleabane (5%)
(3408) [Chemical Pesticides] Perennial pepperweed (5%)
(3409) [Chemical Pesticides] Spanish false fleabane (5%)
(3411) [Chemical Pesticides] Spanish false fleabane (10%)
(3413) [Chemical Pesticides] Perennial pepperweed (5%)
(3414) [Chemical Pesticides] Perennial pepperweed (5%)

0 30 60
FEET

FIGURE 4
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IRWD IPM Plan 2020 Annual Report

Eastwood Meadow Pesticide Application Locations

I:\IRW1901\GIS\MXD\2020 Annual Report\Pesticide_Use.mxd (2/6/2021)

SOURCE: Google Maps (2019); IRWD (9/2019)

LSA

Site Boundary

(1788) [Chemical Pesticides] Spanish false fleabane (5)
(1789) [Chemical Pesticides] Spanish false fleabane (3)
(1793) [Chemical Pesticides] Spanish false fleabane (5)
(1984) [Chemical Pesticides] Spanish false fleabane (10)
(1985) [Chemical Pesticides] Spanish false fleabane (5)
(1986) [Chemical Pesticides] Spanish false fleabane (5)
(1987) [Chemical Pesticides] Spanish false fleabane (2)
(2182) [Chemical Pesticides] Spanish false fleabane (3)
(2183) [Chemical Pesticides] Spanish false fleabane (3)
(2184) [Chemical Pesticides] Spanish false fleabane (1)
(2185) [Chemical Pesticides] Spanish false fleabane (3)
(3118) [Chemical Pesticides] Spanish false fleabane (20)
(3121) [Chemical Pesticides] Spanish false fleabane (5)
(3122) [Chemical Pesticides] Spanish false fleabane (10)

0 30 60
FEET

FIGURE 4
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IRWD IPM Plan 2020 Annual Report

Middle Eastfoot Pesticide Application Locations

I:\IRW1901\GIS\MXD\2020 Annual Report\Pesticide_Use.mxd (2/6/2021)

LSA

Site Boundary

(2649) [Chemical Pesticides] Spanish false fleabane (5%)

(3142) [Chemical Pesticides] Spanish false fleabane (5%)

(3143) [Chemical Pesticides] Spanish false fleabane (10%)

0 50 100
FEET

FIGURE 4

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IRWD IPM Plan 2020 Annual Report

Eastfoot Retarding Basin Pesticide Application Locations

LSA

Site Boundary

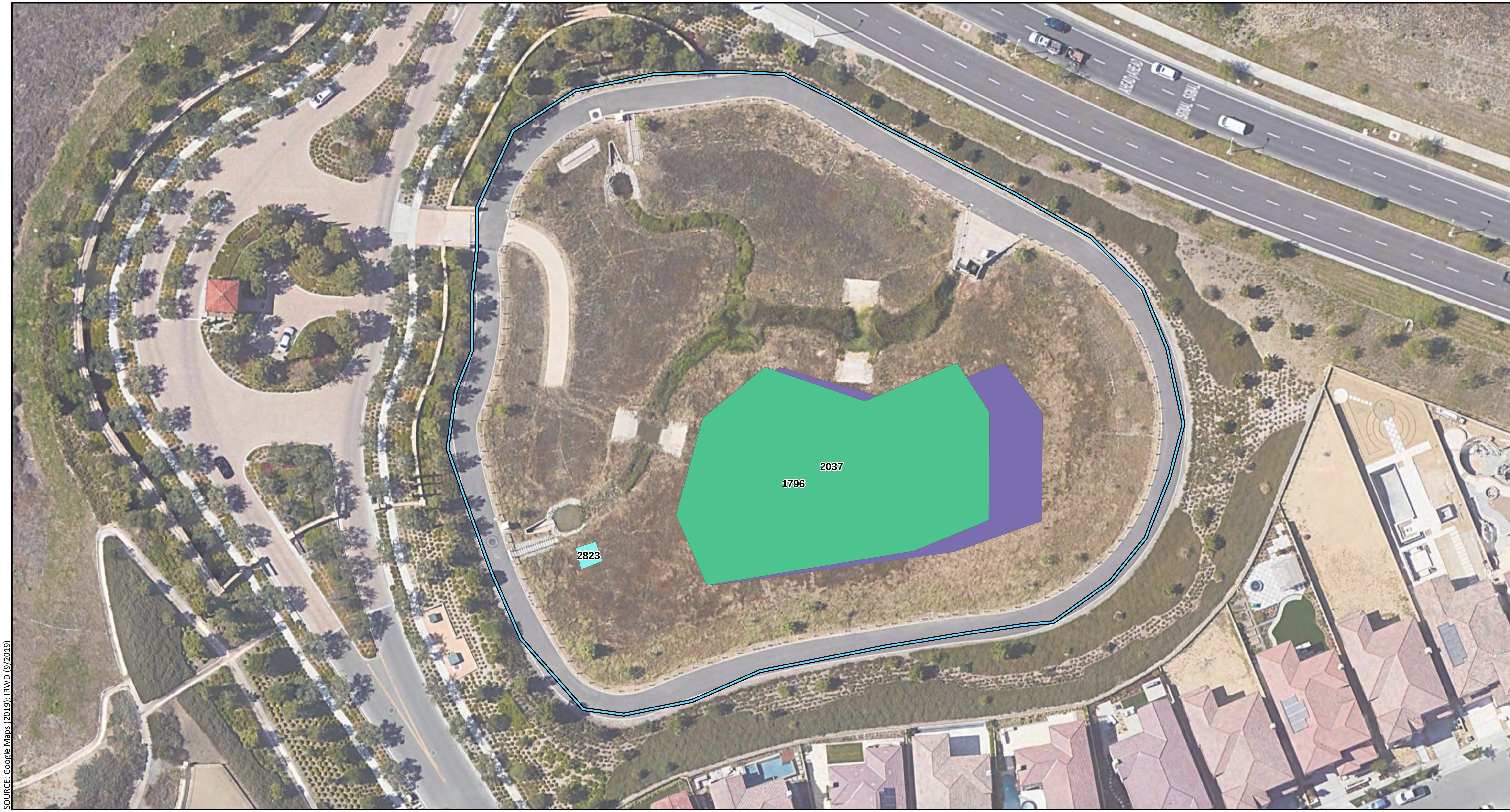
(2555) [Chemical Pesticides] Spanish false fleabane (5%)
(2717) [Chemical Pesticides] Spanish false fleabane (5%)
(2844) [Chemical Pesticides] Spanish false fleabane (5%)
(3282) [Chemical Pesticides] Bermuda grass (5%)
(3283) [Chemical Pesticides] Bermuda grass, Spanish false fleabane (15%)
(3284) [Chemical Pesticides] Bermuda grass, Spanish false fleabane (10%)
(3285) [Chemical Pesticides] Bermuda grass (10%)
(3286) [Chemical Pesticides] Bermuda grass, Spanish false fleabane (15%)
(3287) [Chemical Pesticides] Bermuda grass (5%)
(3288) [Chemical Pesticides] Spanish false fleabane, Bermuda grass (10%)

0 30 60
FEET

FIGURE 4

IRWD IPM Plan 2020 Annual Report

Upper Eastfoot Pesticide Application Locations



SOURCE: Google Maps (2019); IRWD (9/2019)

LSA

Site Boundary

(1796) [Chemical Pesticides] Curly dock, California burclover, Red stemmed filaree, Rabbitsfoot grass (30%)

(2037) [Chemical Pesticides] Curly dock, California burclover, Red stemmed filaree, Italian ryegrass, Other (55%)

(2823) [Chemical Pesticides] Bermuda grass (20%)

0 30 60
FEET

FIGURE 4

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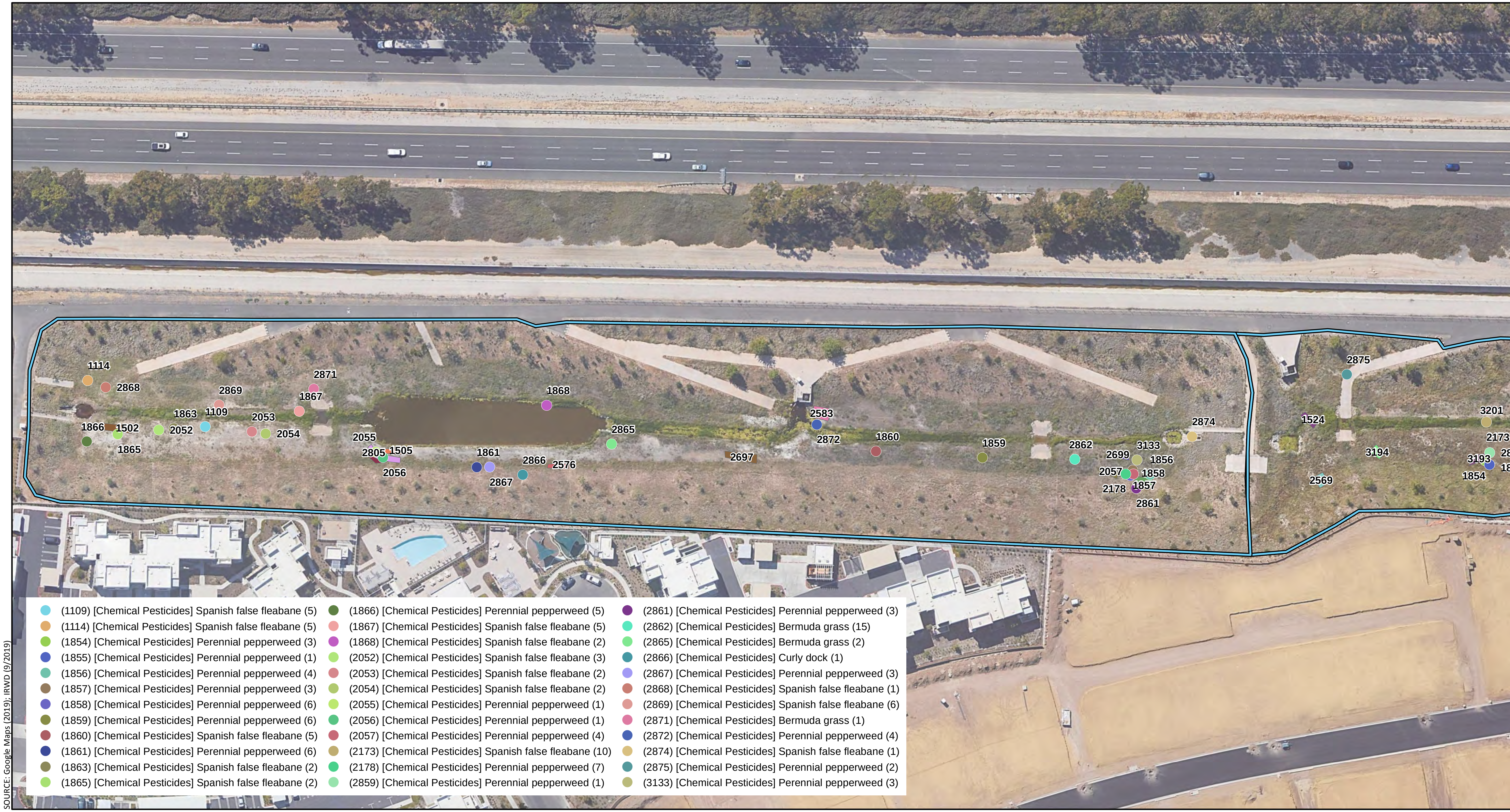
IRWD IPM Plan 2020 Annual Report

Hidden Canyon Pesticide Application Locations



LSA

Site Boundary

(1502) [Chemical Pesticides] Spanish false fleabane (5%)
(1505) [Chemical Pesticides] Perennial pepperweed (5%)
(1524) [Chemical Pesticides] Spanish false fleabane (5%)
(2569) [Chemical Pesticides] Bermuda grass (20%)
(2570) [Chemical Pesticides] Spanish false fleabane (5%)
(2571) [Chemical Pesticides] Spanish false fleabane (5%)
(2576) [Chemical Pesticides] Perennial pepperweed (5%)
(2578) [Chemical Pesticides] Perennial pepperweed (5%)
(2583) [Chemical Pesticides] Perennial pepperweed (5%)
(2697) [Chemical Pesticides] Bermuda grass, Floating primrose willow (15%)
(2699) [Chemical Pesticides] Spanish false fleabane (5%)
(2700) [Chemical Pesticides] Bermuda grass (5%)
(2805) [Chemical Pesticides] Perennial pepperweed (5%)
(3193) [Chemical Pesticides] Bermuda grass (20%)
(3194) [Chemical Pesticides] Bermuda grass (20%)
(3201) [Chemical Pesticides] Bermuda grass (20%)

0 50 100
FEET

FIGURE 4

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IRWD IPM Plan 2020 Annual Report

Ridge Valley A Pesticide Application Locations

I:\IRW1901\GIS\MXD\2020 Annual Report\Pesticide_Use.mxd (2/6/2021)

LSA

Site Boundary

(1524) [Chemical Pesticides] Spanish false fleabane (5%)
(2569) [Chemical Pesticides] Bermuda grass (20%)
(2570) [Chemical Pesticides] Spanish false fleabane (5%)
(2571) [Chemical Pesticides] Spanish false fleabane (5%)
(2685) [Chemical Pesticides] Bermuda grass (30%)
(2699) [Chemical Pesticides] Spanish false fleabane (5%)
(2700) [Chemical Pesticides] Bermuda grass (5%)
(3193) [Chemical Pesticides] Bermuda grass (20%)
(3194) [Chemical Pesticides] Bermuda grass (20%)
(3201) [Chemical Pesticides] Bermuda grass (20%)

0 30 60
FEET

FIGURE 4

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IRWD IPM Plan 2020 Annual Report

Ridge Valley B Pesticide Application Locations

LSA

Site Boundary

(2685) [Chemical Pesticides] Bermuda grass (30%)

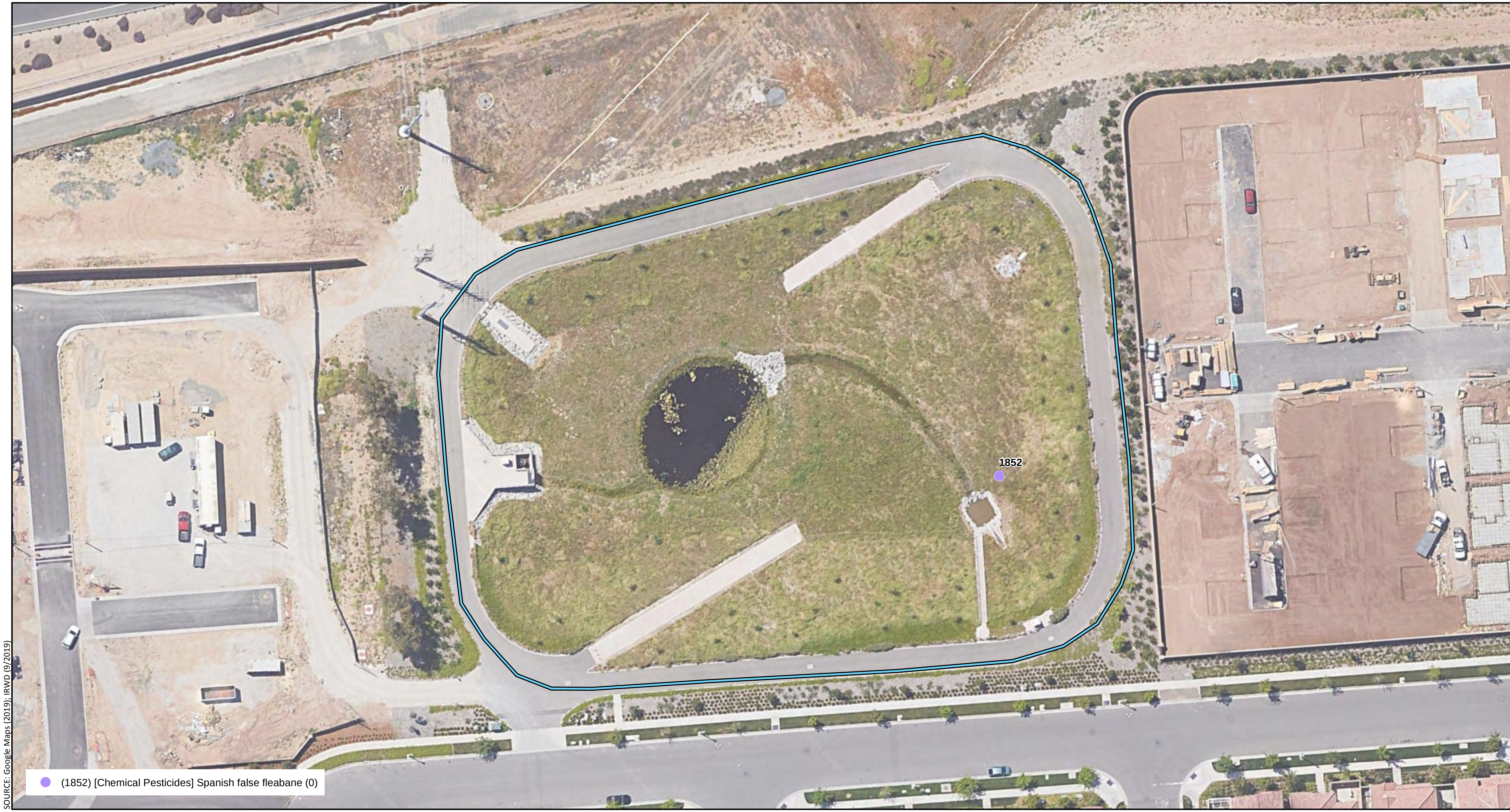
(3192) [Chemical Pesticides] Spanish false fleabane (5%)

0 37.5 75
FEET

FIGURE 4

IRWD IPM Plan 2020 Annual Report

Ridge Valley C Pesticide Application Locations



LSA

Site Boundary

FIGURE 4

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0 30 60
FEET

IRWD IPM Plan 2020 Annual Report

Floral View Pesticide Application Locations

I:\IRW1901\GIS\MXD\2020 Annual Report\Pesticide_Use.mxd (2/6/2021)

LSA

Site Boundary

(2654) [Chemical Pesticides] Perennial pepperweed (5%)
(2655) [Chemical Pesticides] Perennial pepperweed (5%)
(3147) [Chemical Pesticides] Bermuda grass (30%)
(3335) [Chemical Pesticides] Perennial pepperweed (5%)

0 30 60
FEET

FIGURE 4
Sheet 27 of 29

IRWD IPM Plan 2020 Annual Report

District 7 Basin (Iluna Springs) Pesticide Application Locations

I:\IRW1901\GIS\MXD\2020 Annual Report\Pesticide_Use.mxd (2/6/2021)

LSA

Site Boundary

(1266) [Chemical Pesticides] Spanish false fleabane (5%)

FIGURE 4

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N

0 30 60

FEET

IRWD IPM Plan 2020 Annual Report

District 7 Basin 2 (Aquila Springs) Pesticide Application Locations

I:\IRW1901\GIS\MXD\2020 Annual Report\Pesticide_Use.mxd (2/6/2021)

SOURCE: Google Maps (2019); IRWD (9/2019)

LSA

Site Boundary

(2450) [Chemical Pesticides] Spanish false fleabane (10%)
(2451) [Chemical Pesticides] Spanish false fleabane (10%)
(2452) [Chemical Pesticides] Spanish false fleabane (10%)
(2453) [Chemical Pesticides] Spanish false fleabane (5%)
(2454) [Chemical Pesticides] Perennial pepperweed (10%)
(2456) [Chemical Pesticides] Spanish false fleabane (5%)
(2457) [Chemical Pesticides] Spanish false fleabane (5%)
(2609) [Chemical Pesticides] Spanish false fleabane (5%)
(2610) [Chemical Pesticides] Spanish false fleabane (5%)
(2733) [Chemical Pesticides] Perennial pepperweed (5%)
(2736) [Chemical Pesticides] Spanish false fleabane (5%)
(3094) [Chemical Pesticides] Spanish false fleabane (5%)

0 30 60
FEET

FIGURE 4
Sheet 29 of 29

IRWD IPM Plan 2020 Annual Report

Bee Canyon/Sports Park Pesticide Application Locations

I:\IRW1901\GIS\MXD\2020 Annual Report\Pesticide_Use.mxd (2/6/2021)

LSA

LEGEND

Site Boundary

Overlap of Weed Areas

13 - Overlapped by 13 different polygons
12
11
10
9
8
7
6
5
4
3
2
1 - No overlapping polygons

Distribution of Weed Data Points

50 - Individuals per point
30
25
20
15
13
12
10
9
8
7
6
5
4
3
2
1 - Individual per Point

0 150 300
FEET

SOURCE: Google Maps (2019); IRWD (9/2019)

FIGURE 5
SHEET 1 OF 37

IRWD IPM Plan 2020 Annual Report

San Joaquin Marsh (Zone 1) Overlap Analysis

I:\IRW1901\GIS\MXD\2020 Annual Report\Overlap_Analysis.mxd (1/13/2021)

LSA

LEGEND

Site Boundary

Overlap of Weed Areas

13 - Overlapped by 13 different polygons
12
11
10
9
8
7
6
5
4
3
2
1 - No overlapping polygons

Distribution of Weed Data Points

50 - Individuals per point
30
25
20
15
13
12
10
9
8
7
6
5
4
3
2
1 - Individual per Point

0 120 240
FEET

SOURCE: Google Maps (2019); IRWD (9/2019)

I:\IRW1901\GIS\MXD\2020 Annual Report\Overlap_Analysis.mxd (1/13/2021)

FIGURE 5
SHEET 2 OF 37

IRWD IPM Plan 2020 Annual Report

San Joaquin Marsh (Zone 2) Overlap Analysis

LSA

LEGEND

Site Boundary

Overlap of Weed Areas

13 - Overlapped by 13 different polygons

12

11

10

9

8

7

6

5

4

3

2

1 - No overlapping polygons

Distribution of Weed Data Points

50 - Individuals per point

30

25

20

15

13

12

10

9

8

7

6

5

4

3

2

1 - Individual per Point

0 150 300

FEET

SOURCE: Google Maps (2019); IRWD (9/2019)

I:\IRW1901\GIS\MXD\2020 Annual Report\Overlap_Analysis.mxd (1/13/2021)

FIGURE 5

SHEET 3 OF 37

IRWD IPM Plan 2020 Annual Report

San Joaquin Marsh (Zone 3) Overlap Analysis

LSA

LEGEND

Site Boundary

Overlap of Weed Areas

13 - Overlapped by 13 different polygons
12
11
10
9
8
7
6
5
4
3
2
1 - No overlapping polygons

Distribution of Weed Data Points

50 - Individuals per point
30
25
20
15
13
12
10
9
8
7
6
5
4
3
2
1 - Individual per Point

0 150 300
FEET

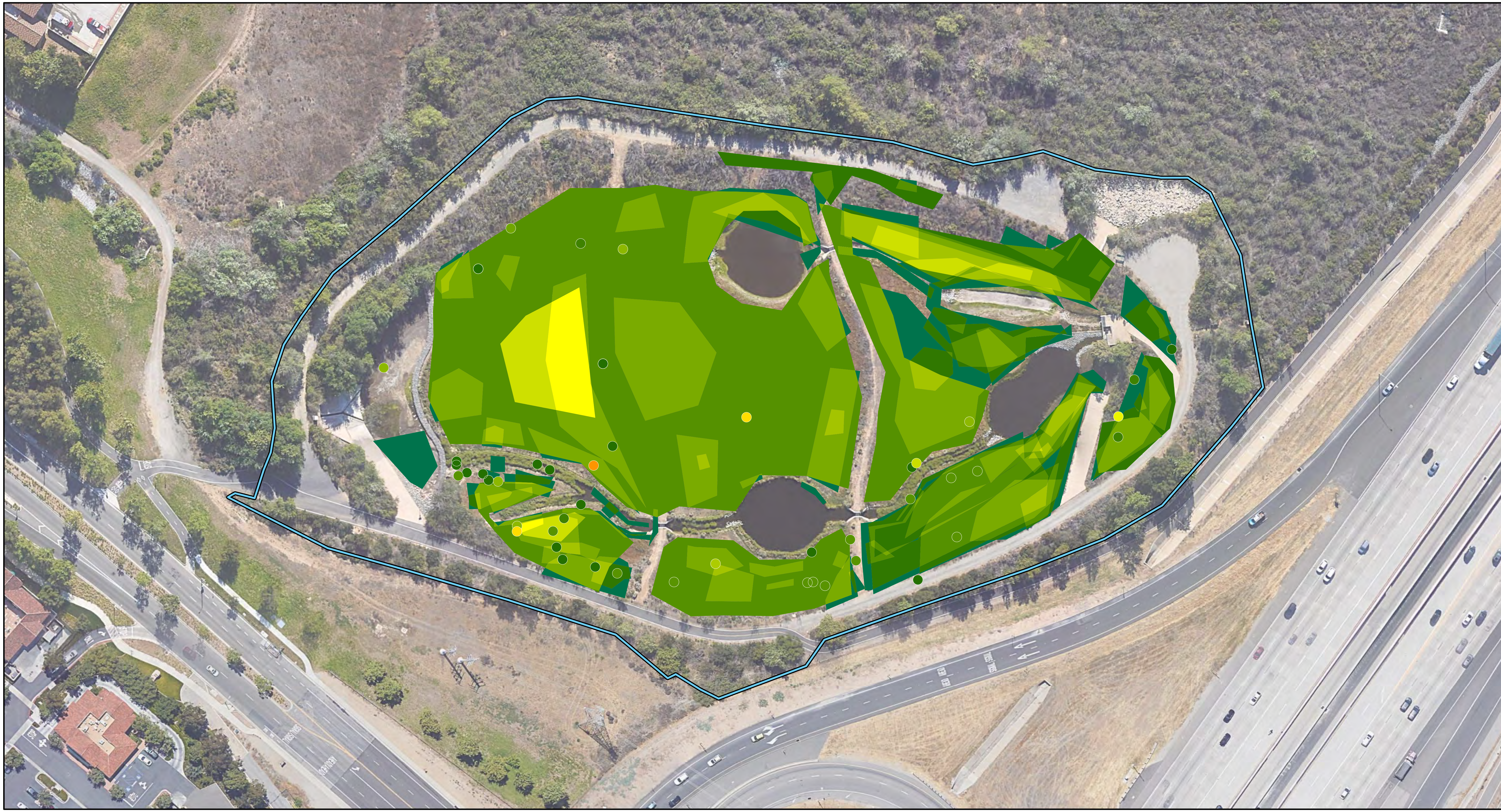
SOURCE: Google Maps (2019); IRWD (9/2019)

I:\IRW1901\GIS\MXD\2020 Annual Report\Overlap_Analysis.mxd (1/13/2021)

FIGURE 5
SHEET 4 OF 37

IRWD IPM Plan 2020 Annual Report

San Joaquin Marsh (Zone 4) Overlap Analysis



LSA

LEGEND

Site Boundary

Overlap of Weed Areas

13 - Overlapped by 13 different polygons	10	5	
12	9	4	
11	8	3	
	7	2	
	6	1 - No overlapping polygons	

Distribution of Weed Data Points

50 - Individuals per point	15	8	3
30	13	7	2
25	12	6	1 - Individual per Point
20	10	5	
	9	4	

0 50 100

FEET

SOURCE: Google Maps (2019); IRWD (9/2019)

I:\IRW1901\GIS\MXD\2020 Annual Report\Overlap_Analysis.mxd (1/13/2021)

FIGURE 5

SHEET 5 OF 37

IRWD IPM Plan 2020 Annual Report

Quail Springs Overlap Analysis

LSA

LEGEND

Site Boundary

Overlap of Weed Areas

13 - Overlapped by 13 different polygons
12
11
10
9
8
7
6
5
4
3
2
1 - No overlapping polygons

Distribution of Weed Data Points

50 - Individuals per point
30
25
20
15
13
12
10
9
8
7
6
5
4
3
2
1 - Individual per Point

0 37.5 75
FEET

SOURCE: Google Maps (2019); IRWD (9/2019)

I:\IRW1901\GIS\MXD\2020 Annual Report\Overlap_Analysis.mxd (1/13/2021)

FIGURE 5
SHEET 6 OF 37

IRWD IPM Plan 2020 Annual Report

Quail Meadow Overlap Analysis

LSA

LEGEND

Site Boundary

Overlap of Weed Areas

13 - Overlapped by 13 different polygons

12

11

10

9

8

7

6

5

4

3

2

1 - No overlapping polygons

Distribution of Weed Data Points

50 - Individuals per point

30

25

20

15

13

12

10

9

8

7

6

5

4

3

2

1 - Individual per Point

0 30 60

FEET

SOURCE: Google Maps (2019); IRWD (9/2019)

I:\IRW1901\GIS\MXD\2020 Annual Report\Overlap_Analysis.mxd (1/13/2021)

FIGURE 5

SHEET 7 OF 37

IRWD IPM Plan 2020 Annual Report

Old Laguna Overlap Analysis

LSA

LEGEND

Site Boundary

Overlap of Weed Areas

13 - Overlapped by 13 different polygons
12
11
10
9
8
7
6
5
4
3
2
1 - No overlapping polygons

Distribution of Weed Data Points

50 - Individuals per point
30
25
20
15
13
12
10
9
8
7
6
5
4
3
2
1 - Individual per Point

0 30 60
FEET

SOURCE: Google Maps (2019); IRWD (9/2019)

I:\IRW1901\GIS\MXD\2020 Annual Report\Overlap_Analysis.mxd (1/13/2021)

FIGURE 5
SHEET 8 OF 37

IRWD IPM Plan 2020 Annual Report

Turtle Ridge Overlap Analysis

LSA

LEGEND

Site Boundary

Overlap of Weed Areas

13 - Overlapped by 13 different polygons
12
11
10
9
8
7
6
5
4
3
2
1 - No overlapping polygons

Distribution of Weed Data Points

50 - Individuals per point
30
25
20
15
13
12
10
9
8
7
6
5
4
3
2
1 - Individual per Point

0 30 60
FEET

SOURCE: Google Maps (2019); IRWD (9/2019)

I:\IRW1901\GIS\MXD\2020 Annual Report\Overlap_Analysis.mxd (1/13/2021)

FIGURE 5
SHEET 9 OF 37

IRWD IPM Plan 2020 Annual Report

Forge Meadow Overlap Analysis

LSA

LEGEND

Site Boundary

Overlap of Weed Areas

13 - Overlapped by 13 different polygons
12
11
10
9
8
7
6
5
4
3
2
1 - No overlapping polygons

Distribution of Weed Data Points

50 - Individuals per point
30
25
20
15
13
12
10
9
8
7
6
5
4
3
2
1 - Individual per Point

0 30 60
FEET

SOURCE: Google Maps (2019); IRWD (9/2019)

I:\IRW1901\GIS\MXD\2020 Annual Report\Overlap_Analysis.mxd (1/13/2021)

FIGURE 5
SHEET 10 OF 37

IRWD IPM Plan 2020 Annual Report

Port Culver Overlap Analysis

LSA

LEGEND

Site Boundary

Overlap of Weed Areas

13 - Overlapped by 13 different polygons

12

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9

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7

6

5

4

3

2

1 - No overlapping polygons

Distribution of Weed Data Points

50 - Individuals per point

30

25

20

15

13

12

10

9

8

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6

5

4

3

2

1 - Individual per Point

0 30 60

FEET

SOURCE: Google Maps (2019); IRWD (9/2019)

I:\IRW1901\GIS\MXD\2020 Annual Report\Overlap_Analysis.mxd (1/13/2021)

FIGURE 5

SHEET 11 OF 37

IRWD IPM Plan 2020 Annual Report

Orchard Meadow Overlap Analysis

LSA

LEGEND

Site Boundary

Overlap of Weed Areas

13 - Overlapped by 13 different polygons	10	5		
12	9	4		
11	8	3		
	7	2		
	6	1 - No overlapping polygons		

Distribution of Weed Data Points

50 - Individuals per point	15	8	3
30	13	7	2
25	12	6	1 - Individual per Point
20	10	5	
	9	4	

0 30 60
FEET

SOURCE: Google Maps (2019); IRWD (9/2019)

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FIGURE 5
SHEET 12 OF 37

IRWD IPM Plan 2020 Annual Report

Lower Eastfoot Overlap Analysis

LSA

LEGEND

Site Boundary

Overlap of Weed Areas

13 - Overlapped by 13 different polygons
12
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4
3
2
1 - No overlapping polygons

Distribution of Weed Data Points

50 - Individuals per point
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2
1 - Individual per Point

0 30 60

FEET

SOURCE: Google Maps (2019); IRWD (9/2019)

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FIGURE 5

SHEET 13 OF 37

IRWD IPM Plan 2020 Annual Report

El Modena Overlap Analysis

LSA

LEGEND

Site Boundary

Overlap of Weed Areas

13 - Overlapped by 13 different polygons	10	5			
12	9	4			
11	8	3			
	7	2			
	6	1 - No overlapping polygons			

Distribution of Weed Data Points

50 - Individuals per point	15	8	3
30	13	7	2
25	12	6	1 - Individual per Point
20	10	5	
	9	4	

N

0 100 200

FEET

SOURCE: Google Maps (2019); IRWD (9/2019)

FIGURE 5
SHEET 14 OF 37

IRWD IPM Plan 2020 Annual Report

Trabuco Overlap Analysis

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LSA

LEGEND

Site Boundary

Overlap of Weed Areas

13 - Overlapped by 13 different polygons	10	5			
12	9	4			
11	8	3			
	7	2			
	6	1 - No overlapping polygons			

Distribution of Weed Data Points

50 - Individuals per point	15	8	3
30	13	7	2
25	12	6	1 - Individual per Point
20	10	5	
	9	4	

0 75 150
FEET

SOURCE: Google Maps (2019); IRWD (9/2019)

I:\IRW1901\GIS\MXD\2020 Annual Report\Overlap_Analysis.mxd (1/13/2021)

FIGURE 5
SHEET 15 OF 37

IRWD IPM Plan 2020 Annual Report

Marshburn Overlap Analysis

LSA

LEGEND

Site Boundary

Overlap of Weed Areas

13 - Overlapped by 13 different polygons

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3

2

1 - No overlapping polygons

Distribution of Weed Data Points

50 - Individuals per point

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1 - Individual per Point

0 30 60

FEET

SOURCE: Google Maps (2019); IRWD (9/2019)

I:\IRW1901\GIS\MXD\2020 Annual Report\Overlap_Analysis.mxd (1/13/2021)

FIGURE 5

SHEET 16 OF 37

IRWD IPM Plan 2020 Annual Report

Los Olivos Meadow Overlap Analysis

LSA

LEGEND

Site Boundary

Overlap of Weed Areas

13 - Overlapped by 13 different polygons
12
11
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3
2
1 - No overlapping polygons

Distribution of Weed Data Points

50 - Individuals per point
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2
1 - Individual per Point

0 30 60
FEET

SOURCE: Google Maps (2019); IRWD (9/2019)

I:\IRW1901\GIS\MXD\2020 Annual Report\Overlap_Analysis.mxd (1/13/2021)

FIGURE 5
SHEET 17 OF 37

IRWD IPM Plan 2020 Annual Report

Laguna Altura North Overlap Analysis

LSA

LEGEND

Site Boundary

Overlap of Weed Areas

13 - Overlapped by 13 different polygons
12
11
10
9
8
7
6
5
4
3
2
1 - No overlapping polygons

Distribution of Weed Data Points

50 - Individuals per point
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2
1 - Individual per Point

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0 30 60
FEET

SOURCE: Google Maps (2019); IRWD (9/2019)

I:\IRW1901\GIS\MXD\2020 Annual Report\Overlap_Analysis.mxd (1/13/2021)

FIGURE 5
SHEET 18 OF 37

IRWD IPM Plan 2020 Annual Report

Laguna Altura South Overlap Analysis

LSA

LEGEND

Site Boundary

Overlap of Weed Areas

13 - Overlapped by 13 different polygons

12

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6

5

4

3

2

1 - No overlapping polygons

Distribution of Weed Data Points

50 - Individuals per point

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25

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6

5

4

3

2

1 - Individual per Point

0 37.5 75

FEET

SOURCE: Google Maps (2019); IRWD (9/2019)

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FIGURE 5

SHEET 19 OF 37

IRWD IPM Plan 2020 Annual Report

Cypress Meadow A Overlap Analysis

LSA

LEGEND

Site Boundary

Overlap of Weed Areas

13 - Overlapped by 13 different polygons
12
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4
3
2
1 - No overlapping polygons

Distribution of Weed Data Points

50 - Individuals per point
30
25
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15
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12
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9
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6
5
4
3
2
1 - Individual per Point

0 30 60
FEET

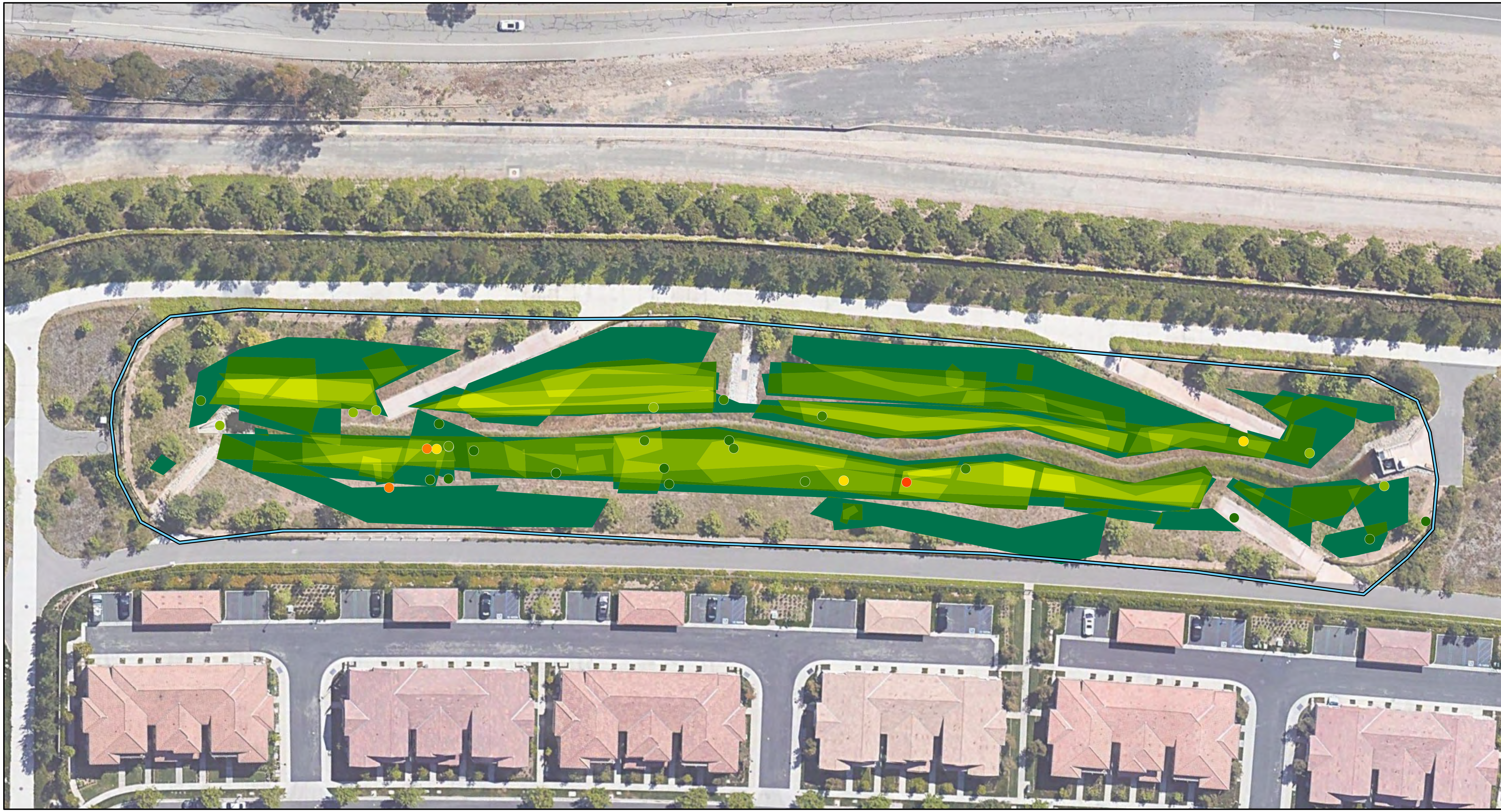
SOURCE: Google Maps (2019); IRWD (9/2019)

I:\IRW1901\GIS\MXD\2020 Annual Report\Overlap_Analysis.mxd (1/13/2021)

FIGURE 5
SHEET 20 OF 37

IRWD IPM Plan 2020 Annual Report

Cypress Meadow B Overlap Analysis



LSA

LEGEND

Site Boundary

Overlap of Weed Areas

13 - Overlapped by 13 different polygons

12

11

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4

3

2

1 - No overlapping polygons

Distribution of Weed Data Points

50 - Individuals per point

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1 - Individual per Point

0 30 60

FEET

SOURCE: Google Maps (2019); IRWD (9/2019)

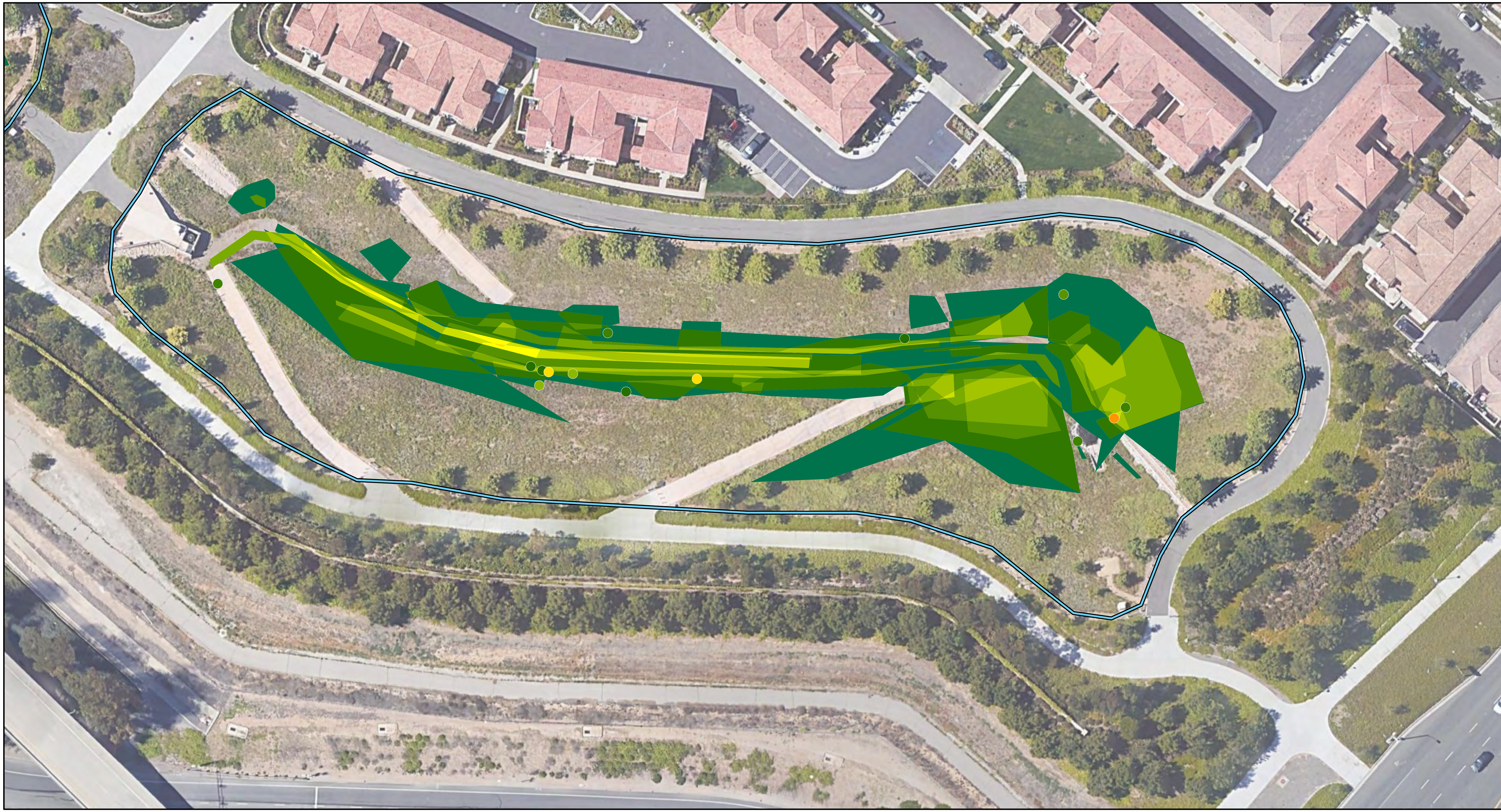
I:\IRW1901\GIS\MXD\2020 Annual Report\Overlap_Analysis.mxd (1/13/2021)

FIGURE 5

SHEET 21 OF 37

IRWD IPM Plan 2020 Annual Report

Cypress Meadow C Overlap Analysis



LSA

LEGEND

Site Boundary

Overlap of Weed Areas

13 - Overlapped by 13 different polygons
12
11
10
9
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6
5
4
3
2
1 - No overlapping polygons

Distribution of Weed Data Points

50 - Individuals per point
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25
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15
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12
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9
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7
6
5
4
3
2
1 - Individual per Point

N

0 30 60
FEET

SOURCE: Google Maps (2019); IRWD (9/2019)

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FIGURE 5
SHEET 22 OF 37

IRWD IPM Plan 2020 Annual Report

Cypress Meadow D Overlap Analysis

LSA

LEGEND

Site Boundary

Overlap of Weed Areas

13 - Overlapped by 13 different polygons	10	5
12	9	4
11	8	3
	7	2
	6	1 - No overlapping polygons

Distribution of Weed Data Points

50 - Individuals per point	15	8	3
30	13	7	2
25	12	6	1 - Individual per Point
20	10	5	
	9	4	

0 30 60

FEET

SOURCE: Google Maps (2019); IRWD (9/2019)

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FIGURE 5

SHEET 23 OF 37

IRWD IPM Plan 2020 Annual Report

Portola Springs Meadow Overlap Analysis

LSA

LEGEND

Site Boundary

Overlap of Weed Areas

13 - Overlapped by 13 different polygons
12
11
10
9
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7
6
5
4
3
2
1 - No overlapping polygons

Distribution of Weed Data Points

50 - Individuals per point
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25
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3
2
1 - Individual per Point

0 30 60
FEET

SOURCE: Google Maps (2019); IRWD (9/2019)

FIGURE 5
SHEET 24 OF 37

IRWD IPM Plan 2020 Annual Report

Eastwood Meadow Overlap Analysis

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LSA

LEGEND

Site Boundary

Overlap of Weed Areas

- 13 - Overlapped by 13 different polygons
- 12
- 11
- 10
- 9
- 8
- 7
- 6
- 5
- 4
- 3
- 2
- 1 - No overlapping polygons

Distribution of Weed Data Points

- 50 - Individuals per point
- 30
- 25
- 20
- 15
- 13
- 12
- 10
- 9
- 8
- 7
- 6
- 5
- 4
- 3
- 2
- 1 - Individual per Point

0 30 60
FEET

SOURCE: Google Maps (2019); IRWD (9/2019)

I:\IRW1901\GIS\MXD\2020 Annual Report\Overlap_Analysis.mxd (1/13/2021)

FIGURE 5
SHEET 25 OF 37

IRWD IPM Plan 2020 Annual Report

Middle Eastfoot Overlap Analysis

LSA

LEGEND

Site Boundary

Overlap of Weed Areas

13 - Overlapped by 13 different polygons
12
11
10
9
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7
6
5
4
3
2
1 - No overlapping polygons

Distribution of Weed Data Points

50 - Individuals per point
30
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15
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8
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6
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4
3
2
1 - Individual per Point

0 50 100
FEET

SOURCE: Google Maps (2019); IRWD (9/2019)

I:\IRW1901\GIS\MXD\2020 Annual Report\Overlap_Analysis.mxd (1/13/2021)

FIGURE 5
SHEET 26 OF 37

IRWD IPM Plan 2020 Annual Report

Eastfoot Retarding Basin Overlap Analysis

LSA

LEGEND

Site Boundary

Overlap of Weed Areas

13 - Overlapped by 13 different polygons
12
11
10
9
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6
5
4
3
2
1 - No overlapping polygons

Distribution of Weed Data Points

50 - Individuals per point
30
25
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6
5
4
3
2
1 - Individual per Point

0 30 60
FEET

SOURCE: Google Maps (2019); IRWD (9/2019)

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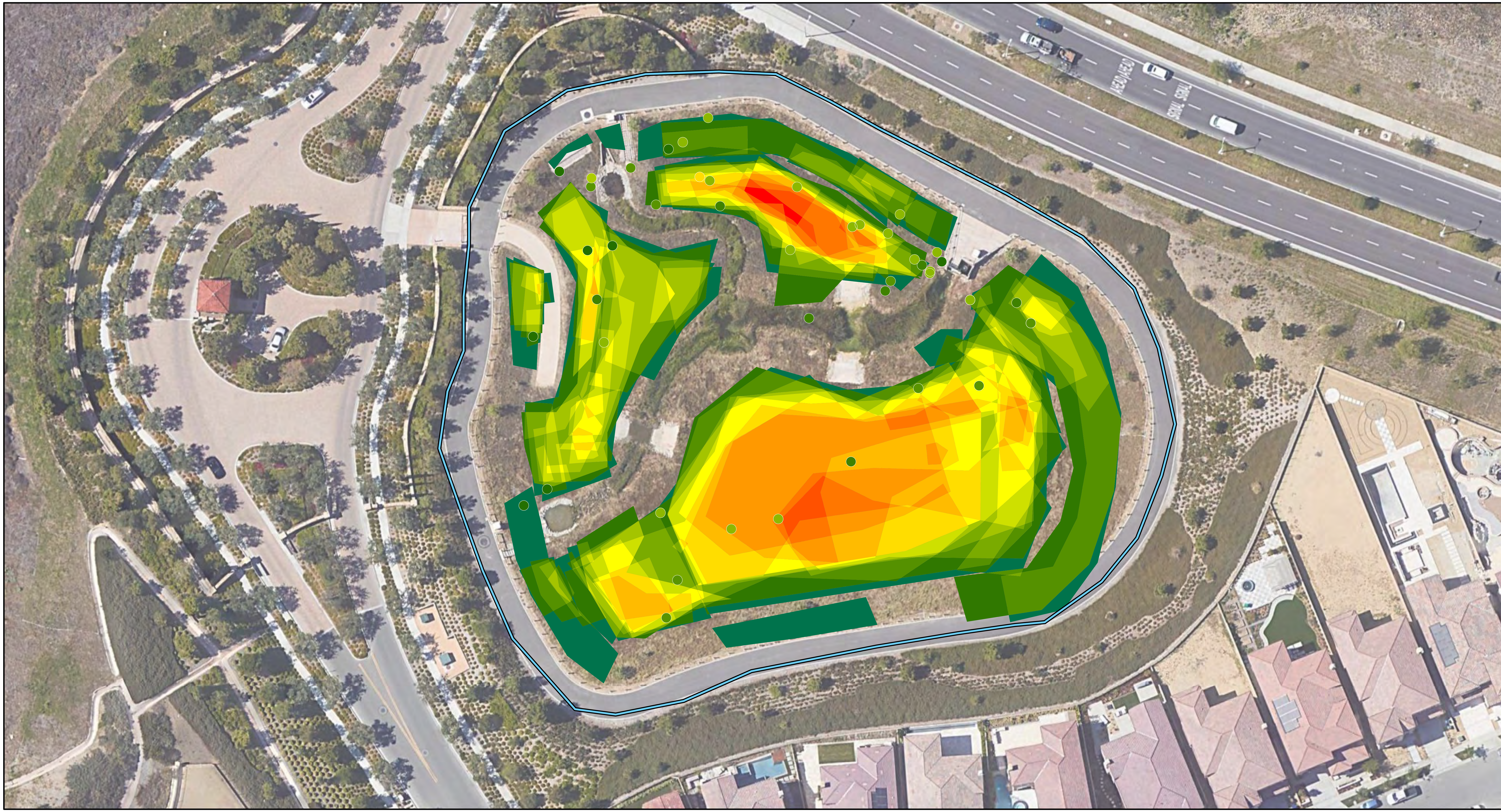
FIGURE 5
SHEET 27 OF 37

IRWD IPM Plan 2020 Annual Report

Upper Eastfoot Overlap Analysis



LSA

LEGEND

Site Boundary

Overlap of Weed Areas

- 13 - Overlapped by 13 different polygons
- 12
- 11
- 10
- 9
- 8
- 7
- 6
- 5
- 4
- 3
- 2
- 1 - No overlapping polygons

Distribution of Weed Data Points

- 50 - Individuals per point
- 30
- 25
- 20
- 15
- 13
- 12
- 10
- 9
- 8
- 7
- 6
- 5
- 4
- 3
- 2
- 1 - Individual per Point

0 30 60
FEET

SOURCE: Google Maps (2019); IRWD (9/2019)

I:\IRW1901\GIS\MXD\2020 Annual Report\Overlap_Analysis.mxd (1/13/2021)

FIGURE 5
SHEET 28 OF 37

IRWD IPM Plan 2020 Annual Report

Hidden Canyon Overlap Analysis

LSA

LEGEND

Site Boundary

Overlap of Weed Areas

- 13 - Overlapped by 13 different polygons
- 12
- 11
- 10
- 9
- 8
- 7
- 6
- 5
- 4
- 3
- 2
- 1 - No overlapping polygons

Distribution of Weed Data Points

- 50 - Individuals per point
- 30
- 25
- 20
- 15
- 13
- 12
- 10
- 9
- 8
- 7
- 6
- 5
- 4
- 3
- 2
- 1 - Individual per Point

0 50 100
FEET

SOURCE: Google Maps (2019); IRWD (9/2019)

I:\IRW1901\GIS\MXD\2020 Annual Report\Overlap_Analysis.mxd (1/13/2021)

FIGURE 5
SHEET 29 OF 37

IRWD IPM Plan 2020 Annual Report

Ridge Valley A Overlap Analysis

LSA

LEGEND

Site Boundary

Overlap of Weed Areas

13 - Overlapped by 13 different polygons
12
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2
1 - No overlapping polygons

Distribution of Weed Data Points

50 - Individuals per point
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25
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6
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4
3
2
1 - Individual per Point

0 30 60

FEET

FIGURE 5

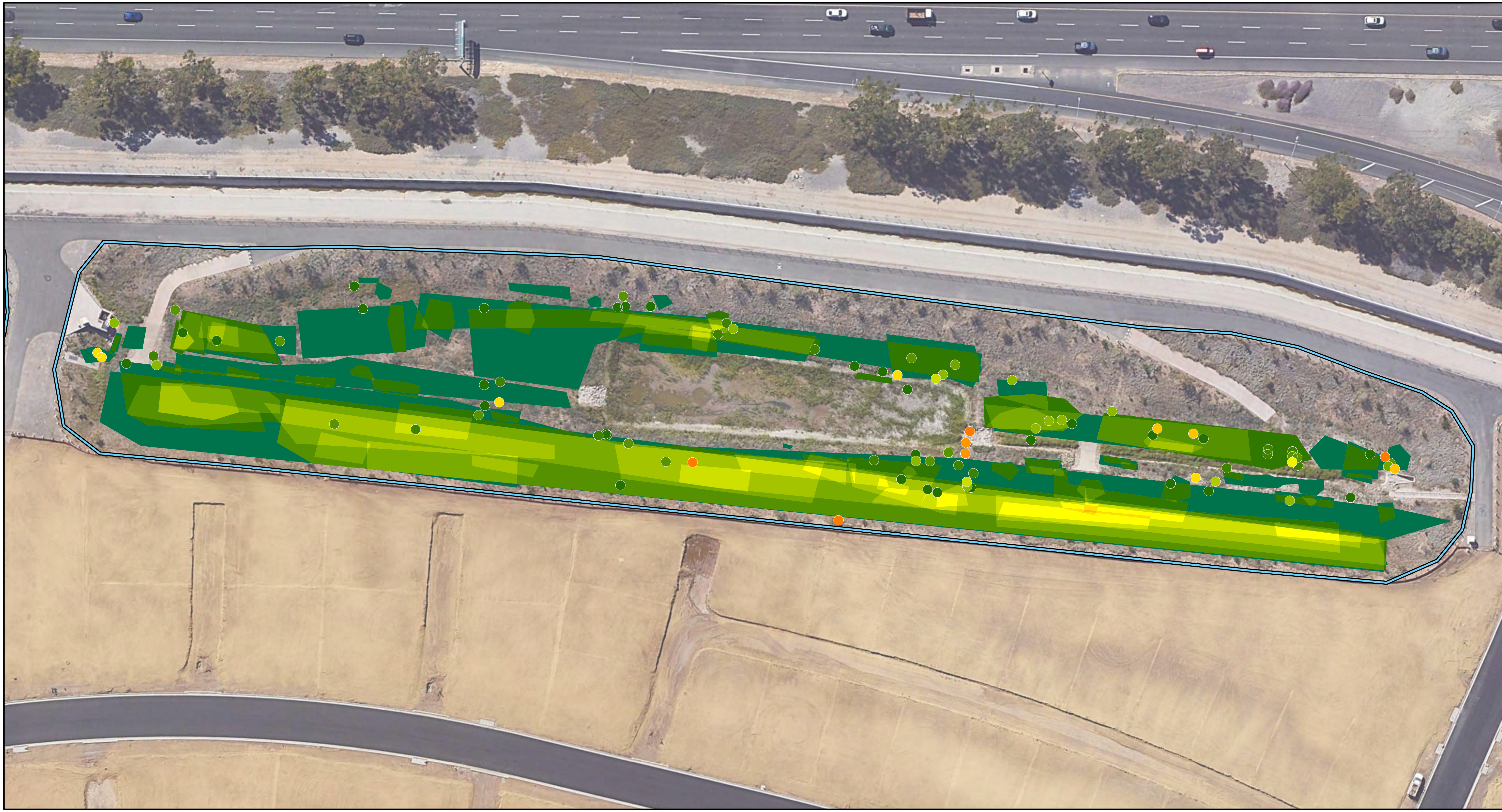
SHEET 30 OF 37

IRWD IPM Plan 2020 Annual Report

Ridge Valley B Overlap Analysis

SOURCE: Google Maps (2019); IRWD (9/2019)

I:\IRW1901\GIS\MXD\2020 Annual Report\Overlap_Analysis.mxd (1/13/2021)



LSA

LEGEND

Site Boundary

Overlap of Weed Areas

13 - Overlapped by 13 different polygons
12
11
10
9
8
7
6
5
4
3
2
1 - No overlapping polygons

Distribution of Weed Data Points

50 - Individuals per point
30
25
20
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13
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9
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6
5
4
3
2
1 - Individual per Point

0 37.5 75
FEET

SOURCE: Google Maps (2019); IRWD (9/2019)

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FIGURE 5
SHEET 31 OF 37

IRWD IPM Plan 2020 Annual Report

Ridge Valley C Overlap Analysis

LSA

LEGEND

Site Boundary

Overlap of Weed Areas

13 - Overlapped by 13 different polygons
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3
2
1 - No overlapping polygons

Distribution of Weed Data Points

50 - Individuals per point
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2
1 - Individual per Point

0 30 60
FEET

SOURCE: Google Maps (2019); IRWD (9/2019)

FIGURE 5
SHEET 32 OF 37

IRWD IPM Plan 2020 Annual Report

Floral View Overlap Analysis

I:\IRW1901\GIS\MXD\2020 Annual Report\Overlap_Analysis.mxd (1/13/2021)

LSA

LEGEND

Site Boundary

Overlap of Weed Areas
- 13 - Overlapped by 13 different polygons
- 12
- 11
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- 7
- 6
- 5
- 4
- 3
- 2
- 1 - No overlapping polygons

Distribution of Weed Data Points
- 50 - Individuals per point
- 30
- 25
- 20
- 15
- 13
- 12
- 10
- 9
- 8
- 7
- 6
- 5
- 4
- 3
- 2
- 1 - Individual per Point

0 30 60
FEET

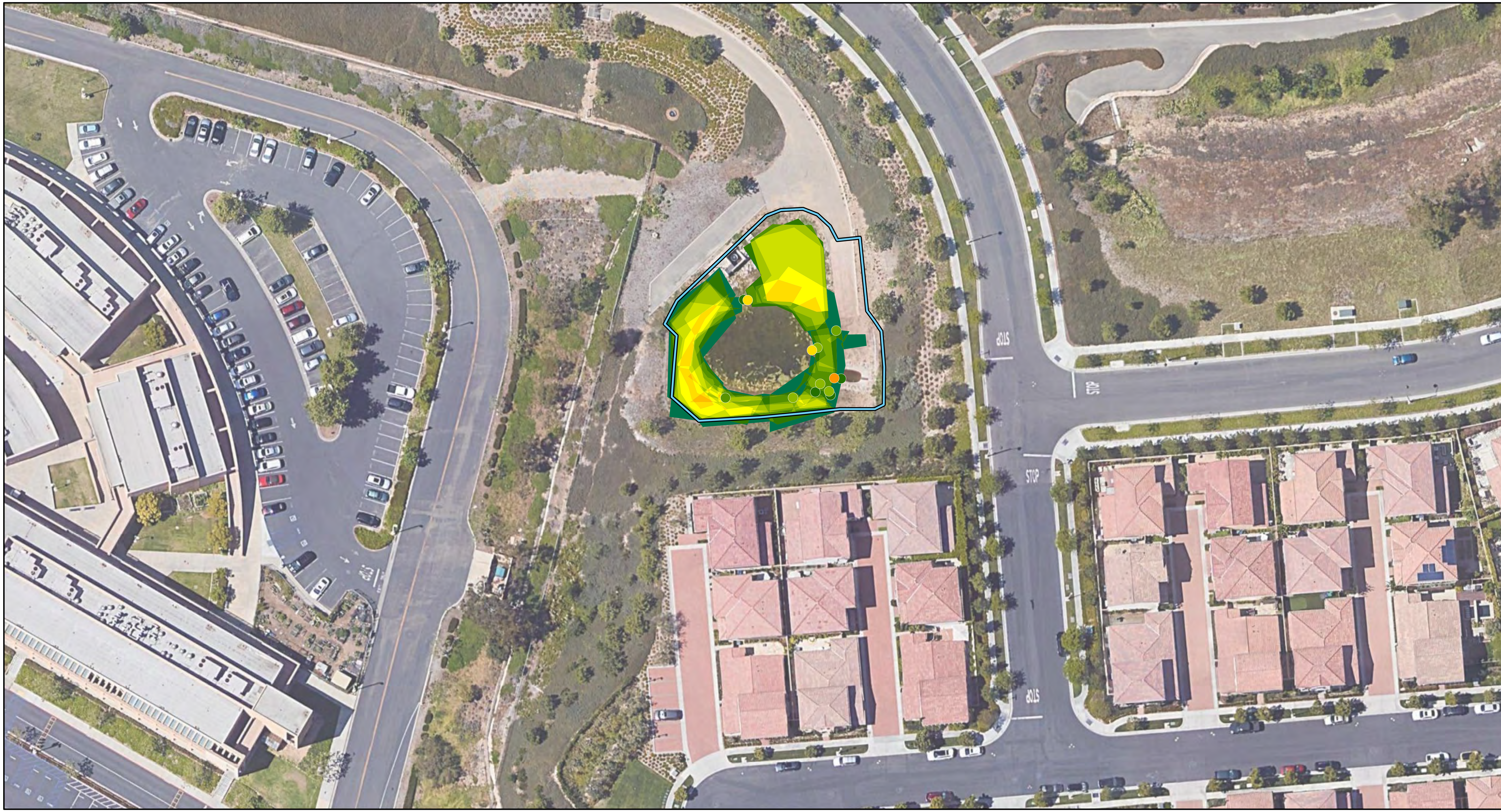
SOURCE: Google Maps (2019); IRWD (9/2019)

I:\IRW1901\GIS\MXD\2020 Annual Report\Overlap_Analysis.mxd (1/13/2021)

FIGURE 5
SHEET 33 OF 37

IRWD IPM Plan 2020 Annual Report

Trabuco East (Parasol Park) Overlap Analysis



LSA

LEGEND

Site Boundary

Overlap of Weed Areas

13 - Overlapped by 13 different polygons
12
11
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5
4
3
2
1 - No overlapping polygons

Distribution of Weed Data Points

50 - Individuals per point
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1 - Individual per Point

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0 30 60
FEET

SOURCE: Google Maps (2019); IRWD (9/2019)

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FIGURE 5
SHEET 34 OF 37

IRWD IPM Plan 2020 Annual Report

Orchard Hills Meadow (Twisted Oak) Overlap Analysis

LSA

LEGEND

Site Boundary

Overlap of Weed Areas

13 - Overlapped by 13 different polygons
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1 - No overlapping polygons

Distribution of Weed Data Points

50 - Individuals per point
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1 - Individual per Point

0 30 60
FEET

SOURCE: Google Maps (2019); IRWD (9/2019)

FIGURE 5
SHEET 35 OF 37

IRWD IPM Plan 2020 Annual Report

District 7 Basin (Iluna Springs) Overlap Analysis

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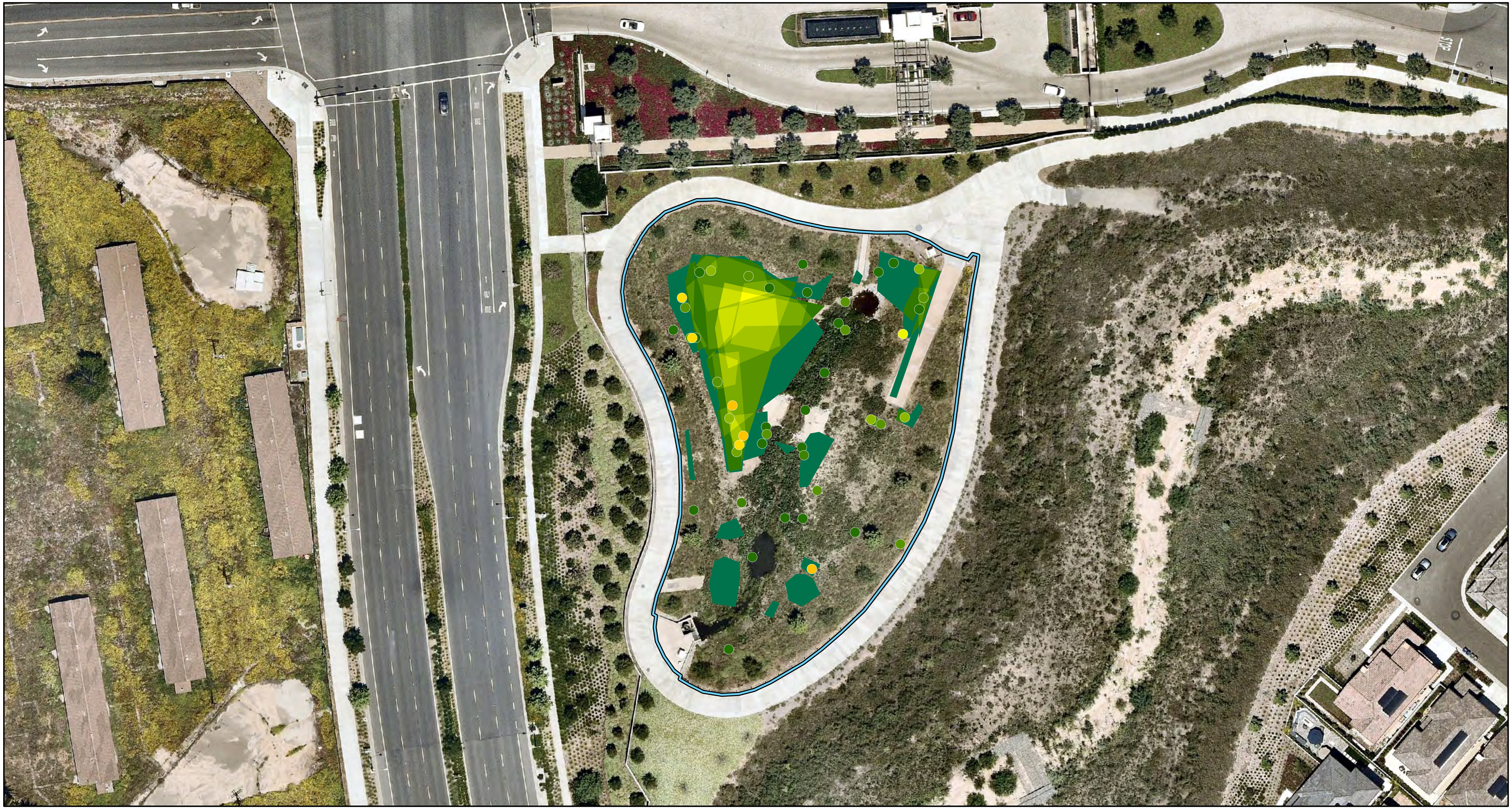

LSA

LEGEND

Site Boundary

Overlap of Weed Areas

- 13 - Overlapped by 13 different polygons
- 12
- 11
- 10
- 9
- 8
- 7
- 6
- 5
- 4
- 3
- 2
- 1 - No overlapping polygons

Distribution of Weed Data Points

- 50 - Individuals per point
- 30
- 25
- 20
- 15
- 13
- 12
- 10
- 9
- 8
- 7
- 6
- 5
- 4
- 3
- 2
- 1 - Individual per Point

0 30 60
FEET

FIGURE 5
SHEET 36 OF 37

IRWD IPM Plan 2020 Annual Report

District 7 Basin 2 (Aquila Springs) Overlap Analysis

SOURCE: Google Maps (2019); IRWD (9/2019)

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LSA

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0 30 60

FEET

LEGEND

Site Boundary

Overlap of Weed Areas

13 - Overlapped by 13 different polygons

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4

3

2

1 - No overlapping polygons

Distribution of Weed Data Points

50 - Individuals per point

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1 - Individual per Point

FIGURE 5

SHEET 37 OF 37

IRWD IPM Plan 2020 Annual Report

Bee Canyon/Sports Park Overlap Analysis

SOURCE: Google Maps (2019); IRWD (9/2019)

I:\IRW1901\GIS\MXD\2020 Annual Report\Overlap_Analysis.mxd (1/13/2021)

APPENDIX B

CHEMICAL PESTICIDE MEMORANDA

CARLSBAD
FRESNO
IRVINE
LOS ANGELES
PALM SPRINGS
POINT RICHMOND
RIVERSIDE
ROSEVILLE
SAN LUIS OBISPO

MEMORANDUM

DATE: January 23, 2020

TO: Ian Swift, Natural Resources Manager, Irvine Ranch Water District

FROM: Jessica Lieuw, Assistant Biologist, LSA

SUBJECT: Chemical Pesticide Treatment Justification for Bermuda Grass

This memorandum documents the results of treatment methods for Bermuda grass (*Cynodon dactylon*) within the Irvine Ranch Water District (IRWD) natural treatment system (NTS) sites. Bermuda grass is a species of perennial grass in the *Poaceae* family that is native to Africa and has been introduced as a turf grass or livestock forage in California but has become an invasive weed in some habitats. This species is a low-growing perennial that is difficult to control, as it often spreads through stolons and rhizomes. Non-chemical methods were tested for removal of the nonnative herb, which have proven unsuccessful in reducing infestations. Moving forward, LSA recommends the use of prioritized chemical pesticides to facilitate removal of Bermuda grass in order to maintain native habitat within the NTS sites.

NON-CHEMICAL REMOVAL

Beginning in September 2019, LSA biologists identified Bermuda grass growing in several of the 34 NTS sites surveyed as part of the IRWD Integrative Pest Management Plan Implementation Project (project). LSA biologists initially prescribed manual removal for the species. Manual removal for Bermuda grass involved hand pulling plants. Other non-chemical removal methods, such as withholding water or mulching, were not prescribed because the habitats were not amenable to these methods. Non-chemical removal methods were not effective in treating areas infested by Bermuda grass as new plants would regenerate from any leftover stolons or rhizomes.

RECOMMENDATIONS

Bermuda grass is listed by the California Invasive Plant Council as an invasive species, with a "Moderate" rating. As the infestations are not responding to non-chemical treatment methods, LSA recommends spot treatment with prioritized chemical pesticides as a management strategy for Bermuda grass. Literature reviews support the aforementioned experiential conclusion that it is difficult to control Bermuda grass by manual removal methods due to its tendency to regenerate from leftover stolons and rhizomes. Withholding water is often recommended as a treatment strategy for Bermuda grass; however, this strategy is not feasible within the NTS sites as the basins are designed to receive urban runoff. LSA biologists have determined that mulching and soil solarization would not be a feasible treatment method within the NTS sites, as infestations are distributed amongst areas that host desirable native species. Flaming would likely also be ineffective due to the rhizome system; flaming as a treatment method in Southern California's dry climate is generally not recommended because of the possibility of brush fires. LSA has also determined that organic chemical control methods would not be effective as a treatment method for Bermuda grass because of the rhizome system. Organic control methods are best suited for newly emerged weeds and treat mainly above-ground biomass, which would not affect the roots of this species, thus allowing the plant to regenerate. Moreover, recent studies have revealed that organic pesticides can have a higher environmental impact than conventional pesticides, especially towards invertebrates. Application of prioritized chemical pesticides should be conducted in a manner that avoids disturbance to installed and recruited native species to the fullest extent practicable. Maintenance over the next few months (early in the growing season) will be most effective in reducing cover by Bermuda grass, as the species blooms from April to May.

Please contact Eric Krieg or Jessica Lieuw at (949) 553-0666 if you have any questions regarding these recommendations.

CARLSBAD
FRESNO
IRVINE
LOS ANGELES
PALM SPRINGS
POINT RICHMOND
RIVERSIDE
ROSEVILLE
SAN LUIS OBISPO

MEMORANDUM

DATE: February 7, 2020

TO: Ian Swift, Natural Resources Manager, Irvine Ranch Water District

FROM: Jessica Lieuw, Assistant Biologist, LSA

SUBJECT: Chemical Pesticide Treatment Justification for Perennial Pepperweed

This memorandum documents the results of treatment methods for perennial pepperweed (*Lepidium latifolium*) within the Irvine Ranch Water District (IRWD) natural treatment system (NTS) sites. Perennial pepperweed is a species of flowering plant in the Brassicaceae family that is native to southeastern Europe and Asia and has been introduced in California where it grows as a weed in disturbed areas. This species is a perennial herb that thrives in seasonally wet areas or areas with a high water table. Plants reproduce from perennial roots or seed. Established perennial pepperweed plants develop an extensive root system that can spread up to 10 feet vertically and laterally, and are capable of producing new shoots from root segments. The root system is the foundation of this species' competitiveness and the major target of control efforts. Perennial pepperweed can quickly form large, dense stands that displace desirable vegetation. Populations easily spread along waterways, and once established this plant is persistent and difficult to control. Moving forward, LSA recommends the use of prioritized chemical pesticides to facilitate removal of perennial pepperweed in order to maintain native riparian habitat within the NTS sites and prevent accumulation of the seed bank.

NON-CHEMICAL REMOVAL

Beginning in September 2019, LSA biologists identified perennial pepperweed growing in a few of the 34 NTS sites surveyed as part of the IRWD Integrative Pest Management Plan Implementation Project (project). LSA biologists initially prescribed manual removal for the species. Manual removal for perennial pepperweed involved pulling individual plants. Other mechanical removal methods, such as tillage or mowing, were not prescribed because the habitats were not amenable to these methods. Perennial pepperweed plants were observed regenerating from portions of the root left in the soil. Furthermore, IRWD personnel have extensive past experience managing perennial pepperweed in the San Joaquin Marsh, and have noted that manual removal methods were not effective.

RECOMMENDATIONS

Perennial pepperweed is listed by the California Invasive Plant Council as an invasive species, with a High rating. As the infestations are known to be difficult to control with mechanical methods and typically require multiple applications of chemical pesticides for full control, LSA recommends spot treatment with prioritized chemical pesticides as a management strategy for perennial pepperweed.

Literature reviews indicate that it is difficult to control perennial pepperweed by hand-pulling past the seedling stage, as plants can regenerate from root fragments as small as one inch. Mowing, mulching, and soil solarization are not effective treatment strategies due to the species' root system and presence of neighboring native species. Flaming is also ineffective due to the root system and perennial nature of the plant. LSA has also determined that organic chemical control methods would not be effective for perennial pepperweed as this species has such an extensive root system. Organic control methods are best suited for newly emerged weeds and treat mainly above-ground biomass, which would not affect roots of this species, thus allowing the plant to regenerate. Moreover, recent studies have revealed that organic pesticides can have a higher environmental impact than conventional pesticides, especially on invertebrates. Due to the highly invasive nature of perennial pepperweed, it is imperative to manage small invasions before they become established. Chemical pesticides are the most effective method to control infestations. Application of prioritized chemical pesticides should be conducted in a manner that avoids disturbance to installed and recruited native species to the fullest extent practicable. Maintenance before individual plants flower will be the most effective way to reduce cover and prevent accumulation of the seed bank.

Please contact Eric Krieg or Jessica Lieuw at (949) 553-0666 if you have any questions regarding these recommendations.

LSA

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ROSEVILLE
SAN LUIS OBISPO

MEMORANDUM

DATE: January 23, 2020

TO: Ian Swift, Natural Resources Manager, Irvine Ranch Water District

FROM: Jessica Lieuw, Assistant Biologist, LSA

SUBJECT: Chemical Pesticide Treatment Justification for Spanish False Fleabane

This memorandum documents the results of treatment methods for Spanish false fleabane (*Pulicaria paludosa*) within the Irvine Ranch Water District (IRWD) natural treatment system (NTS) sites. Spanish false fleabane is a species of flowering plant in the *Asteraceae* family that is native to Europe and has been introduced in California, where it grows as a weed in damp, disturbed areas. This species is an annual or perennial herb with a rhizomatous root system and an inflorescence that bears many flower heads. Multiple non-chemical methods were tested for removal of the nonnative herb over several months, which have proven unsuccessful in reducing infestations. Moving forward, LSA recommends the use of prioritized chemical pesticides to facilitate the removal of Spanish false fleabane in order to maintain native riparian habitat within the NTS sites.

NON-CHEMICAL REMOVAL

Beginning in September 2019, LSA biologists identified Spanish false fleabane growing in more than 20 of the 34 NTS sites surveyed as part of the IRWD Integrative Pest Management Plan Implementation Project (project). Literature reviews of Spanish false fleabane did not indicate any established management strategies. Thus, LSA biologists prescribed manual removal for the species. Manual removal methods for the species included pulling (sometimes with the help of a weed wrench), or cutting shoots in areas where the infestation was too dense to employ the use of a weed wrench without substantial soil disturbance that would negatively impact desirable native plant species. In three sites (Los Olivos Meadow, Quail Springs, and Middle Eastfoot) that exhibited higher cover by Spanish false fleabane, black plastic mulching was tested in flat areas where feasible. The above methods did not significantly reduce cover by Spanish false fleabane. In fact, in some areas, cutting the plants encouraged more growth, as several offshoots regenerated from the parent plant and/or root fragments.

RECOMMENDATIONS

Although Spanish false fleabane is not listed by the California Invasive Plant Council as an invasive species, it exhibits indicators of being an invasive plant. In areas where the infestations are severe, Spanish false fleabane appears to be displacing native species. As the infestations are not responding to non-chemical treatment methods, LSA recommends spot treatment with prioritized chemical pesticides as a management strategy for Spanish false fleabane. LSA biologists have determined that soil solarization would not be an effective treatment method due to the species' extensive root system and the presence of native species. Flaming would also likely be ineffective due to the rhizomatous roots and perennial nature of the plant. Furthermore, flaming as a treatment method in Southern California's dry climate is generally not recommended because of the possibility of starting brush fires. LSA has also determined that organic chemical control methods would not be effective as a treatment method for Spanish false fleabane as this species can have woodier stems and an extensive root system. Organic control methods are best suited for newly emerged weeds and treat mainly above-ground biomass. Moreover, recent studies have revealed that organic pesticides can have a higher environmental impact than conventional pesticides, especially towards invertebrates. Application of prioritized chemical pesticides should be conducted in a manner that avoids disturbance to installed and recruited native species to the fullest extent practicable. Maintenance over the next few months (early in the growing season) will be most effective in reducing cover by Spanish false fleabane, as the species flowers from July to October.

Please contact Eric Krieg or Jessica Lieuw at (949) 553-0666 if you have any questions regarding these recommendations.

LSA

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POINT RICHMOND
RIVERSIDE
ROSEVILLE
SAN LUIS OBISPO

MEMORANDUM

DATE: February 7, 2020

TO: Ian Swift, Natural Resources Manager, Irvine Ranch Water District

FROM: Jessica Lieuw, Assistant Biologist, LSA

SUBJECT: Chemical Pesticide Treatment Justification for Curly Dock

This memorandum documents the results of treatment methods for curly dock (*Rumex crispus*) within the Irvine Ranch Water District (IRWD) natural treatment system (NTS) sites. Curly dock is a species of flowering plant in the Polygonaceae family that is native to Europe and Western Asia and has been introduced in California, where it grows as a weed in disturbed areas. This species is a perennial herb with a large, forking taproot that may extend as deep as 4 feet with side branches up to 3 feet long. Flowers and seeds are produced in clusters and range from 100 to over 60,000 seeds per plant. Nonchemical methods were tested for removal of the nonnative herb over several months but proved unsuccessful in reducing large infestations. Moving forward, LSA recommends the use of prioritized chemical pesticides to facilitate removal of large infestations of curly dock in order to maintain native riparian habitat within the NTS sites and prevent accumulation of the seed bank.

NONCHEMICAL REMOVAL

Beginning in September 2019, LSA biologists identified curly dock growing in several of the 34 NTS sites surveyed as part of the IRWD Integrative Pest Management Plan Implementation Project (project). One site in particular, Hidden Canyon, had a large infestation of curly dock. LSA biologists initially prescribed manual removal for the species. Manual removal for curly dock involved pulling individual plants. Other mechanical removal methods, such as tillage or mowing, were not prescribed because the habitats were not amenable to these methods. Manual removal did not significantly reduce cover by curly dock in large infestations, such as in Hidden Canyon, and plants were observed regenerating from portions of the root left in the soil.

RECOMMENDATIONS

Curly dock is listed by the California Invasive Plant Council as an invasive species, with a Limited rating. As the large infestation in Hidden Canyon is not responding to nonchemical treatment methods, LSA recommends spot treatment with prioritized chemical pesticides as a management strategy for curly dock. Literature reviews indicate that it is difficult to control curly dock by hand-pulling due to the deep taproot, as plants can regenerate if portions of the root are left behind. However, roots may be cut at two inches beneath the soil surface, as only the upper portion of the root is capable of regenerating. Thus, small infestations and single individuals of curly dock may be effectively controlled by manual removal methods as long as the root is cut at the appropriate depth and the top of the plant is removed. However, this method would not be feasible in an area with a large infestation, such as Hidden Canyon, as it would cause a substantial amount of soil disturbance. Other mechanical removal methods such as continual mowing may reduce seed production; however, this method is not feasible for locations where curly dock has been observed within the NTS sites since individual plants are dispersed among desirable native species. LSA biologists have determined that mulching and soil solarization would not be an effective treatment method due to the species' large taproot and presence of neighboring native species. Flaming is also ineffective due to the large taproot and perennial nature of the plant. LSA has also determined that organic chemical control methods would not be effective for curly dock, as this species has such a deep taproot. Organic control methods are best suited for newly emerged weeds and treat mainly above-ground biomass, which would not affect roots of this species, thus allowing the plant to regenerate. Moreover, recent studies have revealed that organic pesticides can have a higher environmental impact than conventional pesticides, especially on invertebrates. Due to the reasons mentioned above, LSA recommends manual removal for small infestations and chemical pesticides for larger infestations. Application of prioritized chemical pesticides should be conducted in a manner that avoids disturbance to installed and recruited native species to the fullest extent practicable. Maintenance before individual plants flower will be the most effective way to reduce cover and prevent accumulation of the seed bank.

Please contact Eric Krieg or Jessica Lieuw at (949) 553-0666 if you have any questions regarding these recommendations.

APPENDIX C

PESTICIDE APPLICATION FORMS

NATURAL TREATMENT SYSTEM

IRWD – Integrated Pest Management Field Monitoring Form

Date: 2-13-20

Time: 8:50 am

Personnel: Zacarias Campos

Application Equipment Used: BackPack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					X
Other: Trabuco					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
X						

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

Non-Organic Chemical Control Methods:

Type *(e.g., herbicide, fungicide, pesticide)*	Trade Name *(e.g., Roundup, Garlon 4, Diuron 4L)*	Active Ingredient *(e.g., Glyphosate, Triclopyr, Dichlorophenyl)*	Application Rate *(e.g., 6 oz/300 sq.ft.)*	Total Area Applied
herbicide	Roundup	Glyphostate	18oz	3500sf

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 2-12-20
Time: 9:16 am
Personnel: Zacarias
Application Equipment Used: BackPack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					X
Other: Los Olivos					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
X						

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

Non-Organic Chemical Control Methods:

Type *(e.g., herbicide, fungicide, pesticide)*	Trade Name *(e.g., Roundup, Garlon 4, Diuron 4L)*	Active Ingredient *(e.g., Glyphosate, Triclopyr, Dichlorophenyl)*	Application Rate *(e.g., 6 oz/300 sq.ft.)*	Total Area Applied
herbicide	Round UP	Glyphosate	6-oz	12000 SF

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 2-17-20

Time: 9:00 am

Personnel: Zacarias Campos

Application Equipment Used: BackPack spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					X
Other: Middle East foot					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
X						

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type (e.g., herbicide, fungicide, pesticide)	Trade Name (e.g., Roundup, Garlon 4, Diuron 4L)	Active Ingredient (e.g., Glyphosate, Triclopyr, Dichlorophenyl)	Application Rate (e.g., 6 oz/300 sq.ft.)	Total Area Applied
Herbicide	Round UP	GlyPhosate	4 oz	11000 Sf

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 2-19-20

Time: 12:15 pm

Personnel: Zacarias Campos

Application Equipment Used: BackPack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					X
Other: aquila Springs.					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
X						

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type *(e.g., herbicide, fungicide, pesticide)*	Trade Name *(e.g., Roundup, Garlon 4, Diuron 4L)*	Active Ingredient *(e.g., Glyphosate, Triclopyr, Dichlorophenyl)*	Application Rate *(e.g., 6 oz/300 sq.ft.)*	Total Area Applied
herbicide	RoundUp	Glyphosate	6oz	15000sf

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 3-25-20

Time: 9:00 am

Personnel: Zacarias campos.

Application Equipment Used:

BackPack-Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					X
Other: Ridge Valley A					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type *(e.g., herbicide, fungicide, pesticide)*	Trade Name *(e.g., Roundup, Garlon 4, Diuron 4L)*	Active Ingredient *(e.g., Glyphosate, Triclopyr, Dichlorophenyl)*	Application Rate *(e.g., 6 oz/300 sq.ft.)*	Total Area Applied
herbicide	Roundup	glyphosate	6 oz	3,000

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 4-20-20

Time: 8:00 am

Personnel: Zacarias Campos

Application Equipment Used: BackPack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					X
Other: Laguna Altura South					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type *(e.g., herbicide, fungicide, pesticide)*	Trade Name *(e.g., Roundup, Garlon 4, Diuron 4L)*	Active Ingredient *(e.g., Glyphosate, Triclopyr, Dichlorophenyl)*	Application Rate *(e.g., 6 oz/300 sq.ft.)*	Total Area Applied
herbicide	Round UP	GlyPhosate	12oz	25000

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 4-22-2020

Time: 11:00 am

Personnel: Zacarias Campos.

Application Equipment Used: Back Pack Spray.

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					X
Other: Hidden Canyon					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type *(e.g., herbicide, fungicide, pesticide)*	Trade Name *(e.g., Roundup, Garlon 4, Diuron 4L)*	Active Ingredient *(e.g., Glyphosate, Triclopyr, Dichlorophenyl)*	Application Rate *(e.g., 6 oz/300 sq.ft.)*	Total Area Applied
herbicide	Round up	Glyphosate	32 oz	40,000

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 4-24-20

Time: 8:00 am

Personnel: Zacarias Campos

Application Equipment Used: Back Pack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					X
Other: Ridge Valley A					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type *(e.g., herbicide, fungicide, pesticide)*	Trade Name *(e.g., Roundup, Garlon 4, Diuron 4L)*	Active Ingredient *(e.g., Glyphosate, Triclopyr, Dichlorophenyl)*	Application Rate *(e.g., 6 oz/300 sq.ft.)*	Total Area Applied
herbicide	Round UP	Glyphosate	6 oz	20,000sf

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 5-13-20

Time: 1:00 Pm

Personnel: Zacarias Campos

Application Equipment Used: Back Pack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					X
Other:	MarshBorn				

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type *(e.g., herbicide, fungicide, pesticide)*	Trade Name *(e.g., Roundup, Garlon 4, Diuron 4L)*	Active Ingredient *(e.g., Glyphosate, Triclopyr, Dichlorophenyl)*	Application Rate *(e.g., 6 oz/300 sq.ft.)*	Total Area Applied
hebicide	Diquad	Diquad	8oz	20000

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 5-11-20

Time: 8:30 am

Personnel: Zacarias Campos

Application Equipment Used: Backpack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					X
Other: Trabuco					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type *(e.g., herbicide, fungicide, pesticide)*	Trade Name *(e.g., Roundup, Garlon 4, Diuron 4L)*	Active Ingredient *(e.g., Glyphosate, Triclopyr, Dichlorophenyl)*	Application Rate *(e.g., 6 oz/300 sq.ft.)*	Total Area Applied
herbicide	Diquad	Diquad	8oz	25000

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 5-12-20

Time: 10:00 am

Personnel: Zacarias Campos

Application Equipment Used: Backpack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					X
Other: Old laguna					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type (e.g., herbicide, fungicide, pesticide)	Trade Name (e.g., Roundup, Garlon 4, Diuron 4L)	Active Ingredient (e.g., Glyphosate, Triclopyr, Dichlorophenyl)	Application Rate (e.g., 6 oz/300 sq.ft.)	Total Area Applied
hebicide	Diquad	Diquad	4 oz	15000

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 5-19-20

Time: 1:00 pm

Personnel: Zacarias Campos

Application Equipment Used: Back Pack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					X
Other: Laguna Altura South					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type *(e.g., herbicide, fungicide, pesticide)*	Trade Name *(e.g., Roundup, Garlon 4, Diuron 4L)*	Active Ingredient *(e.g., Glyphosate, Triclopyr, Dichlorophenyl)*	Application Rate *(e.g., 6 oz/300 sq.ft.)*	Total Area Applied
herbicide	Diquad	Diquad	6oz	23000

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 5-20-20

Time: 12:00 PM

Personnel: Zacarias Campos

Application Equipment Used: Back Pack Spray.

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					X
Other: Middle East Foot					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

Non-Organic Chemical Control Methods:

Type *(e.g., herbicide, fungicide, pesticide)*	Trade Name *(e.g., Roundup, Garlon 4, Diuron 4L)*	Active Ingredient *(e.g., Glyphosate, Triclopyr, Dichlorophenyl)*	Application Rate *(e.g., 6 oz/300 sq.ft.)*	Total Area Applied
herbicide	Diquad	Diquad	10oz	28000

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 5-21-20

Time: 8:00 am

Personnel: Zaccarias Campos.

Application Equipment Used: Back Pack Spray.

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					X
Other: Hidden Canyon.					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type (e.g., herbicide, fungicide, pesticide)	Trade Name (e.g., Roundup, Garlon 4, Diuron 4L)	Active Ingredient (e.g., Glyphosate, Triclopyr, Dichlorophenyl)	Application Rate (e.g., 6 oz/300 sq.ft.)	Total Area Applied
herbicide	Diquad	Diquad	18 oz	45000

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 5-26-20

Time: 2:00 pm

Personnel: Zacarias Campos

Application Equipment Used: Backpack Spray.

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					X
Other: Orchard Meadows					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type *(e.g., herbicide, fungicide, pesticide)*	Trade Name *(e.g., Roundup, Garlon 4, Diuron 4L)*	Active Ingredient *(e.g., Glyphosate, Triclopyr, Dichlorophenyl)*	Application Rate *(e.g., 6 oz/300 sq.ft.)*	Total Area Applied
herbicide	Diquad	Diquad	8oz	2000

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 5-26-20
Time: 11:00am
Personnel: Zacarias Campos.
Application Equipment Used: Backpack Spray-

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					X
Other: Portola Springs					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type (e.g., herbicide, fungicide, pesticide)	Trade Name (e.g., Roundup, Garlon 4, Diuron 4L)	Active Ingredient (e.g., Glyphosate, Triclopyr, Dichlorophenyl)	Application Rate (e.g., 6 oz/300 sq.ft.)	Total Area Applied
herbicide	Diquad	Diquad	8oz	22000

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 5-28-20

Time: 8:30 am

Personnel: Zacarias Campos

Application Equipment Used: Back Pack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					X
Other: Eastwood					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type *(e.g., herbicide, fungicide, pesticide)*	Trade Name *(e.g., Roundup, Garlon 4, Diuron 4L)*	Active Ingredient *(e.g., Glyphosate, Triclopyr, Dichlorophenyl)*	Application Rate *(e.g., 6 oz/300 sq.ft.)*	Total Area Applied
herbicide	Diquad	Diquad	12oz	40.000

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 6-12-20
Time: 8:00 am
Personnel: Zacarias Campos
Application Equipment Used: Backpack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					X
Other: Marshburn					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type *(e.g., herbicide, fungicide, pesticide)*	Trade Name *(e.g., Roundup, Garlon 4, Diuron 4L)*	Active Ingredient *(e.g., Glyphosate, Triclopyr, Dichlorophenyl)*	Application Rate *(e.g., 6 oz/300 sq.ft.)*	Total Area Applied
herbicide	Diquat	Diquat	8oz	20000

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 6-1-20

Time: 9:00am

Personnel: Zaccarias Campos

Application Equipment Used: Back Pack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					X
Other: Cypress Meadow A					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type *(e.g., herbicide, fungicide, pesticide)*	Trade Name *(e.g., Roundup, Garlon 4, Diuron 4L)*	Active Ingredient *(e.g., Glyphosate, Triclopyr, Dichlorophenyl)*	Application Rate *(e.g., 6 oz/300 sq.ft.)*	Total Area Applied
herbicide	Diquad	Diquad	6oz	18000

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 6-10-20

Time: 10:00 am

Personnel: Zacarias Campos

Application Equipment Used: Back Pack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					X
Other: Trabuco					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type *(e.g., herbicide, fungicide, pesticide)*	Trade Name *(e.g., Roundup, Garlon 4, Diuron 4L)*	Active Ingredient *(e.g., Glyphosate, Triclopyr, Dichlorophenyl)*	Application Rate *(e.g., 6 oz/300 sq.ft.)*	Total Area Applied
herbicide	Diquad	Diquad	10oz	30000

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 6-11-20

Time: 12:00 pm

Personnel: Zacarias Campos

Application Equipment Used: BackPack Spray.

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					X
Other: Old laguna					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type *(e.g., herbicide, fungicide, pesticide)*	Trade Name *(e.g., Roundup, Garlon 4, Diuron 4L)*	Active Ingredient *(e.g., Glyphosate, Triclopyr, Dichlorophenyl)*	Application Rate *(e.g., 6 oz/300 sq.ft.)*	Total Area Applied
herbicide	Diquad	Diquad	8 oz	25000

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 6-8-20

Time: 1:00 pm

Personnel: Zacarias Campos

Application Equipment Used: Back Pack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					X
Other: Quail Springs					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type *(e.g., herbicide, fungicide, pesticide)*	Trade Name *(e.g., Roundup, Garlon 4, Diuron 4L)*	Active Ingredient *(e.g., Glyphosate, Triclopyr, Dichlorophenyl)*	Application Rate *(e.g., 6 oz/300 sq.ft.)*	Total Area Applied
herbicide	Diquad	Diquad	16oz	35000

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 6-9-20

Time: 10:00 am

Personnel: Zacarias Campos

Application Equipment Used: Back Pack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					X
Other: Los Olivos					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

Non-Organic Chemical Control Methods:

Type *(e.g., herbicide, fungicide, pesticide)*	Trade Name *(e.g., Roundup, Garlon 4, Diuron 4L)*	Active Ingredient *(e.g., Glyphosate, Triclopyr, Dichlorophenyl)*	Application Rate *(e.g., 6 oz/300 sq.ft.)*	Total Area Applied
herbiside	Diquad	Diquad	16 oz	

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 7-30-2020

Time: 8:00 am

Personnel: Zacarias Campos

Application Equipment Used: Back Pack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					X
Other: Eastwood					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
✓						

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

Non-Organic Chemical Control Methods:

Type *(e.g., herbicide, fungicide, pesticide)*	Trade Name *(e.g., Roundup, Garlon 4, Diuron 4L)*	Active Ingredient *(e.g., Glyphosate, Triclopyr, Dichlorophenyl)*	Application Rate *(e.g., 6 oz/300 sq.ft.)*	Total Area Applied
herbicide	Diquad SPC	Diquad	8-oz	25000

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 7-28-2020

Time: 9:30 am

Personnel: Zacarias Campos

Application Equipment Used: BackPack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					✓
Other: Orchard Meadows					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
✓						

Non-Chemical Control Methods:

Manual Removal (e.g., hand pulling, shovel, hoe)	Mechanical Removal (e.g., mowing, string trimmer)	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides (e.g., acetic acid, d-limonene)	Iron-based Herbicides	Phytotoxic Oils	Other

Non-Organic Chemical Control Methods:

Type *(e.g., herbicide, fungicide, pesticide)*	Trade Name *(e.g., Roundup, Garlon 4, Diuron 4L)*	Active Ingredient *(e.g., Glyphosate, Triclopyr, Dichlorophenyl)*	Application Rate *(e.g., 6 oz/300 sq.ft.)*	Total Area Applied
herbicide	Diquad SPC	Diquad	8 oz	2,000

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 7-27-2020

Time: 10:30am

Personnel: Zacarias Campos

Application Equipment Used: Back Pack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					✓
Other: Ridge Valley A					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
✓						

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

Non-Organic Chemical Control Methods:

Type (e.g., herbicide, fungicide, pesticide)	Trade Name (e.g., Roundup, Garlon 4, Diuron 4L)	Active Ingredient (e.g., Glyphosate, Triclopyr, Dichlorophenyl)	Application Rate (e.g., 6 oz/300 sq.ft.)	Total Area Applied
herbicide	Diquad SPC	Diquad	24 oz	60000

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 7-29-2020

Time: 12:30Pm

Personnel: Zacarias Campos

Application Equipment Used: BackPack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					✓
Other: Floral View					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
✓						

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type *(e.g., herbicide, fungicide, pesticide)*	Trade Name *(e.g., Roundup, Garlon 4, Diuron 4L)*	Active Ingredient *(e.g., Glyphosate, Triclopyr, Dichlorophenyl)*	Application Rate *(e.g., 6 oz/300 sq.ft.)*	Total Area Applied
herbicide	Diquad SPC	Diquad	8- oz	15000

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 7-30-2020

Time: 7:00 am

Personnel: Zacarias Campos

Application Equipment Used: Back Pack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					✓
Other: Portola Springs.					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
✓						

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

Non-Organic Chemical Control Methods:

Type *(e.g., herbicide, fungicide, pesticide)*	Trade Name *(e.g., Roundup, Garlon 4, Diuron 4L)*	Active Ingredient *(e.g., Glyphosate, Triclopyr, Dichlorophenyl)*	Application Rate *(e.g., 6 oz/300 sq.ft.)*	Total Area Applied
herbicide	Diquat SPC	Diquat	8-oz	18000

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 7-31-2020

Time: 9:00 am

Personnel: Zacarias Campos

Application Equipment Used: Back Pack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					✓
Other: Upper Eastfoot					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
✓						

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type *(e.g., herbicide, fungicide, pesticide)*	Trade Name *(e.g., Roundup, Garlon 4, Diuron 4L)*	Active Ingredient *(e.g., Glyphosate, Triclopyr, Dichlorophenyl)*	Application Rate *(e.g., 6 oz/300 sq.ft.)*	Total Area Applied
Herbicide	Diquad SPC	Diquad	8-oz	15000

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 7-20-2020

Time: 1:00 pm

Personnel: Zacarias Campos

Application Equipment Used: Back Pack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					✓
Other: Aguila Springs					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
✓						

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

Non-Organic Chemical Control Methods:

Type (e.g., herbicide, fungicide, pesticide)	Trade Name (e.g., Roundup, Garlon 4, Diuron 4L)	Active Ingredient (e.g., Glyphosate, Triclopyr, Dichlorophenyl)	Application Rate (e.g., 6 oz/300 sq.ft.)	Total Area Applied
herbicide	Diquad SPC	Diquad	8- oz	1,000

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 7-21-2020

Time: 8:30 am

Personnel: Zacarias Campos

Application Equipment Used: Back Pack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					✓
Other: Laguna Altura South					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
✓						

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type *(e.g., herbicide, fungicide, pesticide)*	Trade Name *(e.g., Roundup, Garlon 4, Diuron 4L)*	Active Ingredient *(e.g., Glyphosate, Triclopyr, Dichlorophenyl)*	Application Rate *(e.g., 6 oz/300 sq.ft.)*	Total Area Applied
herbicide	Diquad SPC	Diquad	12-oz	38000

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 7-22-2020

Time: 12:00 pm

Personnel: Zacarias Campos

Application Equipment Used: Back Pack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					✓
Other: Middle East Foot					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
✓						

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type *(e.g., herbicide, fungicide, pesticide)*	Trade Name *(e.g., Roundup, Garlon 4, Diuron 4L)*	Active Ingredient *(e.g., Glyphosate, Triclopyr, Dichlorophenyl)*	Application Rate *(e.g., 6 oz/300 sq.ft.)*	Total Area Applied
herbicide	Diquad SPC	Diquad	12-OZ	45000

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 7-24-2020

Time: 1:45pm

Personnel: Zacarias Campos

Application Equipment Used: Backpack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					√
Other: Ridge Valley C					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
√						

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type *(e.g., herbicide, fungicide, pesticide)*	Trade Name *(e.g., Roundup, Garlon 4, Diuron 4L)*	Active Ingredient *(e.g., Glyphosate, Triclopyr, Dichlorophenyl)*	Application Rate *(e.g., 6 oz/300 sq.ft.)*	Total Area Applied
herbicide	Diquad SPC	Diquad	6 oz	15000

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 7-16-2020

Time: 9:00 am

Personnel: Zacarias Campos

Application Equipment Used: Back Pack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					✓
Other: Forge Meadows					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
✓						

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type *(e.g., herbicide, fungicide, pesticide)*	Trade Name *(e.g., Roundup, Garlon 4, Diuron 4L)*	Active Ingredient *(e.g., Glyphosate, Triclopyr, Dichlorophenyl)*	Application Rate *(e.g., 6 oz/300 sq.ft.)*	Total Area Applied
herbicide	Diquat SPC	Diquat	16-oz	30000

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 7-15-2020

Time: 12:00 PM

Personnel: Zacarias Campos

Application Equipment Used: Back Pack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					✓
Other: Marshburn					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
✓						

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type *(e.g., herbicide, fungicide, pesticide)*	Trade Name *(e.g., Roundup, Garlon 4, Diuron 4L)*	Active Ingredient *(e.g., Glyphosate, Triclopyr, Dichlorophenyl)*	Application Rate *(e.g., 6 oz/300 sq.ft.)*	Total Area Applied
herbicide	Diquad SPC	Diquad	8 oz	15000

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 7-14-2020

Time: 12:00 Pm

Personnel: Zacarias Campos

Application Equipment Used: Back Pack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					✓
Other: Old laguna					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
✓						

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type *(e.g., herbicide, fungicide, pesticide)*	Trade Name *(e.g., Roundup, Garlon 4, Diuron 4L)*	Active Ingredient *(e.g., Glyphosate, Triclopyr, Dichlorophenyl)*	Application Rate *(e.g., 6 oz/300 sq.ft.)*	Total Area Applied
herbicide	Diquad SPC	Diquad	8-oz	15000

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 7-13-2020

Time: 1:30 Pm

Personnel: Zacarias Campos

Application Equipment Used: Back Pack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					✓
Other: Trabuco					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
✓						

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type *(e.g., herbicide, fungicide, pesticide)*	Trade Name *(e.g., Roundup, Garlon 4, Diuron 4L)*	Active Ingredient *(e.g., Glyphosate, Triclopyr, Dichlorophenyl)*	Application Rate *(e.g., 6 oz/300 sq.ft.)*	Total Area Applied
herbicide	Diquad SPC	Diquad	56-oz	65000

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 7-10-2020

Time: 1:50 pm

Personnel: Sacarias Campos

Application Equipment Used: Back Pack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					✓
Other: Los Olivos					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
✓						

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

Non-Organic Chemical Control Methods:

Type (e.g., herbicide, fungicide, pesticide)	Trade Name (e.g., Roundup, Garlon 4, Diuron 4L)	Active Ingredient (e.g., Glyphosate, Triclopyr, Dichlorophenyl)	Application Rate (e.g., 6 oz/300 sq.ft.)	Total Area Applied
herbicide	Diquad SPC	Diquad	32-oz	45000

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 7-1-2020

Time: 9:00am

Personnel: Zacarias Campos

Application Equipment Used: Back Pack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					✓
Other: Cypress Meadows A					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
✓						

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type *(e.g., herbicide, fungicide, pesticide)*	Trade Name *(e.g., Roundup, Garlon 4, Diuron 4L)*	Active Ingredient *(e.g., Glyphosate, Triclopyr, Dichlorophenyl)*	Application Rate *(e.g., 6 oz/300 sq.ft.)*	Total Area Applied
herbicide	Diquat SPC	Diquat	16-oz	40000

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 7-2-2020

Time: 9:00 am

Personnel: Zacarias Campos

Application Equipment Used: Back Pack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					✓
Other: Cypress Meadows B					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
✓						

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type *(e.g., herbicide, fungicide, pesticide)*	Trade Name *(e.g., Roundup, Garlon 4, Diuron 4L)*	Active Ingredient *(e.g., Glyphosate, Triclopyr, Dichlorophenyl)*	Application Rate *(e.g., 6 oz/300 sq.ft.)*	Total Area Applied
herbicide	Diquad SPC	Diquad	4-oz	10000

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 7-8-2020

Time: 9:15 am

Personnel: Zacarias Campos

Application Equipment Used: Back Pack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					√
Other: Sprort Park					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
√						

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type *(e.g., herbicide, fungicide, pesticide)*	Trade Name *(e.g., Roundup, Garlon 4, Diuron 4L)*	Active Ingredient *(e.g., Glyphosate, Triclopyr, Dichlorophenyl)*	Application Rate *(e.g., 6 oz/300 sq.ft.)*	Total Area Applied
herbicide	Diquad SPC	Diquad	24-OZ	55000

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 7-9-2020

Time: 12:00 Pm

Personnel: Zacarias Campos

Application Equipment Used: BackPack spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					√
Other: Quail Springs					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
✓						

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type (e.g., herbicide, fungicide, pesticide)	Trade Name (e.g., Roundup, Garlon 4, Diuron 4L)	Active Ingredient (e.g., Glyphosate, Triclopyr, Dichlorophenyl)	Application Rate (e.g., 6 oz/300 sq.ft.)	Total Area Applied
herbicide	Diquad SPC	Diquad	20-OZ	35000

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 8-12-2020

Time: 8:00 am

Personnel: Zacarias Campos

Application Equipment Used: Back Pack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					✓
Other: Old laguna					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
✓						

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type *(e.g., herbicide, fungicide, pesticide)*	Trade Name *(e.g., Roundup, Garlon 4, Diuron 4L)*	Active Ingredient *(e.g., Glyphosate, Triclopyr, Dichlorophenyl)*	Application Rate *(e.g., 6 oz/300 sq.ft.)*	Total Area Applied
herbicide	life line	Glufosinate	8-oz	18000

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 8-10-2020

Time: 8:15 am

Personnel: Zacarias Campos

Application Equipment Used: Back Pack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					✓
Other: los Olivos					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
✓						

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type *(e.g., herbicide, fungicide, pesticide)*	Trade Name *(e.g., Roundup, Garlon 4, Diuron 4L)*	Active Ingredient *(e.g., Glyphosate, Triclopyr, Dichlorophenyl)*	Application Rate *(e.g., 6 oz/300 sq.ft.)*	Total Area Applied
herbicide	Life line	Glufosinate	24 oz	65000

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 8-11-2020

Time: 11:00 am

Personnel: Zacarias Campos

Application Equipment Used: Back Pack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					√
Other: Trabuco					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type *(e.g., herbicide, fungicide, pesticide)*	Trade Name *(e.g., Roundup, Garlon 4, Diuron 4L)*	Active Ingredient *(e.g., Glyphosate, Triclopyr, Dichlorophenyl)*	Application Rate *(e.g., 6 oz/300 sq.ft.)*	Total Area Applied
herbicide	lifeline	Glufosinate	42-oz	65000

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 8-7-2020
Time: 9:15 am
Personnel: Zacarias Campos
Application Equipment Used: Back Pack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					✓
Other: Quail Springs					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
✓						

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type (e.g., herbicide, fungicide, pesticide)	Trade Name (e.g., Roundup, Garlon 4, Diuron 4L)	Active Ingredient (e.g., Glyphosate, Triclopyr, Dichlorophenyl)	Application Rate (e.g., 6 oz/300 sq.ft.)	Total Area Applied
herbicide	life line	Glufosinate	28-07	40000

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 8-6-2020

Time: 2:00pm

Personnel: Zacarias Campos

Application Equipment Used: Back pack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					✓
Other: Sport Park					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
✓						

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type *(e.g., herbicide, fungicide, pesticide)*	Trade Name *(e.g., Roundup, Garlon 4, Diuron 4L)*	Active Ingredient *(e.g., Glyphosate, Triclopyr, Dichlorophenyl)*	Application Rate *(e.g., 6 oz/300 sq.ft.)*	Total Area Applied
herbicide	lifeline	Glufosinate	16-oz	40000

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 8-3-2020

Time: 9:00 am

Personnel: Tomas Palacios

Application Equipment Used: Back Pack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					✓
Other: Cypress Meadows A					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
✓						

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type (e.g., herbicide, fungicide, pesticide)	Trade Name (e.g., Roundup, Garlon 4, Diuron 4L)	Active Ingredient (e.g., Glyphosate, Triclopyr, Dichlorophenyl)	Application Rate (e.g., 6 oz/300 sq.ft.)	Total Area Applied
herbicide	lifeline	glufosinate	18-70	55000

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 8-4-2020
Time: 1:00 pm
Personnel: Zacarias Campos
Application Equipment Used: Back Pack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					✓
Other: Cypress Meadow B					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
✓						

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type (e.g., herbicide, fungicide, pesticide)	Trade Name (e.g., Roundup, Garlon 4, Diuron 4L)	Active Ingredient (e.g., Glyphosate, Triclopyr, Dichlorophenyl)	Application Rate (e.g., 6 oz/300 sq.ft.)	Total Area Applied
herbicide	Diquad	Glyphoste	8-07	25000

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 8-13-2020

Time: 7:50 am

Personnel: Zacarias Campos

Application Equipment Used: BackPack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					√
Other: Marshburn					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
√						

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type (e.g., herbicide, fungicide, pesticide)	Trade Name (e.g., Roundup, Garlon 4, Diuron 4L)	Active Ingredient (e.g., Glyphosate, Triclopyr, Dichlorophenyl)	Application Rate (e.g., 6 oz/300 sq.ft.)	Total Area Applied
herbicide	lifeline	Glufosinate	8-oz	40000

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 8-31-2020

Time: 9:00 am

Personnel: Zacarias Campos

Application Equipment Used: Back pack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					√
Other: UpperEastfoot					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
√						

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type *(e.g., herbicide, fungicide, pesticide)*	Trade Name *(e.g., Roundup, Garlon 4, Diuron 4L)*	Active Ingredient *(e.g., Glyphosate, Triclopyr, Dichlorophenyl)*	Application Rate *(e.g., 6 oz/300 sq.ft.)*	Total Area Applied
herbicide	life line	Glufosinate	8-oz	15000 sf

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 8-25-2020

Time: 11.00 am

Personnel: Zacarias Campos

Application Equipment Used: Back Pack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					✓
Other: Ridge Valley A					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
✓						

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type *(e.g., herbicide, fungicide, pesticide)*	Trade Name *(e.g., Roundup, Garlon 4, Diuron 4L)*	Active Ingredient *(e.g., Glyphosate, Triclopyr, Dichlorophenyl)*	Application Rate *(e.g., 6 oz/300 sq.ft.)*	Total Area Applied
herbicide	life line	Glufosinate	24 oz	45000

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 8-24-2020

Time: 12:00pm

Personnel: Zacarias Campos

Application Equipment Used: Backpack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					✓
Other: Ridge Valley C					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
✓						

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type (e.g., herbicide, fungicide, pesticide)	Trade Name (e.g., Roundup, Garlon 4, Diuron 4L)	Active Ingredient (e.g., Glyphosate, Triclopyr, Dichlorophenyl)	Application Rate (e.g., 6 oz/300 sq.ft.)	Total Area Applied
herbicide	lifeline	Glufosinate	16-07	350000SF

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 8-26-2020

Time: 8:30 am

Personnel: Zacarias Campos

Application Equipment Used: Back Pack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					✓
Other: Orchard Meadows					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
✓						

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type *(e.g., herbicide, fungicide, pesticide)*	Trade Name *(e.g., Roundup, Garlon 4, Diuron 4L)*	Active Ingredient *(e.g., Glyphosate, Triclopyr, Dichlorophenyl)*	Application Rate *(e.g., 6 oz/300 sq.ft.)*	Total Area Applied
herbicide	lifeline	Glufosinate	3- oz	5,000 sf

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 8-27-2020

Time: 11:30 am

Personnel: Zacarias Campos

Application Equipment Used: BackPack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					✓
Other: Ridge Valley B					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
✓						

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type *(e.g., herbicide, fungicide, pesticide)*	Trade Name *(e.g., Roundup, Garlon 4, Diuron 4L)*	Active Ingredient *(e.g., Glyphosate, Triclopyr, Dichlorophenyl)*	Application Rate *(e.g., 6 oz/300 sq.ft.)*	Total Area Applied
herbicide	life line	Glufosinate	8 oz	15000 sf

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 8-26-2020

Time: 1:00pm

Personnel: Zacarias Campos

Application Equipment Used: Back pack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					✓
Other: Eastwood					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
✓						

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type *(e.g., herbicide, fungicide, pesticide)*	Trade Name *(e.g., Roundup, Garlon 4, Diuron 4L)*	Active Ingredient *(e.g., Glyphosate, Triclopyr, Dichlorophenyl)*	Application Rate *(e.g., 6 oz/300 sq.ft.)*	Total Area Applied
herbicite	lifeline	Glufosinate	8-oz	

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 8-20-2020

Time: 12:00pm

Personnel: Zacarias Campos

Application Equipment Used: BackPack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					✓
Other: Middle East foot					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
✓						

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type *(e.g., herbicide, fungicide, pesticide)*	Trade Name *(e.g., Roundup, Garlon 4, Diuron 4L)*	Active Ingredient *(e.g., Glyphosate, Triclopyr, Dichlorophenyl)*	Application Rate *(e.g., 6 oz/300 sq.ft.)*	Total Area Applied
herbicide	lifeline	Glufosinate	20-OZ	45000-SF

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 8-19-2020

Time: 4:30 am

Personnel: Lazarius Campos

Application Equipment Used: Back Pack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					✓
Other: Laguna Altura South					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
✓						

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type *(e.g., herbicide, fungicide, pesticide)*	Trade Name *(e.g., Roundup, Garlon 4, Diuron 4L)*	Active Ingredient *(e.g., Glyphosate, Triclopyr, Dichlorophenyl)*	Application Rate *(e.g., 6 oz/300 sq.ft.)*	Total Area Applied
herbicide	life line	Glufosinate	6 - oz	10000sf

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 8-26-2020

Time: 1:30 pm

Personnel: Zacarias Campos

Application Equipment Used: BackPack spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					√
Other: ~~[illegible]~~ Aquila Springs.					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
√						

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type *(e.g., herbicide, fungicide, pesticide)*	Trade Name *(e.g., Roundup, Garlon 4, Diuron 4L)*	Active Ingredient *(e.g., Glyphosate, Triclopyr, Dichlorophenyl)*	Application Rate *(e.g., 6 oz/300 sq.ft.)*	Total Area Applied
herbicide	life line	Glufosinate	8- oz	25000sf

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 8-18-2020

Time: 12:00 pm

Personnel: Zacarias Campos

Application Equipment Used: Back Pack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					✓
Other: Illuhu Springs					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
✓						

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type *(e.g., herbicide, fungicide, pesticide)*	Trade Name *(e.g., Roundup, Garlon 4, Diuron 4L)*	Active Ingredient *(e.g., Glyphosate, Triclopyr, Dichlorophenyl)*	Application Rate *(e.g., 6 oz/300 sq.ft.)*	Total Area Applied
herbicide	lifeline	Glufosinate	8 oz	30000 sf.

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 8-17-2020

Time: 1:00 pm

Personnel: Zacarias Campos

Application Equipment Used: Back Pack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					✓
Other: Eastfoot R- Basin					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
✓						

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type (e.g., herbicide, fungicide, pesticide)	Trade Name (e.g., Roundup, Garlon 4, Diuron 4L)	Active Ingredient (e.g., Glyphosate, Triclopyr, Dichlorophenyl)	Application Rate (e.g., 6 oz/300 sq.ft.)	Total Area Applied
herbicide	life line	Glufosinate	8- oz	30000 sf

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 9-2-2020

Time: 10:30 am

Personnel: Zacarias Campos

Application Equipment Used: BackPack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					✓
Other: Cypress Meadow B					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
✓						

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type *(e.g., herbicide, fungicide, pesticide)*	Trade Name *(e.g., Roundup, Garlon 4, Diuron 4L)*	Active Ingredient *(e.g., Glyphosate, Triclopyr, Dichlorophenyl)*	Application Rate *(e.g., 6 oz/300 sq.ft.)*	Total Area Applied
herbicide	lifeline	Glufosinate	4-oz	15000

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 9-30-2020

Time: 11:30 am

Personnel: Zacarias Campos

Application Equipment Used: Back Pack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					✓
Other: Upper Eastfoot					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
✓						

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type (e.g., herbicide, fungicide, pesticide)	Trade Name (e.g., Roundup, Garlon 4, Diuron 4L)	Active Ingredient (e.g., Glyphosate, Triclopyr, Dichlorophenyl)	Application Rate (e.g., 6 oz/300 sq.ft.)	Total Area Applied
herbicide	lifeline	Glufosinate	10-oz	30000

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 9-29-2020

Time: 1:00 pm

Personnel: Zacarias Campos

Application Equipment Used: Back Pack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					√
Other: East foot					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
√						

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type *(e.g., herbicide, fungicide, pesticide)*	Trade Name *(e.g., Roundup, Garlon 4, Diuron 4L)*	Active Ingredient *(e.g., Glyphosate, Triclopyr, Dichlorophenyl)*	Application Rate *(e.g., 6 oz/300 sq.ft.)*	Total Area Applied
herbicide	lifeline	Glufosinate	8-oz	20000

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 01-29-2020

Time: 8:00 am

Personnel: Zacarias Campos

Application Equipment Used: BackPack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					✓
Other: Portola springs					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
✓						

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type (e.g., herbicide, fungicide, pesticide)	Trade Name (e.g., Roundup, Garlon 4, Diuron 4L)	Active Ingredient (e.g., Glyphosate, Triclopyr, Dichlorophenyl)	Application Rate (e.g., 6 oz/300 sq.ft.)	Total Area Applied
herbicide	life line	Glufosinate	8 OZ	16000

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 9-22-2020

Time: 7:30 am

Personnel: Zacarias Campos

Application Equipment Used: BackPack spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					✓
Other: Hidden Canyon					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
✓						

Non-Chemical Control Methods:

Manual Removal (*e.g., hand pulling, shovel, hoe*)	Mechanical Removal (*e.g., mowing, string trimmer*)	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides (*e.g., acetic acid, d-limonene*)	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type *(e.g., herbicide, fungicide, pesticide)*	Trade Name *(e.g., Roundup, Garlon 4, Diuron 4L)*	Active Ingredient *(e.g., Glyphosate, Triclopyr, Dichlorophenyl)*	Application Rate *(e.g., 6 oz/300 sq.ft.)*	Total Area Applied
herbicide	lifeline	Glufosinate	8-OZ	25000

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 9-23-2020

Time: 10:30am

Personnel: Zacarias Campos

Application Equipment Used: Back Pack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					✓
Other: Ridge Valley C					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
✓						

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type *(e.g., herbicide, fungicide, pesticide)*	Trade Name *(e.g., Roundup, Garlon 4, Diuron 4L)*	Active Ingredient *(e.g., Glyphosate, Triclopyr, Dichlorophenyl)*	Application Rate *(e.g., 6 oz/300 sq.ft.)*	Total Area Applied
herbicide	lifeline	Glufosinate	8-oz	10000

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 9-21-2020
Time: 11:00 am
Personnel: Zacarias Campos
Application Equipment Used: BackPack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					✓
Other: Middle EastFoot					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
✓						

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type (e.g., herbicide, fungicide, pesticide)	Trade Name (e.g., Roundup, Garlon 4, Diuron 4L)	Active Ingredient (e.g., Glyphosate, Triclopyr, Dichlorophenyl)	Application Rate (e.g., 6 oz/300 sq.ft.)	Total Area Applied
herbicide	lifeline	Glufosinate	10-oz	35000

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 9-24-2020

Time: 7:45 am

Personnel: Zacarias Campos

Application Equipment Used: BackPack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					✓
Other: Ridge Valley A					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
✓						

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type (e.g., herbicide, fungicide, pesticide)	Trade Name (e.g., Roundup, Garlon 4, Diuron 4L)	Active Ingredient (e.g., Glyphosate, Triclopyr, Dichlorophenyl)	Application Rate (e.g., 6 oz/300 sq.ft.)	Total Area Applied
herbicide	lifeline	Glufosinate	8-OZ	22000

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 9-16-2020

Time: 8:00 am

Personnel: Zacarias Campos

Application Equipment Used: Back Pack spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					X
Other: Laguna Altura South.					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
✓						

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type *(e.g., herbicide, fungicide, pesticide)*	Trade Name *(e.g., Roundup, Garlon 4, Diuron 4L)*	Active Ingredient *(e.g., Glyphosate, Triclopyr, Dichlorophenyl)*	Application Rate *(e.g., 6 oz/300 sq.ft.)*	Total Area Applied
herbicide	Lifeline	Glufosinate	8-OZ	20000

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 9-15-2020

Time: 10:00 am

Personnel: Zacarias Campos

Application Equipment Used: Back Pack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					✓
Other: Forge meadows					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
✓						

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type *(e.g., herbicide, fungicide, pesticide)*	Trade Name *(e.g., Roundup, Garlon 4, Diuron 4L)*	Active Ingredient *(e.g., Glyphosate, Triclopyr, Dichlorophenyl)*	Application Rate *(e.g., 6 oz/300 sq.ft.)*	Total Area Applied
herbicide	life line	Glufosinate	8-oz	25000

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 9-6-2020

Time: 12:00 pm

Personnel: Zacarias Campos

Application Equipment Used: BackPack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					✓
Other: Quail Springs					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
✓						

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

Non-Organic Chemical Control Methods:

Type (e.g., herbicide, fungicide, pesticide)	Trade Name (e.g., Roundup, Garlon 4, Diuron 4L)	Active Ingredient (e.g., Glyphosate, Triclopyr, Dichlorophenyl)	Application Rate (e.g., 6 oz/300 sq.ft.)	Total Area Applied
herbicide	lifeline	Glufosinate	74 - Oz	65000

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 9-10-2020
Time: 1:00pm

Personnel: Sacarias Campos
Application Equipment Used: BackPack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					✓
Other: Trabuco					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
✓						

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type (e.g., herbicide, fungicide, pesticide)	Trade Name (e.g., Roundup, Garlon 4, Diuron 4L)	Active Ingredient (e.g., Glyphosate, Triclopyr, Dichlorophenyl)	Application Rate (e.g., 6 oz/300 sq.ft.)	Total Area Applied
herbicide	lifeline	Glufosinate	24-97	60000

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 9-3-2020

Time: 8:30 am

Personnel: Zacarias Campos

Application Equipment Used: Back Pack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					✓
Other: SportsPark					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
✓						

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type *(e.g., herbicide, fungicide, pesticide)*	Trade Name *(e.g., Roundup, Garlon 4, Diuron 4L)*	Active Ingredient *(e.g., Glyphosate, Triclopyr, Dichlorophenyl)*	Application Rate *(e.g., 6 oz/300 sq.ft.)*	Total Area Applied
herbicide	lifeline	Glufosinate	16-oz	45000

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 9-1-2020

Time: 9:30am

Personnel: Zacarias Campos

Application Equipment Used: Back Pack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					✓
Other: Cypress Meadow A					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
✓						

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type (e.g., herbicide, fungicide, pesticide)	Trade Name (e.g., Roundup, Garlon 4, Diuron 4L)	Active Ingredient (e.g., Glyphosate, Triclopyr, Dichlorophenyl)	Application Rate (e.g., 6 oz/300 sq.ft.)	Total Area Applied
herbicide	lifeline	Glufosinate	24-oz	60000

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 11-30-2020

Time: 8:30 am

Personnel: Zacarias Campos

Application Equipment Used: BackPack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					✓
Other: Upper Eastfoot					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
✓						

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type *(e.g., herbicide, fungicide, pesticide)*	Trade Name *(e.g., Roundup, Garlon 4, Diuron 4L)*	Active Ingredient *(e.g., Glyphosate, Triclopyr, Dichlorophenyl)*	Application Rate *(e.g., 6 oz/300 sq.ft.)*	Total Area Applied
herbicide	Diquat	Dibromide	16 oz	40000

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 11-4-2020
Time: 11:00am
Personnel: Zacarias Campos
Application Equipment Used: Back Pack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					✓
Other: Sport SPark					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
✓						

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type *(e.g., herbicide, fungicide, pesticide)*	Trade Name *(e.g., Roundup, Garlon 4, Diuron 4L)*	Active Ingredient *(e.g., Glyphosate, Triclopyr, Dichlorophenyl)*	Application Rate *(e.g., 6 oz/300 sq.ft.)*	Total Area Applied
herbicide	lifeline	Glufosinate	2 oz	5000

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 11-3-2020

Time: 1:00 Pm

Personnel: Back Pack Spray

Application Equipment Used: Zacarias Campos

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					✓
Other: Cypress Meadows B					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
✓						

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type *(e.g., herbicide, fungicide, pesticide)*	Trade Name *(e.g., Roundup, Garlon 4, Diuron 4L)*	Active Ingredient *(e.g., Glyphosate, Triclopyr, Dichlorophenyl)*	Application Rate *(e.g., 6 oz/300 sq.ft.)*	Total Area Applied
herbicide	lifeline	Glufosinate	2-oz	6000

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 11-13-2020

Time: 8:30am

Personnel: Zacarias Campos

Application Equipment Used: BackPack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					✓
Other: Port Culver					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
✓						

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type (e.g., herbicide, fungicide, pesticide)	Trade Name (e.g., Roundup, Garlon 4, Diuron 4L)	Active Ingredient (e.g., Glyphosate, Triclopyr, Dichlorophenyl)	Application Rate (e.g., 6 oz/300 sq.ft.)	Total Area Applied
herbicide	Diquat	~~Dibro~~ Dibromide	8 oz	2000

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 11-12-2020

Time: 10:30 am

Personnel: Zacarias Campos

Application Equipment Used: BackPack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					✓
Other: Marshburn					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
✓						

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type *(e.g., herbicide, fungicide, pesticide)*	Trade Name *(e.g., Roundup, Garlon 4, Diuron 4L)*	Active Ingredient *(e.g., Glyphosate, Triclopyr, Dichlorophenyl)*	Application Rate *(e.g., 6 oz/300 sq.ft.)*	Total Area Applied
herbicide	Diquad	Dibromide	24-oz	5500

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 11-16-2020

Time: 12:00pm

Personnel: Zacarias Campos

Application Equipment Used: BackPack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					✓
Other: Quail Springs					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
✓						

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type *(e.g., herbicide, fungicide, pesticide)*	Trade Name *(e.g., Roundup, Garlon 4, Diuron 4L)*	Active Ingredient *(e.g., Glyphosate, Triclopyr, Dichlorophenyl)*	Application Rate *(e.g., 6 oz/300 sq.ft.)*	Total Area Applied
herbicide	lifeline	Glufosinate	2-oz	2,000

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 11-24-2020

Time: 8:30 am

Personnel: Zacarias Campos

Application Equipment Used: BackPack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					✓
Other: Ridge Valley A					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
✓						

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type *(e.g., herbicide, fungicide, pesticide)*	Trade Name *(e.g., Roundup, Garlon 4, Diuron 4L)*	Active Ingredient *(e.g., Glyphosate, Triclopyr, Dichlorophenyl)*	Application Rate *(e.g., 6 oz/300 sq.ft.)*	Total Area Applied
herbicide	Diquad	Dibromide	.7-.07	40000

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 11-23-2020

Time: 11:45 am

Personnel: Zacarias Campos

Application Equipment Used: BackPack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					✓
Other: Ridge Valley B					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
✓						

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type *(e.g., herbicide, fungicide, pesticide)*	Trade Name *(e.g., Roundup, Garlon 4, Diuron 4L)*	Active Ingredient *(e.g., Glyphosate, Triclopyr, Dichlorophenyl)*	Application Rate *(e.g., 6 oz/300 sq.ft.)*	Total Area Applied
herbicide	Diquad	~~Glif~~	8 oz	20000
		Dibromide		

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 11-23-2020

Time: 1:45 pm

Personnel: Zacarias Campos

Application Equipment Used: BackPack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					✓
Other: Ridge Valley C					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
✓						

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type *(e.g., herbicide, fungicide, pesticide)*	Trade Name *(e.g., Roundup, Garlon 4, Diuron 4L)*	Active Ingredient *(e.g., Glyphosate, Triclopyr, Dichlorophenyl)*	Application Rate *(e.g., 6 oz/300 sq.ft.)*	Total Area Applied
herbicide	Diquad	Dibromide	8- oz	35000

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 11-25-2020

Time: 10:30am

Personnel: Zacarias Campos

Application Equipment Used: BackPack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					✓
Other: Orchard Meadows					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
✓						

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type *(e.g., herbicide, fungicide, pesticide)*	Trade Name *(e.g., Roundup, Garlon 4, Diuron 4L)*	Active Ingredient *(e.g., Glyphosate, Triclopyr, Dichlorophenyl)*	Application Rate *(e.g., 6 oz/300 sq.ft.)*	Total Area Applied
herbicide	Diquad	Dibromide	8.oz	1100

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 11-17-2020

Time: 1:15 pm

Personnel: Zacarias Campos

Application Equipment Used: BackPack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					✓
Other: Illona Springs					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
✓						

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type *(e.g., herbicide, fungicide, pesticide)*	Trade Name *(e.g., Roundup, Garlon 4, Diuron 4L)*	Active Ingredient *(e.g., Glyphosate, Triclopyr, Dichlorophenyl)*	Application Rate *(e.g., 6 oz/300 sq.ft.)*	Total Area Applied
herbicide	Diquad	Dibromide	6-oz	1800

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 11-16-2020

Time: 2:00pm

Personnel: Zacarias Campos

Application Equipment Used: BackPack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					✓
Other: East Foot Basin					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
✓						

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type *(e.g., herbicide, fungicide, pesticide)*	Trade Name *(e.g., Roundup, Garlon 4, Diuron 4L)*	Active Ingredient *(e.g., Glyphosate, Triclopyr, Dichlorophenyl)*	Application Rate *(e.g., 6 oz/300 sq.ft.)*	Total Area Applied
herbicide	lifeline	Glufosinate	8.07	20000

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 12-29-2020

Time:

Personnel: Zacarias Campos

Application Equipment Used: BackPack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					✓

Other: Orchard Meadows

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
✓						

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type (e.g., herbicide, fungicide, pesticide)	Trade Name (e.g., Roundup, Garlon 4, Diuron 4L)	Active Ingredient (e.g., Glyphosate, Triclopyr, Dichlorophenyl)	Application Rate (e.g., 6 oz/300 sq.ft.)	Total Area Applied
herbicide	Diquad	Dibromide	8-OZ	25000

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 12-20-2021

Time: 8:00am

Personnel: Zacarias Campos

Application Equipment Used: BackPack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					✓
Other: Eastwood					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
✓						

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type (e.g., herbicide, fungicide, pesticide)	Trade Name (e.g., Roundup, Garlon 4, Diuron 4L)	Active Ingredient (e.g., Glyphosate, Triclopyr, Dichlorophenyl)	Application Rate (e.g., 6 oz/300 sq.ft.)	Total Area Applied
herbicide	Diquad	Dibromide	8 oz	30000

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 12-30-2020

Time: 8:30 am

Personnel: Zacarias Campos

Application Equipment Used: BackPack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					✓
Other: Portola Springs					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
✓						

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type (e.g., herbicide, fungicide, pesticide)	Trade Name (e.g., Roundup, Garlon 4, Diuron 4L)	Active Ingredient (e.g., Glyphosate, Triclopyr, Dichlorophenyl)	Application Rate (e.g., 6 oz/300 sq.ft.)	Total Area Applied
herbicide	Diquad	Dibromide	8-07	20000

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 12-23-2020

Time: 11:00 am

Personnel: Zacarias Campos

Application Equipment Used: BackPack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					✓
Other: Ridge valley A					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
✓						

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type (e.g., herbicide, fungicide, pesticide)	Trade Name (e.g., Roundup, Garlon 4, Diuron 4L)	Active Ingredient (e.g., Glyphosate, Triclopyr, Dichlorophenyl)	Application Rate (e.g., 6 oz/300 sq.ft.)	Total Area Applied
herbicide	Diquat	Dibromide	8. Oz	38000

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 12-22-2020

Time: 12:00pm

Personnel: Zacarias Campos

Application Equipment Used: BackPack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					✓
Other: Ridge Valley C					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
✓						

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type (e.g., herbicide, fungicide, pesticide)	Trade Name (e.g., Roundup, Garlon 4, Diuron 4L)	Active Ingredient (e.g., Glyphosate, Triclopyr, Dichlorophenyl)	Application Rate (e.g., 6 oz/300 sq.ft.)	Total Area Applied
herbicide	Diquad	Dibromide	12 oz	55000

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 12-16-2020

Time: 1:00 pm

Personnel: Zacarias Campos

Application Equipment Used: BackPack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					✓
Other: Illuna Springs					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
✓						

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type *(e.g., herbicide, fungicide, pesticide)*	Trade Name *(e.g., Roundup, Garlon 4, Diuron 4L)*	Active Ingredient *(e.g., Glyphosate, Triclopyr, Dichlorophenyl)*	Application Rate *(e.g., 6 oz/300 sq.ft.)*	Total Area Applied
herbicide	Diquad	Dibromide	4 - oz	15000

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 12-17-2020

Time: 8:00am

Personnel: Zacarias Campos

Application Equipment Used: BackPack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					✓
Other: Middle Eastfoot					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
✓						

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type (e.g., herbicide, fungicide, pesticide)	Trade Name (e.g., Roundup, Garlon 4, Diuron 4L)	Active Ingredient (e.g., Glyphosate, Triclopyr, Dichlorophenyl)	Application Rate (e.g., 6 oz/300 sq.ft.)	Total Area Applied
herbicide	Diquad	Dibromide	16-oz	40000

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 12-9-2020

Time: 1:00pm

Personnel: Zacarias Campos

Application Equipment Used: BackPack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					✓
Other: Trabuco					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
✓						

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type *(e.g., herbicide, fungicide, pesticide)*	Trade Name *(e.g., Roundup, Garlon 4, Diuron 4L)*	Active Ingredient *(e.g., Glyphosate, Triclopyr, Dichlorophenyl)*	Application Rate *(e.g., 6 oz/300 sq.ft.)*	Total Area Applied
herbicide	Diquat	Dibromide	24 oz	60000

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 12-17-2020

Time: 1:15 pm

Personnel: Zacarias Campos

Application Equipment Used: BackPack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					✓
Other: Quail Meadows					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
✓						

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type (e.g., herbicide, fungicide, pesticide)	Trade Name (e.g., Roundup, Garlon 4, Diuron 4L)	Active Ingredient (e.g., Glyphosate, Triclopyr, Dichlorophenyl)	Application Rate (e.g., 6 oz/300 sq.ft.)	Total Area Applied
herbicide	Diquad	Dibromide	8 OZ	3000

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 12-7-2020

Time: 1:00 pm

Personnel: Zacarias Campos

Application Equipment Used: BackPack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					✓
Other: Quail Springs					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
✓						

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type *(e.g., herbicide, fungicide, pesticide)*	Trade Name *(e.g., Roundup, Garlon 4, Diuron 4L)*	Active Ingredient *(e.g., Glyphosate, Triclopyr, Dichlorophenyl)*	Application Rate *(e.g., 6 oz/300 sq.ft.)*	Total Area Applied
herbicide	Diquad	Dibromide	36-oz	50000

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 12-3-2020

Time: 10:30 am

Personnel: Zacarias Campos

Application Equipment Used: BackPack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					✓
Other: Sport Park					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
✓						

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type (e.g., herbicide, fungicide, pesticide)	Trade Name (e.g., Roundup, Garlon 4, Diuron 4L)	Active Ingredient (e.g., Glyphosate, Triclopyr, Dichlorophenyl)	Application Rate (e.g., 6 oz/300 sq.ft.)	Total Area Applied
herbicide	~~Dibromide~~	Dibromide	6-oz	10000
	Diquad			

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 12-1-2020

Time: 9:30 am

Personnel: Zacarias Campos

Application Equipment Used: BackPack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					✓
Other: Cypress Meadow – A					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
✓						

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type (e.g., herbicide, fungicide, pesticide)	Trade Name (e.g., Roundup, Garlon 4, Diuron 4L)	Active Ingredient (e.g., Glyphosate, Triclopyr, Dichlorophenyl)	Application Rate (e.g., 6 oz/300 sq.ft.)	Total Area Applied
herbicide	Diquad	Dibromide	18 - oz	55000

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 12-2-2020

Time: 11:00 am

Personnel: Zacarias Campos

Application Equipment Used: BackPack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
					✓
Other: Cypress Meadow -B					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
✓						

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type (e.g., herbicide, fungicide, pesticide)	Trade Name (e.g., Roundup, Garlon 4, Diuron 4L)	Active Ingredient (e.g., Glyphosate, Triclopyr, Dichlorophenyl)	Application Rate (e.g., 6 oz/300 sq.ft.)	Total Area Applied
herbicide	Diquad	Dibromide	2 oz	1000

Summary of Results:

SAN JOAQUIN MARSH

IRWD – Integrated Pest Management Field Monitoring Form

Date: 02-13-2020
Time: 9:00 am
Personnel: Javier
Application Equipment Used: Back Pack Sprayer

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
X					
Other:					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
X						

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

Non-Organic Chemical Control Methods:

Type *(e.g., herbicide, fungicide, pesticide)*	Trade Name *(e.g., Roundup, Garlon 4, Diuron 4L)*	Active Ingredient *(e.g., Glyphosate, Triclopyr, Dichlorophenyl)*	Application Rate *(e.g., 6 oz/300 sq.ft.)*	Total Area Applied
herbicide	Roundup	Glyposate	3oz	

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 9-15-2020

Time: 9:45 am

Personnel: Javier Alvarado

Application Equipment Used: Back Pack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
X					
Other: Pond-D, #1780					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

Non-Organic Chemical Control Methods:

Type (e.g., herbicide, fungicide, pesticide)	Trade Name (e.g., Roundup, Garlon 4, Diuron 4L)	Active Ingredient (e.g., Glyphosate, Triclopyr, Dichlorophenyl)	Application Rate (e.g., 6 oz/300 sq.ft.)	Total Area Applied
herbicide	Round UP	Glyphosate	16 oz	

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 4-20-2020

Time: 11:55 am

Personnel: Javier Alvarado

Application Equipment Used: Back Pack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
X					
Other: #1054					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type (e.g., herbicide, fungicide, pesticide)	Trade Name (e.g., Roundup, Garlon 4, Diuron 4L)	Active Ingredient (e.g., Glyphosate, Triclopyr, Dichlorophenyl)	Application Rate (e.g., 6 oz/300 sq.ft.)	Total Area Applied
herbicide	Round up	Glyphosate	16oz	

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 4-17-20

Time: 12:25 pm

Personnel: Javier Alvarado

Application Equipment Used: Back Pack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
X					
Other: Ponc-C, #1770					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type *(e.g., herbicide, fungicide, pesticide)*	Trade Name *(e.g., Roundup, Garlon 4, Diuron 4L)*	Active Ingredient *(e.g., Glyphosate, Triclopyr, Dichlorophenyl)*	Application Rate *(e.g., 6 oz/300 sq.ft.)*	Total Area Applied
herbeade	Round up	Glyphosate	36 oz	

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 4-16-2020

Time: 12:00

Personnel: Javier Alvarado

Application Equipment Used: Back Pack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
X					
Other: Pond-C #1770					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type (*e.g., herbicide, fungicide, pesticide*)	Trade Name (*e.g., Roundup, Garlon 4, Diuron 4L*)	Active Ingredient (*e.g., Glyphosate, Triclopyr, Dichlorophenyl*)	Application Rate (*e.g., 6 oz/300 sq.ft.*)	Total Area Applied
herbicide	Round up	Glyphosate	24 oz	

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 5-4-20

Time: 8:00 am

Personnel: Damian Arellano

Application Equipment Used: Back pack spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
X					
Other: cell 2 map #1737					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
Curly Dock						
Spanish flea bane						

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type (e.g., herbicide, fungicide, pesticide)	Trade Name (e.g., Roundup, Garlon 4, Diuron 4L)	Active Ingredient (e.g., Glyphosate, Triclopyr, Dichlorophenyl)	Application Rate (e.g., 6 oz/300 sq.ft.)	Total Area Applied
herbicide	DiQuat		40oz	14000 SQ

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 5-5-20

Time: 9:00 am

Personnel: Damian Arellano

Application Equipment Used:

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
X					
Other: cell 2 map #1734					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
Spanish flea Bane						

Non-Chemical Control Methods:

Manual Removal (e.g., hand pulling, shovel, hoe)	Mechanical Removal (e.g., mowing, string trimmer)	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides (e.g., acetic acid, d-limonene)	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type (e.g., herbicide, fungicide, pesticide)	Trade Name (e.g., Roundup, Garlon 4, Diuron 4L)	Active Ingredient (e.g., Glyphosate, Triclopyr, Dichlorophenyl)	Application Rate (e.g., 6 oz/300 sq.ft.)	Total Area Applied
Herbicide	DiQuat		20oz	3900 SQ

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 8-5-20

Time: 8:00am

Personnel: Damian Arellano

Application Equipment Used:

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
X					
Other: Pond D map #1779					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
Spanish flea Bane						

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type *(e.g., herbicide, fungicide, pesticide)*	Trade Name *(e.g., Roundup, Garlon 4, Diuron 4L)*	Active Ingredient *(e.g., Glyphosate, Triclopyr, Dichlorophenyl)*	Application Rate *(e.g., 6 oz/300 sq.ft.)*	Total Area Applied
herbicide	DIQUAT		16oz.	950 SQ.

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 4-23-20

Time: 9:00 am

Personnel: Damian Arellano

Application Equipment Used: Backpack spray.

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
X					
Other: cell 3 By Groundwater channel. map #1767 + Board water					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
Spanish flea Bane						

Non-Chemical Control Methods:

Manual Removal (e.g., hand pulling, shovel, hoe)	Mechanical Removal (e.g., mowing, string trimmer)	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides (e.g., acetic acid, d-limonene)	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type (e.g., herbicide, fungicide, pesticide)	Trade Name (e.g., Roundup, Garlon 4, Diuron 4L)	Active Ingredient (e.g., Glyphosate, Triclopyr, Dichlorophenyl)	Application Rate (e.g., 6 oz/300 sq.ft.)	Total Area Applied
herbicide	Round up custom	Glypho sate 5.4	2 oz	800 SQ.

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 4-23-20

Time: 9:00 am

Personnel: Damian Arellano

Application Equipment Used: Backpack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
X					
Other: Pond D Map #1724					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
Spanish Flea Bane						

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type *(e.g., herbicide, fungicide, pesticide)*	Trade Name *(e.g., Roundup, Garlon 4, Diuron 4L)*	Active Ingredient *(e.g., Glyphosate, Triclopyr, Dichlorophenyl)*	Application Rate *(e.g., 6 oz/300 sq.ft.)*	Total Area Applied
herbicide	Roundup custum	Glyphosate 5.4	14 oz	3500 SQ.

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 4-22-20

Time: 8:00am

Personnel: Damian Arellano

Application Equipment Used: Backpack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
X					
Other: Pond C map#1081					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other

Non-Chemical Control Methods:

Manual Removal (e.g., hand pulling, shovel, hoe)	Mechanical Removal (e.g., mowing, string trimmer)	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides (e.g., acetic acid, d-limonene)	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type (e.g., herbicide, fungicide, pesticide)	Trade Name (e.g., Roundup, Garlon 4, Diuron 4L)	Active Ingredient (e.g., Glyphosate, Triclopyr, Dichlorophenyl)	Application Rate (e.g., 6 oz/300 sq.ft.)	Total Area Applied
herbicide	Roundup custum	Glyphosate 5.4	20 oz	1400 SQ

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 1-22-20

Time: 8:00 am

Personnel: Damian Arellano

Application Equipment Used: Back pack spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
X					
Other: Cell 5 Map # 1054					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
Curly Dock						
Spanish flea bane						

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type *(e.g., herbicide, fungicide, pesticide)*	Trade Name *(e.g., Roundup, Garlon 4, Diuron 4L)*	Active Ingredient *(e.g., Glyphosate, Triclopyr, Dichlorophenyl)*	Application Rate *(e.g., 6 oz/300 sq.ft.)*	Total Area Applied
herbicide	Round up Custom	Glyphosate 5.4	40 oz	7200 SQ,

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 4-24-20

Time: 8:00 am

Personnel: Damian Arellano

Application Equipment Used: Backpack spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
X					
Other: Cell 4 map # 1751					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
"Fan Hen", "Emlydots"						
"Spanish Flea Bane"						

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type *(e.g., herbicide, fungicide, pesticide)*	Trade Name *(e.g., Roundup, Garlon 4, Diuron 4L)*	Active Ingredient *(e.g., Glyphosate, Triclopyr, Dichlorophenyl)*	Application Rate *(e.g., 6 oz/300 sq.ft.)*	Total Area Applied
herbicide	Round up custom	Glyphosate	48 oz	13000 SQ.

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 4-29-20

Time: 9:00am

Personnel: Damian Arellano

Application Equipment Used: Backpack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
X					
Other: Cell 4- map #1742					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
Curly Dock						

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type (e.g., herbicide, fungicide, pesticide)	Trade Name (e.g., Roundup, Garlon 4, Diuron 4L)	Active Ingredient (e.g., Glyphosate, Triclopyr, Dichlorophenyl)	Application Rate (e.g., 6 oz/300 sq.ft.)	Total Area Applied
herbicide	Roundup Custom Aquatic	Glyphosate 53.8	24 oz	3600 SQ.

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 4-28-20

Time: 10:00am

Personnel: Damian Arellano

Application Equipment Used: Backpack Spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
X					
Other: cell 4 - map # 1062					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
Curly Dock						

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type *(e.g., herbicide, fungicide, pesticide)*	Trade Name *(e.g., Roundup, Garlon 4, Diuron 4L)*	Active Ingredient *(e.g., Glyphosate, Triclopyr, Dichlorophenyl)*	Application Rate *(e.g., 6 oz/300 sq.ft.)*	Total Area Applied
herbicide	Round up custom aquatic	Glyphosate	1/2 oz	180 SQ.

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 4-28-20

Time: 10:00am

Personnel: Damian Arellano

Application Equipment Used: Back pack spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
X					
Other: cell 4 map #1066					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
Curly Dock.						

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type (e.g., herbicide, fungicide, pesticide)	Trade Name (e.g., Roundup, Garlon 4, Diuron 4L)	Active Ingredient (e.g., Glyphosate, Triclopyr, Dichlorophenyl)	Application Rate (e.g., 6 oz/300 sq.ft.)	Total Area Applied
herbicide	Glyphosate Roundup custom	Glyphosate	1/2 oz	250 SQ

Summary of Results: 50%

IRWD – Integrated Pest Management Field Monitoring Form

Date: 4-22-20
Time: 8:00 am
Personnel: Damian Arellano
Application Equipment Used: Back pack spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
X					
Other: Zone 3, pond C map # 1081					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
Spanish fleabane						

Non-Chemical Control Methods:

Manual Removal (e.g., hand pulling, shovel, hoe)	Mechanical Removal (e.g., mowing, string trimmer)	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides (e.g., acetic acid, d-limonene)	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type (e.g., herbicide, fungicide, pesticide)	Trade Name (e.g., Roundup, Garlon 4, Diuron 4L)	Active Ingredient (e.g., Glyphosate, Triclopyr, Dichlorophenyl)	Application Rate (e.g., 6 oz/300 sq.ft.)	Total Area Applied
herbicide	Round up custom	Glyphosate 5.4	20 oz	1400 SQ.

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 5-20-20

Time: 9:03am

Personnel: Damian Alvarado

Application Equipment Used: Backpack spray.

RECEIVED

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
X					
Other: Pond D map # 2062					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
Spanish Broom						

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type *(e.g., herbicide, fungicide, pesticide)*	Trade Name *(e.g., Roundup, Garlon 4, Diuron 4L)*	Active Ingredient *(e.g., Glyphosate, Triclopyr, Dichlorophenyl)*	Application Rate *(e.g., 6 oz/300 sq.ft.)*	Total Area Applied
Herbicide	Dequat	Glyphosate	8oz	600SQ.

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 5-27-20

Time: 8:00 AM

Personnel: Damian Arellano

Application Equipment Used:

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
SJM					
Other: Pond D MAP# 2062					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
Spanish Eleagnus						

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type *(e.g., herbicide, fungicide, pesticide)*	Trade Name *(e.g., Roundup, Garlon 4, Diuron 4L)*	Active Ingredient *(e.g., Glyphosate, Triclopyr, Dichlorophenyl)*	Application Rate *(e.g., 6 oz/300 sq.ft.)*	Total Area Applied
Dequat, Herbicide		Dequat	54 oz	1300 SQ.

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 5-27-20

Time: 8:00 am

Personnel: Damian Arellano

Application Equipment Used: Back pack spray.

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
SJM					
Other: POND A. MAP #1474 #1899 #1900					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
pepper weed						

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type *(e.g., herbicide, fungicide, pesticide)*	Trade Name *(e.g., Roundup, Garlon 4, Diuron 4L)*	Active Ingredient *(e.g., Glyphosate, Triclopyr, Dichlorophenyl)*	Application Rate *(e.g., 6 oz/300 sq.ft.)*	Total Area Applied
Herbicide	DeQuat	Glyph.	6 oz/mix 1Gal /use 1/4 of a Gal.	150 SQ.

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 5-28-20

Time: 8:00 am

Personnel: Damian Arellano

Application Equipment Used: Backpack spray.

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
SJM					
Other: Pond E map# 2066					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other
Spanish Flea Bane						

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type *(e.g., herbicide, fungicide, pesticide)*	Trade Name *(e.g., Roundup, Garlon 4, Diuron 4L)*	Active Ingredient *(e.g., Glyphosate, Triclopyr, Dichlorophenyl)*	Application Rate *(e.g., 6 oz/300 sq.ft.)*	Total Area Applied
Hebicide	DeQuat	Glyph.	36 oz	3200 SQ.

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 10-7-20

Time:

Personnel: Damian Arellano

Application Equipment Used: Backpack spot spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
X					
Other: cell 5 Map# 2876					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type *(e.g., herbicide, fungicide, pesticide)*	Trade Name *(e.g., Roundup, Garlon 4, Diuron 4L)*	Active Ingredient *(e.g., Glyphosate, Triclopyr, Dichlorophenyl)*	Application Rate *(e.g., 6 oz/300 sq.ft.)*	Total Area Applied
Herbicide	Diquat		8 oz	800 SQF

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 10-9-20

Time:

Personnel: Damian Arellano

Application Equipment Used: Backpack spot spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
X					
Other: cell #5 map 2876					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type (e.g., herbicide, fungicide, pesticide)	Trade Name (e.g., Roundup, Garlon 4, Diuron 4L)	Active Ingredient (e.g., Glyphosate, Triclopyr, Dichlorophenyl)	Application Rate (e.g., 6 oz/300 sq.ft.)	Total Area Applied
Herbicide	Diquat		16 oz	1800 Sq F

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 10-5-20

Time:

Personnel:

Application Equipment Used: Damian Arellano

Location of Pesticide Application: Back pack spot spray

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
X					
Other: Cell # 8 Map # 2896					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type (e.g., herbicide, fungicide, pesticide)	Trade Name (e.g., Roundup, Garlon 4, Diuron 4L)	Active Ingredient (e.g., Glyphosate, Triclopyr, Dichlorophenyl)	Application Rate (e.g., 6 oz/300 sq.ft.)	Total Area Applied
Herbicide	Diquat	[illegible]	16 oz	1700 sqf

Summary of Results:

IRWD – Integrated Pest Management Field Monitoring Form

Date: 9-21-20

Time:

Personnel: Damian Arellano

Application Equipment Used: Back pack spot spray

Location of Pesticide Application:

San Joaquin Marsh	Rattlesnake Reservoir	San Joaquin Reservoir	Sand Canyon Reservoir	Syphon Reservoir	Natural Treatment Systems
X					
Other: Zone 1 Map # 2832, 2834, 2837, ~~288~~ 2200, 2206					

Target Pests:

Noxious Weed	Aquatic Plants	Algae	Invertebrates	Rodent	Fungi	Other

Non-Chemical Control Methods:

Manual Removal *(e.g., hand pulling, shovel, hoe)*	Mechanical Removal *(e.g., mowing, string trimmer)*	Mulch	Beneficial Insects	Trapping	Other

Organic Chemical Control Methods:

Natural Acid Herbicides *(e.g., acetic acid, d-limonene)*	Iron-based Herbicides	Phytotoxic Oils	Other

IRWD – Integrated Pest Management Field Monitoring Form

Non-Organic Chemical Control Methods:

Type (e.g., herbicide, fungicide, pesticide)	Trade Name (e.g., Roundup, Garlon 4, Diuron 4L)	Active Ingredient (e.g., Glyphosate, Triclopyr, Dichlorophenyl)	Application Rate (e.g., 6 oz/300 sq.ft.)	Total Area Applied
Herbicide	Diquat	"	6 oz	150 ft

Summary of Results: