2015

Annual IPM Report

Integrated Pest Management Program Goal:

"Control Pests by consistent implementation of IPM principles to protect and restore the natural environment and provide for human safety and enjoyment while visiting and working on District lands."

Coty Sifuentes-Winter

Midpeninsula Regional Open Space District

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Figure 1: Mindego Hill is a site where intense thistle control has been undertaken by the District.

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1 Introduction

This report presents the results of the first year of pest management activities prescribed under the Midpeninsula Regional Open Space District (District) Integrated Pest Management (IPM) Program. The Program was established in 2014 upon adoption by the Board of Directors of the IPM Guidance Manual. Five policies set the foundation of the Program:

- Develop specific pest management strategies and priorities that address each of the five work categories;
- Take appropriate actions to prevent the introduction of new pest species to District preserves, especially new invasive plants in natural areas, rangeland, and agriculture properties;
- Manage pests using the procedures outlined in the implementation measures;
- Monitor pest occurrences and results of control actions and use adaptive management to improve results;
- Develop and implement an IPM Guidance Manual to standardize pest management and IPM procedures across all District Lands.

2 Implementation of IPM Program

The first year of planned implementation actions was completed successfully with the exception of one (1) task not completed in Year 1: Notify tenants in letter of list of approved pesticides and how to get help. This task will be implemented at the same time that leases are revised in Year 2 of implementation. Full implementation of the IPM Program should be completed by December of 2018.

Figure 2: Stan Hooper demonstrating the use of green flaming.

3 Summary of Pest Problems

This section is a summary of pest problems that the District has encountered during the year. In future years, it will also contain comparisons of pest problems to past years.

3.1 Ongoing and General Maintenance

Thirty-one (31) pest species found on District lands are treated on an on-going basis (Table 1) to control for asset based protection and long-term management. These species have the potential to invade natural areas and displace native and reduce biodiversity. Of the listed species, twelve (12) are considered noxious weeds by the State of California (Table 2).

Table 1: Ongoing and general maintenance pest species

Scientific Name	Common Name	Cal-IPC rating	CDFA rating	Alert	Additional Information
Acacia dealbata	Silver wattle	Moderate	-	-	
Baccharis pilularis	Coyote brush	-	-	-	Native, grassland conversion
Bambusoudeae	Bamboo	-	-	-	
Brachypodium sylvaticum	Slender false brome	Moderate	Noxious Weed	ALERT	
Carduus pycnocephalus	Italian thistle	Moderate	Noxious Weed	-	
Carthamus lanatus	Woolly distaff thistle	Moderate	Noxious Weed	ALERT	
Centaurea calcitrapa	Purple star thistle	Moderate	Noxious Weed	-	
Centaurea melitensis	Tocalote	Moderate	Noxious Weed	-	
Centaurea solatitialis	Yellow star thistle	High	Noxious Weed	-	
Cirsium vulgare	Bull thistle	Moderate	Noxious Weed	-	
Cistus incanus	Hairy Rockrose	-	-	-	Non-native
Cortaderia jubata	Jubata grass	High	-	-	
Delairea odorata	Cape ivy	High	Noxious Weed	-	
***Dipsacus* sp.**	Teasel	Moderate	-	-	
Dittrichia graveolens	Stinkwort	Moderate	Noxious Weed	ALERT	
Eucalyptus globulus	Blue gum	Limited (Moderate)[1]	-	-	
Euphorbia oblongata	Eggleaf spurge	Limited	Noxious Weed	-	
Genista monspessulana	French Broom	High	Noxious Weed	-	

[1] Blue gum was downgraded from "Moderate" to "Limited" in 2006. This new assessment was due to evaluating Blue gum across the entire state, rather than focusing on coastal areas where it is most prone to spreading. The District maintains the "Moderate" rating due to the location of District managed lands.

Scientific Name	Common Name	Cal-IPC rating	CDFA rating	Alert	Additional Information
Hedera helix	English ivy	High	-	-	
Ilex aquifolium	English holly	Moderate	-	ALERT	
Lathyrus odoratus	Sweet pea	-	-	-	
Lunaria annua	Annual Honesty	-	-	-	non-native
Phalaris aquatica	Harding grass	Moderate	-	-	
Phytophthora ramorum	Sudden Oak Death	-	-	-	Quarantine
Pinus radiata	Monterey Pine	Limited	-	-	
Rubus armeniacus	Himalayan blackberry	High	-	-	
Silybum marianum	Milk thistle	Limited	-	-	
Spartium junceum	Spanish Broom	High	Noxious Weed	-	
Stipa miliacea	Smilo grass	Limited	-	-	non-native
Vinca major	Periwinkle	Moderate	-	-	
Xanthium spinosum	Spiny cocklebur	-	-	-	Native, California red-legged frog habitat areas

Figure 3: Cindy Roessler with slender false brome, a state listed noxious weed.

Table 2: Treated Species by Rating for Ongoing and New Projects

Species Treated	Cal-IPC Rating			CDFA Rating	Alert
	Limited	Moderate	High		
35	4	13	8	12 Noxious Weeds	4

3.2 New Pest Control Projects

Potential pest control projects were summited to the IPM Coordinator using the Districts New Pest Control Project Form (see Appendix D – New Pest Control Project). Potential projects were evaluated using the Project Ranking System (see Appendix E – Project Ranking System) developed by the IPM Coordination Team during this year. The Project Ranking System evaluates projects using five categories:

- Safety,
  - Human health,
  - Environmental health,
- Prevents and controls the most destructive pests,
- Protection of biodiversity,
- Provides for public engagement,
- And is feasibility and effectiveness.

Ten (10) new pest control projects were determined to have high priority for treatment on District lands (Table 3).

Table 3: New Pests Control Projects

Scientific Name	Species	Cal-IPC rating	CDFA rating	Alert	Gross Acres	Infested Acres
Delairea odorata	Cape ivy	High	Noxious Weed	-	0.1	0.05
Eucalyptus globulus	Blue gum	Limited (Moderate)	-	-	0.6	0.12
Elymus caput-medusae	Medusa head	High	-	-	0.1	.075
Papaver somniferum	Opium Poppy	-	-	-	0.01	0.001
Dittrichia graveolens	Stinkwort	Moderate	Noxious Weed	ALERT	0.5	0.25
Toxicodendron diversilobum	Poison oak	-	-	-	0.01	0.002
Baccharis pilularis	Coyote brush	-	-	-	0.15	0.004
Hesperocyparis macrocarpa	Monterey cypress	Limited	-	-	0.1	0.01
Euphorbia oblongata	Eggleaf spurge	Limited	Noxious Weed	-	0.01	0.009

Figure 4: Cape Ivy, a state listed noxious weed, at Bear Creek Redwoods OSP

4 Summary of Pest Control Treatments

4.1 Type of Control with Cost per Acre

Treatment area is not available in 2015 due to data collection protocol under revision. Future reports will present summaries of treatment cost per acre, however data analysis is not available for "Cost per acre." As data is made available with the use of the CalFlora Database, analysis will occur in future years. The following data is for natural areas and does not take into account brushing/mowing of roads, trails, defensible space, or emergency landing zones. Brushing/mowing of roads, trails, defensible space, or emergency landing zones is not presented because these activities do not change from year to year.

Table 4: Treatment Methods and Hours in Naturals Areas

Treatment Method	Hours		
	Staff	Contractor	Volunteer
Brush Cut / Mow	27	52	-
Dig	139	21	1
Flame	118	-	-
Herbicide	556	1283	-
Pull	768	776	1735
TOTAL	**5431**	**2132**	**1736**

Table 5: Treatment Methods and Total Costs in Natural Areas

Treatment Method	Total Costs	
	Staff	Contractor
Brush Cut / Mow	$1,084	$2,548
Dig	$5,582	$1,040
Flame	$4,739	-
Herbicide	$22,329	$62,871
Pull	$30,843	$33,624

Figure 5: Hand removal of gorse

5 Effectiveness of Pest Control Program

The IPM Program identified criteria for assessing the program every year primarily regarding:

- Work health/exposure in buildings,
- Reduction of pesticide use in buildings,
- Per-acre herbicide use,
- Preservation of biodiversity and natural resource values,
- Public participation in pest control,
- And staff training, public outreach, and educational activities.

As data from consecutive years becomes available in the future, the IPM Annual Report will evaluate the reduction of the amount of herbicide used at individual sites in natural areas over time. Actions undertaken in 2015 to meets these criteria are described below.

5.1 Worker Health/Exposure in Buildings

The District is committed to the use of lower pesticide worker health/exposure classifications in buildings and recreational structures. Pesticides used in buildings and at recreational structures in 2015 were consistent with the 6 approved structural pesticides (Table 6) for the 2014 IPM Program Environmental Impact Report, all of which are caution label and therefore pose a reduced risk to workers or occupants of treated buildings. A specific type of rodenticide bait is approved under very strict conditions, however, it was not prescribed and only prevention and traps were approved for rodent control in 2015. In addition, one application of Termidor HE (Caution label, with fipronil as the active ingredient) was used at the Administration Building for termites on December 17, 2015. Although termite control was not evaluated in the original IPM program, fipronil was an approved active ingredient evaluated for insect control under the original IPM Program and it was determined to be suitable for this particular project and consistent with the intent and environmental review of the IPM Program.

Table 6: Pesticides Approved for Use in Buildings and Recreational Structures

Pesticide Category	Active Ingredient	Product Formulation	Purpose	Signal Word
Rodenticide	Cholecalciferol	Cholecalciferol baits	Rodent control	Caution
Insecticide[2]	Indoxacarb	Advion Gel baits	Structural pest control	Caution
	Hydroprene	Gentrol Point Source	Pest Control	Caution
	Fipronil	Maxforce Bait Station	Ant Control	Caution
	Sodium tetraborate	Terro Ant Killer II	Ant Control	Caution
	Diatomaceous earth	Diatomaceous earth	Structural pest control	Caution

5.2 Reduction of Pesticide Use in Buildings

The District seeks to comprehensively oversee all pesticide use in and around District buildings, including use by tenants, which is expected to result in an overall reduction of pesticide use in buildings, and in particular, eliminate use of pesticides not appropriate for use around human occupants or visitors, or which can inadvertently escape into the surrounding wildland environment.

Since this is the first year of the IPM Program, there are no reliable numbers for comparing to structural pesticide use in prior years. Of several rodent and insect infestations in buildings reviewed this year, the IPM Coordinator was able to evaluate site-specific conditions and recommend sanitary practices for prevention and physical controls using snap traps.

[2] Employees, contractors and tenants may install approved ant and roach bait stations inside buildings in tamperproof containers without review by a Qualified Applicator License/Certificate.

5.3 Per-acre Herbicide Use

The District seeks a reduction in per-acre usage of herbicides over time at individual sites, but acknowledges that in some instances, use will initially increase, followed by a reduction in herbicide use when the pest is eliminated or reduced. Use of herbicides in natural areas was precautionary but comparative numbers cannot be provided until next year when work and data collection are conducted in a manner consistent with IPM from year to year.

5.4 Preservation of Biodiversity and Natural Resource Values

Below, District staff provides an annual qualitative assessment of natural resources conditions of IPM projects in natural areas, rangelands, and agricultural properties in the Annual IPM Report.

5.4.1 Natural Areas

In natural areas, herbicide and non-herbicide methods were used to control high priority invasive plants to protect and restore native vegetation at preserves. Qualitative observations of note:

At Mindego Ranch where treatment has been occurring with RoundUp and Milestone, the overall number of purple star thistle plants has continued to decline with most plants now occurring on the road or in scattered locations. In some areas, staff and volunteers were able to just dig up the widely scattered purple star thistle plants rather than spraying them. However, the amount of distaff thistles does not seem to be declining and control techniques for this species should be re-evaluated. The populations of endangered San Francisco garter snake and threatened California red-legged frog are being studied at Mindego Lake by biologists of the US Geological Survey. Populations of these species are increasing, probably as a result of non-native fish control and continued efforts to control American bullfrog in Mindego Lake. Both of these species are predators of the snake and frog, and control efforts were initiated when the lake dried in 2015.

Figure 6: Purple star thistle

At Driscoll Ranch, control of purple star thistle is resulting in less coverage of this biennial non-forage thistle in the target pasture. Because cattle are on a pre-scheduled rotation between pastures, and rounding up and

moving cattle with calves takes several people and can be stressful on the animals, the cattle operator would like to be contacted 6 months ahead of time, whenever possible, to plan on cattle relocation out of a pasture to be treated.

At Los Trancos, the overall amount of yellow star thistle has been steadily declining and much of the current treatment effort is concentrating on thoroughly covering each grassland area to look for remaining yellow star thistle and either contracting for herbicide treatment or hand-pulling remaining plants.

Figure 7: Corral area of Hicks Creek Ranch before treatment of stinkwort

Figure 8: Stinkwort after two weeks post treatment with Roundup ProMax

Figure 9: Three years after chemical treatment of stinkwort

The parking flat in the former Hicks Creek Ranch area of Sierra Azul is just one of many spots that have been heavily infested with stinkwort. Stinkwort is a noxious weed, required by law to control. The former Hicks Creek Ranch parking flat area was a scattered carpet of dense patches of stinkwort in 2010. The District has been every year, except for 2012, treating the area, making sure not to leave any flowering stinkwort plants. In 2013, the District mowed all larger stinkwort plants on the parking flat. Re-sprouted plants were treated with herbicide. This method was used to reduce the amount of herbicide from what would be required for treatment of full grown plants. The District has seen fewer and fewer plants in areas where we have had

multiple treatments since 2010. In addition, more native plants are beginning to colonize this area, with more tar weed (native summer-blooming plant) growing in the area that used to have the dense carpets of stinkwort.

5.4.2 Rangeland

Midpen uses conservation grazing to manage fuel (flammable vegetation) for fire protection; enhance the diversity of native plants and animals; help sustain the local agricultural economy; and foster the region's rural heritage. Midpen uses conservation grazing on approximately 10,800 acres as a tool to manage grassland habitat on portions of these 5 preserves:

- Russian Ridge Open Space Preserve
- Skyline Ridge Open Space Preserve
- Purisima Creek Redwoods Open Space Preserve
- Tunitas Creek Open Space Preserve
- La Honda Creek Open Space Preserve

In the absence of natural disturbance (i.e. fire), the District periodically does brush removal on grasslands to slow the encroachment.

Figure 10: Tunitas Creek Site in 2014 prior to brush removal

Figure 11: Tunitas Creek Site in 2015 after brush removal

5.4.3 Agricultural Properties

Assessment of agricultural properties, which represent a very small area of District land, will begin in year 2 of the IPM program.

5.5 Summary of Public Participation in Pest Control

The public is seen as an integral part of the success of the IPM program. In particular, volunteers who assist with invasive plant identification and control are a valuable asset to the IPM program. In 2015, the District's

Preserve Partners contributed 2,010 hours to Resource Management through fifty outdoor service projects. Preserve Partner projects were held in sixteen Open Space Preserves. The District hosted ten Special Group projects, a subset of the Preserve Partners, which include school groups, technology companies, scout troops, running clubs and community groups. The District's Web Administrator, working with the Volunteer Program Manager, developed a new online registration system for Outdoor Service Projects which has streamlined the volunteer registration process. This system takes reservations, manages wait lists, and automatically sends reminders to participants.

Preserve Partners projects focused primarily on invasive plant control and on nine invasive species: French broom, slender false brome, purple star thistle, yellow star thistle, general thistle species, stinkwort, summer mustard, coyote brush, and California bay removal (the later for sudden oak death management). French broom projects were the dominant Preserve Partner volunteer activity with projects taking place in ten different preserves.

Figure 12: Preserve Partners work day at Thornewood OSP

There were twenty-five active Advanced Resource Management Stewards (ARMS) volunteers in 2015. The ARMS volunteers manage their own resource management projects working independently and on their own schedule. The ARMS volunteers contributed 1,295 hours to Resource Management with project sites located in twenty Open Space Preserves and primarily consisting of invasive plant removal by handpulling.

5.6 Summary of Staff Training, Public Outreach, and Educational Activities

5.6.1 Staff Training

The mandatory annual Pesticide Safety and Training was held at both field offices in May of 2015. All California Department of Pesticide Regulation required training information was presented by the District's Pest Control Advisor (PCA), Mark Heath of Shelterbelt Builders, Inc.

In March of 2015, the District IPM Coordinator participated in Pesticide Safety in Grasslands and Riparian Restoration areas presented by the California Native Grasslands Association.

5.6.2 Public Outreach

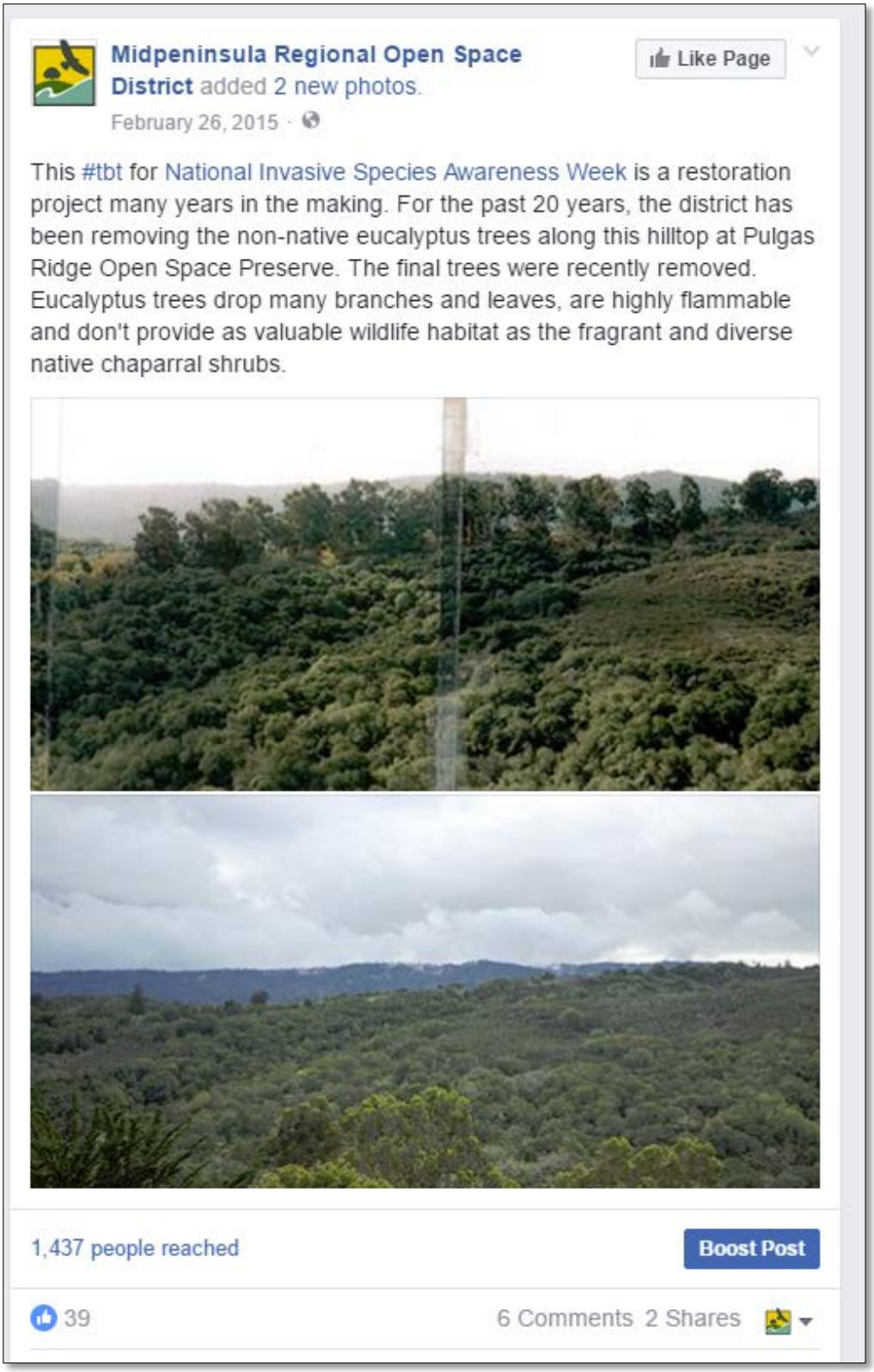
5.6.2.1 Spring Open Space Views newsletter– March 2015

- *Father and Daughter Bond Over Stewardship*
  Includes description of IPM projects the pair has worked on
- *Midpen Joins Forces for Local Resource Management*
  Highlights work on slender false brome.
- (Mailing list: 14,429; Email list: 4,275)

5.6.2.2 Winter Open Space Views newsletter– December 2015

- *Conservation Grazing Reintroduced to Mindego Hill*
  Includes mention of control of invasive plants as one of the benefits of conservation grazing
- (Mailing list: 14,223; Email list: 4,948)

5.6.2.3 Facebook Posts



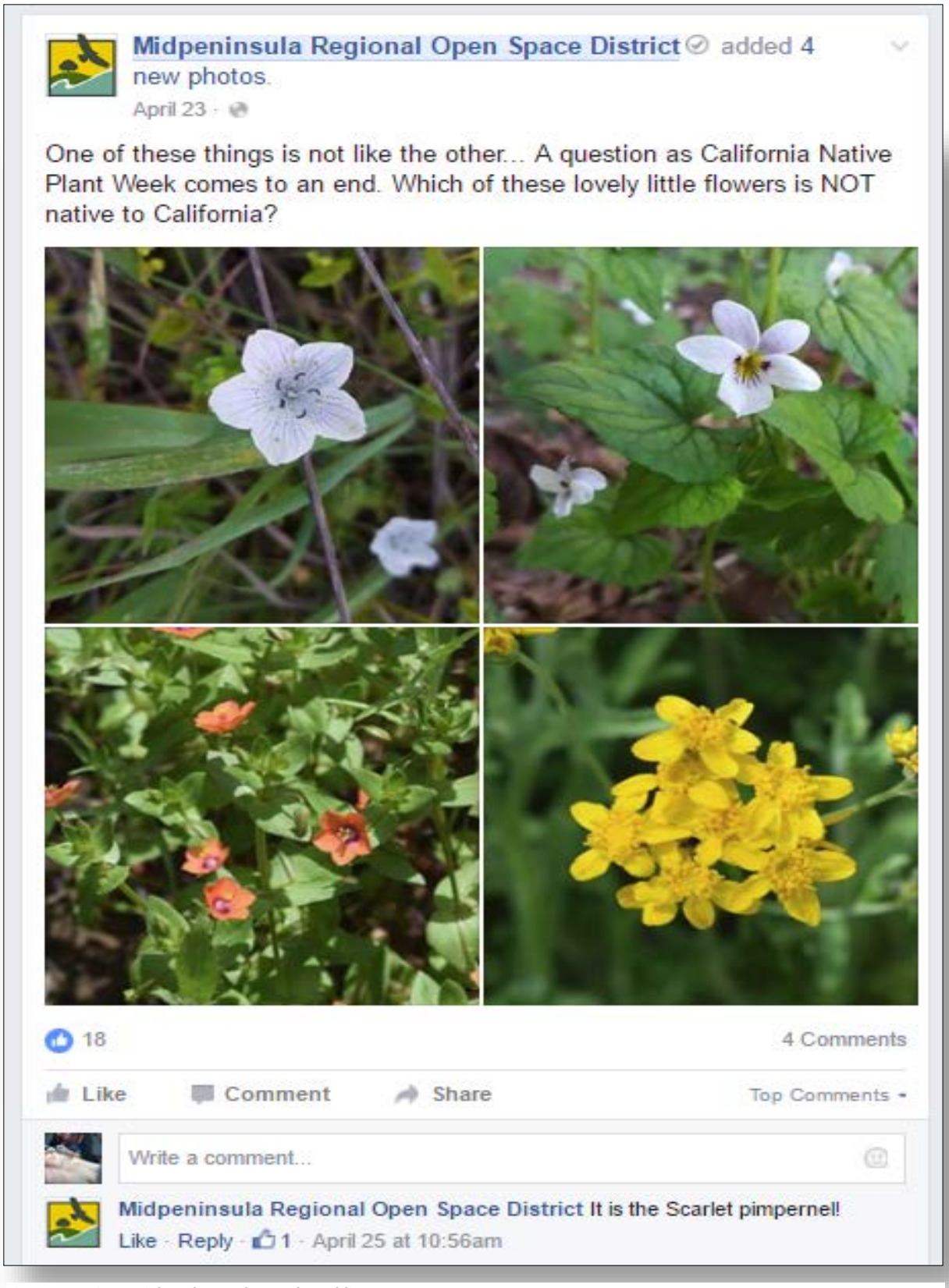


Figure 13: Using Social Media to Educate the Public

Midpeninsula Regional Open Space District added 3 new photos.

Like Page

Published by Cydney EnDean Bieber [?] · April 16, 2015 ·

To celebrate National Volunteer Week, we bring you pictures of a recent volunteer project at Driscoll Pond - La Honda Creek OSP. Our volunteers removed invasive thistles and were introduced to some new friends. #NationalVolunteerWeek

Photo credits: Frances Freyberg

975 people reached

Boost Post

5.6.3 Educational Activities

In January of 2015, the IPM Coordinator presented to the Advance Resource Management Stewards on working safely around pesticides.

5.6.3.1 Presentation at Preserve Partner on CalFlora Mapping

On May 8th, 2015, the IPM Coordinator did a hands-on-training of the CalFlora mapping cell phone application, Observer Pro, at a Preserve Partners volunteer day at Skyline Ridge (Big Dipper Ranch).

6 Summary of Pesticide Use

The reporting of pesticide use on District lands includes the following entities:

- Staff
- Contractors
- Tenants

The following tables summarizes the known use of pesticides on District lands, excluding PG&E which is not covered under the District's Integrated Pest Management Program, but is still required to report pesticide use to each County Agricultural Department.

Pesticide	**Active Ingredient**	**Product Used (oz)**	**Acres Treated**	**Oz / Acre**	**Max Legal Rate (oz. per 36" tree)[3]**
Fungicide (preventative treatment for Sudden Oak Death)	Potassium salts of phosphorus acid	5062.4 oz	22.6	224.0	256 Oz.

Pesticide	**Active Ingredient**	**Product Used**	**Acres Treated**	**Oz / Acre[3]**	**Max Legal Rate[4] (Oz/Acre)**
Herbicide	Aminopyralid	61.5 oz	15.4	4.0	7.0
	Clethodim	0	0	N/A	26
	Clopyralid	0	0	N/A	10.7
	Glyphosate	2,975 oz	225.5	13.2	224
	Imazapyr	0	0	N/A	48

[3] Ounces per acre can only be compared when product formulations have the same Active Ingredient. For example, the rate for Roundup ProMax with glyphosate as the Active Ingredient is 32 to 160 oz per acre. The rate for Milestone with Aminopyralid as the Active Ingredient is 3 to 7 oz per acre.

[4] Maximum legal rate is the maximum amount of product that can legally be used per the label of the product.

Pesticide	Active Ingredient	Product Used (oz)	Acres Treated	Oz / Acre
Insecticide	Pyrethrin	420	N/A	N/A

Pesticide	Active Ingredient	Product Used (oz)	Acres Treated	Oz / Acre
Rodenticide	Cholecalciferol	0	0	N/A

7 Public Interactions

7.1 Notifications

7.1.1 Pesticide Applications

Prior, during, and after the application of a pesticide (including herbicides, insecticides, or other types of pesticides) on District preserves, employees or contractors post signs at the treatment area notifying the public, employees and contractors of the District's use of pesticide. Posting periods designated below are the District's minimum requirements; signs may be posted earlier and left in place for longer periods of time if it serves a public purpose or if it provides staff flexibility in accessing remote locations.

- For pesticide application in outdoor areas of all District-owned preserves and in buildings which are not occupied or are rarely visited (e.g. pump houses), signs are posted at the treatment areas 24 hours before the start of treatment until 72 hours after the end of treatment. Signs stating "Pesticide Use Notification" are placed at each end of the outdoor treatment area and any intersecting trails.

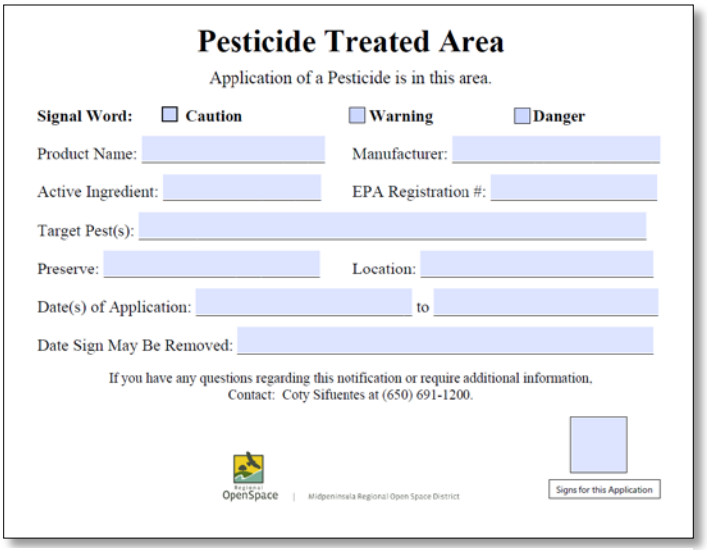

Pesticide Treated Area
Application of a Pesticide is in this area.
Signal Word: Caution Warning Danger
Product Name: Manufacturer:
Active Ingredient: EPA Registration #:
Target Pest(s):
Preserve: Location:
Date(s) of Application: to
Date Sign May Be Removed:
If you have any questions regarding this notification or require additional information,
Contact: Coty Sifuentes at (650) 691-1200.
OpenSpace | Midpeninsula Regional Open Space District
Signs for this Application

Figure 14: Pesticide Notification Sign

- For urgent application of pesticides to control stinging insects, signs are posted at the treatment area 72 hours after the end of treatment, but no pre-treatment posting is required.
- For pesticide application in occupied buildings such as visitor centers, offices and residences, notification is provided to building occupants (employees, visitors, residents) 24 hours before the start of treatment by email, letters or telephone calls. Additionally, for buildings which might be visited by more than just a single family, signs stating "Pesticide Use Notification" will be placed at the entrances to the building 24 hours before the start of treatment until 72 hours after the end of treatment. The

use of approved insecticidal baits in tamper-proof containers require notification 24 hours before the start of treatment by email, letters or telephone calls, but will not require posting of signs.

- The information contained in the pesticide application signs include: product name, EPA registration number, target pest, preserve name and/or building, date and time of application, and contact person with telephone number. The contact person is the IPM Coordinator.
- On lands that the District manages but does not own (e.g., Rancho San Antonio County Park), the District will provide notification of pesticide use in the same manner and applying the same actions as it does with its properties, unless the contracting agencies have adopted more restrictive management standards. In those cases, the more restrictive management standards would be implemented by the District.
- In the event of an immediate public safety concern, notification occurs at the time of treatment but pre-posting may not be possible.

All contractors notify the District before application on any property, and comply with requirements for notification and posting of signs described above.

At the discretion of the District staff and depending on the site conditions, neighboring land owners are notified if the District is conducting pest management near a property line.

7.2 Inquiries

Public inquiries into the IPM program were received via three modes: e-mail, Facebook, and the telephone.

Table 7: Inquires into the IPM Program

Date	**Staff**	**Inquirer**	**Contact Method**	**Request/Comment**
5/3/2015	Bankosh, Sifuentes-Winter	Fremont Older User	E-mail	Complaint: Invasive species on Trail
5/20/2015	Sifuentes-Winter	District User	Telephone	Informational: SOD information
5/21/2015	Sifuentes-Winter	District User	Telephone	Informational: Invasive species location information, especially Eucalyptus
8/25/2015	Sifuentes-Winter	El Sereno User	Telephone	Complaint: Herbicide signage left up for too long
8/25/2015	Bieder; Sifuentes-Winter	Rancho San Antonio User	Facebook	Complaint: Roundup usage on District lands

8 Consultants and Contractors

8.1 CalFlora - $7,659

Cloud-based database for georeferenced data on plant species and the work performed on District-managed properties by staff, contractors, and volunteers.

8.2 California Conservation Corps - $25,000

La Honda Creek OSP pulling purple star thistle around sensitive habitat.

8.3 Confluence Restoration - $17,214

Mindego Gateway (Russian Ridge Open Space Preserve) plant maintenance and weeding.

8.4 Ecological Concerns, Inc. - $65,459

Treatment of various weeds at La Honda, Los Trancos, Russian Ridge, and Skyline Ridge Open Space Preserves.

8.5 Go Native, Inc. - $10,000

Treatment of *Brachypodium sylvaticum* (Slender false brome) at Thornwood Open Space Preserve using manual and chemical treatment methods.

8.6 Shelterbelt Builders, Inc. - $4,426

Preparation of Pest Control Recommendations and the annual pesticide safety training requirement.

8.7 TRA Environmental Sciences - $25,000

Advised Midpeninsula Regional Open Space District on the development of an invasive plant Integrated Pest Management plan for Bear Creek Redwoods Open Space Preserve, including research and mapping of existing conditions, recommended control methods, and guidance on an overall long term strategy to address invasive plants.

Figure 15: French Broom mapped at Bear Creek Redwoods

9 Compliance with Guidance Manual

9.1 Effectiveness of Changes

9.2 Experimental Pest Control Projects

9.2.1 Bio-Control: Hairy Weevils

From 2011 through 2013, the District released 33,390 weevils at 9 Preserves. In 2015, instead of releasing weevils, the District undertook a monitoring protocol to determine if self-sustaining populations of weevils have become established. Hairy weevils were evident in 2015 at all prior release sites. In addition, yellow star thistle sites were surveyed that were not prior weevil release sites. These sites contained the hairy weevil as well. At this point, there does not appear to be a need to continue releasing hairy weevils at existing yellow star thistle sites. Although the weevils are not able to completely eliminate yellow star thistle, they are reducing the seed production and probably slowing the spread and density of yellow star thistle.

Figure 16: Hairy Weevil on yellow star thistle

9.3 Changes to Guidance Manual or Control

9.3.1 Updating the List of Approved Pesticides

The List of Approved Pesticides is intended to change over time as the science of pest control advances and more effective, safer, and less harmful pesticides are developed; as manufacturers update, discontinue, or substitute products; and as the District's target pests change over time.

9.3.2 Product Substitutions

When manufacturers substitute a product or change a product name or formulation, but when the active ingredient stays the same, the new product can be substituted for the old product on the List of Approved Pesticides. In general, this type of change to the list would not trigger a change in condition or result in

the need for additional environmental documentation. Therefore, this change typically will require a simple update to the List of Approved Pesticides.

No substitutions have been identified this year.

9.3.3 Product Eliminations

In instances where products on the list are no longer available from the manufacturer, are found to be ineffective against the District's target pests, or if new risks are discovered that were not previously evaluated by the District, a product may be eliminated from the List of Approved Pesticides. This type of change requires an update to the List of Approved Pesticides, but does not require additional environmental review.

9.3.3.1 Insecticide

Wasp Freeze (EPA Registration #499-362) –This product was discontinued by the manufacture. Active ingredients are D-trans Allethrin, 0.129%; Phenothrin, 0.12%. Signal word is Caution. Pesticide Research Institute hazard rating is a Tier 1.

9.3.4 Product Additions

In instances where new products with new active ingredients are found to be safer, more effective, and/or less costly than products on the on the List of Approved Pesticides, the District may elect to add new pesticides. This type of change typically requires additional toxicological review, and depending on the results, may also require additional environmental review.

9.3.4.1 Insecticide

Python Dust Bag (EPA Registration #39039-9) – This product has been requested by District grazing tenants for use in the control of horn flies, lice, ticks and ked flies, and as an aid in the control of face flies, stable flies and other nuisance flies on livestock. Python Dust is approved for use on any age animal, including lactating dairy cows, beef cattle, horses, sheep and goats. Active ingredients are Piperonyl butoxide, 0.15%; Cypermethrin, zeta, 0.075%. Signal word is "Caution." Pesticide Research Institute hazard rating is Tier 1 (see Appendix A – Python Dust Analysis). Further Environmental Analysis is recommended to determine if product meets District criteria.

Wasp Freeze II (EPA Registration #499-550) – This product is recommended to replace Wasp Freeze. Active ingredient is Prallethrin, 0.1%. Signal word is Caution. Pesticide Research Institute hazard rating is Tier 2, one tier below Wasp Freeze (see Appendix B – Wasp Freeze II Analysis).

9.3.5 Changes to language in Manual and Mechanical Control Options for Natural Lands (page 3-33 of Final EIR)

- *Burn*. After large stands of broom are pulled, the green plants would be stacked in piles no greater than six feet by six feet to dry out. The piles would be located on mineral soils and specific site conditions may require ~~with~~ a 4-inch by 12-foot wide trench to catch debris and would not be located under the drip line of trees. Brush piles would be burned during the wet season on days that the Bay Area Air Quality Management District (BAAQMD) designates as "open burn status" and the piles would be monitored to ensure that all combustible material is consumed or extinguished with water before

leaving the site. Notification Form C for Hazard Reduction Fires would be filed with the BAAQMD in advance, and all conditions of Hazard Reduction Fires per BAAQMD regulations would be followed.

9.3.6 Changes to language in BMPs (page 3-36 of Final EIR)

Changes to the existing Best Management Practices (BMPs) are due to omission of language and new information. Below is a summary of the changes to District BMPs for the IPM Program. Full text with strike-out/underline is presented in Appendix C.

- BMP #8: Notification to the public via posted signage of pesticide use shall be in place no longer than 14 days without the sign being updated.
- BMP #11: New information on plant and soil diseases has come to light. The BMP language has been modified to be more inclusive.
- BMP #12: Training to prevent the spread of weeds and pests will now include tenants in addition to staff, contractors, and volunteers.
- BMP #19: To leverage District staff time, Biologist that have been approved by District staff may conduct surveys for aquatic features.
- BMP #20: The California Red-Legged Frog Injunction includes multiple pesticides, not just glyphosate.
- BMP #21: To leverage District staff time, Biologist that have been approved by District staff may conduct pre-treatment site surveys.
- BMP #22: To leverage District staff time, Biologist that have been approved by District staff may conduct bird nesting surveys prior to pest treatment.
- BMP #23: Training on the San Francisco dusky-footed woodrat will now include tenants in addition to staff, contractors, and volunteers.
- BMP #25: The pesticide buffer zone around rare plants has been increased from 15 feet to 30 feet. This reflect new information about pesticide drift during application.
- BMP #27: Post treatment surveys will be conducted within 2 months after herbicide application.
- BMP #31: This new BMP helps to protect rare plant species during application of Milestone when grazing animals are present.

9.3.7 Change to IPM Team Members in Guidance Manual

With the completion of the Financial and Operational Sustainability Model (FOSM), the District has reorganized departments and staff members leading to the need to change the language of section 3.1.1 of the Integrated Pest Management Program Guidance Manual.

IPM COORDINATION TEAM

The District will establish an IPM Coordination Team. The team will be made up of District staff working with the advice of technical pest control experts. At a minimum, the team will include one staff representative from each of the field offices, the Natural Resources Department, ~~the Real Property Department~~ Land and Facilities Department, and Visitor Services Department ~~and the Volunteer Program~~. As necessary, the IPM Coordination Team will consult with the Rangeland

Ecologist regarding rangeland and agricultural practices and properties, and with the Planning Department regarding long-range plans and construction and maintenance of capital projects.

DEVELOPMENT OF THE IPM WORK PLAN

Using this staff information, the Annual IPM Work Plan will be prepared by the IPM Coordinator, then reviewed and approved by the IPM Coordination Team as well as the Natural Resource and Land and Facilities Department Managers. Information in the Annual IPM Work Plan will also be used to inform the Annual IPM Report (described below in Section 3.4.1).

9.3.8 Changes to "Appendix B – Forms" of the Guidance Manual

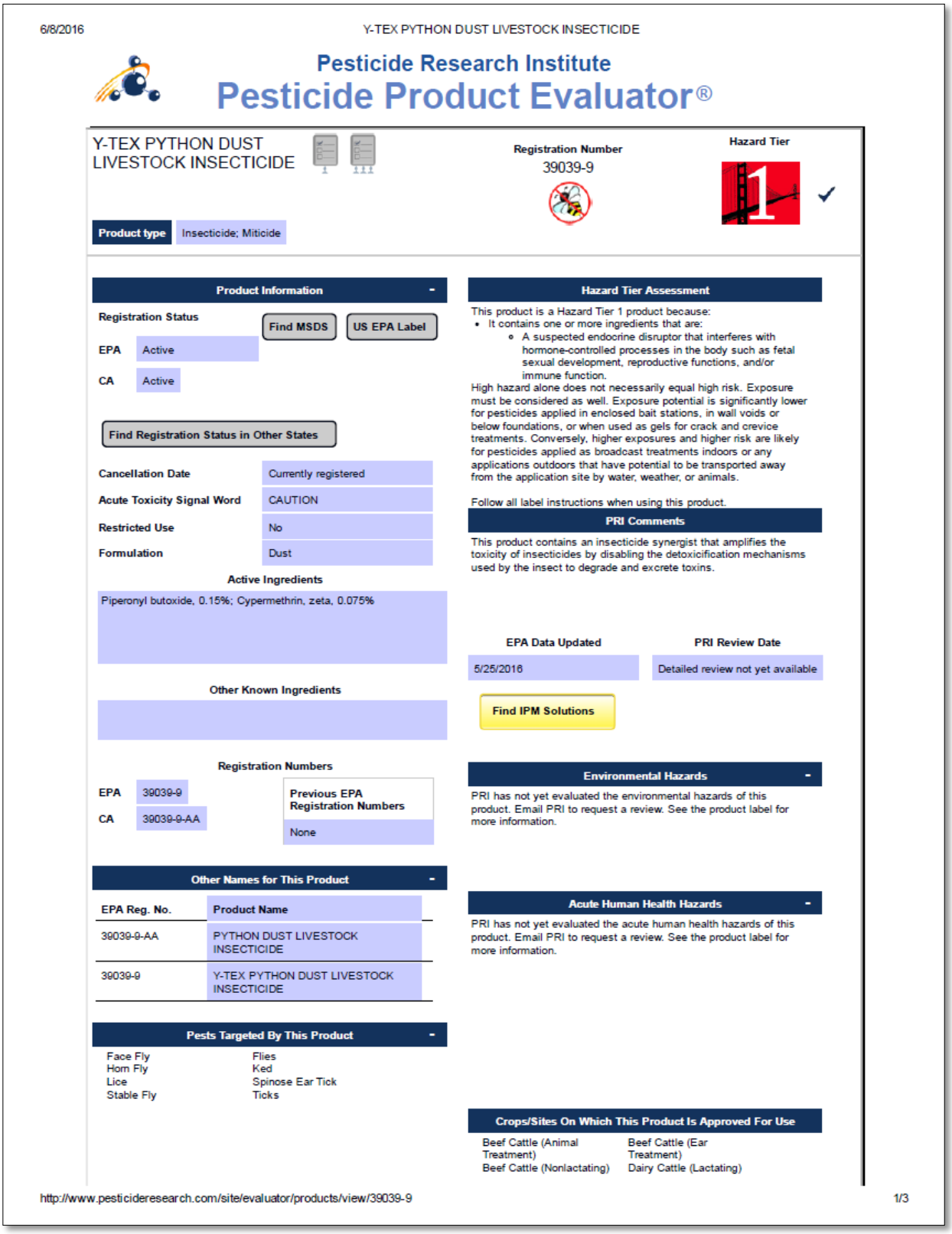
The following forms have been created for use by the IPM Team and Coordinator:

- New Pest Control Project (See Appendix D)
- Project Ranking System (See Appendix E)
- Treatment Survey (see Appendix F)

10 List of Preparers

Coty Sifuentes-Winter, IPM Coordinator
Michael Bankosh, Maintenance, Construction, and Resource Supervisor
Cydney Bieber, Web Administrator
Brian Fair, Open Space Technician
Ellen Gartside, Volunteer Program Lead
Stan Hooper, Maintenance, Construction, and Resource Supervisor
Kirk Lenington, Natural Resources Manager
Cindy Roessler, Senior Resource Management Specialist

Appendix A – Python Dust Analysis



6/8/2016 Y-TEX PYTHON DUST LIVESTOCK INSECTICIDE

Pesticide Research Institute

Pesticide Product Evaluator®

Y-TEX PYTHON DUST LIVESTOCK INSECTICIDE

Registration Number: 39039-9

Hazard Tier: 1

Product type: Insecticide; Miticide

Product Information

Registration Status — Find MSDS | US EPA Label

EPA: Active

CA: Active

Find Registration Status in Other States

Cancellation Date	Currently registered
Acute Toxicity Signal Word	CAUTION
Restricted Use	No
Formulation	Dust

Active Ingredients: Piperonyl butoxide, 0.15%; Cypermethrin, zeta, 0.075%

Other Known Ingredients:

Registration Numbers

EPA: 39039-9

CA: 39039-9-AA

Previous EPA Registration Numbers: None

Other Names for This Product

EPA Reg. No.	Product Name
39039-9-AA	PYTHON DUST LIVESTOCK INSECTICIDE
39039-9	Y-TEX PYTHON DUST LIVESTOCK INSECTICIDE

Pests Targeted By This Product

Face Fly, Horn Fly, Lice, Stable Fly, Flies, Ked, Spinose Ear Tick, Ticks

Hazard Tier Assessment

This product is a Hazard Tier 1 product because:

- It contains one or more ingredients that are:
  - A suspected endocrine disruptor that interferes with hormone-controlled processes in the body such as fetal sexual development, reproductive functions, and/or immune function.

High hazard alone does not necessarily equal high risk. Exposure must be considered as well. Exposure potential is significantly lower for pesticides applied in enclosed bait stations, in wall voids or below foundations, or when used as gels for crack and crevice treatments. Conversely, higher exposures and higher risk are likely for pesticides applied as broadcast treatments indoors or any applications outdoors that have potential to be transported away from the application site by water, weather, or animals.

Follow all label instructions when using this product.

PRI Comments

This product contains an insecticide synergist that amplifies the toxicity of insecticides by disabling the detoxicification mechanisms used by the insect to degrade and excrete toxins.

EPA Data Updated	PRI Review Date
5/25/2016	Detailed review not yet available

Find IPM Solutions

Environmental Hazards

PRI has not yet evaluated the environmental hazards of this product. Email PRI to request a review. See the product label for more information.

Acute Human Health Hazards

PRI has not yet evaluated the acute human health hazards of this product. Email PRI to request a review. See the product label for more information.

Crops/Sites On Which This Product Is Approved For Use

Beef Cattle (Animal Treatment), Beef Cattle (Ear Treatment), Beef Cattle (Nonlactating), Dairy Cattle (Lactating)

http://www.pesticideresearch.com/site/evaluator/products/view/39039-9 1/3

(Animal Treatment)
Dairy Cattle (Lactating) (Ear Treatment)
Dairy Cattle (Nonlactating) (Ear Treatment)
Goats (Nonlactating) (Animal Treatment)
Sheep (Animal Treatment)
Sheep (Nonlactating) (Animal Treatment)
(Animal Treatment)
Dairy Cattle (Nonlactating) (Animal Treatment)
Goats (Animal Treatment)
Goats (Ear Treatment)
Horses (Animal Treatment)
Horses (Ear Treatment)
Sheep (Ear Treatment)

Chemical ID Information on Known Ingredients in this Product

Chemical ID

Piperonyl butoxide

Chemical Name & Synonyms	Use Type	Classification	CAS Number	Molecular Weight
Piperonyl butoxide	Insecticide, Synergist	Unclassified	51-03-6	338.4

(Butylcarbityl)(6-propylpiperonyl) ether 80% and related compounds 20%
070 (PDP Code)
1,3-Benzodioxole, 5-((2-(2-butoxyethoxy)ethoxy)methyl)-6-propyl-
5-((2-(2-Butoxyethoxy)ethoxy)methyl)-6-propyl-1,3-benzodioxole
5-[[2-(2-Butoxyethoxy)ethoxy]methyl]-6-propyl-1,3-benzodioxole
51036
6-Propylpiperonyl butyl diethyleneglycol ether
alpha-(2-(2-Butoxyethoxy)ethoxy)-4,5-(methylenedioxy)-2-propyltoluene
Butacide
But&#65533;xido de piperonilo
Butyl carbitol 6-propylpiperonyl ether
ENT 14250
ENT-14250
PBO
Piperony butoxide
piperonyl
piperonyl butoxyde
piperonylbutoksid
Piperonylbutoxid (Synergist)
Piperonylbutoxyd
Pybuthrin

Registration

CA DPR Code	486	USGS Code	NDA	US	Yes
EPA PC Code	067501, 867501	PMRA Code	PBU	CA	Yes
				EU	Yes

Cypermethrin, zeta

Chemical Name & Synonyms	Use Type	Classification	CAS Number	Molecular Weight
Cypermethrin, zeta	Insecticide	Pyrethroid	68865-47-0, 86752-99-0, 52315-07-8	416.3

(S)-Cypermethrin
3-(2,2-Dichloroethenyl)-2,2-dimethylcyclopropanecarboxylic acid cyano(3-phenoxyphenyl)methyl ester
Cyano(3-phenoxyphenyl)methyl (+/-)-cis/trans-3-(2,2-dichloroethenyl)-2,2-dimethylcyclopropanecarboxylate
Cyclopropanecarboxylic acid, 3-(2,2-dichloroethenyl)-2,2-dimethyl-, cyano(3-phenoxyphenyl)methyl ester, (S)-
Cypermethrin-minus
Cypermethrin-S
FMC 56701
S-Cyano(3-phenoxyphenyl)methyl (+/-)-cis/trans-3-(2,2-dichloethenyl)-2,2-dimethylcyclopropanecarboxylate
Stereoisomer ratio 45-55/55-45
z-Cypermethrin
Zeta-Cipermetrin
Zeta-cipermetrina
zeta-Cypermethrin
z&#65533;ta-cyperm&#65533;thrine
Zeta, cypermethrin
Zetacypermethrine

Registration

CA DPR Code	3866	USGS Code	NDA	US	Yes
EPA PC Code	129064	PMRA Code	ZCP	CA	Yes
				EU	Yes

NDA = No Data Available

Hazard Information on Known Ingredients in this Product

Human Health Hazards | Water Pollution Potential | Low Toxicity Indicators

Percent	Chemical Name	Cancer Ranking	Reproductive/Developmental Toxicity	Endocrine Disruptor Status
0.15	Piperonyl butoxide	Possible	Not Listed	Not Listed
0.075	Cypermethrin, zeta	Possible	Not Listed	Suspected

NDA = No Data Available

Human Health Hazards | Water Pollution Potential | Low Toxicity Indicators

Percent	Chemical Name	Groundwater Ubiquity Score (GUS)	Soil Mobility	Aerobic Half-Life (days)	Exceeds CA Specific Numeric Values	Persistent Bioaccumulative Toxicant	Section 303(d) Listing
0.15	Piperonyl butoxide	1.41	Low	79	Yes	No	Check local 303(d) listing
0.075	Cypermethrin, zeta	-1.83	Very low	49	Not Listed	No	Check local 303(d) listing

NDA = No Data Available

Human Health Hazards | Water Pollution Potential | Low Toxicity Indicators

Percent	Chemical Name	Section 25(b) Minimal Risk	Organic Approved	US EPA Biopesticide	US EPA Waived Data Requests
0.15	Piperonyl butoxide	No	Yes, with limitations	No	No
0.075	Cypermethrin, zeta	No	No	No	No

NDA = No Data Available

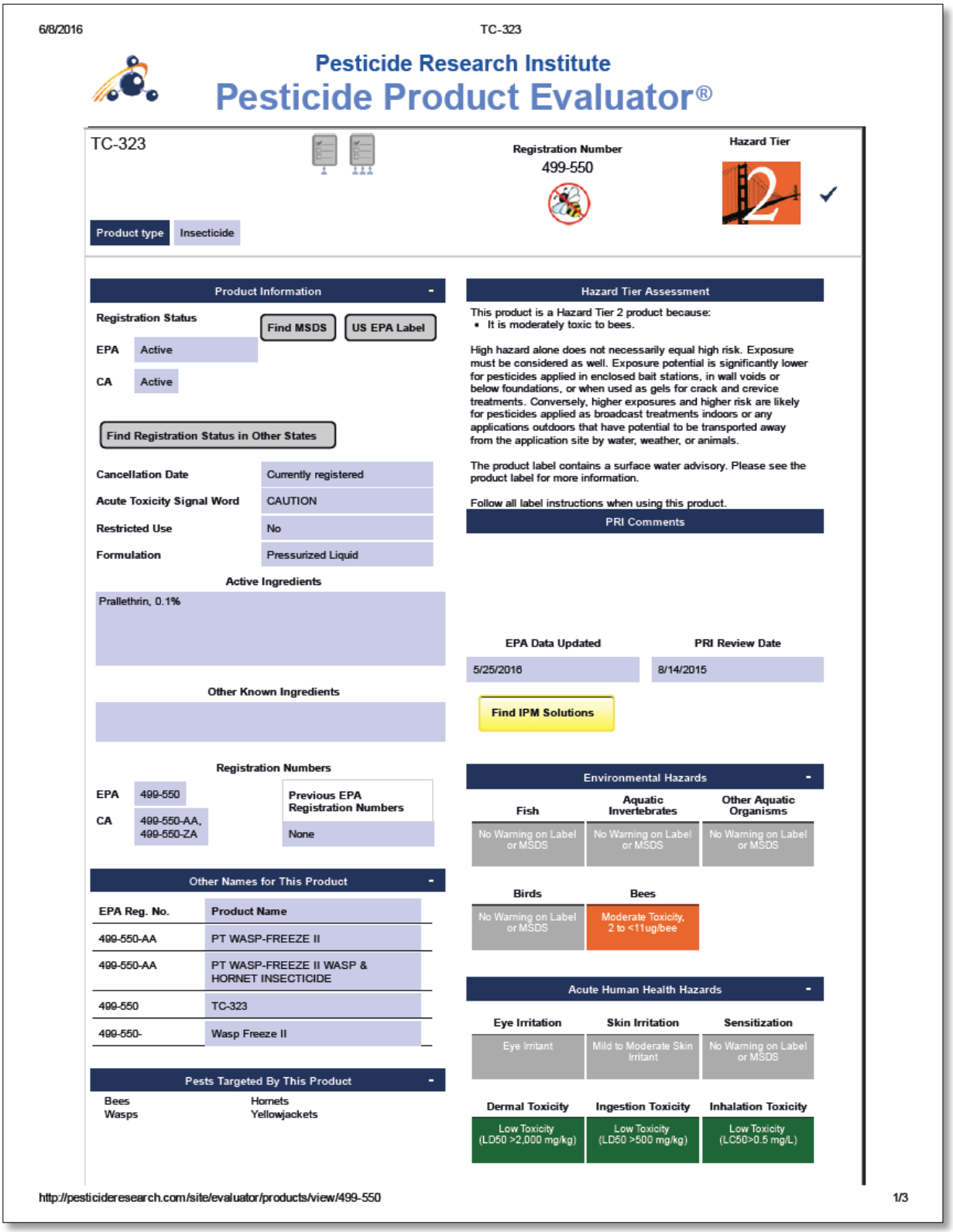
Review

Share your experience using this product. In what situations did you find the product to be most effective? Are there particular pests or sites that you would not recommend this product for use?

Post your review here

Post

Appendix B – Wasp Freeze II Analysis



6/8/2016 TC-323

Pesticide Research Institute

Pesticide Product Evaluator®

TC-323

Registration Number
499-550

Hazard Tier
2

Product type: Insecticide

Product Information

Registration Status

Find MSDS | US EPA Label

EPA: Active

CA: Active

Find Registration Status in Other States

Cancellation Date	Currently registered
Acute Toxicity Signal Word	CAUTION
Restricted Use	No
Formulation	Pressurized Liquid

Active Ingredients

Prallethrin, 0.1%

Other Known Ingredients

Registration Numbers

		Previous EPA Registration Numbers
EPA	499-550	
CA	499-550-AA, 499-550-ZA	None

Other Names for This Product

EPA Reg. No.	Product Name
499-550-AA	PT WASP-FREEZE II
499-550-AA	PT WASP-FREEZE II WASP & HORNET INSECTICIDE
499-550	TC-323
499-550-	Wasp Freeze II

Pests Targeted By This Product

Bees
Wasps
Hornets
Yellowjackets

Hazard Tier Assessment

This product is a Hazard Tier 2 product because:
- It is moderately toxic to bees.

High hazard alone does not necessarily equal high risk. Exposure must be considered as well. Exposure potential is significantly lower for pesticides applied in enclosed bait stations, in wall voids or below foundations, or when used as gels for crack and crevice treatments. Conversely, higher exposures and higher risk are likely for pesticides applied as broadcast treatments indoors or any applications outdoors that have potential to be transported away from the application site by water, weather, or animals.

The product label contains a surface water advisory. Please see the product label for more information.

Follow all label instructions when using this product.

PRI Comments

EPA Data Updated	PRI Review Date
5/25/2016	8/14/2015

Find IPM Solutions

Environmental Hazards

Fish	Aquatic Invertebrates	Other Aquatic Organisms
No Warning on Label or MSDS	No Warning on Label or MSDS	No Warning on Label or MSDS

Birds	Bees
No Warning on Label or MSDS	Moderate Toxicity, 2 to <11ug/bee

Acute Human Health Hazards

Eye Irritation	Skin Irritation	Sensitization
Eye Irritant	Mild to Moderate Skin Irritant	No Warning on Label or MSDS

Dermal Toxicity	Ingestion Toxicity	Inhalation Toxicity
Low Toxicity (LD50 >2,000 mg/kg)	Low Toxicity (LD50 >500 mg/kg)	Low Toxicity (LC50>0.5 mg/L)

http://pesticideresearch.com/site/evaluator/products/view/499-550 1/3

Crops/Sites On Which This Product Is Approved For Use

Commercial/Institutional/Industrial Buildings (Attics)
Domestic Dwellings (Outdoor)
Domestic Dwellings (Indoor)

Chemical ID Information on Known Ingredients in this Product

Chemical ID

Prallethrin

Chemical Name & Synonyms	Use Type	Classification	CAS Number	Molecular Weight
Prallethrin	Insecticide	Pyrethroid	23031-36-9	300.4

(S)-2-Methyl-4-oxo-3-(2-propynyl)cyclopent-2-enyl (1R)-cis,trans-chrysanthemate
2,2-Dimethyl-3-(2-methyl-1-propenyl)cyclopropanecarboxylic acid 2-methyl-4-oxo-3-(2-propynyl)-2-cyclopenten-1-yl ester
23031369
ADC (PDP Code)
Cyclopropanecarboxylic acid, 2,2-dimethyl-3-(2-methyl-1-propenyl)-, 2-methyl-4-oxo-3-(2-propynyl)-2-cyclopenten-1-yl ester
Escort flea & tick spray for cats, kittens and puppies (128722+069005+057001+067501)
ETOC
MGK Concentrate 2593
OMS 3033
Praletrina
Prallethrin (ETOC)
S 4068
S-4068SF

Registration

CA DPR Code	3985	USGS Code	NDA	US	Yes
EPA PC Code	128722	PMRA Code	PAL	CA	Yes
				EU	NDA

NDA = No Data Available

Hazard Information on Known Ingredients in this Product

Human Health Hazards | Water Pollution Potential | Low Toxicity Indicators

Percent	Chemical Name	Cancer Ranking	Reproductive/Developmental Toxicity	Endocrine Disruptor Status
0.1	Prallethrin	Not Likely	Not Listed	Not Listed

NDA = No Data Available

Human Health Hazards | Water Pollution Potential | Low Toxicity Indicators

Percent	Chemical Name	Groundwater Ubiquity Score (GUS)	Soil Mobility	Aerobic Half-Life (days)	Exceeds CA Specific Numeric Values	Persistent Bioaccumulative Toxicant	Section 303(d) Listing
0.1	Prallethrin	NDA	NDA	NDA	Not Listed	No	Check local 303(d) listing

NDA = No Data Available

Human Health Hazards | Water Pollution Potential | Low Toxicity Indicators

Percent	Chemical Name	Section 25(b) Minimal Risk	Organic Approved	US EPA Biopesticide	US EPA Waived Data Requests
0.1	Prallethrin	No	No	No	No

NDA = No Data Available

Appendix C - District Best Management Practices

District BMPs for IPMP

BMP ID#	Best Management Practices
1	All pesticide use shall be implemented consistent with Pest Control Recommendations prepared annually by a licensed Pest Control Advisor.
2	Surfactants and other adjuvants shall be used and applied consistent with the District's Pest Control Recommendations.
3	Applicators shall follow all pesticide label requirements and refer to all other BMPs regarding mandatory measures to protect sensitive resources and employee and public health during pesticide application.
4	Pesticide applicators shall have or work under the direction of a person with a Qualified Applicator License or Qualified Applicator Certificate. Contractors and grazing and agricultural tenants may apply approved herbicides after review and approval by the District and under the direction of QAL/QAC field supervisors. Employees, contractors and tenants may install approved ant and roach bait stations inside buildings in tamper-proof containers without review by a QAL/QAC. Tenants may not use rodenticides; only qualified District staff or District contractors may use approved rodenticides and these should only be used in the event of an urgent human health issue and in anchored, tamper-proof containers inside buildings.
5	All storage, loading and mixing of herbicides shall be set back at least 300 feet from any aquatic feature or special-status species or their habitat or sensitive natural communities. All mixing and transferring shall occur within a contained area. Any transfer or mixing on the ground shall be within containment pans or over protective tarps.
6	Appropriate non-toxic colorants or dyes shall be added to the herbicide mixture to determine treated areas and prevent over-spraying.
7	Application Requirements - The following general application parameters shall be employed during herbicide application: ◢ Application shall cease when weather parameters exceed label specifications, when wind at site of application exceeds 7 miles per hour (MPH), or when precipitation (rain) occurs or is forecasted with greater than a 40 percent probability in the next 24-hour period to prevent sediment and herbicides from entering the water via surface runoff; ◢ Spray nozzles shall be configured to produce a relatively large droplet size; ◢ Low nozzle pressures (30-70 pounds per square inch [PSI]) shall be observed; ◢ Spray nozzles shall be kept within 24 inches of vegetation during spraying; ◢ Drift avoidance measures shall be used to prevent drift in locations where target weeds and pests are in proximity to special-status species or their habitat. Such measures can consist of, but would not be limited to the use of plastic shields around target weeds and pests and adjusting the spray nozzles of application equipment to limit the spray area.
8	Notification of Pesticide Application – Signs shall be posted notifying the public, employees, and contractors of the District's use of pesticides. The signs shall consist of the following information: signal word, product name, and manufacturer; active ingredient; EPA registration number; target pest; preserve name; treatment location in preserve; date and time of application; date which notification sign may be removed; and contact person with telephone number. Signs shall generally be posted 24 hours before the start of treatment and notification shall remain in place for 72 hours after treatment ceases. In no event shall a sign be in place longer than 14 days without dates being updated. See the IPM Guidance Manual for details on posting locations, posting for pesticide use in buildings and for exceptions.
9	Disposal of Pesticides – Cleanup of all herbicide and adjuvant containers shall be triple rinsed with clean water at an approved site, and the rinsate shall be disposed of by placing it in the batch tank for application. Used containers shall be punctured on the top and bottom to render them unusable, unless said containers are part of a manufacturer's container recycling program, in which case the manufacturer's instructions shall be followed. Disposal of non-recyclable containers shall be at legal dumpsites. Equipment shall not be cleaned and personnel shall not bathe in a manner that allows contaminated water to directly enter any body of water within the treatment areas or adjacent watersheds. Disposal of all pesticides shall follow label requirements and local waste disposal regulations.
10	All appropriate laws and regulations pertaining to the use of pesticides and safety standards for employees and the public, as governed by the U.S. Environmental Protection Agency, the California Department of Pesticide Regulation, and local jurisdictions shall be followed. All applications shall adhere to label directions for application rates and methods, storage, transportation, mixing, and container disposal. All contracted applicators shall be appropriately licensed by the state. District staff shall coordinate with the County Agricultural Commissioners, and all required licenses and permits shall be obtained prior to pesticide application.
11	Sanitation and Prevention of Contamination - All personnel working in infested areas shall take appropriate precautions to not carry or spread weed seed or plant and soil diseases ~~SOD associated spores~~ outside of the infested area. Such precautions will consist of, as necessary based on site conditions, cleaning of soil and plant materials from tools, equipment, shoes, clothing, or vehicles prior to entering or leaving the site.
12	All staff, contractors, tenants, and volunteers shall be properly trained to prevent spreading weeds and pests to other sites.
13	District staff shall appropriately maintain facilities where tools, equipment, and vehicles are stored free from invasive plants.

District BMPs for IPMP

BMP ID#	Best Management Practices
14	District staff shall ensure that rental equipment and project materials (especially soil, rock, erosion control material and seed) are free of invasive plant material prior to their use at a worksite.
15	Suitable onsite disposal areas shall be identified to prevent the spread of weed seeds.
16	Invasive plant material shall be rendered nonviable when being retained onsite. Staff shall desiccate or decompose plant material until it is nonviable (partially decomposed, very slimy, or brittle). Depending on the type of plant, disposed plant material can be left out in the open as long as roots are not in contact with moist soil, or can be covered with a tarp to prevent material from blowing or washing away.
17	District staff shall monitor all sites where invasive plant material is disposed on-site and treat any newly emerged invasive plants.
18	When transporting invasive plant material off-site for disposal, the plant material shall be contained in enclosed bins, heavy-duty bags, or a securely covered truck bed. All vehicles used to transport invasive plant material shall be cleaned after each use.
19	Aquatic Areas –A District-approved biologist shall survey all treatment sites prior to work to determine whether any aquatic features are located onsite. On a repeating basis, grassland treatment sites shall be surveyed once every five years and brushy and wooded sites shall be surveyed once every three years. Brush removal on rangelands will require biological surveys before work is conducted in any year. Aquatic features are defined as any natural or manmade lake, pond, river, creek, drainage way, ditch, spring, saturated soils, or similar feature that holds water at the time of treatment or typically becomes inundated during winter rains. If during the survey it is found that aquatic features are present within 15 feet of the proposed treatment area, the District shall either eliminate all treatment activities within 15 feet of the aquatic feature from the project (i.e. do not implement treatment actions in those areas) or if the District chooses to continue treatment actions in these areas, it shall follow the requirements of the mitigation measure for special-status wildlife species and the CDFW Streambed Alteration Agreement.
20	Application of herbicides shall be conducted in accordance with the California Red-Legged Frog Injunction (Center For Biological Diversity v. U.S. Environmental Protection Agency (2006) Case No.: 02-1580-JSW) in known or potential California red-legged frog habitat specifically by: not applying ~~glyphosate~~ specified pesticides within 15 feet of aquatic features (including areas that are wet at time of spraying or areas that are dry at time of spraying but subsequently might be wet during the next winter season); utilizing only spot-spraying techniques and equipment by a certified applicator or person working under the direct supervision of a certified applicator; and not spraying during precipitation or if precipitation is forecast to occur within 24 hours before or after the proposed application. Preserves in which these precautions must be undertaken are: Miramontes Ridge, Purisima Creek Redwoods, El Corte de Madera, La Honda Creek, Picchetti Ranch, Russian Ridge, Sierra Azul, Tunitas Creek, Skyline Ridge, Rancho San Antonio, Monte Bello and Coal Creek OSPs and Toto Ranch.
21	A District-approved biologist shall survey all selected treatment sites prior to work to determine site conditions and develop any necessary site-specific measures. On a repeating basis, grassland treatment sites shall be surveyed once every five years and brushy and wooded sites shall be surveyed once every three years. Brush removal on rangelands will require biological surveys before work is conducted in any year. Site inspections shall evaluate existing conditions at a given treatment site including the presence, population size, growth stage, and percent cover of target weeds and pests relative to native plant cover and the presence of special-status species and their habitat, or sensitive natural communities. In addition, worker environmental awareness training shall be conducted for all treatment field crews and contractors for special-status species and sensitive natural communities determined to have the potential to occur on the treatment site by a District-approved biologist. The education training shall be conducted prior to starting work at the treatment site and upon the arrival of any new worker onto sites with the potential for special-status species or sensitive natural communities. The training shall consist of a brief review of life history, field identification, and habitat requirements for each special-status species, their known or probable locations in the vicinity of the treatment site, potential fines for violations, avoidance measures, and necessary actions if special-status species or sensitive natural communities are encountered.
22	Nesting Birds - For all IPM activities that could result in potential noise and other land disturbances that could affect nesting birds (e.g., tree removal, mowing during nesting season, mastication, brush removal on rangelands), treatment sites shall be surveyed to evaluate the potential for nesting birds. Tree removal will be limited, whenever feasible, based on the presence or absence of nesting birds. For all other treatments, if birds exhibiting nesting behavior are found within the treatment sites during the bird nesting season: March 15 – August 30 for smaller bird species such as passerines and February 15 - August 30 for raptors, impacts on nesting birds will be avoided by the establishment of appropriate buffers around active nests. The distance of the protective buffers surrounding each active nest site are: 500 feet for large raptors such as buteos, 250 feet for small raptors such as accipiters, and 250 feet for passerines. The size of the buffer may be adjusted by a District biologist in consultation with CDFW and USFWS depending on site specific conditions. Monitoring of the nest by a District biologist during and after treatment activities will be required if the activity has potential to adversely affect the nest. These areas can be subsequently treated after a District-approved biologist or designated biological monitor confirms that the young have fully fledged, are no longer being fed by the parents and have left the nest site. For IPM activities that clearly would not have adverse impacts to nesting birds (e.g. treatments in buildings and spot spraying with herbicides), no survey for nesting birds would be required.

District BMPs for IPMP

BMP ID#	Best Management Practices
23	San Francisco dusky-footed woodrat and Santa Cruz kangaroo rat – All District staff, volunteers, tenants, or contractors who will implement treatment actions shall receive training from a qualified biologist on the identification of dusky-footed woodrat, Santa Cruz kangaroo rat, and their nests. Generally, all San Francisco dusky-footed woodrat, Santa Cruz kangaroo rat, and their nests will be avoided and left undisturbed by proposed work activities. If a nest site will be affected, the District will consult with CDFW. Rodenticides, snap traps, and glue boards shall not be used in buildings within 100 feet of active San Francisco dusky-footed woodrat nests or Santa Cruz kangaroo rat nests; instead rodent control in these areas will be limited to non-lethal exclusion and relocation activities including relocation of nests if approved by CDFW. Tenants will contact the District for assistance in managing rat populations in buildings and under no circumstances will be allowed to use rodenticides.
24	Where appropriate, equipment modifications, mowing patterns, and buffer strips shall be incorporated into manual treatment methods to avoid disturbance of grassland wildlife.
25	Rare Plants – All selected treatment sites shall be surveyed prior to work to determine the potential presence of special-status plants. On a repeating basis, grassland treatment sites shall be surveyed once every five years and brushy and wooded sites shall be surveyed once every three years. Brush removal on rangelands will require biological surveys before work is conducted in any year. A ~~15~~30-foot buffer shall be established from special-status plants. No application of herbicides shall be allowed within this buffer. Non-herbicide methods can be used within ~~15~~30 feet of rare plants but they shall be designed to avoid damage to the rare plants (e.g., pulling).
26	Cultural Resources – District staff, volunteer crew leaders, and contractors implementing treatment activities shall receive training on the protection of sensitive archaeological, paleontological, or historic resources (e.g., projectile points, bowls, baskets, historic bottles, cans, trash deposits, or structures). In the event volunteers would be working in locations with potential cultural resources, staff shall provide instruction to protect and report any previously undiscovered cultural artifacts that might be uncovered during hand-digging activities. If archaeological or paleontological resources are encountered on a treatment site and the treatment method consists of physical disturbance of land surfaces (e.g., mowing, brushcutting, pulling, or digging), work shall avoid these areas or shall not commence until the significance of the find can be evaluated by a qualified archeologist. This measure is consistent with federal guidelines 36 CFR 800.13(a), which protects such resources in the event of unanticipated discovery.
27	Post-Treatment Monitoring – District staff shall monitor IPM activities within two months after herbicide treatment (except for routine minor maintenance activities which can be evaluated immediately after treatment) to determine if the target pest or weeds were effectively controlled with minimum effect to the environment and non-target organisms. Future treatment methods in the same season or future years shall be designed to respond to changes in site conditions.
28	Erosion Control and Revegetation - For sites with loose or unstable soils, steep slopes (greater than 30 percent), where a large percentage of the groundcover will be removed, or near aquatic features that could be adversely affected by an influx of sediment, erosion control measures shall be implemented after treatment. These measures could consist of the application of forest duff or mulches, straw bales, straw wattles, other erosion control material, seeding, or planting of appropriate native plant species to control erosion, restore natural areas, and prevent the spread or reestablishment of weeds. Prior to the start of the winter storm season, these sites shall be inspected to confirm that erosion control techniques are still effective.
29	Operation of noise-generating equipment (e.g., chainsaws, wood chippers, brush-cutters, pick-up trucks) shall abide by the time-of-day restrictions established by the applicable local jurisdiction (i.e., City and/or County) if such noise activities would be audible to receptors (e.g., residential land uses, schools, hospitals, places of worship) located in the applicable local jurisdiction. If the local, applicable jurisdiction does not have a noise ordinance or policy restricting the time-of-day when noise-generating activity can occur, then the noise-generating activity shall be limited to two hours after sunrise and two hours before sunset, generally Monday through Friday. Additionally, if noise-generating activity would take place on a site that spans over multiple jurisdictions, then the most stringent noise restriction, as described in this BMP or in a local noise regulation, would apply. For IPM sites where the marbled murrelet has the potential to nest, as identified in the District's 2014 maps (see attachment) if noise-generating activities would occur during its breeding season (March 24 to September 15), the IPM activities would be subject to the noise requirements listed in the most current in the CDFW RMA issued to the District (see attachment).
30	All motorized equipment shall be shut down when not in use. Idling of equipment and off-highway vehicles will be limited to 5 minutes.
31	Grazing Animals – Animals that have grazed in areas treated with Milestone herbicide will be moved to an untreated holding area for three days prior to being transferred to an area containing plant species of concern.

Appendix D – New Pest Control Project

Midpeninsula Regional Open Space District
New Pest Control Recommendation

Submitting Person

Date

Preserve

Location

Species

Common Name

Calflora Record Number

Date Last Assessed

Known Site Conditions

- ☐ Access Issues
- ☐ Aquatic Areas (within 15 feet)
- ☐ Preserve Boundary (within 100 feet)
- ☐ Steep Slopes (Erosion Potential)
- ☐ T&E Species (within 30 feet)
- ☐ Other

Site History

Proposed Treatment

Year 1

Work Force ☐ Contractors Hours

☐ Staff Hours

☐ Volunteers PP days or ARMS Hours

Year 2

Work Force ☐ Contractors Hours

☐ Staff Hours

☐ Volunteers PP days or ARMS Hours

Year 3

Work Force ☐ Contractors Hours

☐ Staff Hours

☐ Volunteers PP days or ARMS Hours

Project Ranking

Safety

Prevent and Control

Biodiversity

Public Engagement

Feasible and Efficient

Total

Appendix E – Project Ranking System

Safe	
Human Health	
The proposed method is the safest method for workers at that location.	
There are human occupied facilities nearby (trails, parking lots, buildings, school, etc.).	
Environmental Health	
The pest provides habitat for beneficial species.	
Removal method would cause a seed bank flush or erosion issues.	

Prevents and Controls Most Destructive Pests	
Prevent	
The species is listed as a State or Federal noxious weed.	
The species is listed as a Cal-IPC Alert and/or Cal-IPC or District watch list.	
The species' Cal-IPC rating is …	
Control	
This is the only population of the species at the preserve.	

Protects Biodiversity	
The removal will …	
assist in the recovery of a Special Status Species.	
protect a sensitive ecological community (wetlands, serpentine grassland, coastal prairie).	
actively protect against spread of pathogens.	
assist in retaining a bio-diverse community.	
The species is allopathic or can change the soil chemistry.	

Provides for Public Engagement	
The project has significant public interest and/or support.	
The project provides for the participation or education of the public.	

Feasible and Effective	
The project be done with existing staffing and/or funding.	
There is a high level of anticipated outcome (Cost/Benefit)	
The treatment method is considered the most effective.	
The project method will reduce the overall maintenance of the area.	

Appendix F – Treatment Survey

ENVIRONMENTAL SITE REVIEW FORM

Biologist _____ Date: _____

Preserve _____ Treatment Site _____

Photo Filename _____

GIS Filename _____

Target Species _____

Vegetation Type: Grassland Brush Wooded

% Cover - Target Sp: 0 0-1 1-5 5-25 25-50 50-75 75-100

Treatment Method: Manual Mechanical Chemical

Sensitive Plant Species	
Sensitive Animal Species	
Cultural Resources	
Aquatic Features	
Erosive Conditions	
SOD Symptoms	

Specific BMPs or other site conditions needs

Work Performed

Date: _____ Preserve _____

Reporter _____ Treatment Site _____

% Area Treated _____ Target Species _____

Person Hours _____ (# of People) X _____ (Project Hours) = _____ (Person-Hours)

Herbicide Use

_____ (Product) _____ (Method) _____ (Amount of Concentrate (oz))

Post Treatment Survey

Surveyor _____

Photo Filename _____ Date _____

Signs of Herbicide Damage (Target)

Signs of Herbicide Damage (Non-target)

New Environmental Issues

Recommendations for next treatment

Additional Comments