



Midpeninsula Regional  
Open Space District

R-17-50  
Meeting 17-10  
April 26, 2017

## AGENDA ITEM 5

### AGENDA ITEM

Annual Integrated Pest Management Report, 2016

### GENERAL MANAGER'S RECOMMENDATION

No Board action required.

### SUMMARY

On December 10, 2014 (R-14-34), the Midpeninsula Regional Open Space District's (District) Board of Directors adopted the Final Environmental Impact Report for the Integrated Pest Management Program and approved the Integrated Pest Management Program (IPM) and Policy. The program requires an annual report of pest management activities that describes past pest control activities, both chemical and non-chemical, on District lands. This report presents the results of the second year of pest management activities prescribed under the District IPM Program. The District treated thirty-three species, including seventeen listed noxious weeds (plants that have been defined as a pest by state law or regulation) using a variety of treatment methods. Treatment methods that included the use of chemicals did so using only Board approved chemicals. Overall, the second year of implementing the IPM Program has resulted in an additional 7.4 acres of District land being treated. Eleven new projects were added to the existing 310 projects in progress.

### DISCUSSION

Integrated Pest Management (IPM) is a long-term, science-based, decision-making system that uses a specific methodology to manage damage from pests. The District defines pests in its Resource Management Policies as "animals or plants that proliferate beyond natural control and interfere with natural processes, which would otherwise occur on open space lands," and target pests as "plant or animal species that have a negative impact on other organisms or the surrounding environment and are targeted for treatment." IPM requires monitoring site conditions before, during, and after treatment to determine if objectives are being met and if methods need to be revised.

On December 10, 2014 (R-14-34), the District's Board of Directors adopted the Final Environmental Impact Report for the IPM Program and approved the IPM Program and Policy. As a component of the IPM Program, an Annual Report is required to be prepared describing the pest management activities undertaken and comparing past pest control activities, both chemical and non-chemical, on District lands. The IPM Program identified criteria for assessing the program

every year primarily regarding protection of human health in buildings, protection of natural resources in the preserves, training, and clear communication with the public.

The attached Annual Report (Attachment 1) is the second annual report prepared for the IPM Program and describes the IPM activities undertaken in 2016. Some of the highlights from the second year of the program, detailed in the annual report, are listed below:

#### *Summary of Pest Problems*

Thirty-three plant species found on District lands are treated on an on-going basis to control for asset based protection and long-term management. These species have the potential to invade natural areas and displace native species and reduce biodiversity. Of the listed species, seventeen are considered noxious weeds by the State of California. New potential pest control projects were submitted to the IPM Coordinator using the District's new Pest Control Project Form. Potential projects were evaluated using the Project Ranking System developed by the IPM Coordination Team during this year. Eleven new pest control projects were determined to have high priority for treatment on District lands.

#### *Summary of District Pest Control Treatments*

Table 1: Treatment hours by crew type, below, presents the number of hours during the 2016 calendar year expended by staff, contractors, and volunteers controlling pest species on District Natural Areas:

*Table 1: Treatment hours by crew type*

Treatment Method	Hours		
	Staff	Contractor	Volunteer
Brush Cut / Mow	Monitoring and data collection Protocols under development	365	0
Cut		54	316
Dig		299	415
Herbicide		598	0
Pull		343	2152
<b>Total</b>		<b>1659</b>	<b>2883</b>

Manual removal of weeds via pulling remains the most prevalent treatment method at 55% of all hours; herbicide accounts for 13% of all hours. As was the case with the prior year (2015), some monitoring protocols were still in development during the year, and changes to the data collection protocol resulted in data sets that did not permit analyses of some metrics, most significantly the calculation of staff time expended conducting specific treatment methods. Additionally, brushing/mowing of roads, trails, defensible space, or emergency landing zones is not presented because these activities do not change from year to year.

The District has partnered with CalFlora, a non-profit organization, in which treatment data is collected and stored in a cloud based database. During 2016, incomplete legacy data was transferred to CalFlora due to incompatible data sets resulting in unknown staff hours. As data is made available with the use of the CalFlora Database, additional analysis will occur in future years.

Figure 1 below presents an analysis of treatment costs per infested acre, derived from contractor pest treatments data. Although cutting is the most cost effective treatment option, it is limited to a very few plant species (e.g. teasel). Hand pulling target species is the most expensive option, but is also considered the most precise and in most cases the most ecologically sensitive. Future reports will present total summaries of treatment cost per acre; however, because staff time was not tracked per individual treatment method, analysis of cost per acre by District staff cannot be calculated this year.

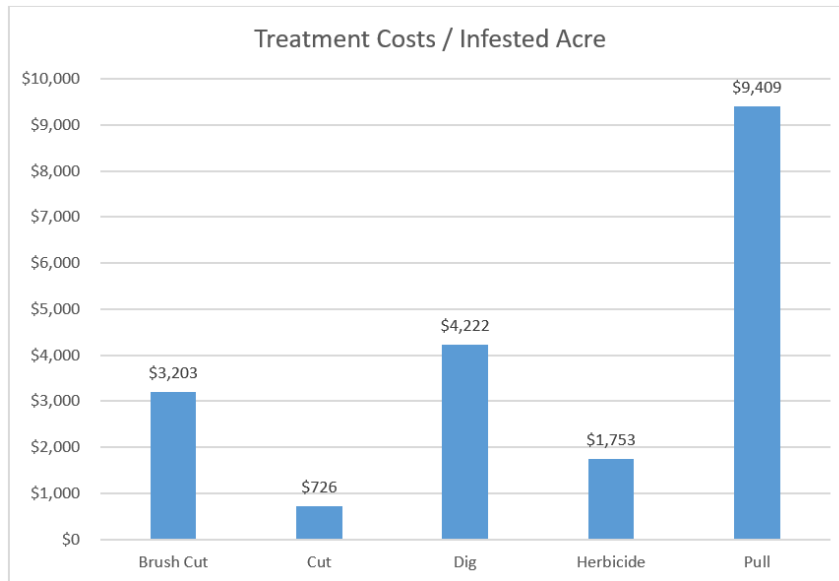


Figure 1: Treatment costs per infested acre

### *Effectiveness of District's Pest Control Program*

When chemical pesticides are used on District lands, the District is committed to the use of lower pesticide exposure classification products in buildings and recreational structures for worker and visitor health and safety. Pesticides used in buildings and at recreational structures in 2016 were consistent with the 6 approved structural pesticides, all of which are “Caution” label (as opposed to “Warning” or “Danger” labels) and therefore pose a reduced risk to workers or occupants of treated buildings.

In natural areas, herbicide and non-herbicide methods were used to control high priority invasive plants to protect and restore native vegetation at preserves. 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 to a level that can be effectively managed with non-herbicidal methods.

Methods used on District lands to reduce pesticide usage include the techniques of mow/spray/mow and timed mowing. To reduce herbicide use, workers will first mow larger vegetation and once the vegetation has re-sprouted to a vulnerable stage, workers apply an herbicide treatment and then re-mow once dead. Staff performed this technique on stinkwort with great success at the Hicks Creek Ranch parking area (Sierra Azul OSP). An additional method employed is timed mowing, for example of yellow star thistle at the Mindego Gateway area of Russian Ridge Open Space Preserve, where the plant is mowed at the specific point in time in its growth cycle when it is most susceptible to the mowing to reduce the density and seed dispersion.

Additionally, 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 5 preserves. In the absence of natural disturbance (i.e. fire), the District periodically does brush removal on grasslands to slow the encroachment.

### *Pesticide Use*

The reporting of pesticide use on District lands includes staff, contractors, and tenants. Table 2 below summarizes the known use of pesticides on District lands, excluding PG&E that is not covered under the District's Integrated Pest Management Program, but is still required to report pesticide use to each County Agricultural Department. All PG&E work is reviewed by District staff and the use of herbicide is limited to the approved pesticide list under the IPM program. The District's herbicide Best Management Practices and mitigation measures are adhered to by PG&E.

*Table 2: Pesticide use by active ingredient*

<i>Pesticide</i>	<i>Active Ingredient</i>	<i>Amount Used (oz)</i>	<i>Acres Treated</i>	<i>Oz/Acre</i>
Fungicide	Potassium salts of phosphorus acid	5011.2	22.6	256
Herbicide	Aminopyralid	9.07	26.44	0.34
	Clethodim	0.00	0.00	-
	Clopyralid	3.08	1.90	1.62
	Glyphosate	3677.1	Measurement Protocols Under Development	-
	Imazapyr	243.32	15.06	16.16
Insecticide	Pyrethrin	420	N/A	N/A
Rodenticide	Cholecalciferol	0	0	0

Recommended application rates, as specified on a product label, vary by Active Ingredient and formulation of any particular pesticide product. For example, the specified application rate for Roundup ProMax with glyphosate as the Active Ingredient ranges from 32 to 160 oz per acre, depending on the target plant species. The specified application rate for Milestone with Aminopyralid as the Active Ingredient ranges from 3 to 7 oz per acre, depending on the target plant species.

As monitoring and data collection protocols were under development for staff in 2016, acres treated for the use of glyphosate was not collected. Thus, ounces of product used per acre cannot be calculated.

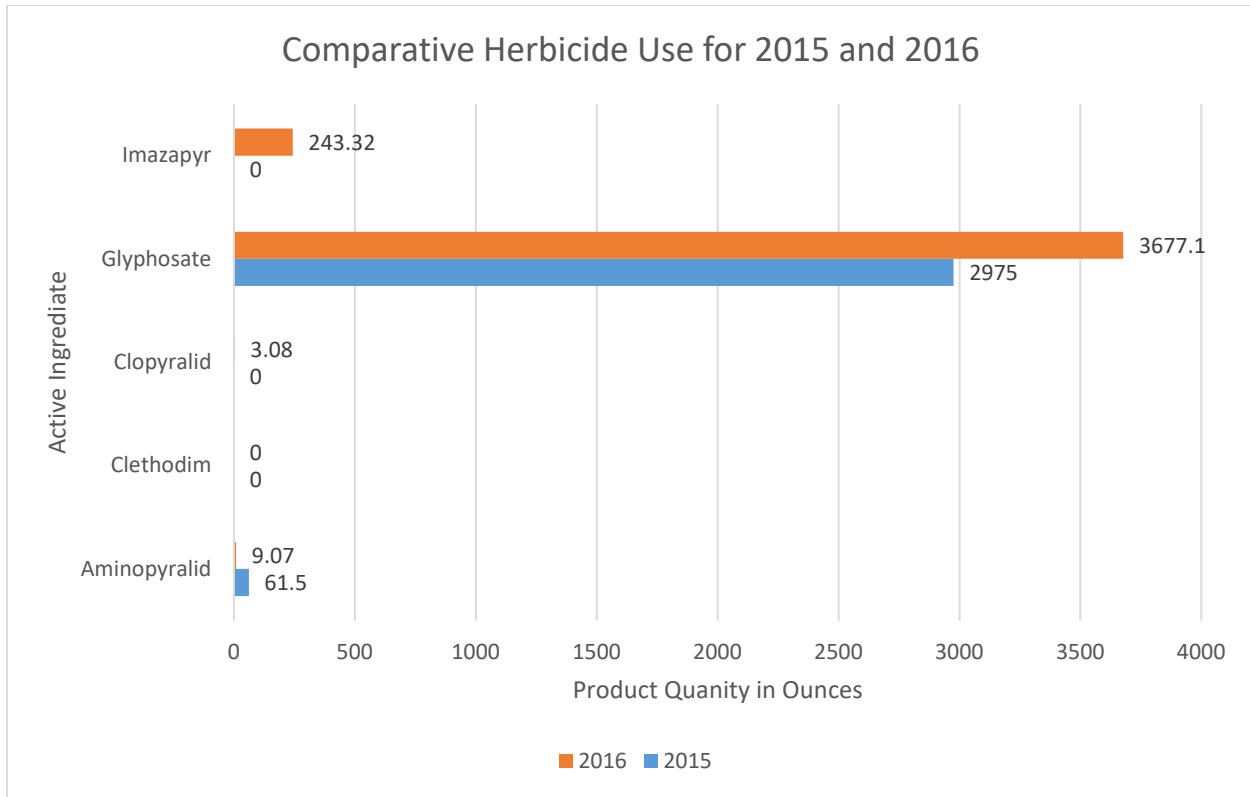


Figure 2: Comparative herbicide use for 2015 and 2016

Figure 2 above presents an analysis of the herbicides used by District staff and contractors to control pest plant species. The main active ingredient used is glyphosate, the active ingredient in Round-Up. Herbicide use has increased over the previous year. This increase is the direct result of intensive invasive species work at Bear Creek Redwoods. The initial knock down period is expected to last three year, after which an increase in both manual and mechanical treatment methods will partially replace the need for chemical applications.

*Public Notification and Inquiries*

Prior to, during, and after the application of a pesticide (including herbicides, insecticides, or other types of pesticides) on District preserves, employees and contractors post signs at the treatment area notifying the public, employees and contractors of the District’s use of pesticide. All contractors notify the District before application on any property, and comply with requirements for notification and posting of signs.

There were no recorded public inquiries relating to the IPM Program.

*Compliance with the Guidance Manual*

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, recommended additions or deletions of approved products will be made by staff. The changes to the Approved Pesticides list in the IPM Program is summarized in the table below. Staff will return to the Board for approval of these changes upon completion of the toxicological analysis of new products. Recommended updates to the List of Approved Pesticides are as follows:

Table 3: Recommended updates to the List of Approved Pesticides

Action	Category	Product	Signal Word	Memo
Substitution	Fungicide	Agri-Fos	Caution	Agri-Fos and Reliant have the same active ingredient. Reliant can be purchased at a reduced price.
		Reliant	Caution	
Addition	Insecticide	Wasp Freeze II	Caution	Toxicological research is now being prepared.
	Insecticide	Python Dust Bag	Caution	Toxicological research is now being prepared.
	Herbicide	Garlon 4 Ultra	Caution	Toxicological research is now being prepared.
	Herbicide	Capstone	Caution	Toxicological research is now being prepared.

Pesticides that have been identified as possible additions to the approved pesticide list under the IPM program are undergoing toxicological review by Blankinship and Associates of Davis, CA. This review is scheduled to be completed by the end of the fiscal year.

### **FISCAL IMPACT**

Receipt of the 2016 Annual IPM Report will not result in a fiscal impact. Implementation of the IPM Program occurs across several different Departments, including Land and Facilities, Visitor Services, and Natural Resources. Each Department separately budgets for pest management activities within the Department operating budget. Future annual reports will include analyses of the budgetary impacts of pest management activities as more data become available.

### **BOARD COMMITTEE REVIEW**

The IPM Policy established direction that an annual review of the IPM Program be completed by the full Board of Directors.

### **PUBLIC NOTICE**

Public notice was provided as required by the Brown Act. Public notice was sent to 168 interested parties and tenants by postal or electronic mail.

### **CEQA COMPLIANCE**

All of the activities undertaken in 2016 to manage pests on District lands, and summarized in this report, were conducted in compliance with the Final Environmental Impact Report for the Midpeninsula Regional Open Space District Integrated Pest Management Program, which was approved by the Board on December 10, 2014.

**NEXT STEPS**

Toxicological review of the additional pesticide will be completed by the end of the fiscal year. After the review, additional CEQA review will be completed and the recommended pesticide products brought to the full Board for possible inclusion on the List of Approved Pesticides.

Attachment

1. IPM Annual Report, 2016

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