
MARIN COUNTY
PARKS
PRESERVATION • RECREATION



IPM Policy, Tools, and Discussion

Katherine Knecht
IPM Specialist
July 2019

INTEGRATED PEST MANAGEMENT (IPM)

What is IPM?

Integrated Pest Management is a science-based approach that combines a variety of techniques. By studying their life cycles and how pests interact with the environment, IPM professionals can manage pests with the most current methods to improve management, lower costs, and reduce risks to people and the environment.

IPM tools include:

- Alter surroundings
- Add beneficial insects/organisms
- Grow plants that resist pests
- Disrupt development of pest
- Prevention of pest problem developing
- Disrupt insect behaviors
- Use pesticides

1 IDENTIFY/MONITOR

Determine the causal agent and its abundance (contact your local extension agent for help).

2 EVALUATE

The results from monitoring will help to answer the questions: Is the pest causing damage? Do we need to act? As pest numbers increase toward the economic threshold further treatments may be necessary.

3 PREVENT

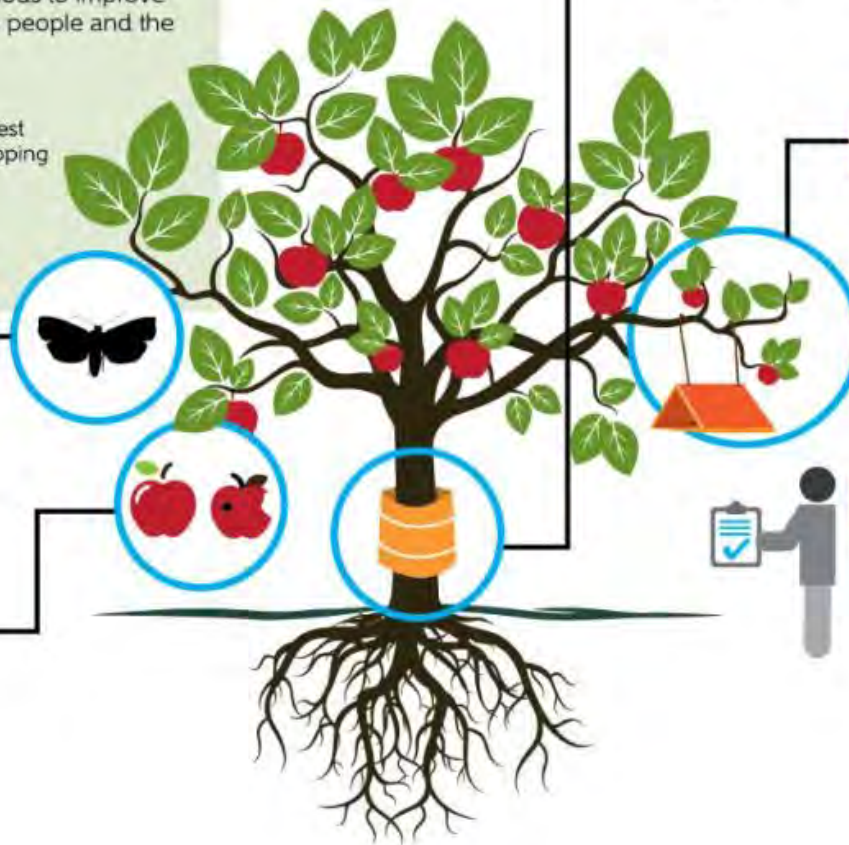
Some pest problems can be prevented by using resistant plants, planting early, rotating crops, using barriers against climbing pests, sanitation, and sealing cracks in buildings.

4 ACTION

IPM uses multiple tools to reduce pests below an economically damaging level. A careful selection of preventive and curative treatments will reduce reliance on any one tactic and increase likelihood of success.

5 MONITOR

Continue to monitor the pest population. If it remains low or decreases, further treatments may not be necessary, but if it increases and exceeds the action threshold, another IPM tool should be used.



OUR IPM PROGRAM

- History:
 - IPM policy created in response to citizen concerns around pesticides
 - IPM Coordinator position created (later, specialist added)
- Program governed by Marin County IPM Ordinance and Policy



FORMATION OF YARDSMART IN RESPONSE TO CITIZEN CONCERN



Pest or weed problem? Stop. Think. Protect.

WHERE?

All sites “owned, leased, or managed” by Marin County

Exceptions:

- open space district
- flood control vegetation removal

IPM Governance

Marin County Ordinance 3598 governs park, structural, and ornamental landscape IPM for 148 locations.



County ordinance 3598 governs IPM for parks, libraries, fire stations, office buildings, traffic medians, other buildings, and ornamental landscapes on county properties across Marin. The Marin County Open Space Preserves are governed by the Parks and Open Space Commission and the Open Space District Board of Directors. They are not covered in this report. Visit marincountyparks.org to view the Vegetation and Biodiversity Report and Work Plan for more information on IPM in the preserve system.

OUR IPM POLICY: HIGHLIGHTS

- IPM Commission established to provide recommendations to Board of Supervisors
- Allowed products list
- Exemption process
- Notifications of pesticide application
- Reporting requirements
- Outlines goals for IPM practices



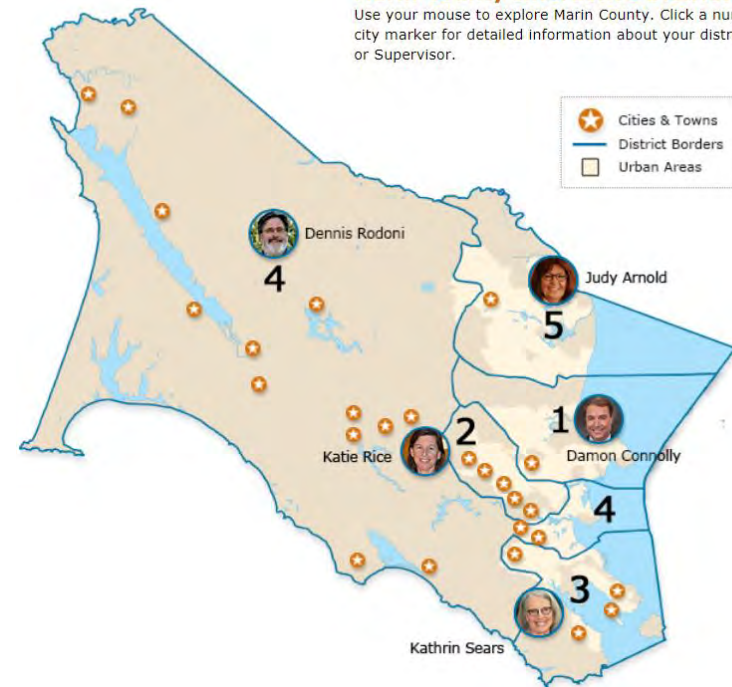
REPORTING IPM WORK

Reporting: pesticide and nonchemical work

- Monthly to the public
- Quarterly to IPM commission
- Annually to Board or Supervisors

Marin County Interactive District Map

Use your mouse to explore Marin County. Click a number or city marker for detailed information about your district, city, or Supervisor.



OUR IPM POLICY: PESTICIDE GOALS

- Signal Word goals: eliminate all “danger” and “warning”
- Organic goals: replace synthetic with NOP organic products
- Prop 65: exemption required, must prove all alternatives have been exhausted (none used this year)
- Reduce the total amount of product used



PESTICIDE USE AT IPM SITES

- Herbicides: roadsides and medians only, for applicator safety
- % organic increase....but total ounces also increased
- Number of products used decreased over time
- Golf course: upper our numbers, but still a HUGE reduction. No longer an IPM site
- MKAT partnership
 - No knotweed currently on county property
 - Surveys to continue

HOW HAS THE IPM POLICY CHANGED OPERATIONS? NON-CHEMICAL LABOR SUMMARY

Labor Hours Year-Over-Year

Year	Staff IPM	Volunteer IPM	Contractor IPM	Total Hours	% Change
2013	13,905	7,654	7,949	29,506	--
2014	15,774	6,678	8,201	30,653	3.7%
2015	20,718	7,983	8,687	37,388	21.9%
2016	26,888	7,086	8,808	42,782	14.4%
2017	25,052	9,439	8,542	43,033	.58%
2018	21,970	10,766	10,563	43,299*	.62%

The County maintains a strong commitment to Integrated Pest Management that emphasizes non-chemical, least toxic methods. Mechanical and manual weed removal, sheet mulching, mowing, trapping, turf aeration, irrigation system improvements, and other site modifications are used in combination to help control various pest populations.

* Equal to 21 full-time staff.



Measure A protects the parks, open spaces, and farmland that make Marin an extraordinary place to live, work, and play.

Measure A's quarter-cent sales tax supports parks, open space, and agricultural lands across Marin. Measure A funds can't be used for any other purpose.



WEEDING

- Hand weed
- Weed Whip
- Mowing



MULCHING

Sheet mulching using the
“Schroeder Method”

- rice straw
- cardboard
- rice straw
- mulch

Gorilla Hair over landscape
fabric for majority of
landscaped areas



PROPANE FLAMING

- Safety concerns
- Good results



TARPING: OCCASIONAL USE

- Raises soil temperature
- Blocks sunlight
- Unselective: seed bank, flora, fauna



(Indiamart.com, 2012)

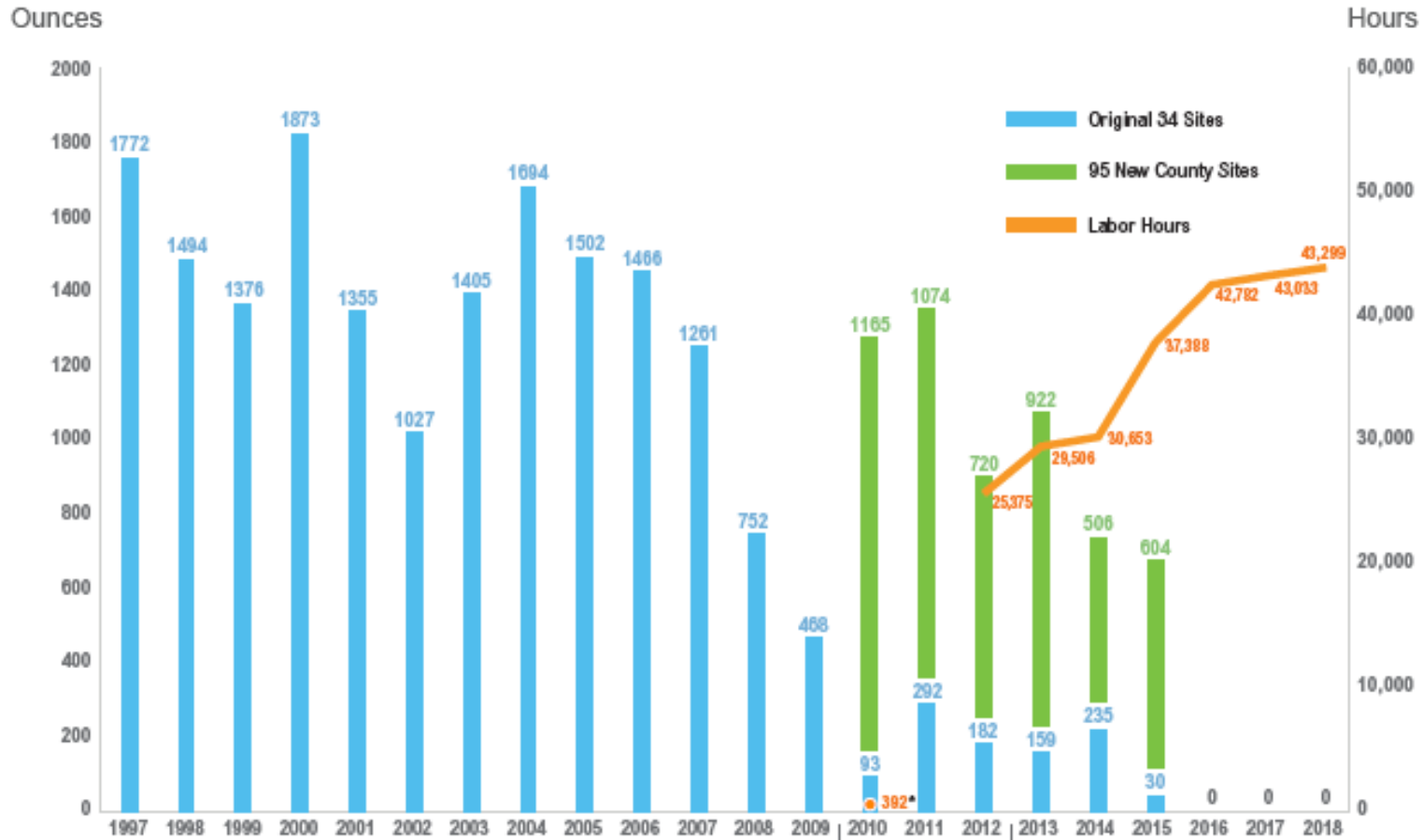
GRAZING IN OPEN SPACE DISTRICT



Glyphosate Use Has Declined to Zero Over Time While Labor Continues to Increase

**

Yearly Glyphosate Use at County Sites vs Labor Hours in Ounces of Glyphosate Concentrate

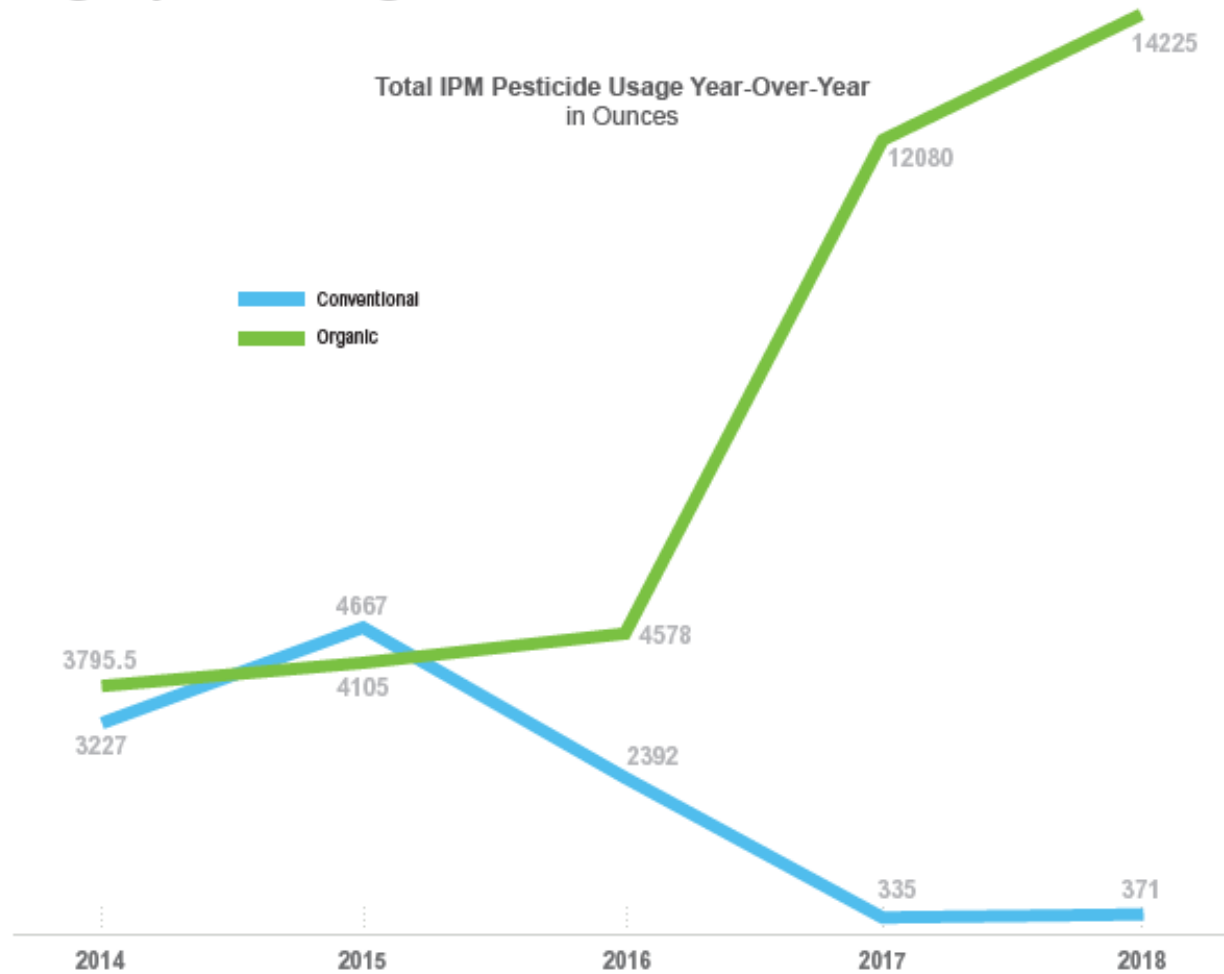


95 new county sites added

McInnis Golf Course added

** at IPM ordinance sites

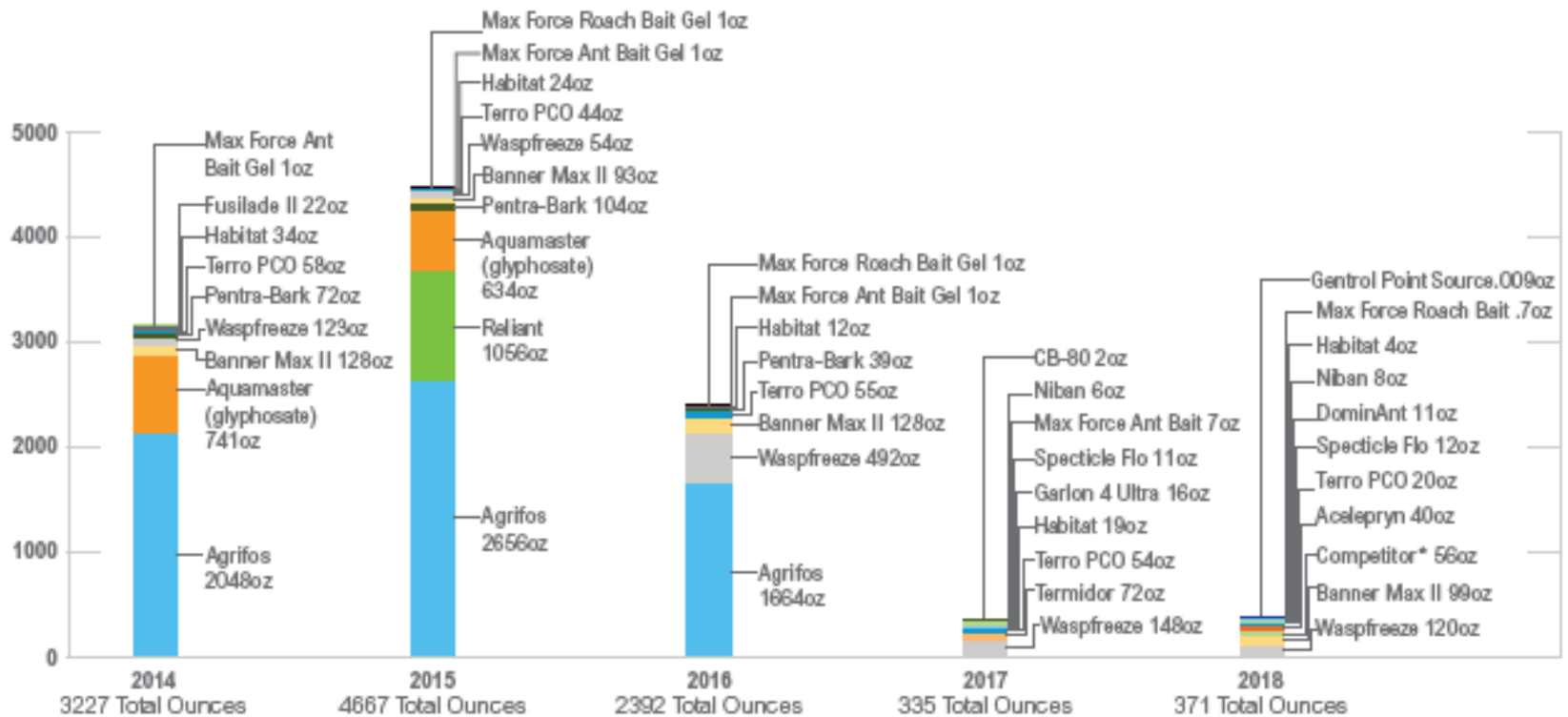
In 2018 conventional pesticide use increased ^{**} slightly while organic use increased 18%.



^{**}at IPM ordinance sites

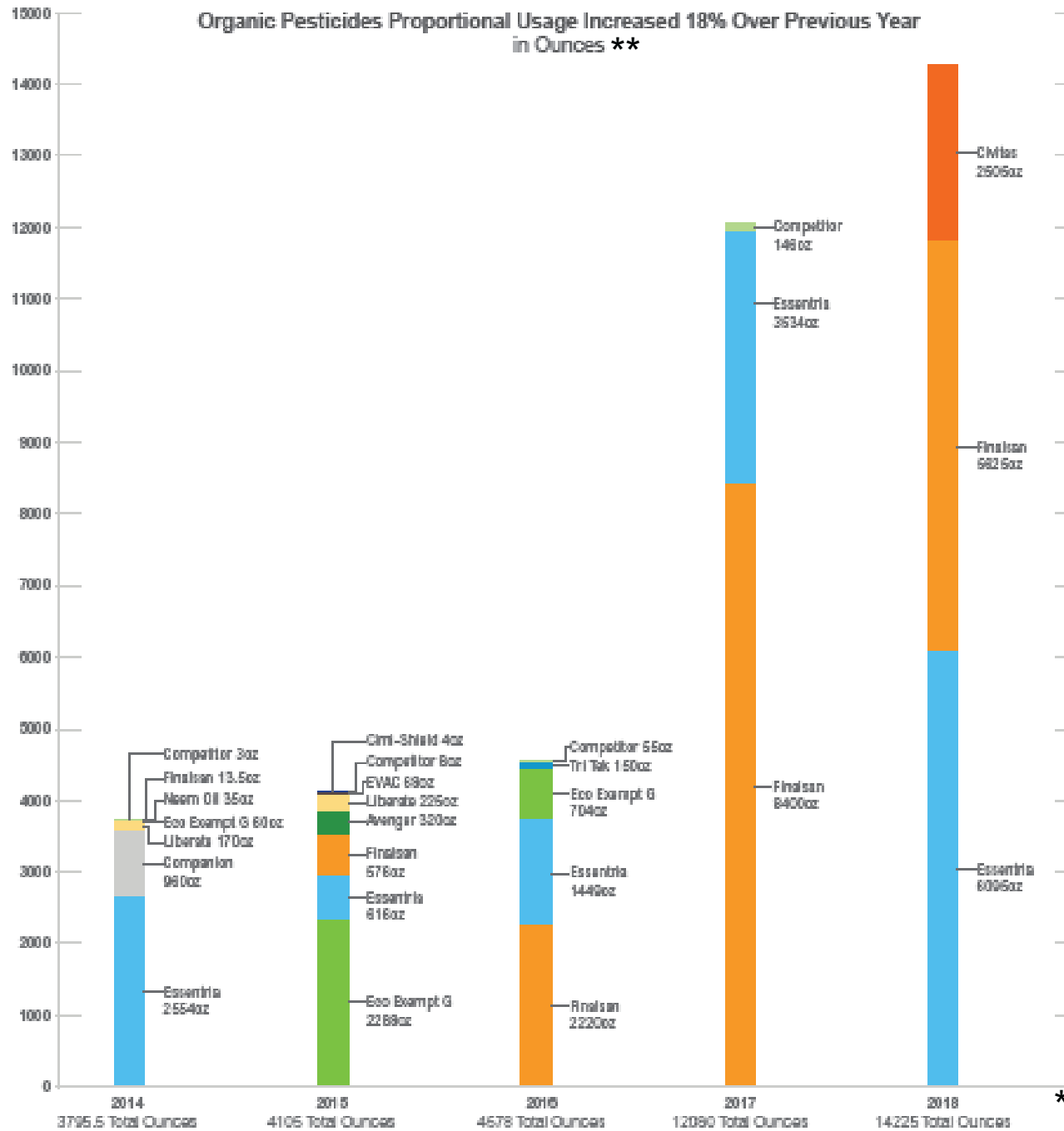
Conventional Pesticide Use**

Use of Conventional Products Increased by 36 Ounces Over Previous Year in Ounces



**at IPM ordinance sites

Organic Pesticides Proportional Usage Increased 18% Over Previous Year in Ounces **



**at IPM ordinance sites

NOTIFICATION REQUIREMENTS

- On site at all entrances and exits: yellow paper, laminated
 - Target pest
 - Active ingredient
 - Product name and EPA reg #
 - Timing and location of application
- Online and over BUGS hotline
- 4 days before, 4 days after: all “conventional” products
- 1 day before, 4 days after: eco-exempt (no signal word, 25B aka minimum risk, or organic)



County of Marin is a leader in ecologically sound Integrated Pest Management (IPM).

Marin County Parks manages landscape and structural IPM at 148 county sites with minimal use of pesticides, protecting people and the environment.

FOR THE PUBLIC

- [Yard Smart Marin](#)
- [Community IPM Management](#)
- [Volunteer Opportunities](#)
- [Apply to be a Commissioner](#)
- [Notice of Pesticide Application 4/24/19-4/25/19 PDF](#)

IPM COMMISSION

- [Meeting Agendas and Archives](#)
- [About the IPM Commission](#)
- [IPM Ordinance \(English\) PDF](#)
- [IPM Ordinance \(Spanish\) PDF](#)
- [IPM Policy \(English\) PDF](#)
- [IPM Policy \(Spanish\) PDF](#)

FOR CONTRACTORS

- [2019 Landscape Allowed Products PDF](#)
- [2019 Structural Allowed Products PDF](#)
- [County Property Locations PDF](#)
- [Pest Specific IPM Plan: Rats PDF](#)

PESTICIDE NOTIFICATION

Imagine me in bright yellow! →



MARIN COUNTY
PARKS
PRESERVATION • RECREATION

NOTICE OF PESTICIDE APPLICATION

Herbicide Name(s):	Weed Slayer and Competitor
Active Ingredient(s):	Eugenol and Ethyl Oleate
Target Pest:	Weeds/Grasses
Area to Be Treated:	Rush Creek Pathway at Atherton Avenue
Application Dates:	4/24/19-4/25/19
Signal Word:	Warning and Caution
EPA/CA Reg #:	N/A and CA 2935-50173
Re-Entry Period:	Until spray has dried
More Information:	Call 473-2847 (473-BUGS) or marincountyparks.org

In accordance with Marin County Ordinance No.3598, Section 23.19.160
Pesticides are applied in accordance with State and Federal regulations.
No applications are made to turf areas, designated play areas or picnic table areas.

MARIN KNOTWEED ACTION TEAM (MKAT)



- Knotweed identified in San Geronimo Valley on public and private lands
- CDFA A-rated noxious weed: “ If found entering or established in the state, A-rated pests are subject to state (or commissioner when acting as a state agent) enforced action involving eradication, quarantine regulation, containment, rejection, or other holding action.”

EDRR: JAPANESE KNOTWEED IDENTIFICATION

- Spade shaped leaves the size of your palm
- Purple stem juvenile
- Spotted green and purple stems that looks like bamboo when mature
- Needs moist soils but loves shade or sun



Photo courtesy of Betsy W. Bikle, Marin Conservation League

QUESTIONS? COMMENTS?



Thank you

Katherine Knecht

kknecht@marincounty.org

415 720-6755