# BAPPG Pesticides Update

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TDC Environmental, LLC

# Presentation Overview

1) Background – The problem; the vision; history
2) Safer Alternatives for pet flea control - Stephanie
3) Urban Pesticides Pollution Prevention (UP3) Partnership
4) POTW Science & Monitoring Partnerships
5) Regulatory Engagement
6) Plans for 2020/2021

Q&A after each segment

# 1. Background

# How do pesticides get into POTWs?

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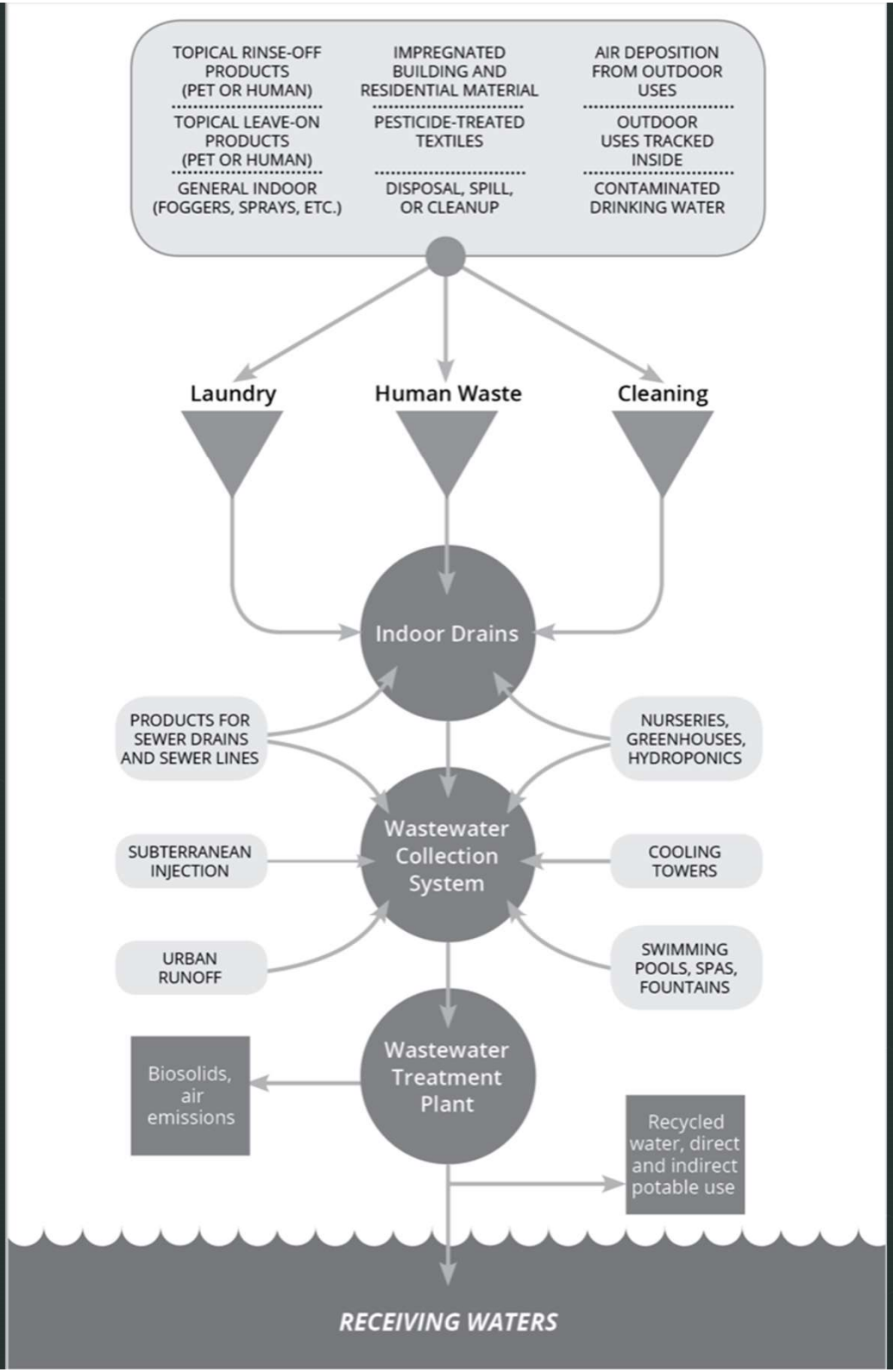
DPR




Sutton, R., Xie, Y., Moran, K., & Teerlink, J. (2019). Occurrence and Sources of Pesticides to Urban Wastewater and the Environment. In K. Goh (Ed.), Pesticides in Surface Water: Monitoring, Modeling, Risk Assessment, and Management (pp. 63-88). Washington, DC: American Chemical Society.

# POTW Pesticides Conundrum

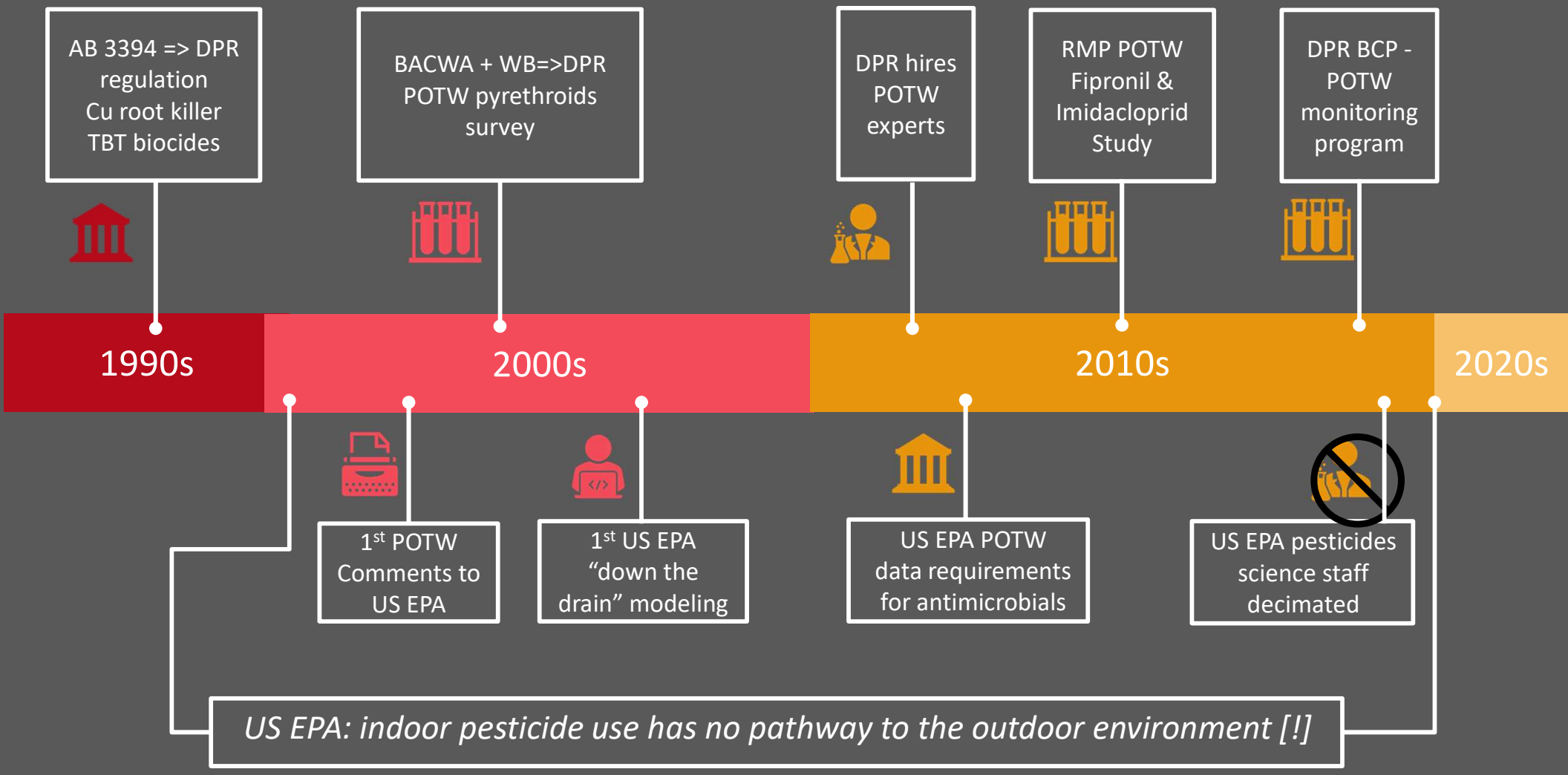
- 100s of Pesticides used & discharged
- Many pass through POTWs
- Some toxic as low as ng/L
- Toxicity in CA surface waters usually linked to current pesticides
- POTW treatment changes unrealistic
  - So many pesticides, such low concentrations!
- **State law prohibits local pesticide regulation**

# BACWA Pesticides Management Vision

1. Focus = Prevention
2. Primary tools = FIFRA/CA Pesticides Law
3. Minimize CWA role in pesticides management

**Progress is Promising!**

# BACWA has engaged in current pesticides management since 1990s



# BACWA is being proactive on pesticides

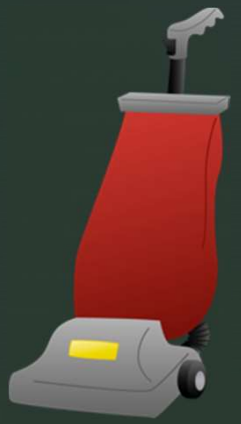
- Safer Alternatives (BAPPG)
- Science & Monitoring Partnerships (RMP, DPR)
- Regulatory Engagement (Pesticide workgroup)

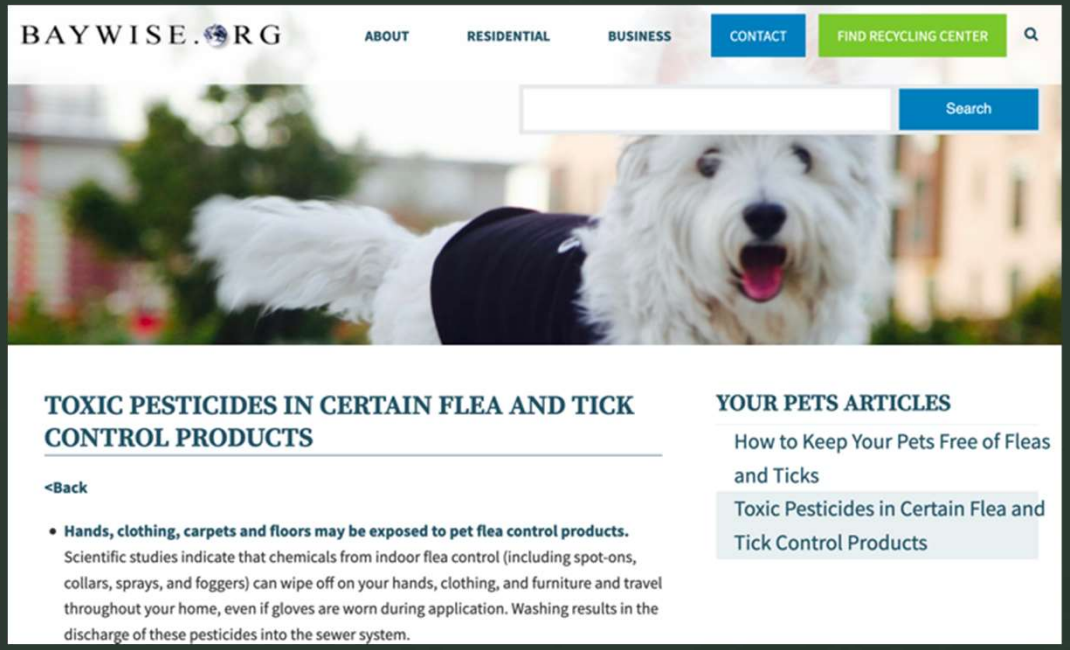
# Q&A

# 2. Safer Alternatives

# BAPPG/BACWA is being proactive on pesticides

*Safer Alternatives*




Stephanie Hughes, P.E.
Santa Clara University

# Our Concerns

- *Pesticides from common flea control products are reaching the sewer systems.*
- *Pesticide concentrations subsequently discharged into San Francisco Bay can exceed toxicity thresholds for aquatic invertebrates*

Pesticides of concern are those that are known or suspected to pass through POTWs at concentrations exceeding toxicity thresholds for sensitive aquatic organisms

- Bifenthrin
- Deltamethrin
- Fipronil *
- Imidacloprid *
- Indoxacarb
- Permethrin

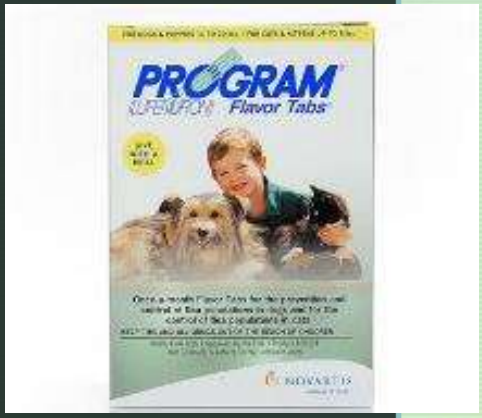
* Uses of fipronil and imidacloprid are currently under review by the California Department of Pesticide Regulation due to possible health risks posed to adults and children.

# Our Outreach Messages

- **Most Important**: mechanical controls (vacuuming, bed washing)
- **Avoid**: topical collars and spot products
- **Avoid**: fipronil, indoxacarb, imidacloprid, bifenthrin, deltamethrin, and permethrin
- When appropriate, consider **oral medication**

# How Oral Medications Work

- Systemic
  - Requires adult flea to bite the animal
- Active ingredient in most are adulticides
  - The active ingredient in Program is an insect growth regulator
- Typically monthly or quarterly doses
- Although rare, adverse reactions can include vomiting, lethargy
- Prescription rather than OTC (therefore regulated by FDA, not EPA)





# A family of new oral medications began in 2013

- New family of chemicals - Isoxazolines
- These are for dogs only
- In September 2018, the FDA sent out a press release about possible negative impacts such as muscle tremors, ataxia, and seizures They consider this class of chemicals to remain a safe and effective alternative.


# What about effectiveness of orals versus topicals?

- Orals appear to be more effective
  - More accurate application method?
  - More direct approach (flea bites animal rather than happens upon the topical application)?
  - The active ingredient is within the pet's bloodstream rather than being licked off or diluted around the home

*"In this study systemically acting insecticides such as nitenpyram, and the topically applied but systemically active insecticide selamectin, were* ***more effective*** *in interfering with flea blood feeding* ***than were imidacloprid and fipronil."***

REF: "Flea blood feeding patterns in cats treated with oral nitenpyram and the topical insecticides imidacloprid, fipronil and selamectin," McCoy, c., et al., Veterinary Parasitology, Vol. 156, pp 293-301, 2008.

# Meanwhile the flea pyramid suggests that relying on on-pet treatments may not be most effective


"Flea Control Failure? Myths and Realities," Halos, L., et al., Trends in Parasitology, May 2014.

# AVMA Messages

- *Treating only your pet won't eliminate the problem*
- *Reduce the flea population in your house by thoroughly cleaning your pet's sleeping quarters and vacuuming floors and furniture*
- *Careful and regular vacuuming/ cleaning of pet living areas helps remove and kill flea eggs, larvae, and pupae*


American Veterinary Medical Association, "External Parasites" brochure from AVMA web site, lasted updated December 2009.

# Our message about avoiding specific active ingredients is being hampered

To reduce theft, box stores are providing shelf-tags to consumers (rather than actual product boxes), typically with incomplete information. The consumer only sees the complete label information AFTER purchase.

*Advantage II contains imidocloprid and pyriproxyfen*


*Frontline Plus contains fipronil and S-methoprene*


This leads us to conclude that our message about avoiding all topicals and collars is a simpler and stronger message.

# We are reaching out to local veterinarians

- Speaking at Veterinary Medical Association (VMA) meetings
- Providing articles for VMA newsletters
- Speaking at vet tech classes
- Reaching out to the larger vet businesses
- Providing web sites for additional reference

WINTER 2019

SFVMA | SAN FRANCISCO VETERINARY MEDICAL ASSOCIATION

QUARTERLY NEWSLETTER

THE CONTRA COSTA VETERINARY MEDICAL ASSOCIATION

SANTA CLARA VALLEY VETERINARY MEDICAL ASSOCIATION

NEWSLETTER

# HELP PET OWNERS AVOID EXPOSURE TO THE TOXIC CHEMICALS IN TOPICAL FLEA & TICK CONTROL PRODUCTS

## INDOOR FLEA AND TICK TREATMENTS LEADING TO ENVIRONMENTAL AND PUBLIC HEALTH CONCERNS

To avoid exposing pets, their owners, and Bay Area waterways to toxic pesticides, members of the Bay Area Clean Water Agencies (BACWA) are urging veterinarians and other animal care professionals to recommend their clients to use oral medications for fleas and tick control, and to discourage the use of topical treatments.

There is increasing evidence that pesticides from flea and tick control products such as spot-on treatments, collars, indoor foggers and sprays are finding their way into our local waterways, sometimes at concentrations above toxicity thresholds for aquatic species. The California Department of Pesticide Regulation (DPR) is also currently reviewing uses of fipronil and imidacloprid, the active ingredient in many common spot-on topicals, due to possible human health risks.

## HELPFUL TIPS:

- **Oral medications may be more effective than topical spot treatments while reducing the pet owner's exposure to toxic chemicals.** According to some scientific studies, oral flea and tick medications appear to be more effective than topical treatments and collars possibly because they are easier to use as directed. Some oral flea control products also control ticks and other parasites, such as hookworms, roundworms, and/or heartworms.
- **The best way for pet owners to avoid flea problems may be to use oral medications and vacuum at home regularly to thoroughly remove larvae and eggs.** It is estimated that adult fleas only account for five percent of the total flea population. The other 95 percent are eggs, larvae and pupae laying around the home.
- **Vets are a trusted source for flea and tick control information.** Please help us educate Bay Area pet owners about the efficacy of oral medications and the toxicity of pesticides in spot-on treatments.

In response to this emerging concern, BACWA has compiled relevant information on our website to help veterinarians and other animal care professionals better understand human health and environmental concerns with topical indoor flea and tick control. For scientific insights, links to ongoing studies, and recommendations for your clients, visit: baywise.org/business/veterinary. Information for pet owners can be found at: baywise.org/residential/pets.

BACWA welcomes your feedback on messages and materials as we educate the public about both the potential human health and environmental impacts of flea and tick control products. Please direct feedback or questions to **Stephanie Hughes**, the BACWA outreach representative, who can be reached at **sehughes@scu.edu** or **(408) 499-9271**.

**NOTES:**

BACWA represents 55 publicly owned wastewater treatment facilities and collection system agencies serving nearly 7.2 million San Francisco Bay Area residents. BACWA is concerned with pesticides that have transport pathways to the sanitary sewer; even the most sophisticated wastewater treatment plants cannot fully remove complex chemicals like pesticides.

The photos above are part of a study in which researchers incorporated a fluorescent dye into a spot treatment to document the spread of the application. Photographs are reprinted from Bigelow Dyk, M., et al. (2012). Fate and distribution of fipronil on companion animals and in their indoor residences following spot-on flea treatments. Journal of Environmental Science and Health, Part B: Pesticides, Food Contaminants, and Agricultural Wastes, 47(10): 913-924. Reprinted by permission Taylor & Francis LLC.

# We are using social media to advertise our web page

# Web pages for vets

## VETERINARY RESOURCES

### Help Pet Owners Avoid Exposure to Toxic Chemicals in Topical Flea & Tick Control Products

***Indoor Pet Flea and Tick Treatments Leading to Environmental and Public Health Concerns***

To avoid exposing pets, their owners and Bay Area waterways to toxic pesticides, members of the Bay Area Clean Water Agencies (BACWA) are encouraging professionals to recommend their clients to use oral medications to control fleas and ticks, and to discourage the use of topical treatments.

There is increasing evidence that pesticides from external flea and tick control products including spot-on treatments, collars, indoor foggers and sprays are finding their way into our local waterways, sometimes at concentrations above toxicity thresholds for aquatic species. The California Department of Pesticide Regulation (DPR) is also currently reviewing uses of fipronil and imidacloprid, the active ingredients in most spot-on topical treatments, due to possible human health risks.


*"Dog and cat flea treatments*

# Web pages for pet owners

## YOUR PETS

### Flea and Tick Control

Products commonly used to treat fleas and ticks, including spot-on treatments, collars, sprays, and foggers, contain toxic pesticides that can easily spread around your home. Toxic pesticides from these treatments can also end up in our local waterways when you: wash your pet; wash bedding, clothing, floors, carpets or upholstery that comes into contact with your pet; and neglect to dispose of pet waste in the trash.

To avoid exposing your pets, family and Bay Area waterways to toxic pesticides, **please speak to your vet about using oral medications to control fleas and ticks**, and review our recommendations for keeping your pets safe.

- **How to Keep Your Pets Free of Fleas and Ticks**
- **Important Facts about Toxic Chemicals in Certain Flea and Tick Control Products**

*"Dog and cat flea treatments suspected of polluting San Francisco Bay" by Paul Rogers, San Jose Mercury News, published November 7, 2017"*

# Q&A

# 3. UP3 Partnership

Teamwork = Success

# Urban Pesticides Pollution Prevention (UP3) Partnership

*UP3 Partnership is an informal network with expert staff support*

- Combined, coordinated actions of dozens of agency and NGO partners
- Hard work by talented agency staff and diligent scientific researchers
- Funding from the Water Boards, CASQA, BACWA, and individual municipalities
- Leadership and scientific / regulatory support provided by Kelly Moran, Ph.D. and the staff team

# UP3 Partnership Activities

1. Regulatory

   Agency communication & regulatory document scientific reviews

2. Science

   Literature review & networking with scientific community

3. Communications/collaboration

   with UP3 partners

# UP3 Partnership History

- BACWA, CASQA, CA Water Boards => same vision
- 1990s - Informal Partnership formed (Urban Pesticides Committee)
  - Communication/collaboration with NGOs, research community
  - Dialog with pesticide regulators, users, and manufacturers
- 2000 -> 2019 - Invested in expert staff
- 2020 – *On hiatus/future uncertain*
  - Lead funders: SF Bay Water Board (2001 –early 2012); CASQA (mid-2012 – 2019)
  - No lead funder for 2020
    - POTWs have never been lead funder

# UP3 Partnership Staff

Kelly D. Moran,
Ph.D. (Chemistry)

Armand
Ruby, M.S.
(Biology)

Tammy
Qualls, P.E.

Stephanie
Hughes, P.E.

## Extensive Pro-Bono Support

Dave Tamayo, M.S.
(Entomology)
Sacramento County

## Former Staff

Jen Jackson, M.A.
Now with SF Environment

Laura Speare
Professional writer

Athena Honore
SF Estuary Partnership

# UP3 Partnership POTW Accomplishments

- US EPA and DPR today recognize that pesticides can pass through POTWs and occur in effluents and biosolids (previously indoor pesticides were not believed to reach the environment).
- DPR hired wastewater expert Ph.D. scientists.
- DPR is developing a POTW model and preparing to make POTW discharge review a routine part of its pesticide registration process.
- US EPA developed a simple model to estimate pesticide pass through into effluent and often uses this model to evaluate pesticides.
- US EPA adopted testing requirements for antimicrobial pesticides so that they have data to evaluate potential for pesticides to cause process interference or to occur in effluent.
- US EPA's Pesticides and Water Offices collaborated to harmonize pesticides toxicity evaluation methods.
- DPR required pyrethroids manufacturers to work with POTWs on the POTW pyrethroids survey.
- DPR joined BACWA and SFEI in the RMP fipronil/imidacloprid study.
- DPR washed dogs to prove that pet flea pesticides are discharged to sewers.
- DPR established a permanent POTW pesticides monitoring program in 2019.
- Water Boards and DPR updated their Management Agency Agreement, to clarify their respective roles and achieve better coordination on addressing water quality impacts, particularly in urban areas.
- USGS and academic researchers developed chemical analysis methods for the newest pesticides and used them in environmental monitoring studies.
- NGOs joined Water Boards and POTWs to ask US EPA and DPR to prevent pesticides water pollution.
- POTWs will be notified 24 hours prior to all professional root control chemical applications in collection systems.
- When pool maintenance professionals empty biocide-treated swimming pools, they must contact their local government and follow discharge instructions (most, but not all biocides yet)
- US EPA developed aquatic life and human health benchmarks for pesticides and published them online for use in evaluating monitoring data. The human health benchmarks are similar to US EPA Health Advisories.

# Q&A

# 4. POTW science & monitoring partnerships

Science forms the basis for pesticides regulatory engagement

# Pesticides priorities based on ongoing scientific literature review funded by BACWA

**BAPPG/BACWA Wastewater Pesticides Watch List**

***Currently registered pesticides that may occur in wastewater***

| Priority | Basis for Priority Assignment | Pesticides | |
|---|---|---|---|
| 1 – High Concern | a) POTW effluent monitoring data[1] exceeding benchmarks<br>b) Known cause of process interference<br>c) Present in recycled water or biosolids at concentrations that limit use<br>d) SF Bay area receiving water 303(d) listing for the pesticide or degradate | Pyrethroids# (21 chemicals[2])<br>Fipronil#<br>Imidacloprid# | |
| 2 – Moderate Concern | a) Pesticide contains a Clean Water Act Priority Pollutant<br>b) SF Bay area receiving water 303(d) listing for the pesticide, degradate or contaminant that also has non-pesticide sources | Copper pesticides+<br>Silver pesticides+<br>Zinc pesticides (including Ziram)+ | |
| 3 – Possible Concern | Monitoring data[1] approaching or wastewater discharge modeling predicting:<br>a) effluent or receiving water benchmark exceedances<br>b) process interference<br>c) limitations on use of recycled water or biosolids<br>or used for pet flea control | ADBAC+<br>Amitraz#<br>1,2-Benzisothiazolin-3-one (BIT)<br>Bronopol (Bioban)<br>Carbendazim (MBC)<br>Chlorhexidine<br>Chlorinated isocyanurates+<br>Clothianidin<br>DDAC+<br>Dichlobenil^<br>Dinotefuran# | Indoxacarb#<br>IPBC<br>Malathion (lice)<br>Metam sodium^<br>Methoprene#<br>Nanopesticides (all)<br>o-Benzyl-p-chlorophenol<br>Octhilinone<br>*o*-Phenyl phenol<br>Polyhexamethylenebiguanidine (PHMB)+<br>Pyriproxyfen#+ |

# DPR Review: Only 81 conventional pesticides tested at US POTWs

100s of registered pesticides

41 pesticides detected:

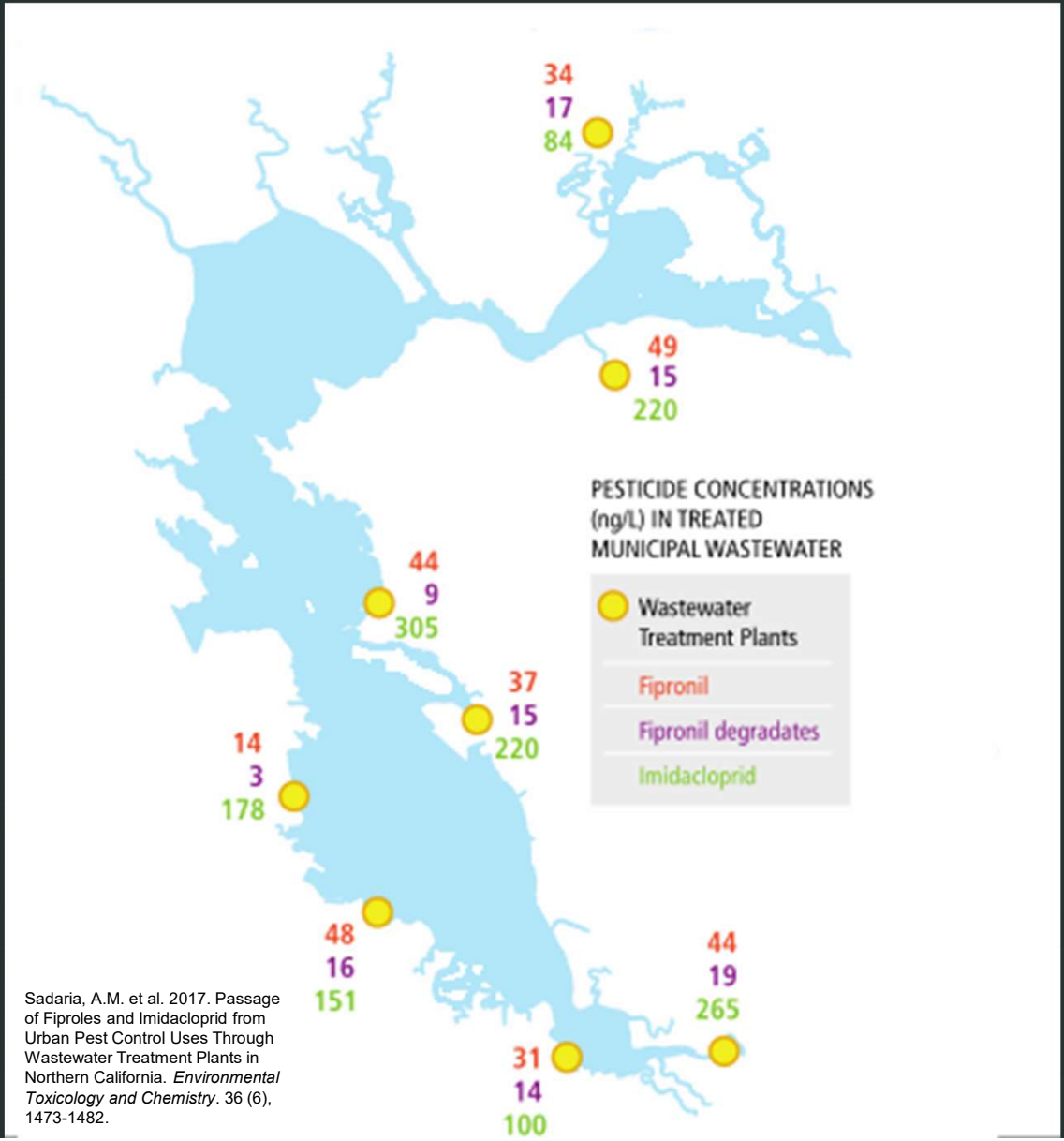
- 20 insecticides and degradates
- 1 insect repellent
- 18 herbicides and degradates
- 2 fungicides
- 1 wood preservative

**Table 1: Occurrence of pesticides in wastewater influent and effluent in the U.S.**

| Pesticide | Inf./ Eff. | Range (ng/L) [a] | Median (ng/L) [b] | DF (%) | No. of Samples | No. of Facilities | References |
|---|---|---|---|---|---|---|---|
| 2,4-D | Eff. | <100-1890 | <100 | 3 | 102 | 52 | (*1*) |
| 2,4-DB | Eff. | <610-7440 | <610 | 10 | 102 | 52 | (*1*) |
| 2,4-Dichlorophenol | Eff. | <19-470 | <19 | 62 | 102 | 52 | (*1*) |
| Acetamiprid | Inf. | 3–4.7 | 3.2 | 100 | 5 | 1 | (*2*) |
| | Eff. | 0.6–5.7 | 1.3–1.7 | 76 | 17 | 13 | (*2*) |
| Acetamiprid-N-desmethyl | Inf. | <0.6 | <0.6 | 0 | 5 | 1 | (*2*) |
| | Eff. | 1.1–1.6 | 1.2 | 100 | 5 | 1 | (*2*) |
| Acetochlor | Eff. | <0.89–240 | 1.3 | 61 | 38 | 3 | (*3-5*) |
| Atrazine | Inf. | 1–67 | 2-18.4 | 100 | 19 | 4 | (*6-8*) |
| | Eff. | <7–390 | <7–29 | 82 | 67 | 16 | (*3-6, 8, 9*) |
| Bifenthrin | Inf. | <0.1–74 | 7.7–20.3 | 96 | 80 | 32 | (*10, 11*) |
| | Eff. | <0.1–14.1 | <1–10.3 | 71 | 92 | 34 | (*10-13*) |
| Carbaryl | Eff. | <0.49–663 | <41 | 9 | 140 | 55 | (*1, 3-5*) |
| Chlorpropham | Eff. | <7.7-72.4 | <7.7 | 3 | 102 | 52 | (*1*) |
| Chlorpyrifos | Inf. | <1–81.9 | 15.2 | 85 | 13 | 1 | (*10*) |
| | Eff. | <1–24.1 | <1–3 | 40 | 30 | 5 | (*3, 4, 10, 13*) |
| Clothianidin | Inf. | <0.9–666.4 | 18 | 80 | 5 | 1 | (*2*) |
| | Eff. | <0.9–347.2 | 12.5–45.3 | 47 | 17 | 13 | (*2*) |
| Cyfluthrin | Inf. | <0.8–55 | <1–8.85 | 74 | 80 | 32 | (*10, 11*) |
| | Eff. | <0.2–4 | <1–0.3 | 42 | 90 | 34 | (*10, 11, 13*) |
| Cypermethrin | Inf. | <0.8–200 | 18–27.3 | 99 | 80 | 32 | (*10, 11*) |
| | Eff. | <0.167–17 | <1–1.3 | 56 | 90 | 34 | (*10, 11, 13*) |
| DEET [c] | Inf. | 413-42334 | 413-10138 | 100 | 18 | 4 | (*6, 7, 14*) |
| | Eff. | <5–13600 | 25–675 | 85 | 171 | 69 | (*1, 5, 6, 14-17*) |
| Deltamethrin | Inf. | <1.6–210 [d] | <3.33 | 42 | 67 | 31 | (*11*) |
| | Eff. | <0.2–2.7 | <1 | 15 | 81 | 34 | (*11, 13*) |
| Diazinon | Eff. | <5–150 | <5–38 | 64 | 25 | 22 | (*3, 4, 9, 15*) |
| Dicamba | Eff. | <300-760 | <300 | 3 | 102 | 52 | (*1*) |
| Dichlorprop | Eff. | <300-370 | <300 | 1 | 102 | 52 | (*1*) |
| Diuron | Eff. | <4–775 | <4 | 46 | 102 | 52 | (*1*) |
| Esfenvalerate | Inf. | <1.6–360 [d] | <1.67–2.3 | 46 | 67 | 31 | (*11*) |
| | Eff. | <0.167–3.7 | <1 | 27 | 81 | 34 | (*11, 13*) |
| Fenpropathrin | Inf. | <0.8–130 [e] | <1.67 | 4 | 67 | 31 | (*11*) |
| | Eff. | <0.167–0.8 | <1 | 2 | 81 | 34 | (*11, 13*) |
| Fipronil | Inf. | <20–146 | 30–70.5 | 66 | 41 | 33 | (*18, 19*) |
| | Eff. | <0.5–340.3 | 30–104.3 | 67 | 57 | 40 | (*3, 4, 18-20*) |
| Fipronil amide | Inf. | <0.3 | <0.3 | 0 | 8 | 8 | (*19*) |
| | Eff. | <0.3–19.8 | 1.25–6.7 | 95 | 21 | 13 | (*19, 20*) |
| Fipronil desulfinyl | Inf. | <0.5–5.5 | <0.8 | 19 | 16 | 8 | (*19*) |
| | Eff. | <0.5–30.8 | <0.8–9.4 | 56 | 32 | 15 | (*3, 4, 19, 20*) |
| Fipronil sulfide | Inf. | <0.5–5.2 | 1.95–2.05 | 81 | 16 | 8 | (*19*) |
| | Eff. | <0.5–52.2 | <5–8.4 | 81 | 32 | 15 | (*3, 4, 19, 20*) |
| Fipronil sulfone | Inf. | <0.5–31.2 | 8–23.05 | 94 | 16 | 8 | (*19*) |
| | Eff. | <0.5–79.1 | <5–30.7 | 88 | 32 | 15 | (*3, 4, 19, 20*) |
| Fluridone | Eff. | <7.7-27 | <7.7 | 1 | 102 | 52 | (*1*) |
| Glyphosate | Eff. | <100–2000 | <100 | 27 | 11 | 10 | (*9*) |
| Imazapyr | Eff. | <40-17200 | <40 | 9 | 102 | 52 | (*1*) |
| Imidacloprid | Inf. | 30–306.1 | 51.4–160.7 | 100 | 21 | 17 | (*2, 19*) |
| | Eff. | 18.5–305.2 | 48.3–164.2 | 100 | 25 | 21 | (*2, 19*) [f] |
| Lambda- | Inf. | <0.8–72 | 2.4–16 | 78 | 80 | 32 | (*10, 11*) |

Sutton, R., Xie, Y., Moran, K., & Teerlink, J. (2019). Occurrence and Sources of Pesticides to Urban Wastewater and the Environment. In K. Goh (Ed.), Pesticides in Surface Water: Monitoring, Modeling, Risk Assessment, and Management (pp. 63-88). Washington, DC: American Chemical Society.

# Pyrethroids, fipronil and imidacloprid pass through POTWs at concentrations > toxicity thresholds for sensitive organisms




Sadaria, A.M. et al. 2017. Passage of Fiproles and Imidacloprid from Urban Pest Control Uses Through Wastewater Treatment Plants in Northern California. *Environmental Toxicology and Chemistry*. 36 (6), 1473-1482.

<u>Fipronil & imidacloprid data</u>:

RMP special study *BACWA/DPR partnership*

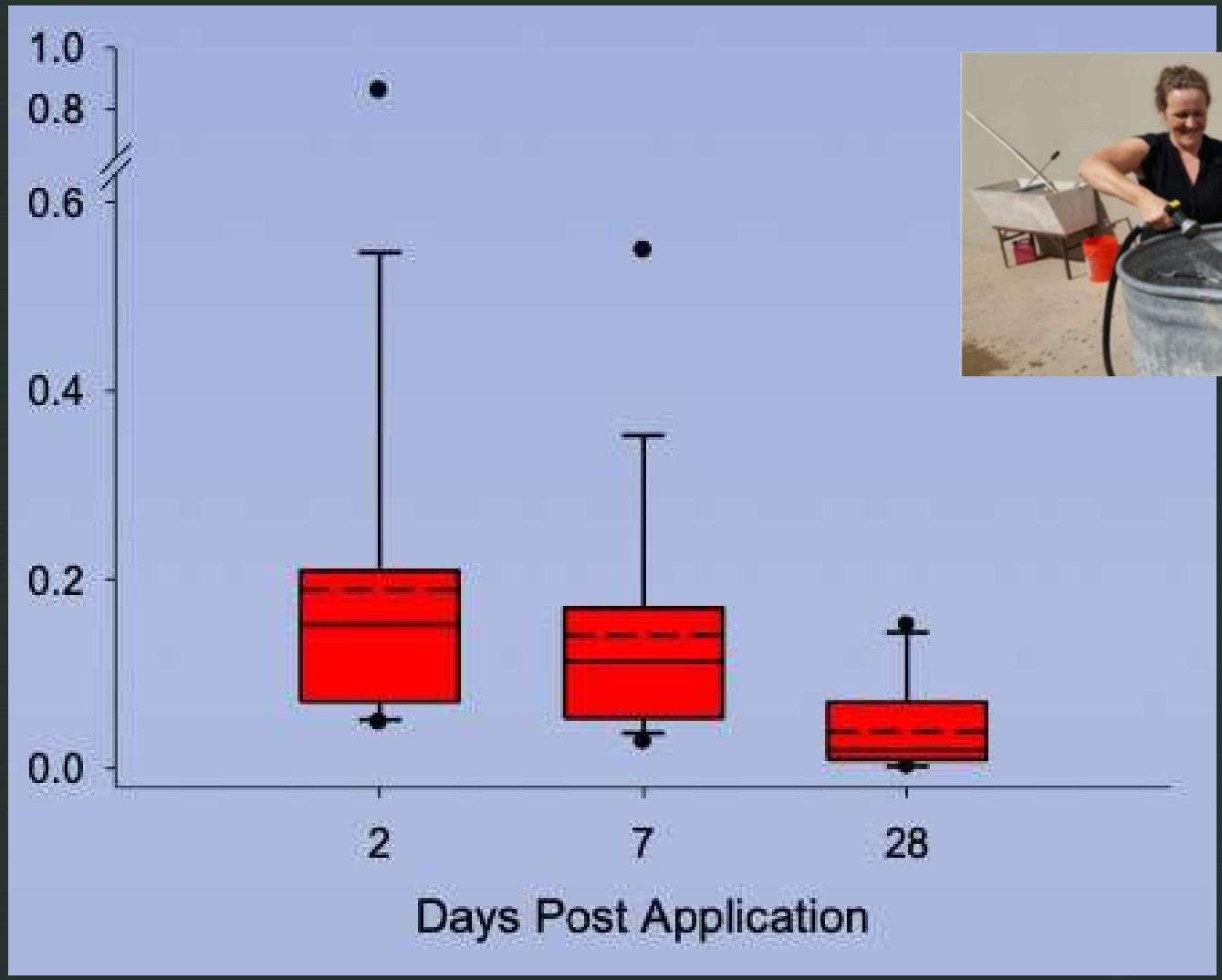
<u>Pyrethroids data</u>:

POTW Pyrethroids Survey (*DPR, CASA, Pyrethroids Working Group partnership*) & Las Gallinas

# Pet treatments do not stay on the pet

Photo: Bigelow Dyk, M., et al. (2012). Fate and distribution of fipronil on companion animals and in their indoor residences following spot-on flea treatments, Journal of Environmental Science and Health, Part B: Pesticides, Food Contaminants, and Agricultural Wastes, 47(10): 913-924. Reprinted by permission Taylor & Francis LLC.

# DPR: Fipronil washes off pets



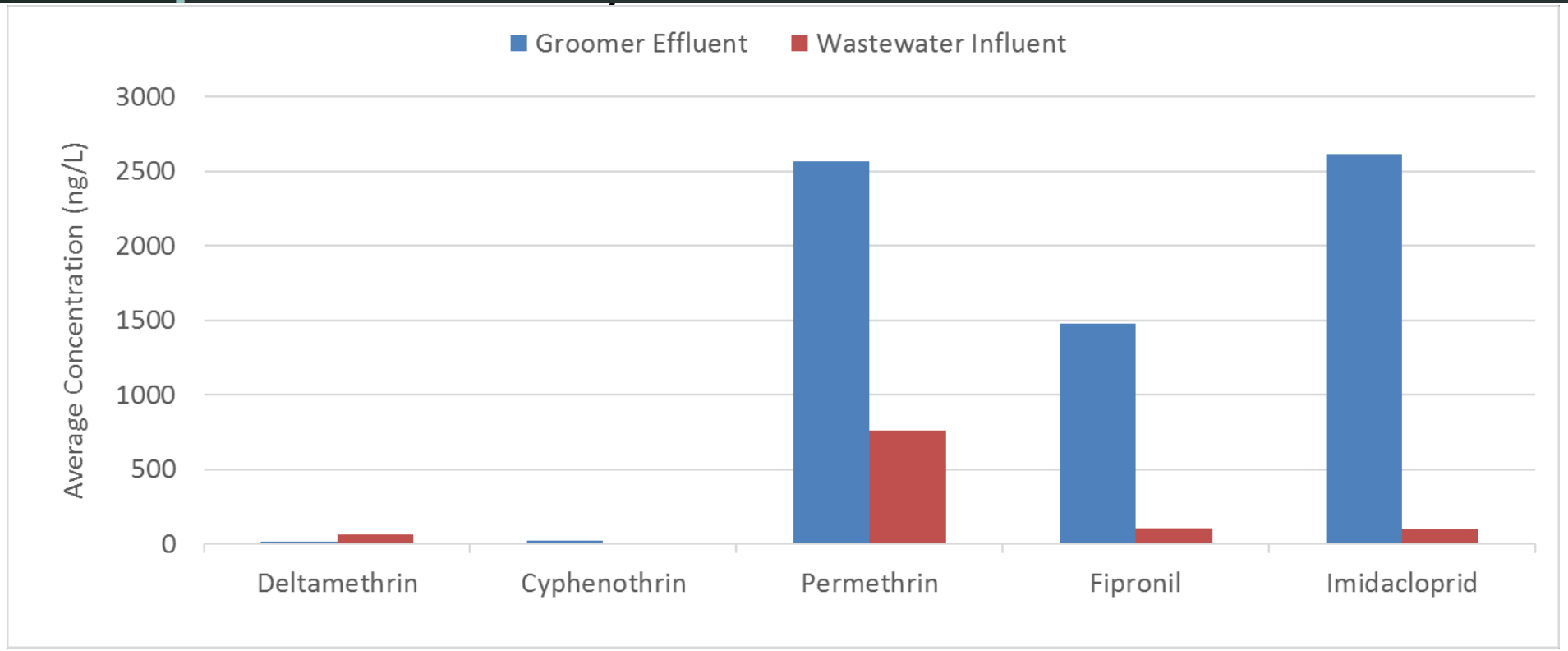

Teerlink, J., Hernandez, J., & Budd, R. (2017). Fipronil washoff to municipal wastewater from dogs treated with spot-on products. *Sci Total Environ, 599-600*, 960-966. Photos: DPR

# Palo Alto Sewershed

- Routine Monthly Sampling
  - 10 sub-sewershed laterals
  - Influent **8 dates**
  - Effluent
- Specialty Sites
  - Laundromat
  - Pest Control Operator (PCO)
  - Groomer ★ **4 dates**
- 24-hour time-weighted composites


Slide source:
California DPR

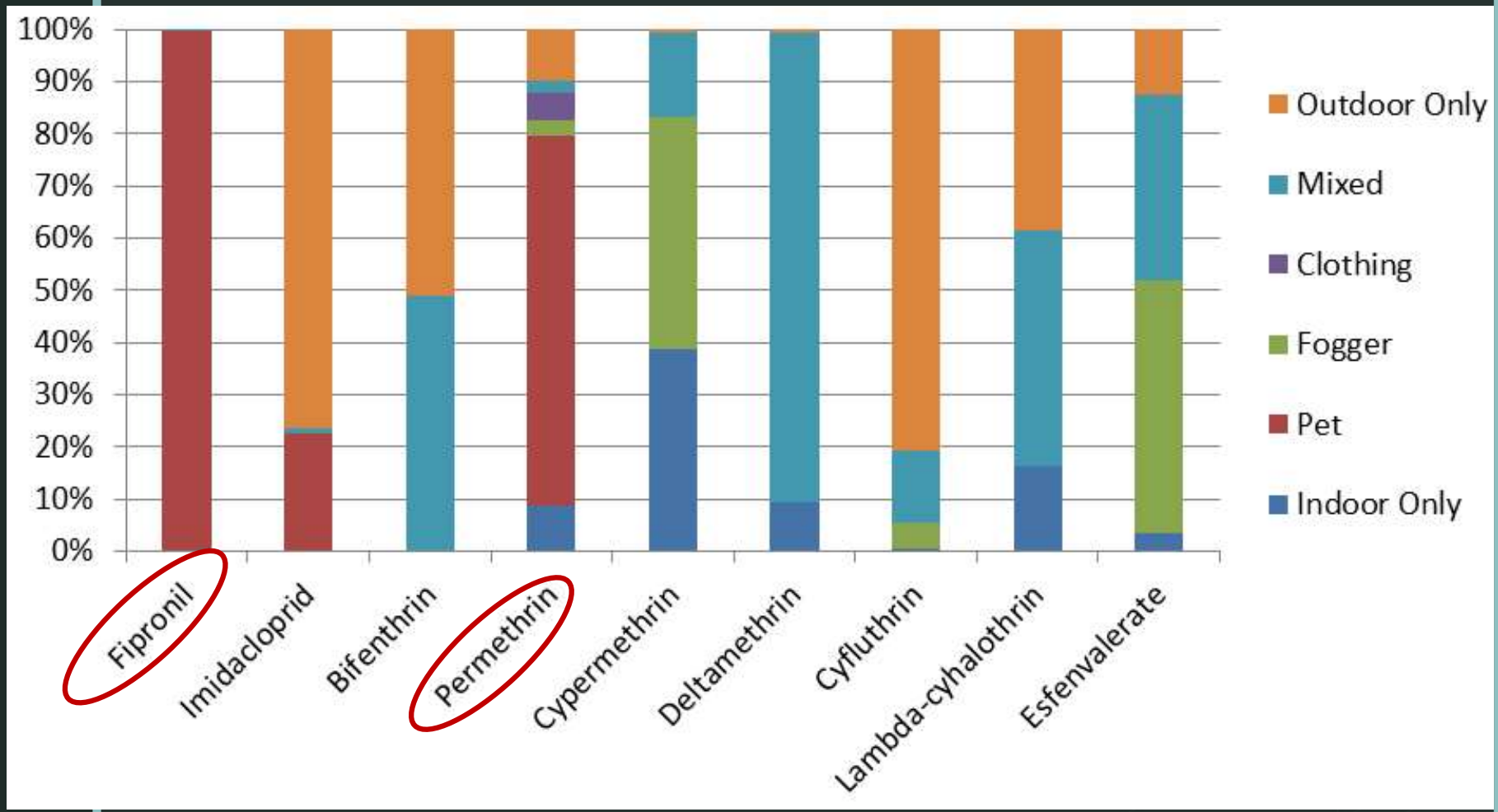
# DPR Palo Alto Sewershed study: Groomers discharge pesticides in pet flea control products




Unpublished data from California DPR

# DPR analysis: indoor & outdoor urban pesticides use

Most fipronil & permethrin used on pets
Note cypermethrin & esfenvalerate foggers




Unpublished data from California DPR

# DPR establishing permanent POTW monitoring network

*First such network in the world!*


Map Source: California DPR

- DPR mapped all California POTWs
- Identifying POTW volunteers in all regions
- Influent, effluent biosolids
- Sewershed studies

# Q&A

# 5. Regulatory engagement

- Advocate POTWs be addressed
- Educate regulators about POTWs & CWA
- Formal = Letters (*see BACWA website*)
- Informal = Meetings & science conferences

# BAPPG/BACWA Pesticides Workgroup

*Monthly meetings to guide regulatory engagement*

James Parrish
Water Board

Autumn Cleave
SFPUC

Susan Hiestand
SVCW

Josh Bakin
Palo Alto

Debbie Phan
Water Board

Karin North
Palo Alto

Robert Wilson
Petaluma

Rebecca Nordenholt
Water Board

Regulatory engagement to builds prevention into pesticides regulatory processes

# Current Priorities

1. Pesticide pass-through
   - Pyrethroids, Fipronil, Imidacloprid
   - In undiluted effluent > toxicity thresholds
2. Operational Safety
   - Worker safety
   - Spill avoidance
3. Prepare for direct potable reuse NEW!
   - Protect human health
   - RO concentrate disposal

# US EPA Office of Pesticide Programs

- Registers pesticides
  - Denials exceptionally rare
- Reviews pesticides every 15 years ("Registration Review")
  - Data requirements
  - Risk assessment
  - Risk management
- No nationwide environmental monitoring
- Preempts some state authorities
  - Controls pesticide label language

# EPA schedules tough to anticipate

*Some actions do not have formal notices*

## BACWA & CASQA Pesticide Tracking List - EPA Registration Review

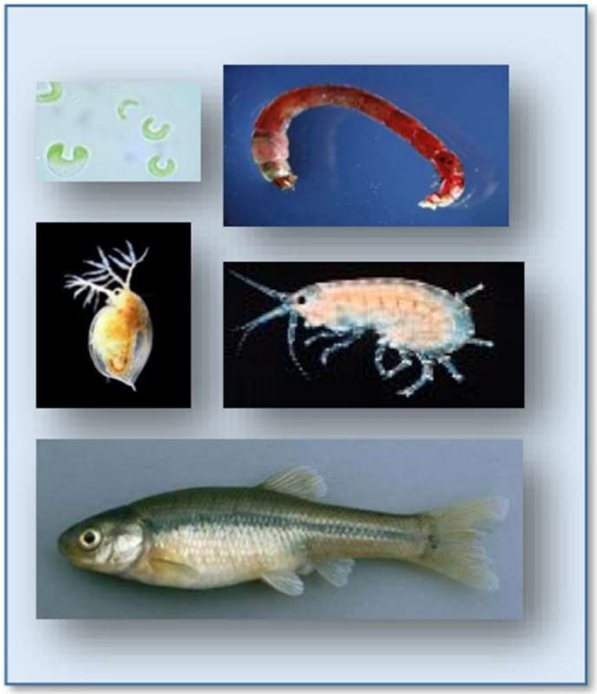
| Pesticide | Docket opening* | Final Workplan | Prelim Risk Assmt** | Draft Decision** | TQ estimate | Final Decision | Notes | Docket number(s) | Schedule Notes | On BACWA tracking | On CASQA tracking list | T( re fc |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Abamectin | [] | 12/1/13 | 2/13/18 | 4-Feb-19 | | 8/6/19 | CV WB high relative risk; UP3 watch (toxicity); currently all urban products are for landscapes or are containerized baits | EPA-HQ-OPP-2013-0360 | | [] | [] | X |
| Amitraz | [] | 9/15/10 | 11/30/2018 (later extended) | | | | | EPA-HQ-OPP-2009-1015 | | [] | | X |
| 1,2-Benzisothiazolin-3-( | [] | 12/31/14 | Jan-Mar 20 | Jul-Sept 2020 | | | "BIT" | EPA-HQ-OPP-2014-0159 | | [] | | X |
| Bromacil | [] | 12/7/12 | 5/25/17 | due 4/6/20 | | Apr-June 2020 | | EPA-HQ-OPP-2012-0445 | | | [] | X |
| Carbaryl | [] | 2/1/11 | OH HOLD (as of 9/17) ESA PILOT | | | | UP3 Priority (toxicity; use pattern; monitoring data) | EPA-HQ-OPP-2010-0230 | | | [] | X |
| Chlorantraniliprole | n/a | | 10/3/12 | Jan-Mar 2020 | | | New chemical; UP3 watch (toxicity) | EPA-HQ-OPP-2012-0029 | | [] | [] | X |
| Chlorfenapyr | [] | 12/1/10 | Jul-14 | Aug-15 | | May-17 | UP3 watch (toxicity) | EPA-HQ-OPP-2010-0467 | | [] | [] | X |
| Chlorpyrifos | [] | 9/1/09 | 4/2016 ESA PILOT | July-Sept 2020 | | | 303(d) listings; TMDLs; additional TMDLs in development | EPA-HQ-OPP-2008-085( | Updated 1/16. Part of ESA pilot | | [] | X |
| Chlorsulfuron | [] | 5/23/13 | Sep-15 | Jul-16 | | Sep-17 | | EPA-HQ-OPP-2012-0878 | | | [] | X |
| Copper compounds, salts, sulfate, and oxides | [] | 3/1/11 | Aug-16 | 12/4/18 | | 2/22/19 | 303(d) listings (copp Contains CWA Priorit | | | | | |
| Cyantraniliprole | n/a | ? | 6/6/13 | 6/6/13 | | 2/5/14 | New chemical; UP3 P pattern) | | | | | |
| Cyclaniliprole | [] | | 5/18/17 | 5/18/17 | | 8/3/17 | 8/3/2017 registration ingredient | | | | | |
| Dacthal (DCPA) | [] | 12/5/11 | | | | | Check urban runoff st (Dacthal; dioxins); Co Pollutant (Dioxins) | | | | | |
| Diazinon | [] | 12/1/08 | 4/2016 ESA PILOT | Sep-17 | | | 303(d) listings; TMDL development | | | | | |
| Dichlobenil | [] | 12/1/12 | 9/17/17 | 8/8/18 | | 3/18/19 | Storm drain applicatio without ensuring flow | | | | | |
| Dichlorvos (DDVP) | [] | 1/4/10 | Jan-Mar 2020 | | | | organophosphate inse | | | | | |
| Dichromic Acid | [] | 10/25/10 | due March 2, 2020 | Jan-Mar 2020 | | Jul-Sept 2020 | Dichromic Acid, Disod | | | | | |
| Diquat dibromide | [] | 5/13/10 | 9/25/15 | 5/25/17 | | 2/3/20 | | | | | | |
| Dithiopyr | [] | 7/24/14 | 8/9/18 | Apr-Jun 2020 | | | UP3 watch (toxic, soil | | | | | |
| | | | | | | | 303(d) listings; D | | | | | |

## BACWA Pesticides Regulatory Tracking List – Sept. 2019

| Item/Next Steps | Comments Due (60 days after release date) |
|---|---|
| **U.S. EPA** | |
| **Pesticide** Registration Review (15-year cycle) | |
| *Registration Review Environmental Risk Assessments*: | |
| • Sodium bromide (*pool/spa use*) | Nov/Dec? |
| • Fipronil (*pet flea control*); Thiophanate methyl/Carbendazim (MBC) (degradate toxicity; use patterns); | Jan/Feb? |
| • 2-phenylphenol and salts (*antimicrobial*); 1,2-Benzisothiazolin-3-one (BIT) (*antimicrobial*); Octhilinone (*antimicrobial*) | Mar/Apr? |
| *Registration Review Proposed Decisions:* | |
| • Zinc Salts (*pool/spa use*) | 9/30/19 |
| • Pyrethroids: Cyfluthrin, Cyphenothrin, Deltamethrin, Etofenprox, Flumethrin, Imiprothrin, Momfluothrin, Phenothrin (includes Sumethrin), Tau-Fluvalinate, Tefluthrin, Tetramethrin (*pet flea control, other indoor uses*); | Nov/Dec? |
| • Chlorine gas (swimming pools); Triclosan (antimicrobial); Metam sodium (*root control*) | Nov/Dec? |
| • Neonics: Imidacloprid (*pet flea control*), Dinotefuran (*pet flea control*), Clothianidin (*indoor uses*), Thiamethoxam (*indoor uses*), Acetamiprid (bed bugs); | Jan/Feb? |
| • Pyrethroids: Bifenthrin, Cyhalothrins, Cypermethrins, Esfenvalerate, Prallethrin | Jan/Feb? |
| • Halohydantoins (*pool/spa use*) | Mar/Apr? |

# Department of Pesticide Regulation
## Surface Water Protection Program

**Prevention**
*Registration*



**Response**
*Continuous Evaluation*

Slide Source:
California DPR

# 2018 – 2019 Regulatory Engagement Outcome Summary

*See outcome evaluation tables on BAPPG website*

## US EPA Risk Assessments/Risk Management

- Pet flea control/Misc. indoor
  - **Outcome: Mostly discouraging; but happy to see proposed no-dump icons**
- Swimming pools (discharge language)
  - **Outcome: Must contact local agency and follow discharge instructions**
- Root control (POTW notification)
  - **Outcome: POTWs to be notified 24 hours prior to applications**

## DPR Surface water review requests (emails)

- **Outcome: Ensure surface water program review for key pesticide registration applications**

Dublin San Ramon Services District

# BACWA needs to continue to engage with both DPR and US EPA

Focus = DPR

- Prevention (registration)
- Monitoring data
- Mitigation

*DPR has stronger science team & more protective authorities*

US EPA

- Controls product labels
- "Treated articles" made outside of CA
- All pesticides reviewed every 15 years

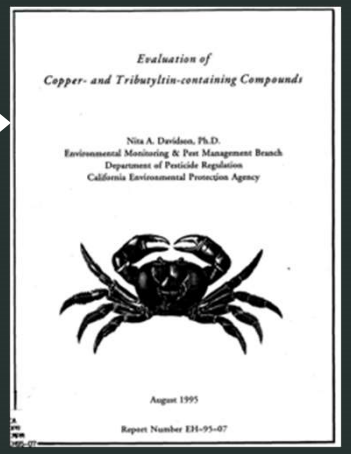
*US EPA currently has limited capacity to help POTWs*

# Q&A

# 6. Plans for 2020/2021

# 2020/2021 Regulatory Action Plan

- Start discussing POTW mitigation actions with DPR
  - Last DPR POTW mitigation action in 1996
  - Educate DPR management
  - Identify non-scientific information needs
    - POTW costs
    - Water quality regulatory information
  - Pet flea control
  - Expand conversation around protections for future potable reuse



# 2020/2021 Regulatory Action Plan

- US EPA reviews
  - Priorities - Imidacloprid + Fipronil
  - Continue swimming pools + root control
  - New info - EPA antimicrobials (“CECs”) reviews (a flood!)

# 2020/2021 Science Action Plan

- Obtain information to meet DPR's needs to implement POTW mitigation actions for pet flea control
- Assemble information to encourage DPR and pesticide industry actions to protect potable reuse of effluents
- Spread the word on science needs and seek scientific partners via participation in ACS San Francisco Conference in August 2020 (tentative)

# Future is Promising

- It's a marathon – not a sprint
- Change will only occur with active POTW engagement!
  - Science, including monitoring partnerships
  - Regulatory
  - Safer Alternatives - Outreach & education
- UP3 Teamwork maximizes chance of success

- Regulatory programs are driving a new paradigm for consumer product design


Clean Bay

Pest Control Benign by Design

# Q&A