

# A Link Between Consumer Flea and Tick Control and San Francisco Bay

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# Organizations involved in this project

- Bay Area Pollution Prevention Group (55 regional agencies)
- City of Palo Alto
- San Francisco Estuary Institute
- San Francisco Dept of Environment
- San Francisco Public Utilities Commission
- TDC Environmental, LLC



## Our Concerns

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

# Pesticides of concern are those that exhibit aquatic toxicity and persist in the environment

- 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.

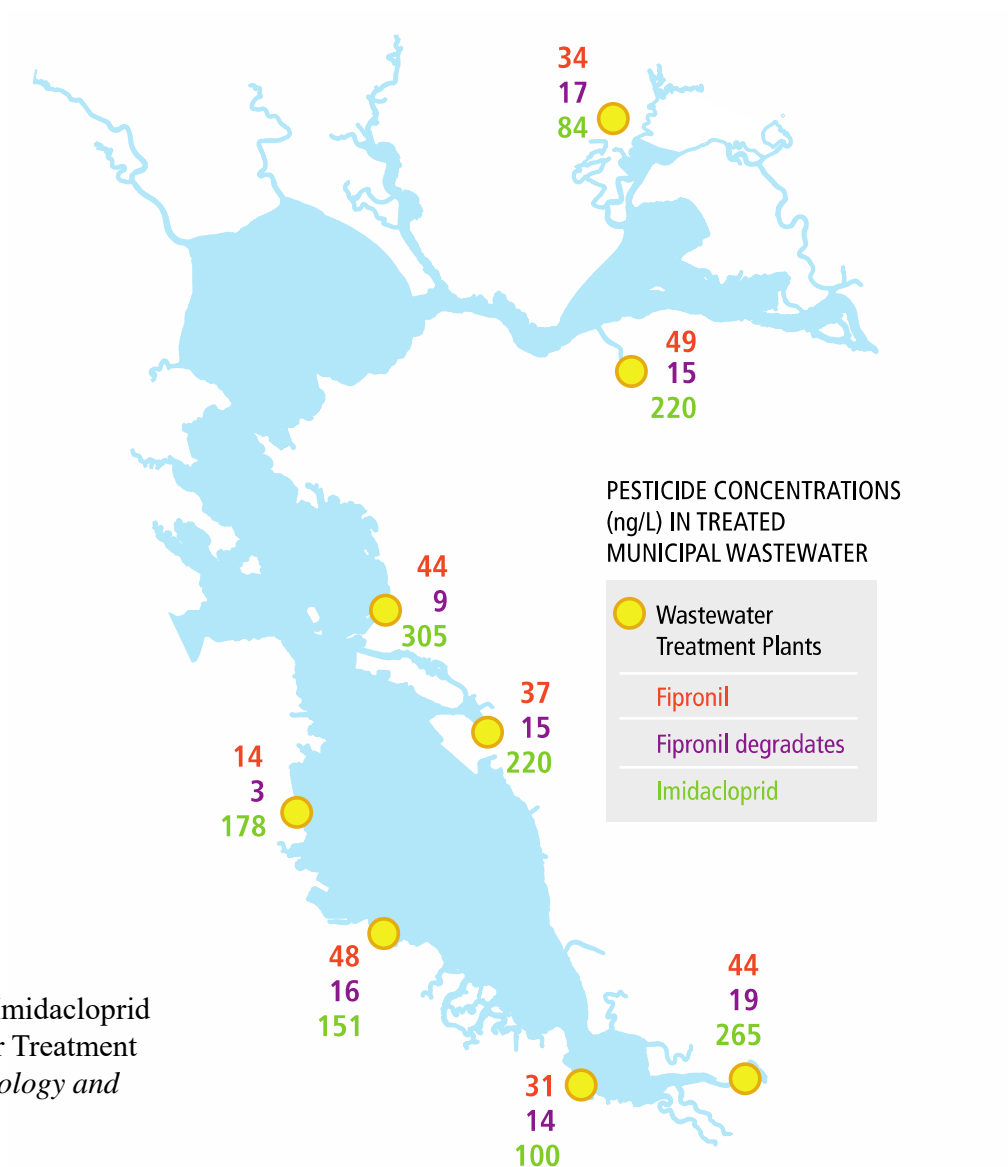
## Which indoor-use products contain pesticides of concern?

- Topicals
  - Collars
  - Spot treatments
- Shampoos or dusts
- House sprays and foggers

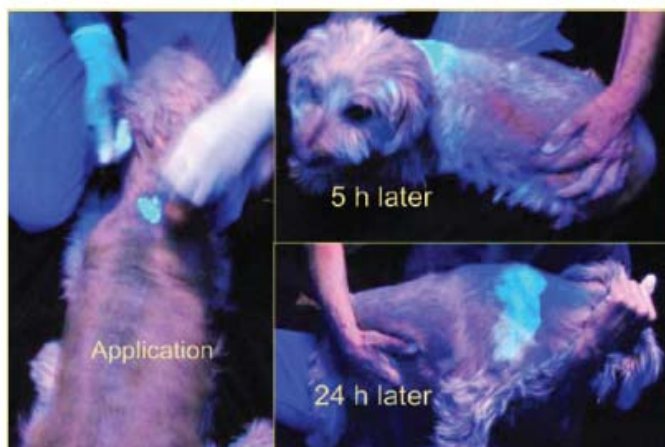


We have evidence that fipronil and imidacloprid pass through wastewater treatment to the Bay

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.



## Topical treatments (spot and collar) do not remain where applied



Researchers incorporated a fluorescent dye into the spot treatment to photograph the spread

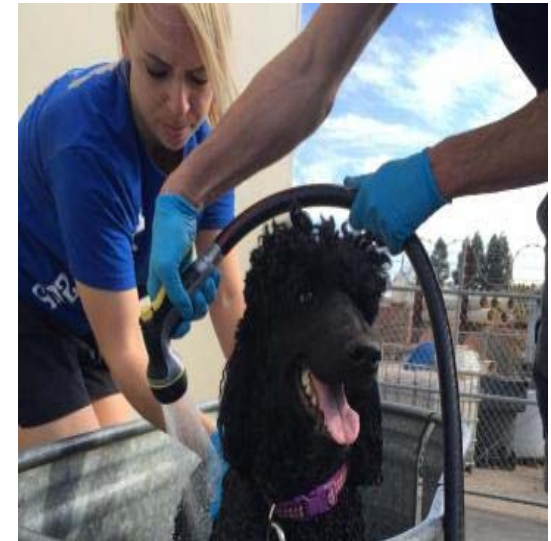
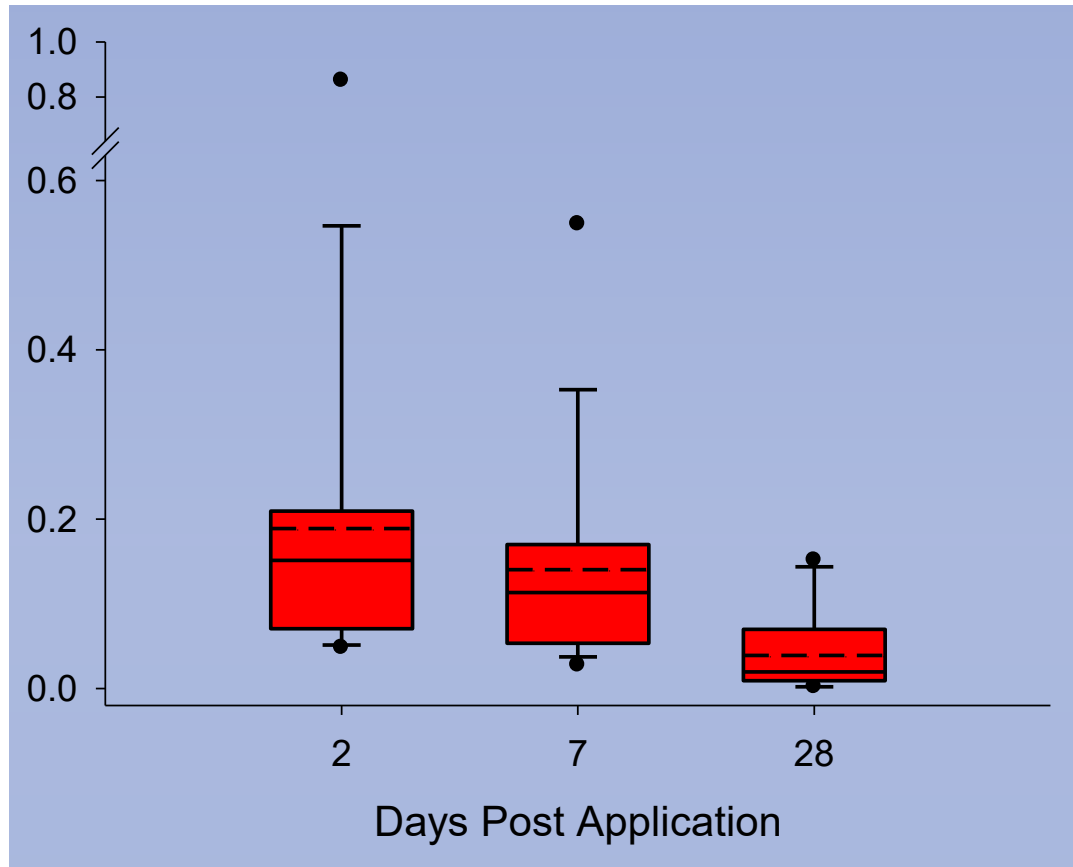


Fig. 3. Handling of a dog treated with Frontline® containing 1% Tinopal® CBS-X fluorescent tracer revealed contamination of hands during routine application and handling of a treated dog (color figure available online).

"Fate and Distribution of Fipronil on Companion Animals and in Their Indoor Residences Following Spot-On Flea Treatments," Bigelow Dyk, M., et al., J. of Env Science and Health, Part B, 2012, Vol 47, pp 913-924.

# Fipronil Washes Off Pets

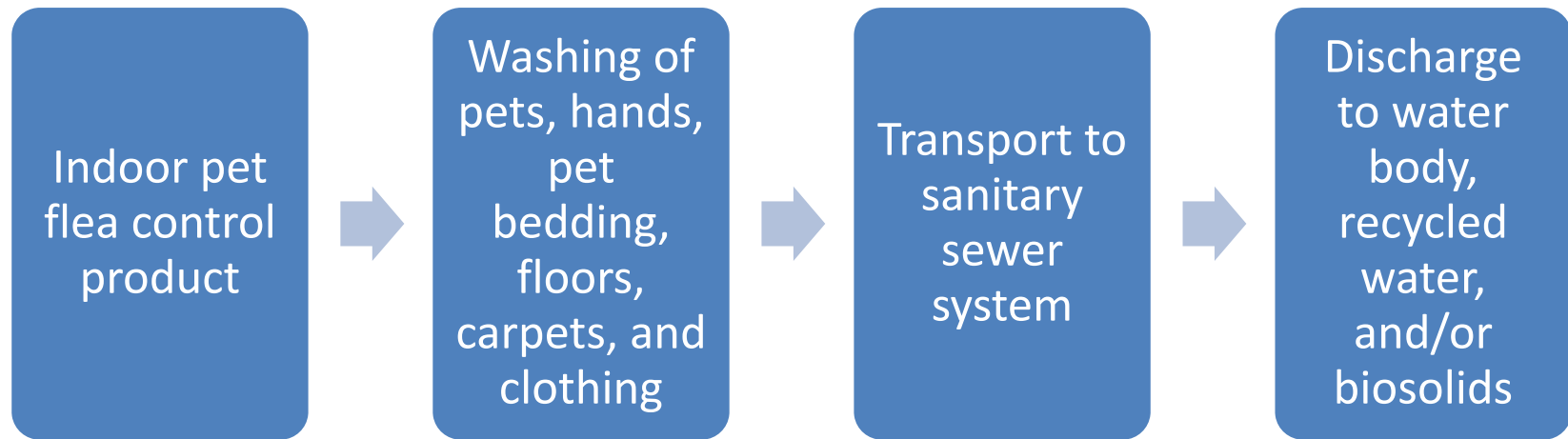
Wash-off continues for at least 28 days



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



## How Pet Treatments Travel to Sewer Systems and San Francisco Bay



# Summary of Our Concerns



- Active ingredients:
  - transport around the home
  - wash off (contrary to product labels)
  - observed in wastewater effluent and waterbodies
    - sometimes at concentrations toxic to sensitive aquatic species

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, last updated December 2009.



*Brought to you by your veterinarian and the  
American Veterinary Medical Association*

# Draft 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**



# We seek your partnership and support



- Help us focus these messages
- Help develop an integrated strategy easy for clients to understand
- To further discuss, please provide us with a business card or contact:

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