

# The Stream Pollution Trends Program (SPoT): Statewide Contaminant and Toxicity Monitoring Related to Land Use



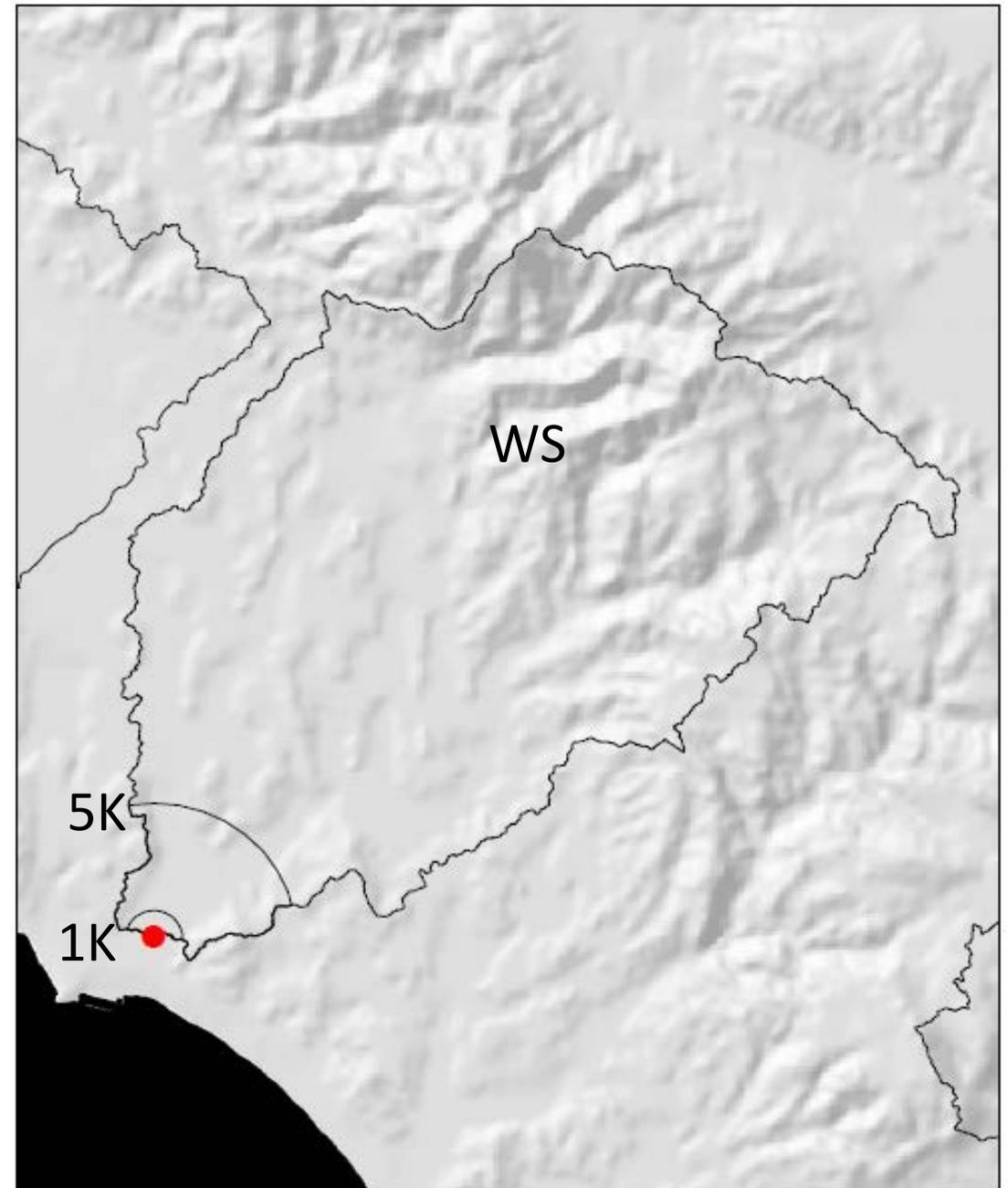
# Background

- The Stream Pollution Trends Program (SPoT) monitors the health of 100 watersheds statewide through measurements of sediment toxicity and contaminants.
- The focus of the program is trend monitoring linked to land use.
- Goal is to establish a network of sites to serve as a framework for collaboration with other programs and agencies.



# Defining Watershed Land Use

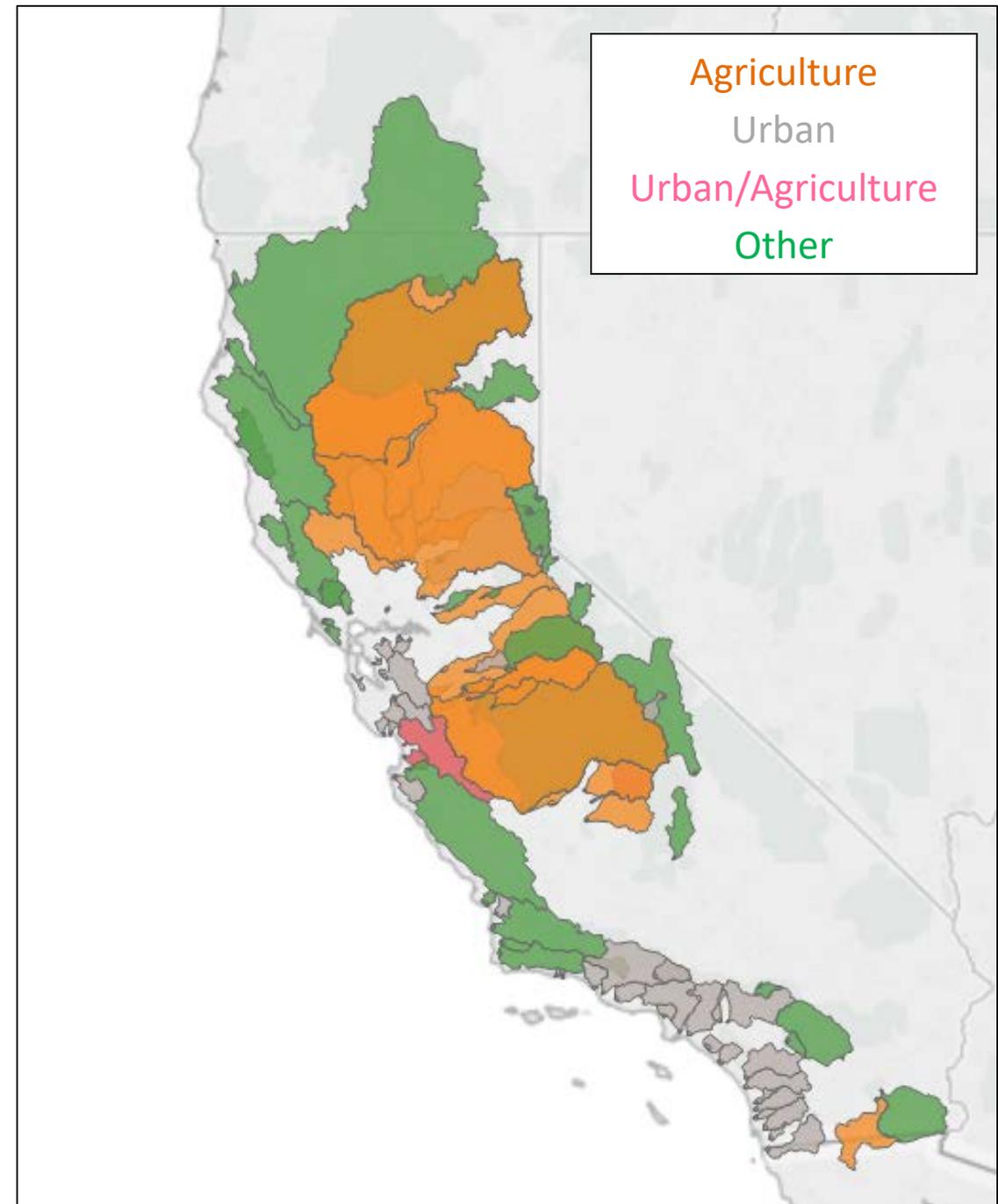
- The focus of the program is trend monitoring based on land use (NLCD 2011):
  - Urban (>25% low, medium and high impact development plus developed open space)
  - Agriculture (>50% row crops and pasture)
  - Open Lands (other than the above)



# SPoT Watersheds

## California Land Use

- Developed land area in California increased by 3.7% between 2001 and 2011, and the net increase in impervious surface was 8.8%.
- Among the developed land uses, developed open space decreased, and there were substantial increases in medium and high impact development.
- Increases in developed land have coincided with decreases in scrub, grasslands and agricultural lands.



# Watershed Coverage

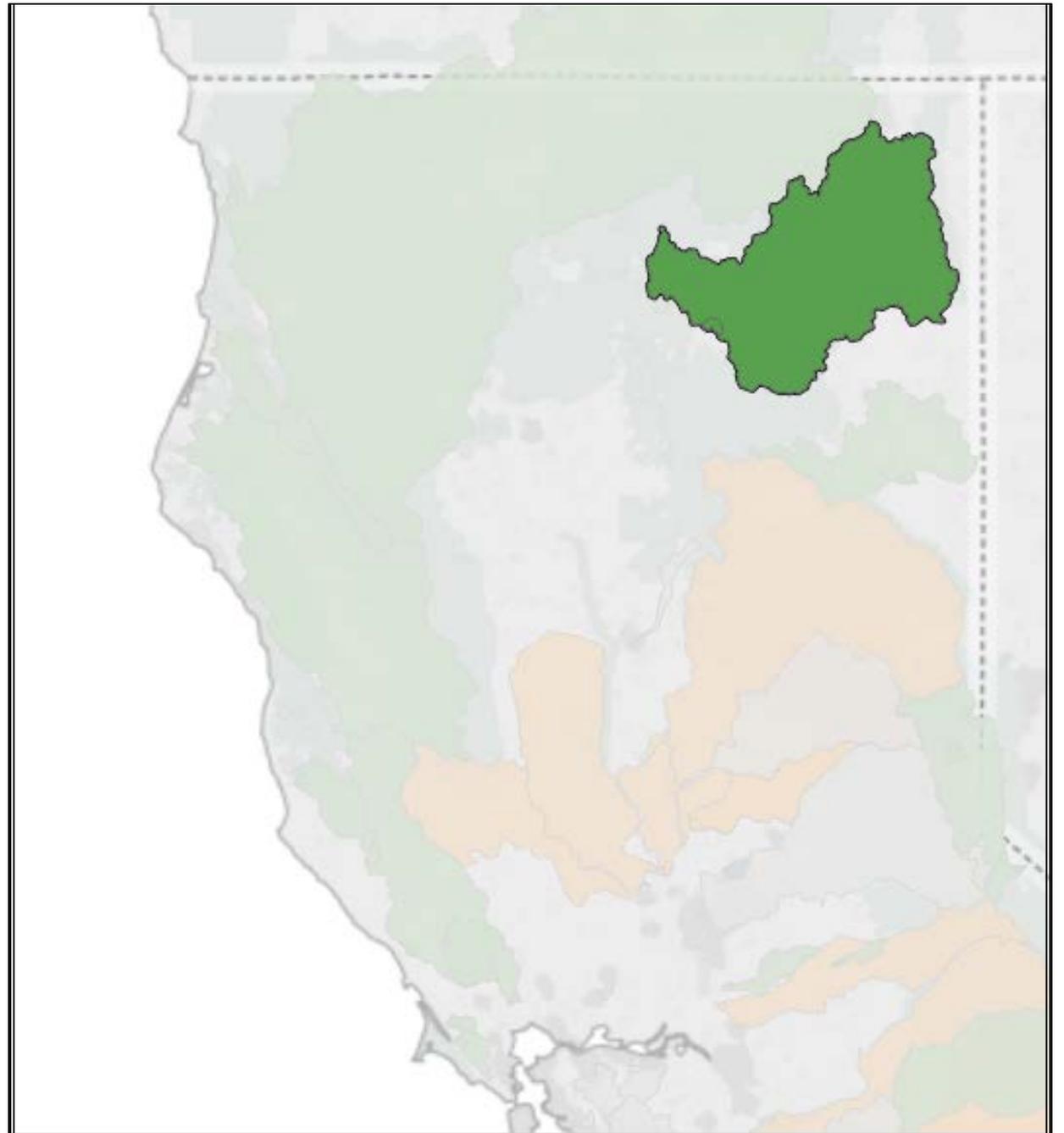
520BUTPAS – Butte Slough

510LSAC08 – Clarksburg Marina

504SACHMN – Sacramento River  
(Hamilton City)

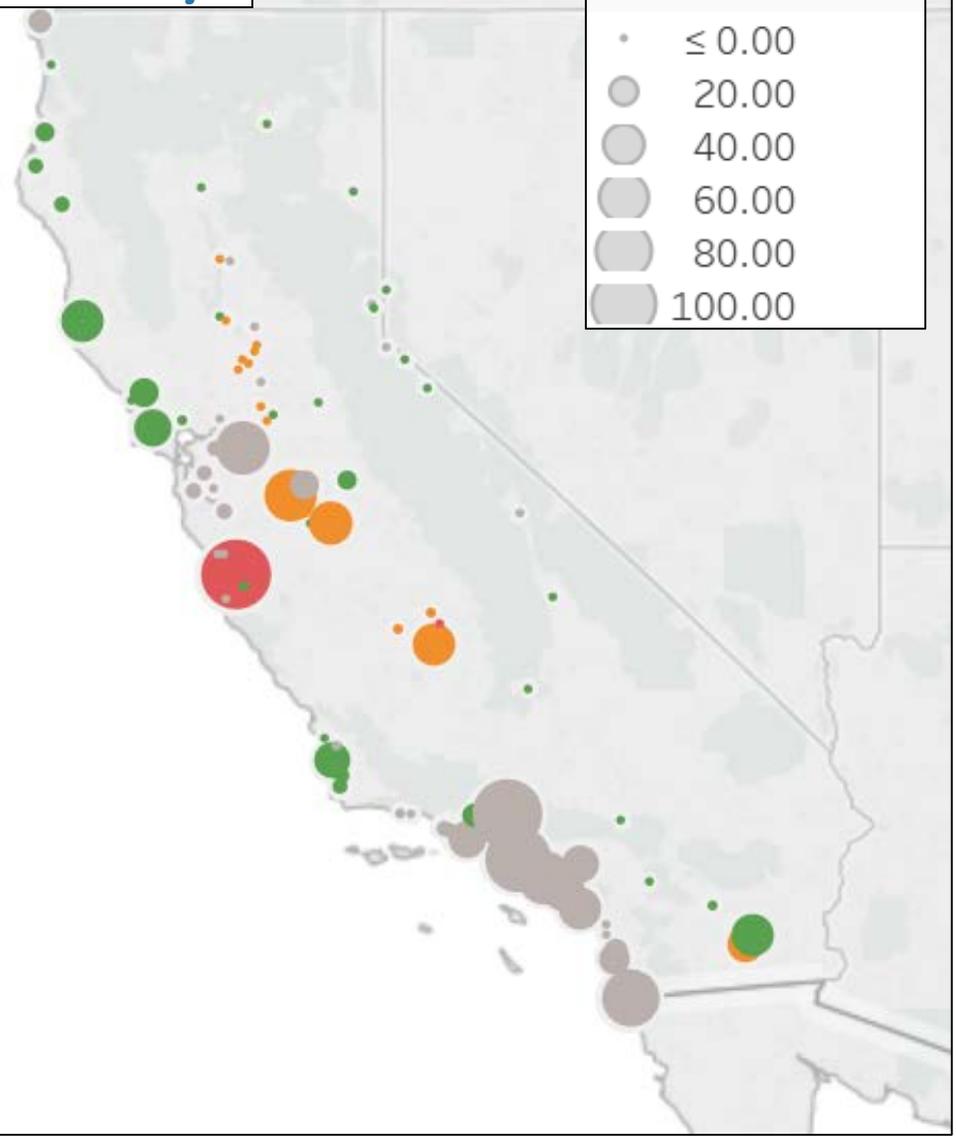
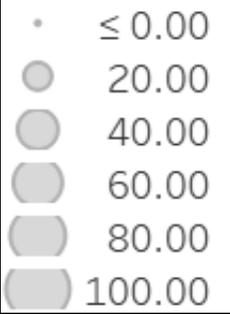
508SACBLF - Sacramento River  
(Balls Ferry)

526PRFALR – Pit River



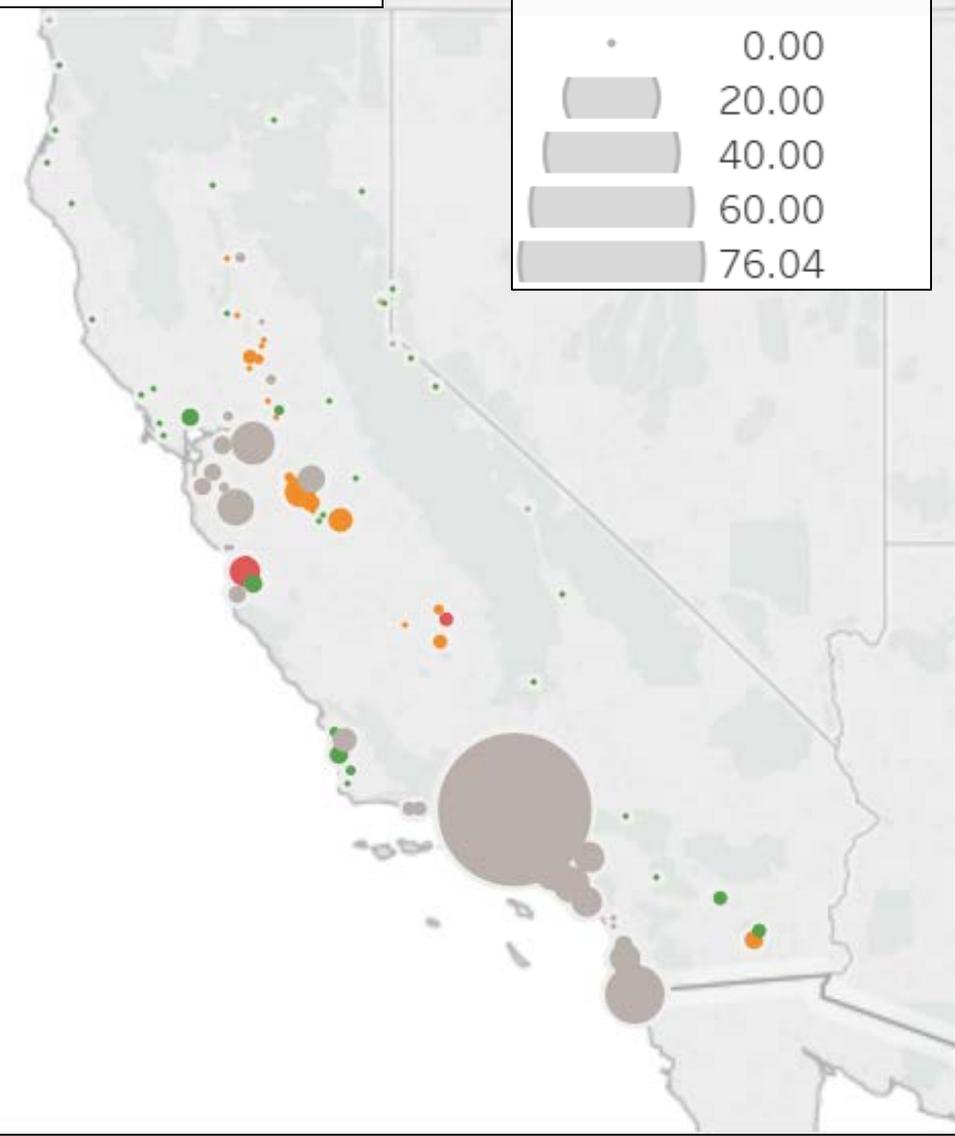
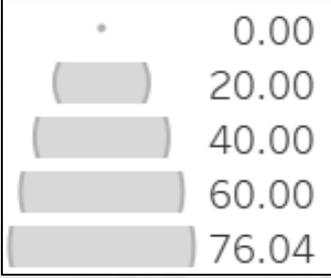
# Toxicity

## 5-Yr Avg Mortality



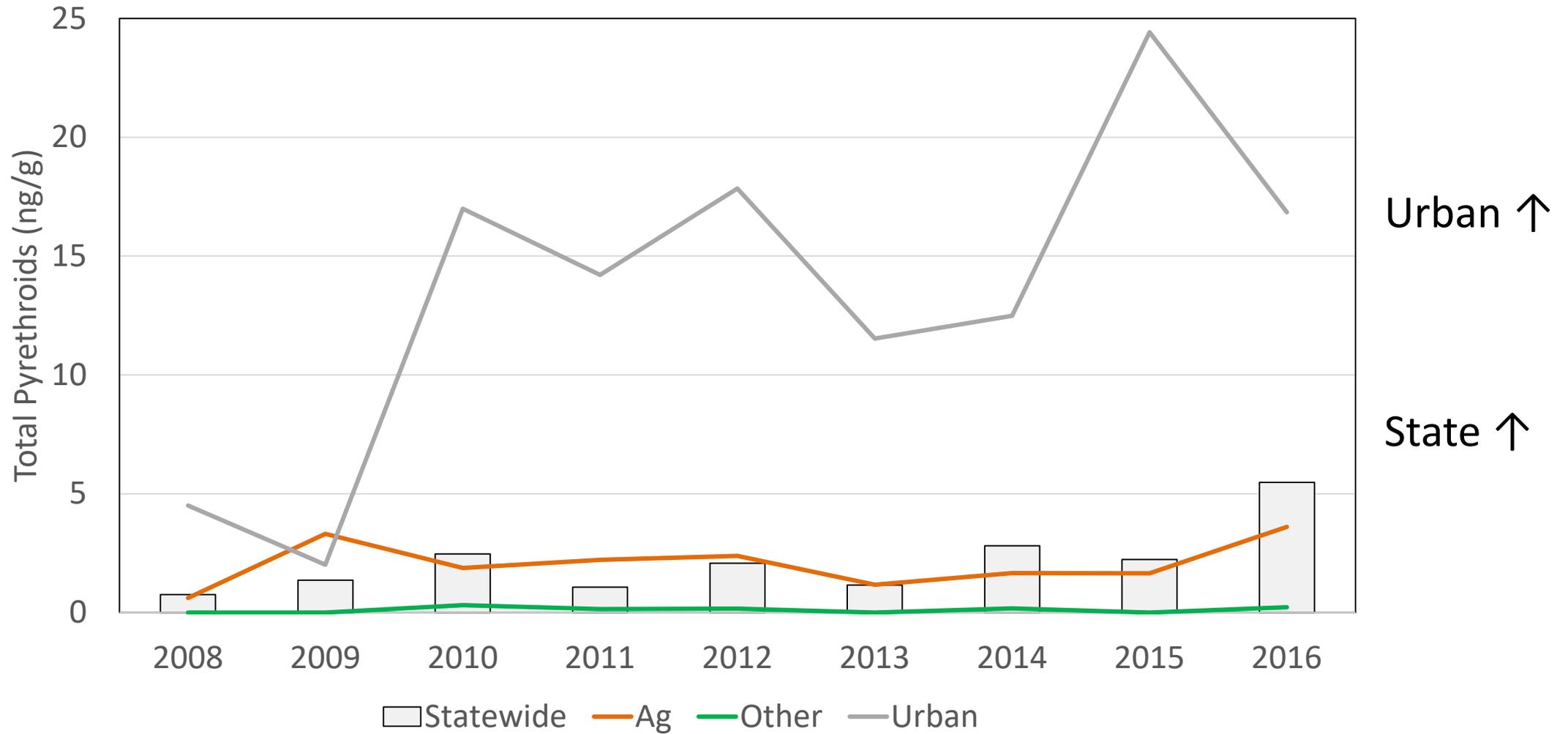
# Pyrethroids

## 5-Year Avg Pyr OC TU



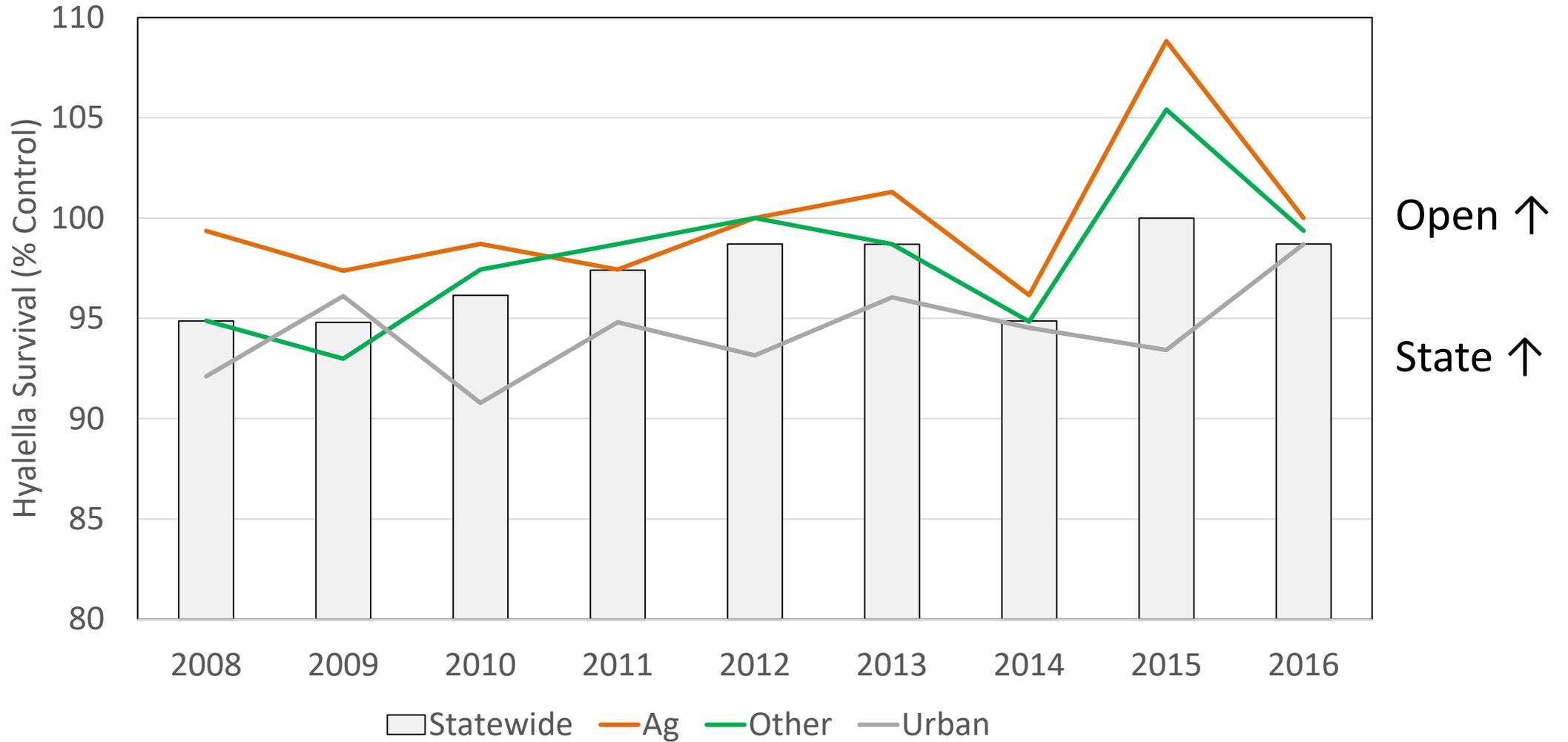
# Pyrethroids

## Median Total Pyrethroids



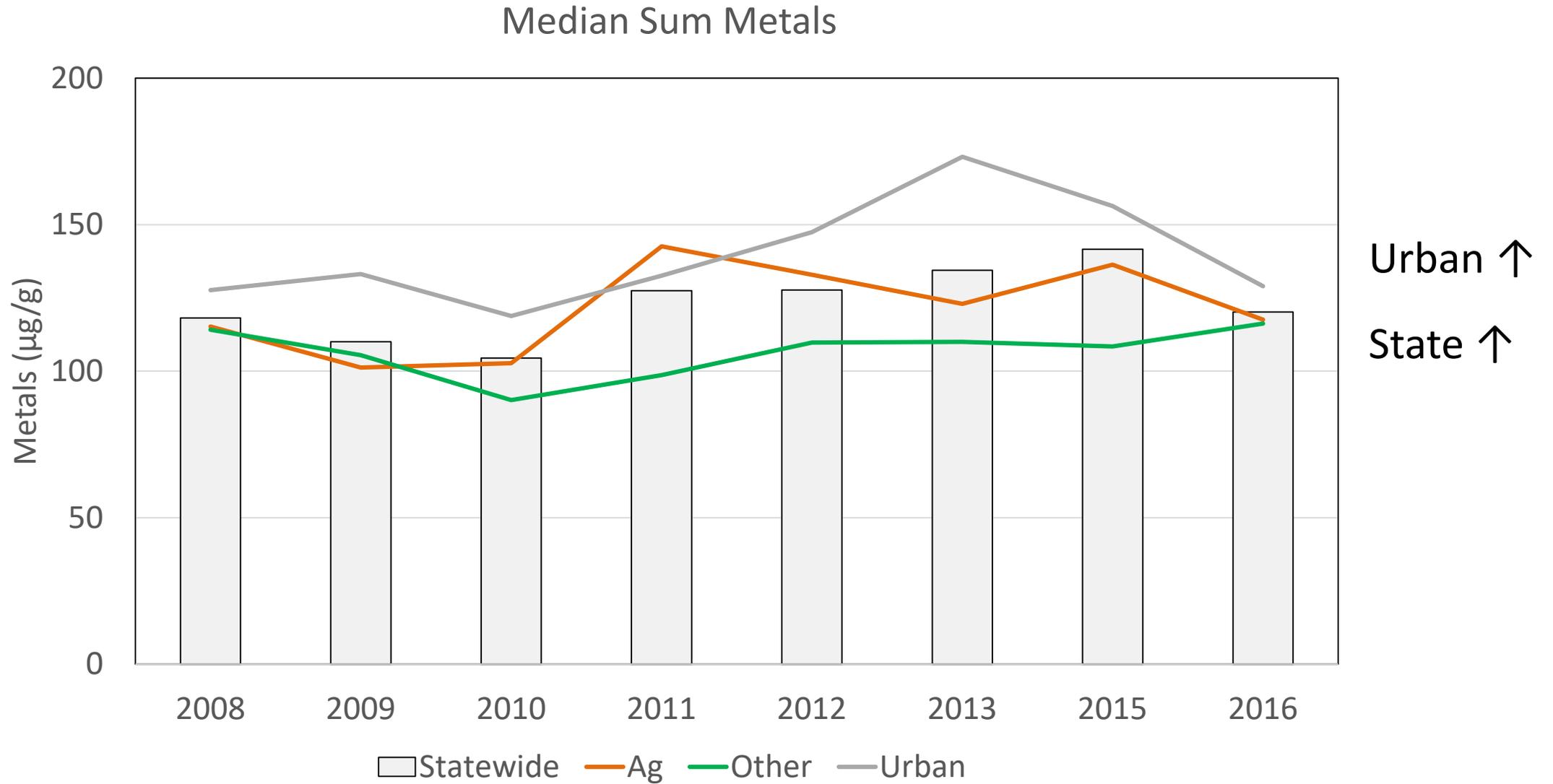
# Hyalella Toxicity

Median *Hyalella* Survival (% of Control)



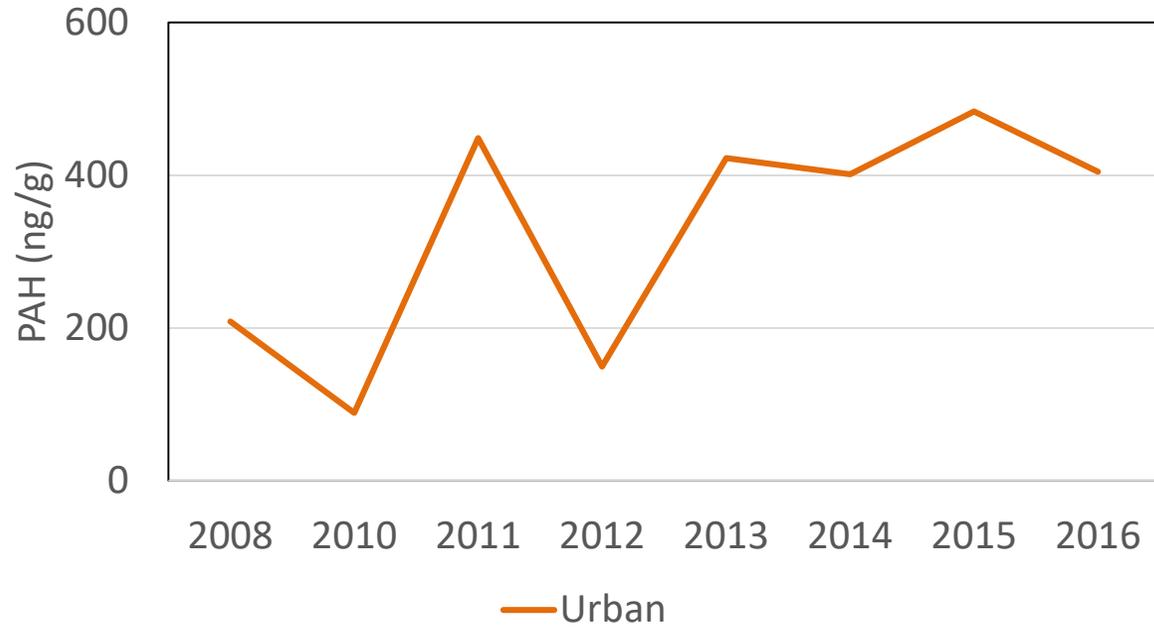
No trends with Growth

# Metals

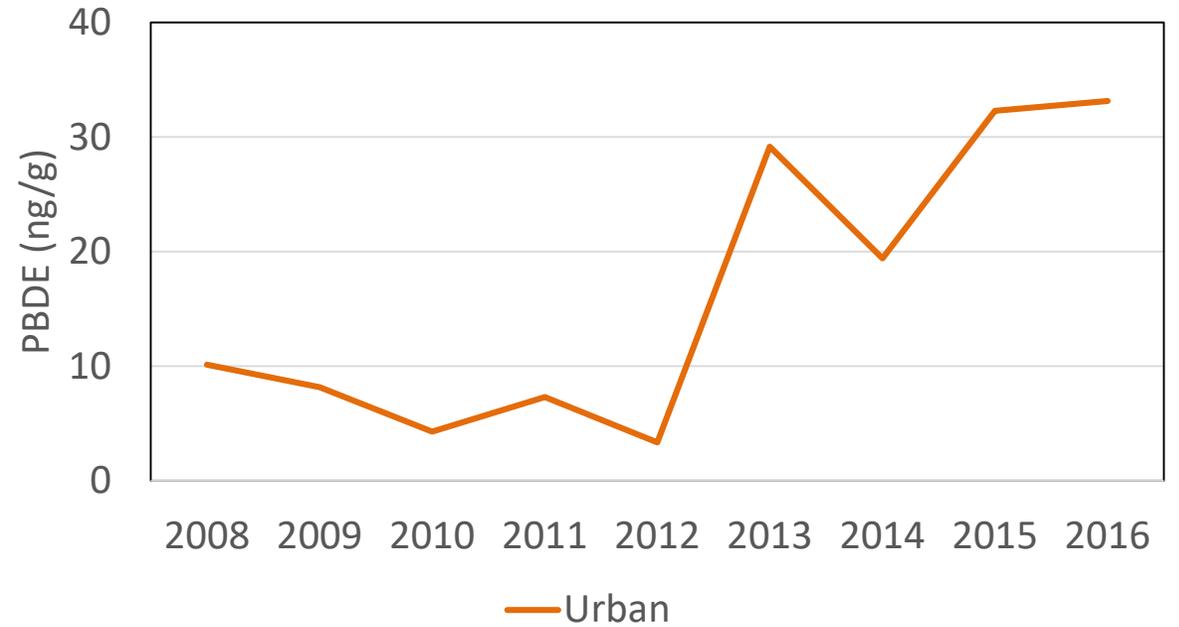


# PAHs & PBDEs at Urban Sites

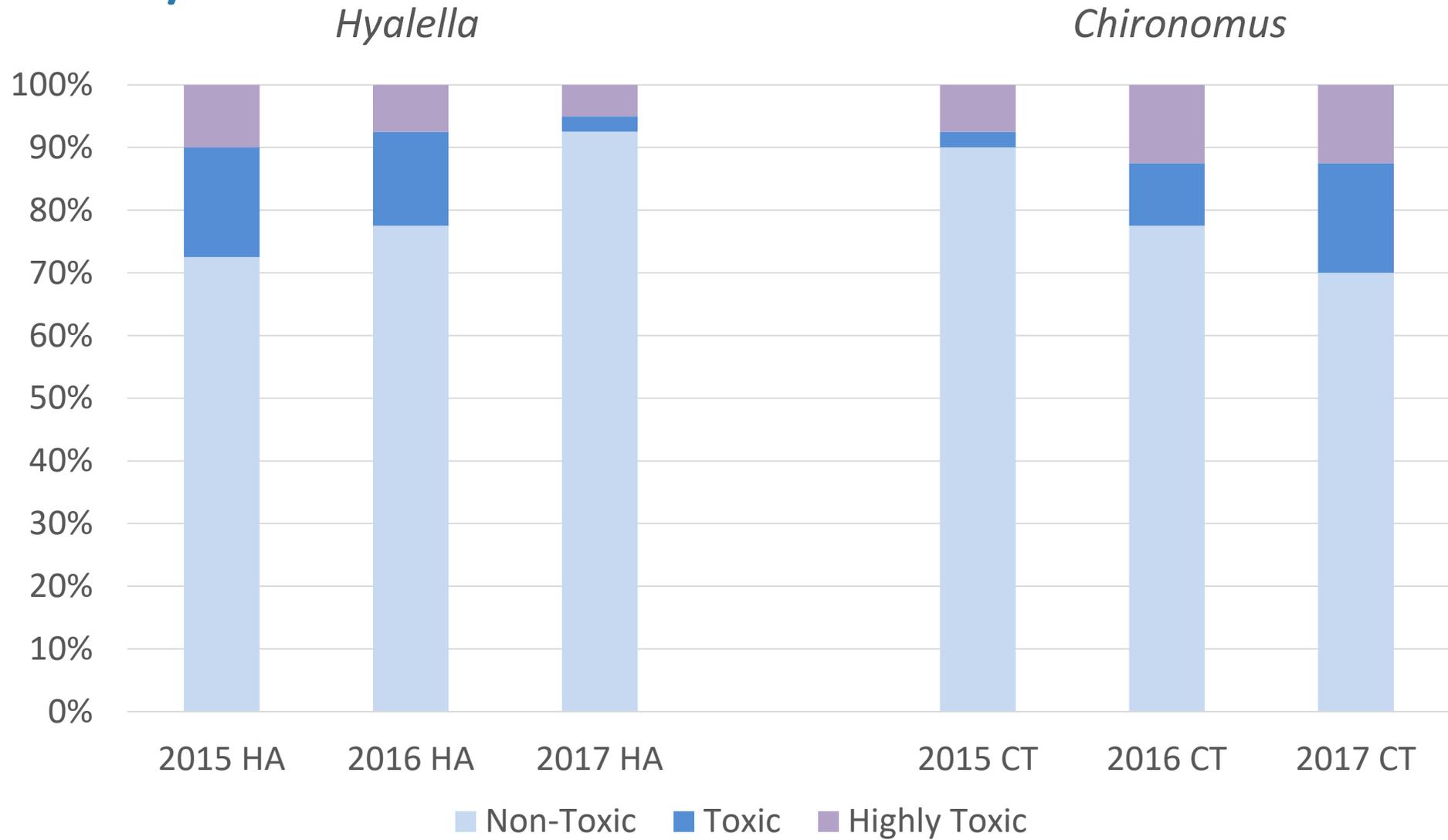
## Median PAH



## Median PBDE



# Paired Toxicity



## Other SPoT Activities (Current and Proposed)

- Continued collaborations with California Department of Pesticide Regulation
  - Tracking pyrethroid reductions as a result of label changes
  - Water column toxicity testing at DPR surface water monitoring sites
- Continued monitoring of harmful algae in sediment (microcystin)
- Investigating contaminants of emerging concern
- Bioanalytical Tools and Non-Target Analysis Pilot Project