

UP3 Project

A graphic of a city skyline with various skyscrapers, rendered in shades of green and grey, positioned in the top right corner of the slide.

Annual Research & Monitoring Update

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Urban Surface Water Toxicity

- Pyrethroids causing toxicity in sediments
 - Severe, widespread
 - Linked to urban runoff
 - Multiple pyrethroids (bifenthrin > others)
 - Toxicity linked to OC concentration
- Diazinon concentrations decreasing
- Unknown toxicity occurring
 - Chronic *Ceriodaphnia* toxicity in creeks
 - Sacramento wastewater
 - Sediments in Southern CA estuaries



Monitoring Recommendations

- See Report Recommendation 2 for complete pesticide/toxicity monitoring recommendations
 - Which pesticides?
 - Toxicity – which species?
 - Recommended detection limits

Pyrethroid Monitoring Recommendations

- Low detection limits needed
 - Water—as close to 0.001 ppb as available
 - Sediment—1 ng/g (dry weight)
 - Few labs can achieve
 - Commercial: CRG Marine Laboratories, Torrance; Caltest Analytical Laboratory, Napa; AXYS, Canada
- Sediments more important than water
 - Measure OC concentrations
- Include these pyrethroids:
 - Bifenthrin, cyfluthrin, beta-cyfluthrin, cypermethrin, deltamethrin, esfenvalerate, lambda-cyhalothrin, permethrin, tralomethrin



Photo courtesy USGS



Submit Data to Monitoring Databases

- DPR surface water database
 - Seeks good quality current use pesticide monitoring data
 - Expanding to include sediments
 - Electronic format preferred (SWAMP format great)
 - More info: www.cdpr.ca.gov/docs/sw/surfdata.htm
- CEDEN/BDAT
 - Coordinating with SWAMP
 - Seeks surface water monitoring data
 - More info: www.bdat.ca.gov



Gaps

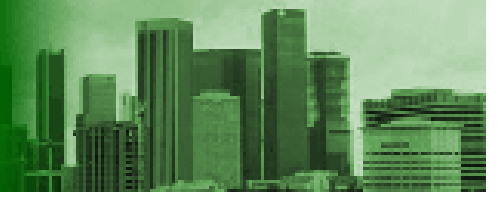
- Chemical analytical methods
 - Practical for municipality or contract labs
 - Need for PHMB, fipronil & degradates, a few additional pyrethroids
- Monitoring/toxicity data for pesticides of concern
 - Gaps: some pyrethroids, PHMB, fipronil
 - Limited CA urban data: malathion, carbaryl
 - More data (more places, salt water, wastewater)



Management Recommendations

1. Avoid over-interpretation of non-detects
 - Detection limits often $>$ toxicity thresholds
2. When toxicity occurs, look at pesticides as a possible cause
 - Recommend analysis of the UP3 Project's list of pesticides of concern
 - Other pesticides may also be the cause
 - Pesticides are not the only causes of toxicity

UP3 Project



For full report:

www.up3project.org/up3_monitoring.shtml