

## Pesticides and POTWs

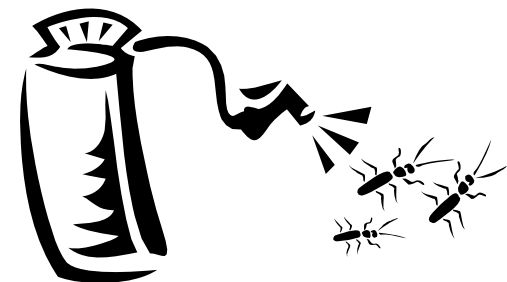
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# Many Products Are Pesticides

- Insect killers
- Herbicides
- Algaecides
- Biocides (cooling water, swimming pool)
- Disinfectants (soap, bleach)



# Urban Pesticide Facts

- >900 registered pesticide active ingredients
- >11,000 registered pesticide products
- At least half of California pesticide use is in urban areas



# Wastewater Pesticide Compliance Problems

- Copper-based root killers
- Tributyltin cooling water additives
- Dursban (chlorpyrifos) pet shampoos
- Lindane lice and scabies treatments



# Pesticide Compliance Driven by Toxicity, TMDLs

- Toxicity is the compliance key for most pesticides
  - Numerical water quality standards exist for only about 20 of the 900 pesticides
- Total Maximum Daily Loads (TMDLs) are setting tough standards
  - Many in progress for pesticides or toxicity
  - More anticipated (pyrethroids)



# Municipalities Have Little Control Over Pesticides

- Cannot regulate sales or use
- Can regulate discharge
  - But is this practical?
- Can use voluntary programs
  - Even expensive programs usually can't obtain reductions needed for compliance





# Pesticide/Water Quality Regulatory Gaps

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- Clean Water Act and pesticide registration not coordinated
  - Pesticides registered for uses that will cause Clean Water Act violations & municipal compliance problems
  - Pesticide registration rarely considers sewer discharges
- EPA pesticide & water quality offices don't talk
- DPR & SWRCB have minimal interaction (improving)
- EPA & DPR don't coordinate



# Main EPA activities

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- Pesticide Registration & Re-Registration
  - By pesticide “active ingredient”
  - 15 year review cycle
    - No action between reviews
  - Do environmental risk assessments
    - Don't use water quality criteria
    - Often don't consider sewer discharges
    - Don't address cumulative risks
    - Don't fully assess degradates, “inerts”
  - Allow public comments



# Main DPR Activities

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- Pesticide Product Registration
  - Each product individually (by name, not a.i.)
  - No evaluation of aquatic toxicity for urban products
  - No environmental risk assessment
  - No assessment of sewer discharges
  - Almost no public information—hard to comment
- Re-Evaluation
  - Can address environmental problems
  - Generally want proof of harm prior to action
  - Decide breadth of requirements without public involvement



# Water Quality Agencies Team Up to Address Pesticide Regulation

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- Stormwater—CASQA Pesticides Subcommittee
- Wastewater—Tri-TAC Water Committee
- Water Boards
  - SF Bay leader on urban pesticides
  - Other regions involved
  - SWRCB becoming engaged
- DPR Surface Water Protection Program
- EPA Region 9 Pesticides Liaison



# Organized Effort to Encourage Proactive Pesticide Regulation

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- Why? Cost effective—Preventing problems much cheaper than responding to them
- Approach
  - Coordinate with existing regulatory processes
  - Request special action to address current problems
  - UP3 Project scientific & regulatory support
- Communications
  - >130 Letters to U.S. EPA, teleconference meetings
  - ≈10 Letters to and >10 meetings with DPR



# UP3 Project

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- Urban Pesticide Pollution Prevention
- Goal: Help implement the Bay Area Urban Creeks Pesticides TMDL
- Manager: San Francisco Estuary Project
  - Science & Regulatory support:  
TDC Environmental
- Funding: SWRCB Grant (Prop. 13)



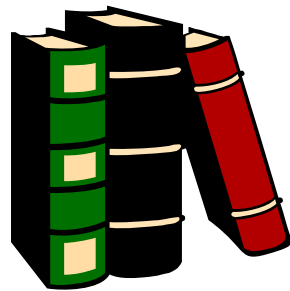
# UP3 Project Major Activities

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- Urban Pesticides Committee
  - Information/coordination network, >100 members
  - Meetings (can call in)
  - Announcement-only e-mail listserver
- Scientific support for water quality agencies
- Regulatory program support
- Assist Bay Area municipalities
  - IPM Exchange
  - Trainings

# UP3 Project Regulatory Activities

- Identify regulatory processes of interest
- Review relevant scientific documents
- Collect specific information
- Identify risk mitigation options
- Help communicate information
  - To U.S. EPA & DPR
  - Among water quality agency team
- Strengthen water quality agency team
- Review outcomes





# UP3 Project Publications

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- Web Site – [www.up3project.org](http://www.up3project.org)
- 3 annual reports:
  - Research & Monitoring Update
  - Regulatory Program Outcomes Evaluation
  - Bay Area Urban Pesticide Use Analysis
    - Pesticides of Concern for Water Quality
    - Trends
    - Recommended priority actions for water quality agencies



# Tri-TAC and Lindane

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- Lindane (1998)
  - California Toxics Rule
  - Looming compliance problem
  - Developed multi-prong approach
  - Pollution Prevention Leadership Grant from EPA Region 9 for outreach activities
  - State legislation banned the use in head lice and scabies treatments in 2002



# Lessons Learned from Lindane

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## Raised awareness

- Potential compliance problems from pesticides
- Limited regulatory authority to control pesticides
- EPA surrendered authority in 1979 to regulate pharmaceutical pesticide uses
  - Adverse environmental impacts considered under NEPA when drug is first approved



# Tri-TAC Pesticide Activities

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- Identify pesticides of concern
  - UP3 Project currently identifies the pesticides of concern for sewerage agencies
  - Began with pesticides applied directly to sewers
    - Cockroach sewer crown sprays
    - Root killers
- Review environmental risk assessments
- Prepare comment letters
- Participate on UPC Committee



# Tri-TAC Letters

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- Pyrethrins/Pyrethroids
  - 10 letters have been sent since 12/02
- Head lice treatments
- Synergists
- Data requirements
- Reregistration procedures
- Samsung “Silver Wash” washing machines



# Comments to EPA and DPR

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- Provide information
  - Which uses cause sewer discharges and how
  - Explain wastewater treatment processes (e.g. photolysis)
  - Explain discharge requirements
    - Mandatory minimum penalties,
    - Effluent dominated water bodies, etc.
- Request actions
  - Analysis of sewer discharge & urban runoff in risk assessments
  - Mitigation measures during reregistration
  - Reassert authority over pesticide pharmaceuticals
  - Reiterate that EPA's assistance is needed for compliance
  - Register pesticide products (impregnated pesticides, washing machines) as pesticides



# Response from EPA and DPR

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- EPA permethrin risk assessments
  - Selected model to evaluate sewer discharges
  - Identified uses that cause sewer discharges
  - Performed a “Down the Drain” Assessment
- DPR reversed decision to register impregnated items
- Reevaluating Samsung “Silver Wash” washing machines

# Wastewater

## Pesticides of Interest

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- Metam sodium root killers
  - Contain NDMA
  - EPA re-registration decision by 8/06
- Copper-based root killers
  - EPA Risk assessment available (cmts. due 3/27)
  - EPA re-registration decision by 8/06
- Malathion
  - Wash-off treatments
  - EPA re-registration decision by 8/06



# Wastewater

## Pesticides of Interest

- Pyrethroids & Pyrethrins
  - Impregnated fabric
  - Wash-off treatments (lice, fleas)
  - Permethrin EPA re-registration decision 3/06 (?)
  - Resmethrin EPA re-registration decision by 8/06
  - Pyrethrins EPA re-registration decision by 8/06
- Synergists
  - PBO, MGK-264 can make pyrethroids/pyrethrins more toxic
  - EPA re-registration decisions by 8/06



# Wastewater

## Pesticides of Interest

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- Silver biocides
  - Impregnated clothing
  - In devices like washing machines
  - Need to monitor registration decisions
- Tributyltin
  - Carpet & fabric treatments
  - EPA risk assessment anticipated late 2006
  - EPA re-registration decision anticipated 9/07
  - ★ No more cooling water additives in CA



# Next Steps for Tri-TAC

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## Form a Tri-TAC Pesticide Working Group?

- Identify pesticides of concern
  - Currently done by UP3 Project – ends 12/06 unless grant is renewed
  - Funding
    - Pool resources with other water quality agencies
    - Use member agency staff
- Develop recommendations by end-use
- Attend Pesticide Registration Evaluation Committee meetings
- Initiate annual meetings with DPR/EPA staff
- Prepare comment letters
- Collect sampling data on pesticides



# Pyrethroid Monitoring

- Low detection limits needed
  - Water—as close to 0.001 ppb as available
  - Sediment—1 ng/g (dry weight)
  - Few labs can achieve
    - Research: DFG & Southern Illinois University
    - Commercial: CRG Marine Laboratories, Torrance; Caltest Analytical Laboratory, Napa
- Sediments more important than water
  - Measure OC concentrations



For more information:

[www.UP3Project.org](http://www.UP3Project.org)