DPR's Surface Water Protection Program (SWPP)

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Program Overview

DPR's Surface Water Program

- Part of:
  - Pesticide Programs Division
    - Environmental Monitoring Branch
- Once part of CA. Dept. of Food & Ag. (CDFA)
- EM Branch also contains
  - GW Protection Program
  - Air Program
- Primarily composed of env. scientists & research scientists from various scientific disciplines
- Based here - 3rd floor, w/ field office in West Sacramento

DPR's Surface Water Program

- SW Program established to implement various general env. protection mandates in Division 6 & 7 of the Food & Ag. Code
- Less specific statutory authority than Groundwater or Air Programs
- SW & GW Programs - DPR's main connection to Water Boards' water quality protection programs
- Management Agency Agreement (MAA) activities coordinated through SWPP
- Primary MAA point of contact – Syed Ali, State Board

Program Goals

- *Goals:*
  - ➔ Monitoring/Assessment: Assess the extent of pesticide contamination in surface water & determine potential water quality impacts
  - ➔ Mitigation/Regulation: Reduce the presence of pesticides in surface water & prevent significant adverse impacts to the environment

- *Note:* goal is not to necessarily be protective of Water Boards' beneficial uses

Program Scope

- *Scope:*
  - Currently-registered pesticides
  - Water, sediment & biota
  - Ecological issues not human health
  - Covers all types of uses that could impact SW
- *Uses:*
  - General - Ag. & Non-Ag., reported & non-reported
  - Use Categories (e.g., structural pest control, antifouling, home/garden, ag. commodities)
  - User Categories (e.g., pest control operators, boaters, home owners, growers)

Regulatory Triggers

- Triggers different from Water Board's
  - similar to disconnect between FIFRA & CWA
- Water Board's water quality protection mandates are protective of beneficial uses
- DPR's mandates (particularly for major regulatory actions) allows for some level of adverse effects to the environment
- Source of friction
- Thus, the continual need for coordination
- Each agency still has respective mandates to uphold

Ag. Pesticide Use Settings

Non-Ag. Pesticide Use Settings

Program Approaches

- *Approaches:* Preventative or Responsive
- Preventative
  - Registration evaluation
  - Education & outreach (general)
  - Regulations (general)
- Responsive
  - Mitigation (outreach, stewardship, management practices)
  - Regulations (e.g., use requirements, restrictions)
  - Work w/ DPR's Registration Branch to change registration status (e.g., cancellation, suspension)
  - Work w/ U.S. EPA to change label language

What do we do…?

Program Activities

- Registration Evaluation
- Monitoring Studies
- Mitigation Studies
- Special Research Projects
- Publications
- Surface Water Database
- Mitigation
- Reevaluation Support
- Regulation Development
- Policy/Interagency Coordination

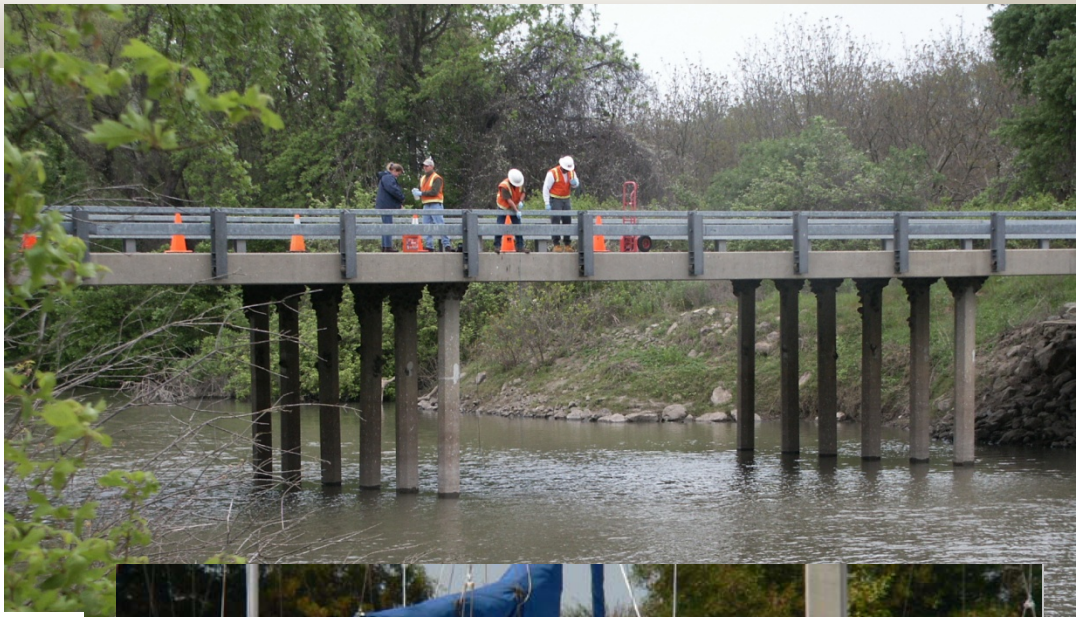
Program Activity: Registration Evaluation

- Special review of fate, transport & W.Q. impacts of new active ingredients A.I's), products, or labels during registration process
- Done for "high risk" uses
  - Rice
  - Direct applications to water
  - A.I.'s or products:
    - of fish & wildlife concern
    - of particular W.Q. concerns
    - that exceed specific numerical values for GW
- Modeling being integrated
- Currently overhauling review process
- Important preventative opportunity

Program Activity: Monitoring Studies

- Watershed level – receiving water & drains
- Foundation of assessment work
  - Most are in-house studies
- Prioritize → Plan → Conduct → Data Management → Analyze → Publish
- *Examples:*
  - Study 264 & 265 - Urban Pesticide Monitoring (NorCal & SoCal)
  - Study 248 & 252 - Long-term Pesticide Monitoring in High-Use Ag. Areas (Central Coast & Imperial Co.)
  - Study 255 - Dormant Season Herbicide Monitoring (Central Valley)
  - Study 236 - Multi-Regional Antifouling Paint Study (marinas)

Monitoring Studies



Program Activity: Mitigation Studies

- Field or edge-of-field level
  - Evaluate management practices
  - Pilot level studies & statistically valid studies
  - Used in outreach/education & stewardship efforts
- *Examples:*
  - Study 259 - Constructed wetlands & ag. runoff (Monterey Co.)
  - Study 242 - Vegetated ditches to reduce λ-Cyhalothrin in irrigated alfalfa (Stanislaus Co.)
  - Study 231 – Effects of polyacrylamide (PAM) on chlorpyrifos & soil movement (Stanislaus Co.)
  - DPR #09-C0079 - Innovative vegetated treatment systems & pesticide breakdown technologies (Landguard™)

Mitigation Studies

Program Activity: Special Research Projects

- Fill critical data gaps
- Initiated based on research priorities
- *Examples:*
  - Urban pesticide use surveys (UC IPM)
  - Water quality model evaluations
  - Environmental fate reviews
  - Biological assessments
  - Water quality criteria development (historical w/ DFG)
  - Analytical method development
    - mainly w/ CDFA lab
    - may collaborate w/ other agencies (e.g., USGS, DFG)

Program Activity: Publications

- Most program activities result in some form of publication
- Documents our work & exists as a resource to others
- *Examples:*
  - Peer-reviewed scientific journal articles
  - Study memos & reports
  - Protocols
  - Analytical methods
  - E-fate reviews
  - Other technical reviews

Program Activity: SW Database

- Initiated 1997 to collect & make available pesticide detection data
- CA Rivers, streams, creeks, runoff, drains from various land uses
- Contain results from 54 studies conducted by federal, state, local agencies & industry & environmental groups
  - 780 sites
  - 9,500 samples
  - 280,000 analysis records
- Periodically updated
- Periodically synchronized w/ SWAMP

Program Activity: Mitigation

- To help achieve program goals, mitigation via outreach is sometimes relied upon
- DPR usually considers non-regulatory mitigation before regulatory actions
- Involves collaborative effort
  - SWPP develops & compiles data on management practices (MPs)
- Use (commodity) or user group focus
- *Examples:*
  - Presentations on MPs at grower meetings
  - Urban pesticide user outreach project (UC IPM contract)
  - Copper-based antifouling paint retail outreach (UC Sea Grant & West Marine partnership) – in development

Program Activity: Reevaluation Support

- Reevaluation is a "data call-in" process
- SWPP helps…
  - set data requirements
  - guide process
  - evaluate submitted data
  - determine outcome
- Could also take direct actions ourselves
  - Mitigation
  - Regulations
- *Examples:* Diazinon, chlorpyrifos, pyrethroids

Program Activity: Regulation Development

- When there is sufficient evidence that meets DPR's response criteria & other means fail…
- Involves "rulemaking" – must do cost/benefit analysis & hold public hearings
- *Examples:*
  - Copper-based root killers
  - Dormant spray insecticide regs.
  - SW regs (in development)
- Some are easier to craft & some are more effective than others
- Regulations in *CCR Title 3, Division 6*

Program Activity: Policy & Interagency Coordination

- Simply cannot function in a "void"…
- Interact most frequently w/ U.S. EPA, Water Boards, USGS & DFG
- Interagency technical workgroups & forums
  - Round Tables, ILRPs, TMDLs, IACCs, Food Safety & Water Quality, POD, SFIREG, etc.
- Management Agency Agreement (MAA) helps pave our working relationships w/ Water Boards
  - CA Pesticide Management Plan for W.Q.
  - SW Response Process
  - MAA reviews

Summary - SWPP

- Focus on environmental assessment and mitigation
- Continually pushing the envelope in integrating latest scientific findings into our work
- A useful pesticide-related resource for the public and other agencies
- Continuously coordinate w/ other agencies
- Seek collaborative opportunities w/ other research groups
- Protect W.Q. from impacts of pesticide use in CA

Key SWPP Web Links

- Surface Water Protection Program Home Page:
  http://www.cdpr.ca.gov/docs/emon/surfwtr/index.htm
- Publications (e.g., protocols, SOPs, analytical methods, reviews, reports, fate papers):
  http://www.cdpr.ca.gov/docs/emon/surfwtr/pubs.htm
- Contracts:
  http://www.cdpr.ca.gov/docs/emon/surfwtr/contracts.htm
- Surface Water Database:
  http://www.cdpr.ca.gov/docs/emon/surfwtr/surfdata.htm
- Policy & Regulations:
  http://www.cdpr.ca.gov/docs/emon/surfwtr/regulatory.htm

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