DPR Environmental Monitoring Branch's Surface Water Protection Program (SWPP)

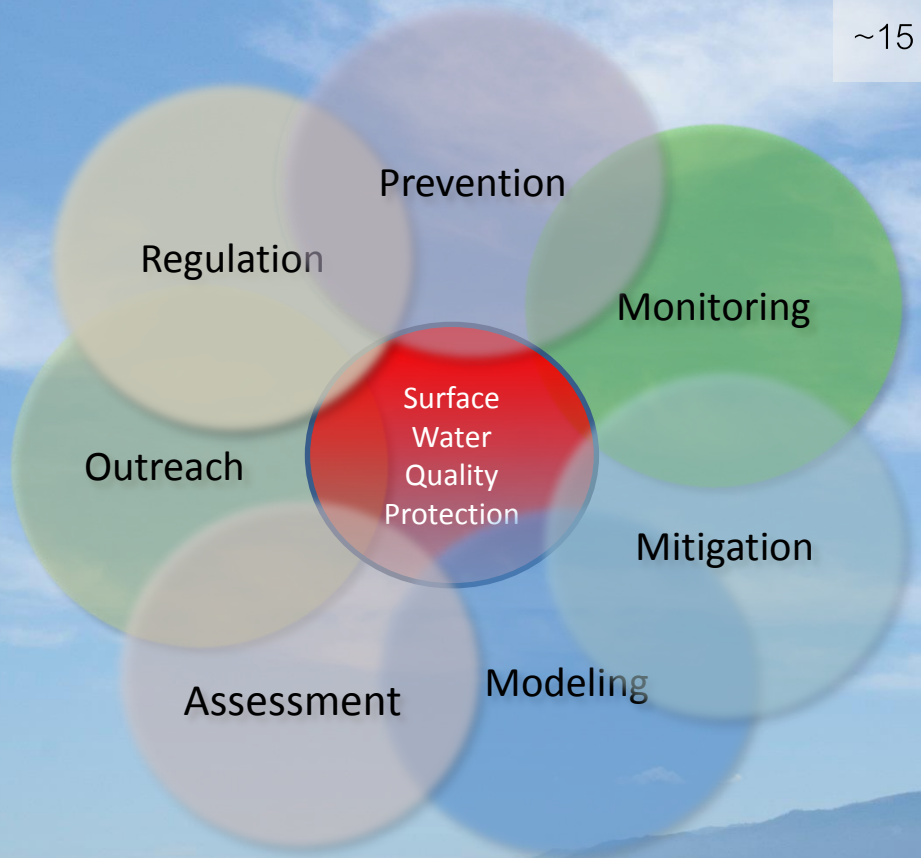
Nan Singhasemanon
Sr. Env. Scientist (Supervisor)
WPHA Conference 2016

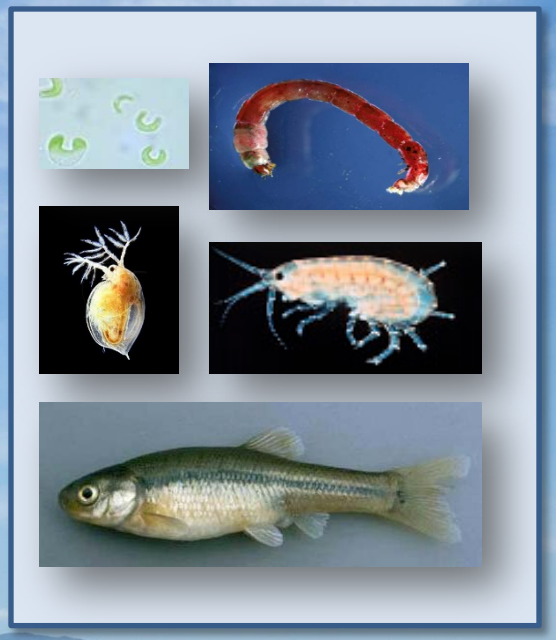
Yes, We Do Monitoring…

Fate and transport within stream network (watershed)

…but SWPP has many areas of activities

~15 fulltime & handful of intermittent staff





Registration Evaluation: What Goes into SWPP?

- Routing Criteria (updated in 2012):
  - All new active ingredients (A.I.'s) w/ some exceptions
  - Direct application to water
  - Use on rice
  - Antifouling paints
  - Products designated by Registration Branch Chief as needing evaluation by SWPP
  - What SWPP flags

Routing Order & Procedure

- SWPP – end of the review queue
- SWPP policy requires approved Chemistry and Ecotoxicology (EcoTox) evaluations
- Recent changes
  - Packet does not officially get routed to SWPP until both stations have completed evaluations
  - However, proposed labels and draft evaluations may be provided earlier

Evaluation Overview – PREM

- Evaluation either "best professional judgement" or model assisted.
- Pesticide Registration Evaluation Model (PREM) – based on USEPA's PRZM5-VVWM
- Risk quotient (RQ) based for water column & sediment
  - "Compact risk assessment" geared toward CA conditions
- "User manual" & training for staff
- Emphasize importance of proper identification & verification of data

Model Use

- Scientist evaluate proposed labels
  - How many model scenarios to run? (up to18)
  - How much applied? Focus on formulations, application rates/ frequencies/intervals (accurate determination critical)
- For label amendments – only added use evaluated
- When label is unclear, conservative interpretation is made

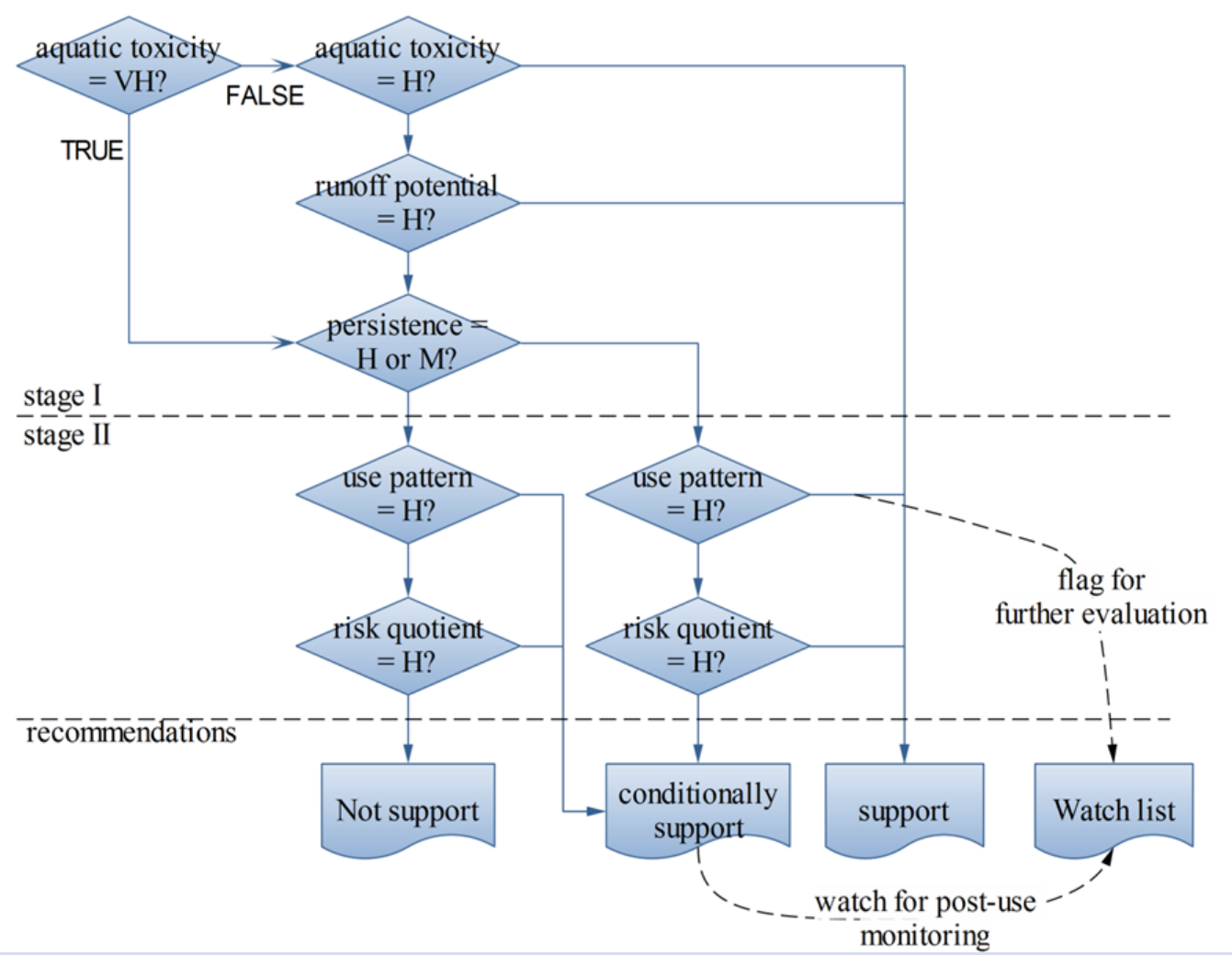
Exposure Determination

- PRB Chemistry Station evaluations relied upon
  - Chemistry evals available early on in registration process
  - Only use physico-chemical & e-fate values from approved registrant submissions
  - Not all model input is required for runs
  - Use median values, unless there are CA-specific data
  - No longer rely on outside data (e.g., EU Footprint)

Hazard Determination (Toxicity)

- Completed EcoTox evaluation relied upon
  - EPA OPPTS test guidelines
- Scientist evaluates toxicity endpoint
  - Lowest aquatic fauna EC50/LC50
  - When Koc > 1,000: lowest benthic EC50/LC50 used
- Now consider product use pattern & persistence of A.I. to determine whether estuarine/marine or freshwater species are used for endpoint.

PREM Flow Chart



Model Results

- Support, Support + Flag, Conditional or Deny
- Model results strongly considered but staff recommendation could differ…
- "Conditional" usually involved analytical method request, but sometimes additional toxicity or e-fate studies needed
- If "Deny," we will try to offer suggestions on how concerns can be addressed to facilitate registration

Monitoring as Safety Net

- SWPP has Monitoring Prioritization Model
  - Based on evaluation of A.I. use, toxicity, physico-chemical properties & product use patterns
- Annually, model prioritizes A.I.'s to be added to SWPP urban or ag monitoring
- Monitoring provides "safety net" to catch A.I.'s & use patterns not caught in Registration Evaluation
  - Allows quick addition of analytical capabilities (recall that conditional involve method submission)

What's New or Upcoming?

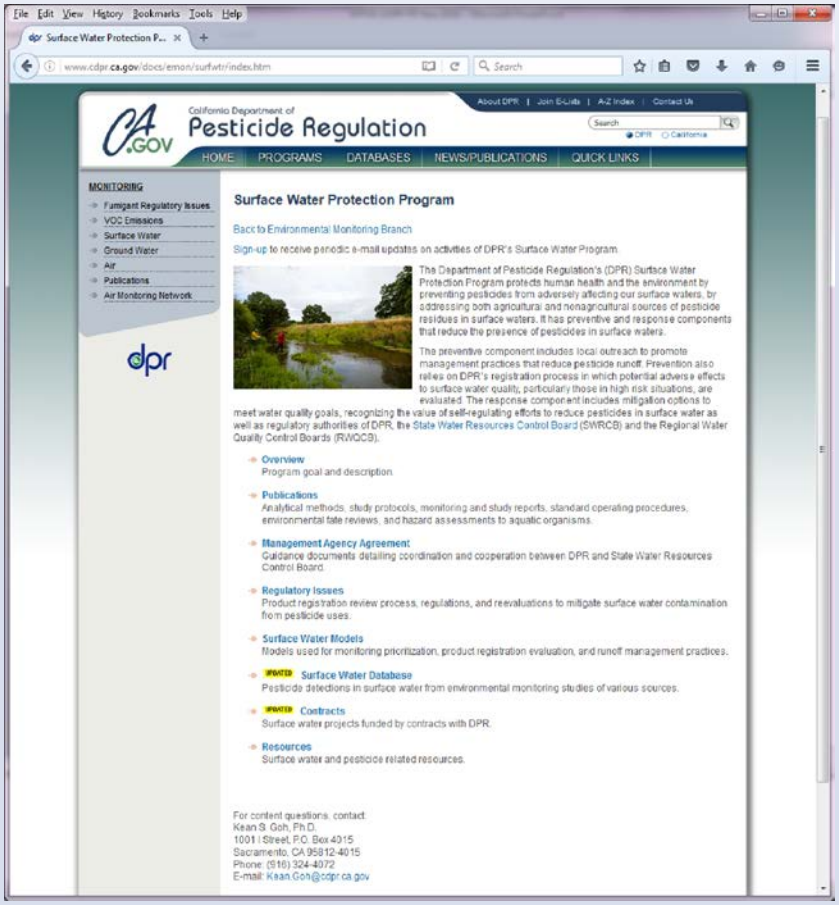
- Urban Module (in use since 2015)
- Estuarine/marine endpoint determination (in use since 2016)
- Degradate Module (new – Notice to Registrant July?)
- PREM Version 5.0 (new – Notice to Registrant Aug/Sept?)
  - Incorporates all updates/improvements after Urban Module
- Receiving water methodology (in development)
- Wastewater Module (in development)

Degradate Module

- Degradates have been considered in past evaluations
- Now methodology & rationale are provided for transparency & consistency
- In short, A.I.'s w/ "very short half-lives" or those with "very high toxicity" are candidates
  - Only for major reported degradates (>10% formation)
  - Only for products w/ high risk use-patterns
- SWPP will estimate RQ's similar to parent A.I.'s
  - May need additional data or justification from registrant

Additional Info:

Webpage - http://www.cdpr.ca.gov/docs/emon/surfwtr/index.htm



Contact: Nan Singhasemanon

Nan.Singhasemanon@cdpr.ca.gov

916-324-4122