

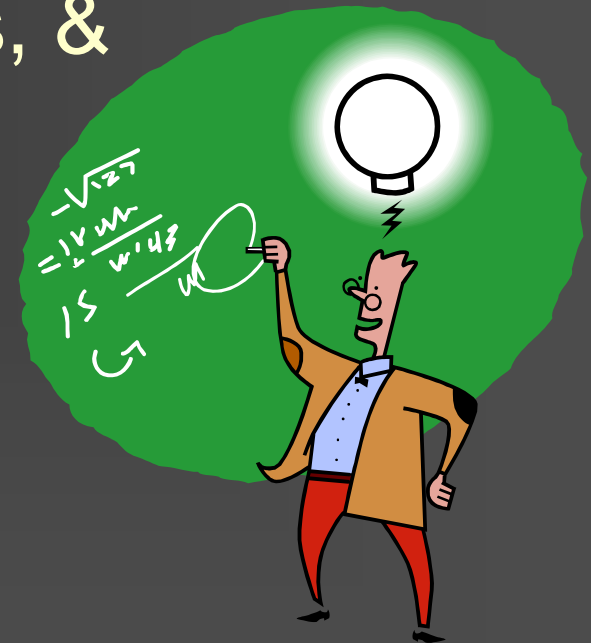
Diazinon & Pesticide-Related Toxicity Water Quality Attainment Strategy & TMDL

Scientific Peer Review Comments & Responses

Bill Johnson
San Francisco Bay Water Board
September 2005

Health & Safety Code §57004

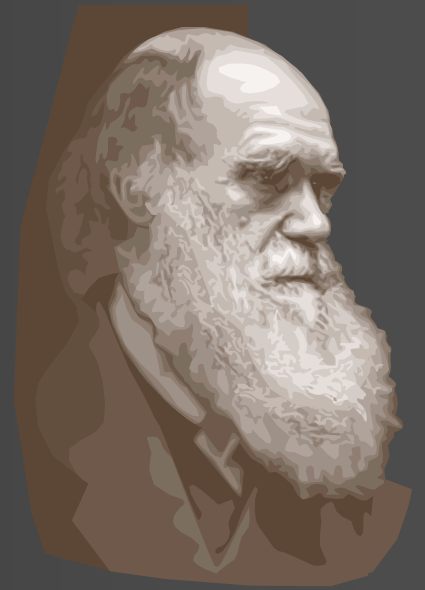
- Determine whether scientific portions of proposed rule are based on sound scientific knowledge, methods, & practices.
 - Numeric Targets
 - TMDL & Allocations
 - Adaptive Implementation (monitoring benchmarks)



Two Scientific Peers Reviewed June 2005 Draft Strategy & TMDL

- Professor David Sedlak
 - Department of Civil & Environmental Engineering
 - University of California, Berkeley
 - Professor Allan Felsot
 - Food & Environmental Quality Laboratory
 - Washington State University, Tri-Cities
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Professor Sedlak: Three Major Comments



- Provide data on pyrethroid persistence in creek sediment
 - Added data from Gan et al. 2005 to report
- Seek additional data on pyrethroid toxicity in Bay Area sediment
 - Prof. Don Weston unable to provide more data
- Evaluate effectiveness of pesticide runoff prevention & control efforts
 - Rely on adaptive implementation / UP3 Project / Project Assessment & Evaluation Plans

Professor Felsot: One Major Comment



- Prefers pesticide-specific targets to proposed generic toxicity targets
 - Largely based on misreading Basin Plan
 - Generic targets closely mirror Basin Plan
- Suggested solution:

$$TU = \frac{C_A}{LC_{50-A}} + \frac{C_B}{LC_{50-B}} + \frac{C_C}{LC_{50-C}} + \dots + \frac{C_X}{LC_{50-X}}$$

Response...

- No guarantee that available LC_{50} data represent sensitive species
 - LC_{50} 's are not sufficiently protective (need Water Quality Criteria or NOECs)
 - Analytical methods are insufficient
 - Detecting LC_{50} 's is often difficult
 - Lower detection needed for WQC / NOEC
 - Lower detection needed if pesticides combined
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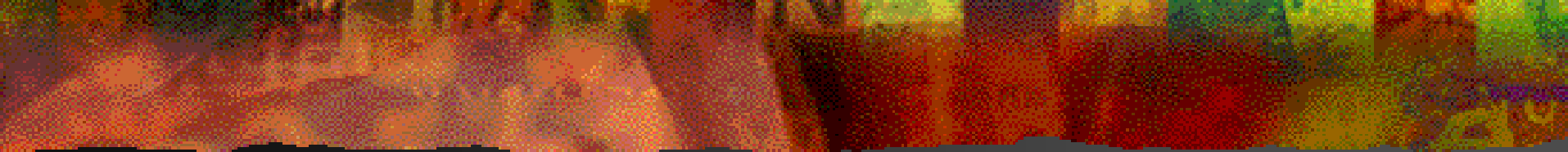
Furthermore...

- Many more targets would be needed (one for each mode of toxicity), and much more monitoring
 - Additivity assumed, but effects could be synergistic or antagonistic
 - Pesticides of greatest concern may not always be known and will change over time
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Comments and Responses Posted on Internet

- www.waterboards.ca.gov/sanfranciscobay/urbancrksdiazinontmdl.htm
- Public review draft includes all text changes made in response to scientific peer review





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