

Public Hearing for 303 (d) Listing of Pleasant Grove Creek for Pyrethroids

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Qualifications for Lenwood Hall Jr.

- Aquatic Toxicologist – University of Maryland
- Areas of Expertise – Aquatic Toxicology, Bioassessments and Ecological Risk Assessment
- 113 peer-reviewed papers
- Editor for 4 books
- Have conducted numerous water quality related studies in CA since 1994
- Served on numerous state and national committees, including EPA's FIFRA Science Advisory Panel

Issues of Concern

- Proposed listing for Pleasant Grove Creek (PGC) and its tributaries as impaired due to the presence of pyrethroids
- Proposed listing based on results from single species sediment toxicity tests with concurrent chemical measurements in 2004
- Proposed listing inappropriate due to data collected during a 2-year bioassessment multiple stressor study conducted in PGC and its tributaries in 2006 and 2007
- Staff determination that “no one line of evidence takes priority over the others”

Advantages of Bioassessment Data versus Single Species Toxicity data

- Bioassessments provide a time-integrated observed response on the condition of resident biological communities (Warm/Cold Freshwater Habitat Beneficial Use) consistent with the goals of the Clean Water Act
- Single Species toxicity data are a predictive tool to estimate the response of a resident biological community based on one single measurement
- Regional Board has wide discretion in establishing how data and information are to be evaluated (Listing Policy § 6.1.5.)

Objectives of 2-Year Study in Pleasant Grove Creek

- Characterize benthic communities and physical habitat at 21 sites during 2006 and 2007
- Concurrently measure water quality conditions, sediment parameters, pyrethroids and metals
- Assess the relationship between benthic community metrics and various stressors

Study Results

- Ten (10) significant relationships with various benthic metrics and various stressors
- Nine (9) significant relationships reported between benthic metrics and habitat metrics (primarily velocity depth regimes)
- One (1) significant relationship reported for mercury and a single benthic metric (% tolerant taxa)
- No significant relationships between any of the benthic metrics and the eight (8) pyrethroids
- Results from study accepted for publication in the peer-reviewed literature

Conclusions

- Impaired physical habitat is the critical stressor influencing benthic communities in Pleasant Grove Creek and its tributaries
- Pyrethroids did not show a statistically significant relationship with benthic community metrics
- Pleasant Grove Creek should not be listed as an impaired water body based on the presence of pyrethroids