

Special Session on Multi-indicator Integration:

CABW 2014: Session Overview

ERIC STEIN

BIOLOGY DEPARTMENT

SOUTHERN CALIFORNIA COASTAL WATER RESEARCH PROJECT



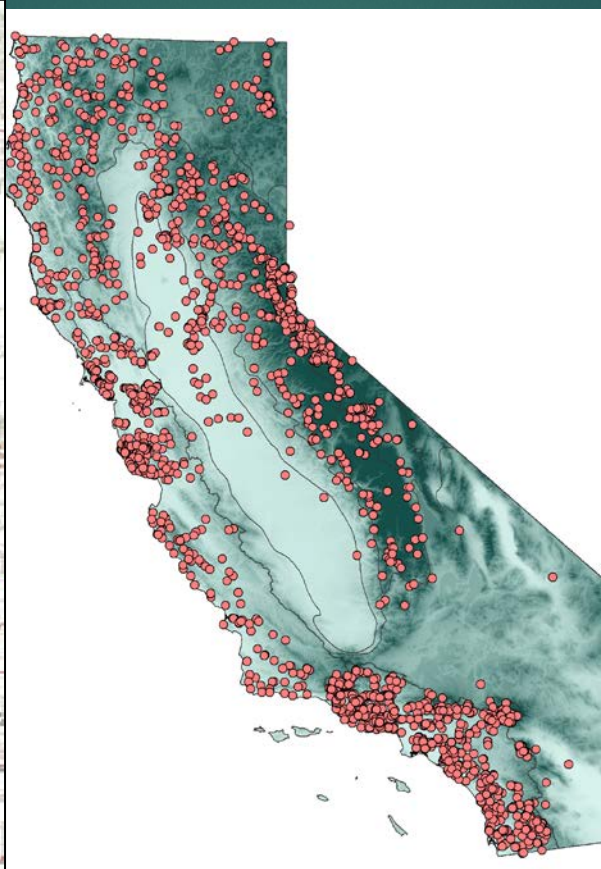
Key Questions

- ▶ How healthy are our
 - Streams
 - Wetlands
 - Watersheds
- ▶ What are the most critical water quality challenges?
- ▶ What areas should be priorities for restoration or management?

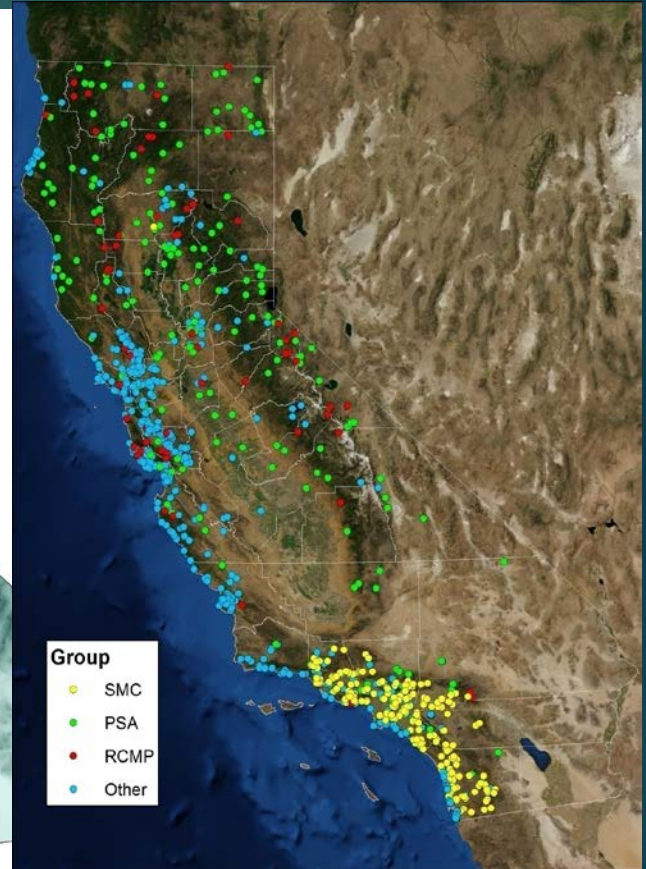
Core Condition Indicators



Algae

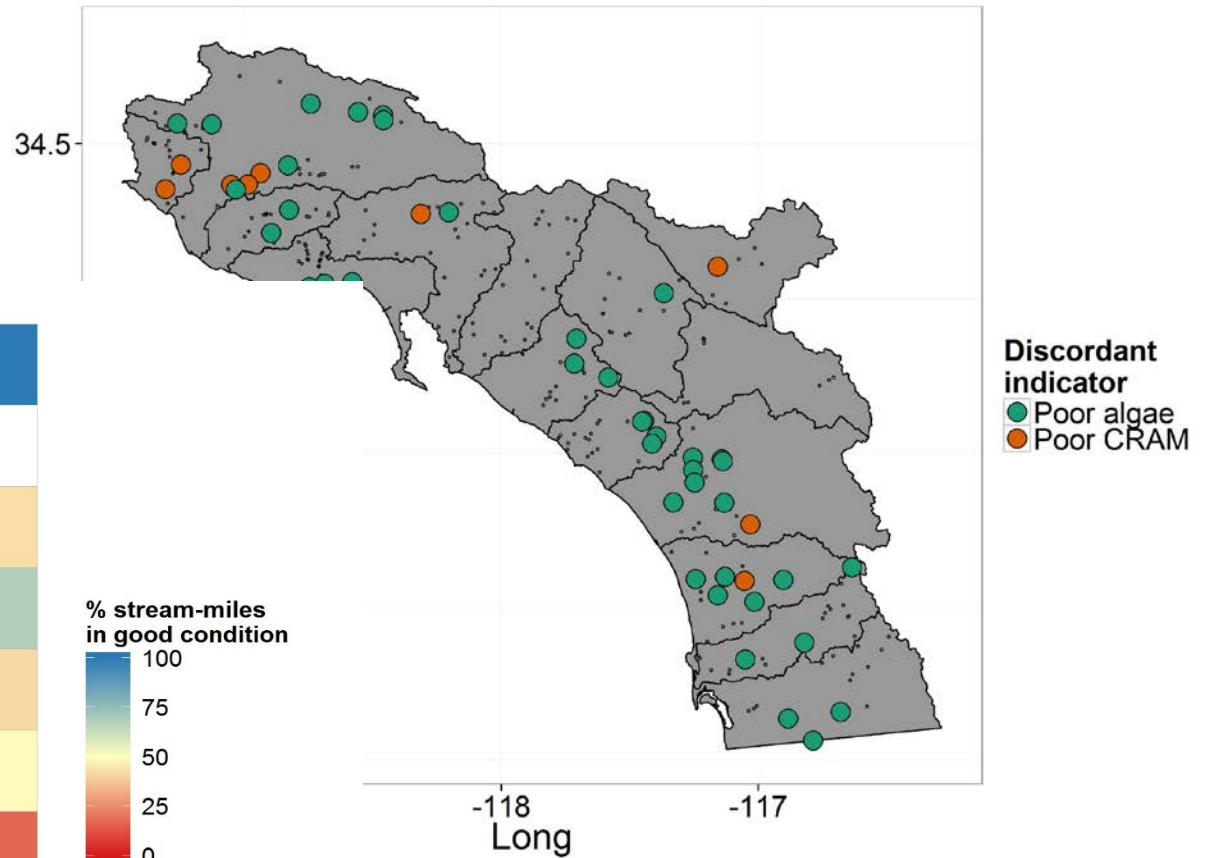
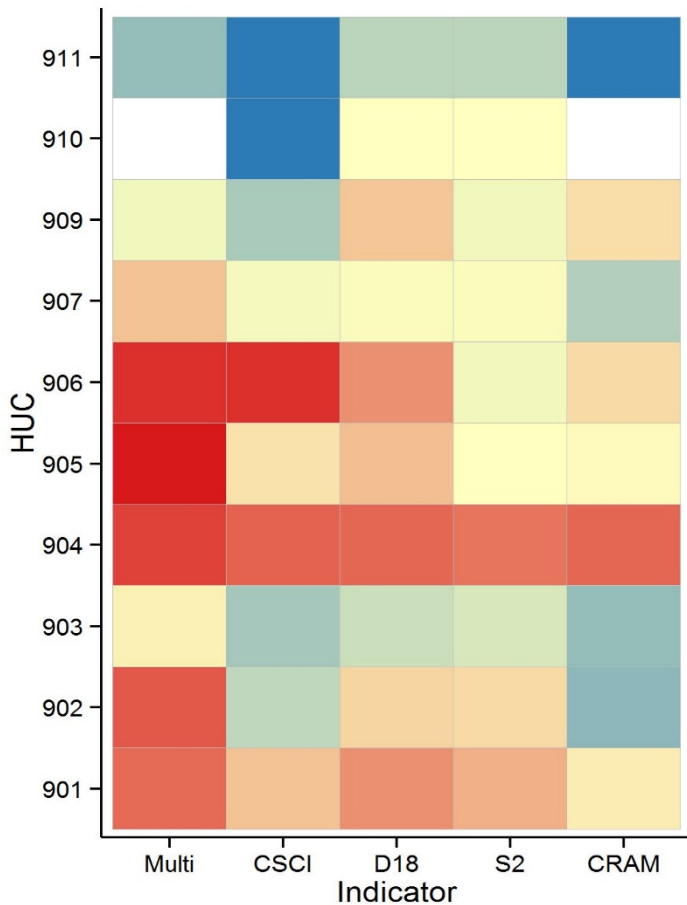


Benthic Invertebrates
Physical Habitat



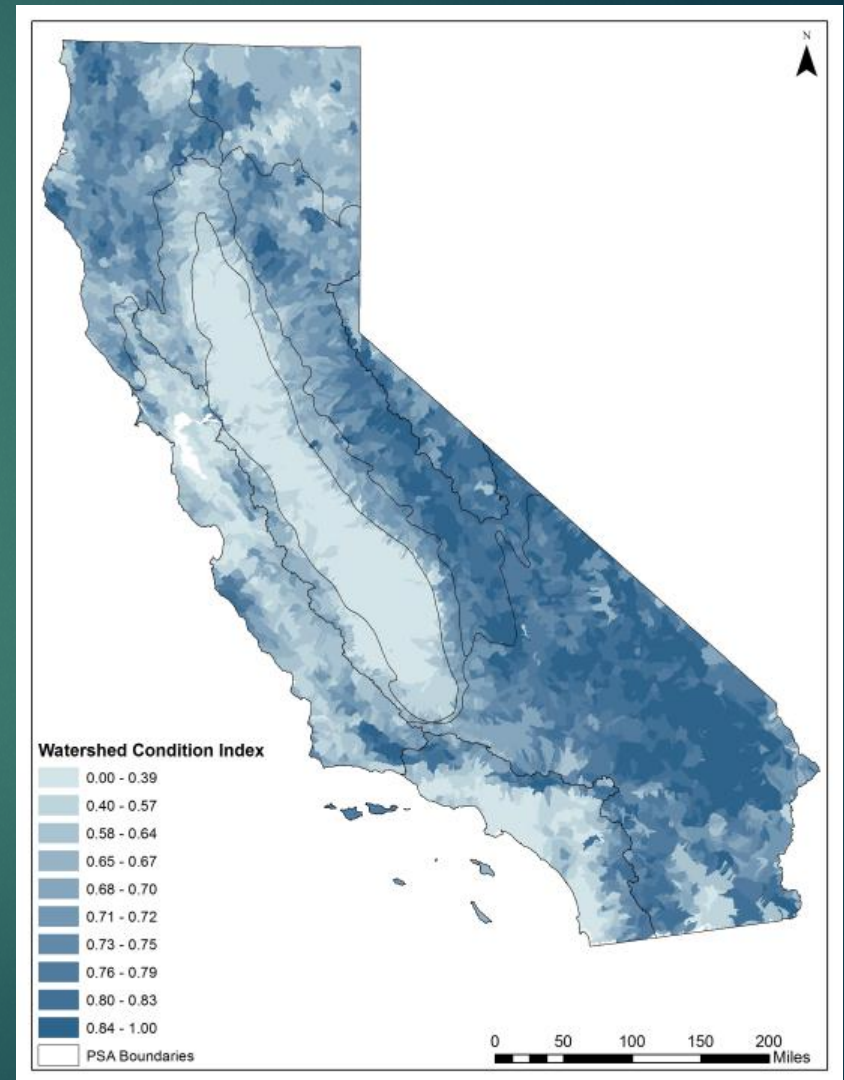
CRAM

Need for Integration



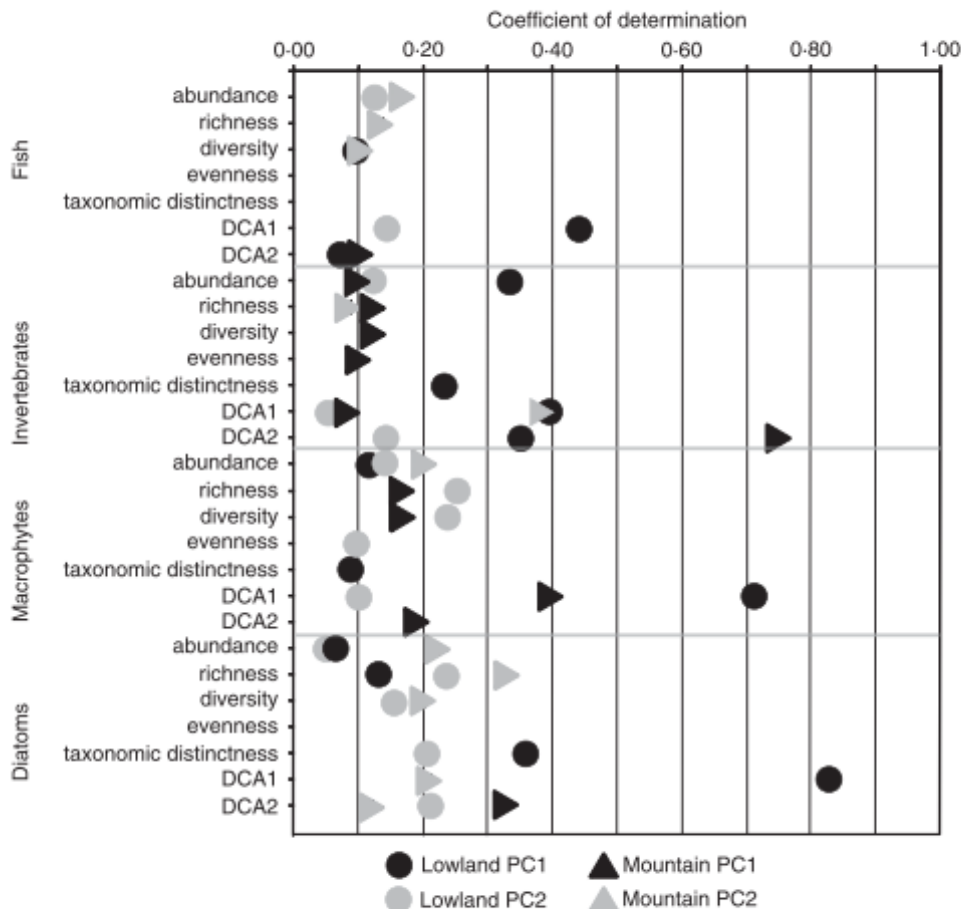
Need for Integration

- ▶ Ability to integrate multiple indicators into an overall assessment of condition
- ▶ Retain ability to look at component parts
 - Different sensitivities of specific areas
 - Different response to stressors



Challenges to Integration

Organism response to stress 181



Journal of Applied Ecology

Journal of Applied Ecology 2009, 46, 175–186

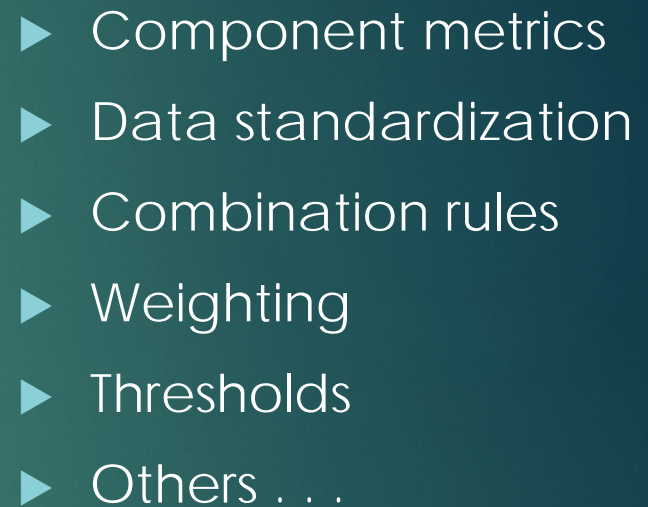
doi: 10.1111/j.1365-2664.2008.01583.x

Response of taxonomic groups in streams to gradients in resource and habitat characteristics

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Lack of concordance
between four taxonomic
groups



- ▶ Component metrics
- ▶ Data standardization
- ▶ Combination rules
- ▶ Weighting
- ▶ Thresholds
- ▶ Others . . .

Goals for This Session

- ▶ Explore critical issues associated with integration of condition indicators
- ▶ Examples and lessons learned
- ▶ Discuss future directions for integrated indicator development

$$\text{MAYBE} = \frac{\text{YES}}{\text{NO}} + \frac{\text{NO}}{\text{YES}}$$

Session Overview

- ▶ Challenges of developing integrated assessments
- ▶ Lessons learned (& pitfalls) from past experiences
- ▶ Statewide integration through healthy watersheds assessment
- ▶ Examples from regional programs
 - Central coast
 - Southern California
- ▶ Moving toward assessing beneficial uses
- ▶ Discussions
- ▶ Optional special workshop (before happy hour)
 - 4:00 – 5:30: *Developing a Tool for Interpreting Beneficial Use Attainment*