Technical Support for Freshwater Biological Objectives in California

SCCWRP
California Dept Fish and Wildlife
US Geological Survey
The SWRCB Directive

• Over 26,000 California stream miles are impaired
  - Uneven among Regions

• Almost all impairments are for chemistry
  - Why not measure the biology directly?

• “The SWRCB will have biological objectives in three years”
  - Asked SCCWRP to help support the technical foundation for policy development
SWRCB’s Policy Goals

- Establish consistency
  - Biological assessment methods
  - Methods for interpreting assessment data
  - Endpoints for reasonable protection of beneficial uses

- Identify streams in good biological condition
  - Protect them from degradation

- Identify streams not in good condition
  - Restore them to good or “best attainable” condition
8-Step Development Process

- Reference condition
- Scoring tools development
- Stressor identification
- Information management
- Implementation Plan Development
- Rulemaking
- Outreach
- Training and standardization

Technical Elements
Technical Development Has Been Successful

- Invested in 15 years of reference site sampling
  - Excellent coverage of most environmental gradients

- Developed a scoring tool capturing statewide consistency AND local site-specificity
  - California Stream Condition Index (CSCI)

- Evaluated four Causal Assessment case studies across the state testing EPA’s tool box
  - Two were in southern California
Reference Condition

- Over 500 sites statewide
- Minimal human disturbance
  - Human land use
  - Roads, Mining, Dams, etc
- Independent of biology
- Can be used for additional measures
  - Algae, other biology
  - Nutrients, other chemistry
  - Microbiology
California Stream Condition Index

- Includes individual species and ecological community diversity measures

- Utilizes landscape modeling approaches to predict "expected" biology at your site
  - Based on geophysical factors

- Measure what is observed

- Observed / Expected
  - Unity represents reference condition
At expectation

30% Below expectation
Status of SWRCB’s Policy Steps

- CEQA Scoping meetings in 2012
  - State Water Board Workshop 2013

- Stakeholder and Regulatory Advisory Groups

- Four philosophical principles

- Three policy options
SWRCB’s Bio-Objective Development Philosophy

- All waterbodies should have biological protection
  - Start with perennial wadeable streams

- Desire multiple indicators
  - Start with benthic macroinvertebrates

- Biological objectives need numeric endpoints
  - Perhaps several

- Requires statewide consistency with regional flexibility
SWRCB’s Three Regulatory Options

- Adopt statewide narrative biological objective with numeric endpoints determined to be protective of beneficial uses

- Amend the Water Quality Control Policy for Developing California’s Clean Water Act Section 303(d) List (Listing Policy) to establish evaluation

- Amend the Inland Surface Waters and Enclosed Bays and Estuaries Plan to establish consistent, statewide biological condition assessment methods, scoring tools, and guidance for implementation
SWRCB Staff Currently Favoring Option #3

- The Plan will not:
  - Establish Water Quality Objectives
  - Establish thresholds that define desired biological condition

- The Plan will:
  - Establish consistent methods including how to establish baseline condition
  - Provide direction to the Regional Water Boards on implementation in water quality control programs – including “dos” and “don’ts”
  - Provide discretion, where appropriate, to the Regional Water Boards
  - Provide recommendations to other relevant State Agencies
SWRCB Next Steps

- Creating a Draft Biological Integrity Assessment Implementation Plan

- Stakeholder and Regulatory Group meetings
  - Implementation sub-committee

- Hoping to take to Board in early 2015
  - Recent leadership turnover