

Bio-integrity Policy Process

Recap – How we got to today

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Overview

- Project history – 2010 to 2015
- Draft Policy Framework – July 2014

Project Goals

Abridged Version

- Consistent methods for conducting biological assessments and interpreting the data
- Identify streams in good condition and protect them from degradation
- Identify streams not in good condition and restore them where feasible

2010

- Kick-off meeting
- Formed Stakeholder and Science Advisory Groups
- Agreed on technical work plan
- Started with plan to develop biological water quality objectives

2011

- Technical work
 - Establish reference condition
 - Stream classification & stressor/response approaches
 - Work plan for causal assessment
- Formed Regulatory Advisory Group
- Stakeholders focused on:
 - Defining terms
 - Providing input on technical work

2012

- Technical work
 - Conducted causal assessment pilot studies
 - Finalized reference condition and scoring tool
- Stakeholders focused on:
 - Causal assessment pilot studies
 - Assessment framework
 - Identifying major policy issues
- Conducted CEQA scoping

2013

- State Water Board workshop on science basis for policy
- Stakeholders focused on:
 - Approaches for addressing “modified” streams
 - Developing implementation options
 - Formed small stakeholder focus group
- Briefings for State Board management to evaluate policy options

2014

- Changed direction from water quality objectives to implementation plan
- Developed draft policy framework
- Project stalled in July due to State Board staff change

January 2015

- New staff assigned
- Project re-started
- New schedule proposed

Draft Bio-integrity Policy Framework July 2014

Policy Goals

- Establish consistent, statewide methods for conducting biological assessments and interpreting biological data as indicators of biological integrity in California's surface waters.
- Identify streams or stream reaches in which biological condition is similar to that in appropriate reference sites and prevent degradation inasmuch as it is within the State's authority to do so.
- Identify streams or stream reaches in which biological condition is significantly different from appropriate reference condition and use this information to determine whether additional information is needed and to prioritize actions necessary to improve biological condition as appropriate.

Definitions

- **“Index Period”** is used to standardize sampling during the most stable flow periods of the year to minimize variation in the biological communities being sampled. Index periods are based on Omernik Level III Ecoregions developed by US EPA.
- **“Sample-able Stream”** is one that has surface water flow present during the appropriate index period and can be crossed safely by wading in order to be sampled for benthic invertebrates.
- **“Reference Site”** is one determined to be minimally disturbed by anthropogenic stresses.
- **“Reference Condition”** represents the expected stream condition for sites with similar natural characteristics (i.e., elevation, geology, precipitation, temperature, gradient, etc.). Data from reference sites are used to characterize the range of biological conditions expected to occur.
- **“Biological Condition”** is defined by the score derived from a data interpretation model that meets the specifications in the Data Interpretation section below.
- **“Minimally Disturbed”** is defined as a site that has stressor variables that do not exceed the criteria in Table 1.

Applicability


- Streams that flow during the index period
- Streams that flow due to wastewater or urban runoff discharges
- Does not include ephemeral streams

Biological Assessment Methods and Data Interpretation

- Biological Assessment Methods
- Data Interpretation
- Establishing Biological Condition (spatial & temporal)
- Causal Assessment

Biological Assessment Methods

- SOP for Collecting BMI Samples and Physical Habitat Measures
- SOP for Lab Processing and Identification of BMIs
- Taxonomic Conventions for Identifying BMI (SAFIT Level 1)



SWAMP Bioassessment Procedures 2007

Standard Operating Procedures for Collecting Benthic Macroinvertebrate Samples and Associated Physical and Chemical Data for Ambient Bioassessments in California

February 2007

Water Boards

www.waterboards.ca.gov/swamp

Data Interpretation – Scoring Tool

- California Stream Condition Index (CSCI)
- Updated at regular intervals
 - Incorporate new data
 - Vet with stakeholders

Biological Community Condition Spatial Extent

- A biological condition score at a site represents biological community condition of the stream segment between tributary inputs or significant changes in land use or hydrology, flow diversions, and stressor inputs.
- At a minimum the biological condition score represents biological condition in the sampled reach of no less than 150 meters.

Establishing Current Biological Condition

- The average biological condition score of a minimum of 3 samples shall be calculated to determine current biological condition.
- Samples may be collected within one year's index period or over multiple years.
- Use sensitivity analysis to determine the number of samples needed to detect a change in biological condition scores.

Causal Assessment

- Refer to causal assessment case studies and guidance document.
- Identify criteria for prioritizing where further investigation or causal assessments are needed.
 - Potential for restoration
 - Adequate data on biological community condition
 - Adequate comparator sites
 - Adequate data on potential stressors

Implementation in Water Quality Control Programs

- Assess current biological community condition.
- Assess trends in biological community condition.
- Measure the effectiveness of management plan implementation
- Evaluate whether additional investigation is necessary to determine the cause of a change in biological community condition or a low biological condition score relative to other similar sites.
- Evaluate whether additional management actions are needed to improve biological community condition.
- In streams where biological community condition is statistically similar to reference condition, Regional Boards may require biological assessment as a screening tool in lieu of other monitoring requirements.
- Prioritize drainage and sub-drainage areas that need management actions.

Roles of the Water Boards and Other Agencies

- The State Water Board establishes policy for water quality control, consisting of principles and guidelines for long-range water resource planning.
- The Regional Water Boards are required to formulate and adopt water quality control plans for surface and groundwater within their regions. Such plans shall conform to policies adopted by the State Water Board. The Regional Water Boards protect water resources with the issuance of permits that implement CDFW recommendations, this Policy, and applicable law.
- CDFW is charged with the maintenance of sufficient populations of all species of aquatic organisms to insure their continued existence (Fish and Game Code Section 1700). CDFW, as with all State departments, in carrying out activities which affect water quality, are required to comply with water quality control policies adopted by the State Water Board, unless otherwise directed by statute. (Wat. Code § 13146).

Questions?