

## **The California Stream Condition Index (CSCI): A New Statewide Biological Scoring Tool for Assessing the Health of Freshwater Streams**

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### **OVERVIEW**

California's dramatic environmental diversity supports a broad array of natural stream types throughout the state. Bioassessment of freshwater stream and rivers is especially challenging in such a region because the reference condition, or the benchmark of biological condition expected when human disturbance in the environment is absent or minimal, varies greatly among natural stream types. Previous indices used by monitoring programs were developed on a regional basis to help partition the state's environmental diversity, but statewide assessments were confounded by different criteria used in different regions. The CSCI, which translates complex data about individual benthic macroinvertebrates (BMIs) found living in a stream into an California Stream Condition Index (CSCI) Technical Memorandum overall measure of stream health, was developed specifically to address some of the shortcomings of earlier indices. First, the CSCI was developed with a much larger, more representative data set that makes it applicable statewide and that covers the broad range of environmental variability among natural stream types. Second, the CSCI sets biological benchmarks for a site based on its site-specific environmental setting. Finally, the CSCI combines two separate types of indices, each of which provides unique information about the biological condition of a stream: a multi-metric index (MMI) that measures ecological structure and function, and an observed-to-expected (O/E) index that measures taxonomic completeness. Together they provide multiple lines of evidence about the condition of a stream, providing greater confidence in results than a single index.

**Full text: [883\\_CSCI-StatewideBioScoringTool.pdf](#)**