

WATERBODY TYPE: WADEABLE PERENNIAL STREAMS

MEASURE: BIOLOGICAL CONDITION OF STREAMS

MESSAGE: 67% of California's stream length is in "Good" condition.

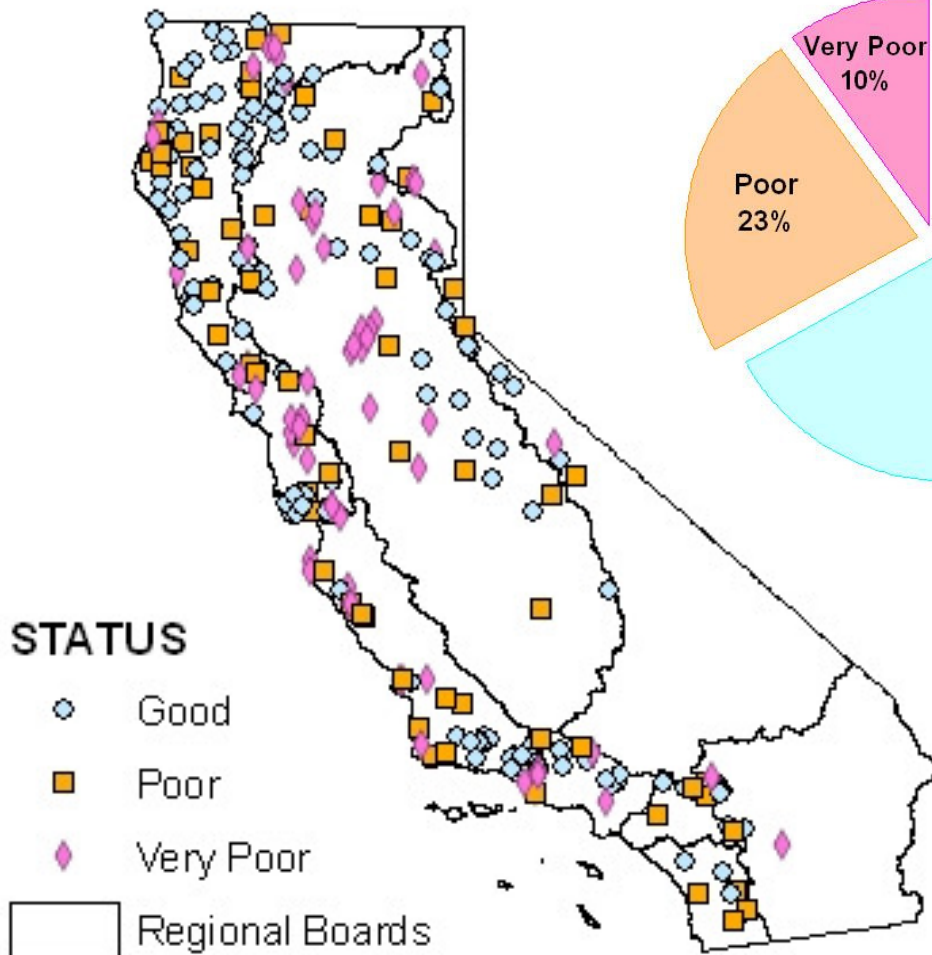
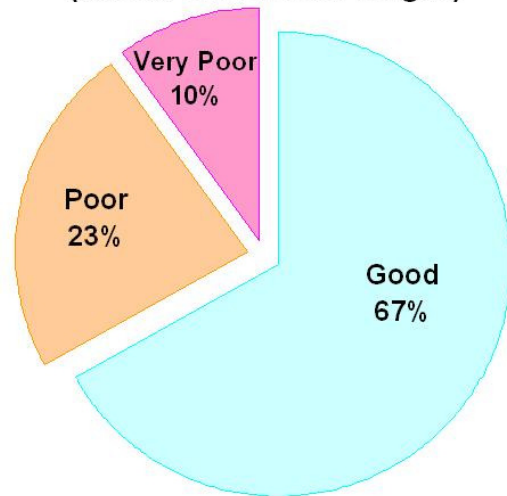
KEY STATISTICS

NUMBER OF SITES SAMPLED: 163

STREAM LENGTH REPRESENTED (miles): 28,266

MEASUREMENTS:

Statewide Stream Health (based on stream length)



WHAT IS THE MEASURE SHOWING?

This measure shows the percent of stream miles that support healthy aquatic life. This study looked at the insects and other aquatic life (except fish) that live in shallow streams throughout California. Some of these organisms are sensitive to pollution in the water and their presence or absence in a stream can tell us about the health of that stream. Sixty-seven percent of California streams are in “Good” condition, 23 percent are in “Poor” condition and 10 percent are in “Very Poor” condition when compared to the best or least disturbed sites in California.

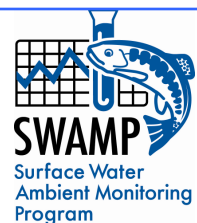
WHY IS THIS MEASURE IMPORTANT?

This measure is one indicator of the overall health of streams. It allows researchers to make broad estimates of the health condition of shallow streams statewide. It also establishes baseline information that can be used to compare with future studies. In addition, the health of aquatic life, specifically bugs that live in streams, is important because they are food sources for fish and wildlife. The health of the bugs directly affects the health of animals higher up in the food chain.

WHAT FACTORS INFLUENCE THE MEASURE?

The reason for the decline of aquatic life (including fish and important fish foods such as bugs) in some streams is not always apparent. Pollution and other stressors that can negatively affect aquatic life in streams can develop gradually over time. In many cases, multiple stressors act together. Higher water temperatures, lower amounts of dissolved oxygen, soil, and contaminants are all potential stressors that can negatively affect aquatic life.

<i>Stressor</i>	<i>Potential Source(s) of Stressor</i>
Contaminants	Runoff from urban or agricultural areas Wastewater treatment plants Aerial deposition
High water temperature	Low water flow Lack of shade along stream banks Shallow water due to sediment build-up
Sediment (soil)	Erosion from stream banks Runoff from urban or agricultural areas
Low dissolved oxygen	High water temperature Excess nutrients from erosion, runoff, or wastewater discharges



TECHNICAL CONSIDERATIONS:

- Data source: California Monitoring and Assessment Program (CMAP) Period 2004-2005; US EPA Environmental Monitoring and Assessment Program (EMAP) Period 2000-2003.
- Unit of Measure: Condition scores based on California Aquatic Macroinvertebrate Observed/Expected Index.
- Poor stream condition scores likely indicate poor ecological condition. However, a stream can have a good condition score and still be in poor ecological condition.
- This indicator is like an examination in a doctor's office. If it finds a problem, there is a problem. But, just like an office exam is not able to detect all illnesses, this indicator may miss some water quality problems.
- Fact sheet is available at:
http://www.waterboards.ca.gov/water_issues/programs/swamp/docs/factsheets/wadeable11x8.pdf
- Public report is available at:
http://www.waterboards.ca.gov/water_issues/programs/swamp/docs/reports/assess_statewide2005.pdf

GLOSSARY:**Wadeable Stream**

Streams, creeks and small rivers that are shallow enough to sample without boats.

Perennial Stream

Streams that contain water year-round.

Aquatic Macroinvertebrates

Aquatic bugs that are large enough to be seen with the naked eye.

Observed/Expected Index

An observed to expected ratio is a measure of the loss of species expected under natural or reference conditions.