

EPA National Perspective on Comprehensive Water Quality Monitoring and Assessment

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Assessment in the Past

- States prepared State 305(b) water quality assessment reports
- EPA compiled all State 305(b) reports and reported on the nation's water quality
- + >50 305(b) reports \neq national water quality report

Assessment in the Future

- States transition from preparing State 305(b) reports to Integrated 305(b)/303(d) reports and lists
- EPA looks for restoration and improvements in certain watersheds
- EPA reports on nation's water quality using national surveys based on probabilistic design

Monitoring in the Past

- Since 1989 – EPA and states conducted coastal monitoring of bays, estuaries, offshore areas, and coastal wetlands with probabilistic design.
- 2000-2004 – EPA conducted Western EMAP survey of wadeable streams in 12 western states (including CA, AZ, NV; HI, GU starting soon).
- Beginning 2004 – States begin reporting results from probabilistic design monitoring into 305(b) reports.

Monitoring in the Future

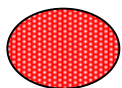
- Beginning 2006 – EPA expanding probabilistic sampling approach to other water body types
 - Lakes and reservoirs
 - Large rivers and streams
 - Wetlands

Schedule for National Surveys

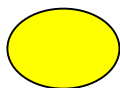
Annual Output Measure for Monitoring - EPA will assess and identify trends for 100% of the Nation's waters by 2017 using statistically-valid surveys to evaluate the extent that waters support the fishable and swimmable goals of the Clean Water Act. Annual milestones to meet this goal are:

Coastal waters and estuaries
Streams and small rivers
Lakes, ponds, reservoirs
Large and great rivers
Wetlands

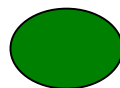
Amount Assessed in 2000	Target for 100% Assessed	Target for Trends of 100%
100%	2004	2007
19%	2006	2011
43%	2008	2013
19%	2010	2015
8%	2012	2017



Red-
Planning

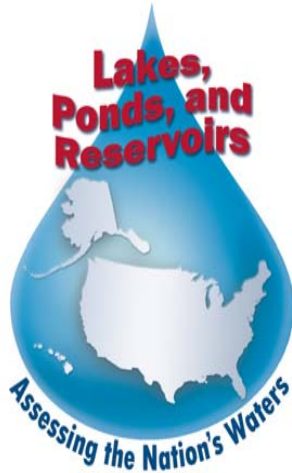


Yellow-
Progress



Green-
Success

National Lakes Survey



The goal of this survey is to address two key questions about the quality of the Nation's lakes, ponds, and reservoirs:

- What percent of the Nation's lakes are in good, fair, and poor condition for key indicators of ecological health and human activities?
- What is the relative importance of key stressors such as nutrients and pathogens?

Lakes = Natural and man-made freshwater lakes, ponds, and reservoirs in the continental U.S., excluding the Great Lakes.

Probability-based network which will provide statistically-valid estimates of the condition of all lakes with known confidence.

National Lakes Survey

- Define scope and design of survey in 2005 and 2006
- Define the population of lakes to be surveyed
- Select indicators of ecological health and human activities
- Develop QA plan and field manuals

National Lakes Survey

- Conduct field training and sampling in 2007
- Process samples and analyze data in 2008
- Prepare report by end of 2008

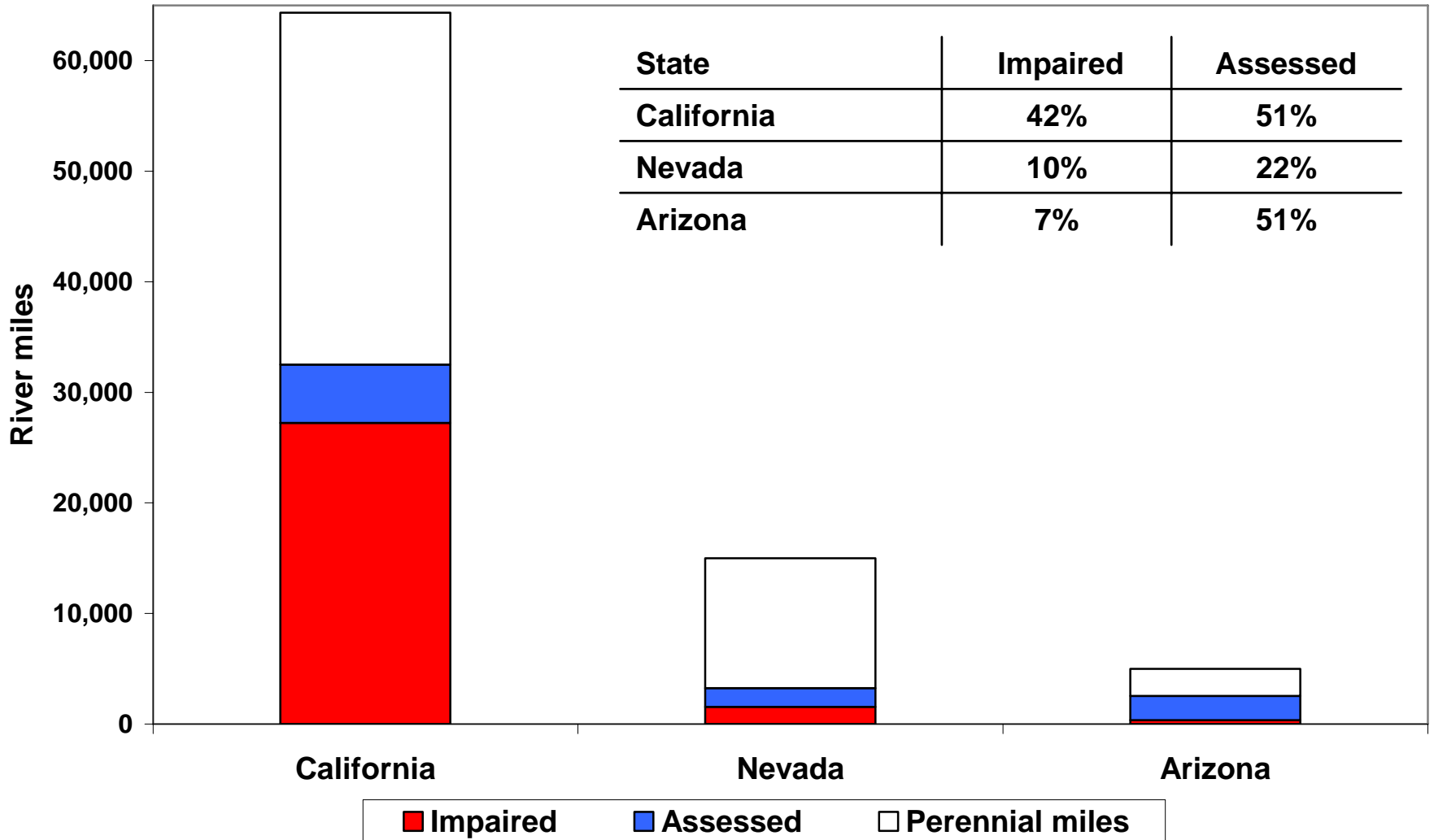
National Lakes Survey

- April 25-28, 2005 at the Annual State Lakes Meeting in Chicago, IL – EPA sought input from participants
- **Nov. 10, 2005 at the North American Lake Management Society's (NALMS) Annual Symposium in Madison, WI**
<http://www.nalms.org/symposia/madison/index.htm>
- EPA has a half day session
- EPA seeking input from meeting participants on scope, design and implementation
- State of Vermont providing overview of their partnership among states in New England to survey lakes
- EPA looking for specific recommendations for defining population of lakes that should be included in the survey

National Lakes Survey

- April 25-28, 2006 at the Annual State Lakes Meeting in Chicago, IL
<http://www.nalms.org/symposia/events.htm>
- Plan the survey of the Nation's lakes
- Focus on indicators and field protocols for survey
- Participants will present and discuss approaches and options:
 - chemical, physical, and/or biological parameters
 - technically and financially feasible sampling and analytical methods
 - technologies such as remote sensing
 - practical considerations for getting the assessment done (e.g., use of volunteers)
 - availability of labs; timeframes; funding
 - emerging pollutants or other issues to consider

Extent of River Impairments (Perennial Streams) from the 2002 305(b) Reports



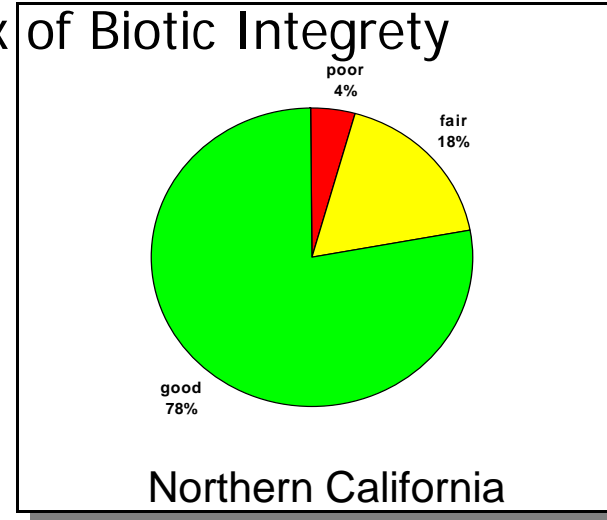
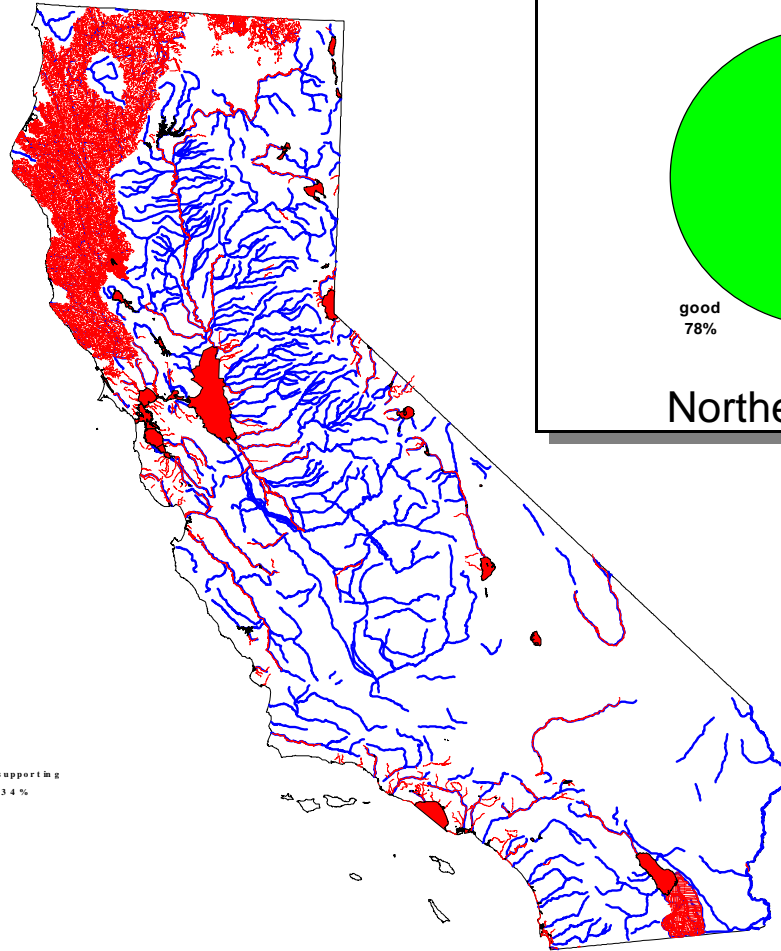
Need a common yardstick for assessment.

Directed sampling &
Best Professional Judgement

Probability-based sampling &
Index of Biotic Integrity

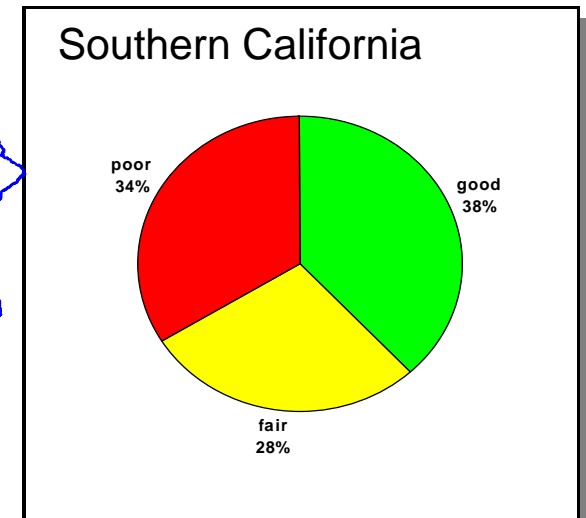
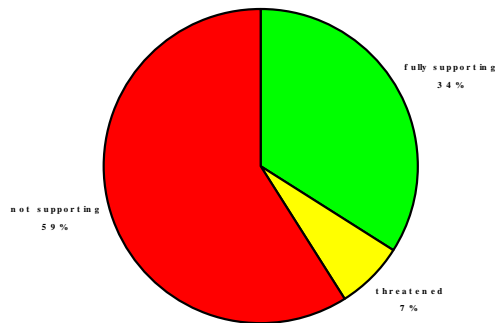


Northern California



Northern California

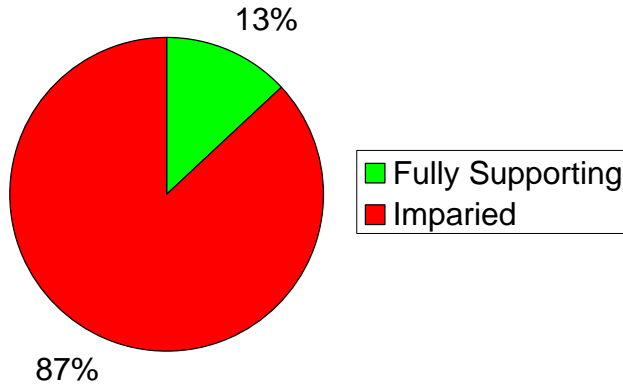
Southern California



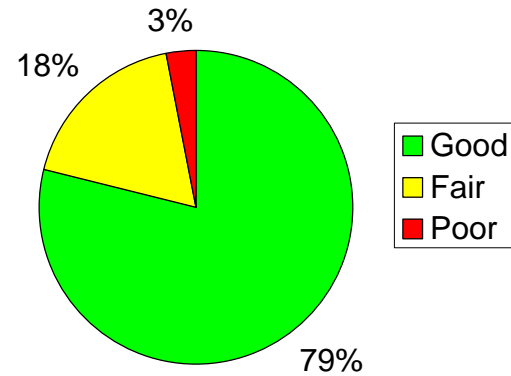
Southern California

Comparing EMAP Estuaries to 305(b)

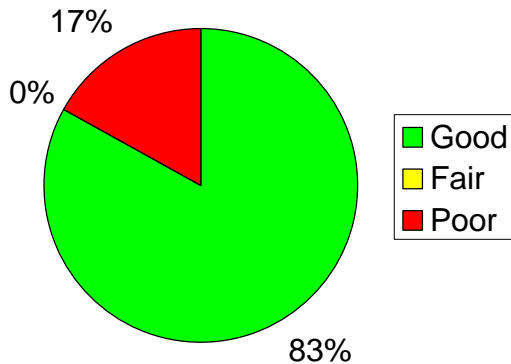
West Coast 305(b) Summary



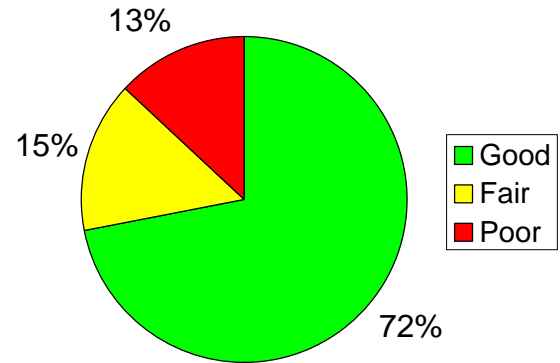
EMAP Sediment Contamination



EMAP Sediment Toxicity



EMAP Benthic Condition



Today's Water Quality = 51% Great

