

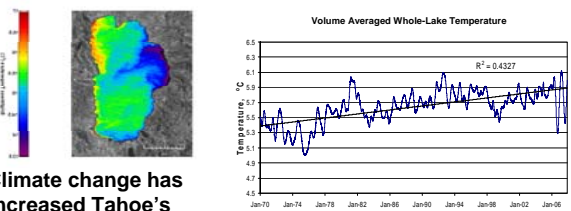
Science is Helping to Restore Lake Clarity

Developing an Integrated Water Quality Management System

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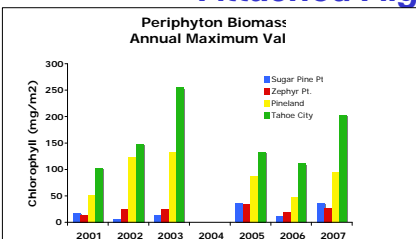


State of the Lake Warming of Lake Tahoe



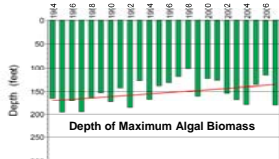
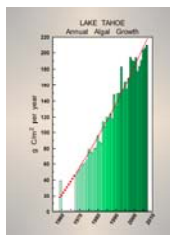
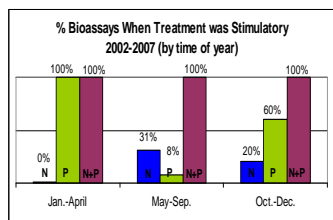
- Climate change has increased Tahoe's temperature
- Increased water column stability selects for smaller sized diatoms, affecting biodiversity and food webs
- Resistance to deep mixing will affect water quality

Nearshore Water Quality Attached Algae



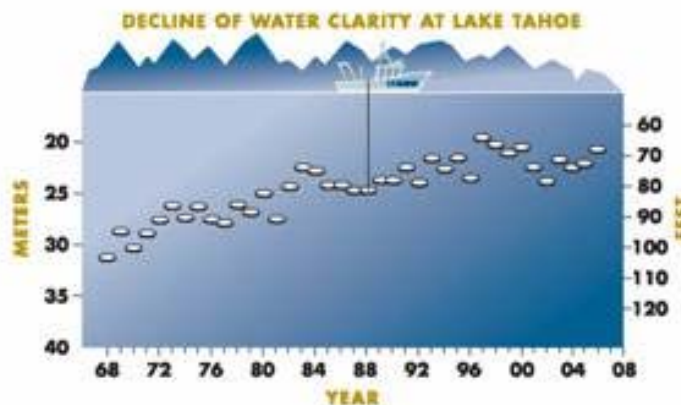
Attached algae covers rocks in urban regions - visible to public

Phytoplankton at Base of Food Web



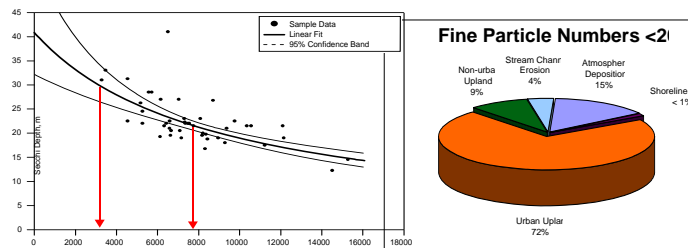
- Phytoplankton growth increasing
- Bioassays show N+P combined stimulate growth
- Depth of maximum biomass shallows
- New techniques indicate that very small phytoplankton play a role in productivity, biodiversity and food webs

New Analysis Shows Slowdown in Lake Tahoe Clarity Loss



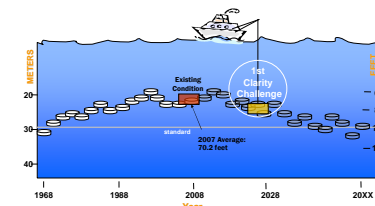
- Since 2001 - better clarity than predicted by historic long-term trend
- New analysis uses a Generalized Additive Model - more sensitive to detecting long-term change and reflective of current conditions
- Time-series analysis suggests slowdown not entirely due to lower precipitation and runoff
- New curve does not predict future conditions

Fine Particles and Lake Clarity



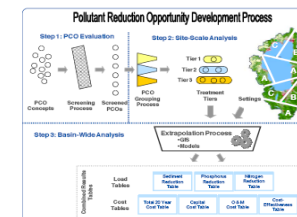
- Modeling shows clarity can be restored if loading targets are met
- Large fraction of urban sources will require reduction

Lake Tahoe TMDL Clarity Challenge



Clarity Challenge - interim water quality milestone of 77-80 feet of clarity. Represents improvement over current conditions. Science suggests a 32% in fine sediment loading, 17% reduction in phosphorus loading and a 4% reduction in nitrogen loading is needed to meet this goal.

Load Reduction Opportunities



Pollutant Reduction Opportunity study quantified options. Greatest opportunity came from control and treatment of urban stormwater.

Pollutant Reduction Targets

(% of total basin loads)

Target	77-80 ft. "Challenge"	97 ft. TMDL
Secchi Depth	15 years	>20 years
Fine Particles	32%	65%
Phosphorus	14%	35%
Nitrogen	4%	10%

Strategy for Meeting WQ Goals

