

TAHOE:
STATE
OF THE
LAKE
REPORT
2008

ANGORA FIRE

ANGORA FIRE - LAKE RESPONSE

Atmospheric deposition of nutrients

The Angora Fire began on June 24, 2007, and was fully contained within eight days. Nearly 3,100 acres burned in the Upper Truckee River watershed, located in the southwest corner of the Lake Tahoe Basin. Satellite images showed the smoke had significantly cleared within 4 or 5 days. Atmospheric deposition

was measured about one mile east of the fire and at the mid-lake buoy in the northern part of the lake. Atmospheric deposition of nitrogen on the lake from the fire was estimated to be 5.0 to 8.4 metric tons; phosphorus deposition was estimated at 0.4 to 0.8 metric tons. (One metric ton = 2,205 pounds.) Although deposition

during the fire was 2.5 to 7 times the normal summer rate, it represented only about 1 to 2 percent of the annual load from all sources. Nutrient loads from the streams are not presented here, but no significant runoff occurred during 2007.

	Total Nitrogen	Total Phosphorus
Load from Angora Fire	5.0 TO 8.4 METRIC TONS	0.40 TO 0.77 METRIC TONS
Increased deposition rate during fire	2.5 TO 4 TIMES	4 TO 7 TIMES
Contribution to annual atmospheric loading	2 TO 4 %	6 TO 11 %
Contribution to annual loading from all sources	1.2 TO 2.1 %	0.9 TO 1.5 %

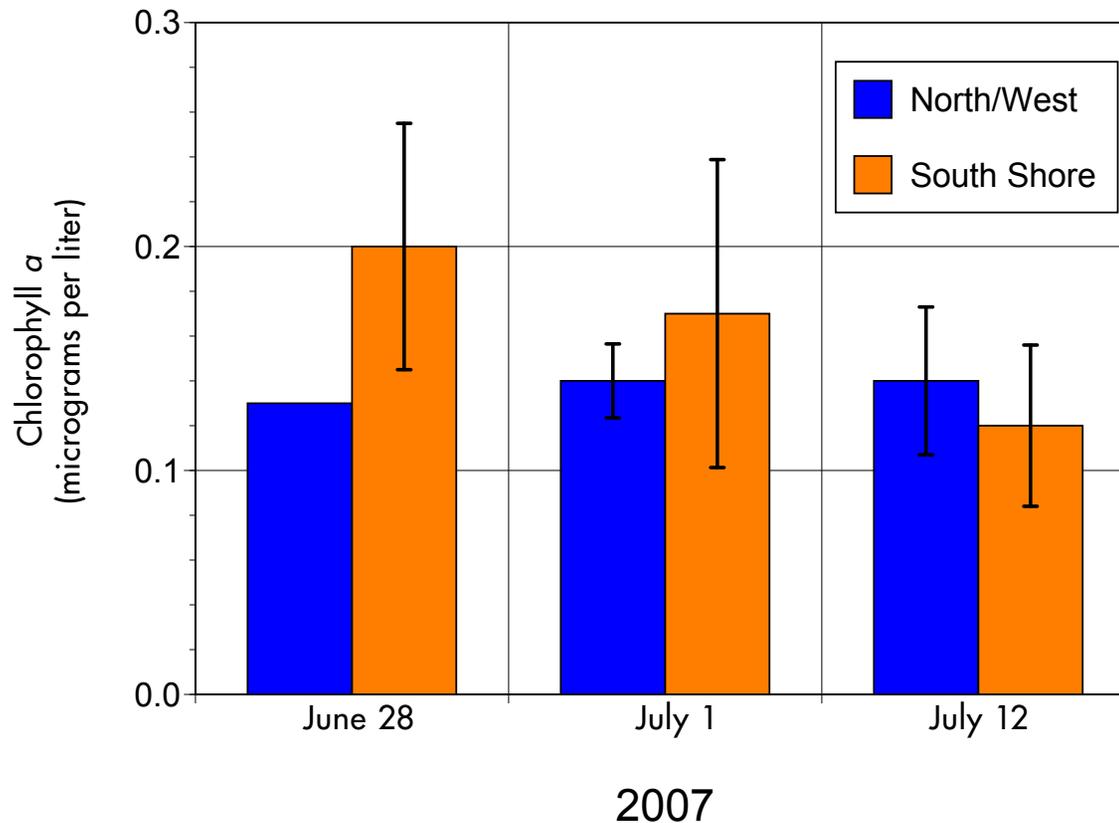
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Short-term impacts on phytoplankton

Chlorophyll concentrations in the lake were measured along a depth profile and the average value of the top 33 feet of water was calculated. (Chlorophyll concentrations below 33 feet could be influenced by the deep chlorophyll maximum and there-

fore were assumed not to be a direct response to the fire.) From 8 to 17 stations were visited on three dates within 2 to 3 weeks after the fire. On June 28th, phytoplankton biomass along the south shore was about 50 percent higher than other sites on the

lake. The effect was short-lived however, and phytoplankton biomass was relatively uniform across the lake by July 12th. Chlorophyll concentrations at these shallow depths are extremely low.



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Seasonal impacts on phytoplankton

Analysis of routine monitoring data collected at TERC's western lake monitoring station allowed us to evaluate the seasonal impacts of atmospheric deposition from the Angora Fire on lake clarity and algal biomass. Secchi depth was relatively steady for the six-

week period from July to mid-August. The low Secchi reading of 17.5 meters was taken two days before the fire, on June 22nd. The red horizontal bar shows when smoke was in the basin. Both Secchi depth and chlorophyll *a* remained stable until late August,

indicating that atmospheric deposition from the Angora Fire had a negligible impact on lake clarity and algal biomass. It is highly unlikely that changes after late August were related to the fire.

