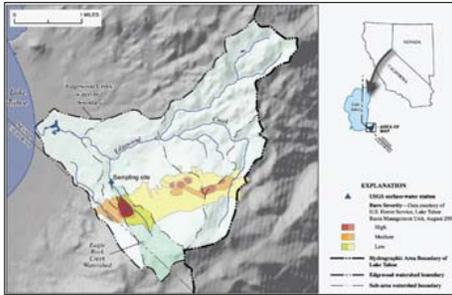


Fire Effects on Water Quality



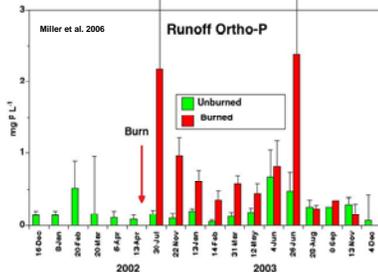
Scientists monitored the conditions of Eagle Rock Creek drainage before and after the 672 acre Gondola wildfire of July 3, 2002.

- Shortly after this fire a summer precipitation event caused severe erosion.

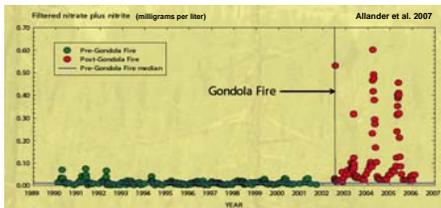


- The amount of surface material removed by that one event was 10–50 times greater than the long-term annual average.

- Nutrient delivery downstream increased dramatically after the fire.



- Years later the concentrations of nitrate plus nitrite remain elevated.



Runoff Characteristics of Soils

Runoff water quality and soil nutrient flux was compared at three watershed locations: an upland forest, a transition ecotone consisting of forest and meadow vegetation, and a down-gradient stream environment zone (SEZ) containing a wet meadow. Significantly higher discharge loads of NO_3^- -N, NH_4^+ -N, and SO_4^{2-} were found in surface runoff from the wet meadow/SEZ than from the upper watershed location.

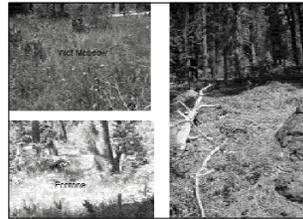
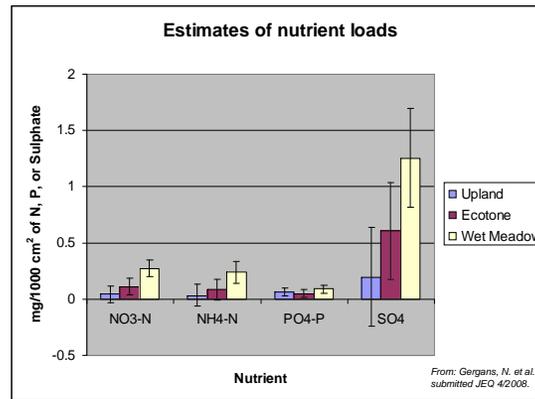


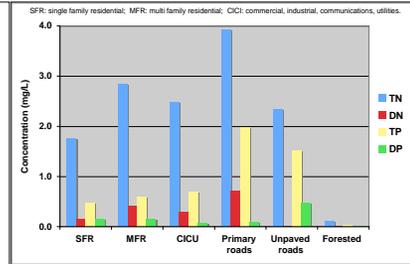
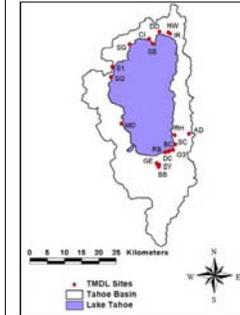
Chart below shows estimates of NO_3^- -N, NH_4^+ -N, PO_4^{3-} -P, and SO_4^{2-} loads (mg) for the upland, transition ecotone, and wet meadow study site locations.



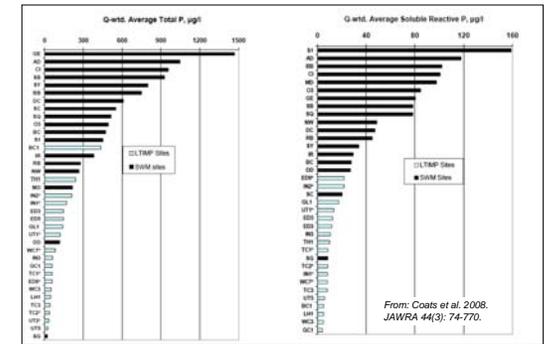
- It appears that the stream environment zone adjacent to Sagehen Creek is not functioning as a sink for nutrients in overland flow.
- The soils from this study were derived from volcanic parent material, and although a large proportion of Tahoe basin soils are of andesitic origin, an even larger proportion of the basin's soils consist of decomposing granite.
- A similar study performed on granitic soils would assess potential differences in site behavior due to soil type.

Tahoe Regional Stormwater Monitoring Program

Collaborative interagency effort to develop a Basin-wide approach for consistent protocols in stormwater monitoring, data reporting and treatment evaluations.



These data have been useful for developing TMDL land use water quality targets.



Conceptual Design of Periphyton Biofilm Treatment System

Testing a pilot stormwater treatment system to achieve the low nutrient and sediment requirements for Lake Tahoe.

