

Air Quality in the Lake Tahoe Air Basin

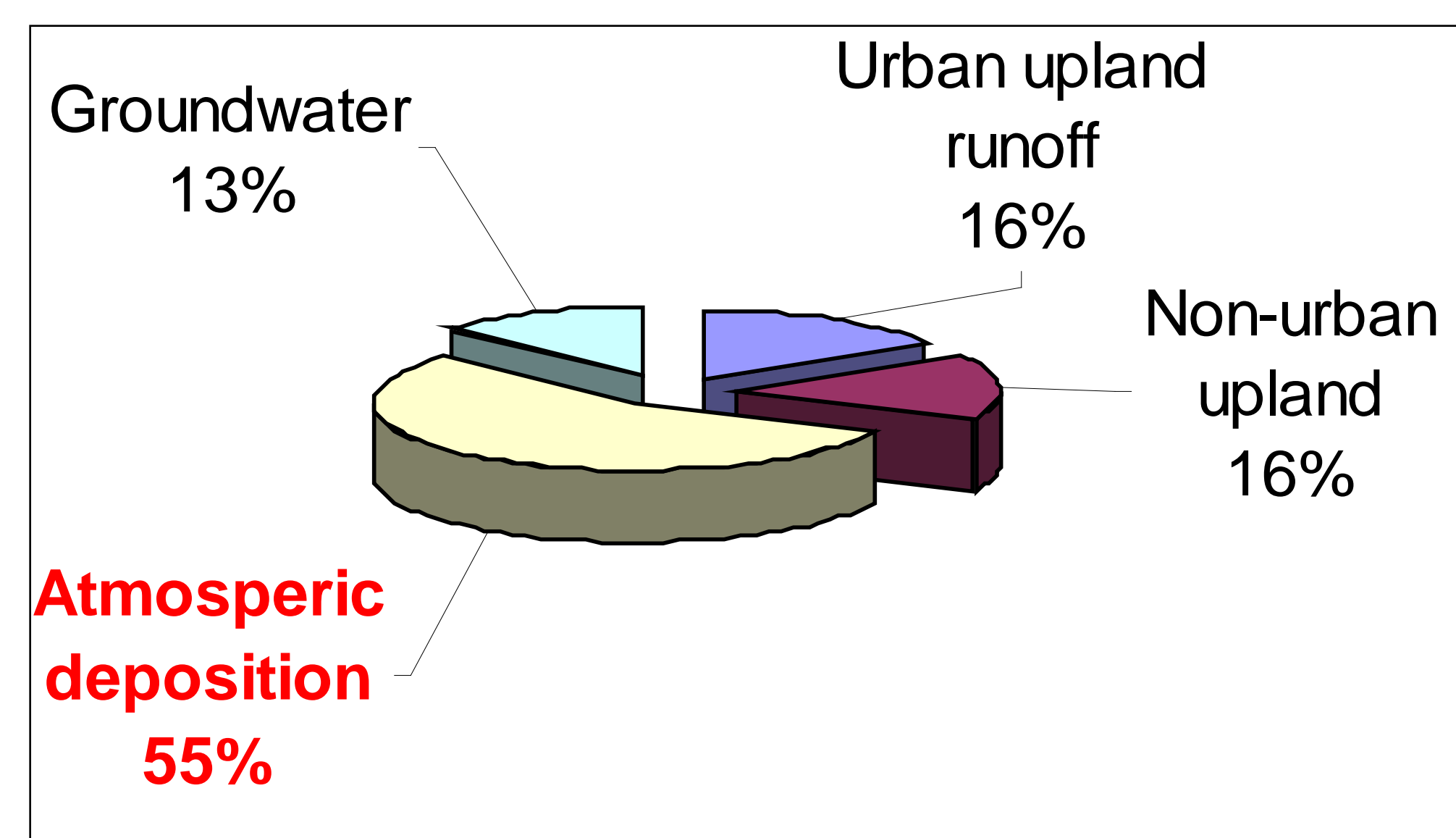
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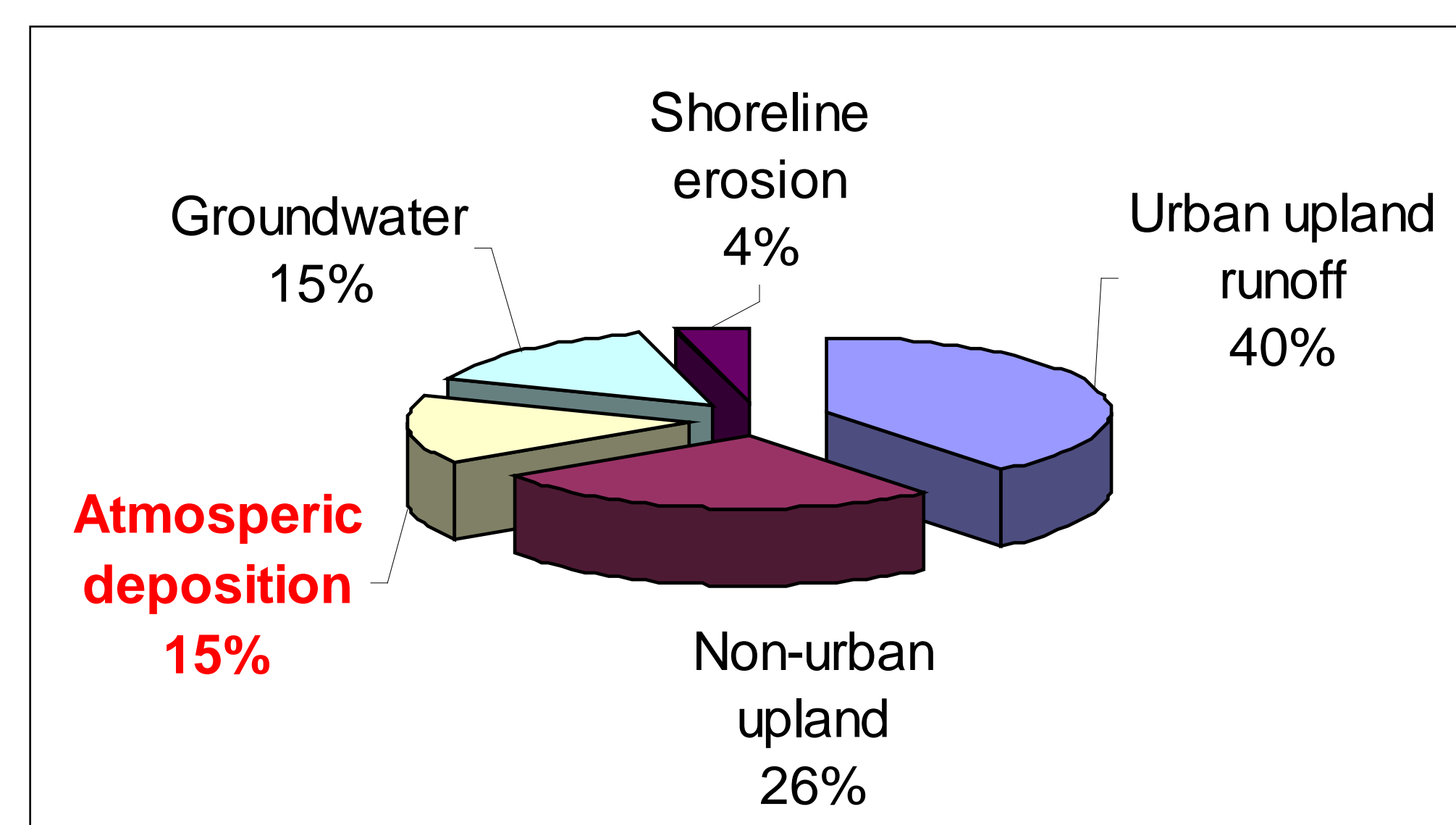
Nature of the Problem

- Since 1968, lake clarity has been decreasing at 0.25 m/yr.
- Causes of the decline in clarity include hydrologic and atmospheric input of:
 - Nitrogen
 - Phosphorous
 - Sediment

Are Atmospheric Sources Significant? Nitrogen



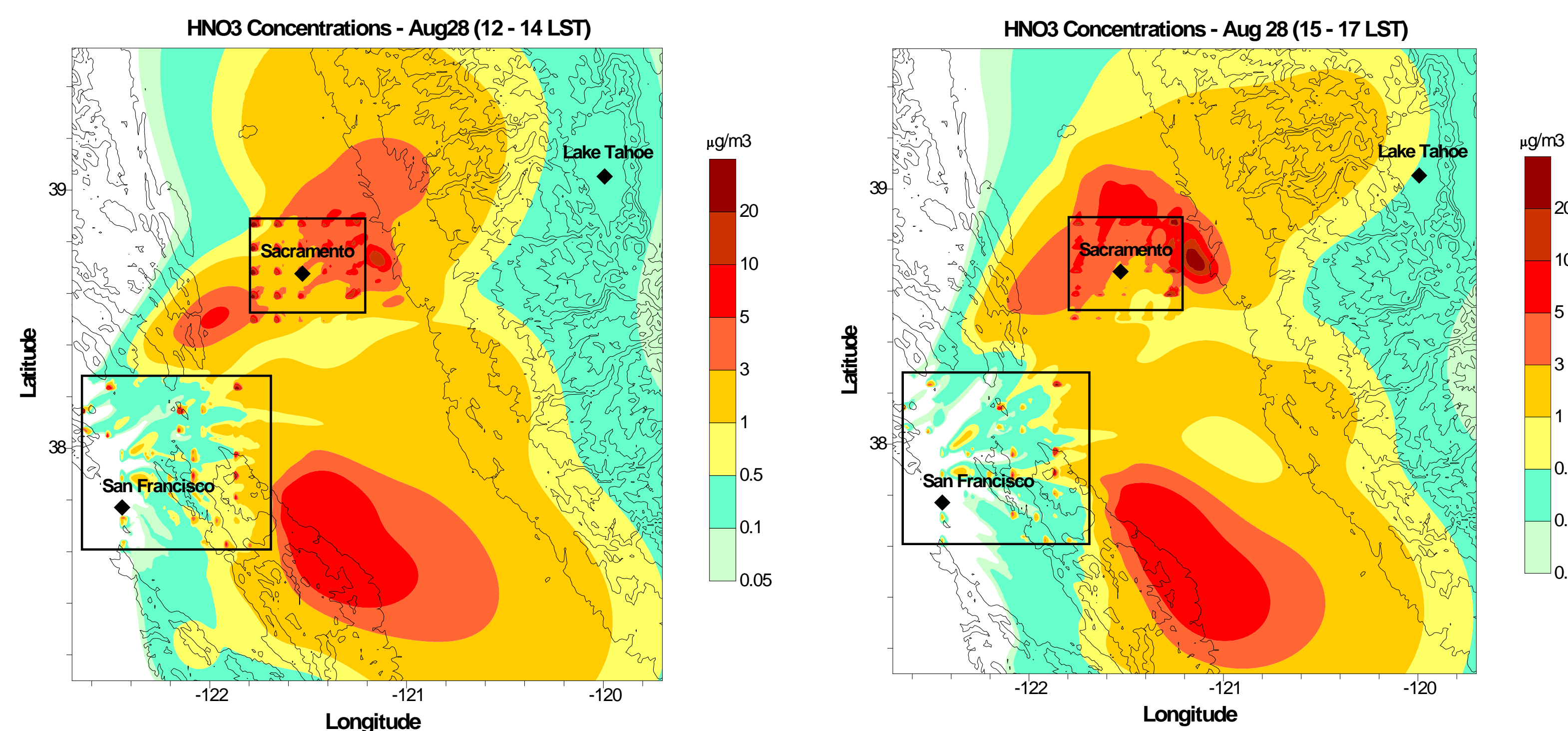
Phosphorous



State of the Air

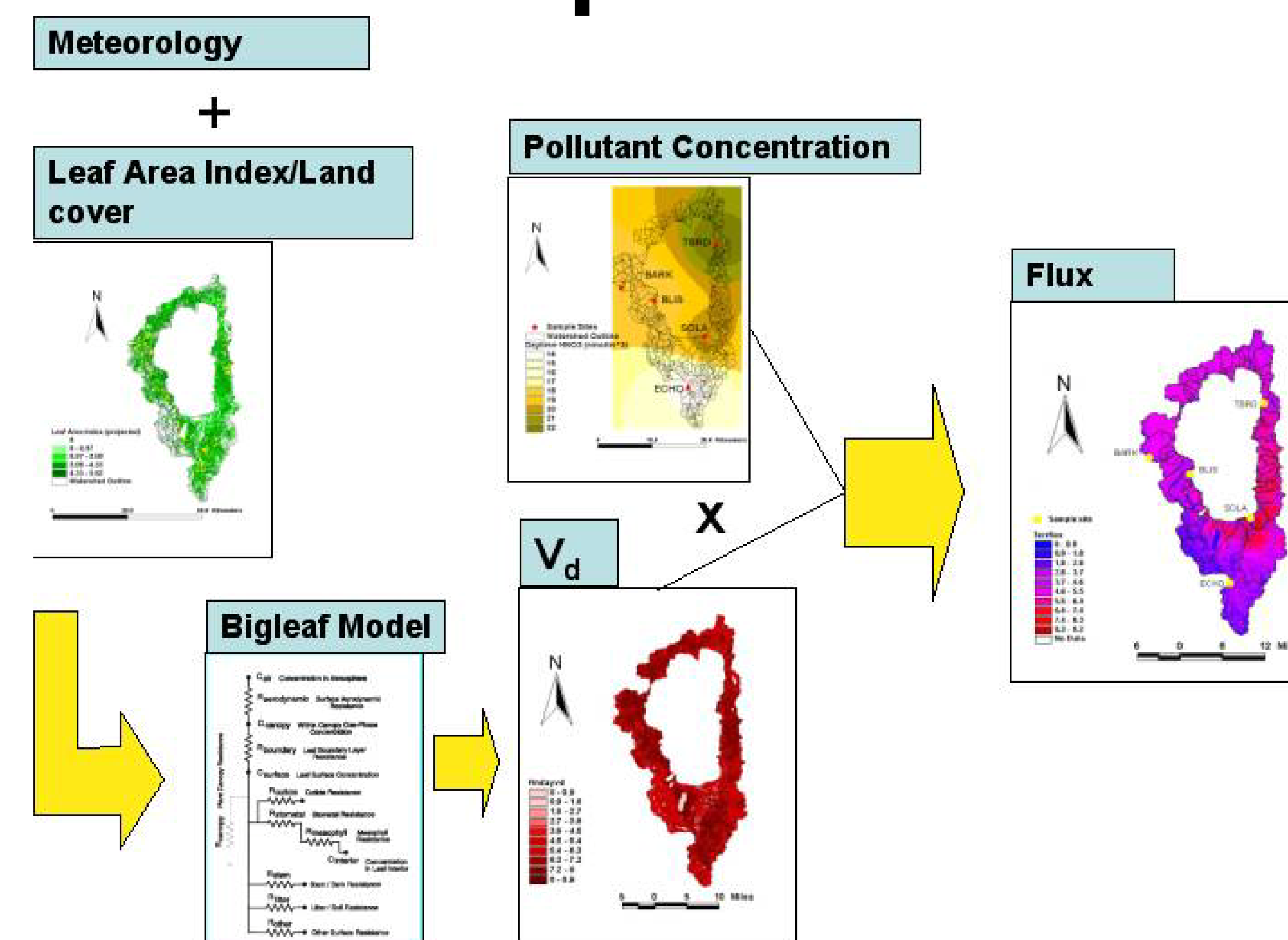
- The air quality at Lake Tahoe is generally excellent.
- However, ozone is getting worse and visibility has been decreasing.

In-Basin vs. Out-of-Basin Sources of Gaseous Pollutants?



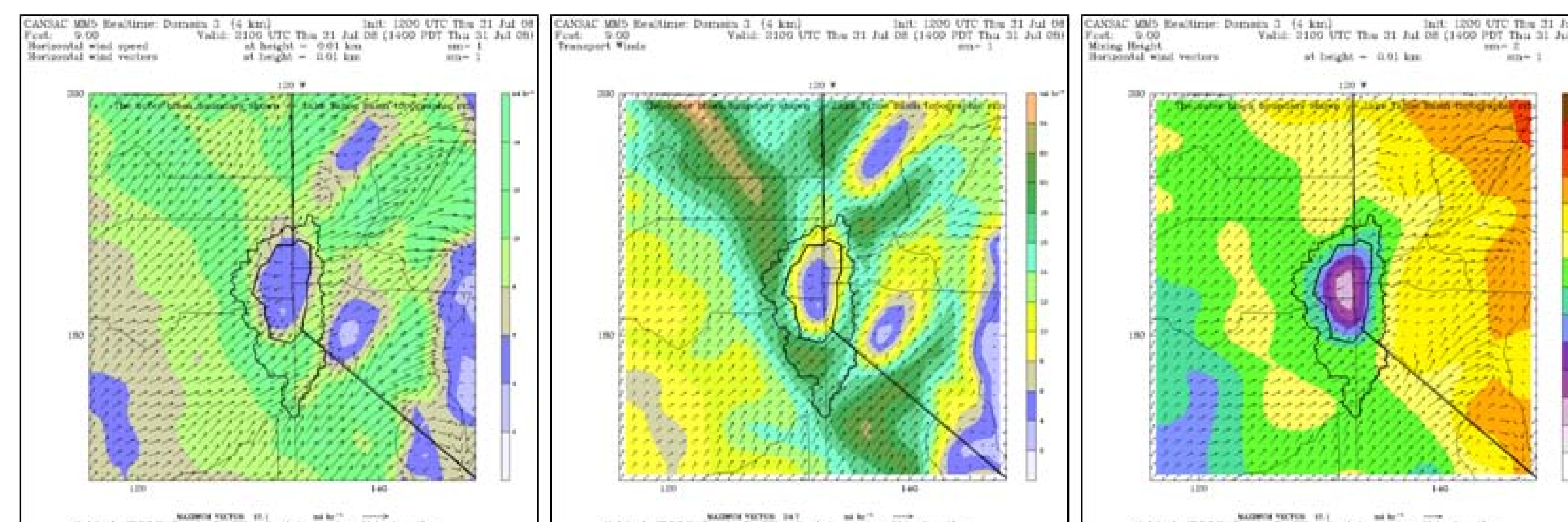
Advanced modeling methods used by DRI show that most of the atmospheric N comes from in-basin sources and transport from the west is limited.

How Much is Deposited in the Basin?



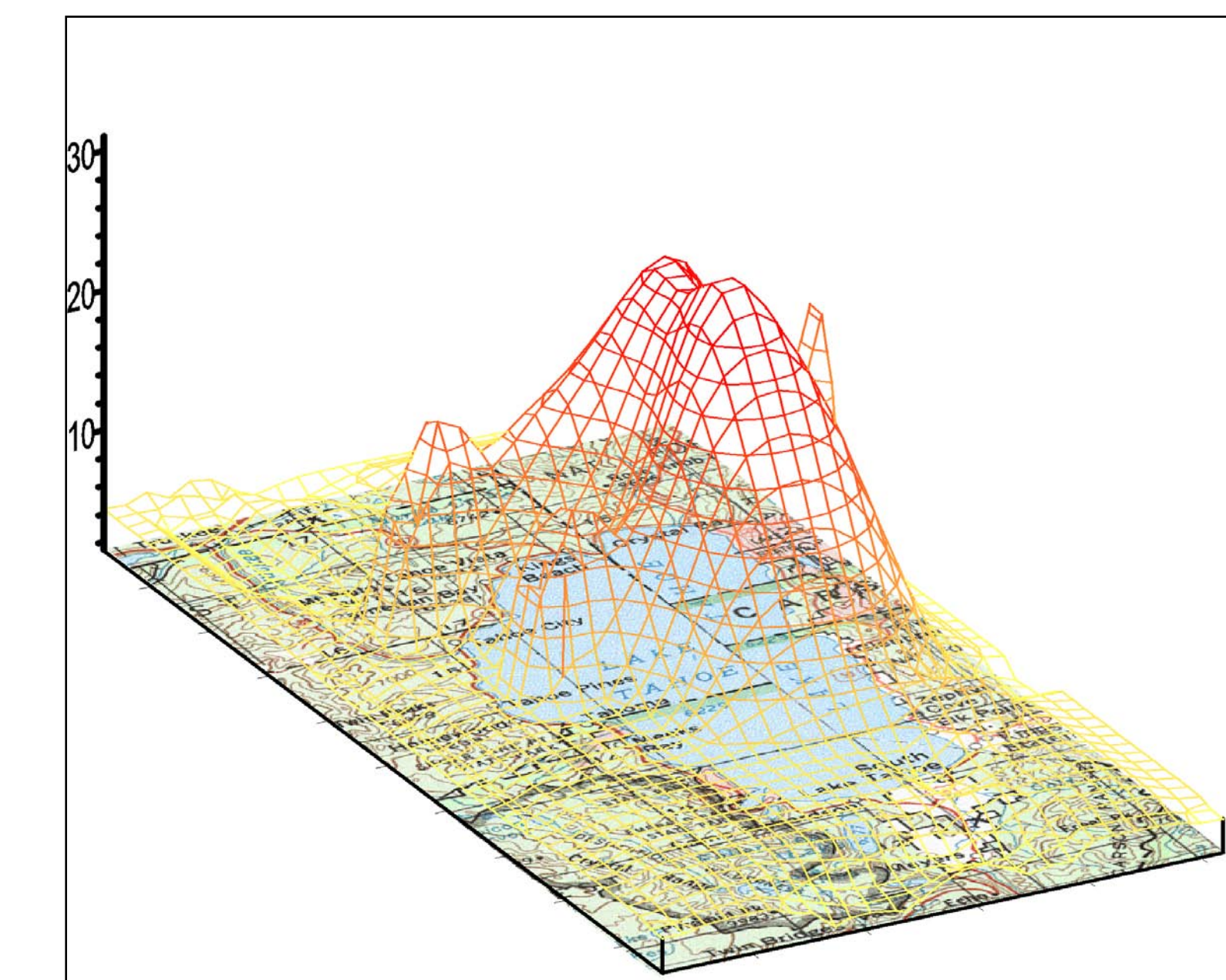
DRI has assembled an integrated modeling system to calculate the deposition of pollutants to both the lake and the watershed.

What is the Fire Potential?

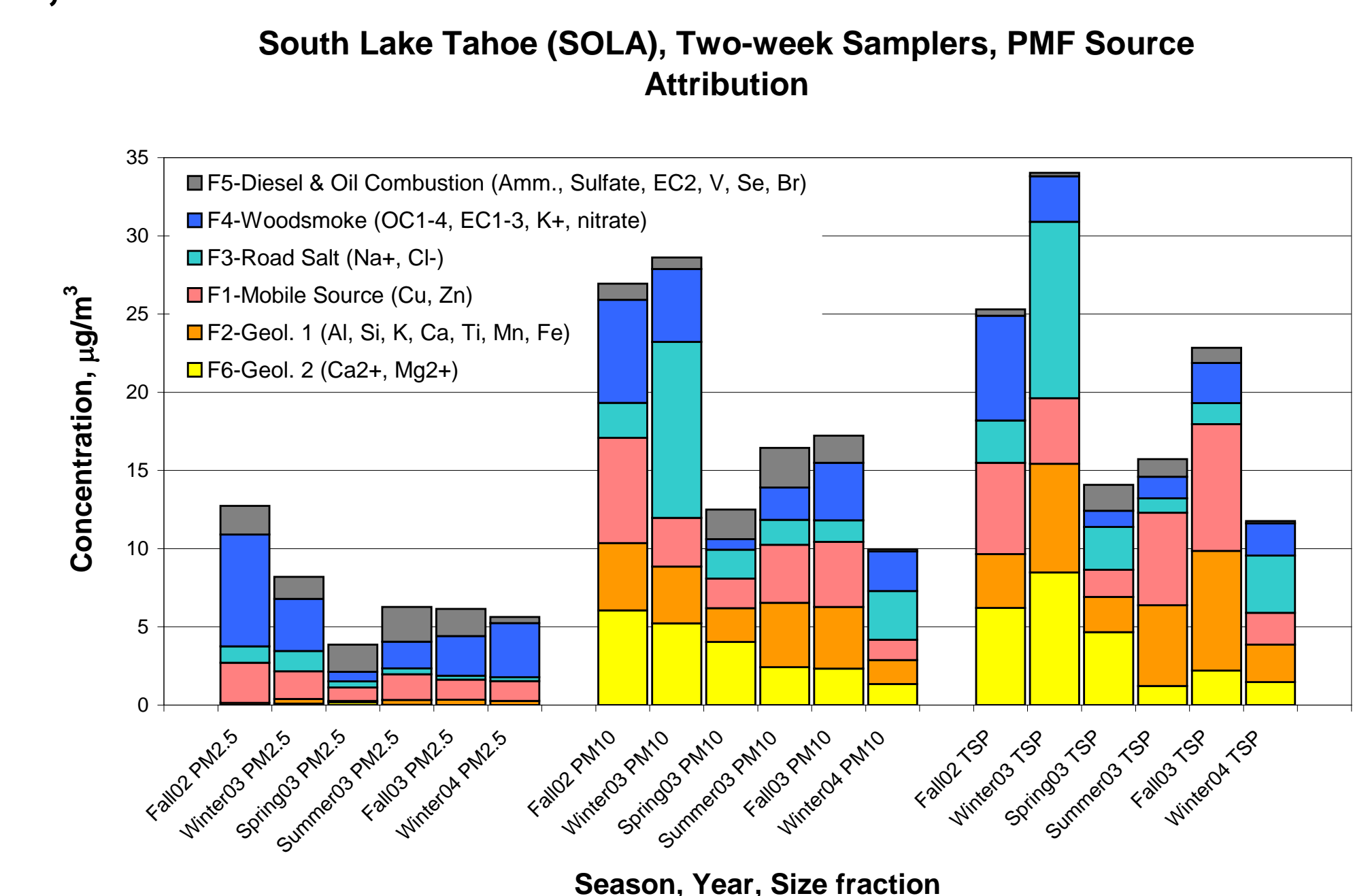


An operational fire-weather forecast model has been developed by DRI for the Lake Tahoe Basin.

What are the Sources of Phosphorous, Nitrogen and PM?

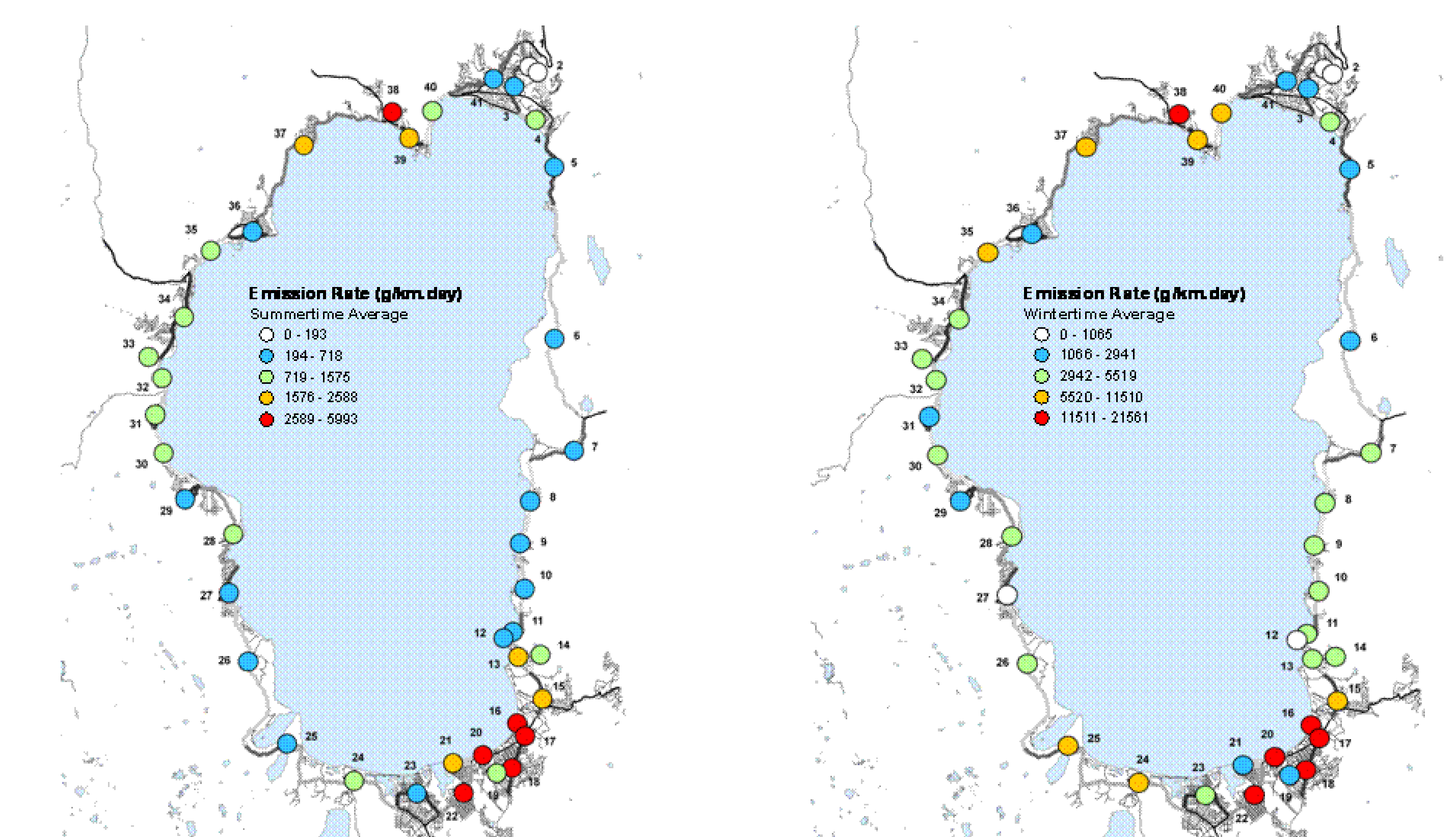


UCD has modeled the impact of fire on particulate levels. Additional research has shown that the major sources of phosphorous are resuspended road dust, soil, and vehicle exhaust, which comes from in-basin sources.



A source apportionment study performed by DRI using receptor modeling techniques to determine the sources of particulates found that resuspended road dust, wood smoke and mobile source emissions were the major sources of airborne particulate matter in the basin.

Summer/Winter Average Emission rate (g/km day) for 41 segments



On-road measurements by DRI have determined how much specific roads contribute to road dust resuspension.