the net impact of atmospheric deposition is finally determined by the total input of all constituents. Scientists agree that total sulfur deposition, and not nitrate deposition, has been the major contributor to the long term lowering of pH in some poorly buffered waters, but that nitrate deposition can contribute to episodic acidity of surface waters during spring runoff.

Although it is acknowledged that the modeling of sulfur is of primary importance for assessing the acidification of aquatic ecosystems, it is understood that modeling of other constituents must be undertaken to provide a complete picture of acidic deposition.