



REPORTS

# Iron Photoreduction and Oxidation in an Acidic Mountain Stream

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## Abstract

In a small mountain stream in Colorado that receives acidic mine drainage, photoreduction of ferric iron results in a well-defined increase in dissolved ferrous iron during the day. To quantify this process, an instream injection of a conservative tracer was used to measure discharge at the time that each sample was collected. Daytime production of ferrous iron by photoreduction was almost four times as great as nighttime oxidation of ferrous iron. The photoreduction process probably involves dissolved or colloidal ferric iron species and limited interaction with organic species because concentrations of organic carbon are low in this stream.



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