

# **The Major Element Geochemistry of River Waters: Fluxes, Sources, and Controls**

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The concentrations of major elements in natural waters provide important insights into a range of problems in biogeochemistry. In particular, rivers are important in that they transport solutes between environments and spatially integrate the effects of biogeochemical processes. This review discusses various aspects of the major element chemistry of river systems, including the measurement of major species, the processes that affect the estimation of solute fluxes (concentration-discharge relationships), the approaches for apportioning fluxes between different processes, the environmental factors that are thought to control major elemental fluxes from specific processes, and how riverine fluxes can be interpreted in terms of their effects on global biogeochemical cycles.