

TRENDS IN STREAM DISSOLVED INORGANIC NITROGEN IN FORESTED REFERENCE BASINS ACROSS US

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Long term datasets offer invaluable information to assess the effects of global change on water resources and provide essential knowledge useful for developing management practices to remediate human-induced alterations of natural conditions. We synthesized stream nitrate and ammonium data collected over 12 to 37 years from 23 forested basins in 7 USFS Experimental Forest Research sites located across a gradient of atmospheric deposition and climatic conditions. Basins were chosen based on the absence of anthropogenic disturbances, other than atmospheric deposition, during the last 60 years. However, some basins were exposed to natural disturbances over the period of study. Specifically we want to answer: a) do reference basins across US show similar nitrate and ammonium trends? and b) do different sites across US present similar responses to disturbances? Results show contrasting trends among reference basins and similar responses to natural disturbances. For instance, between 1972 and 2007 stream nitrate concentration decreased in HJ Andrews (OR) and Hubbard Brook (NH), and increased in Coweeta (NC), although atmospheric deposition tended to decrease in all 3 sites and streamflow did not change significantly. On the other hand, nitrate concentrations generally increased after natural disturbances but varied in response times and magnitudes.