

Trends in Surface Water Chemistry in Acidified Areas in Europe and North America from 1990 to 2008

Abstract

Acidification of lakes and rivers is still an environmental concern despite reduced emissions of acidifying compounds. We analyzed trends in surface water chemistry of 173 acid-sensitive sites from 12 regions in Europe and North America. In 11 of 12 regions, non-marine sulphate (SO_4^*) declined significantly between 1990 and 2008 (-15% to -59%). In contrast, regional and temporal trends in nitrate were smaller and less uniform. In 11 of 12 regions, chemical recovery was demonstrated in the form of positive trends in pH and/or alkalinity and/or acid neutralizing capacity (ANC). The positive trends in these indicators of chemical recovery were regionally and temporally less distinct than the decline in SO_4^* , and tended to flatten after 1999. From an ecological perspective, the chemical quality of surface waters in acid-sensitive areas in these regions has clearly improved as a consequence of emission abatement strategies, paving the way for some biological recovery.