

The EANET challenge on the catchment-scale analysis for the future integrated monitoring

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Integrated monitoring of atmospheric deposition, soil, vegetation, and inland water is required to evaluate effects of atmospheric deposition on ecosystems qualitatively and quantitatively. For this purpose, the Acid Deposition Monitoring Network in East Asia (EANET) has promoted case studies on catchment-scale analysis in several forest types of the East Asian region, including a tropical seasonal forest in Sakaerat, Thailand; a tropical rainforest in Danum Valley, Malaysia; and a temperate coniferous forest in Kajikawa, Japan. The similar catchment-scale monitoring has also been conducted in the catchment of Lake Ijira in Japan, one of the EANET sites. Several factors, including climate, hydrology, geology, soil, vegetation, and atmospheric deposition may affect stream water chemistry. In the tropical catchments, stream water chemistry at the Sakaerat site changed significantly from the beginning to middle of wet season, reflecting the distinct climatic seasonality, while that at the Danum Valley site was regulated mainly by water discharge. In the temperate catchments, atmospheric deposition may have a larger role; acidification of soil and/or stream water has been seen with high sulfur and nitrogen depositions. Data and experience from these case studies will also be informative for development of biogeochemical model applicable to the East Asian catchments.