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Kejimkujik Calibrated Catchments: a benchmark dataset for long-term impacts of terrestrial acidification

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Abstract

Delays in forest recovery from terrestrial acidification combined with climate change is leading Acadian Forest ecosystems into new territory. Kejimkujik Calibrated Catchments (KCC) Study Program was established in an around Kejimkujik National Park and Historic Site (KNPHS) in Southwest Nova Scotia (SWNS) in the late 1970s to increase our understanding of the impacts of acid precipitation on relatively pristine ecosystems. KCC now have one of the longest continuously monitored water chemistry records in North America, with data collection beginning in 1980. Its infrastructure includes three gauged streams, twelve forest inventory plots, an atmospheric deposition monitoring station, and three streams with continuous water quality monitoring and regular lab analysis of stream chemistry, and recent LiDAR coverage. The KCC fits into a wider network of monitored lakes. Data collected at the KCC form a key datapoint in comparisons of catchment response to terrestrial acidification in the context of a warming climate, due to their high and increasing DOC levels, highly dilute waters, lowland topography and extensive wetlands. KCC are also emerging as an important source of information for species at risk protection as SWNS was declared one of the 11 national priority places for biodiversity protection.

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