

Supplemental Figure Captions

Supplemental Figure S1

Concentrations of major ionic components in the western region (blue), other regions (red), and groundwater (green) during the long-term monitoring study (two-weekly samples)

Supplemental Figure S2

NO₃ concentrations in river water in the western region and other regions from 1996 to 2014

Supplemental Figure S3

Concentrations of major ionic components in the western region (blue), other regions (red), and groundwater (green) in December 2018

Supplemental Figure S4

Wet deposition (NO₃⁻ and NH₄⁺) from January 2011 to December 2018. The grey bars indicate NO₃⁻ and white bars indicate NH₄⁺. Data for December 2017 and January and February 2018 were not observed. This graph was used data from Ministry of the Environment Government of Japan Acid rain monitoring result.¹