Investigation of streamwater chemistry in forest with heavy snowfall in northern part of Shiga prefecture

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Nitrogen exported from forest is considered to affect environment of downstream ecosystem, means that the understanding the processes of nitrogen export from forest is important. Particularly, many study reported that snow accumulation and snowmelt has important role in nitrogen export from forest with heavy snowfall region. The northern part of Shiga prefecture is specified as Special Heavy Snowfall Area under the Act on Special Countermeasures for Heavy Snowfall Area. However, temperature in the forest is relatively high, because the forest is located in the southernmost area of Special Heavy Snowfall Area. Therefore, during snow accumulation, snowmelt is often caused by high temperature in northern part of Shiga Prefecture. However, observation of nitrogen export during snow accumulation and snowmelt in such forest is very few. Therefore, we observed nitrogen export from the forest during snow accumulation and snowmelt in northern part of Shiga Prefecture. We conducted the experiment in the Surumi catchment located in the northern part of Shiga prefecture. We collected streamwater sample by automatic water sampler (ISCO, 3700) in the snow fall in 6 to 24 hour interval in a day. Samples were analyzed for total nitrogen, dissolved nitrogen, nitrate and ammonium. We also analyzed oxygen and nitrogen isotope of nitrate for examining the nitrate source. Chemical analysis for ion concentration were conducted in the University of Siga Prefecture, and isotope analysis was conducted at ICRE in University of Yamanashi.

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