

Effect of climate change on flood events as major driver of nutrient transportation in a suburban watershed

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This research aims to confirm the effect of climate change on flood events as a major driver of nutrient discharge. It was confirmed that small-scale flood events have decreased and extreme flood event has increased in western Japan. This trend leads that study catchment has advanced to polarization which has relatively low flows in base flow period and high flows in flood events. Accordingly, the capability of nutrient transportation during base flow condition has decreased. While amount of nutrient has accumulated inside of the catchment during drought period, large amount of nutrient will be transported in first flood event. It is like the first flush phenomenon on urban hydrology. It was confirmed that the mean N:P ratio of the catchment has been increased in recent decade. Although changes of human activities might be one of the reasons, it was suggested hydrologic changes also affected.

Keywords: nutrient transport, climate change, flood, drought, SWAT model