Title: Effect of Artificial Fire on the Stream Water Chemistry in a Small Mountainous Peatland, South-Western Japan

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Tadewara mire is a typical volcanic mire that locates in the southwestern Japan and the vegetation has been maintained by the artificial fire. However, the effect of fire on the mire ecosystems as well as its impact on the fresh water ecosystems have not been clarifies. The objective of this study is to clarify the response of mire ecosystem by the fire. We investigated the effect of artificial fire on the chemistry of the stream water in Tadewara mire, southwestern Japan. Artificial fire was conducted on early April in 2007 and 2008, which burned the vegetation: mainly *Moliniopsis japonica*, *Phragmitesa australis*, and *Sphagnum palustre* - *S. fimbliatum* communities. Our result showed that the burning had little effect on the chemical characteristics of the streams, except for NH_4^+. Ammonium concentration was significantly increased after the burning, and showed a 2-hold increase within 24 hours after the burning. This implies that the burning of the vegetation lead to maintain the poor nutrient condition as well as the nutrient removal from the mire.