High Frequency Data Exposes Nonlinear Seasonal Controls on Dissolved Organic Matter in a Large Watershed: Supporting Information

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Figures: 3

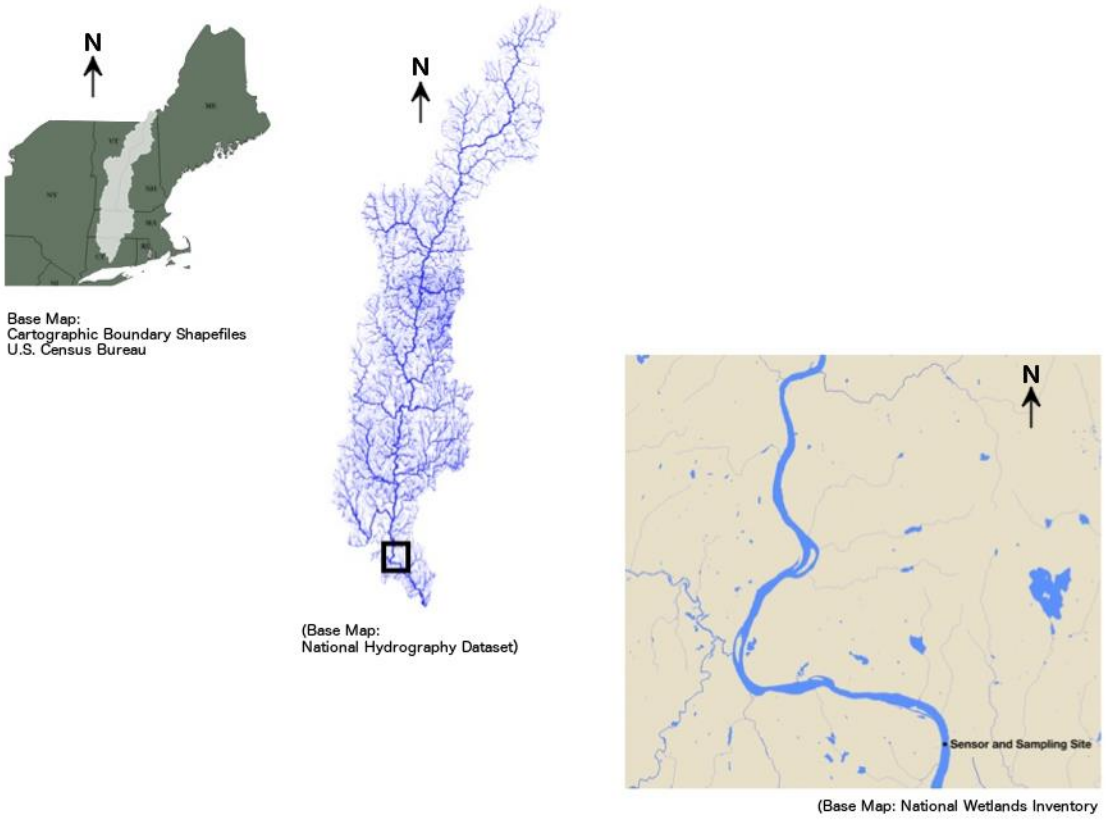

Figure S1
Map showing monitoring location of fDOM sensor whose data was analyzed for this paper.

DOC Fractionation Protocol

DOC was fractionated using Amberlite XAD-8 and XAD-4 resins, which preferentially sorb different classes of organic acids Samples were acidified to pH 2 using HCl and passed through a column of XAD-8 resin followed by a column of XAD-4 resin. The hydrophobic organic acid (HPOA) fraction sorbed to the XAD-8 resin was recovered by back elution of the column with 0.1N NaOH. Similarly, the transphilic organic acid (TPIA) fraction sorbed to the XAD-4 resin was recovered by back elution of the column with 0.1N NaOH. The hydrophilic (HPI) faction is identified as the fraction of DOM that does not sorb to either column. Total DOC were measured on an OI700 wet oxidation (platinum-catalyzed heated method) analyzer. Chloride interferes with that method, and when chloride is high, samples are analyzed on a Shimadzu TOC-VCPH high temperature combustion instrument. The size of each fraction was calculated as a percentage of total DOC concentration, using the sample mass of each fraction **and the measured total DOC concentration.**

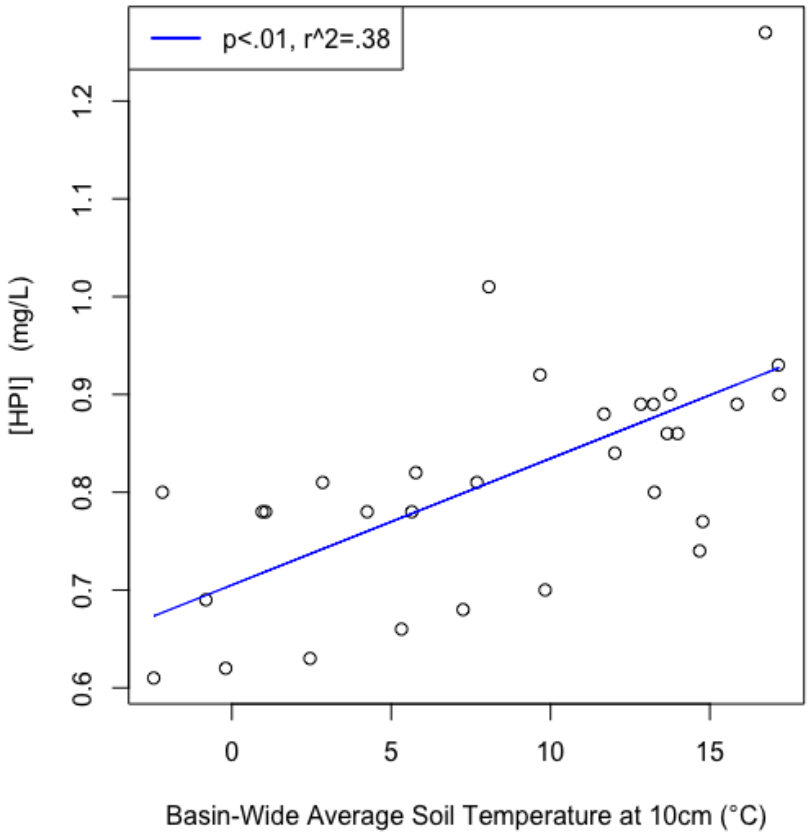

Figure S2
Soil Temperature at 10cm is a highly significant predictor of [HPI].

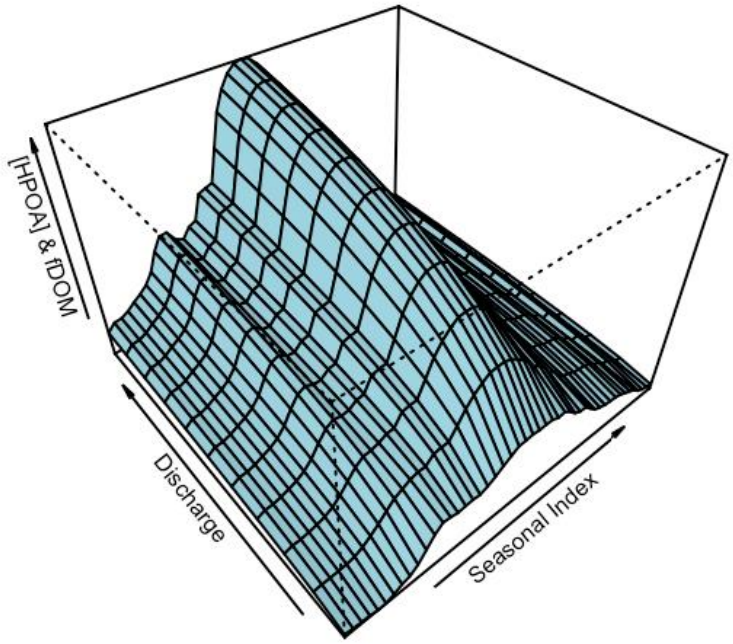

Figure S3
3d Surface of HPOA/fDOM response to 2 day lagged discharge