Supplementary Information for

Natural Organobromine in Terrestrial Ecosystems

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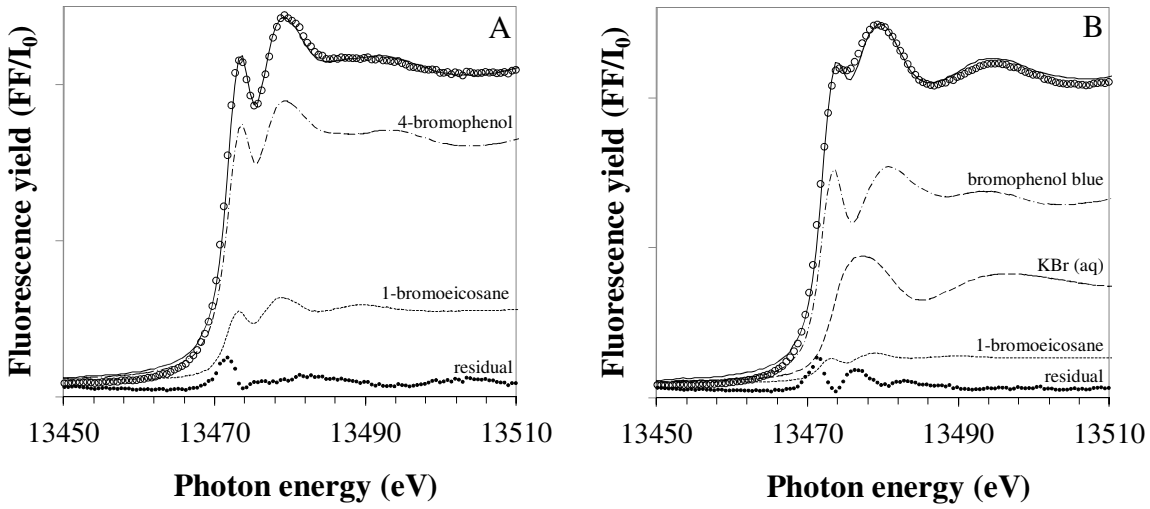

Figure S1. Determination of Br speciation from Br 1*s* XANES spectra by least-squares fitting. A) Isolated fulvic acid from Lake Fryxell, Antarctica (same spectrum as Fig. 2, e). B) Redwood needles treated with KBr, CPO, H_2O_2 for 4.5 days (same spectrum as Fig. 6A, b). Background-subtracted, normalized spectral data are represented by circles and fit by the solid line. Fitting was performed iteratively with a library of ten organic and inorganic Br model compounds. In each case, weighted contributions to the best fit are labeled with the name of the Br standard. The small feature around 13,471 eV in the residuals may be attributable to a Br component not represented by our standards, such as multiply brominated aliphatic carbon or a Br-metal interaction.

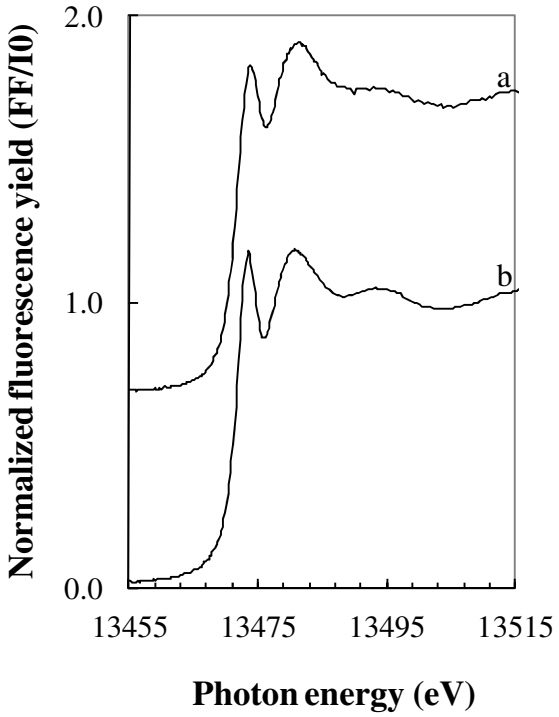

Figure S2. Abiotic bromination of phenol. Br 1*s* XANES spectra of: a, Precipitate from reaction of phenol + $Fe(NO_3)_3$ + H_2O_2 + KBr (pH 2.1). b, Bromophenol blue standard.

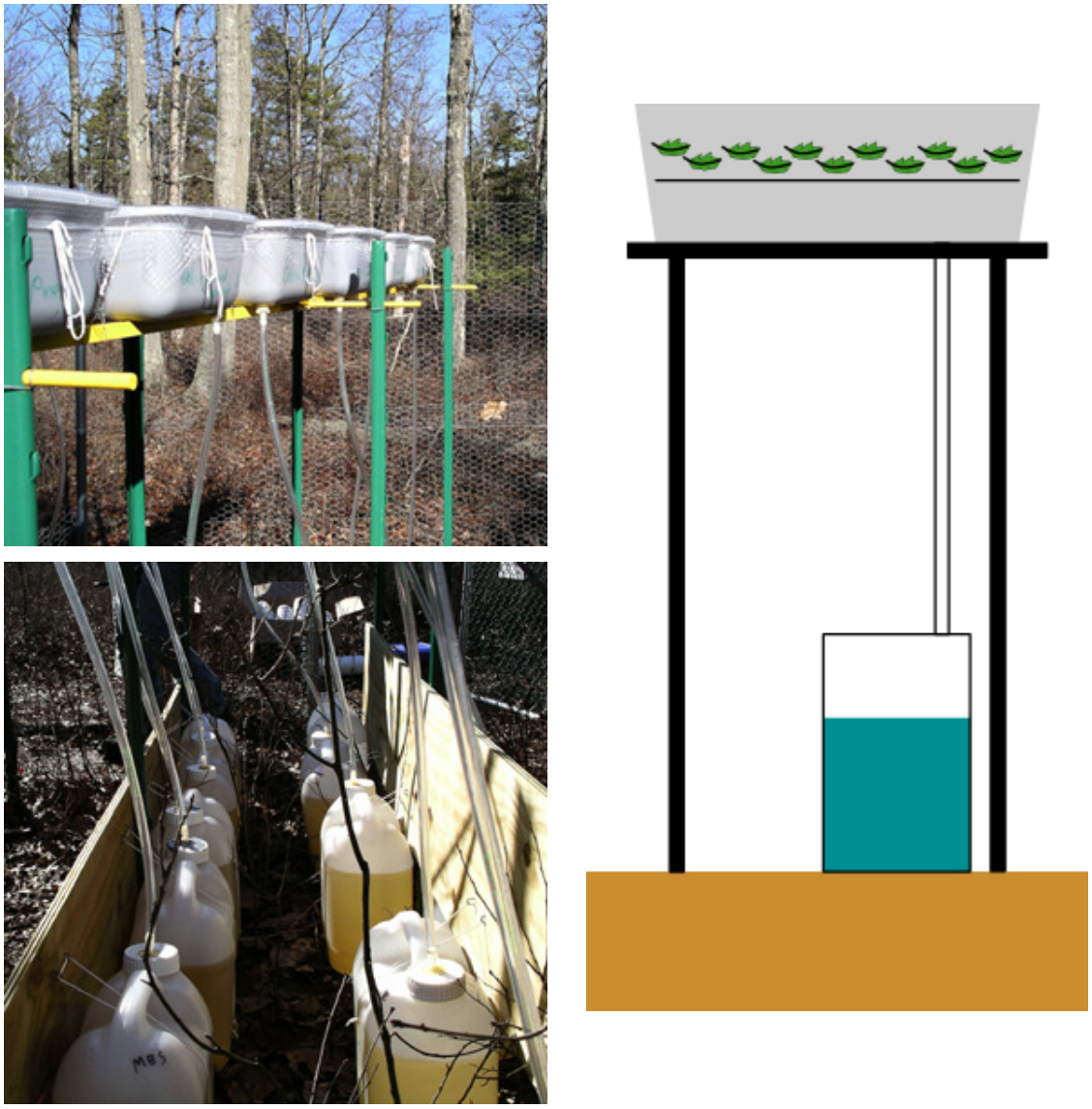

Figure S3. Field experimental station in the Brendan Byrne State Forest (Pine Barrens, NJ, USA) photos (left) and schematic (right): "Above-ground" trays and carboys. Tygon tubing routes leachate from interaction of rainwater with plant material in trays into carboys.

Figure S4. Field experimental station in the Brendan Byrne State Forest (Pine Barrens, NJ, USA) photos (left) and schematic (right): "On-ground" trays and carboys. Holes in tray sides facilitate microbial exchange with surrounding mulch. Underground tubing routes leachate into buried carboys. Leachate was manually pumped from underground carboys during periodic collections.