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Controls on dissolved organic matter (DOM) degradation in a headwater stream: the influence of photochemical and hydrological conditions in determining light-limitation or substrate-limitation of photo-degradation

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Supporting Information – Figures and Data

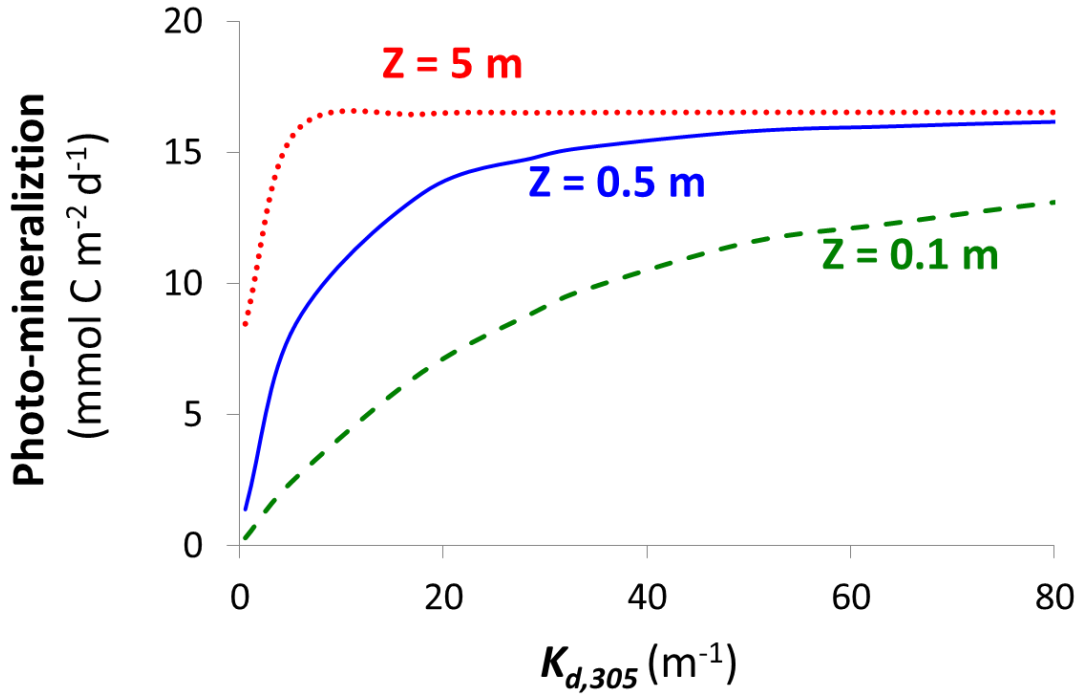

Fig. S1. The dependence of water column rates of photo-mineralization as a function of K_d, which increases with increasing CDOM. Three situations with varying depth (z) of the water column are shown. In all but the shallowest water columns, the photo-mineralization rate asymptotes at relatively low K_d values – the range of K_d at 305 nm measured in Imnavait Creek was 39 to 63 m^{-1}.

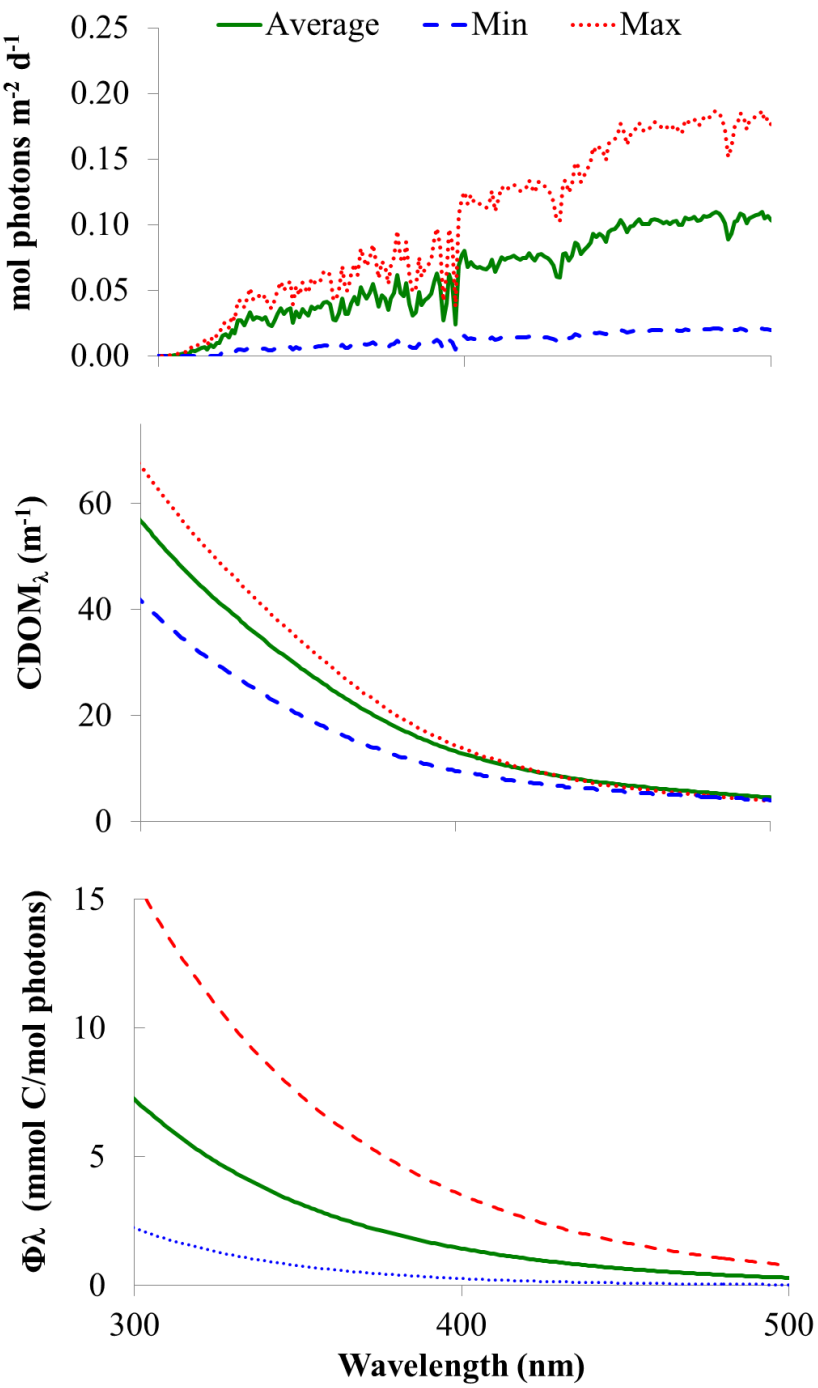

Fig. S2. Average, minimum, and maximum spectra of incident UV light (daily photon flux), CDOM, and apparent quantum yield of photo-mineralization measured in Imnavait Creek.

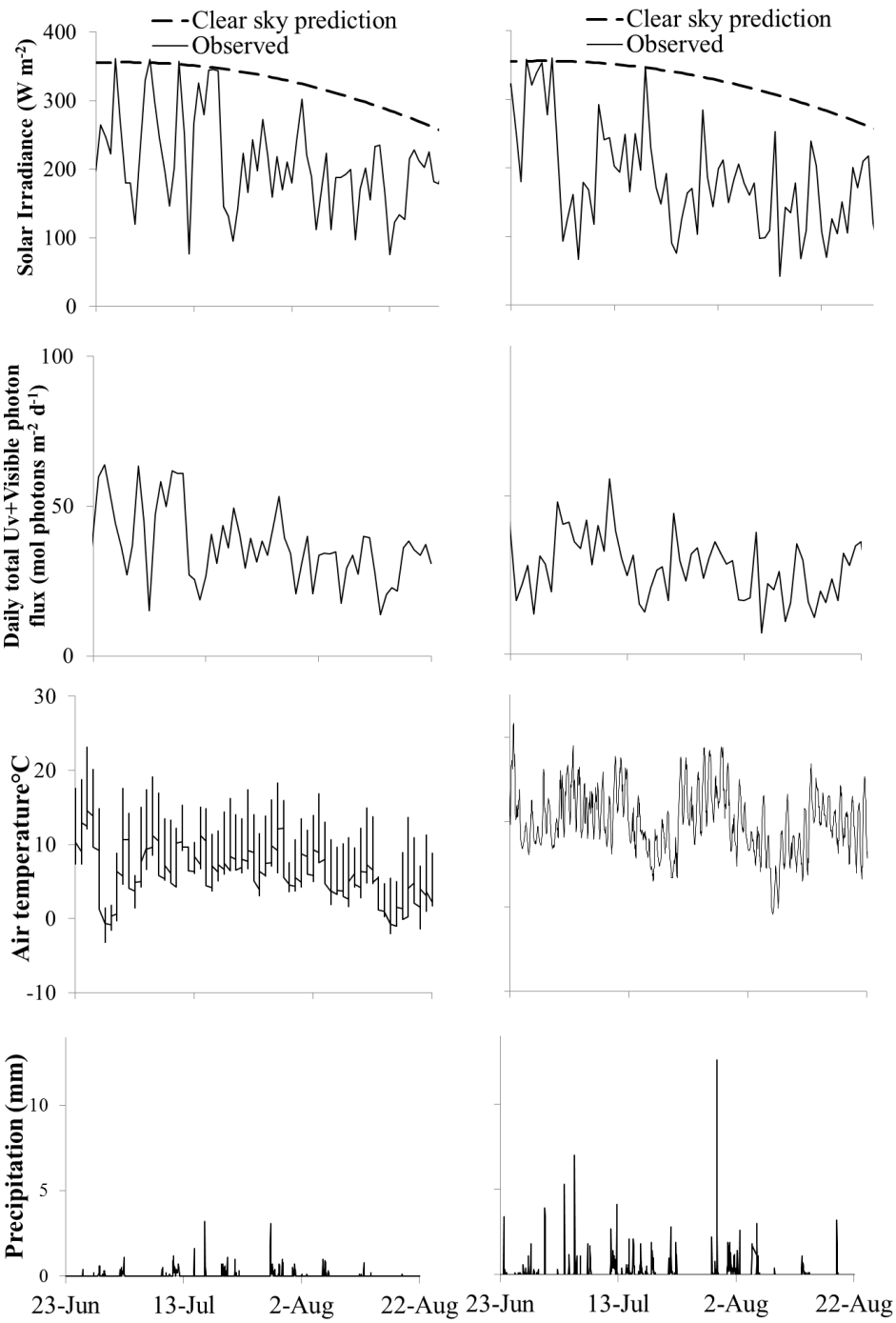

Fig. S3. UV and climate data at Imnavait Creek for 2011 (left) and 2012 (right) during the study periods. (A) Predicted and observed mean daily global solar irradiance. (B) Daily total sum of UV+ Visible photon flux reaching water surface. (C) Air temperature measured 1m above ground at Imnavait Creek. (D) Precipitation.