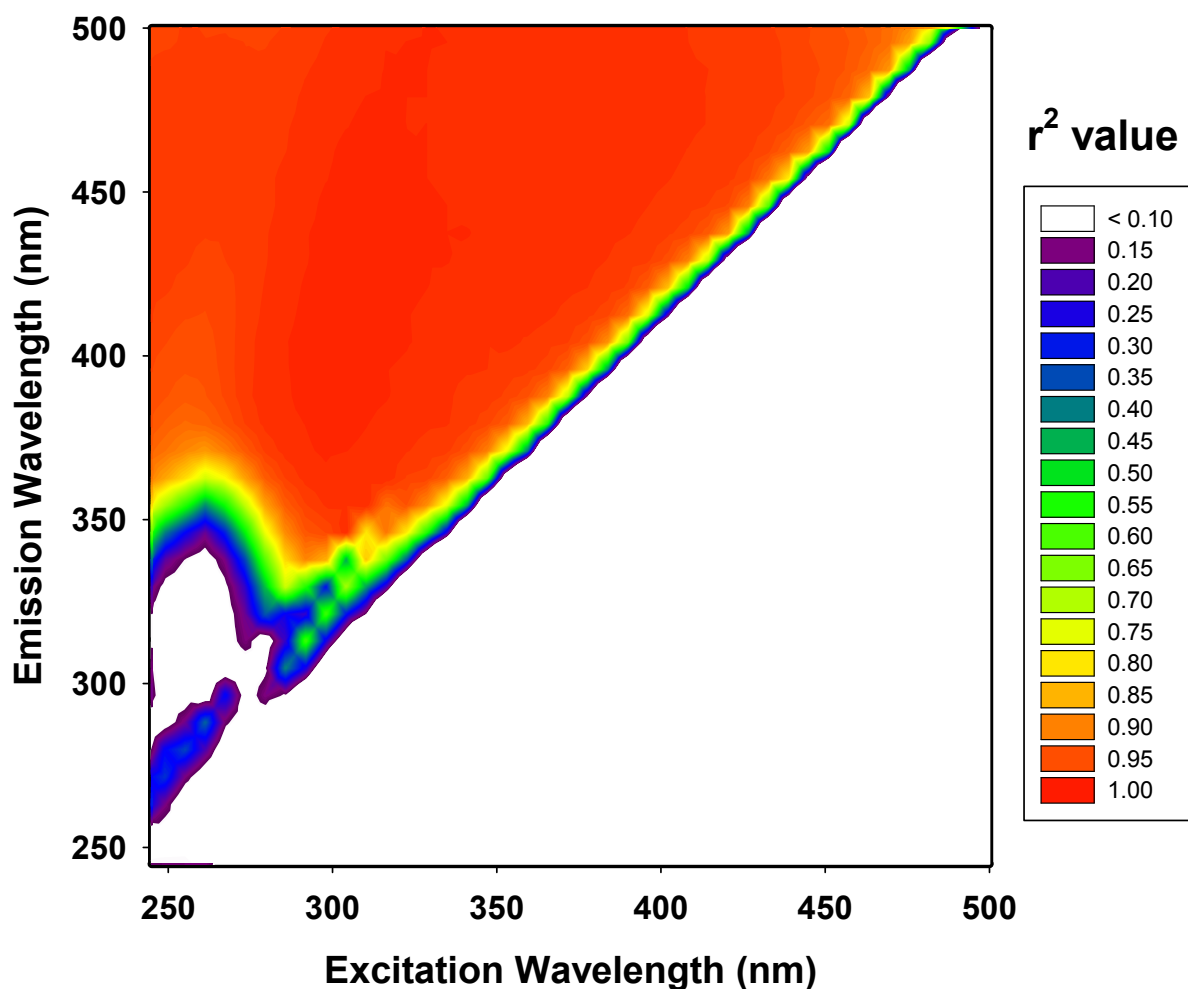
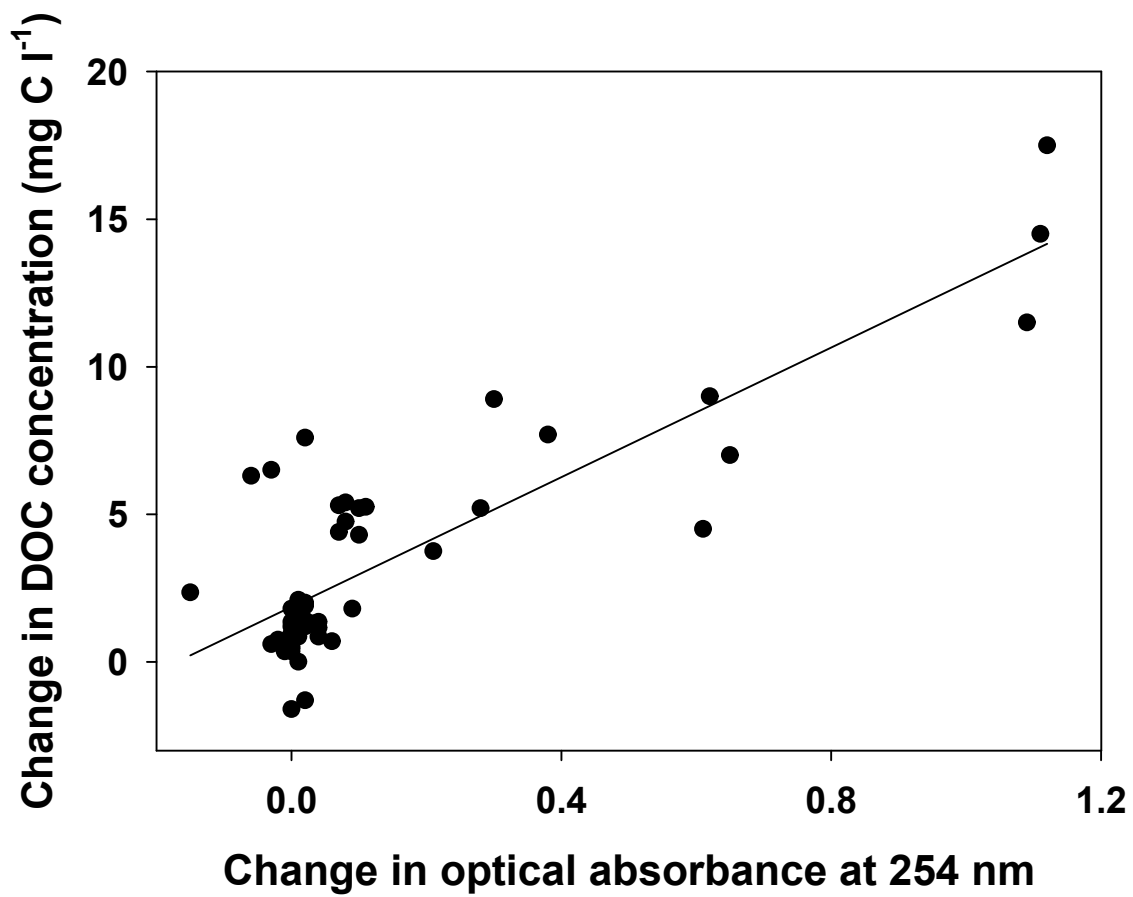


Electronic Supplementary Information for

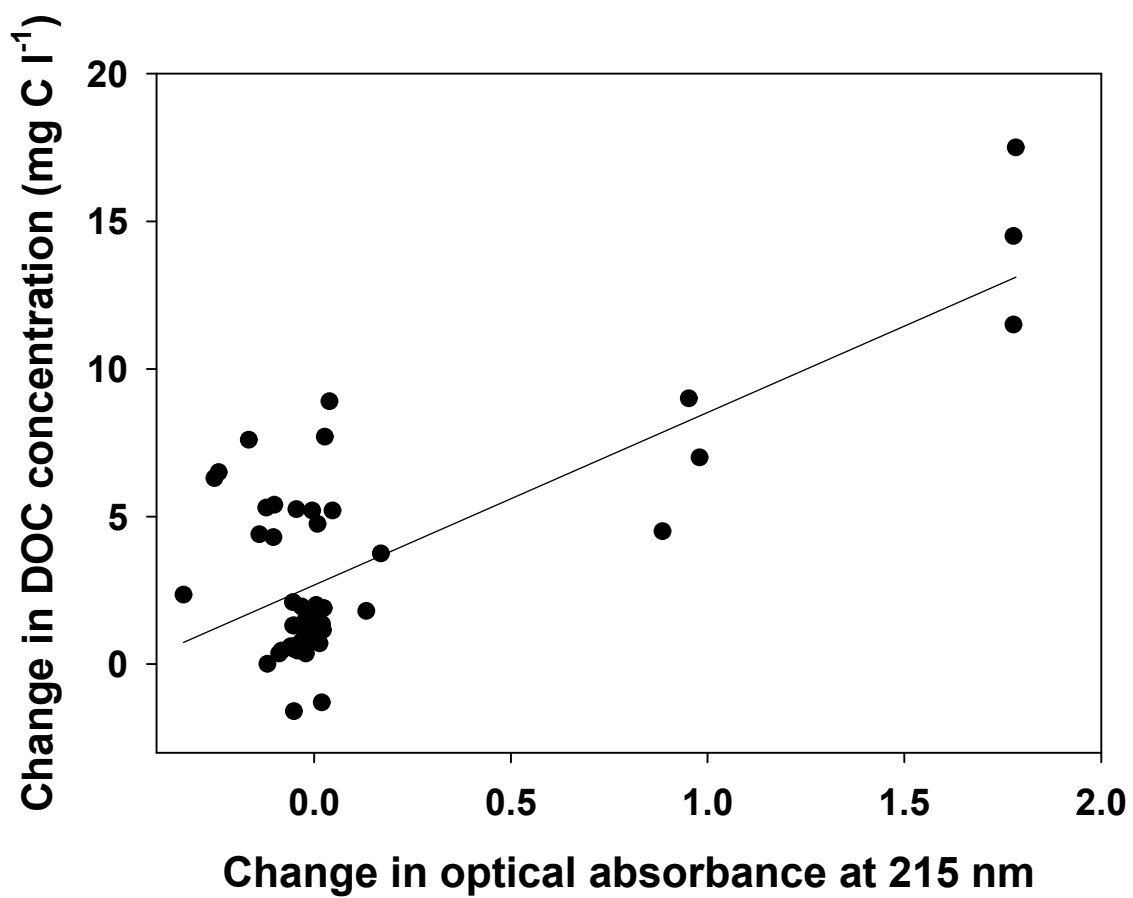
Exploring the relationship between the optical properties of water and the quality and quantity of dissolved organic carbon in aquatic ecosystems: strong correlations do not always equate to strong predictive power.



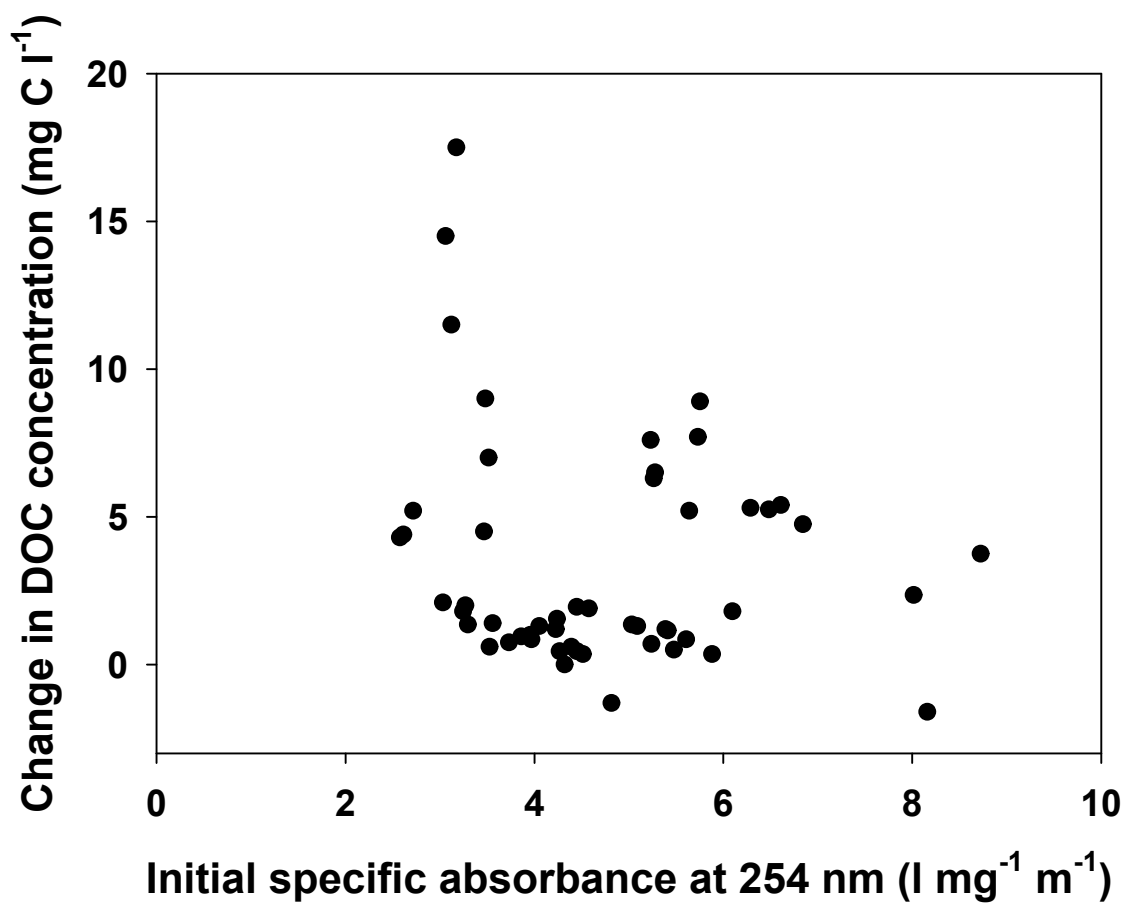
ESI Fig 1 3-Dimensional representation of the coefficient of determination (r^2) for the initial fluorescence intensity measured at specific excitation/emission wavelength couples and the initial concentration of DOC in the samples used in the Model development phase of the project.



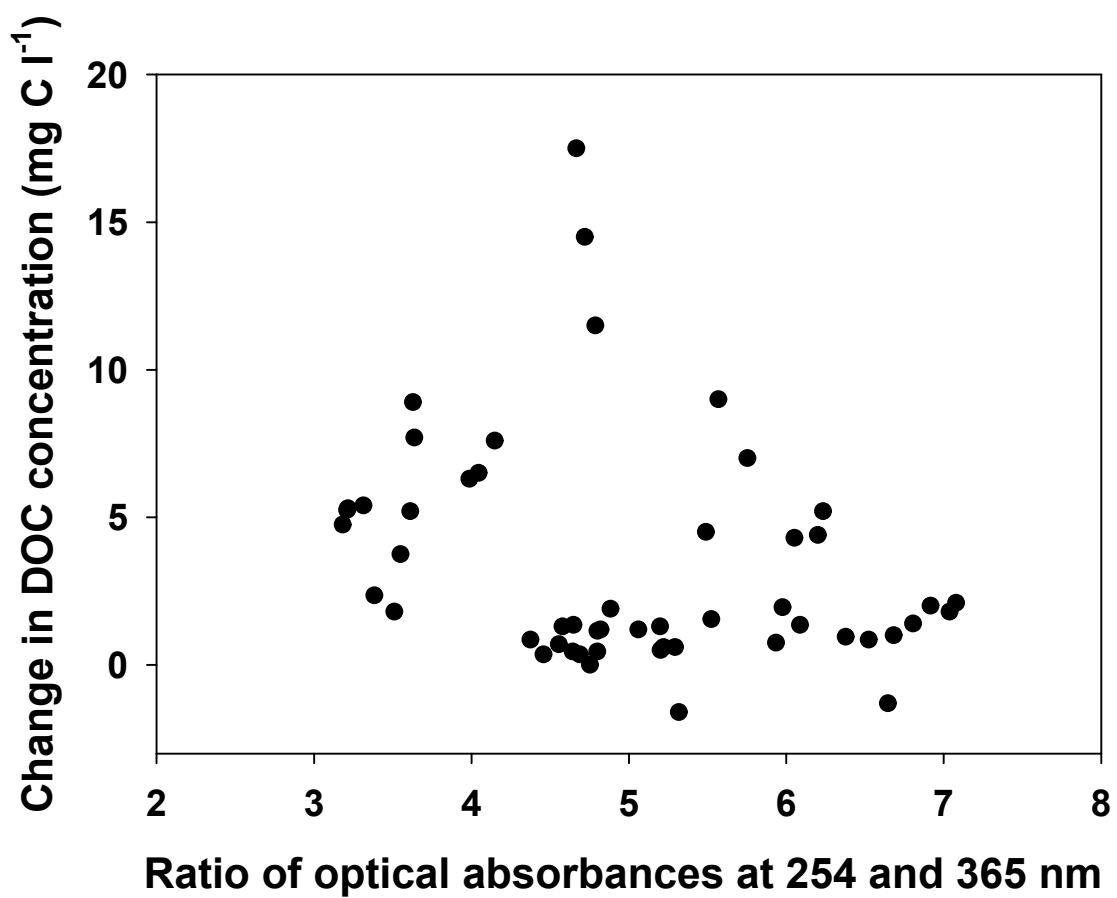
ESI Fig 2 Correlation between changes in the optical absorbance at 254 nm after 28 days of incubation and changes in DOC concentration over the same period.



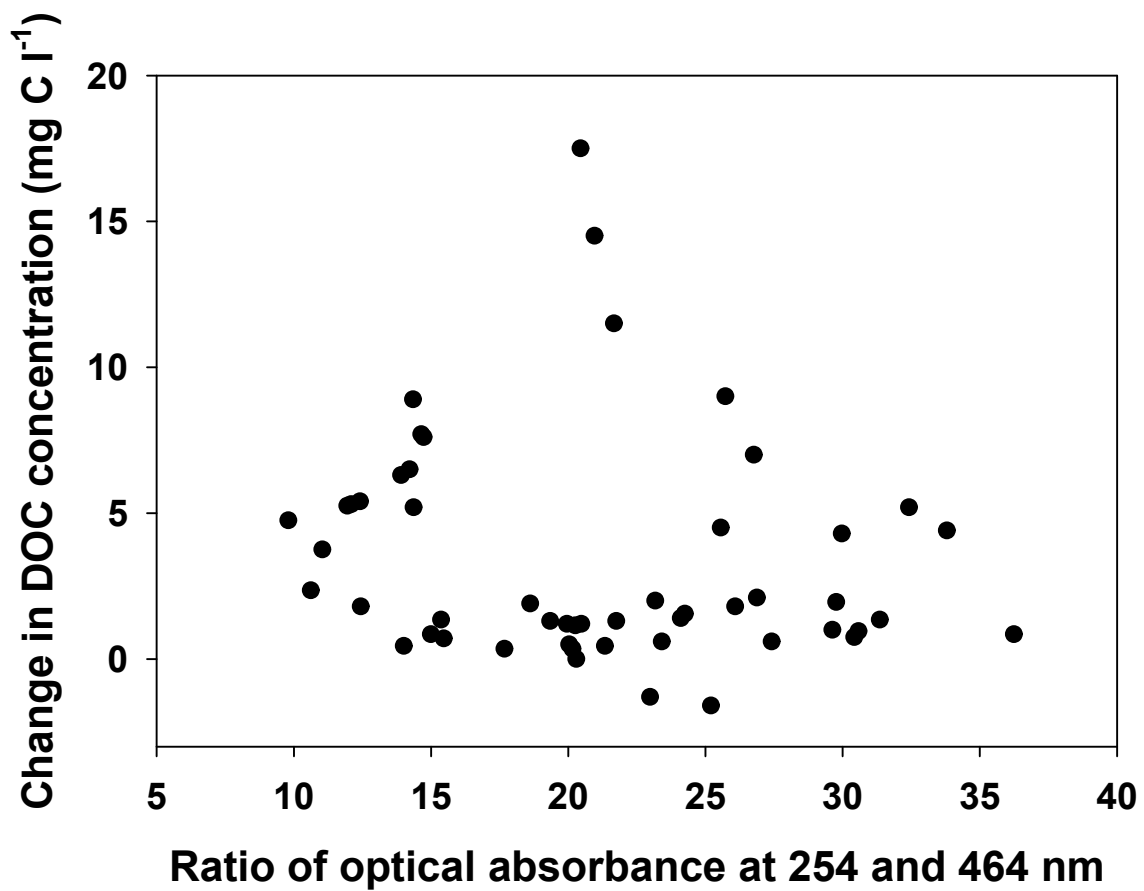
ESI Fig 3 Correlation between changes in the optical absorbance at 215 nm after 28 days of incubation and changes in DOC concentration over the same period.



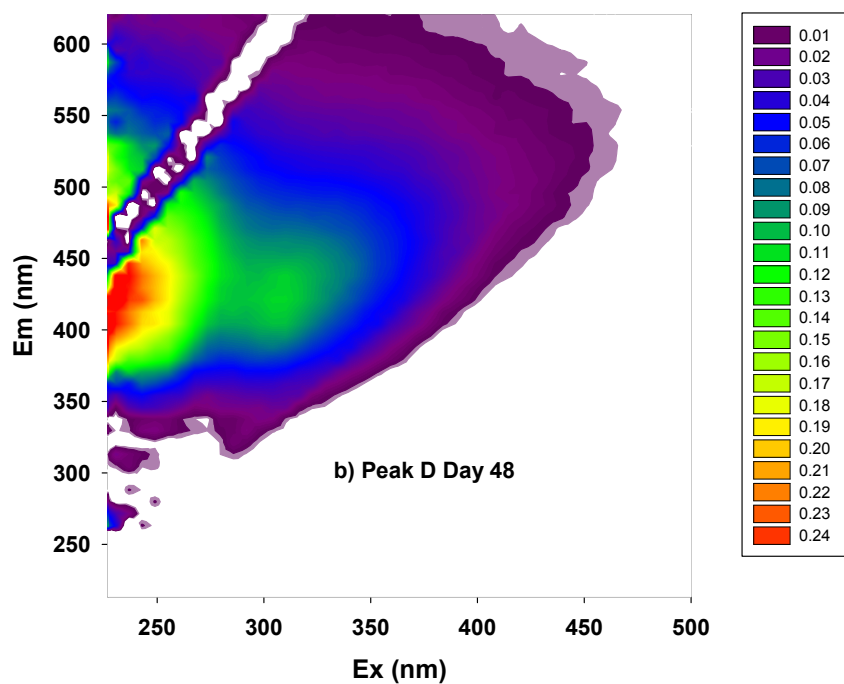
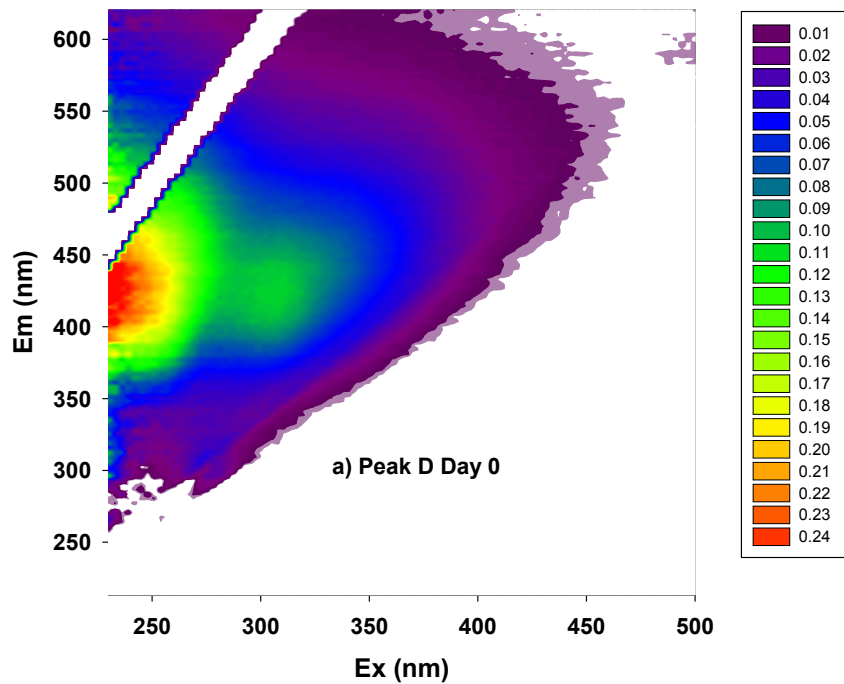
ESI Fig 4 Relationship between the initial $SUVA_{254}$ with the amount of DOC lost from solution after 28 days of incubation.



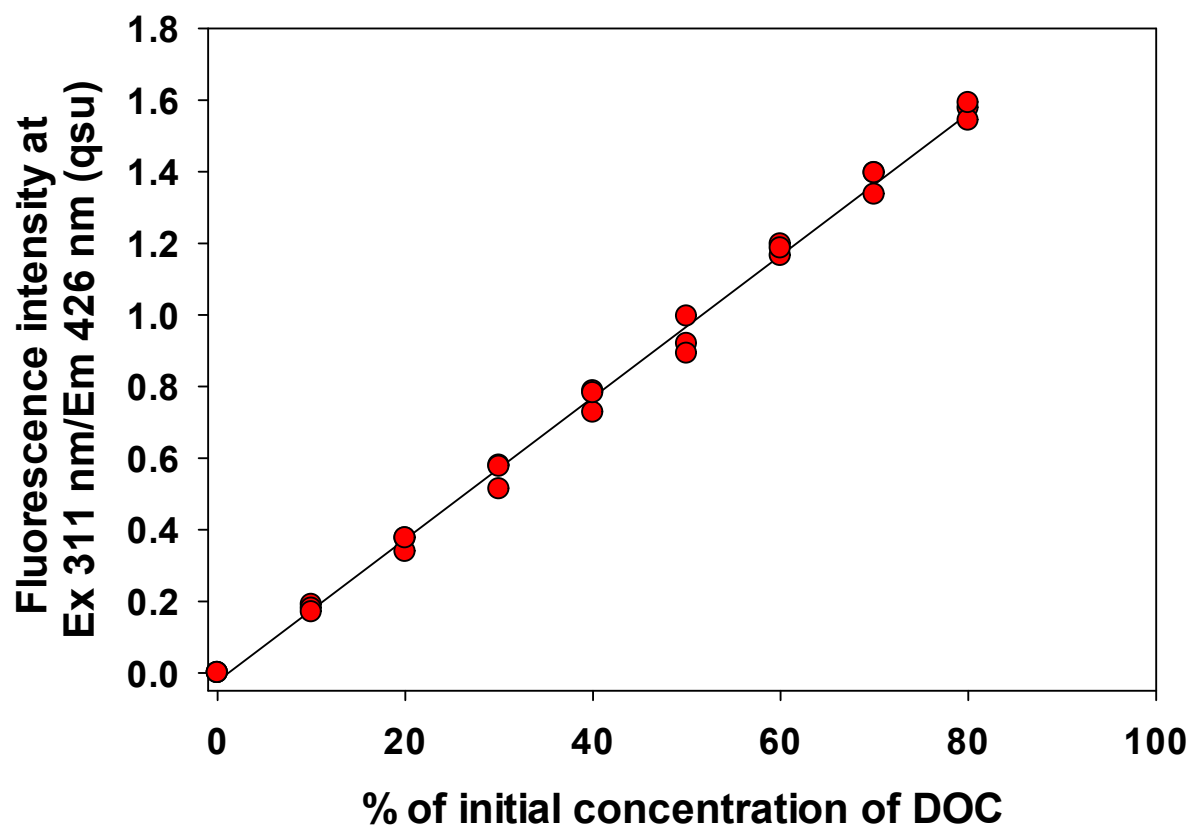
ESI Fig 5 Relationship between the initial $E_2:E_3$ with the amount of DOC lost from solution after 28 days of incubation.



ESI Figure 6 Relationship between the initial $E_2:E_4$ with the amount of DOC lost from solution after 28 days of incubation.



ESI Fig 7 Fluorescence excitation-Emission matrices of Peak D from size exclusion chromatograms for a water sample from Site 3 (Cookies Dam) immediately prior to incubation and after 48 days of incubation. Fluorescence intensity is in quinine sulfate units.



ESI Fig 8 Changes in fluorescence intensity at Ex 311 nm/Em 426 nm with dilution of triplicate samples from Site 3 (Cookies Dam). The line represents the linear regression ($r^2 = 0.99$).