

Supplementary Materials for

Discharge and Temperature Controls of Dissolved Organic Matter (DOM) in a Forested Coastal Plain Stream

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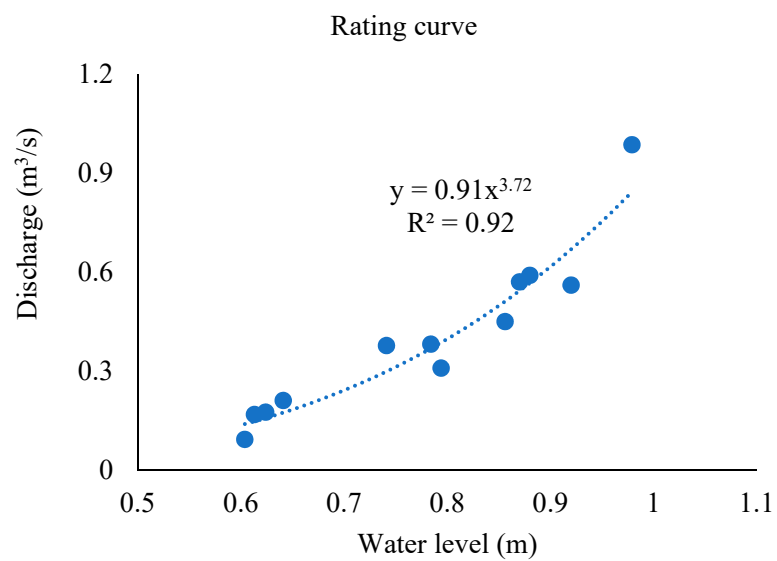
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Supplementary Figure S1: Mayfield Creek and in situ sensors



Supplementary Figure S2: Rating curve in the Mayfield Creek.

Supplementary Table S1: Hydrological and nutrient parameters of the Mayfield Creek

| Date (m/d/y) | Q (m ³ /s) | Temp (C) | $\delta^{18}\text{O}$ (‰) | $\delta^2\text{H}$ (‰) | Si (mg/L) | Na (mg/L) | Nitrate (ug/L) | Ammonia (ug/L) | Phosphate (ug/L) |
|-----------------|--------------------------|-------------|------------------------------|---------------------------|--------------|--------------|-------------------|-------------------|---------------------|
| 9/13/2015 | 0.1 | 19.28 | -4.05 | -18.59 | 4.42 | 0.91 | 18.7 | 7.64 | 1.89 |
| 9/17/2015 | 0.09 | 20.81 | -4.17 | -18.64 | 4.6 | 0.78 | 9.66 | 9.21 | 1.63 |
| 9/20/2015 | 0.08 | 20.42 | -4.19 | -18.01 | 4.54 | 0.9 | 13.5 | 9.9 | 1.59 |
| 9/24/2015 | 0.09 | 21.28 | -4.18 | -18.6 | 4.56 | 0.71 | 10.6 | 3.19 | 2.9 |
| 10/1/2015 | 0.06 | 20.33 | -4.37 | -19.07 | 4.84 | 0.75 | 7.01 | 5.29 | 2.23 |
| 10/4/2015 | 0.07 | 16.43 | -4.32 | -19.34 | 4.53 | 0.82 | 8.05 | 2.62 | 1.83 |
| 10/8/2015 | 0.1 | 21.86 | -4.42 | -20.43 | 4.61 | 0.8 | 8.65 | 3.15 | 1.75 |
| 10/15/2015 | 0.11 | 17.09 | -4.28 | -19.79 | 4.66 | 0.82 | 5.03 | 0.516 | 1.3 |
| 10/22/2015 | 0.14 | 17.95 | -4.28 | -19.88 | 4.51 | 0.76 | 3.71 | 3.04 | 1.08 |
| 10/29/2015 | 0.1 | 18.52 | -4.13 | -18.46 | 4.63 | 0.87 | 5.73 | 2.79 | 1.94 |
| 11/5/2015 | 0.16 | 20.04 | -4.5 | -19.74 | 4.68 | 0.95 | 5.19 | 2.34 | 0.984 |
| 11/15/2015 | 0.22 | 11.04 | -4.28 | -19.85 | 4.46 | 0.85 | 5.15 | 4.06 | 1.59 |
| 11/19/2015 | 0.29 | 16.52 | -4.51 | -20.44 | 4.08 | 0.91 | 4.71 | 10.7 | 1.98 |
| 12/6/2015 | 0.36 | 9.57 | -4.15 | -17.59 | 4.31 | 1.1 | 11.6 | 65.1 | 2.9 |
| 12/13/2015 | 0.11 | 15.66 | -4.12 | -17.26 | 4.35 | 1.19 | 4.78 | 20.3 | 2.11 |
| 12/20/2015 | 0.38 | 6.67 | -4.07 | -16.67 | 4.48 | 1.15 | 8.68 | 48.6 | 1.88 |
| 12/27/2015 | 0.54 | 18.52 | -3.8 | -14.79 | 3.42 | 1.03 | 17 | 22 | 2.14 |
| 12/29/2015 | 0.54 | 15.38 | -3.73 | -14.22 | 3.45 | 1.04 | 18.4 | 15.2 | 2.67 |
| 1/17/2016 | 0.2 | 8.98 | -4.16 | -17.58 | 3.84 | 1.04 | 8.99 | 20.4 | 1.69 |
| 1/22/2016 | 0.35 | 9.87 | -4.25 | -16.41 | 3.1 | 0.94 | 28.4 | 16.2 | 2.71 |
| 2/11/2016 | 0.41 | 7.98 | -3.94 | -16.82 | 3.38 | 0.96 | 7.17 | 22.1 | 4.06 |
| 2/25/2016 | 0.71 | 12.59 | -3.96 | -16.35 | 3.16 | 0.95 | 7.86 | 13.7 | 1.95 |
| 3/6/2016 | 0.6 | 14.04 | -3.88 | -15.41 | 3.15 | 0.95 | 6.21 | 12.3 | 1.99 |
| 3/17/2016 | 0.3 | 18.24 | -3.89 | -15.46 | 3.33 | 1.01 | 6.35 | 11.4 | 1.89 |
| 4/10/2016 | 0.41 | 16.9 | -3.74 | -15.68 | 3.34 | 1 | 5.52 | 11.4 | 1.98 |
| 4/26/2016 | 0.25 | 19.28 | -3.91 | -16.02 | 3.59 | 1.38 | 6.3 | 9.92 | 2.15 |
| 5/8/2016 | 0.24 | 19.38 | -3.81 | -15.95 | 3.57 | 1 | 9.99 | 24.6 | 3.28 |
| 5/15/2016 | 0.4 | 18.24 | -3.91 | -17.1 | 3.71 | 1.05 | 7.61 | 37.2 | 2.15 |

| | | | | | | | | | |
|-----------|------|-------|-------|--------|------|------|------|------|------|
| 5/22/2016 | 0.32 | 20.04 | -4 | -17.38 | 3.82 | 1.07 | 9.73 | 27.1 | 2.1 |
| 5/29/2016 | 0.34 | 22.24 | -4.01 | -17.96 | 3.87 | 1.09 | 14.1 | 36.3 | 3.54 |
| 6/19/2016 | 0.38 | 26.78 | -3.89 | -16.36 | 3.9 | 1 | 33.2 | 26 | 1.98 |
| 6/26/2016 | 0.2 | 24.74 | -3.99 | -17.33 | 4.26 | 1.12 | 21.3 | 26.6 | 1.86 |
| 7/6/2016 | 0.19 | 25.51 | -4.02 | -17.31 | 4.32 | 1.07 | 21.6 | 32.5 | 3.54 |
| 7/16/2016 | 0.24 | 23.97 | -3.79 | -16.05 | 4.29 | 1.1 | 33.5 | 22.1 | 3.02 |
| 7/27/2016 | 0.18 | 25.03 | -4.13 | -18.18 | 4.54 | 1.09 | 20.5 | 19.4 | 1.86 |

Supplementary Table S2: DOM parameters of the Mayfield Creek

| Date (d/m/y) | DOC (mg/L) | SUVA ₂₅₄ (L mg ⁻¹ m ⁻¹) | SR | HIX | BIX | FI | C1 (R.U.) | C2 (R.U.) | C3 (R.U.) | C4 (R.U.) | C1% | C2% | C3% | C4% |
|-----------------|---------------|--|------|-------|------|------|--------------|--------------|--------------|--------------|-------|-------|-------|-------|
| 9/13/2015 | 2.26 | 2.99 | 0.78 | 6.36 | 0.56 | 1.62 | 1.81 | 1.35 | 0.47 | 0.77 | 41.18 | 30.62 | 10.61 | 17.59 |
| 9/17/2015 | 1.65 | 2.99 | 0.83 | 5.43 | 0.65 | 1.56 | 1.41 | 0.86 | 0.25 | 3.76 | 22.5 | 13.65 | 4 | 59.86 |
| 9/20/2015 | 1.66 | 2.99 | 0.88 | 9.63 | 0.52 | 1.62 | 1.41 | 1.01 | 0.31 | 0 | 51.74 | 36.96 | 11.3 | 0 |
| 9/24/2015 | 1.86 | 2.98 | 0.84 | 8.44 | 0.59 | 1.58 | 1.53 | 1.17 | 0.59 | 0.47 | 40.68 | 31.2 | 15.57 | 12.56 |
| 10/1/2015 | 1.99 | 3.39 | 0.75 | 16.05 | 0.52 | 1.58 | 1.44 | 0.93 | 0.08 | 0 | 58.87 | 37.96 | 3.17 | 0 |
| 10/4/2015 | 1.62 | 2.87 | 0.76 | 9.24 | 0.78 | 1.6 | 1.33 | 1.34 | 0.89 | 3.24 | 19.58 | 19.74 | 13.08 | 47.61 |
| 10/8/2015 | 1.84 | 2.89 | 0.75 | 12.76 | 0.59 | 1.63 | 1.41 | 0.96 | 0.06 | 1.09 | 40.17 | 27.26 | 1.74 | 30.83 |
| 10/15/2015 | 1.79 | 2.74 | 0.8 | 3.78 | 0.93 | 1.71 | 0.9 | 1.25 | 0.56 | 0.37 | 29.2 | 40.62 | 18.22 | 11.96 |
| 10/22/2015 | 1.42 | 2.65 | 0.86 | 3.59 | 0.93 | 1.75 | 0.68 | 0.96 | 0.48 | 0.12 | 30.36 | 42.75 | 21.41 | 5.47 |
| 10/29/2015 | 4.12 | 2.69 | 0.83 | 3.46 | 0.91 | 1.7 | 1.75 | 2.38 | 1.32 | 0.49 | 29.47 | 40.08 | 22.16 | 8.29 |
| 11/5/2015 | 3.74 | 2.96 | 0.88 | 3.97 | 0.95 | 1.7 | 1.88 | 2.56 | 1.07 | 0.72 | 30.16 | 41.12 | 17.1 | 11.62 |
| 11/15/2015 | 2.04 | 2.48 | 1.02 | 2.55 | 1.08 | 1.8 | 0.74 | 1.19 | 0.76 | 0.32 | 24.62 | 39.46 | 25.37 | 10.56 |
| 11/19/2015 | 4.14 | 2.44 | 0.8 | 3.69 | 1.13 | 1.79 | 1.53 | 2.27 | 0.8 | 0.59 | 29.52 | 43.69 | 15.35 | 11.44 |
| 12/6/2015 | 2.03 | 2 | 1.2 | 1.7 | 1.23 | 1.82 | 0.54 | 0.93 | 0.81 | 0.35 | 20.47 | 35.51 | 30.88 | 13.14 |
| 12/13/2015 | 1.99 | 2.55 | 0.77 | 3.3 | 1.01 | 1.73 | 0.92 | 1.3 | 0.57 | 0.66 | 26.7 | 37.64 | 16.54 | 19.12 |
| 12/20/2015 | 1.68 | 2.14 | 0.8 | 2.72 | 1.03 | 1.75 | 0.67 | 0.97 | 0.47 | 0.73 | 23.53 | 34.1 | 16.65 | 25.71 |
| 12/27/2015 | 3.04 | 3.18 | 0.79 | 3.59 | 0.98 | 1.7 | 1.28 | 1.69 | 0.74 | 0.5 | 30.39 | 40.23 | 17.52 | 11.87 |
| 12/29/2015 | 2.77 | 3.4 | 0.8 | 3.35 | 0.99 | 1.71 | 1.23 | 1.63 | 0.69 | 0.97 | 27.29 | 36 | 15.17 | 21.55 |
| 1/17/2016 | 1.78 | 2.08 | 0.81 | 2.84 | 1 | 1.68 | 0.63 | 0.89 | 0.45 | 0.66 | 24.13 | 33.83 | 17.08 | 24.95 |
| 1/22/2016 | 4.47 | 2.64 | 0.75 | 3.7 | 0.98 | 1.7 | 1.37 | 1.76 | 0.72 | 0.75 | 29.88 | 38.22 | 15.69 | 16.22 |
| 2/11/2016 | 1.45 | 1.97 | 0.77 | 3.35 | 0.99 | 1.71 | 0.47 | 0.67 | 0.29 | 0.24 | 28.04 | 40.11 | 17.25 | 14.59 |
| 2/25/2016 | 2.13 | 2.21 | 0.83 | 4.4 | 0.99 | 1.72 | 0.72 | 0.98 | 0.31 | 0.26 | 31.65 | 43.16 | 13.74 | 11.45 |
| 3/6/2016 | 1.86 | 1.98 | 0.77 | 3.46 | 0.97 | 1.74 | 0.62 | 0.89 | 0.43 | 0.21 | 28.96 | 41.33 | 19.99 | 9.72 |
| 3/17/2016 | 2.49 | 2.23 | 0.72 | 4.87 | 0.89 | 1.68 | 0.98 | 1.32 | 0.43 | 0.26 | 32.83 | 43.99 | 14.35 | 8.83 |
| 4/10/2016 | 2.35 | 2.06 | 0.71 | 4.11 | 0.91 | 1.68 | 0.88 | 1.19 | 0.48 | 0.3 | 30.89 | 41.72 | 16.85 | 10.53 |
| 4/26/2016 | 2.72 | 2.75 | 0.75 | 3.5 | 0.91 | 1.67 | 1.19 | 1.56 | 0.83 | 0.4 | 29.87 | 39.21 | 20.9 | 10.02 |
| 5/8/2016 | 2.86 | 2.38 | 0.77 | 3.62 | 0.91 | 1.68 | 1.14 | 1.51 | 0.74 | 0.27 | 31.22 | 41.21 | 20.08 | 7.48 |

| | | | | | | | | | | | | | | |
|-----------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|
| 5/15/2016 | 3.15 | 2.28 | 0.76 | 3.73 | 0.91 | 1.68 | 1.3 | 1.71 | 0.71 | 0.42 | 31.41 | 41.22 | 17.17 | 10.2 |
| 5/22/2016 | 1.99 | 3.44 | 0.76 | 4.43 | 0.91 | 1.66 | 1.29 | 1.68 | 0.69 | 0.35 | 32.05 | 41.98 | 17.14 | 8.83 |
| 5/29/2016 | 1.98 | 3.98 | 0.78 | 4.06 | 0.9 | 1.66 | 1.35 | 1.78 | 0.75 | 0.39 | 31.58 | 41.75 | 17.57 | 9.1 |
| 6/19/2016 | 2.76 | 3.43 | 0.74 | 4.13 | 0.95 | 1.69 | 1.64 | 2.14 | 0.87 | 0.73 | 30.47 | 39.85 | 16.12 | 13.56 |
| 6/26/2016 | 2.23 | 3.43 | 0.75 | 5.34 | 0.9 | 1.67 | 1.45 | 1.9 | 0.6 | 0.4 | 33.35 | 43.67 | 13.83 | 9.15 |
| 7/6/2016 | 2.04 | 2.75 | 0.71 | 4.36 | 1.01 | 1.81 | 1.03 | 1.53 | 0.45 | 0.33 | 30.75 | 45.73 | 13.51 | 10.01 |
| 7/16/2016 | 2.63 | 3.74 | 0.73 | 4.73 | 0.93 | 1.69 | 1.55 | 2.07 | 0.69 | 0.41 | 32.86 | 43.88 | 14.61 | 8.65 |
| 7/27/2016 | 1.9 | 3.38 | 0.75 | 3.77 | 0.91 | 1.68 | 1.24 | 1.67 | 0.7 | 0.44 | 30.73 | 41.15 | 17.31 | 10.81 |