

**From:** Daley, Michelle [michelle.daley@unh.edu]

**Sent:** Monday, October 20, 2008 10:24 AM

**To:** McDowell, Bill; Trowbridge, Philip

**Subject:** RE: DOC delivery trends

Hi Phil,

Bill's assessment below is correct and the annual flux/export data along with average concentrations are below. DOC flux was almost twice that of most other years in 2006 due to the flooding that year. Flux in 2007 was back down to "normal" levels and DOC concentration that year was lower than all other years. It's likely that the 2006 event flushed lots of organic matter from the watershed so even though we had another flood event in 2007, concentrations and flux of DOC did not reach that of 2006. I would hesitate to say that DOC flux is increasing to development though. We haven't found any relationships between DOC and development. Wetland sources and discharge really seem to drive DOC dynamics in the Lamprey.

Michelle

| Water Year | Mean DOC mg/L | Q Weighted Mean DOC mg/L | mm/yr | DOC kg/ha/yr (Q weighted mean * runoff) |
|------------|---------------|--------------------------|-------|---|
| 2000       | 5.95          | 5.80                     | 545   | 31.6                                    |
| 2001       | 5.32          | 5.26                     | 456   | 24.0                                    |
| 2002       | 5.10          | 5.80                     | 259   | 15.0                                    |
| 2003       | 5.78          | 5.61                     | 492   | 27.6                                    |
| 2004       | 6.25          | 6.29                     | 578   | 36.4                                    |
| 2005       | 6.41          | 5.79                     | 663   | 38.4                                    |
| 2006       | 5.17          | 5.69                     | 1064  | 60.5                                    |
| 2007       | 4.49          | 4.77                     | 806   | 38.5                                    |

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**From:** McDowell, Bill

**Sent:** Sunday, October 19, 2008 7:14 PM

**To:** Trowbridge, Philip

**Cc:** Daley, Michelle

**Subject:** RE: DOC delivery trends

Hi Phil. Without the numbers in front of me, I think it is fair to say that yes, the DOC flux in the LR has gone up a lot in the recent high flow years. Concentrations are down some, but not significantly, so overall flux has increased a lot. Michelle can verify, please, and perhaps has calculated the annual fluxes. Bill

William H. McDowell

Professor of Water Resources Management

Department of Natural Resources and the Environment

Presidential Chair

Director, NH Water Resources Research Center (<http://www.wrrc.unh.edu/>)

238 Spaulding Life Sciences Building

**MAILING ADDRESS**

Department of Natural Resources

119 Spaulding Life Sciences

38 College Rd.

University of New Hampshire

Durham, NH 03824

bill.mcdowell@unh.edu  
Phone (603) 862-2249; FAX (603) 862-4976

<http://www.unh.edu/natural-resources/fac-bmcdowell.html>

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**From:** Trowbridge, Philip [mailto:Philip.Trowbridge@des.nh.gov]  
**Sent:** Friday, October 17, 2008 2:18 PM  
**To:** McDowell, Bill  
**Subject:** DOC delivery trends

Hi Bill,

One question related to CDOM is whether the delivery of CDOM to the estuary is increasing due to development. I know that you and Ru related CDOM in the estuary to DOC in the freshwater of the Lamprey River. Have you determined whether the DOC load to the estuary (not concentration) from the Lamprey River is changing over time? Thank you for your help.

Phil

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Phil Trowbridge, P.E.  
Coastal Scientist  
N.H. Dept. of Environmental Services  
603.271.8872  
[Philip.Trowbridge@des.nh.gov](mailto:Philip.Trowbridge@des.nh.gov)