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**Supplementary Information: Dynamics of dissolved reactive phosphorus loss from phosphorus source and sink soils in tile-drained systems.**

Table S1

General characteristics, Dissolved Reactive Phosphorus loads, and Flow-Weighted Dissolved Reactive Phosphorus concentrations, of the selected discharge events between October 2010 and September 2013 at the Purdue University Water Quality Field Station\*. Flow-Weighted Dissolved Reactive Phosphorus concentrations > 20 ug L-1 (concentration above which eutrophication is accelerated (Correll 1999)) are italicized and in bold.

| **Plot no.** | **Water year (Oct 1 to Sept 30)** | **Event no.** | **Date** | **ED (days)** | **Δt (days)** | **Q (L event-1plot-1)** | **Qave (L day-1plot-1)** | **Qmax (L day-1plot-1)** | **Drel (%)** | **DRP (g ha-1)** | **FDRP (ug L-1)** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 10 | 2011 | 1 | 12/30 - 01/02 | 4 | 90 | 4106 | 1026 | 2431 | 0 | 0.3 | 1.7 |
| 10 | 2011 | 2 | 02/14 - 02/18 | 5 | 42 | 7086 | 1417 | 3030 | 40 | 0.4 | 1.2 |
| 10 | 2011 | 3 | 02/20 - 02/22 | 3 | 1 | 2984 | 995 | 2553 | 33 | 0.2 | 1.3 |
| 10 | 2011 | 4 | 02/27-03/01 | 3 | 4 | 4839 | 1613 | 4048 | 33 | 0.4 | 1.9 |
| 10 | 2011 | 5 | 03/04 - 03/07 | 4 | 2 | 4442 | 1111 | 4048 | 25 | 0.5 | 2.5 |
| 10 | 2011 | 6 | 03/09 - 03/11 | 3 | 1 | 3651 | 1217 | 3033 | 0 | 0.5 | 3.0 |
| 10 | 2011 | 7 | 04/26 - 04/29 | 4 | 2 | 7981 | 1995 | 4048 | 25 | 2.5 | 3.8 |
| 10 | 2012 | 8 | 12/04 - 12/06 | 3 | 2 | 2167 | 722 | 1477 | 33 | 1.8 | 17.6 |
| 10 | 2012 | 9 | 12/14 - 12/16 | 3 | 7 | 4991 | 1664 | 4048 | 33 | 0.4 | 0.2 |
| 10 | 2013 | 10 | 02/26 - 03/01 | 4 | 25 | 5763 | 1441 | 4048 | 0 | 1.4 | 5.1 |
| 10 | 2013 | 11 | 03/08 - 03/11 | 4 | 6 | 1417 | 354 | 724 | 50 | 0.7 | 10.2 |
| **Average** |  |  |  | **4** |  |  |  |  |  | **0.8** | **4.4** |
| 11 | 2011 | 1 | 12/30 - 01/01 | 3 | 90 | 1701 | 567 | 1503 | 0 | 3.3 | ***42*** |
| 11 | 2011 | 2 | 02/20 - 02/22 | 3 | 1 | 2195 | 732 | 1991 | 33 | 0.3 | 2.4 |
| 11 | 2011 | 3 | 02/27 - 03/01 | 3 | 1 | 3739 | 1246 | 3100 | 33 | 0.4 | 2.3 |
| 11 | 2011 | 4 | 03/04 - 03/07 | 4 | 2 | 3277 | 819 | 3100 | 25 | 0.3 | 2.4 |
| 11 | 2011 | 5 | 03/09 - 03/12 | 4 | 1 | 2686 | 671 | 2541 | 0 | 0.4 | 3.3 |
| 11 | 2011 | 6 | 03/15 - 03/17 | 3 | 2 | 1755 | 585 | 1641 | 0 | 0.1 | 1.0 |
| 11 | 2012 | 7 | 11/29 - 12/01 | 4 | 59 | 4495 | 1498 | 3100 | 0 | 0.3 | 1.5 |
| 11 | 2012 | 8 | 12/04 - 12/07 | 4 | 2 | 1625 | 406 | 1149 | 25 | 2.8 | ***37.8*** |
| 11 | 2012 | 9 | 12/14 - 12/16 | 3 | 6 | 3877 | 1292 | 3100 | 33 | 0.1 | 0.4 |
| 11 | 2012 | 10 | 12/30 - 01/01 | 3 | 8 | 753 | 251 | 465 | 0 | 0.5 | 15.3 |
| 11 | 2012 | 11 | 01/22 - 01/24 | 3 | 3 | 3120 | 1040 | 3100 | 33 | 6.0 | ***41.8*** |
| 11 | 2012 | 12 | 01/26 - 01/28 | 3 | 1 | 3249 | 1083 | 2607 | 0 | 2.5 | 16.8 |
| 11 | 2012 | 13 | 05/06 - 05/08 | 3 | 98 | 4805 | 1602 | 3100 | 33 | 8.9 | ***40.1*** |
| 11 | 2013 | 14 | 02/26 - 03/01 | 4 | 25 | 4459 | 1115 | 3100 | 0 | 4.8 | ***23.3*** |
| **Average** |  |  |  | **3** |  |  |  |  |  | **2.2** | **16.4** |
| 12 | 2011 | 1 | 03/15 - 03/17 | 3 | 2 | 1506 | 502 | 1052 | 0 | 0.1 | 1.4 |
| 12 | 2012 | 2 | 11/27 - 12/01 | 5 | 57 | 4485 | 897 | 2308 | 40 | 3.5 | 16.9 |
| 12 | 2012 | 3 | 12/04 - 12/06 | 3 | 2 | 638 | 213 | 436 | 33 | 0.8 | ***25.5*** |
| 12 | 2012 | 4 | 12/14 - 12/16 | 3 | 7 | 2586 | 862 | 2308 | 33 | 0.1 | 1.1 |
| 12 | 2012 | 5 | 12/30 - 01/01 | 3 | 8 | 489 | 163 | 236 | 33 | 0.1 | 4.7 |
| 12 | 2012 | 6 | 01/22 - 01/24 | 3 | 3 | 2415 | 805 | 2308 | 33 | 1.9 | 17.8 |
| 12 | 2012 | 7 | 01/26 - 01/28 | 3 | 1 | 3532 | 1177 | 1936 | 0 | 1.9 | 11.7 |
| 12 | 2012 | 8 | 05/06 - 05/08 | 3 | 98 | 1934 | 645 | 1867 | 33 | 0.5 | 5.1 |
| **Average** |  |  |  | **3** |  |  |  |  |  | **1.1** | **10.5** |
| 26 | 2011 | 1 | 12/29 - 01/02 | 5 | 89 | 7993 | 1599 | 3589 | 20 | 0.5 | 1.5 |
| 26 | 2011 | 2 | 03/15 - 03/18 | 4 | 2 | 4354 | 1089 | 3149 | 0 | 0.3 | 1.3 |
| 26 | 2011 | 3 | 06/20 - 06/22 | 3 | 3 | 2253 | 751 | 1207 | 0 | 0.1 | 1.4 |
| 26 | 2012 | 4 | 12/14 - 12/18 | 5 | 5 | 5527 | 1105 | 3589 | 20 | 0.4 | 1.4 |
| 26 | 2012 | 5 | 12/20 - 12/23 | 4 | 1 | 3144 | 786 | 1846 | 0 | 0.2 | 1.4 |
| 26 | 2012 | 6 | 12/30 - 01/02 | 4 | 6 | 3005 | 751 | 1550 | 0 | 0.1 | 0.8 |
| 26 | 2012 | 7 | 01/17 - 01/19 | 3 | 14 | 3990 | 1330 | 3589 | 0 | 2.3 | 12.6 |
| 26 | 2012 | 8 | 05/06 - 05/08 | 3 | 97 | 5043 | 1681 | 3589 | 33 | 1.8 | 7.5 |
| 26 | 2013 | 9 | 12/20 - 12/23 | 4 | 80 | 4305 | 1076 | 3331 | 0 | 1.0 | 4.9 |
| 26 | 2013 | 10 | 05/27 - 05/29 | 3 | 24 | 5317 | 1772 | 3589 | 0 | 0.4 | 1.4 |
| 26 | 2013 | 11 | 06/01 - 06/03 | 3 | 2 | 1039 | 346 | 562 | 33 | 0.3 | 6.3 |
| **Average** |  |  |  | **4** |  |  |  |  |  | **0.7** | **3.7** |
| 30 | 2011 | 1 | 12/30 - 01/01 | 3 | 90 | 944 | 315 | 917 | 0 | 0.2 | 4.7 |
| 30 | 2011 | 2 | 02/16 - 02/18 | 3 | 45 | 512 | 171 | 309 | 33 | 0.0 | 0.2 |
| 30 | 2011 | 3 | 04/26 - 04/28 | 3 | 2 | 1124 | 375 | 574 | 0 | 0.2 | 2.9 |
| 30 | 2011 | 4 | 06/20 - 06/22 | 3 | 3 | 2079 | 693 | 1449 | 33 | 0.1 | 1.4 |
| 30 | 2012 | 5 | 12/30 - 01/02 | 4 | 6 | 145 | 36 | 77 | 0 | 0.0 | 1.4 |
| 30 | 2012 | 6 | 01/17 - 01/19 | 3 | 14 | 414 | 138 | 392 | 0 | 0.0 | 4.8 |
| 30 | 2013 | 7 | 12/20 - 12/22 | 3 | 80 | 533 | 178 | 505 | 0 | 0.3 | 10.4 |
| 30 | 2013 | 8 | 02/26 - 03/05 | 8 | 25 | 1178 | 147 | 882 | 0 | 0.4 | 7.4 |
| 30 | 2013 | 9 | 05/27 - 05/29 | 3 | 24 | 2308 | 769 | 1509 | 0 | 0.2 | 1.4 |
| 30 | 2013 | 10 | 06/01 - 06/03 | 3 | 2 | 191 | 64 | 160 | 0 | 0.4 | ***45.0*** |
| **Average** |  |  |  | **4** |  |  |  |  |  | **0.2** | **8.0** |
| 32 | 2011 | 1 | 02/21 - 02/23 | 3 | 41 | 713 | 238 | 543 | 0 | 0.1 | 2.1 |
| 32 | 2011 | 2 | 02/28 - 03/02 | 3 | 4 | 1641 | 547 | 1444 | 0 | 0.2 | 2.2 |
| 32 | 2011 | 3 | 03/15 - 03/17 | 3 | 2 | 898 | 299 | 723 | 0 | 0.0 | 0.6 |
| 32 | 2012 | 4 | 11/28 - 12/01 | 4 | 58 | 2502 | 625 | 1444 | 25 | 1.0 | 9.0 |
| 32 | 2012 | 5 | 12/04 - 12/06 | 3 | 2 | 306 | 102 | 259 | 33 | 0.2 | 13.6 |
| 32 | 2012 | 6 | 12/14 - 12/16 | 3 | 7 | 1894 | 632 | 1444 | 33 | 0.1 | 0.7 |
| 32 | 2012 | 7 | 05/06 - 05/08 | 3 | 97 | 2935 | 978 | 1444 | 33 | 0.5 | 3.5 |
| 32 | 2013 | 8 | 02/26 - 03/03 | 6 | 25 | 3410 | 568 | 1444 | 0 | 0.4 | 2.7 |
| 32 | 2013 | 9 | 04/28 - 04/30 | 3 | 1 | 242 | 81 | 208 | 0 | 0.0 | 1.9 |
| 32 | 2013 | 10 | 05/27 - 05/29 | 3 | 26 | 2127 | 709 | 1444 | 0 | 0.1 | 1.4 |
| **Average** |  |  |  | **3** |  |  |  |  |  | **0.0003** | **0.0038** |
| 43 | 2011 | 1 | 12/30 - 01/03 | 5 | 33 | 4513 | 903 | 1825 | 20 | 0.3 | 1.4 |
| 43 | 2011 | 2 | 06/20 - 06/22 | 3 | 19 | 948 | 316 | 782 | 33 | 0.1 | 1.4 |
| 43 | 2012 | 3 | 12/04 - 12/07 | 4 | 1 | 3764 | 941 | 1875 | 25 | 1.7 | 9.6 |
| 43 | 2012 | 4 | 12/14 - 12/17 | 4 | 6 | 5317 | 1329 | 3554 | 25 | 0.3 | 1.4 |
| 43 | 2012 | 5 | 12/20 - 12/22 | 3 | 2 | 1593 | 531 | 941 | 0 | 0.1 | 1.4 |
| 43 | 2012 | 6 | 12/30 - 01/01 | 3 | 7 | 1923 | 641 | 972 | 33 | 0.4 | 4.1 |
| 43 | 2012 | 7 | 05/06 - 05/08 | 3 | 97 | 4993 | 1664 | 3554 | 0 | 2.4 | 10.5 |
| 43 | 2013 | 8 | 02/26 - 03/01 | 4 | 1 | 605 | 151 | 202 | 50 | 0.1 | 1.9 |
| 43 | 2013 | 9 | 03/09 - 03/11 | 3 | 7 | 2914 | 971 | 2119 | 33 | 1.7 | 12.5 |
| **Average** |  |  |  | **4** |  |  |  |  |  | **0.8** | **4.9** |
| 44 | 2011 | 1 | 12/30 - 01/04 | 6 | 17 | 5366 | 894 | 2072 | 0 | 0.3 | 1.2 |
| 44 | 2011 | 2 | 06/20 - 06/22 | 3 | 19 | 2131 | 710 | 1561 | 33 | 0.1 | 1.4 |
| 44 | 2011 | 3 | 07/02 - 07/04 | 3 | 9 | 662 | 221 | 462 | 33 | 0.0 | 1.4 |
| 44 | 2012 | 4 | 11/22 - 11/24 | 3 | 6 | 1173 | 391 | 850 | 0 | 0.8 | 14.5 |
| 44 | 2012 | 5 | 12/30 - 01/02 | 4 | 5 | 1580 | 395 | 634 | 25 | 0.1 | 1.3 |
| 44 | 2012 | 6 | 01/17 - 01/19 | 3 | 14 | 2497 | 832 | 2072 | 0 | 0.8 | 6.8 |
| **Average** |  |  |  | **4** |  |  |  |  |  | **0.4** | **4.4** |

**\***ED, event duration; Δt, days since previous event; Q, total discharge; Qave, average event discharge; Qmax, peak event discharge;Drel, relative length (days) of the rising limb; DRP, dissolved reactive phosphorus; FDRP, flow-weighted DRP concentrations.