The following 4 tables accompany the peer-reviewed journal article GS Metson, J Lin, JE Compton, JA Harrison. Where have all the nutrients gone? Long-term Decoupling of Inputs and Outputs in the Willamette River Watershed, Oregon, USA. JGR Biogeoscience

The views expressed in this article are those of the authors and do not necessarily represent the views or policies of the U.S. Environmental Protection Agency.

Values refer to the Willamette River Watershed, which was defined as the area draining to USGS gauge 14211720 (which is 29 018 km2 when delimiting using HydroSHEDs 15 arc-second flow direction maps (Lehner et al 2006)).

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The dataset contains:

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| **Table** | **Full title** |
| S1 | Land use makeup of the Willamette River Basin watershed (USGS site 14211720, Willamette R. at Portland) in 1974 and 2012 (NWALT data) |
|  |  |
| S2 | Terrestrial N and P values in kg of nutrient per km per year for target years in the Willamette River Basin. |
|  |  |
| S3 | Riverine TN, TP, and DIP concentrations, loads from 1972 to 2013 from 3 model outputs for the Willamette River Basin. |
|  |  |
| S4 | N and P fractional export 1972 to 2013 using WRTDS model loads for the Willamette River Basin and the TN, TP, and DIP annual yields from the model. |
|  |  |
| S5 | Interpolated annual terrestrial sources and estimated accumulation of N and P between 1969 and 2012 for the Willamette River Basin. |

Abbreviations and units are as follows:

|  |  |  |  |
| --- | --- | --- | --- |
| **Table** | **Variable abbreviation** | **Definition** | **Units** |
| S2 and S5 | fert\_P | Phosphorus synthetic fertlizer input | kg of P per ha per year |
| S2 and S5 | manure\_P | Phosphorus manure input | kg of P per ha per year |
| S2 and S5 | crop\_P | Phosphorus crop harvest | kg of P per ha per year |
| S2 and S5 | agbal\_P | Phosphorus agricultural balance (fertlizer+manure-crop harvest) | kg of P per ha per year |
| S2 and S5 | mps\_P | Phosphorus major point source input | kg of P per ha per year |
| S2 and S5 | pop\_P | Phosphorus input as human sewage based on population density | kg of P per ha per year |
| S2 and S5 | fert\_N | Nitrogen synthetic fertlizer input | kg N per ha per year |
| S2 and S5 | manure\_N | Nitrogen manure input | kg N per ha per year |
| S2 and S5 | crop\_N | Nitrogen crop harvest | kg N per ha per year |
| S2 and S5 | agbal\_N | Nitrogen agricultural balance (fertlizer+manure+biological fixation+ wet deposition-crop harvest) | kg N per ha per year |
| S2 and S5 | biofix\_N | Nitrogen input through biological fixation (alfalfa) | kg N per ha per year |
| S2 and S5 | mps\_N | Nitrogen major point source input | kg N per ha per year |
| S2 and S5 | pop\_N | Nitrogen input as human sewage based on population density | kg N per ha per year |
| S2 and S5 | wetdep\_N | Nitrogen input as wet deposition | kg N per ha per year |
| S3 | date | Year followed by month | NA |
| S3 | wrtds\_TN\_conc | Monthly average total nitrogen concentration from the WRTDS model | mg per liter |
| S3 | wrtds\_TN\_load | Monthly average total nitrogen load from the WRTDS model | kg per day |
| S3 | wrtds\_TP\_conc | Monthly average total phosphorus concentration from the WRTDS model | mg per liter |
| S3 | wrtds\_TP\_load | Monthly average total phosphorus load from the WRTDS model | kg per day |
| S3 | wrtds\_DIP\_conc | Monthly average dissolved inorganic phosphorus concentration from the WRTDS model | mg per liter |
| S3 | wrtds\_DIP\_load | Monthly average dissolved inorganic phosphorus load from the WRTDS model | kg per day |
| S4 | TN\_y\_w | Annual TN yield from the WRTDS model | kg N per ha per year |
| S4 | TP\_y\_w | Annual TP yield from the WRTDS model | kg of P per ha per year |
| S4 | DIP\_y\_w | Annual DIP yield from the WRTDS model | kg of DIP per ha per year |
| S4 | export\_P | Fractional export of phosphorus from the watershed (total phosphorus yield from wrtds model divided by the total of phosphorus inputs in that year and multiplied by 100) | percentage (%) |
| S4 | export\_n | Fractional export of nitrogen from the watershed (total nitrogen yield from wrtds model divided by the total of nitrogen inputs in that year and multiplied by 100) | percentage (%) |
| S4 | balance\_export\_P | Fractional export of net balance of phosphorus for the watershed (total phosphorus yield from wrtds model divided by net agricultural balance plus sewage inputs inputs in that year and multiplied by 100) | percentage (%) |
| S4 | balance\_export\_N | Fractional export of net balance of nitrogen for the watershed (total nitrogen yield from wrtds model divided by net agricultural balance plus sewage inputs inputs in that year and multiplied by 100) | percentage (%) |
| S5 | P\_retention | Retention of phosphorus from net agricultural inputs after known losses (riverine loads- human sewage) have taken place. | kg of P per ha per year |
| S5 | N\_retention | Retention of nitrogen from net agricultural inputs after known losses (riverine loads- human sewage) have taken place. | kg N per ha per year |