**PlosOne Supplemental Material Description (Waite et al. 2014): This file contains the Partial Dependency Plots from Boosted Regression Tree models using development data set for each of the three invertebrate metrics (EPTR (Richness); Intolerant Taxa (Intol\_rich) and NonInsect Richness (NONINSR)) for each region that were not shown in the full paper in PlosOne.**

**Full Region** -- Plots in order from left to right: 1) Percent Watershed Urban, 2) % Riparian Slope, 3) Average December Runoff (mm), 4) % Riparian Canopy Cover, 5) % Riparian Forest, and 6) % Manmade Stream Channels for EPT richness. Boosted Regression model variable importance values in parentheses.



**Full Region** Plots in order from left to right: 1) Percent Riparian Forest, 2) Watershed Population Density (#/km2), 3) Percent Watershed Forest, 4) % Riparian Maximum Elevation (m), and 5) Average Maximum Monthly Runoff (mm) for Intolerant taxa richness. Boosted Regression model variable importance values in parentheses.



**Full Region** Plots in order from left to right: 1) Average March Runoff (mm), 2) % Manmade Stream Channels, 3) Mean Elevation in Watershed, and 4) Mean Slope in Riparian for NonInsect richness. Boosted Regression model variable importance values in parentheses.



**North Central Appalachians** Plots in order from left to right: 1) Minimum April Runoff (mm), 2) Riparian Population Density (#/km2), 3) Mean Riparian Canopy, and 4) Watershed Road Density (km/km2) for EPT taxa richness. Boosted Regression model variable importance values in parentheses.



**North Central Appalachians** Plots in order from left to right: 1) % Riparian Forest, 2) Mean Slope in Riparian, 3) Soil Infiltration D (very slow rate), 4) Minimum April runoff (mm), 5) % Riparian Agriculture , 6) Riparian Population Density (#/km2), and 7) Watershed Road Density (km/km2) for Intolerant taxa richness. Boosted Regression model variable importance values in parentheses.



**North Central Appalachians** Plots in order from left to right: 1) Percent Riparian Forest, 2) Watershed Population Density (#/km2), 3) Percent Manmade Channels, 4) Watershed Dam Density (#/km2), and 5) Riparian Population Density (#/km2) for NonInsect taxa richness. Boosted Regression model variable importance values in parentheses.



**Ridge and Valley** Plots in order from left to right: 1) Percent Riparian Forest, 2) Percent Watershed Agriculture + Urban, 3) Watershed Population Density (#/km2), 4) Maximum Monthly Runoff CV, and 5) Percent Watershed Urban for EPT taxa richness. Boosted Regression model variable importance values in parentheses.



**Ridge and Valley** Plots in order from left to right: 1) Percent Riparian Forest, 2) Watershed Population Density (#/km2), 3) Percent Watershed Urban, 4) Mean Riparian Canopy, and 5) Mean Watershed Slope for Intolerant taxa richness. Boosted Regression model variable importance values in parentheses.



**Ridge and Valley** Plots in order from left to right: 1) Maximum March Runoff (mm), 2) Maximum May Runoff (mm), 3) Soil Infiltration C (slow rate), and 4) Percent Manmade Channels for NonInsect richness. Boosted Regression model variable importance values in parentheses.



**Northeastern Highlands** Plots in order from left to right: 1) Percent Watershed Urban, 2) Percent Watershed Wetlands, 3) Percent Manmade Channels, and 4) Percent Riparian Forest for EPT taxa richness. Boosted Regression model variable importance values in parentheses.



**Northeastern Highlands** Plots in order from left to right: 1) Percent Watershed Urban, 2) Average July Runoff (mm), 3) Percent Riparian Forest, and 4) Percent Manmade Channels for Intolerant taxa richness. Boosted Regression model variable importance values in parentheses.



**Northeastern Highlands** Plots in order from left to right: 1) Maximum January Runoff (mm), 2) Average March Runoff (mm), 3) Percent Riparian Wetlands, 4) Mean Slope in Riparian, and 5) Watershed Population Density (#/km2) for NonInsect taxa richness. Boosted Regression model variable importance values in parentheses.



**Northern Piedmont** Plots in order from left to right: 1) Percent Watershed Urban, 2) Watershed Mean Elevation (m), 3) Percent Riparian Forest, and 4) Percent Manmade Channels for EPT taxa richness. Boosted Regression model variable importance values in parentheses.



**Northern Piedmont** Plots in order from left to right: 1) Percent Watershed Urban, 2) Riparian Maximum Elevation (m), 3) Mean Watershed Slope, 4) Soil Infiltration B (moderate rate), 5) % Riparian Wetland, and 6) Watershed Population Density (#/km2), for Intolerant taxa richness. Boosted Regression model variable importance values in parentheses.



**Northern Piedmont** Plots in order from left to right: 1) Maximum April Runoff (mm), 2) Maximum Riparian Elevation (m), 3) Soil Infiltration C (slow rate), and 4) Percent Manmade Channels for NonInsect richness. Boosted Regression model variable importance values in parentheses.

