Examining Watershed Properties of the NRCS Watershed Boundary Dataset (WBD) in the context of NHDPlus

Using the Watershed Boundary Dataset (WBD) and the National Hydrography Database (NHDPlus), a preliminary analysis is being developed examining the relationships between these two datasets considering stream inflows, outflows, and Strahler Order of streams, using EPA Region 4 as a test case. Specifically, we are using existing NHDPlus navigation tools as well as custom scripts to gather for every 6 Level, 12-digit Hydrologic Unit Code (HUC12) in the WBD all the inflows, outflows, Strahler Order of inflows and outflows, and upstream HUC12s based on the NHDPlus network as the linking mechanism. This would identify classic watershed (all surface drainage contained within area and converging to single point), composite unit (land area receiving flow from upstream watershed and converging to a single point), and frontal unit (land area with surface flow originating in unit and draining to multiple points) hydrologic types of the WBD using the NHDPlus medium-resolution stream network. While the WBD HUCs identify both downstream and upstream HUC as well as watershed type (e.g. standard, closed, or frontal basin) in their attribute tables, explicit linkage to the NHDPlus network will allow more robust watershed analysis and classification. The hierarchically-nested and more detailed WBD HUC12s provide a useful framework of hydrologic delineation for managers and analysts, and tying them to the value-added components of the NHDPlus network and aggregating HUC12s that form classic watersheds will add additional analytic capability to these datasets.

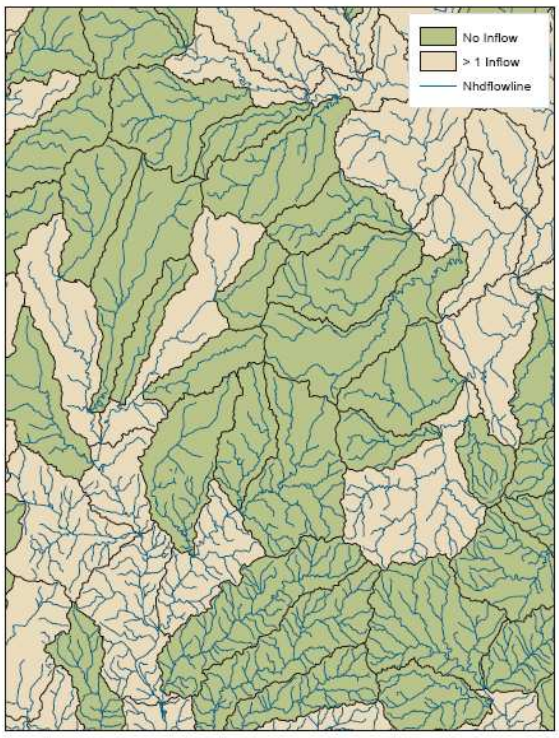

Figure 2. Watershed Boundary Dataset (WBD) 12-digit HUCs categorized by inflow.

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