Drainage Area: MS, VPU: 05 - Release Notes

12/01/2018 – Updated and New Data

Time of Travel and Related Attributes: The new and updated data is included in new versions of the NHDPlusAttributes and EROMExtension components. Specifically,

EROM mean annual and mean monthly statistics have been re-computed with the following changes:

Removal of upper and lower limits for reference gage regression adjustment,
Correction of reference gage regression equation, and
Reference gage regression included in all flow statistics.

PlusFlowlineLakeMorphology and PlusWaterbodyLakeMorphology tables have been updated based on the new EROM mean annual flows.

PlusFlowlineVAA mean annual time of travel (TOTMA) has been updated based on the new EROM mean annual flows. Path time (PathTime) attribute has been added and populated based on the updated TOTMA values.

05/10/2016 – Updated Components

The improved HUC12 downstream pointers from the February 2016 WBD Version were updated in the NHDPlus WBDSnapshot. When a correspondence between the two versions could be determined for both the HUC12 and the downstream HUC12, the downstream pointer was updated.

01/05/2016 – Updated Components

EROM Mean Annual and Mean Monthly flow estimates have been re-run to correct incremental flows to be the sum of the incremental flows upstream and on the flowline. EROM velocities were updated to provide velocity estimate only for flowing waters. EROM velocities are now set to -9998 (missing value) in all water bodies except swamp/marsh.

07/08/2015 – Updated Components

The WBDSnapshot was revised to correct the values in the Acres field. The NHDSnapshot and NHDPlusAttributes were revised to correct values in FType/FCode in a handful of features.

1/30/2015 – Revised Component

The VPUAttributeExtension has been updated to include accumulated mean annual and mean monthly runoff files.

1/21/2014 – New Data Release

The EROMExtension was enhanced to include mean monthly flow estimates. See NHDPlusV2 User Guide for additional information.

12/07/2012 – Replacement components

Three NHDPlusV2 components are replaced with new versions: NHDSnapshot, NHDPlusBurnComponents, and NHDPlusAttributes. These replacements represent some changes in NHDFlowline ReachCode values and the inclusion of an NHDReachCrossReference table that tracks ReachCode changes from NHDPlusV1 to NHDPlusV2.

9/21/2012 – Temporary Attribute Cleanup

During NHDPlusV2 processing and subsequent QAQC, some temporary attributes were added. Some of these attributes were not deleted and were inadvertently included in the public release. These extraneous attributes do not affect the usability of the data, but they do violate the official data model and may cause issues with future NHDPlusV2 tools. Users are encouraged to download the new components. In this VPU, the replacement zip files are:

NHDPlusV21_MS_05_NHDPlusBurnComponents_04.7z

9/19/2011 – NHDPlusV21_MS_05_NHDSnapshot_03.7z

Stream name errors/omissions reported by end user were corrected.

8/14/2012 – Initial Release Notes

Missing NHDPlusV21 Components

This VPU is being released without the NHDPlusFilledAreas grids. These will be released at a later date.

Non-spatial connections

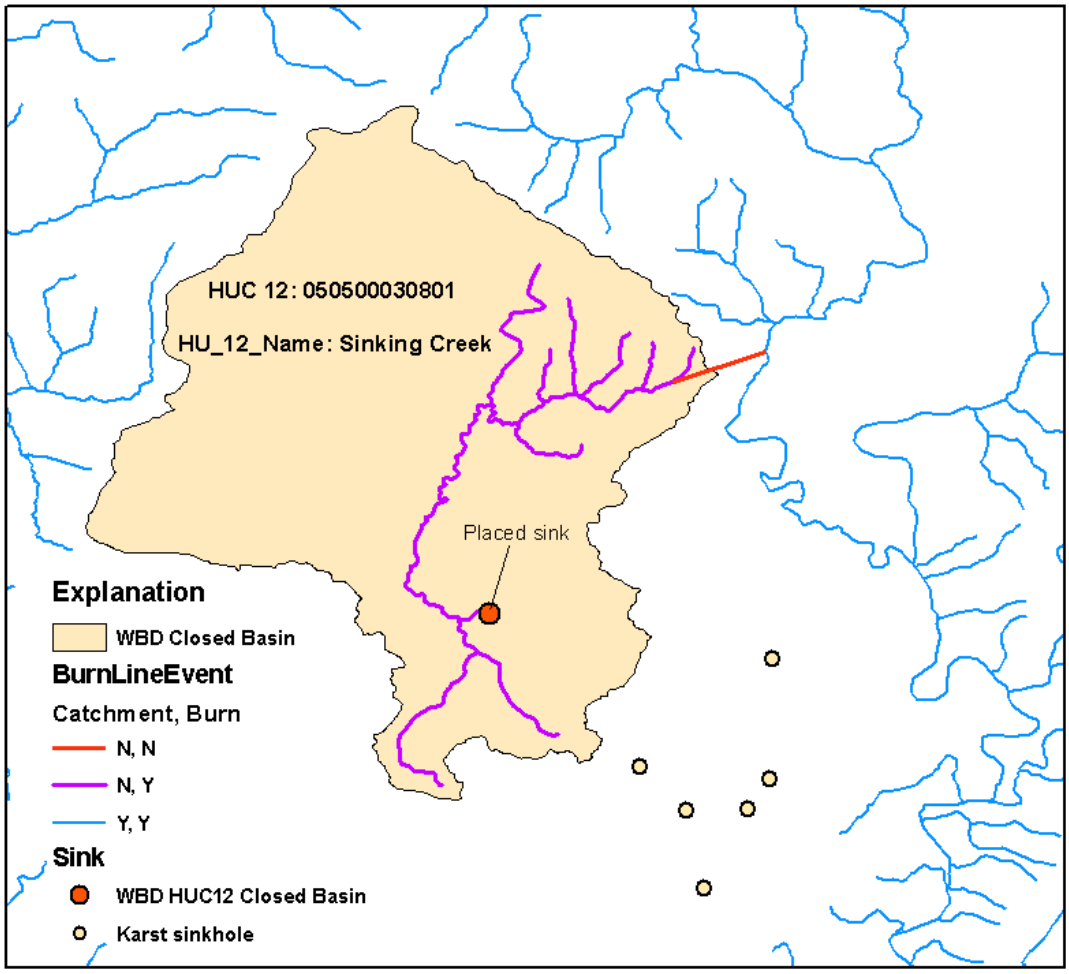
Region 5 has areas of karst terrain where surface water flows to a sink hole and travels underground. In some cases, the underground flow resurfaces to emerge to surface stream. In the NHD, some isolated networks in these karst terrain settings were non-spatially connected to another NHD flow network in the PlusFlow.dbf table using information from local knowledge sources. The locations of these non-spatially connected networks can be found using the Sink feature class (PurpCode = 2) in the NHDPlusBurnComponents folder. There are 5 of these networks that were non-spatially connected to one or more flowlines of another network. Records in PlusFlow.dbf show how these were connected.

Conflict between a WBD closed basins and NHD

There was a conflict between a WBD closed basin (HUC 12 level) and the connectivity of this area made by the NHD to the Ohio River basin. In the example below, the flowline colored in red is coded as "Connector" where all NHD flowlines colored in purple are draining towards. This connection made by the NHD is in error and all NHD flowlines within the closed HUC should be draining towards a sink (shown as a red dot). At the time of production, limited resources prohibited the correction of the NHD, therefore, to best represent the landscape in the NHDPlus and avoid this closed basin area to be allocated to the Ohio River drainage, several actions were taken.

First, the connector flowline (ComID 6935792) was set to "N" for both Burn and Catchment properties in BurnLineEvent. The flowlines flowing into the connector (purple flowlines in figure) were set to "Y" for burn and "N" for catchment. A sink was manually placed on the flowline network within the closed basin as seen in the figure. These actions in effect isolate the closed basin area by assigning a catchment for the

entire HUC 12 to the manually placed sink. The flowlines in purple were utilized as burn features for the HydroDEM, resulting in correct flow direction and accumulation grids where the NHD hydro in purple flows to the sink.



Handling of NHD connections in error

Within Region 5, several NHD flowline connector features were visited. In a couple cases, these connections were incorrect and handled by setting the connector features (ComIDs 6935810, 6935792) to "N" for both Burn and Catchment, and setting all upstream flowlines of the connector to "Y" for Burn and "N" for Catchment.

In one case, a set of streams that drains to an NHD connector feature (ComID 935050011) to connect to the Ohio River Basin, appeared to actually drain to a karst sink hole. As such, the connector flowline was set to "N" for both Burn and Catchment properties and a sink was manually placed at the downstream end of the flowline (ComID 935050012) that connects to the connector feature. This action isolated the set of streams in the NHDPlus fdr/fac grids, but remained connected with catchments in the NHDPlus vector data

(minus the removal of the connector flowline). This action creates a non-spatial like connection in the NHDPlus.

Placement of Sinks in Karst Terrain

Manually placed sinks were created in Karst terrain areas even if these areas were not classified as a closed basin by the WBD. Depression areas from USGS topographic maps were used as source information to create these sinks.

Enhanced Unit Runoff Method (EROM)

See Appendix A of the "NHDPlus V2 User Guide" for a detailed explanation of the EROM parameters. EROM Flow and Velocity estimates are for Mean Annual values.

The time period for these estimates is 1971 to 2000; the runoff, temperature and precipitation grids are for this time period.

For gage adjustment and Reference Gage Regression, gages must meet the following criteria:

1. A minimum of 20 of the 30 years (1971 to 2000) of complete flow records.
2. NWIS reported drainage area versus NHDPlus drainage area, for the gage, must be within 0.2 (+/- 20%).
3.

Upstream gage drainage area proportion is 0.5 (50%).

Excess Evapotranspiration default coefficients are 0.3 and 0.5.

Gage sequestration proportion is 0.2 (20%).