Drainage Area: MS, VPU: 11 - 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.

09/20/2016 – Updated NHDSnapshot

Corrected a handful of incorrect FType/Fcode values and WBAreaCOMID 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.

11/25/2014 – Replacement components

The NHDSnapshot component file has a new version. The name of Lake Overholser was incorrectly named Ramsey Lake. The lake name and GNIS ID are now correct.

04/02/2014 – Replacement components

The NEDSnapshot component files have new versions. The previous files did not uncompress properly into the NHDPlusV2 native folder structure.

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.

9/19/2012 – Update to VPUAttributeExtension Component

An error was discovered in the ArcGIS->Spatial Analyst->Zonal-Statistics-as-Table geoprocessing tool. The error created incorrect results in the catchment allocation and accumulation tables in the VPUAttributeExtension folder. After implementing a work-around, the tables were recreated and are posted as NHDPlusV21_MS_11_VPUAttributeExtension_02.7z.

07/06/2012 - 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%)

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%)

Reference gages (those gages determined to have minimal impact from human activities) are generally found on smaller streams with lower mean annual flow. Currently, the Reference Gage Regression step adjusts all flows in a VPU regardless of mean annual stream flow. In several VPUs, the Reference Gage Regression step (step 3) will "over-adjust" larger mean annual flows. In these cases, the resulting Reference Gage Regression flow estimates will be worse than the Runoff/Excesses ET flow estimates (step 2). Note that this issue exists on the larger rivers, which are most likely to have flow gages on them. Consequently, Gage Adjustment step (step 5) will "re-adjust" the flow estimates to better match the expected mean annual flow conditions. Below is a list of the VPUs that appear to be affected by an over adjustment during the Reference Gage Regression and an approximate flow value above which this issue applies:

> 03N: > 2,000 cfs
> 03S: > 4,000 cfs
> 03W: > 15,000 cfs
> 07: > 3,000 cfs
> 10L: > 10,000 cfs
> 11: > 5,000 cfs
> 12: > 3,000 cfs
> 16: > 1,000 cfs
> 17: > 10,000 cfs

7/3/2012 - Initial Release Notes

BurnAddLine

There are several lines in the BurnAddLine shapefile that represent flowlines in the adjacent NHDPlus Vector Production Unit (VPU). These flowlines were added to BurnAddLine to constrain the catchment delineations at the inter VPU connection points with Region 8. These also serve the purpose to ensure proper drainage enforcement of the HydroDEM, as these flowlines extend the drainage to the temp raster processing units NoData extent in the grid data. The GridCode, StreamLeve, and HydroSeq values for these attributes are not the official coded values for these flowlines in the Region 8 data because these values did not exist for Region 8 at the time of production for Region 11. As such, these values were used purely for production processing of the Region 11 data. Refer to the Region 8 data for the correct set of flowline attributes.

Catchment/Burn Settings

The following describes unique settings of Burn and Catchment properties in BurnLineEvent.

1) Several flowlines along the NHDPlus VPU border within a grid cell width or outside of the VPU, had their Burn and Catchment properties set to "N" (no). This avoids region 11 catchment areas extending into the adjacent VPUs.
2) There are twelve flowlines coded with a pipeline feature type (Ftype = "Pipeline"). All of these features were visited and all had the Catchment property set to "N". Four of the pipeline flowlines were set to "Y" (yes) for Burn, thus allowing connectivity of the network

in the NHDPlus HydroDem. The remaining eight pipeline features were set to "N" for the Burn property to ensure proper channel enforcement of the natural drainage.

3) A Canal/Ditch flowline (ComID 254998) that extends into an adjacent HUC12 was set to "N" for both Catchment and Burn.

4) A select portion of a man-made water diversion canal comprising of several flowlines in the NHD coded as "Stream/River" and "Pipeline" features were set to "N" for both Catchment and Burn properties. These were set to no to ensure the natural drainage was represented correctly in the HydroDEM as defined by the WBD and the natural stream channels in the NHD. The canal named the Bretch Diversion Canal, located in Oklahoma, diverts flow from Elk Creek to supply water to the Tom Steed Reservoir. Portions of this canal in the NHD (miscoded as feature type = "Stream/River") bisect natural drainage represented in the NHD. At these intersections with natural streams the canal is culverted under the bisecting streams. List of ComIDs set to "N" for Catchment and Burn (includes 4 pipeline flowlines discussed previously) : 559941, 559859, 560003, 560065, 560005, 561525, 561533, 559883, 560015, 561545, 561557)

Explanation

— NHD Flowlines

— Select set of NHD flowlines representing a portion of the Bretch Diversion Canal. Catchment and Burn properties set to "N" (no).

— WBD HUC12 drainage divide

Tom Sneed Reservoir