

Hydrography Technical Working Group Meeting  
March 12<sup>th</sup> 2020

**Attending:**

- *In Room*
  - David Nagle - USFS, Rocky Mountain Research Station
  - Linda Davis – IDWR
  - Danielle Favreau – IDWR
- *Via phone*
  - Ariel Doumbouya – USGS
  - Zach Uhlmann
  - Brandon Jones – HDR
  - Nigel Powell – Aero-Graphics
  - Bill Nielsen

**NHDPlus HR Attributes VAA: LevelPathID and TerminalPathID - Presentation From Ariel Doumbouya:**

- See Slides

There are two ways to download the NHD plus

- [National Map Downloader](#) – select NHD ( HUC 4 for Conus, HUC2 only for Alaska) Click on find product. There are vector and raster options for download
- [NHD website](#) – all the NHD Plus is in the Beta Directory. There are 4 different parts in the downloads ( jpg (image showing extent), xml (metadata), GDB (vector data), raster ( raster products)).

There are many files in a NHDPlusHR region GDB. Don't get overwhelmed! Start with the table NHDPlusFlowlineVAA! The NHDPlusFlowlineVAA is a set of value added attributes to enhance stream network navigation, analysis, and display. The NHDPlus HR VAAs are broken into 2 general categories; Analysis Attributes and Display Attributes.

Join NHDPlusFlowlineVAA table to the NHDFlowline feature class on NHDPlusID (unique identifier).

Demo of InNetwork, LevelPathIdentifier, TerminalPathIdentifier, VPUOut in ArcGIS Pro (Please see Slides)

- LevelPathIdentifier – The identifier for all the flowlines on a level path from mouth to headwaters. Based on GNISID.
- TerminalPathIdentifier – The identifier for all connected flowlines from mouth to headwaters. Based on Network Connectivity.
- In InNetwork = “No”, the flowline will not have any VAAs.
- VPUOut identifies where outflow connects to other HU.

If you create a feature class of the NHDFlowline/NHDPlusFlowline, you can do additional processing on the dataset. Dissolve on TerminalPathIdentifier to reduce the number of flowline segments.

For more information on the NHDPlusHR Value Added Attributes:

[VAAs Website](#)

[NHDPlusHR User Guide](#)

**Aquatic Resources Data for the Western US - Presentation from David Nagle**

- See Slides

All regional dataset. Based on NHDPlus v.2 which is a static product dated 2012.

#### Dataset Lists:

- [Stream temp](#) – Norwest
  - For 1993-2011
  - Mean
  - Aug. Temp.
- Fish habitat – [Cold-Water Climate Shield](#)
  - Thermally Suitable Habitat Patches
- [Stream flow metrics](#)
  - VIC Model tied to NHDPlus v.2
  - Results are tables tied to NHDPlus v.2 via COMID
- [Valley Confinement](#)
  - Algorithm is written in python using NHDPlus v. 2 and Elevation
  - Identifies a type of fish habitat
- NSI – [National Stream Internet Project](#)
  - Edited NHDPlus v.2 to make a dendritic network for use in STARS, SSN, and other modeling packages.
  - National Coverage
- Environmental DNA (eDNA)
  - Looks at water samples and the DNA within them.
  - Sampling limit is about 1 km
  - Data available as AGOL interactive maps
  - Two Datasets
    - [Bull Trout eDNA](#)
    - [Aquatic eDNA Atlas](#)
      - several species
      - Data collection is ongoing. Public can rent sample kits.
- Stream Gradient
  - Still in draft – waiting on final publications
  - Refinement of what is in NHDPlus v. 2 based on 30M DEM
  - Stream gradient spacing based on contour intervals to get best result ( closer spacing in high gradients, further apart in low gradient). Gradient used for habitat modeling.
  - For more information, contact [David.Nagel@usda.gov](mailto:David.Nagel@usda.gov)

#### Other Updates

NHD and WBD – Some model and feature changes coming. More information at Sept. Hydro TWG.  
NHD/WBD editing tools – All tools require ArcGIS 10.5.1. Training on the tools will resume in May 2020.

#### Other Business

After all of CONUS is complete in Beta for NHDPlusHR (region 4 is not complete), USGS will work on:  
Refresh of NHDPlusHR  
A National Conus download product of NHDPlusHR

Ariel is going to be working with other NGTOC folks on ArcGIS Pro trace network testing. This is an Alpha testing with ESRI. Possible ArcGIS Pro 2.6 may have some network capability.

**Next TWG:** Sept. 10, 2020