We would like your input for expectations of hydro feature extraction from LiDAR/IfSAR datasets and for thoughts on an integrated elevation-hydro data structure prototype. The following questions may help guide future research efforts at the USGS for these topics

Thank you for taking the time to complete this survey. No personal information is collected and all responses will remain anonymous. If you are uncomfortable answering any question for any reason, please feel free to skip it.

1. What is your primary use of the NHD (choose one)?
   1. Flood risk management
   2. Infrastructure and construction management
   3. Natural resources conservation
   4. Agriculture and precision farming
   5. Water supply and quality (analyses and modeling)
   6. Wildfire management, planning, and response
   7. Geologic resource assessment and hazard mitigation
   8. Forest resources management
   9. River and stream resource management
   10. Aviation navigation and safety
   11. Mapping
   12. Fisheries management
   13. Hydrology
2. Please rate these NHD features in importance to your work: (most important, important, least important)

|  |  |  |  |
| --- | --- | --- | --- |
| **NHD Feature** | **Most Important** | **Important** | **Least Important** |
| Streams/Rivers with width < 50ft. |  |  |  |
| Streams/Rivers with width > 50ft. |  |  |  |
| Canal/Ditch |  |  |  |
| Lake/Pond |  |  |  |
| Sea/Ocean |  |  |  |
| Swamp/Marsh (wetlands) |  |  |  |
| Engineered features (dams, levees, diversion gates) |  |  |  |
| Coastline |  |  |  |
| Bays and Estuaries |  |  |  |
| Fish passage barriers |  |  |  |

1. For braided stream situations, please rate the following options of representation:

|  |  |  |  |
| --- | --- | --- | --- |
| **NHD Feature** | **Most Important** | **Important** | **Least Important** |
| * 1. All individual channelsC:\Users\khyamamoto\Desktop\a.JPG |  |  |  |
| * 1. An all-encompassing Complex Channel polygon with a single artificial path   C:\Users\khyamamoto\Desktop\b.JPG |  |  |  |
| 1. A Complex Channel polygon with major individual channels   C:\Users\khyamamoto\Desktop\c.JPG |  |  |  |

1. What, if any, issues/challenges do you currently encounter working with NHD and NED together?

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1. Do you use the NHDPlus:

Yes or No

If yes, which characteristics do you utilize? (Please check any that apply.)

1:100K National Hydrography Dataset (NHD)

30 meter National Elevation Dataset (NED)

Nationally complete Watershed Boundary Dataset (WBD)

Value added attributes to enhance stream network navigation, analysis and display

Elevation-based catchment for each flowline in the stream network

Catchment characteristics

Headwater node areas

Cumulative drainage area characteristics

Flow direction, flow accumulation and elevation grids

Flowline min/max elevations and slopes

Flow volume & velocity estimates for each flowline in the stream network

Catchment attributes and network accumulated attributes

Gridded data from the hydro-enforcement process (e.g. hydro-enforced DEM)

1. Is there a need for a new integrated high resolution (1:24,000 or larger scale) product that contains both elevation and hydrography from the USGS?

Yes or No

Please explain your answer above.

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| --- |
|  |

1. Which resolution of a dataset best meets your needs?
2. 1:100,000-scale level of detail
3. 1:24,000-scale level of detail
4. 1:12,000-scale level of detail
5. 1:4,800-scale level of detail
6. 1:2,400-scale level of detail
7. A multi-scale level of detail
8. If an integrated high resolution product existed (assuming high-resolution elevation measurement adequate to support the proposed resolution are available), which spatial resolution for the elevation grid would you prefer:
9. 1 meter
10. 3 meter
11. 10 meter
12. Other (specify)
13. Is there any other format (DTM, etc) that you would like for the elevation data, besides DEM?

Yes or No

1. Do you have any use for hydrography delivered as a raster?

Yes or No

1. Should catchment size in the dataset be:
   1. Variable based on reach
   2. Fixed size
2. Should stream periodicity (perennial/intermittent/ephemeral) be included in the dataset?

Yes or No

1. Should derived channels from elevation datasets that are not field-verified be identified differently than known streams in the dataset?

Yes or No

1. Would you like to have catchments as a part of the NHD?

Yes or No

1. Please rate the following options for inclusion in a possible integrated dataset: (most important, important, least important)

|  |  |  |  |
| --- | --- | --- | --- |
| **Option** | **Most Important** | **Important** | **Least Important** |
| Raw elevation (e.g. point clouds, intensity images, etc) |  |  |  |
| Hydrologically enforced elevation |  |  |  |
| Flow direction/accumulation grids |  |  |  |
| Hydrography |  |  |  |
| Drainage Catchments |  |  |  |
| Channel Cross-sections |  |  |  |
| Floodplains |  |  |  |
| Reach-based channel slope |  |  |  |
| Hydrography with z-values |  |  |  |
| Flow volume and velocity |  |  |  |
| Breaklines (vendor-provided used for hydro-flattening of the elevation data) |  |  |  |

1. If you would like to make any other comments or suggestions, please do so in the box below.

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