

# USGS National Hydrography Dataset Newsletter

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## Updated Naming Conventions for Hydrography Datasets

Contact: Andy Stauffer ([astauffer@usgs.gov](mailto:astauffer@usgs.gov))

As announced in the [February 2017 NHD Newsletter](#), the USGS will be making minor filename changes to the National Hydrography Dataset (NHD), Watershed Boundary Dataset (WBD), and NHDPlus High Resolution (NHDPlus HR) products in support of standardizing file naming conventions for all National Map vector products. While the changes may be small, we anticipate impacts to users who have dependencies on the current naming conventions running within programs and scripts, and as automated downloads. ***These name changes are being implemented December 1, 2017.***

For a period of about one week during the transition, we anticipate data products will be duplicated on data repositories including The National Map, Cloud repositories, and FTP servers, with files appearing with both the old and new file names. Data dissemination endpoints such as The National Map Download Client and ScienceBase will be unaffected by this change.

This table provides examples of the current and new naming conventions. In the hydrologic unit (HU) extracts, an HU2, HU4, or HU8 suffix will be added to the file name. For state extracts, a "State" suffix will be added.

Product	Current Naming Convention (ex.)	Proposed Naming Convention (ex.)
NHD HU8	NHD_H_10190002_GDB	NHD_H_10190002_HU8_GDB
NHD HU4	NHD_H_1019_Shape	NHD_H_1019_HU4_Shape
NHD State	NHD_H_Colorado_GDB	NHD_H_Colorado_State_GDB
WBD HU2	WBD_10_GDB	WBD_10_HU2_GDB
NHDPlus HR HU4	NHDPlus_H_1019_GDB	NHDPlus_H_1019_HU4_GDB



For more information, please contact Andy Stauffer at [astauffer@usgs.gov](mailto:astauffer@usgs.gov).

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## Migration of NHD and WBD Web-Based Map Services to the Cloud

Contact: Ariel Doumbouya ([atdoubouya@usgs.gov](mailto:atdoubouya@usgs.gov))

***As part of an ongoing effort to improve performance and reliability for the suite of USGS Hydrography web-based map services, the USGS is migrating the National Hydrography Dataset and Watershed Boundary Dataset services to a Cloud location.***

National Hydrography Dataset (NHD) and Watershed Boundary Dataset (WBD) dynamic web-based map services currently served directly from USGS endpoints are migrating to [new Cloud endpoints](#). The migration will improve performance and reliability while keeping separate and independently consumable NHD and WBD services. These new Cloud endpoints also provide a more logical hierarchy for accessing [USGS Hydrography web-based map services](#). This change will impact applications presently consuming the NHD and WBD layers from the previous service addresses.

USGS will provide a transition period until December 31st, 2017. The previous endpoints from USGS servers will continue to be publicly accessible during this transition period. Users will need to use the new Cloud service endpoints to access the NHD or WBD dynamic services after the transition period ends. In addition, users consuming the services from the previous endpoints will need to update application configurations for display of the desired layers.

An announcement will be posted in the “What’s New” section on the [The National Map website](#) and information related to services on the “[Links to Data Products and Map Services](#)” page of the USGS Hydrography website will document these changes.

### Summary of changes to National Map Hydrography service endpoints

New USGS Hydrography web-based map service Cloud endpoints:

<https://hydro.nationalmap.gov/arcgis/rest/services>

#### National Hydrography Dataset

- Function: Provides national hydrography data at 1:288,000 scale and below.
- Previous Endpoint: <https://services.nationalmap.gov/arcgis/rest/services/nhd/MapServer>
- New Cloud Endpoint: <https://hydro.nationalmap.gov/arcgis/rest/services/nhd/MapServer>
  - This new NHD endpoint no longer contains a (0) National Hydrography Dataset layer.
  - All layer numbers have changed; other options remain the same
  - Reference above endpoint for full descriptions of layer ordering.

#### Watershed Boundary Dataset

- Function: Provides watershed boundary data at 1:74,000,000 scale and below.
- Previous Endpoint: <https://services.nationalmap.gov/arcgis/rest/services/wbd/MapServer>



- New Cloud Endpoint: <https://hydro.nationalmap.gov/arcgis/rest/services/wbd/MapServer>
  - This new WBD endpoint no longer contains a (0) Watershed Boundary Dataset layer.
  - All layer numbers have changed; other options remain the same
  - Reference above endpoint for full descriptions of layer ordering.

### Hydrography (cached)

- Function: Provides a fast USGS Topo styled hydrography overlay at 1:74,000,000 to 1:9,000 scale.
- Endpoint: <https://basemap.nationalmap.gov/arcgis/rest/services/USGSHydroCached/MapServer>
- This service was announced and made public March 2017 and is also available as a WMTS service.
- No changes to endpoint.

For ArcGIS Online web maps using the service endpoints, the [ArcGIS Online Assistant](#) can be used to update to the new Cloud service endpoints. Please note, however, that any layer customizations, such as pop up configurations, will need to be redone because of the changes to layer numbering. To ease the transition, it may be useful to create a copy of the web map with the previous service endpoint layer customizations for comparison when redoing customizations for the new Cloud endpoints. This step must take place prior to the retirement of the service endpoints. Once the service endpoints are retired on December 31, all applications using them will cease to function and customizations will no longer be viewable in the web map.

For any questions, comments, or concerns regarding this update, please contact Ariel Doumbouya ([atdoubouya@usgs.gov](mailto:atdoubouya@usgs.gov)).

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## USGS NHD Partner Support Changes for Regions 1 and 2

*Contacts: Bill Smith ([wjsmith@usgs.gov](mailto:wjsmith@usgs.gov)) and Kristiana Elite ([keelite@usgs.gov](mailto:keelite@usgs.gov))*

In order to better serve our NHD Stewards, the USGS has reorganized our Partner Support to the community. Effective December 1, 2017, Bill Smith and Kristiana Elite exchange their stewardship regions. Bill Smith will be responsible for all states and territories within Region 1 (CA, WA, OR, AK, NV, HI, GU, AS) and Kristiana Elite will be responsible for all states within Region 2 includes: CO, AZ, NM, UT, TX, OK, KS, NE. For questions, please contact Bill Smith ([wjsmith@usgs.gov](mailto:wjsmith@usgs.gov)) or Kristiana Elite ([keelite@usgs.gov](mailto:keelite@usgs.gov)).

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## EPA Environmental Information Exchange Network Grant Proposals

*Contact: Tommy Dewald ([Dewald.Tommy@epa.gov](mailto:Dewald.Tommy@epa.gov))*

The EPA is soliciting grant proposals for the FY2018 Environmental Information [Exchange Network Grant Program](#) through Jan 26, 2018. Please see the application related information from the EPA announcement below:



The primary outcome expected from Exchange Network (EN) assistance agreements is improved access to, and exchange of, high-quality environmental data from public and private sector sources. With this outcome in mind, applications should demonstrate support for and results toward EN program priorities.

In FY 2018, EPA expects to award about \$6 million for 20-25 assistance agreements for EN projects. Most awards will be in the \$50,000 to \$300,000 range. Awards for an individual assistance agreement cannot exceed \$200,000. EPA may make a limited number of awards to collaborative, partnership assistance agreements. Budgets for these projects cannot exceed \$400,000. The exact number of assistance agreements will depend on the final amount of EPA's appropriation for the EN grant program, the number of applications submitted to EPA by the application deadline, the amounts of proposed budgets, and the outcome of application reviews.

EPA only accepts project proposals for EN assistance agreements submitted electronically through [Grants.gov](https://www.epa.gov/grants), unless applicants have a waiver. EPA anticipates that it will announce selection decisions in or around June 2018, and tentatively plans to issue awards by July 31, 2018.

For more information, please contact EPA's Salena Reynolds at [reynolds.salena \[at\] epa.gov](mailto:reynolds.salena@epa.gov).

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## Interested in helping with NHDPlus High Resolution?

*Contact: Cynthia Ritmiller ([critmiller@usgs.gov](mailto:critmiller@usgs.gov))*

There are two ways you can help with NHDPlus HR:

### **1. Improving the NHD or WBD prior to NHDPlus HR Production**

Partners proficient with NHD or WBD editing tools can perform the required review/quality control (QC) to fix problems in the NHD or WBD data before the datasets are used in NHDPlus HR production. Partners who have local knowledge but are not trained editors can get involved in the review/QC effort following the release of the web-based Markup Application. Please contact the [USGS Partner Support Point of Contact](#) in your area for questions about NHD or WBD editing.

### **2. NHDPlus HR Beta review/QC**

The USGS is seeking volunteers to perform a review/QC of the NHDPlus HR Beta in various Hydrologic Regions. This opportunity is ideal for users with previous NHDPlus Version 2 (medium resolution) experience and, most importantly, local hydrography knowledge. Once these changes have been reviewed and approved by the steward, they are incorporated into the NHD or WBD. Please fill out the [NHDPlus HR QC interest Google form](#) to participate in the NHDPlus HR Beta review/QC process.

For more information on NHDPlus HR, please see the [NHDPlus HR website](#).



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## Opportunity to Test the New NHD/WBD Hydro Maintenance Portal

Contact: Kristiana Elite ([keelite@usgs.gov](mailto:keelite@usgs.gov))

The USGS is preparing to release the new and improved NHD/WBD Stewardship website, which will be rebranded as the “Hydrography Maintenance Portal”. If you are an NHD or WBD partner, you are probably familiar with the existing NHD/WBD Stewardship website as your portal for accessing NHD and WBD data for editing and maintenance.

Prior to the formal release of the new Hydro Maintenance Portal, we would like to invite a small group of NHD and WBD partners to test website functionality and provide feedback. This testing will likely begin in early 2018. For testing, partners will use the Hydro Maintenance Portal as they would normally use the existing Stewardship website, such as for checking out data, generating reports, etc.

If you would like to volunteer to test the new Hydro Maintenance Portal, we would love your help! Please contact Kristiana Elite ([keelite@usgs.gov](mailto:keelite@usgs.gov)) to express your interest.

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## U.S.-Canada Data Harmonization Updates

For the past 10 years, the International Joint Commission (IJC) Trans-boundary Data Harmonization Task Force (IJC Task Force) has been charged with 'harmonizing' Canadian and U.S. hydrography and hydrologic unit data for areas that straddle the border spanning from Alaska/Yukon to Maine/New Brunswick. For the United States, this includes the national [Watershed Boundary Dataset](#) (WBD) and the [National Hydrography Dataset](#) (NHD). For Canada, this includes the [Canadian Sub-sub-drainage areas](#) (SSDA) and the [National Hydro Network](#) (NHN). The end goal of this effort is to collaborate with resource agencies across the Canada-US border on the development of seamless framework geospatial data between the two countries.

### International Watersheds Initiative Multi-board Workshop

Contacts: Michael Laitta ([LaittaM@washington.ijc.org](mailto:LaittaM@washington.ijc.org)), Mike Major ([mike.major@canada.ca](mailto:mike.major@canada.ca)), Kimberly Jones ([kjones@usgs.gov](mailto:kjones@usgs.gov)), Judy Kwan ([judy.kwan@canada.ca](mailto:judy.kwan@canada.ca)), Pete Steeves ([psteeves@usgs.gov](mailto:psteeves@usgs.gov)), Susan Buto ([sbuto@usgs.gov](mailto:sbuto@usgs.gov))

The IJC Trans-boundary Data Harmonization Task Force and IJC staff hosted a half-day workshop in Ottawa, Ontario, Canada, on October 24, 2017. The primary objectives of the workshop were to provide background about the hydrographic data harmonization process, to review data access methods, and to gather feedback about future data and information needs from stakeholders and partners. The workshop was attended by representatives from several river and science boards and representatives from Canadian and U.S. federal agencies.

Several case studies highlighting uses for the harmonized data were presented and IJC Task Force members provided updates about the current state of hydrography data and program areas in both countries. The Task



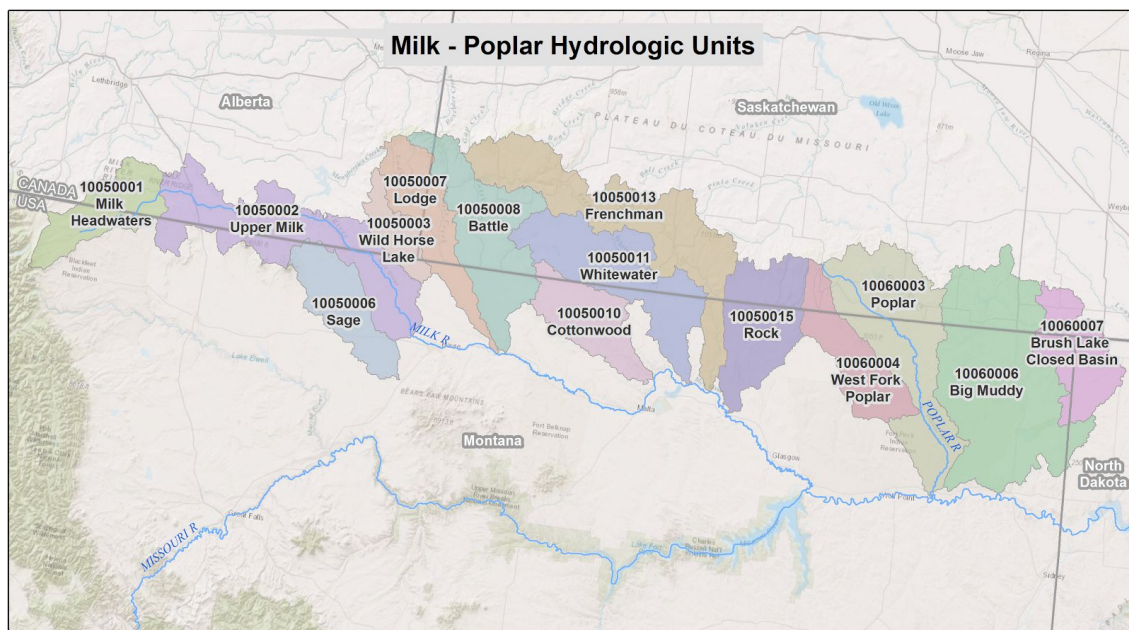
Force gathered feedback and insights from participants about harmonized hydrography data and the future needs of the participants for geospatial tools and data to assist with fulfilling operational, water management, and scientific research mandates, and goals. Participants noted significant management issues that harmonized hydrography and other geospatial data can help to understand and address. These include understanding and management of flood and drought conditions, management of water quality issues including nutrient management and algal blooms, and understanding impacts of human development in basins and impacts on water resources.

More information about Canada-U.S. Transboundary Hydrographic Harmonization effort can be found at <https://my.usgs.gov/confluence/display/USCANHHDH>

## Completion of Milk River and Poplar River Hydrologic Units

*Contacts: Kimberly Jones ([kjones@usgs.gov](mailto:kjones@usgs.gov)) and Judy Kwan ([judy.kwan@canada.ca](mailto:judy.kwan@canada.ca))*

The IJC Task Force is pleased to announce that development of harmonized 10- and 12-digit hydrologic units for the international Milk River and Poplar River units has been completed. This is the final phase of the hydrographic data harmonization project for these areas.



Within the United States, the 1:24,000-scale WBD was adjusted as needed to seamlessly align with units in Canada. These updates were made using the best available base information and the work was carefully coordinated with partners within the U.S. States and Canadian Provinces. In Montana, the work was completed by the Montana WBD Steward and editors at the Montana State Library. In North Dakota, the work was completed by the IJC Task Force representative at the USGS Utah Water Science Center. Within Canada, the 8-digit boundaries were reviewed and updated where necessary and new 1:20,000-scale 10- and 12-digit boundaries were developed using best available provincial and federal datasets. The work within Canada was completed by the IJC Task Force representative from Environment and Climate Change Canada. The U.S. "Federal Standards and Procedures for the National Watershed Boundary Dataset (WBD)" (<http://pubs.usgs.gov/tm/11/a3/>) was used to guide all updated and new delineations.

The newly harmonized data for these 14 cross-border 8-digit units is available for download through the [USGS Hydrography Data Products and Map Services](#) page.

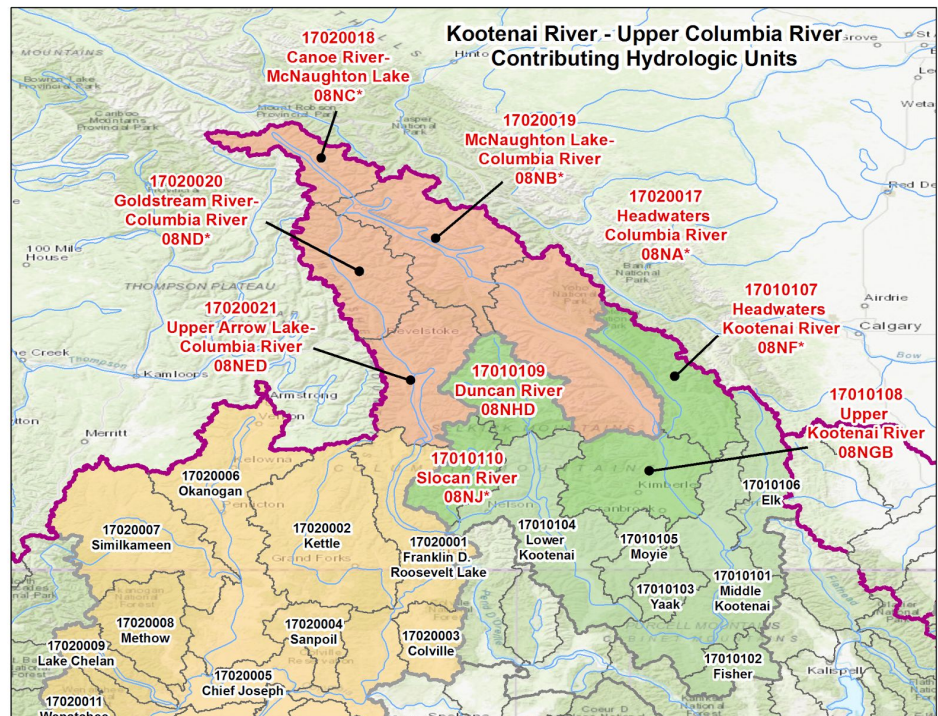


Thank you to the many partners, programs and colleagues that willingly supported and participated in this effort.

## Addition of Columbia headwater units

Contacts: Kimberly Jones ([kjones@usgs.gov](mailto:kjones@usgs.gov)) and Peter Steeves ([psteeves@usgs.gov](mailto:psteeves@usgs.gov))

The IJC Task Force recently incorporated contributing hydrologic units and hydrography entirely within Canada for the Columbia River Basin to support the IJC river boards and the NHDPlus HR process. Four new hydrologic units were added to the Kootenai-Pend Oreille-Spokane 4-digit HU (1701) and five new units were added to the Upper Columbia 4-digit HU (1702). The harmonized data for the new hydrologic units currently is available within the WBD. The hydrography will be available within the NHD after the data have been processed. Users can access these datasets via the [USGS Hydrography Data Products and Map Services](#) page.



## NHDPlus High Resolution Update

### NHDPlus HR Availability

Contact: Phil Rufe ([prufe@usgs.gov](mailto:prufe@usgs.gov))

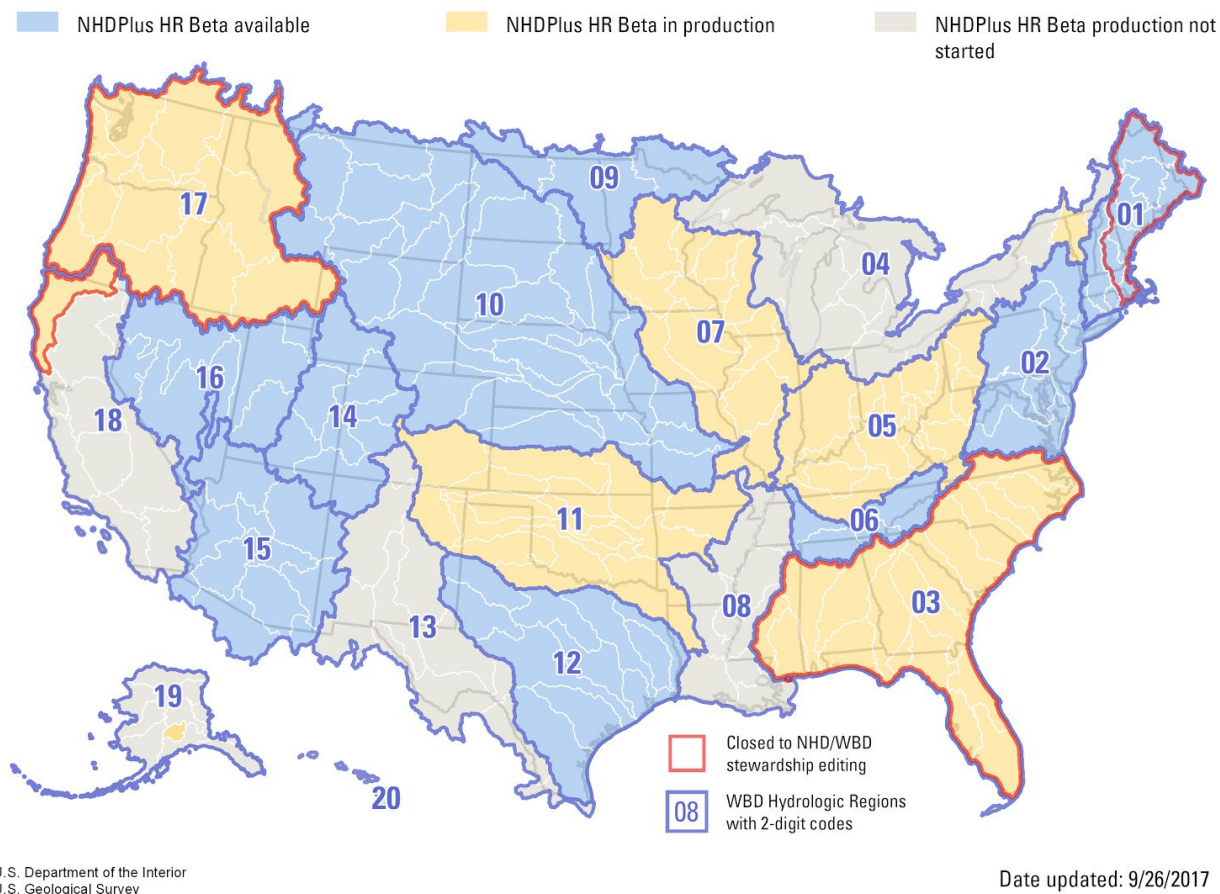
The map below provides a general overview of NHDPlus HR availability. This status map is updated frequently on the “Where is NHDPlus HR Available?” section of the [NHDPlus HR webpage](#).

- **Blue areas** - NHDPlus HR Beta is currently available and Beta QC is either in process or completed for these areas. Please see the [NHDPlus HR Beta QC](#) section of the [NHDPlus HR webpage](#).
- **Yellow areas** - The NHDPlus HR Beta is in production and the USGS is currently seeking volunteers for the upcoming Beta QC for these areas. Please see the [NHDPlus HR Beta QC](#) section of the [NHDPlus HR webpage](#) for more information. Please contact the [NHD/WBD Point of Contact](#) in your area for more information on the status of NHD and WBD editing in these areas.



- **Gray areas** - NHDPlus HR Beta will be produced at a later date. Please see the general processing schedule on the [NHDPlus HR webpage](#) for more information. These areas are currently open for NHD and WBD editing.
- **Red outline** - These areas are currently closed to NHD and WBD editing. Please contact the [NHD/WBD Point of Contact](#) in your area for more information.

## NHDPlus High Resolution Availability



## NHDPlus HR Ingredient Dataset Status - Network Improvement Project

Contact: Hannah Boggs ([hboggs@usgs.gov](mailto:hboggs@usgs.gov))

The Network Improvement Project is identifying and correcting network and data quality issues in the NHD High Resolution. One of the key drivers for this work is to provide data ready for the production of NHDPlus HR. Coordination with appropriate NHD POCs will begin prior to review. **Please Note:** *For all areas listed below, all new data will go through the QA/QC process as it becomes available.*



#### Network Improvement - Work Completed

- Regions - 01, 02, 05, 06, 07, 09, 10, 11, 12, 14, 15, 16, 20, 21 and 22
- Pilot areas - 0903, 041504, 1902

#### Network Improvement - Currently In Work

- Regions - 03, 17
- Pilot areas- 1801

#### Network Improvement - Future Work

- Regions - 13, 08, 04, 18, and 19

### NHDPlus HR Ingredient Dataset Status - WBD 4-digit Improvement Project

*Contacts: Kimberly Jones ([kjones@usgs.gov](mailto:kjones@usgs.gov)) and Lily Niknami ([lniknami@usgs.gov](mailto:lniknami@usgs.gov))*

The WBD 4-digit Improvement Project is identifying and correcting hydrologic boundary issues in the WBD at the 4-digit level in support of the production of NHDPlus HR. Instances where the NHD and WBD intersect are being reviewed and invalid intersections are being addressed when appropriate. All proposed major updates to the WBD will be coordinated with the appropriate WBD state steward prior to implementation.

#### WBD 4-digit Improvement - Work Completed

- Regions - 01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11, 12, 13, 14, 15, 16
- Pilot areas - 0903, 041504, 190204, 190205

#### WBD 4-digit Improvement - Currently In Work

- Region - 04
- International - Mexico contributing hydrologic units in Region 13

#### WBD 4-digit Improvement - Future Work

Regions - 18, 19, 20, 21 and 22

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## Hydrography Photo of the Month

This month's photo, taken by Jon Becker, brings us the nuanced beauty of the Southeastern waters. In this case, Cedar Creek in Congaree National Park in South Carolina.

We'd love to see photos of the hydrology near you or from your travels! Please send submissions to Becci Anderson ([rdanderson@usgs.gov](mailto:rdanderson@usgs.gov)). Check out current and past photos on the [Photo of the Month webpage](#).





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## Hydrography Quiz

Congratulations to **Steve Shivers** as the first to respond to last month's quiz with the correct answer - the **Madison River**! While we were looking for the Madison River, the Yellowstone River also fit the description and was accepted as a correct answer.

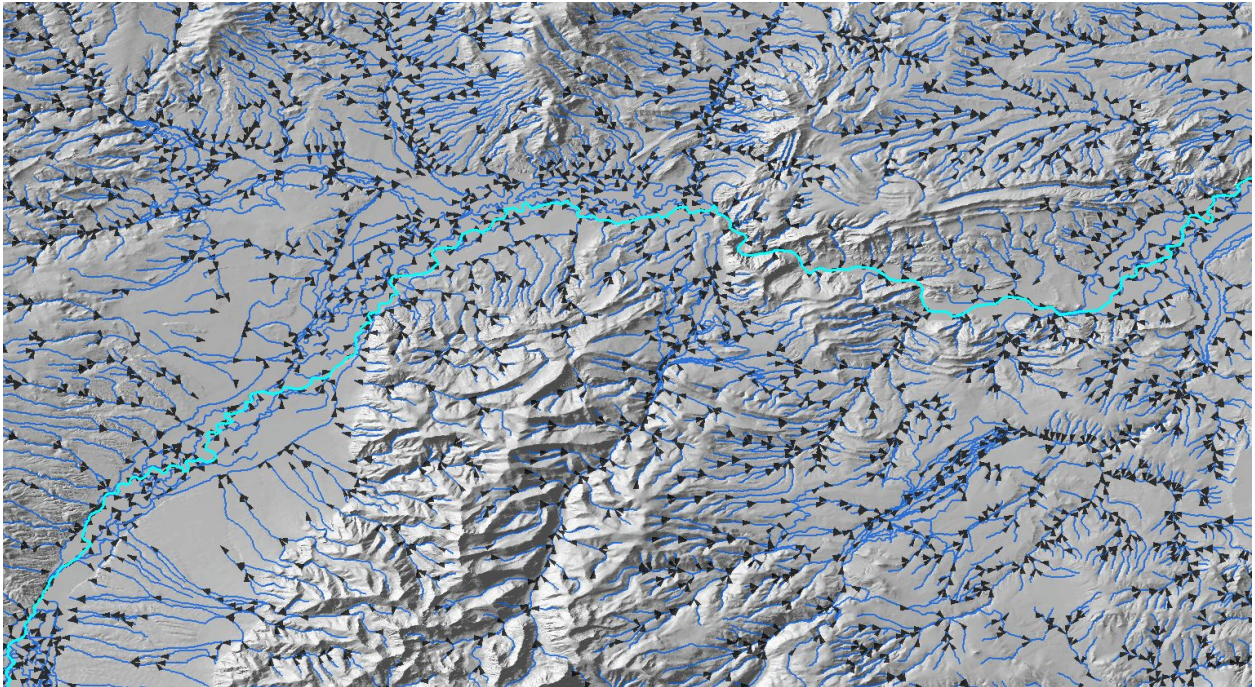
Steve Shivers is the USGS National Map Liaison for Montana, Wyoming, North Dakota, and South Dakota. He is a member of the Natural Resources Conservation Community of Use, which engages users of National Map products to obtain feedback used to guide future program enhancements. Liaisons support State, local, Tribal, regional, Federal and other partners in improving timeliness, quality and accessibility of geospatial data. Steve has been with USGS for 35 years, and was originally hired under the EROS contract in Alaska. He later served as Chief of the Earth Science Information Center in Washington D.C.'s Main Interior Building and spent 13 years at the USGS National Center in Reston, Virginia, before moving to the Black Hills of South Dakota. Nice job, Steve!

**Thanks for playing along - other respondents with the correct answer:** Becca Conklin, Linda Davis, Wendy Steinberger, Evan Hammer, David Fetter, Jane Schafer-Kramer, Barbara Rosenbaum, James Seay, John Miller, Joanna Wood, Roger Barlow, Marc Weber, Kelly Carr, Janet Brewster, and Angela Coleman.



**This Month's Quiz**, by Alex Kaufman ([akaufman@usgs.gov](mailto:akaufman@usgs.gov)) and Lily Niknami ([lniknami@usgs.gov](mailto:lniknami@usgs.gov)):

Thanksgiving is a time of harvest and gratitude, and also a time to reflect on the historical significance of territorial exploration. Travel back in time with Meriwether Lewis and William Clark along this tributary of the Missouri River whose name was inspired by one of the Founding Fathers.



Send your answers with an email subject including the phrase “Hydro Quiz” to Becci Anderson ([rdanderson@usgs.gov](mailto:rdanderson@usgs.gov)). Happy hydro hunting!

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## Upcoming USGS Hydrography Calls, Trainings, and Meetings

Date	Time	Event
Dec 6	1:00 pm ET	NHD Technical Exchange Meeting (TEM)
Dec 6	1:00 pm ET	WBD Technical Exchange Meeting (TEM)
N/A	N/A	NHD/WBD Advisory Call - <b>CANCELLED FOR DECEMBER</b>

To be added to the NHD/WBD Advisory Call email list, please contact Becci Anderson ([rdanderson@usgs.gov](mailto:rdanderson@usgs.gov)).

For more information on technical exchange meetings and trainings, please see the [Hydrographic Data Community \(HDC\)](#) site. For access to the HDC site, please contact Lily Niknami ([lniknami@usgs.gov](mailto:lniknami@usgs.gov)).

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**Thank you to this month's USGS National Hydrography Dataset Newsletter contributors:**

Andy Stauffer, Ariel Doumbouya, Bill Smith, Kristiana Elite, Cynthia Ritmiller, Michael Laitta, Mike Major, Kimberly Jones, Judy Kwan, Pete Steeves, Phil Rufe, Hannah Boggs, Lily Niknami, Alex Kaufman, Al Rea, Susan Buto, and Becci Anderson.

**Join Our Community!**

For more information, to sign up for the newsletter, or to contribute, please contact Becci Anderson, USGS National Hydrography Co-Lead, at [rdanderson@usgs.gov](mailto:rdanderson@usgs.gov).

***Visit us anytime at [nhd.usgs.gov](http://nhd.usgs.gov) and follow us on Twitter @USGSNHD***

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