NSGIC 3DHP Monthly Forum:

Question and Answers

Concurrent Mapping of National Wetlands Inventory (NWI) and National Hydrography Dataset (NHD) Data

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Participant Questions:

Do you have any preliminary estimates on how this integrated approach saves money?

Our vendor conducting concurrent mapping of the datasets in Alaska estimates a 20% savings over mapping each product independently. As we embark on new NWI mapping projects where recently produced NHD products are available we estimate that we will see a significant reduction in NWI production cost, but the amount saved will vary substantially based on geography and project requirements. We plan to collect and release data on cost savings as we move forward with additional integration projects.

Have you developed a crosswalk that maps feature type classifications between NWI and NHD?

We do not have a formal crosswalk that is available for stakeholders. However, there is a relatively predictable relationship between many NWI and NHD feature classes and several groups have developed crosswalks to meet their own purposes.

In AK, we don't have a crosswalk between the NWI and NHD attributes. Many of our smaller perennial streams have an attribution of R3UBH and therefore incorporation of higher order streams is fairly straightforward regarding that attribution, then validated during internal (contractor) QC for outliers.

Improved parameterization of wetland functional assessment models, including Landscape position, Landform, Water flow path, and Waterbody type (LLWW), is one of the benefits of having contemporary NWI and NHD. Guidance documents and semi-automated models have been developed to support the production of LLWW data.

Does the NWI program have state contacts similar to the USGS NHD State Stewards Program?

No, there are no formal agreements with state data managers. However, NWI field operations staff work closely with state partners. You can locate your regional contact at: https://www.fws.gov/wetlands/nwi/Staff.html.

You mentioned functional wetland assessment, what are the plans to include Landscape Position which are critical to functional assessments?

Landscape position is included in the LLWW or Landscape position, Landform, Water flow path and Waterbody type wetland functional assessment method. NWI doesn't formally support the development of the assessment approach or steward LLWW data. However, we are working with other federal agencies to improve and expand wetland functional assessment techniques and resources, and many stakeholders are choosing to include LLWW as part of their projects. We also provide basic guidance, as requested, to stakeholders who choose to collect LLWW data. One of the benefits of more interoperable NWI and NHD data is that they support wetland functional assessment approaches, like LLWW.

Do you have contract templates for integrated mapping?
We have started to develop these templates and can share this information upon request. However, we anticipate that this information will be refined through time, so we encourage stakeholders to check with us regularly – as needed. In addition, we can share some lessons that could be helpful when developing integrated mapping contracts.

Lessons learned:

1. Have target miles/sq. miles of streams available (USGS can assist).
2. Clearly identify the TMU for NWI data.
3. Ensure a realistic timeline by coordinating with USFWS and USGS ahead of time.
4. Identify how QC work will be funded (in kind from the federal agency or externally).

How will future USGS 3DHP funding be integrated with NWI funding to support integrated mapping projects? For state partners, will this be separate agreements with USGS and FWS, or can we bundle coverage?
We are working to fully develop this capacity. We certainly have GPSC (Geospatial Products and Service Contracts—a USGS contracting mechanism) prime vendors that can do NHD and NWI work or subcontract with other contractors with NWI mapping experience. Additionally, USFWS and USGS have the ability to move money between organizations if opportunities arise and can collaborate with states/stakeholders through various agreement opportunities. We anticipate further building and streamlining the capacity for joint mapping through time.

Is the new integrated NWI / NHD data development and attribute workflow 100% GIS / remote sensing based?
No. NWI data are field verified, and this will continue as we move towards greater integration with NHD.

NOAA CCAP has funding from GLRI for 1 meter land cover in the Great Lakes - can CCAP data be integrated with NWI/3DHP?
There is a longstanding relationship between the agencies and data sharing – e.g., our data are used to train and calibrate C-CAP data. We are working towards a more

reciprocal relationship where C-CAP uses our data as noted, and NWI uses C-CAP data to help strategically target NWI updates.

Interview Questions:

What lessons have you learned about concurrent mapping of NHD and NWI that could be different in the future?
This is an incremental process, which is more complicated than it might first appear (especially given limited resources). Both the NWI and NHD programs are trying to strategically adopt new technology and opportunities for alignment and interoperability. Both programs need to push independent data development forward while also looking for collaborative opportunities. State and local interest in simultaneous investment is very helpful for us to prioritize future collaborative efforts.

What are some surprising challenges?
Identifying areas where the two data models are different, why they are different and opportunities to better align them. One example is double line riverine features. For NWI in CONUS streams that are 15 feet wide must be represented as polygons but for NHD it is 50 feet. We need to understand what the value of those detailed polygonal stream delineations are for NWI users to see if we can adjust our requirements.

What non-data resources will be essential for future work
Staffing is key to making this happen. We need not only QC staff at the federal levels, but also consistent staffing at the data producer level to make sure projects can move forward efficiently.

What are the resources and/or data that will need to be secured for future mapping?
The present level of NWI funding is not sufficient to maintain a high-quality, contemporary dataset. Regularly updated imagery and elevation data are also critical to the production of NWI and NHD data.