

MINUTES: Hydro TWG - September 13, 2018

Attendees:

Danielle Favreau - IDWR
Linda Davis - IDWR
Missy Harris – IDWR
Molly Maupin – USGS
Al Rea – USGS
Jim Szpara – DEQ
Cindy Coulter – Idaho Fish and Game
Mark Wasdahl – ITD, District 3
Brett Sargenian – ITD, District 3

Web Attendees:

Michelle Porter – Reclamation (BOR)
Dan Determan – NOAA/NGS
Joel Harrison – USFS- Nez Perce/Clearwater
Sabine Krier – CDA Tribe
Jane McAtty – Nez Perce Tribe

Water Use in Idaho: 2015 – Molly Maupin, USGS

Links:

Link to Download Reports: <http://water.usgs.gov/watuse/50years.html>

Link to Download Data:

<http://water.usgs.gov/watuse/data/index.html>

https://waterdata.usgs.gov/id/nwis/water_use/

Link to visualize water use: <https://owi.usgs.gov/vizlab/water-use/>

Link to Idaho Fact Sheet: <https://pubs.usgs.gov/fs/2018/3036/fs20183036.pdf>

What is the Compilation?

- Water Use is compiled every 5 years
 - Local Agencies assist in data collection
- There is an emphasis on water availability and use
- Erin Murray compiled the data for 2015
- Trends are built from the data

Overview of categories

- Water Use Reports
 - Focuses on Calendar year, not water year
 - There is a report just for Idaho. (See link above.)
 - Links to download data and to visualize water use. (See links above.)

U.S. Total Water Use

- Water use is decreasing due to:
 - Higher efficiency on thermo-electric plant
 - Public supply use is decreasing
- 2015 reinstated consumptive use - water that is locked in other sources such as plants

Water Use and Idaho's Rank (see slide 6)

- In Idaho the largest water use is irrigation.

Idaho Water Use, 2015

- Data Report has all the water use divided by county
- Question. What about wildlife water use?
 - A. Wildlife use is mostly a flow-through and water is not diverted (non-consumptive), so it is not taken into account
 - Categories used are focused on consumptive use – those uses that remove water from the channel for use.

2015 Idaho Results (see slide 8)

2015 Idaho

- Other categories after irrigation
 - Domestic use is the biggest

The data has limitations

- Sparsely populated counties cause issues with data availability

Aquaculture showing a decline in use

- Due to better reporting on sites (more accurate data)
- Hatcheries were contacted directly

Community Water Systems

- Were able to calculate per capita estimate
- Need to work monitoring/calculating water reclamations from waste water plants
- $\frac{3}{4}$ of the population is on a community system and this includes outdoor watering

Population and Per-Capita

- There is data uncertainty. For example in Butte county. This is probably due to the low population
- Blaine county was a county of shame, but is improving due to the Water Use Reports

Crop & Golf Courses

- Irrigation for crops and golf courses have been separated
- Surveys were sent out to golf courses to help with the data
- 0.11% of all withdrawals were for golf courses
 - Better data was gathered directly from golf courses
 - A complication is that some water can be from public water use

Crop Methods

- Crop acres and type of crop were used to determine water use
- Inefficiencies were calculated by type
- Inefficiencies were broken out by system type
 - Would like to improve on irrigation system mapping
- Ground and Surface water were separated by using Water Right information from WADE
 - Would like to get info from IDWR on ground water data numbers
 - Question. How is recharge going to be accounted for?

- A. There isn't a place for artificial recharge to be taken into account as of now. It needs to be addressed, but there are no plans to do so as of now.

Crop Results

- Groundwater use increased from 2010
- Some improvement is needed in reporting

Industrial Methods

- Water Use per employee distribution
- Not much use, mostly ground water

Livestock Methods

- Data is based off stock heads

Mining Methods

- Water Use per commodity
- Better data is needed, but there isn't good communication with the mining industry yet

Thermoelectric

- There is a linked heat and energy model for each plant
 - There is only 1 plant in Idaho

Idaho Historical Trends

- Slight increase in water use from 2010 to 2015

End Comments

- A future goal is to have water use at the HUC12 level daily
 - Mostly modeled data
- National project for water supply data
 - Starting with [PRISM](#) for irrigated lands
 - Need to ascertain losses of diverted water before it reaches end goal
 - Will use [LandSat](#), [SSEBop](#), And [Metric](#)
- Geomorphology is not addressed in recharge or water loss
- Employing a new tool called BANDIT that goes out and gathers layers of data from web sources

Brief Overview of the National Water Model – Al Rea, USGS National Hydrography Co-Lead

National Water Model

- See slide 2 for details
- Work is being done to increase the resolution
- NHD Plus v. 2 is being used to improve the model
- 2016 was the first stand of the model and it has been improved each time

WRF-Hydro Grid

- Precipitation measurements on a 1 km grid
- Areas without forecasts

Model Real-time Output: <http://water.noaa.gov/map>

National Water Model Details

- Areas without forecasts are getting more forecast points in the new model
 - Will result in better coverage
- Working on storm surge modeling
- Catchments and flowlines
 - Each grid (250 m) is associated with catchments
- URL on the slide show the real time output on the NWM
 - Output available on ArcGIS online
 - A bit experimental at this stage
 - Is being used for Hurricane Harvey
- Question – Will it be merged into Stream Stats?
 - A. Stream stats was used in the design. The aim is to estimate the flow currently and in near future. NHDPlus is underlying and stream stats is based on state total levels.
- Gathering data from stream, and rain data
- Run hourly, every 10 days, and every 30 days
- Trying to make the system produce results in an automated way

NHDPlus HR Status – Al Rea, USGS National Hydrography Co-Lead

Region 17 NHDPlus HR

- Download with National Map Viewer:
<https://viewer.nationalmap.gov/basic/?basemap=b1&category=nhd&title=NHD%20View#startUp>
- All of Idaho will be available by the end of the month
- It is in process of being loaded on the system by the end of the fiscal year
 - Now past 70% of National Coverage
 - Alaska is based on 8 digit HUC and everywhere else is based on 4 digit HUC
 - Expecting the trend of densification in the networks
- Beta release
 - Go in and find problems and notify of errors in data
 - This will be used in the refresh of NHDPlus
- Sinks
 - Meant to be where the stream ends
 - Is based on aerial imagery
 - Not necessarily real
 - Trying to identify real sinks vs. old map stream ends

Boise River Enhancement Network

- Going forward in identifying where connections happen
 - Experimenting with automation in Wyoming

- Question – Will it show infrastructure?
 - A. The original topo maps ignored building and is based on contours.
- Question –How much have contours changed over time?
 - A. Some studies have looked at topographic change
 - Some data on that. We are getting new elevation data with LIDAR
 - Open pit mining and mountain top removal for coal mining have affected it
 - In Idaho, contours are based on original TOPOs, starting from 1940-1990s
 - USGS now has webservice of historical TOPO maps on ArcGIS online.

Other Updates – Danielle Favreau, IDWR

New NHD Website -- Remember to update your links!

- <https://www.usgs.gov/core-science-systems/ngp/national-hydrography>
- More mobile friendly product
- Some content is dated, but the new system will make it easier to update

The NHD Markup Tool

- <https://www.usgs.gov/media/videos/lesson-15d-markup-application>
- Adds ability to put in small updates
- All updates will go through the steward
- The markup tool is available for use
- The change requests may be discussed in future HydroTWG for approval and discussion
- The application is completely public

NHD/WBD Update Tools

- The Update Tools are on version 10.5.1 of ArcMap

Question – is there an update on GNIS names?

- Al Rea responded
 - GNIS is working on an update. Hopefully it will get better, but they are very understaffed.
 - The provisional names tool is dead. GNIS side wasn't compatible
 - Names that exist in GNIS, but are attributed to the wrong stream are an easy correction. Adding new names is the hard part.

Upcoming Events

- **Northwest GIS Conference:** October 15-19, 2018 Bremerton, WA
- **URISA GIS/CAMA Conference:** February 25-28, 2019 Portland, OR
- **Intermountain GIS Conference:** March 25-29, 2019 Boise, ID
- **2019 AWRA Annual Water Resources Conference:** November 3-7, 2019 Salt Lake City, UT

Next TWG is March 14, 2019