Sample Comparability Following Severe Drought

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Measure AQL Attainment

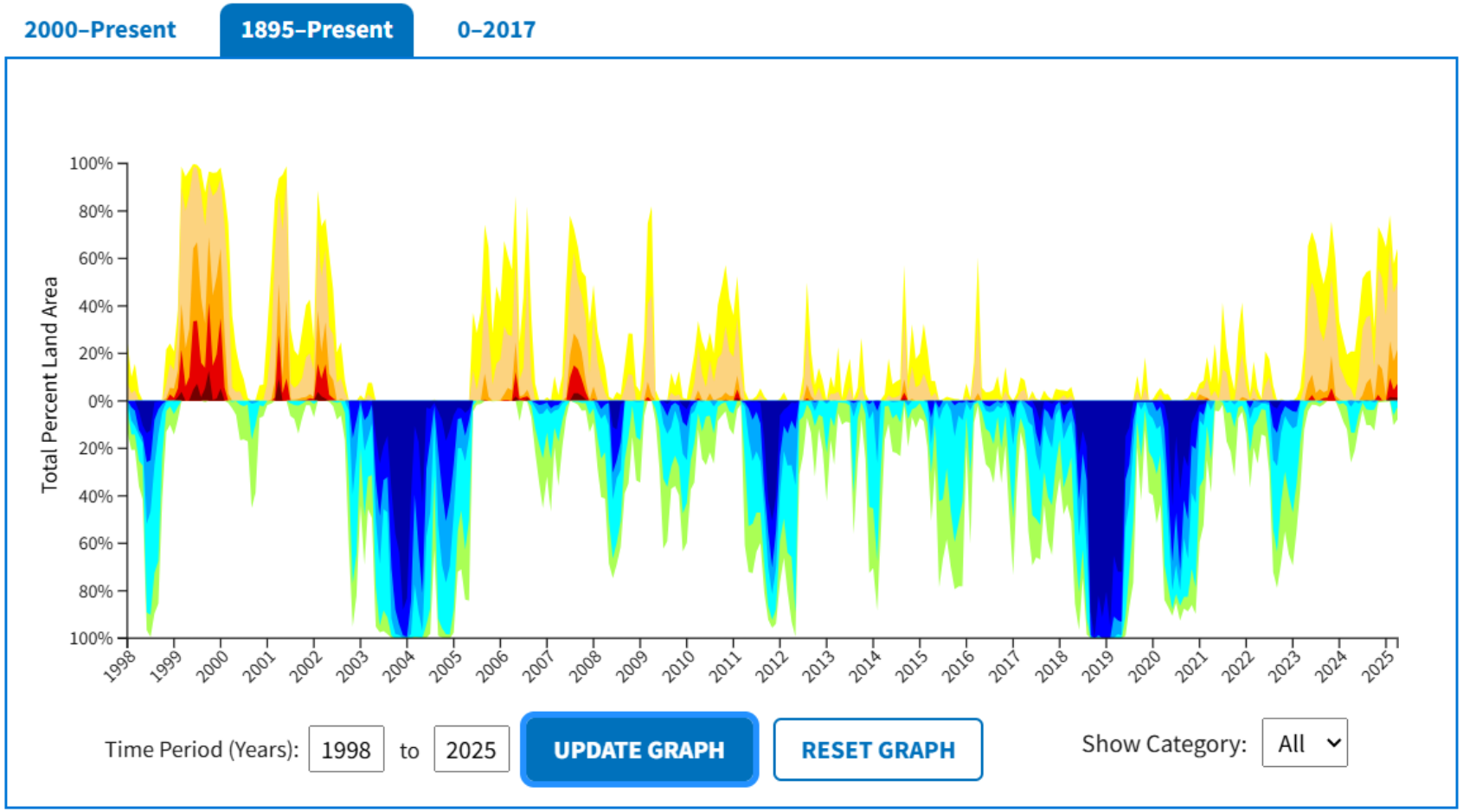
- Indices of Biotic Integrity – incorporate attributes to reflect biological integrity
  - community richness
  - abundance
  - tolerance metrics
- Family-level ID – Statewide, April-Oct
- Genus-level ID – Season/region, year-round

IBI Comparability

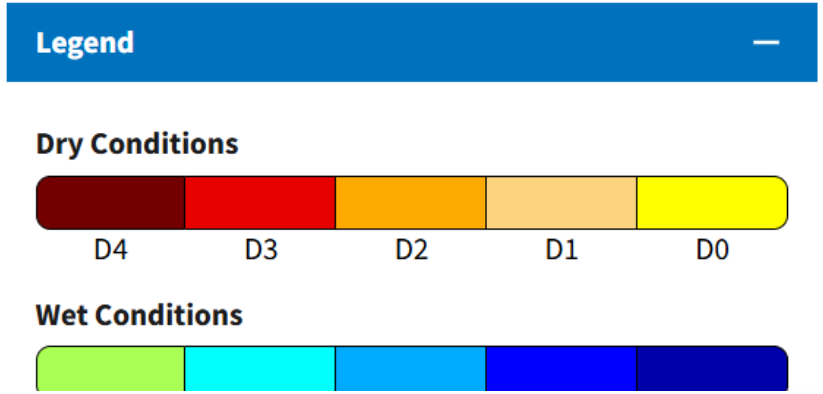
- Confines of Index (time period/limestone)
- Collection SOPs
  - Single riffle/run habitat
  - Specific dip/kick net
- Generally, do not sample during high flows when cannot assess habitat
- Do not sample after scour event

- Range of flow regimes already in the IBI

The Standardized Precipitation Index (SPI) is a monthly depiction of drought based on precipitation (with data going back to 1895).



Drought results from an imbalance between water supply and water demand. The Standardized Precipitation Index (SPI) measures water supply, specifically precipitation. SPI captures how observed precipitation (rain, hail, snow) deviates from the climatological average over a given time period—in this case, over the 9 months leading up to the selected date. Red hues indicate drier conditions, while blue hues indicate wetter conditions. Data are available monthly from 1895–present. Learn more.



Potential Drought Impacts

- Historic -1999, 2000, 2001 impacted by drought.
  - Identified stations with samples 1999-2001, n=1510
  - Identified stations with revisits, n=618
  - Samples were assigned “bins”
    - Bin 1 = 1999, 2000, 2001
    - Bin 2 >2001
  - Compared Max scores from each bin. 444 max revisit sample > than max1999-2001 sample

- Results: 72% of resamples had higher scores.
- Should we avoid collection during/after drought?

Questions

Recovery from no flow?

Low flow confound non-point stressors?

Have TMDLs been effective?

Early in monitoring program, learning to tweak SOPs.

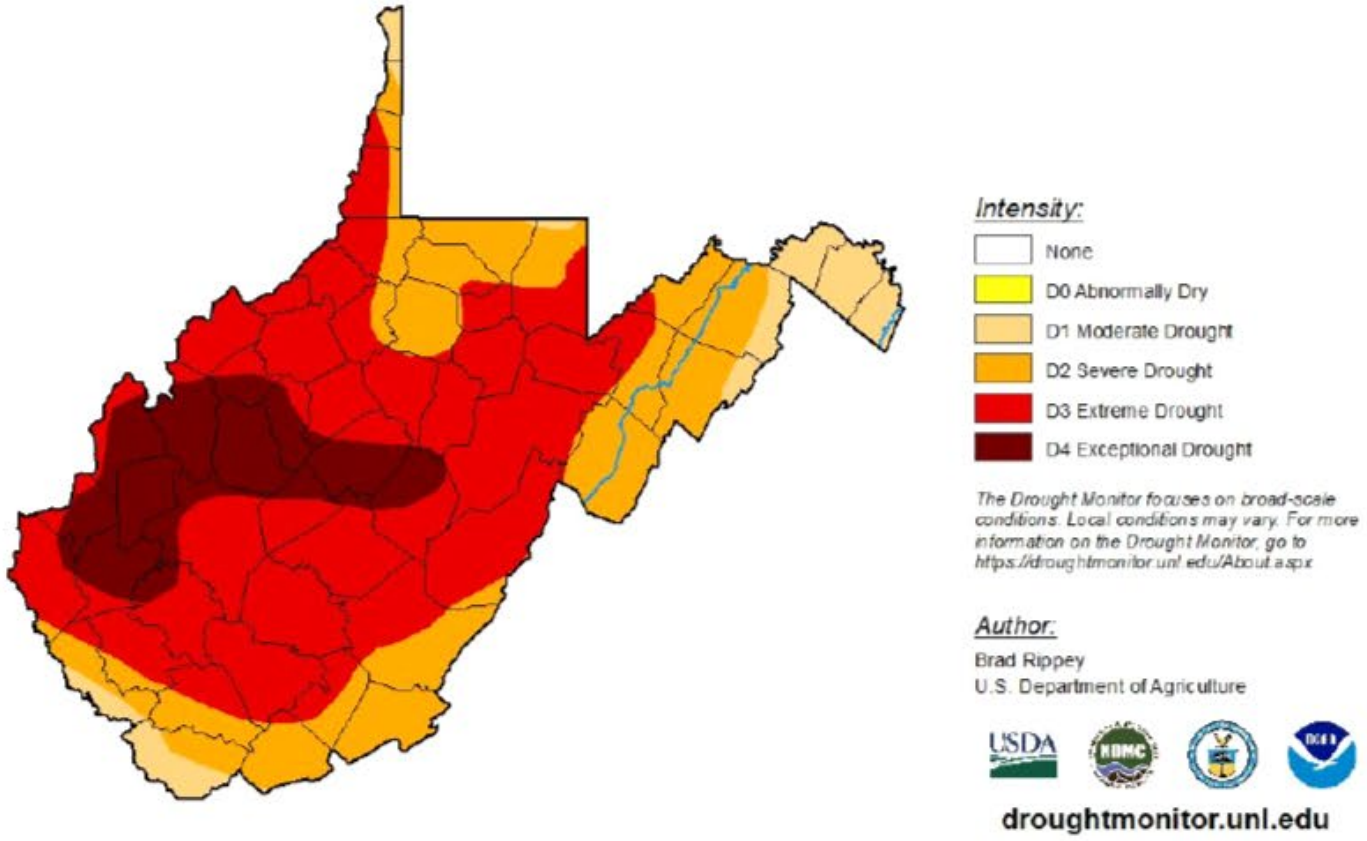
Drought Assessment

For the state of West Virginia

September 24, 2024 10:53 AM

Current Conditions

➔ Current drought monitor (see image to the right)

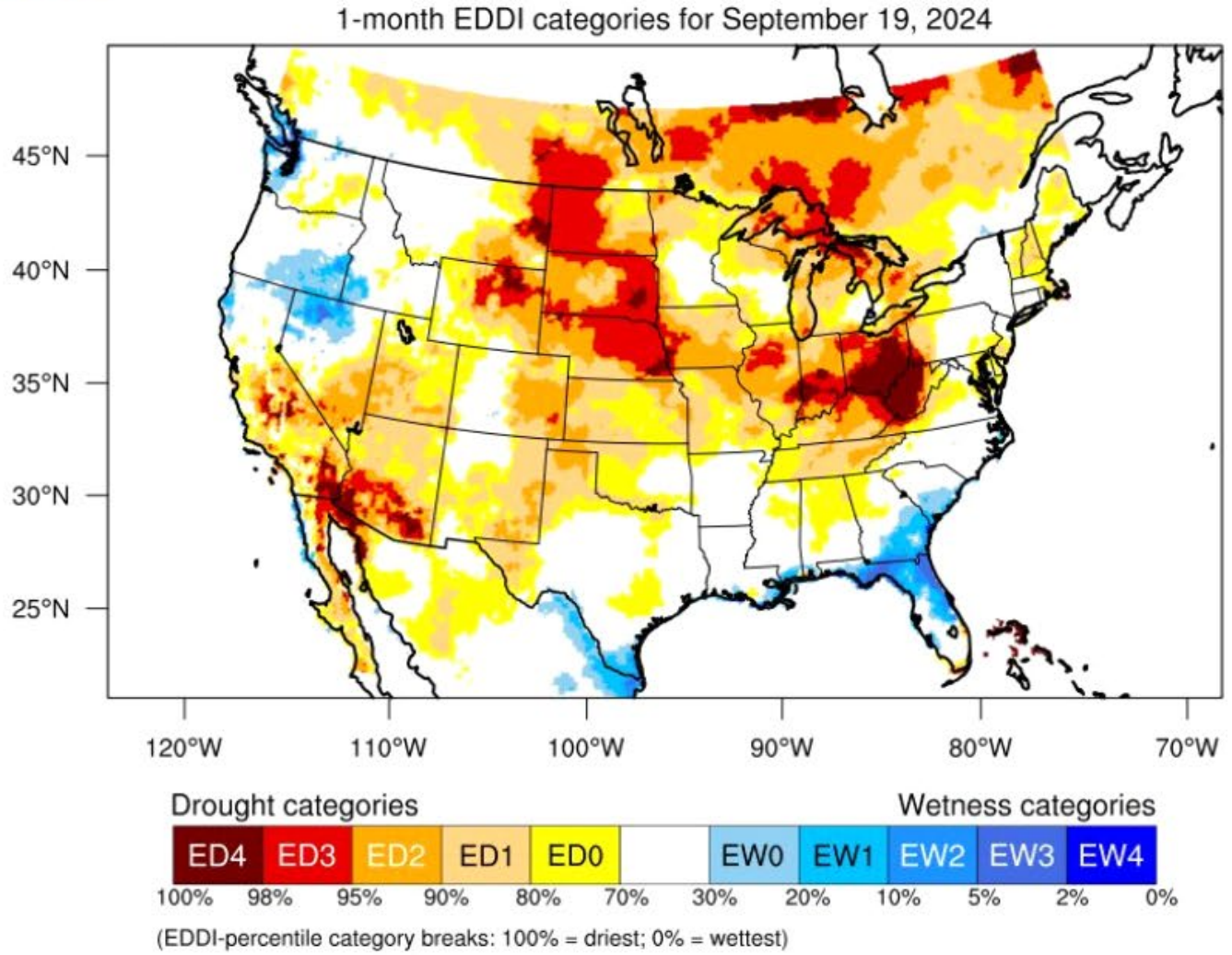


EDDI Categories

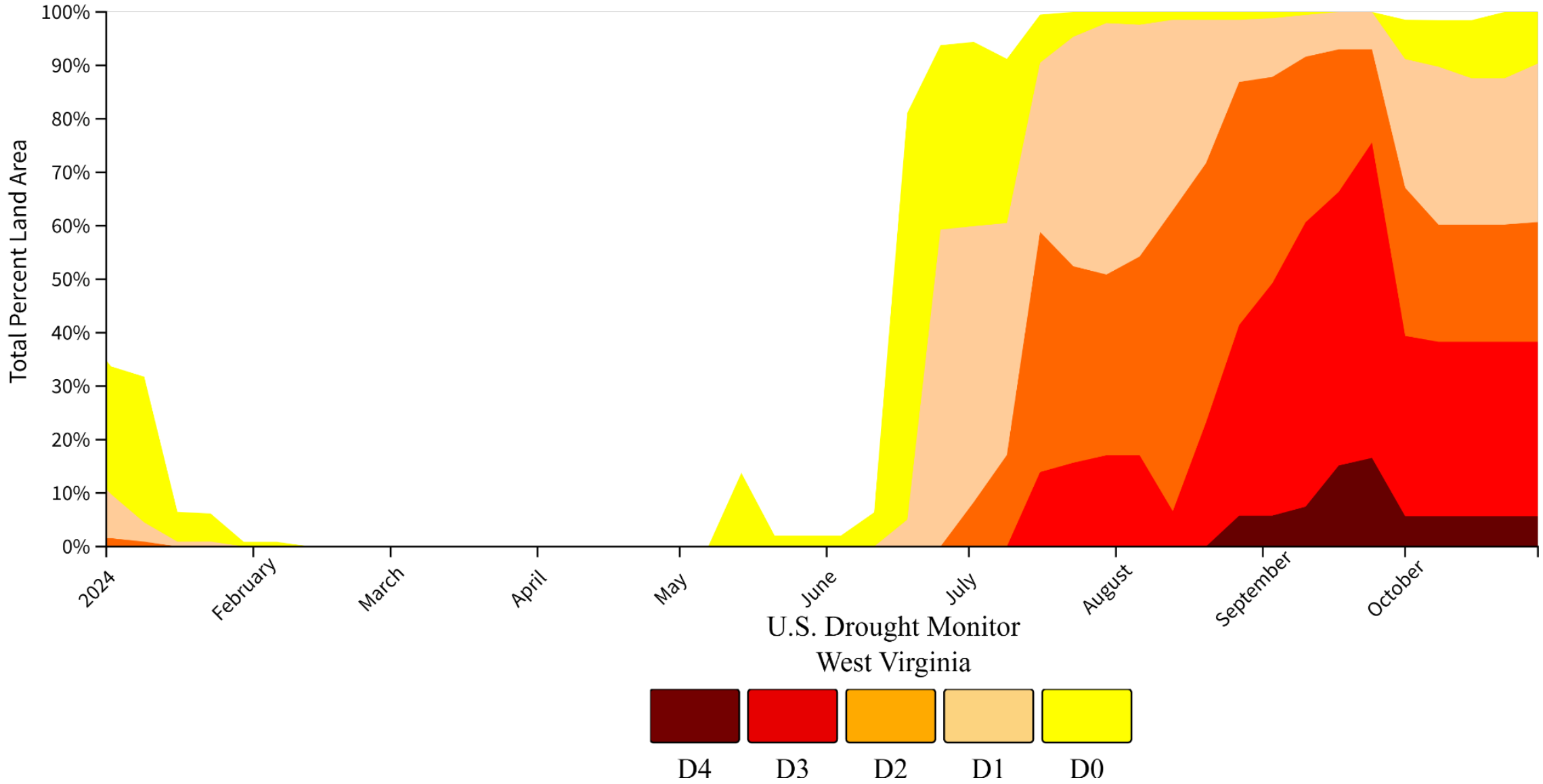
Gridded percentile

September 24, 2024 10:53 AM

Evaporative Demand Drought Index
or
“thirst of the atmosphere”



The U.S. Drought Monitor is a weekly map that shows the location and intensity of drought across the country since 2000



Hurricane Helene

August 23, 2024 – New River

September 27, 2024

August 23, 2024

September 27, 2024

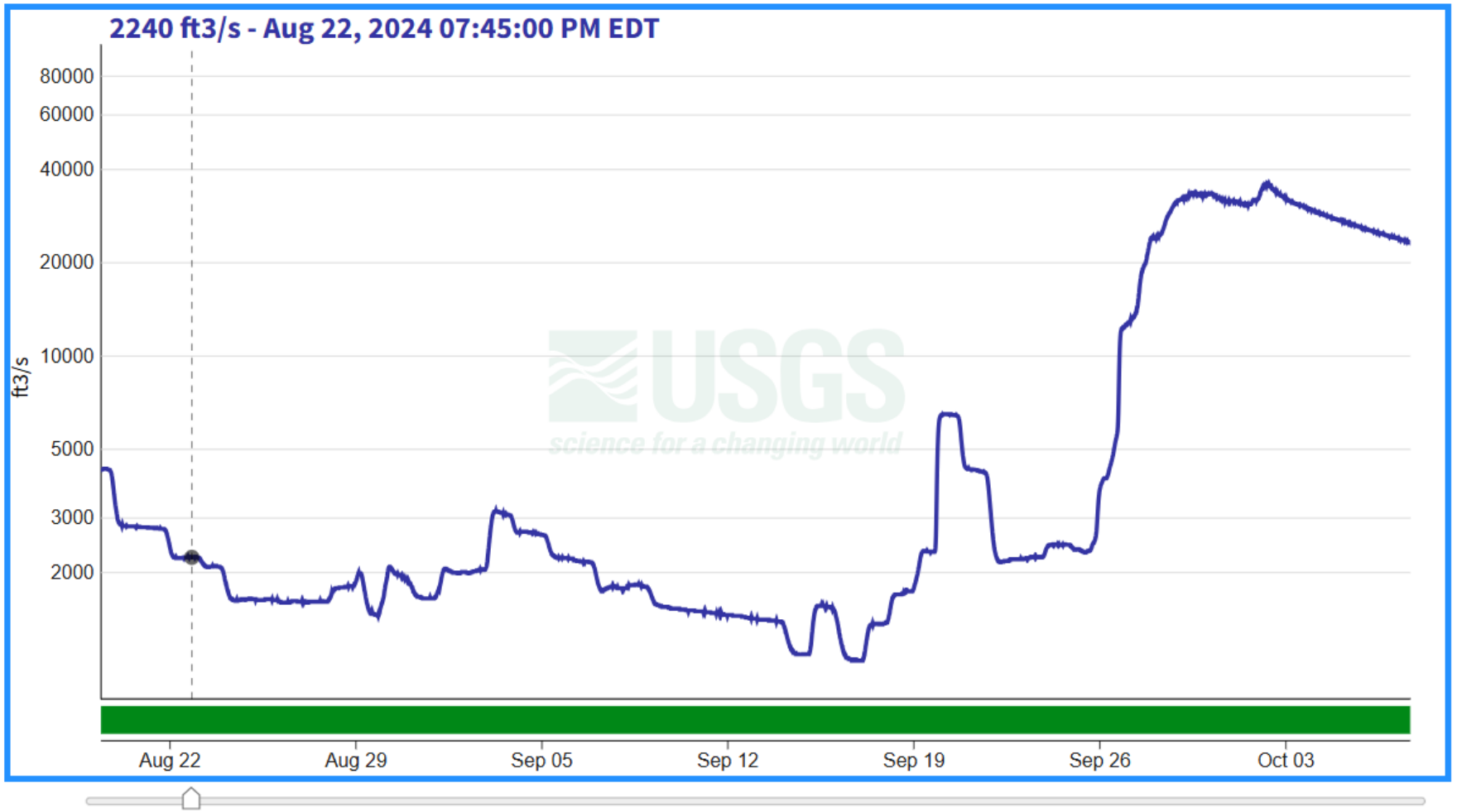
August 23, 2024 – Pipestem Creek

September 27, 2024

Continuous data

New River at Thurmond, WV - 03185400 Subscribe to WaterAlert

- using graph zoom -
May 29, 2024 - May 29, 2025
Discharge, cubic feet per second

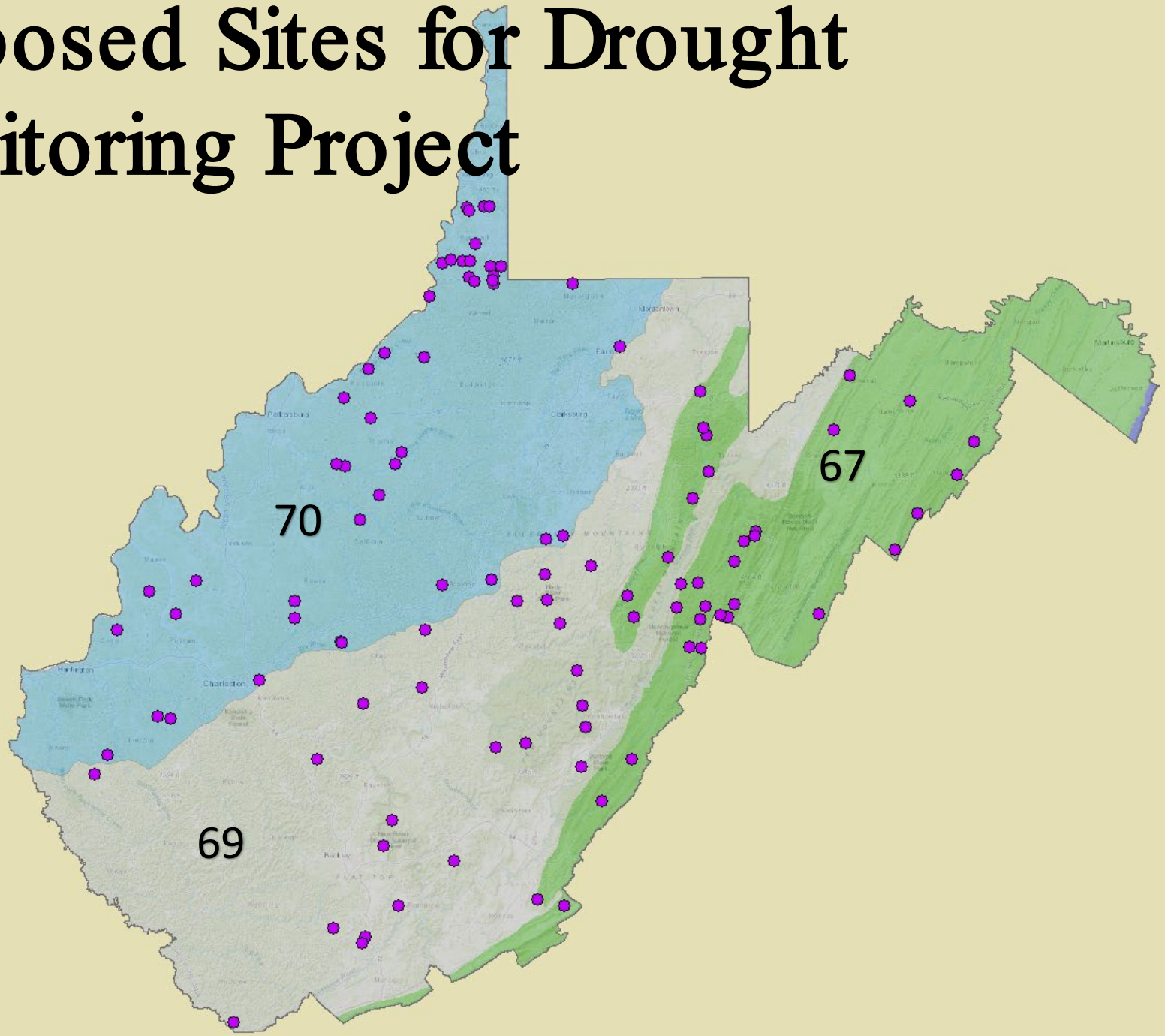


https://waterdata.usgs.gov/monitoring-location/03185400/#dataTypeId=continuous-00065-0&period=P7D

Drought Monitoring

- Select sites where we consistently experience reference conditions
- Sites where there was severe drought likely resulting in no flow
- Benthic macroinvertebrates and Fish trend stations
- Attention to downstream of treatment facilities – AMD treatment that are flow dependent

Proposed Sites for Drought Monitoring Project



Hold Questions

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