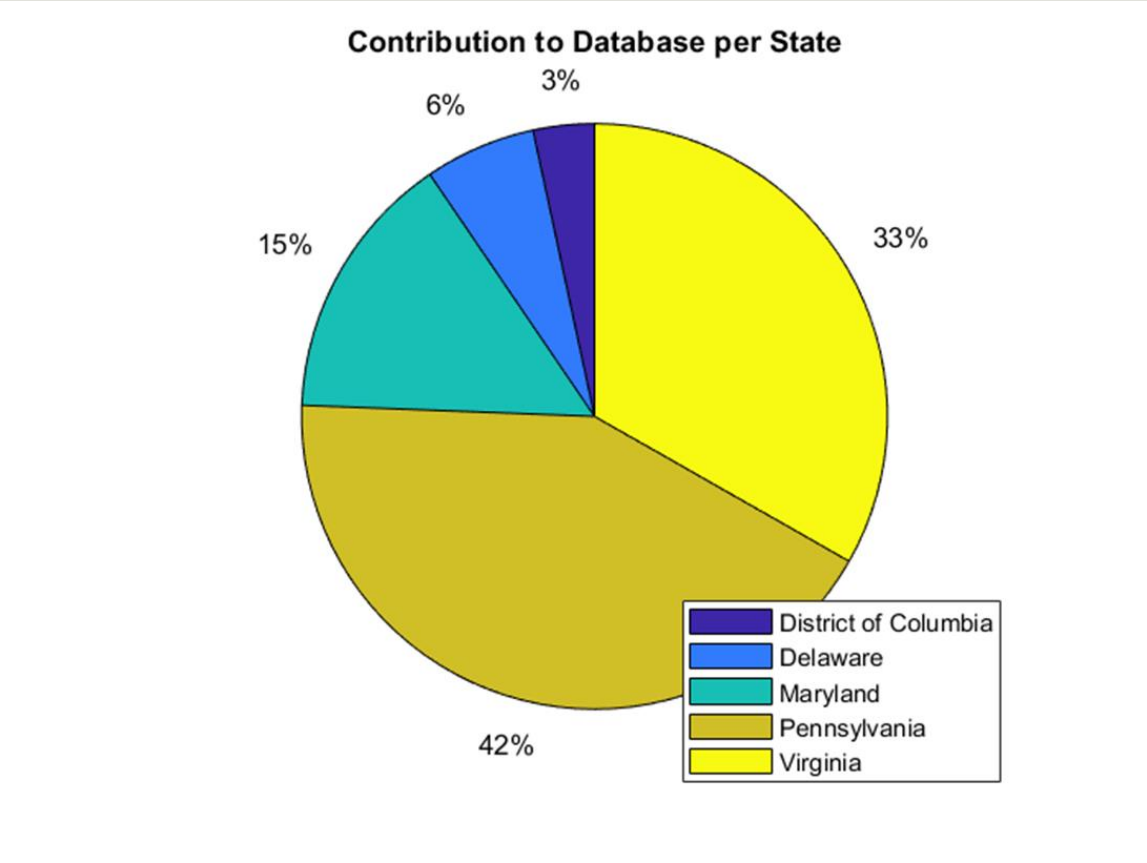
Content Characterization of the New Chesapeake Monitoring Cooperative's *Chesapeake Data Explorer* Database

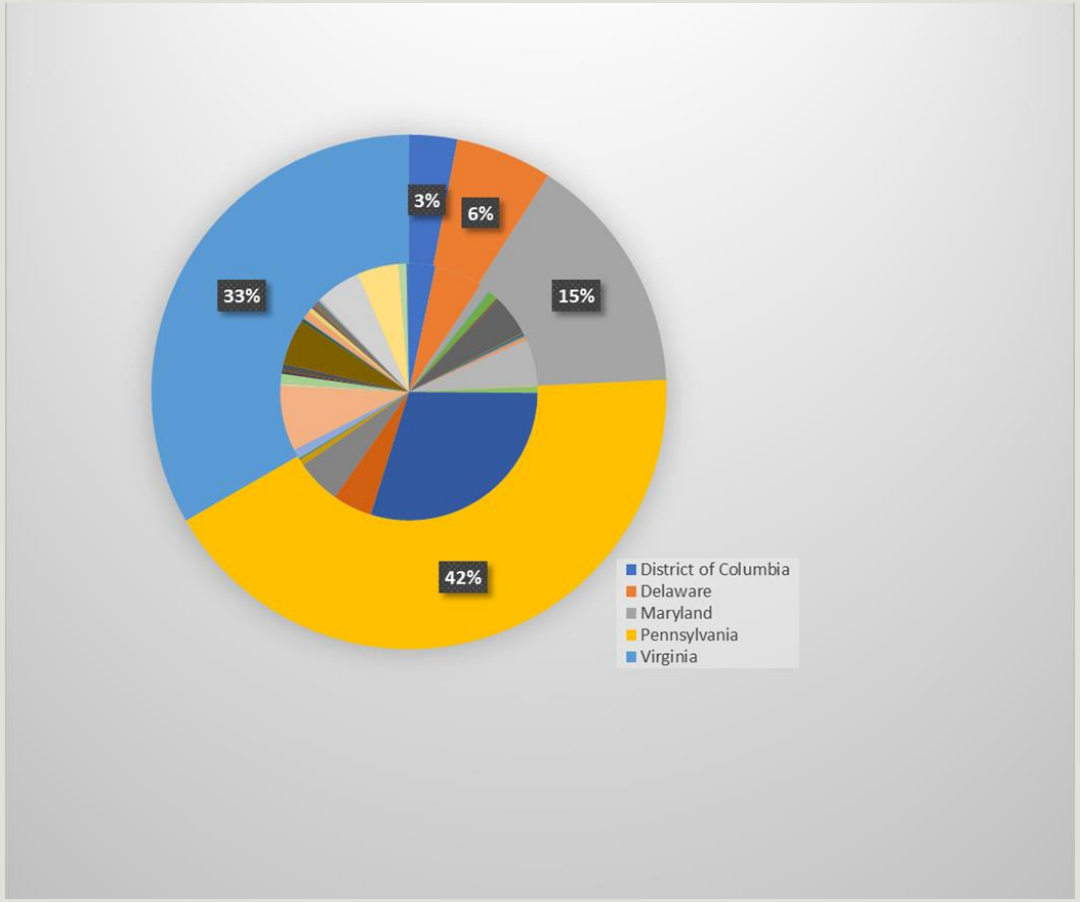
BY DIA BROWN
CRC C-STREAM STAFFER
JUNE 19, 2019

Over View

- Overall View of the data contribution by jurisdiction
- Overall View of data over time by jurisdiction
- Deeper Dive into data over time by jurisdiction
- Deeper Dive into data contribution by parameter within jurisdictions
- Data Explorer and Next Steps

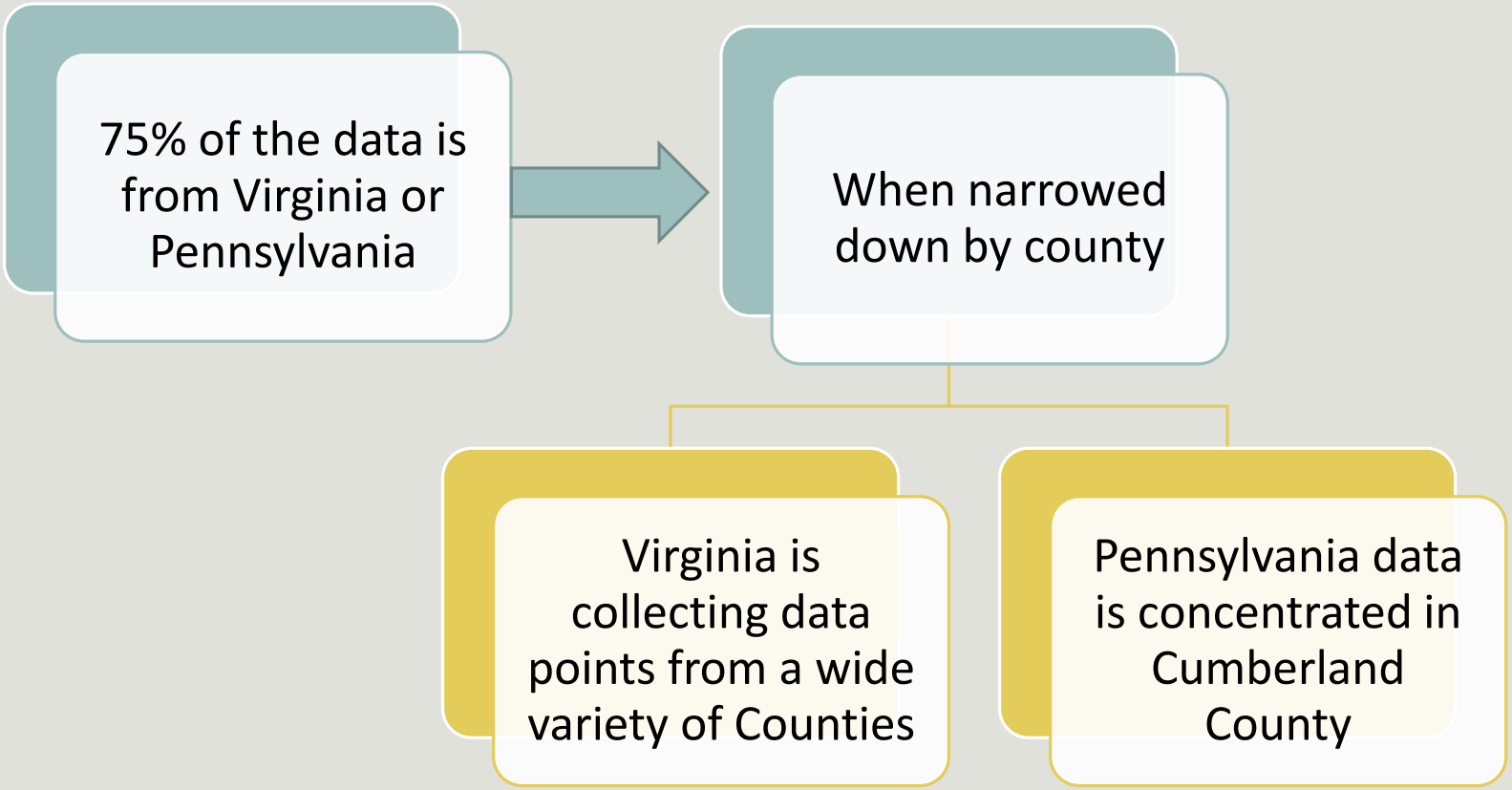
Note: All of this data is accurate up to the May 29th data download



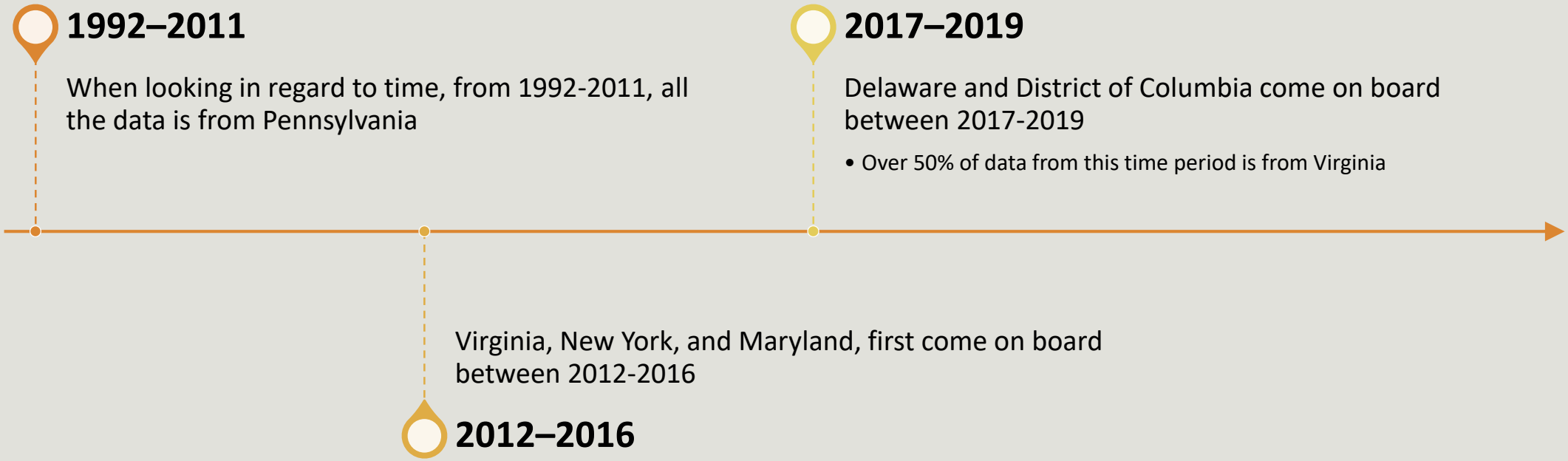


Overall Contribution by Jurisdiction

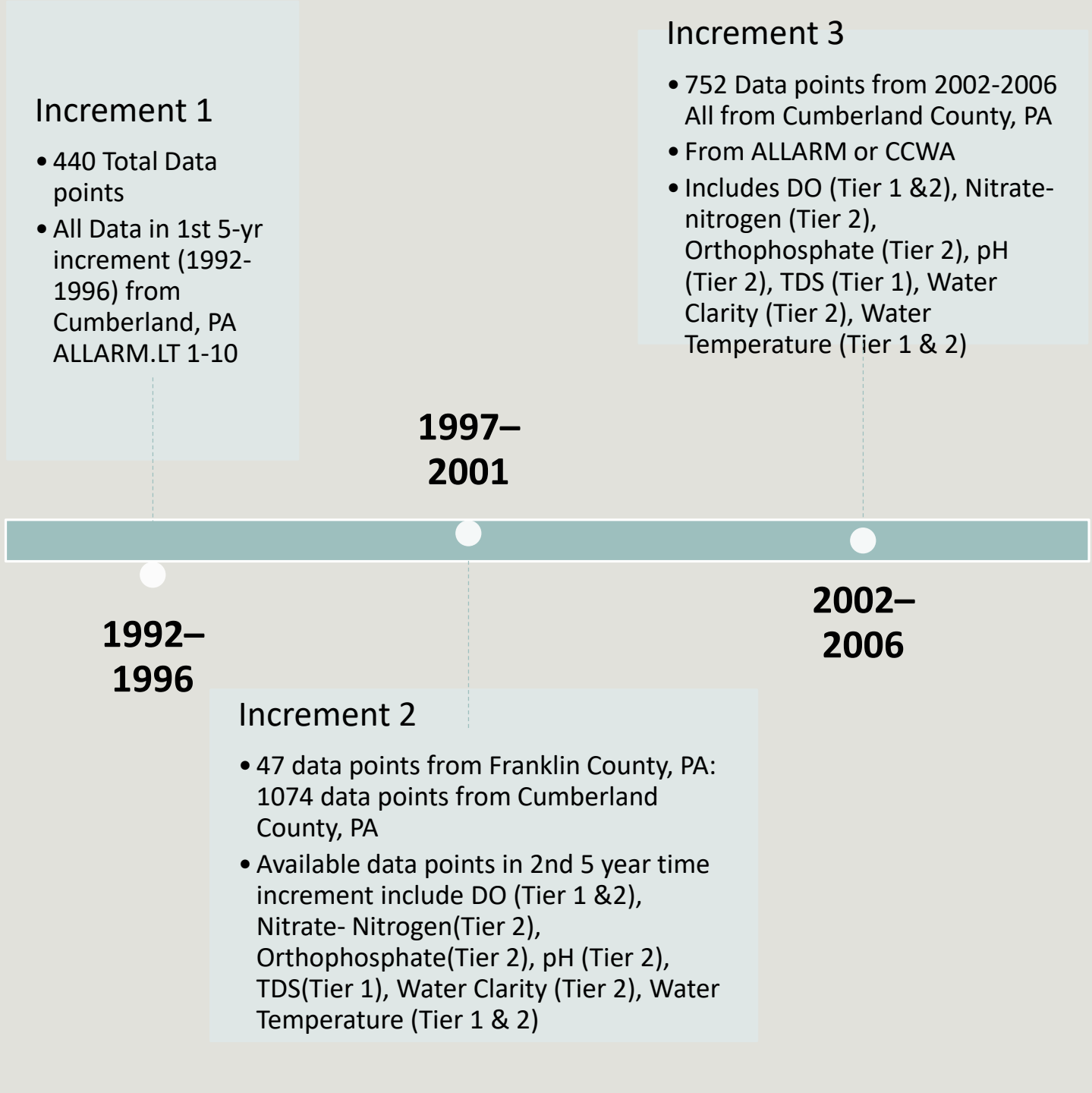
Overall Contribution by Jurisdiction

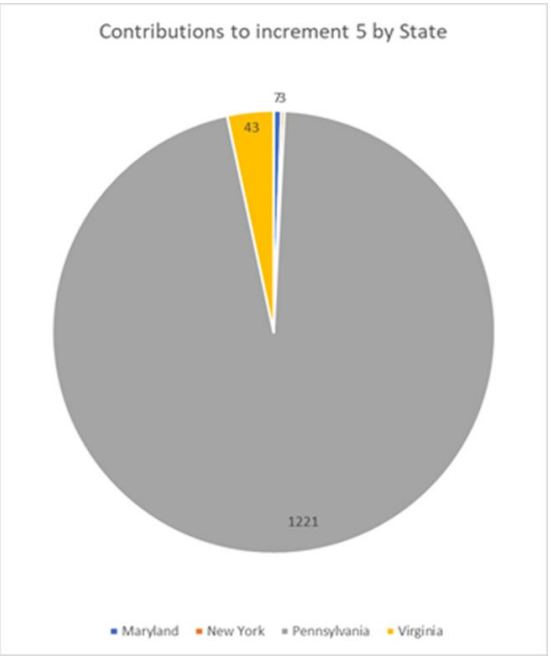


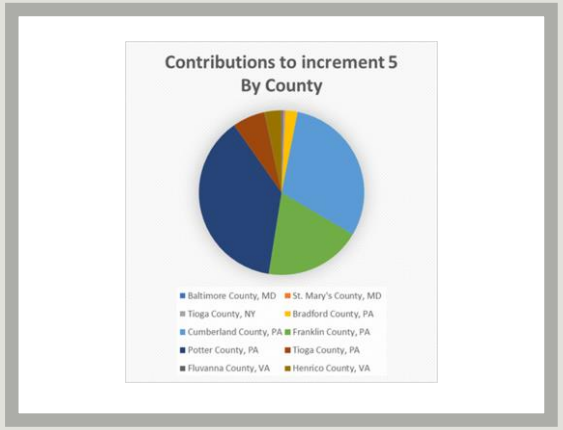
Overall Timeline

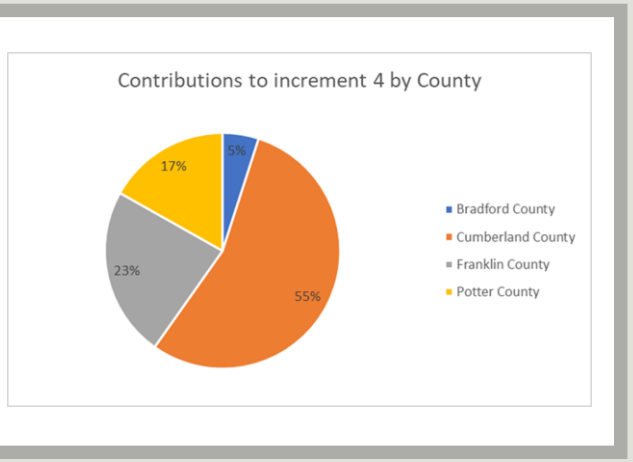


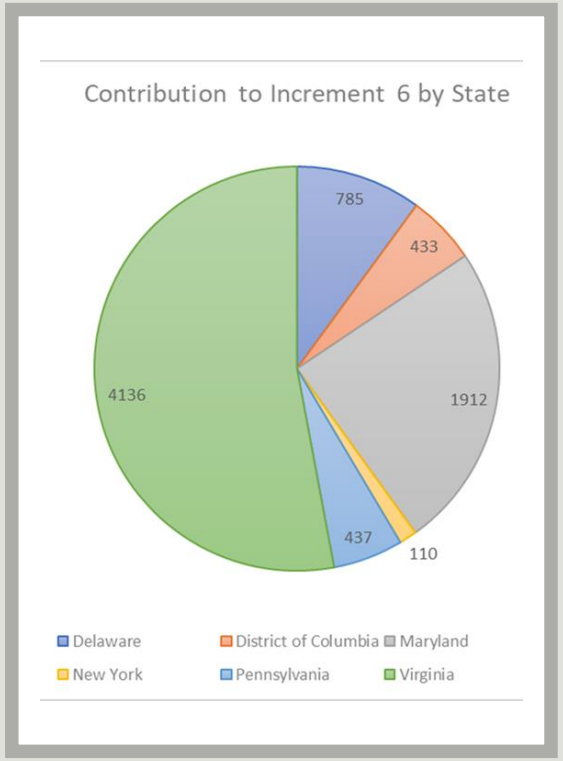
Deeper Dive: Timeline











Deeper Dive: Timeline

Increment 4

- All data only in PA (Bradford County, Cumberland County, Franklin County, Potter County)
- 1490 total data points

Increment 6

- 7813 data contributions
- 6 Jurisdictions in the database all show up

2007–2011 | **2012–2016** | **2017–2019**

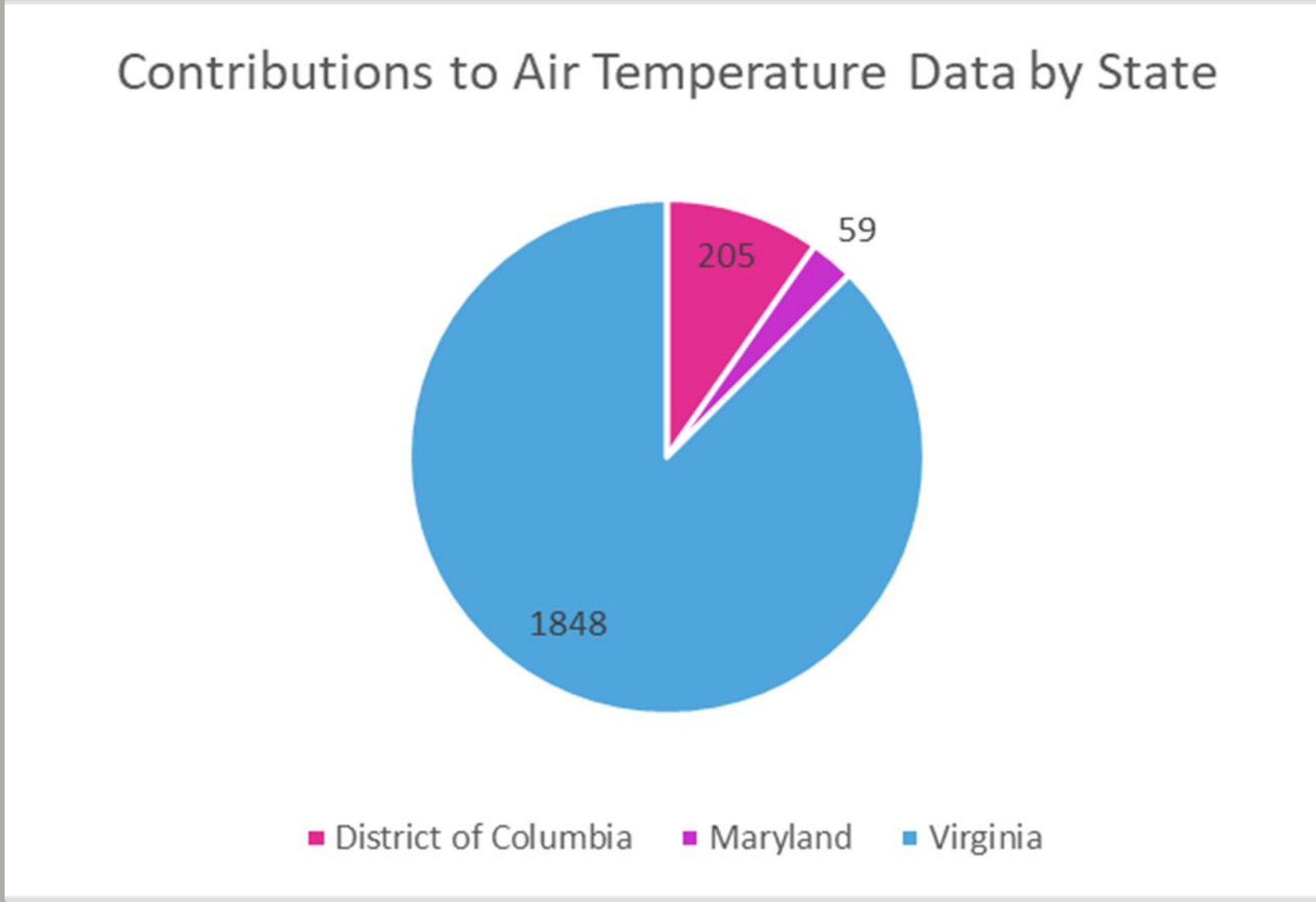
Increment 5

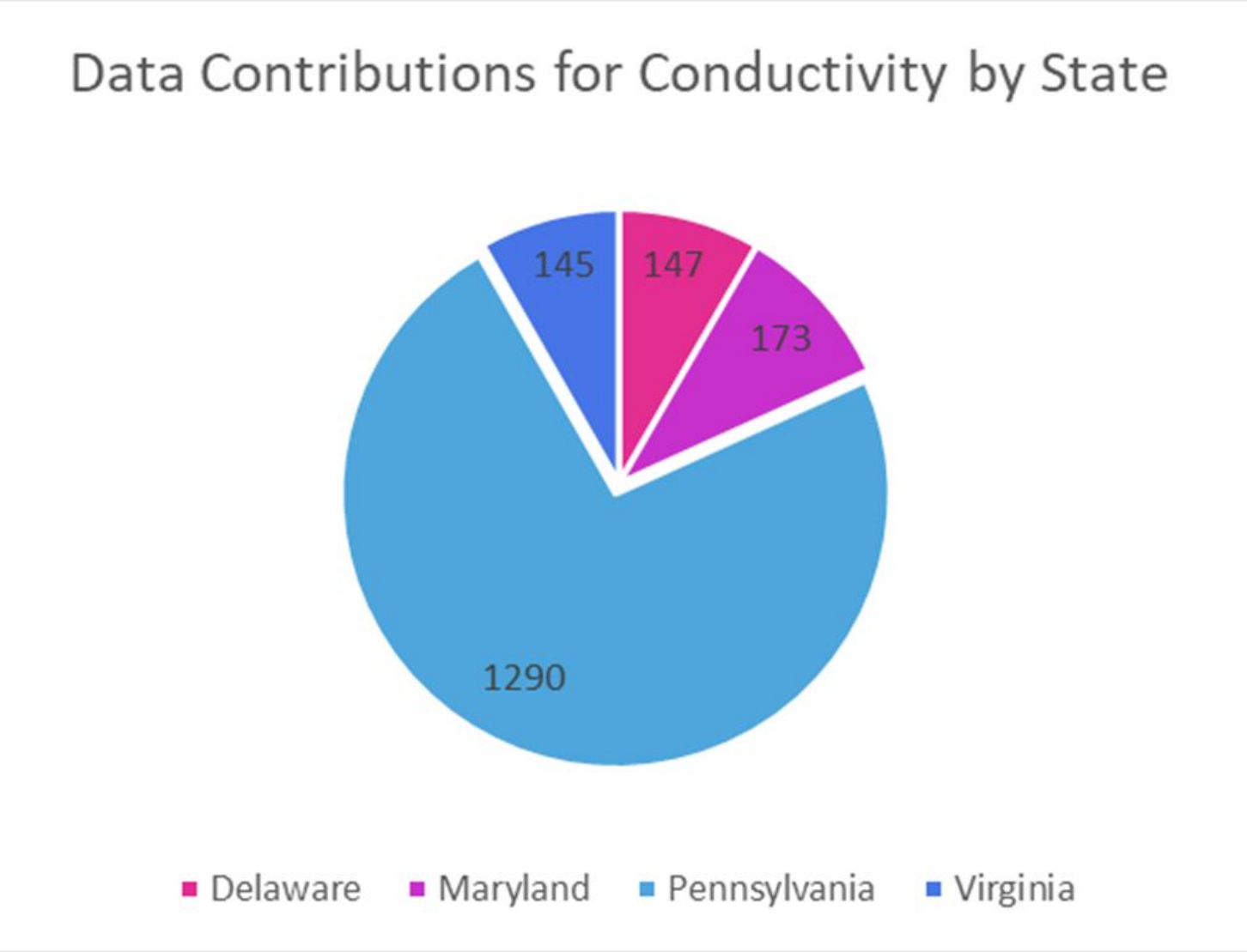
- 1267 total data points
- Data starts appearing from a wider variety of Jurisdictions

Deeper dive: Looking at parameter by jurisdiction

By Parameter - Air Temperature

- 100% Tier 2
- 2112 available data points





Deeper dive: Looking at parameter by jurisdiction

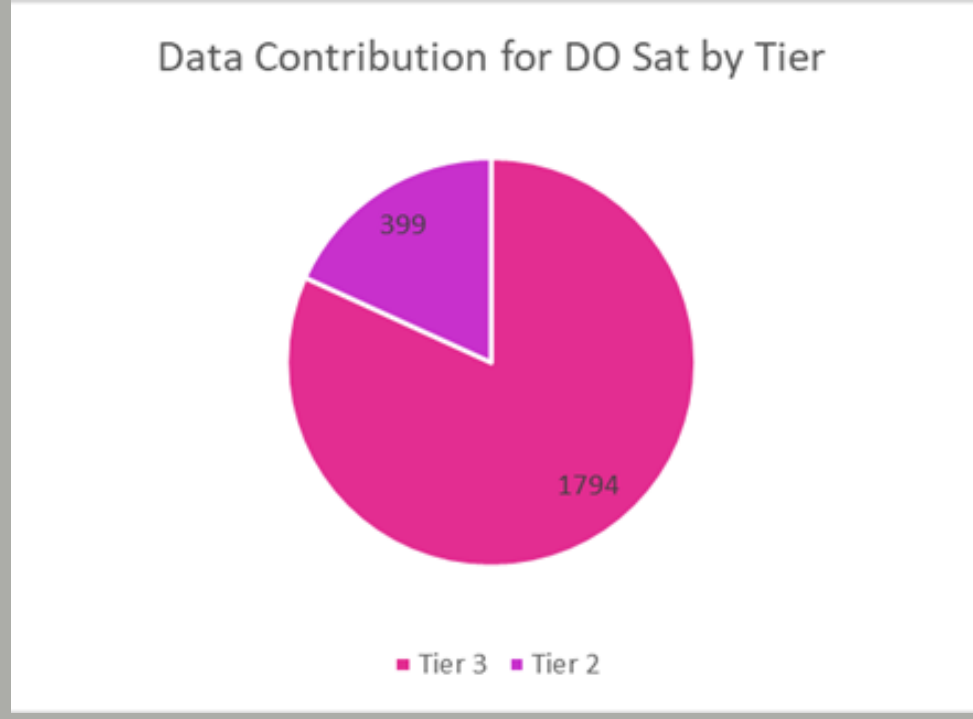
By Parameter- Conductivity

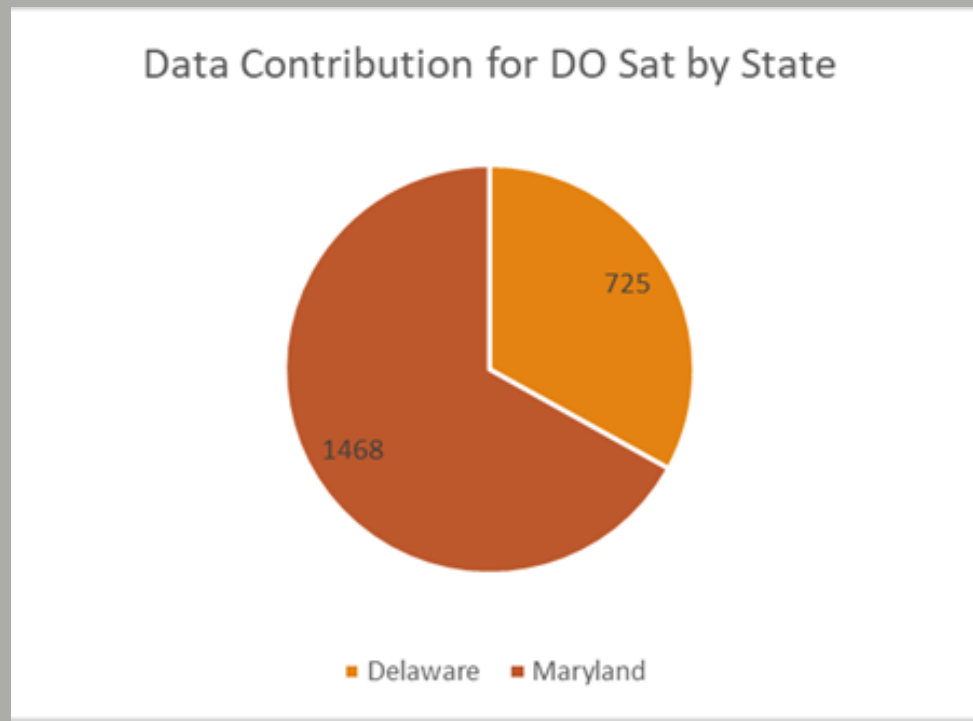
- 100% Tier 2
- 1755 available data points

Deeper dive: Looking at parameter by jurisdiction

By Parameter- DO Sat %

- 2193 Available Data Points

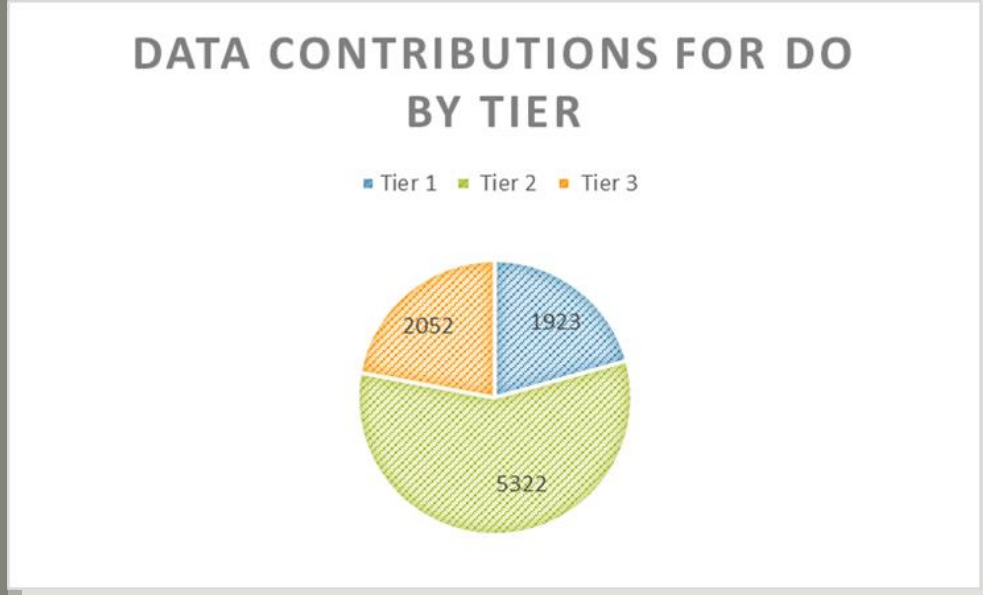


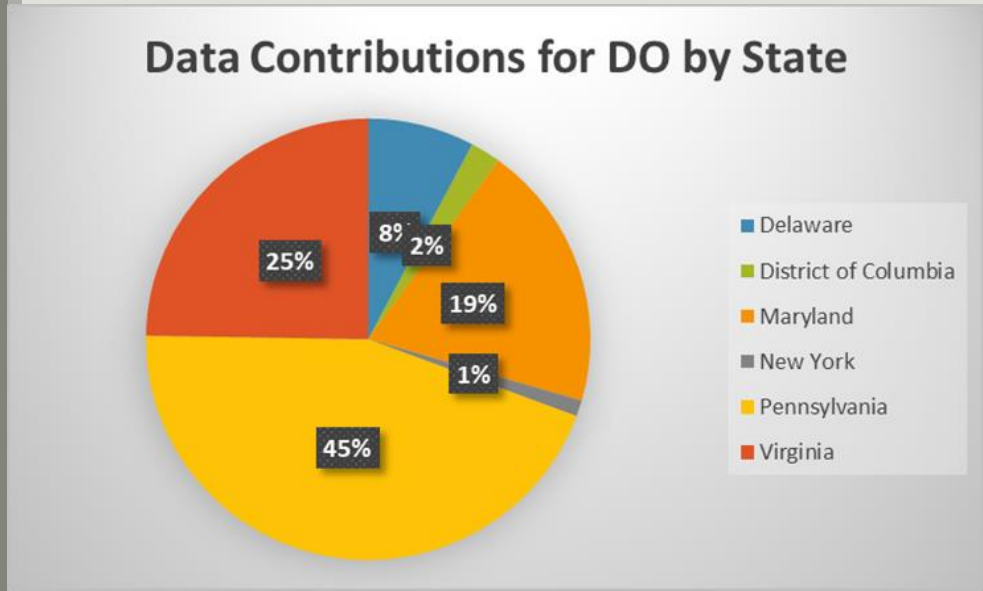


Deeper dive: Looking at parameter by jurisdiction

By Parameter- Dissolved Oxygen

- Tier 3 Data found only in DE and MD
- 9297 Total Data Points

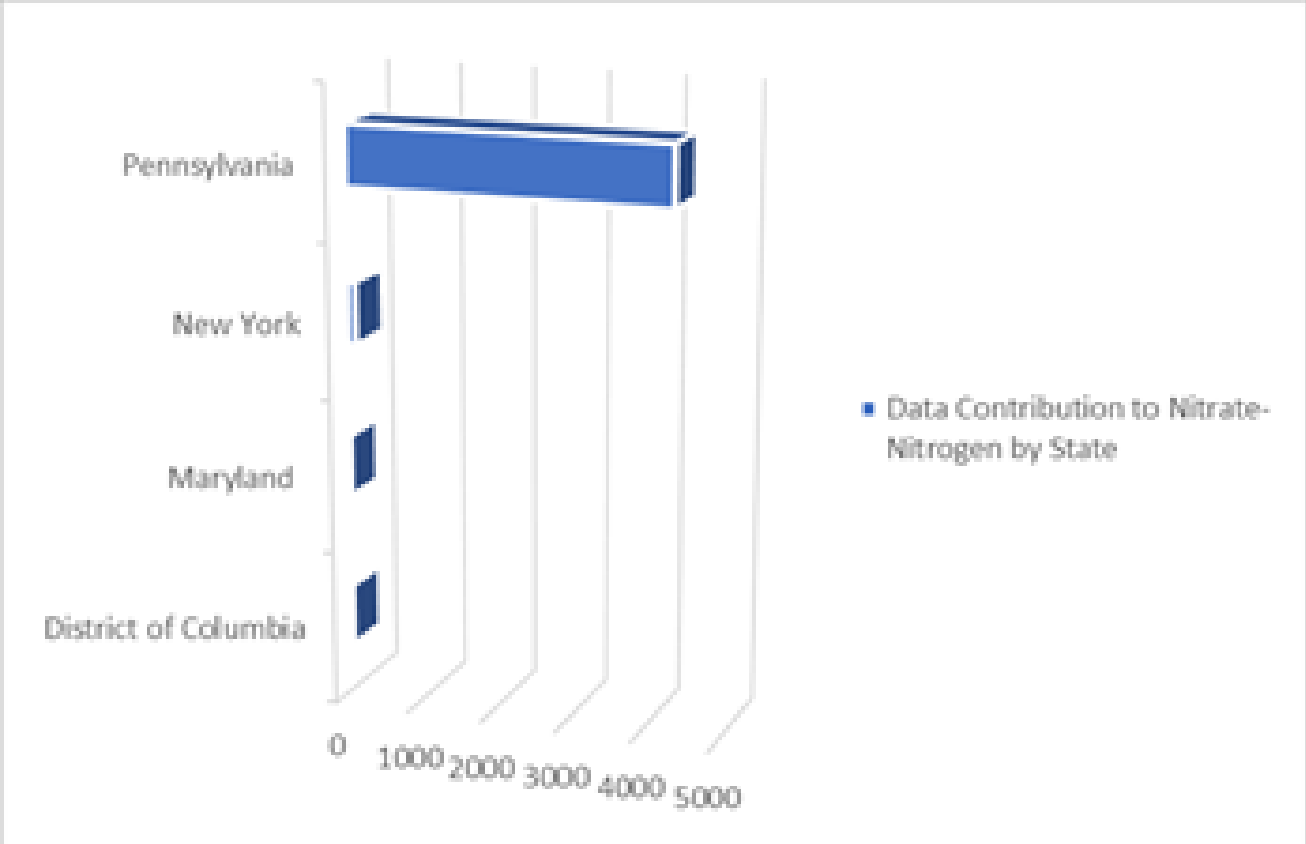


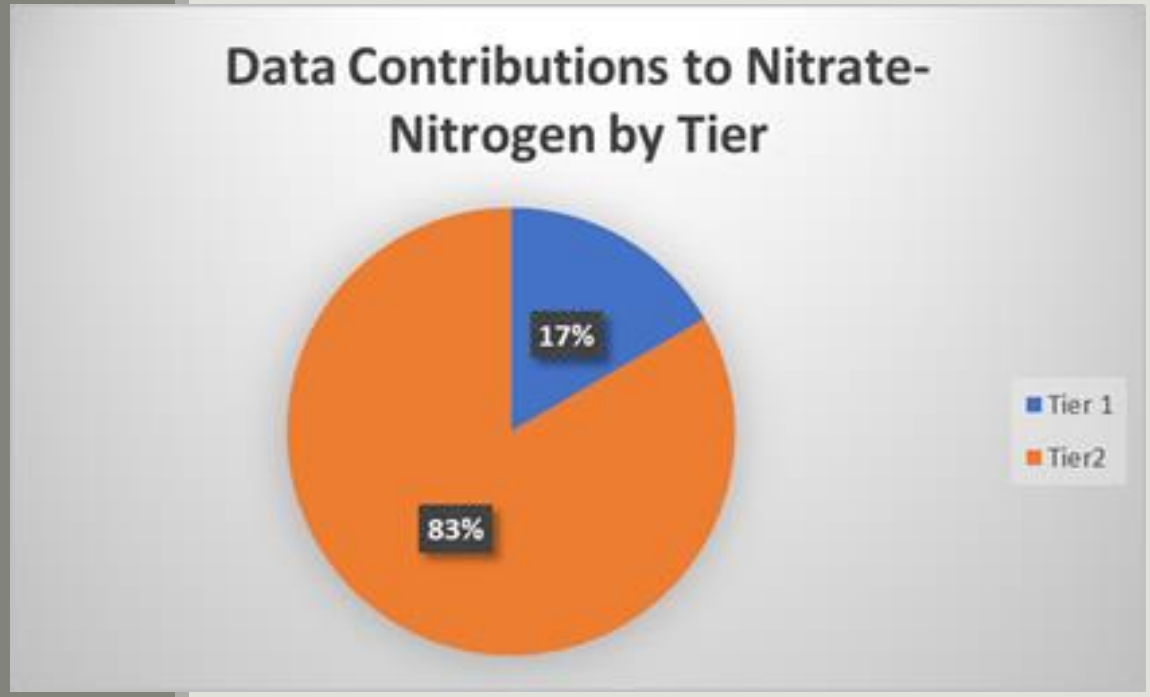


Deeper dive: Looking at parameter by jurisdiction

By Parameter- Nitrate-Nitrogen

- 4428 Total Data Points

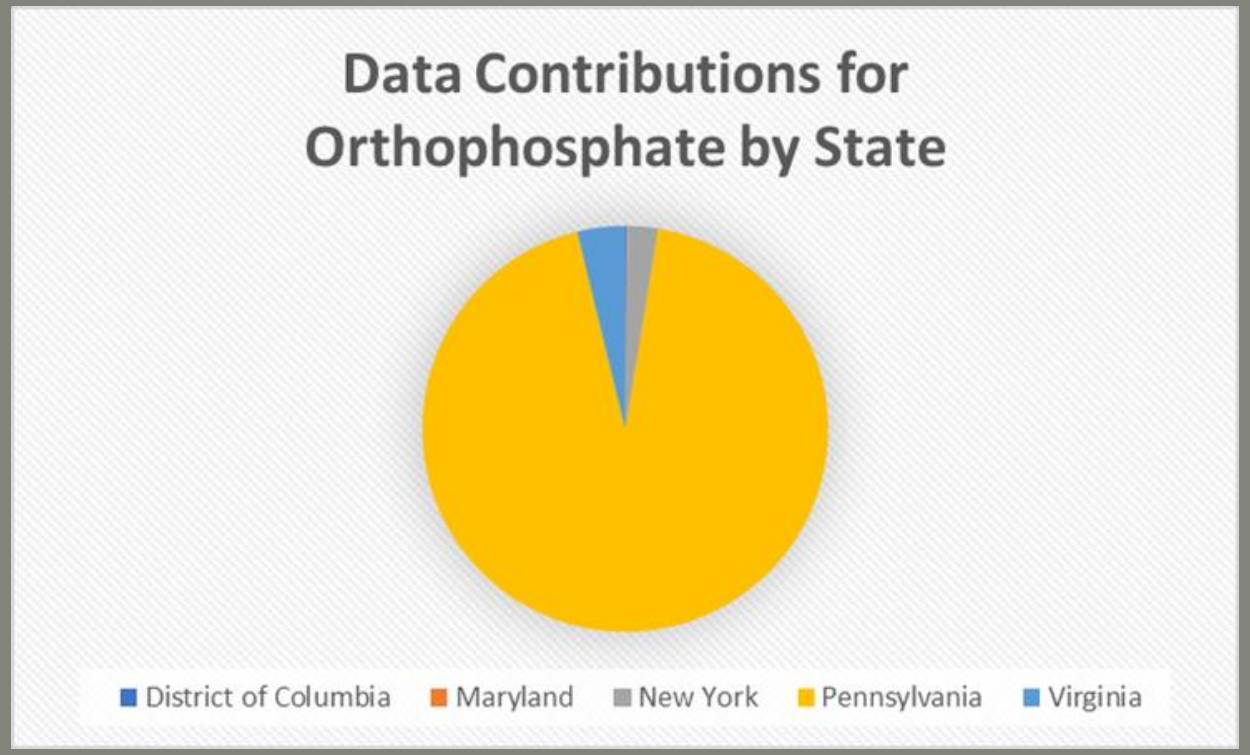


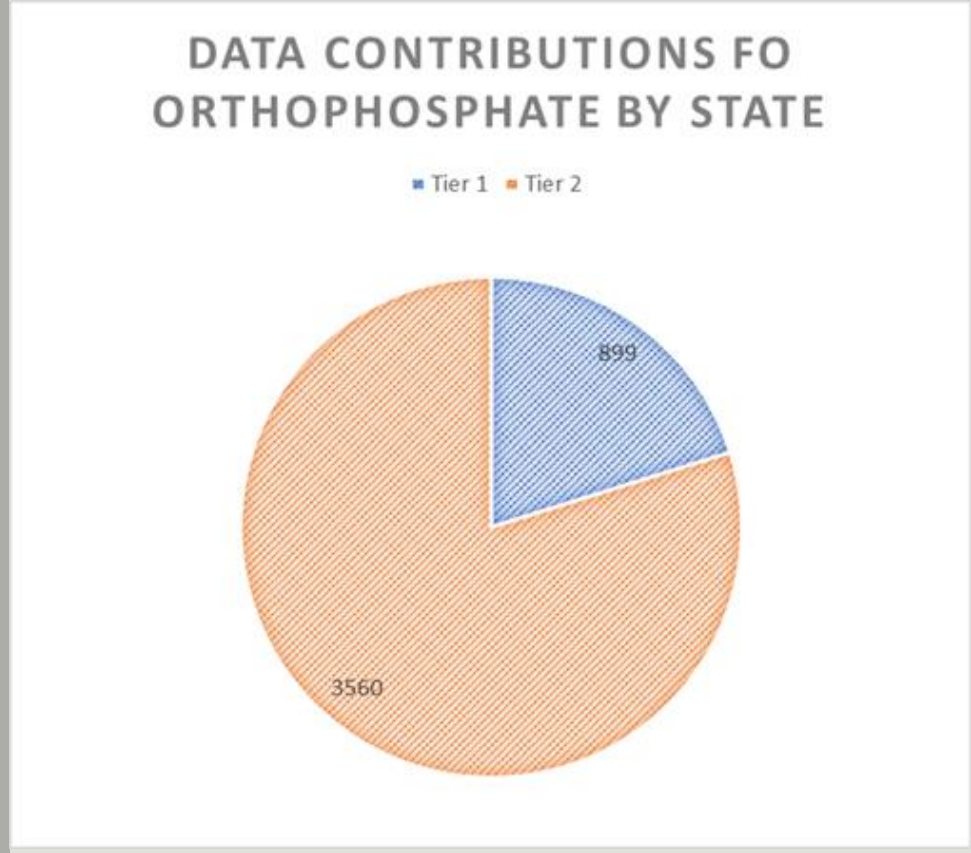


Deeper dive: Looking at parameter by jurisdiction

By Parameter- Orthophosphate

- 4459 Total data points

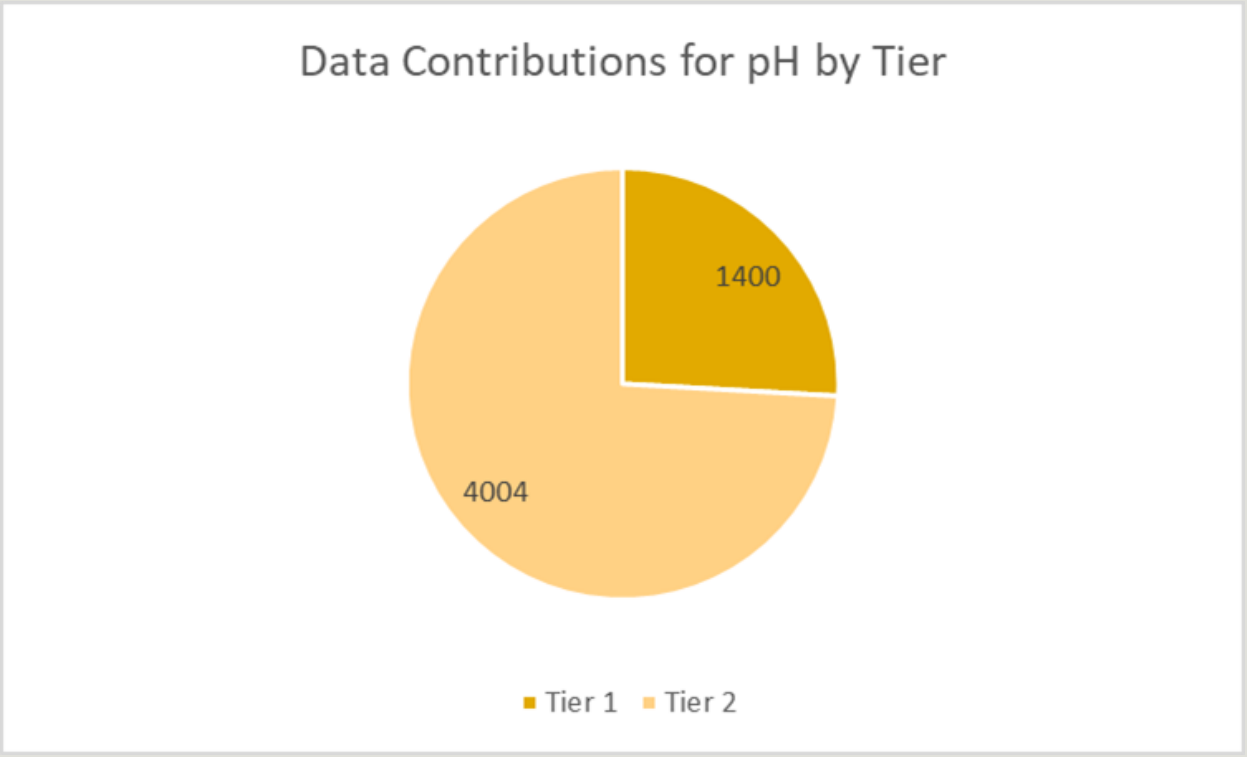


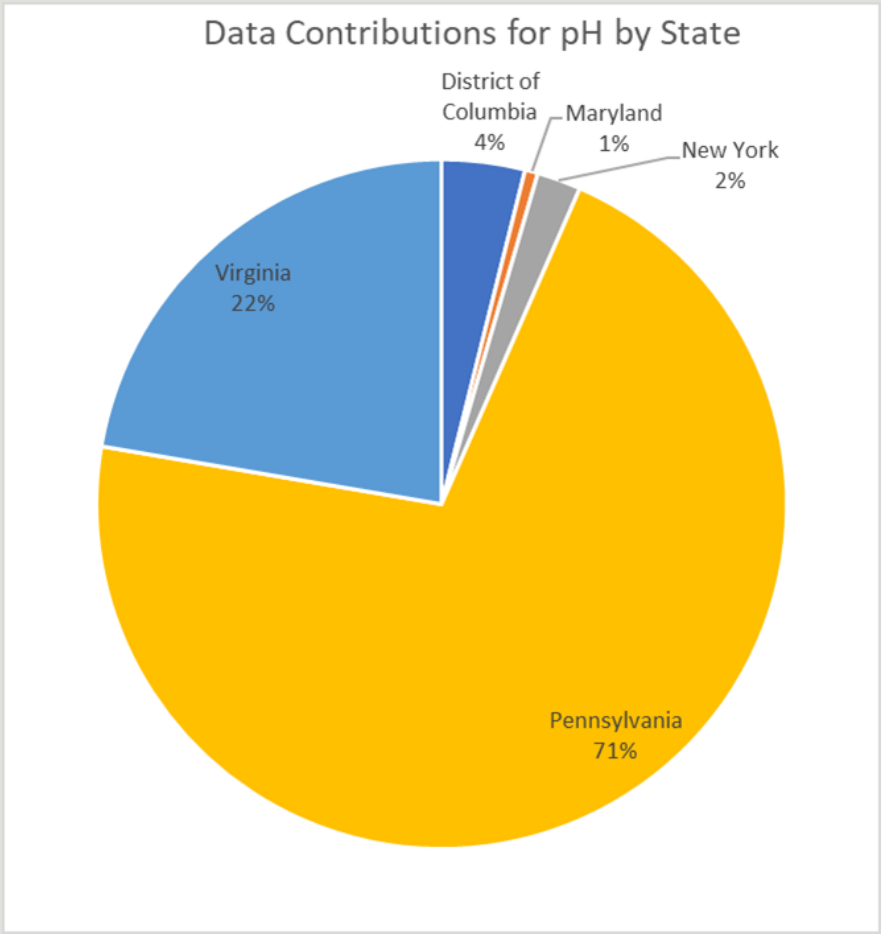


Deeper Dive: Looking at Parameter by Jurisdiction

By Parameter- pH

- 5404 data points available

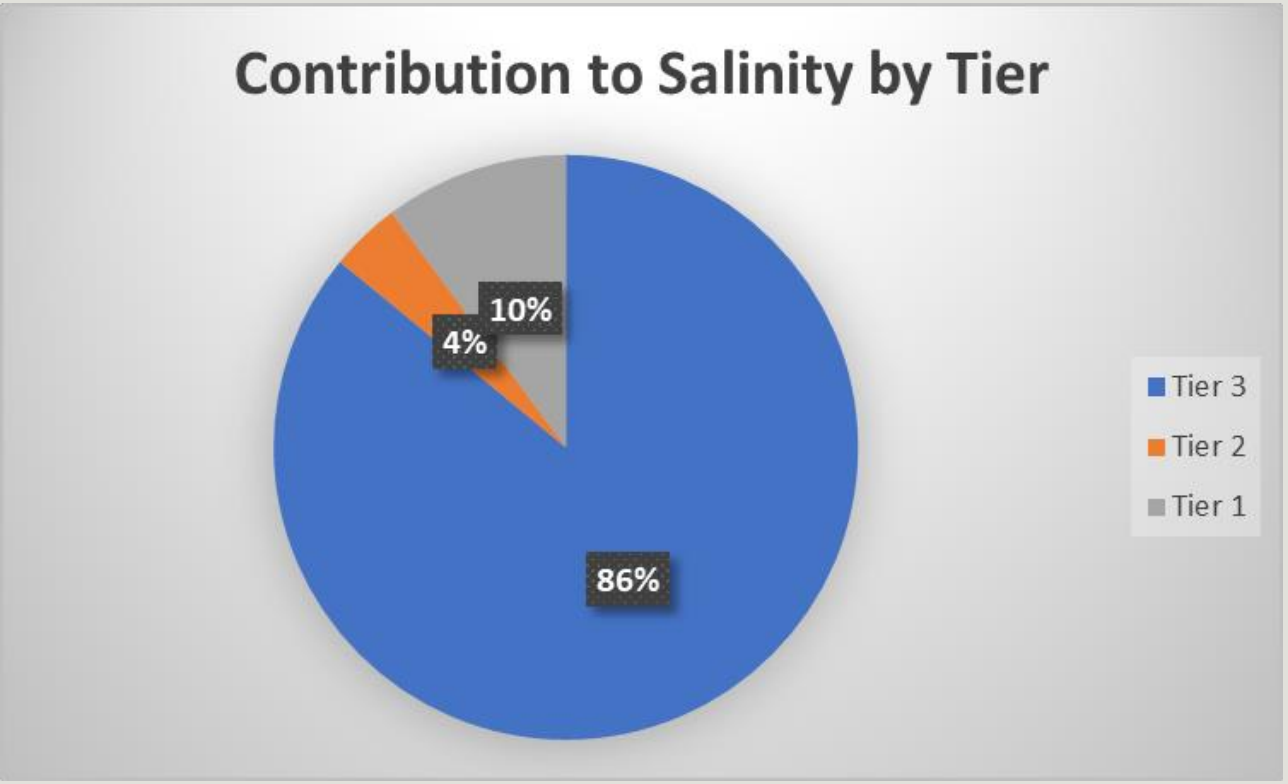


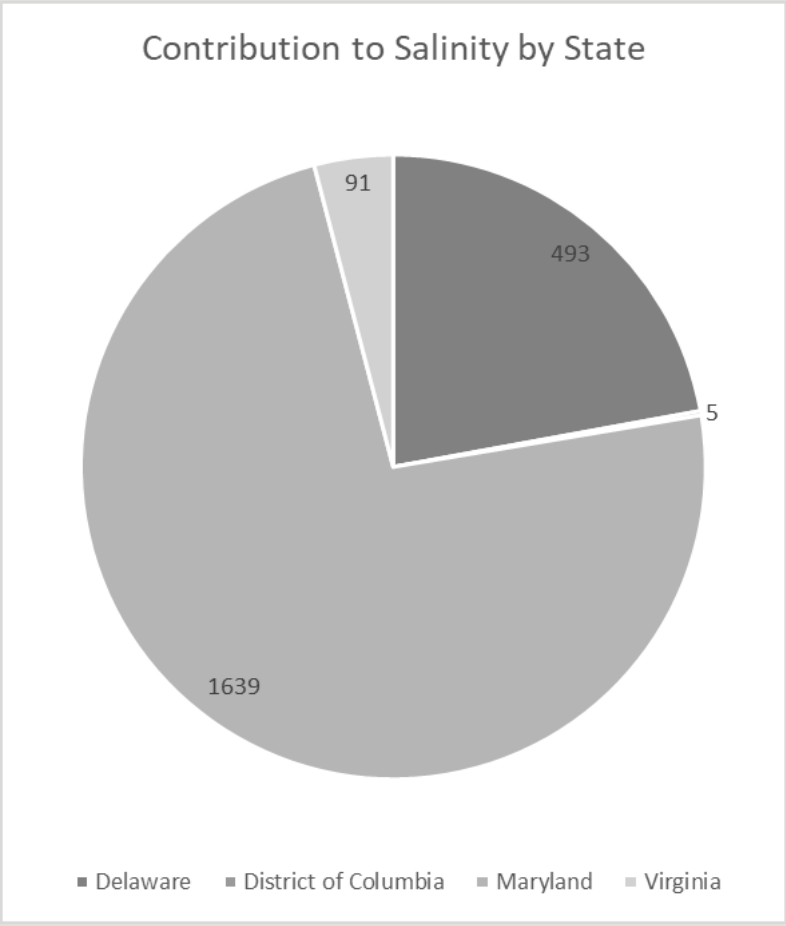


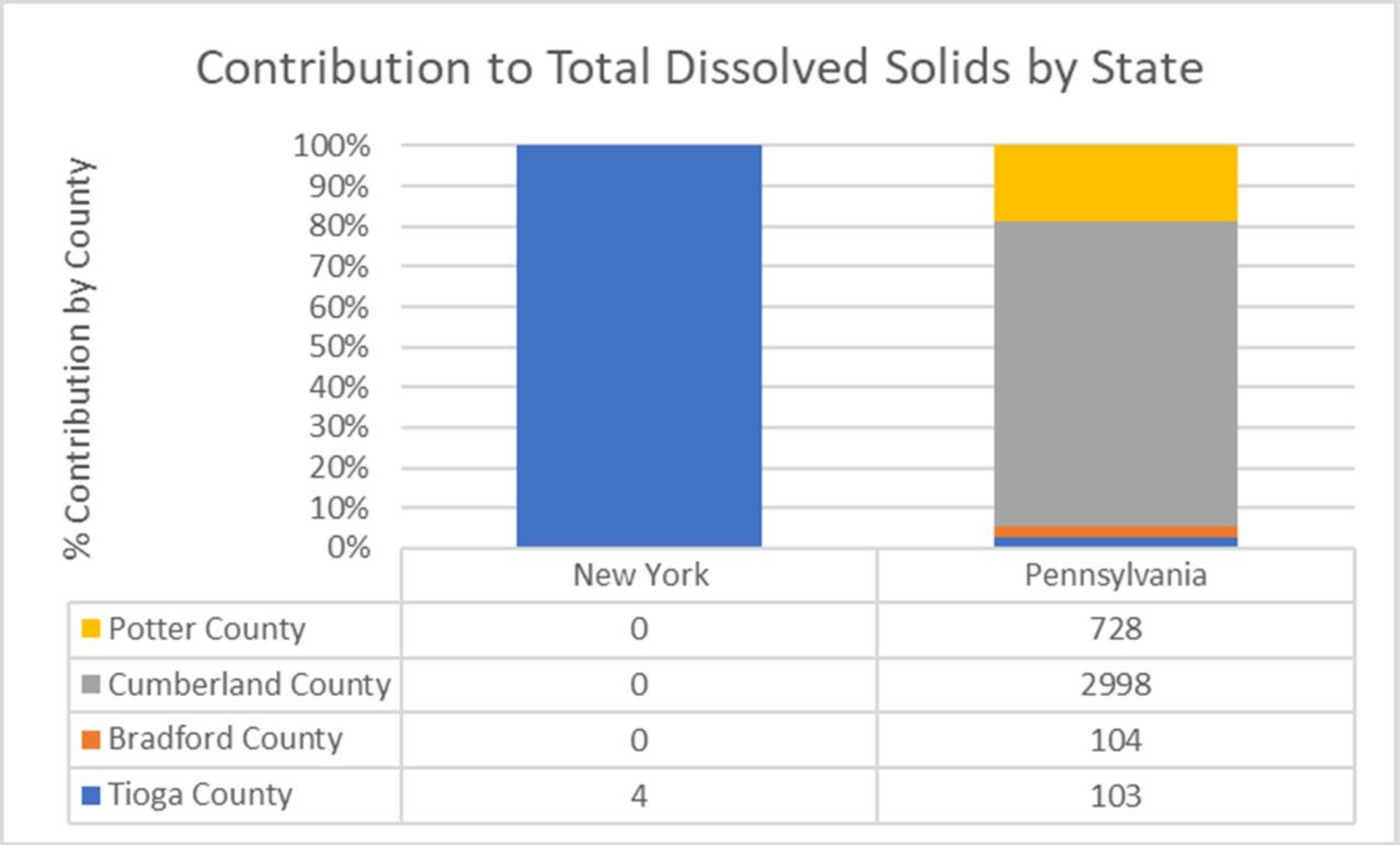
Deeper Dive: Looking at Parameter by Jurisdiction

By Parameter- Salinity

- 2228 Available Data Points



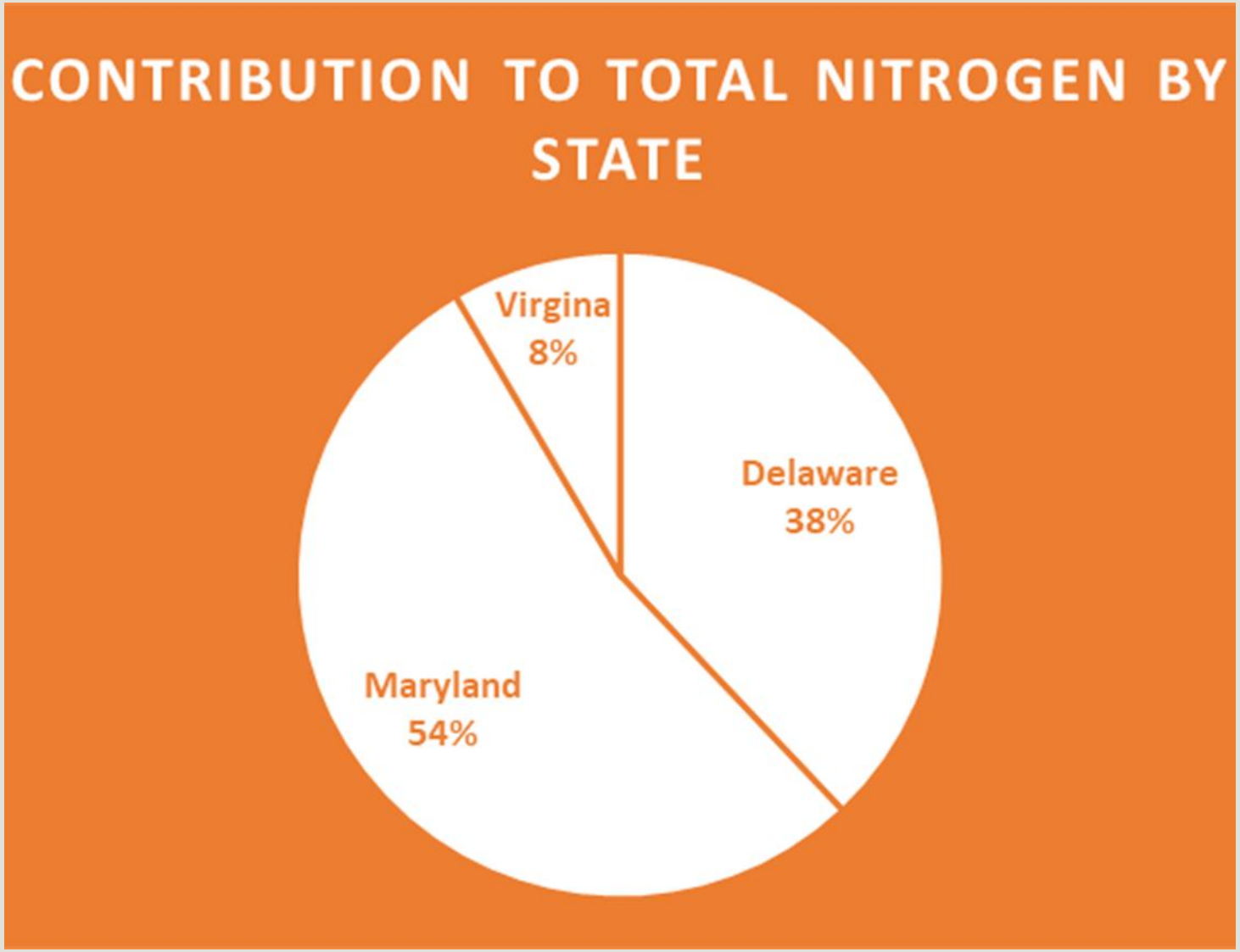




Deeper dive: Looking at parameter by jurisdiction

By Parameter - TDS

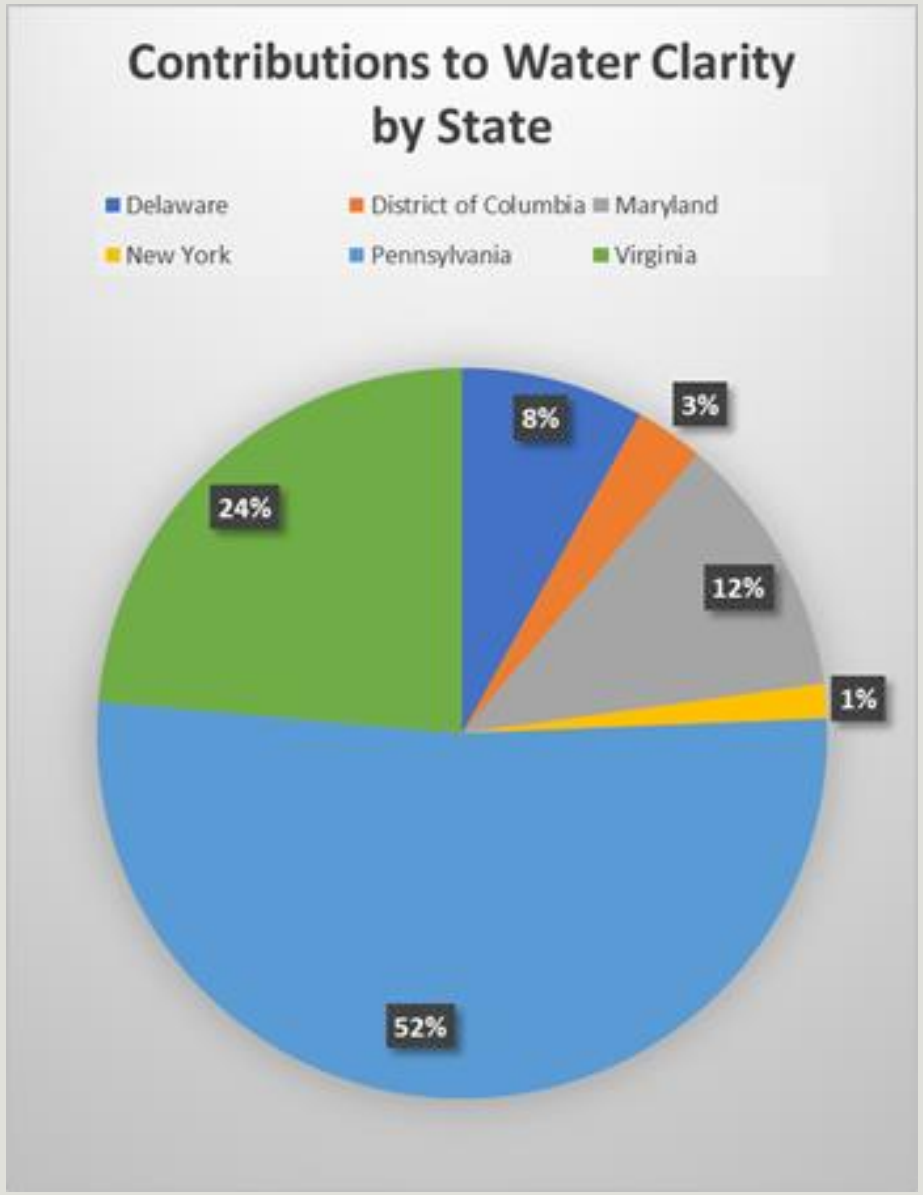
- 100% Tier 1
- 3933 Available Data Points



Deeper dive: Looking at parameter by jurisdiction

By Parameter- Total Nitrogen

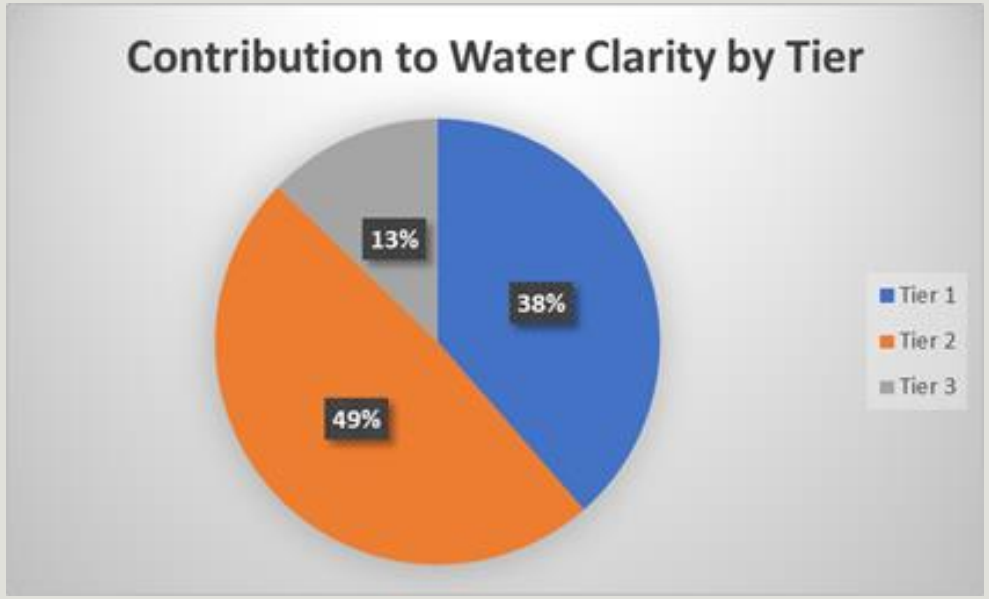
- 100% Tier 2
- 1299 total data points



Deeper dive: Looking at parameter by jurisdiction

By Parameter - Water Clarity

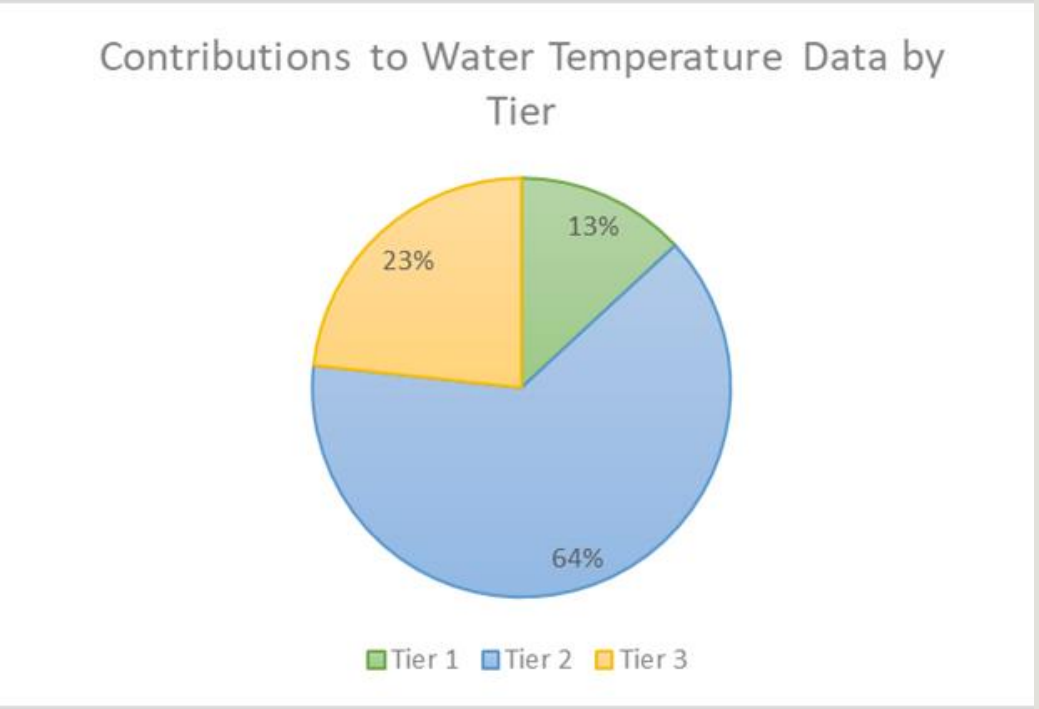
- All Tier 3 Data in Delaware or Maryland (Caroline, Wicomico, Dorchester Counties)
- Total data= 7005

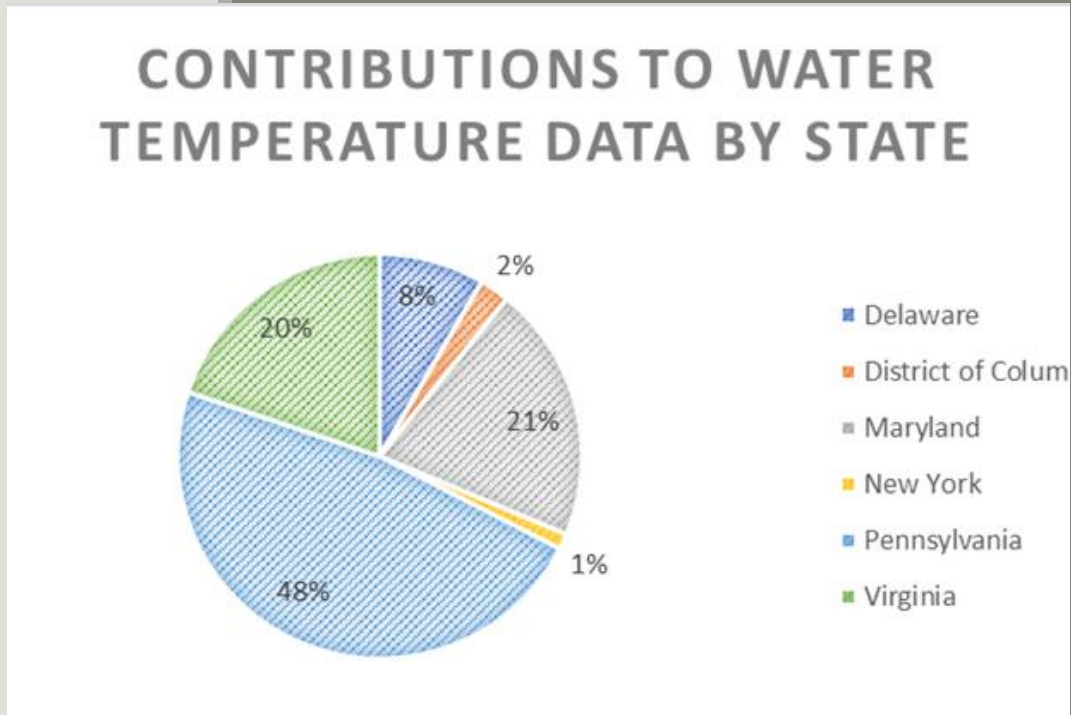


Deeper dive: Looking at parameter by jurisdiction

By Parameter: Water Temperature

- All Tier 3 data is from Delaware and Maryland (Anne Arundel, Baltimore, Caroline, Dorchester, Cecil, Charles, Kent, Queen Anne, Somerset, St. Mary's, Talbot, Wicomico Counties)
- 8872 Total Data Points

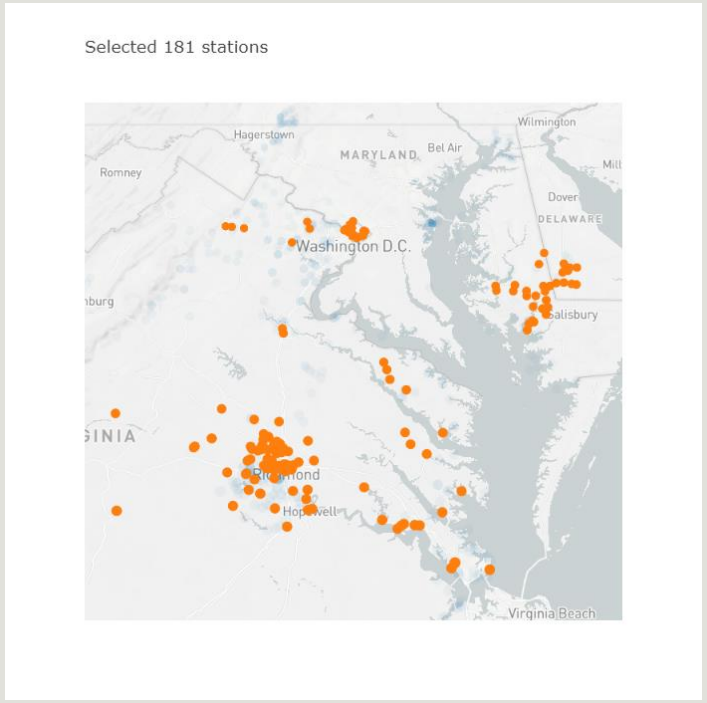


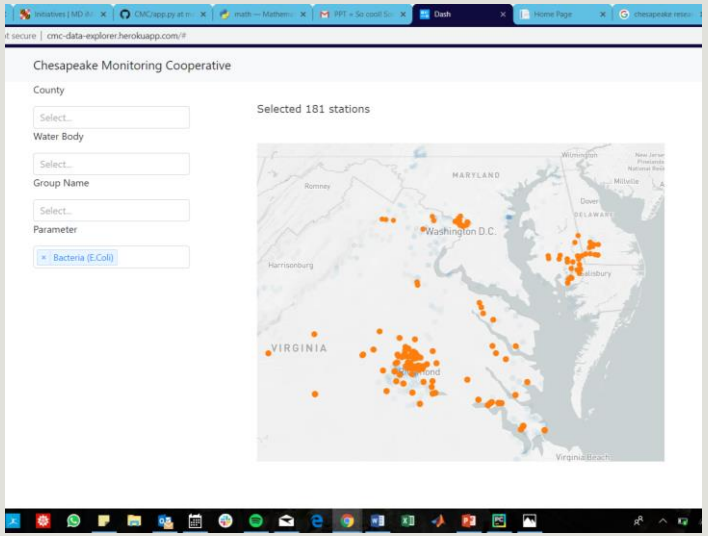


Deeper dive: Looking at parameter by jurisdiction

Other parameters that are collected, but have less than 1,000 data points

- Alkalinity, Ammonia-Nitrogen, Enterococcus, Nitrate-Nitrite, TKN
- These are also charted out in regard to where these parameters are being collected, but is not displayed within this presentation





Next Steps Data- Explorer

Next Steps Data-Explorer

The data explorer allows for a deeper dive into water quality data by parameter

The data explorer also propagates plots with the available data for that parameter

- Currently all plots for all parameters are always shown

Next Steps

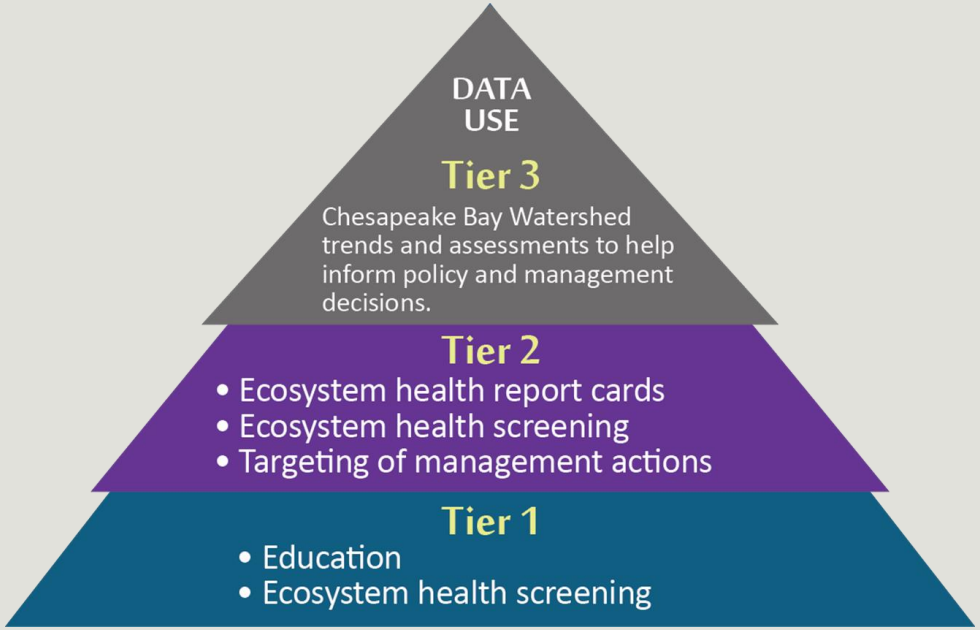
There is a lot of incredibly useful data in this database!!!

There are data represented across all 3-tiers in the database

A wide majority of the information today is Tier 2 or Tier 3 data

Current next steps

- Doing more to interpret current Nontidal Benthic Macroinvertebrate data
- Assisting in updates to the data explorer
- Mapping extremes of water temperature data as an example showing how the data can be used



CMC 3-tier framework of data characterization