



Maryland
Department of
the Environment

Combined 2020-2022 Integrated Report of Surface Water Quality

(combined 303(d) List, 305(b) Report and 314 List)

Wednesday, January 5, 2022

5:00 pm

Virtual Meeting



Purpose of This Meeting

- Provide General Information/Updates on the Combined 2020-2022 IR
- Encourage public dialogue, request comments
- Answer questions and address concerns related to the Combined 2020-2022 IR
- Increase water quality awareness and increase the utilization of the IR for water quality planning

Note: 42-day public comment period ends on January 17, 2022!



Background – What is the Integrated Report (IR)?

- Biennial Report- Due April 1st of even years
- Documentation of the water quality status of surface waters in Maryland
 - Provides list of water bodies that are impaired and identifies the pollutant (i.e., the 303d list, Section 314)
 - Also provides lists of those water bodies that are not impaired (i.e. 305b Report)
 - Integrated in 2002
- Documentation of the decision-making process by which water bodies are assessed and listed.



Background – Why compile the Integrated Report?

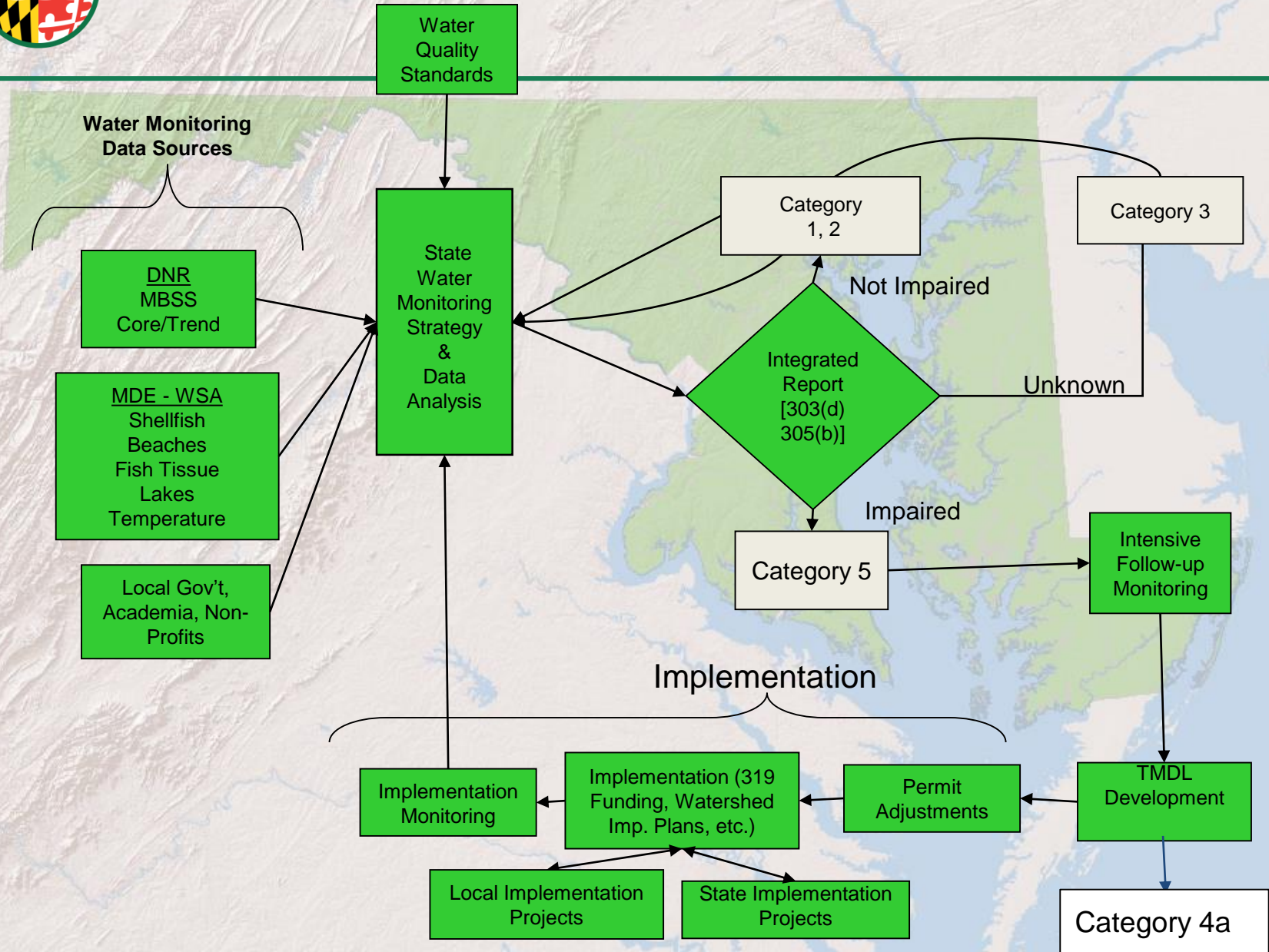
- Required by Clean Water Act (Sections 303(d), 314, and 305(b))
- Report the results of statewide water quality monitoring
- Identify and Prioritize waters needing:
 - TMDLs,
 - restoration, and
 - protection



(MDE, 2016)



CWA Background – An Adaptive Management Process





What's in the Report

- A. Text describing how data is evaluated for quality and water quality standards support
- B. Water pollution programs in the state
- C. Summary water quality information for MD
- D. Listings/records describing waterbody-pollutant combinations
 - Examples: a) Loch Raven Reservoir – Hg in Fish Tissue- Category 5 (impaired)
 - b) Aaron's Run – pH- Category 2 (meeting standards)
- E. Special Assessments
 - Conococheague Creek- High pH Assessment
 - Piscataway Creek Elevated PFOS Listings

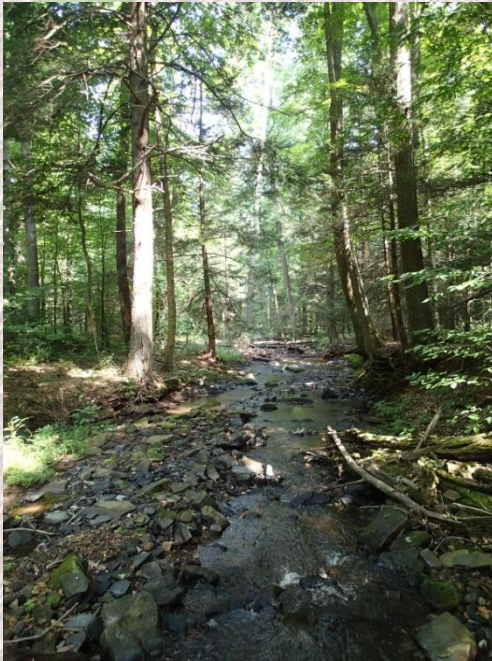


Categories of the Integrated Report

- **Categories 1 and 2** - waters attaining all standards or some standards
- **Category 3** - waters with insufficient information to assess water quality standards. *These areas deserve follow-up assessment.*
- **Category 4** - impaired waters that do **NOT** need a TMDL.
 - 4a – TMDL completed
 - 4b – Technological solution should bring water body back into attainment (eg. Oil Spill, Industrial Point Source Discharge, etc)
 - 4c – Impairment not caused by a pollutant (eg. Dam, habitat modification, etc)
- **Category 5** - impaired waters that may require a TMDL (*Historically known as the 303(d) List*).
 - 5s – Waterbody impairment is caused by chloride from road salt



What happens when a Water Body is Listed as Impaired (Category 5)?



- Collect additional data
- Develop TMDL or delist (no impairment)
- Once TMDL is established...
 - Implement regulatory requirements (NPDES permits)
 - Implement non-regulatory actions (e.g. BMPs in the Ag sector)
 - Project Partnerships – leverage funding



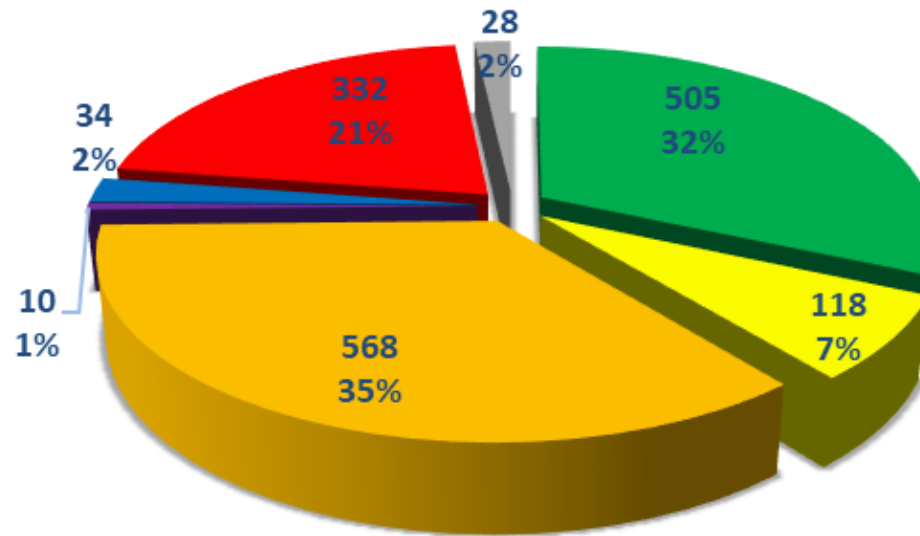
Goals of this Effort

- Use the IR to communicate the status of MD's water quality to the public and EPA
- Highlight success stories as well as challenges
- To bring impaired waters back into attainment of water quality standards (Categories 1 and 2)
 - Doesn't always require a TMDL (Categories 4B, 4C and now alternatives)
- Protect those water bodies already meeting water quality standards



2020-2022 Listings by Categories

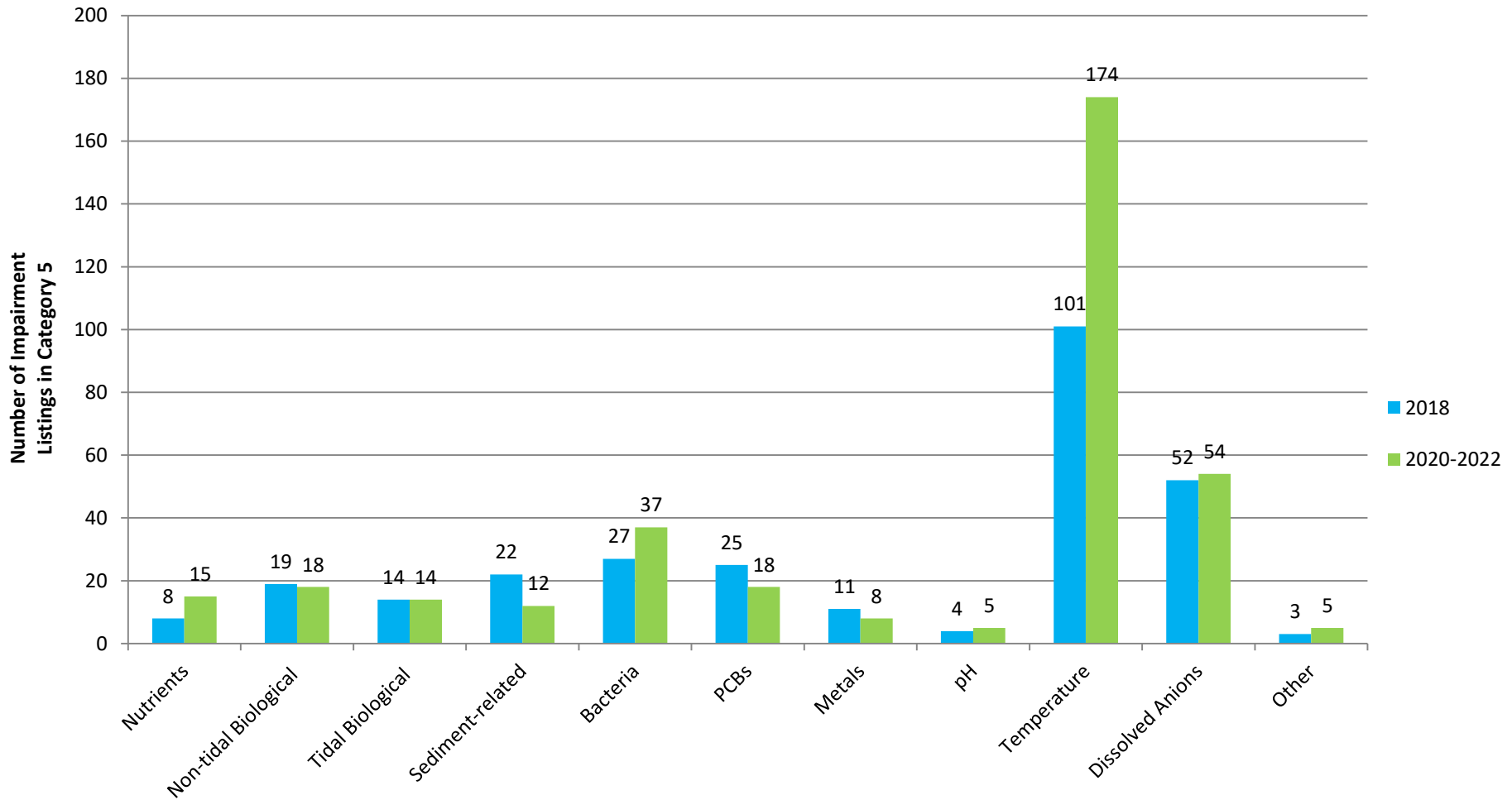
2020-2022 Combined Integrated Report: Percentage of Listings from each Category



- Category 2 - Meets some WQ standards
- Category 3 - Insufficient information
- Category 4a - Impaired, TMDL completed
- Category 4b - Impaired, Tech. fix expected to bring about attainment
- Category 4c - Impaired, Pollution not caused by pollutant (e.g. channelization)
- Category 5 - Impaired, May need TMDL
- Category 5s - Impairment caused by chloride from road salt



2020-2022 IR Summary Information



Pollutant Types in the 2018 and 2020-2022 IR



Summary of Listing Changes for 2020-2022

- 101 additions to Category 5 (impaired waters)
- 10 delistings (Category 5 to 2 or 3)
- 16 approved TMDLs

IR Year/Status	Category 5 Listings
2018 Total Category 5 Listings	284
2020-2022 New Category 5 Listings	101
2020-2022 New Delistings (Category 5 to Category 2 or 3)	-10
Approved TMDLs (since the 2018 IR)	-16
2020-2022 Grand Total Category 5 Listings	359



New Category 5 Listings

2020-2022 Additions to Category 5

Type of Impairment Listing	Number of Listings Added to Category 5
Biological Stressor Identification - 2 sulfates	2
Chlorophyll-a- Public Water Supply Designated Use	3
Fecal coliform- Shellfish Harvesting Areas	16
High pH - replaced the delisting and now covers the 8-digit watershed	1
Perfluorooctane Sulfonate (PFOS) In Fish Tissue	2
Phosphorus- Aquatic Life and Wildlife Designated Use	3
Temperature (in Class III or III-P coldwater streams)	74
Total New Category 5 Impairments	101



Delistings

2020-2022 Delistings

Type of Impairment Listing	Number of Listings Removed from Category 5
Generic Biological Listings removed – specific pollutant now specified (by BSID analysis)	1
Hg - fish tissue concentrations now meeting fishing designated use	3
High pH listing removed (this listing was replaced by a new category 5 listing covering the 8-digit watershed)	1
PCBs - fish tissue concentrations now meeting fishing designated use	4
Temperature- erroneous impairment listing removed for a use class I stream	1
2020-2022 Total Number of Delistings	10



TMDLs

2020-2022 Approved TMDLs (Since 2018 IR)

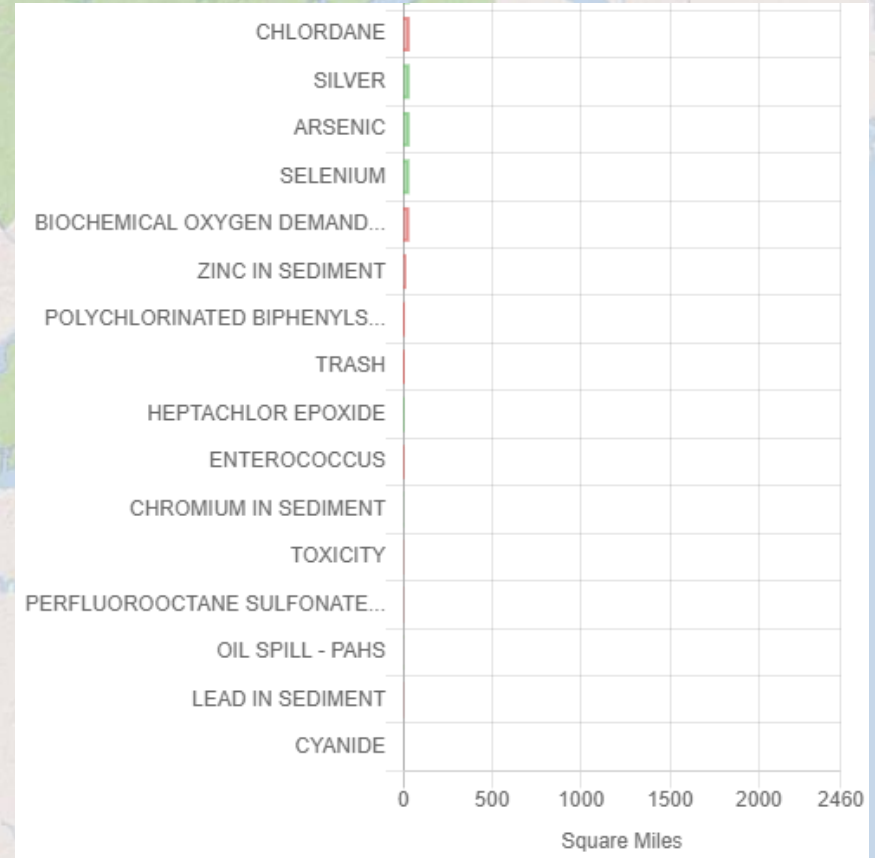
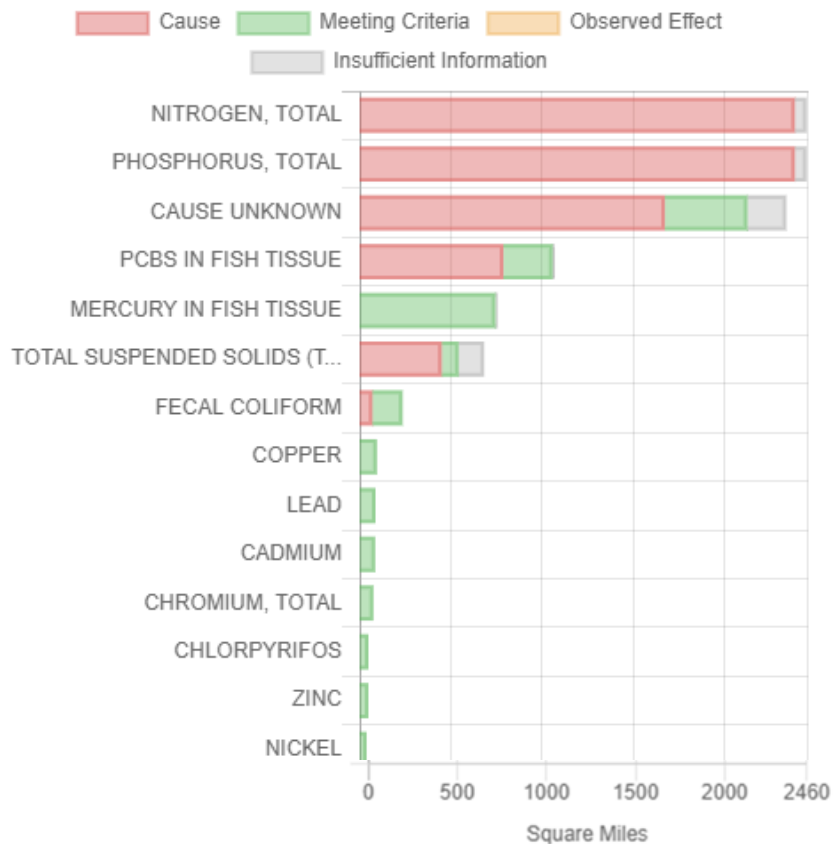
Type of Impairment Listing	Number of TMDLs Approved
Fecal Coliform- Shellfish Harvesting Area	5
PCBs in Fish Tissue	3
Total Suspended Solids (TSS)	8
Total TMDLs Approved (Since 2018 IR)	16



2020-2022 IR Summary Stats

Waters sizes in each category

Estuarine Waters- Square Miles

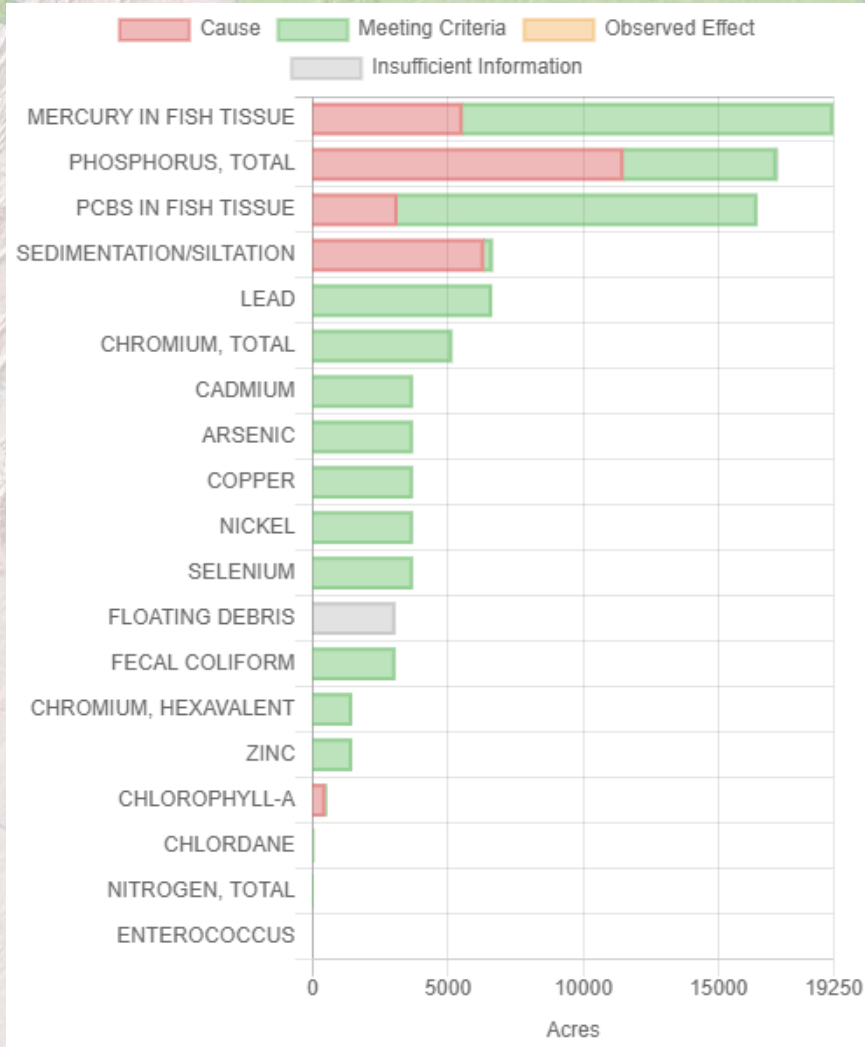




2020-2022 IR Summary Stats

Waters sizes in each category

Impoundments- Acres

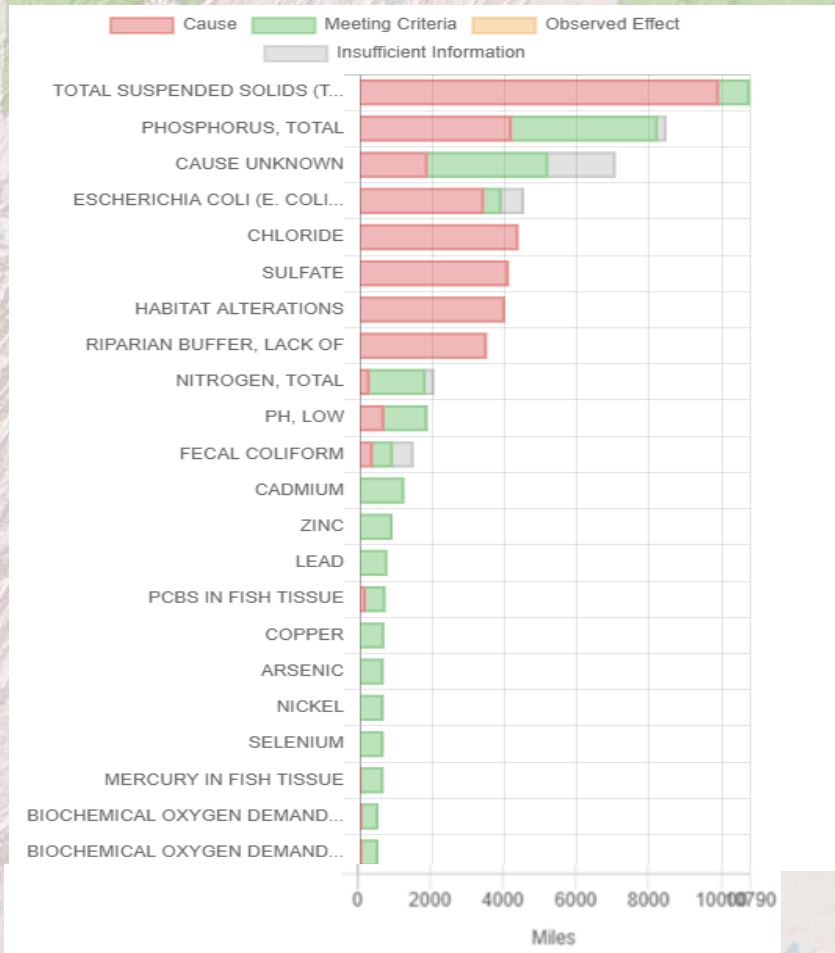




2020-2022 IR Summary Stats

Waters sizes in each category

Rivers- Miles



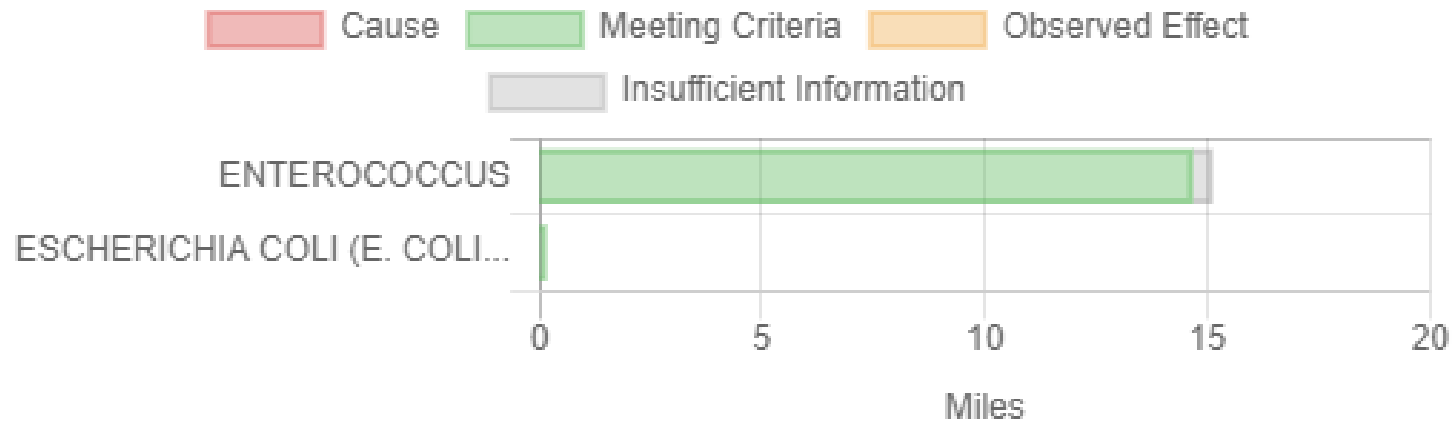


2020-2022 IR Summary Stats

Waters sizes in each category

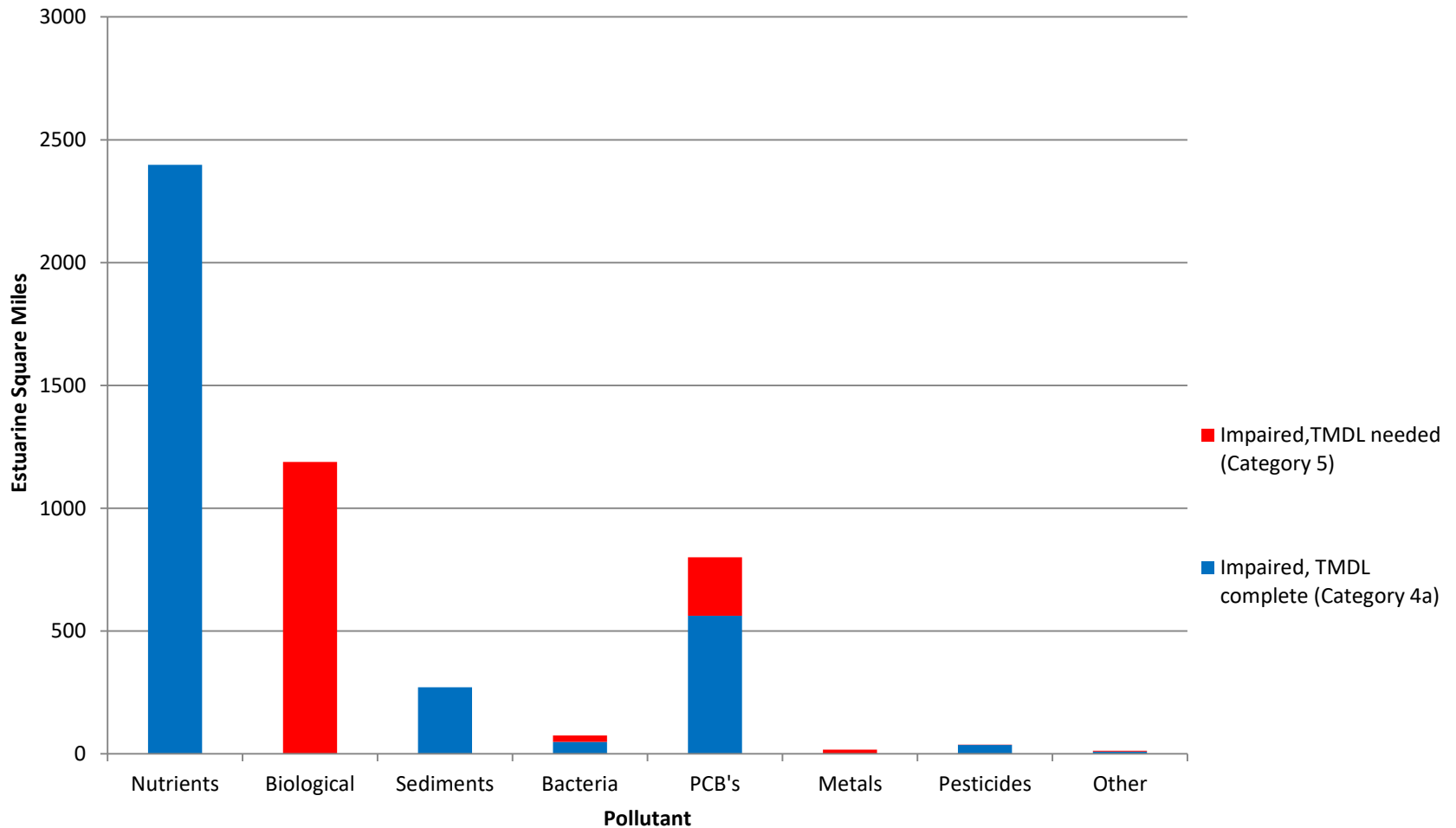
Beaches- Number of Beaches

Parameters - BEACH (Miles)





Size of Waters Impaired and with TMDLs by Pollutants





What's New with the Combined 2020-2022 IR?

Combined IR

- 2020-2022 is the first combined report for MD.
- Decision made in in consultation and with the support of EPA Region 3- consistent with EPA's Integrated Reporting guidance.
- Incorporates all assessments from 2020 and 2022.



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Maryland's Draft Combined 2020-2022 Integrated Report of Surface Water Quality

Submitted in Accordance with Sections 303(d), 305(b), and 314 of the Clean Water Act

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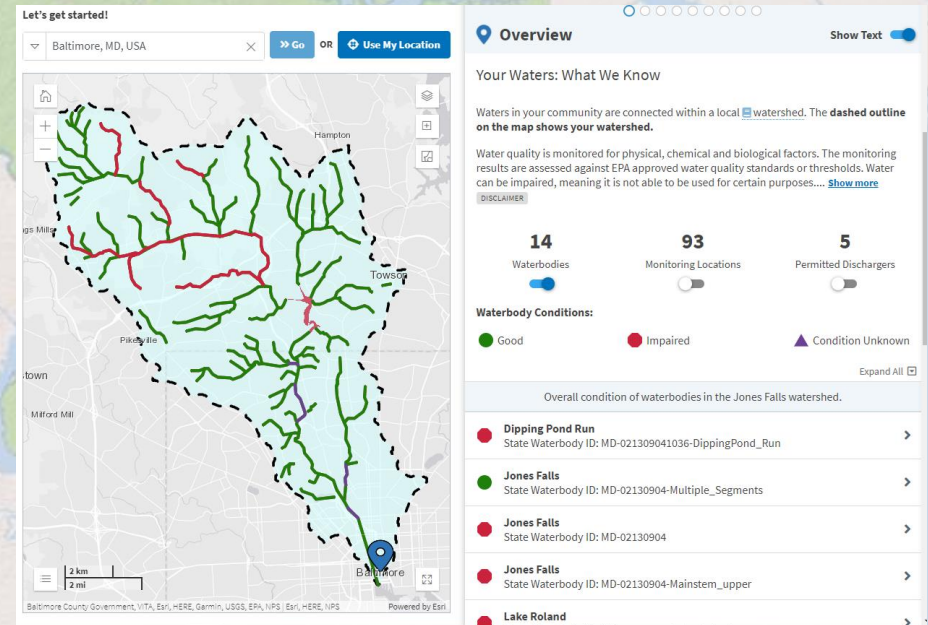
Larry Hogan, Governor | Royce K. Rothefeld, Lt. Governor | Ben Grubbins, Secretary | Dilara Tabada, Deputy Secretary
Submittal Date:
EPA Approval Date:



What's New continued...

ATTAINS

- EPA's Assessment, Total maximum daily load Tracking and Implementation System (ATTAINS)
- Utilized the reporting function to produce all assessment results and summary calculations in the report.
- Loading data into ATTAINS also allows EPA to display it on their [How's My Waterway Webpage](#)



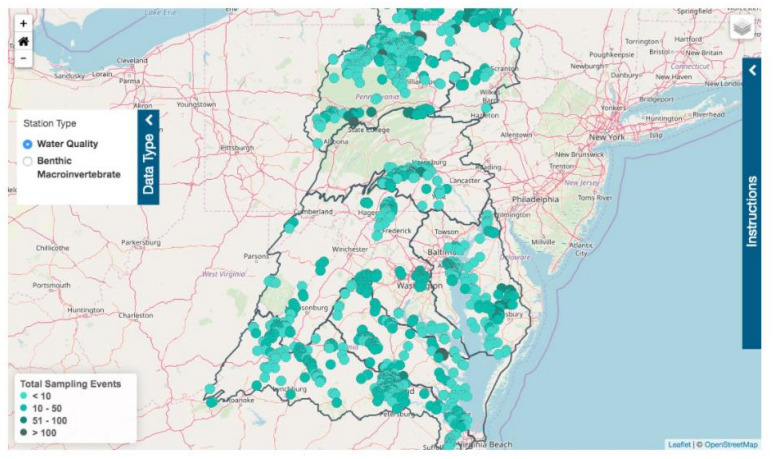


What's New continued...



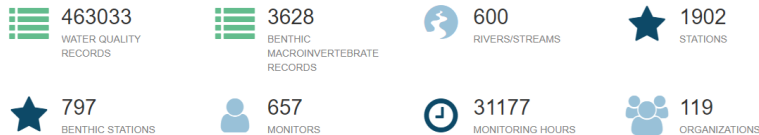
Citizen Data and Partnership with the CMC

- Continued to incorporate non-governmental organization (NGO) and citizen data for assessing water quality.
- Developed partnership with the Chesapeake Monitoring Cooperative (CMC) and obtained citizen data directly from their Chesapeake Data Explorer for this cycle.



Database Statistics

The summary statistics below provide an overview of the current scope of the Data Explorer.



[CMC's Webpage](#)



What's New continued...

MD's First PFOS Advisories and Listings

- PFOS (perfluorooctane sulfonate) - more widely studied PFAS chemicals.
- MDE developed a fish consumption advisory threshold (2020) and issued first fish consumption advisories for 3 species in Piscataway Creek (2021).
- MD's first ever Category 5 listings for PFOS in fish tissue for the tidal and non-tidal waters of Piscataway Creek.

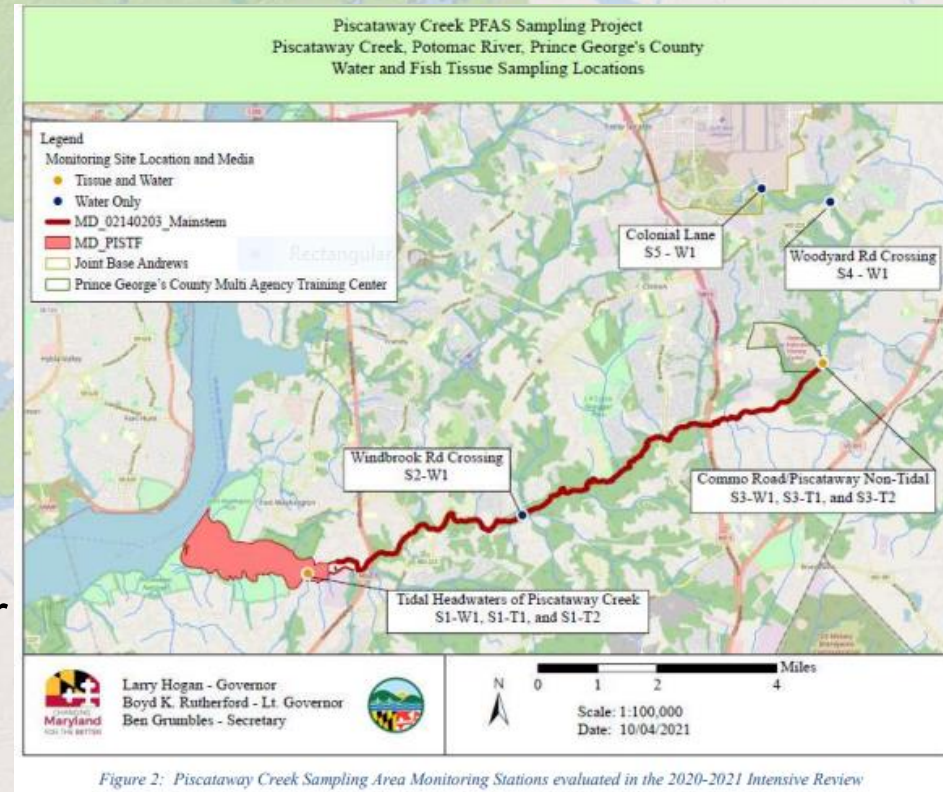


Figure 2: Piscataway Creek Sampling Area Monitoring Stations evaluated in the 2020-2021 Intensive Review

[MDE's PFAS Webpage](#)



What's New continued...

Conococheague pH Study

- MDE coordinated with EPA on a water quality monitoring investigation in the Conococheague Creek watershed for high pH impairments
 - High pH was due to natural geology (Karst) or nutrients?
- High pH due to a combination of the Karst geography, high nutrient input, and a dam at a specific station that caused nutrients and water to remain trapped.
- MDE listed the entire Conococheague Creek watershed in Category 5 for high pH.

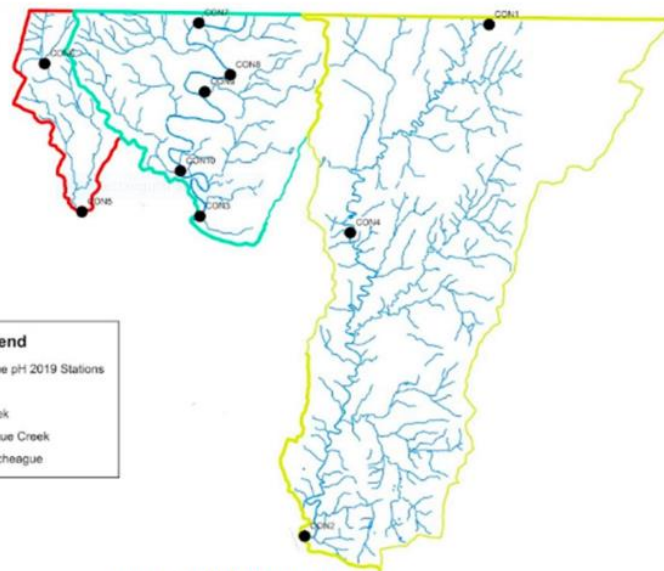


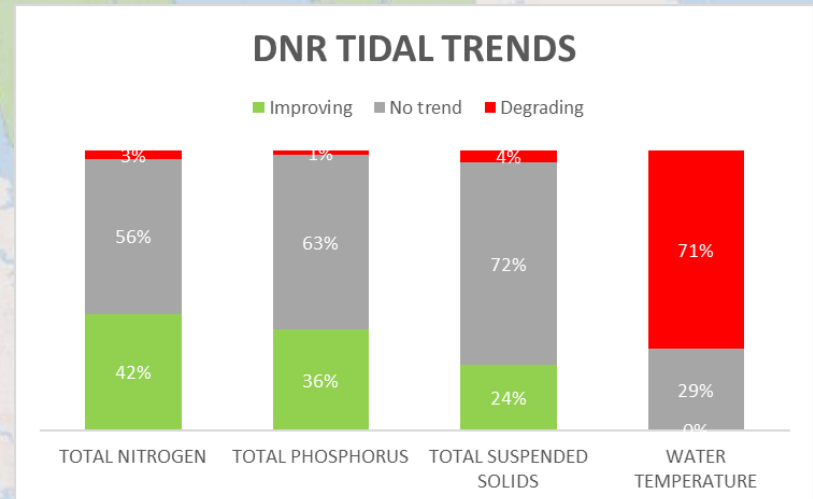
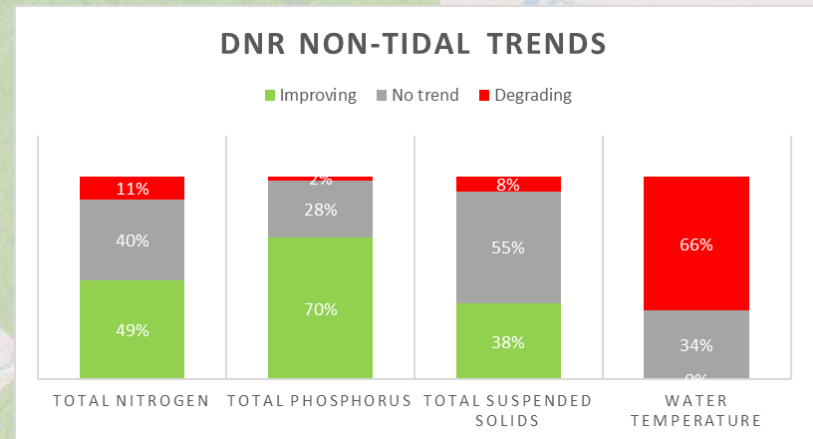
Figure 2: 2019-2020 Monitoring stations



What's New continued...

Temperature Trends

- Long term temperature trends are degrading in both tidal and nontidal waters in Maryland.
- New temperature impairments 2020-2022- 74 temperature impairments across 9 different watersheds.
- Total temperature impairments for MD- 174 impairments across 30 different watersheds.
- Threatens coldwater obligate species and provides strong justification for moving forward with temperature TMDLs.

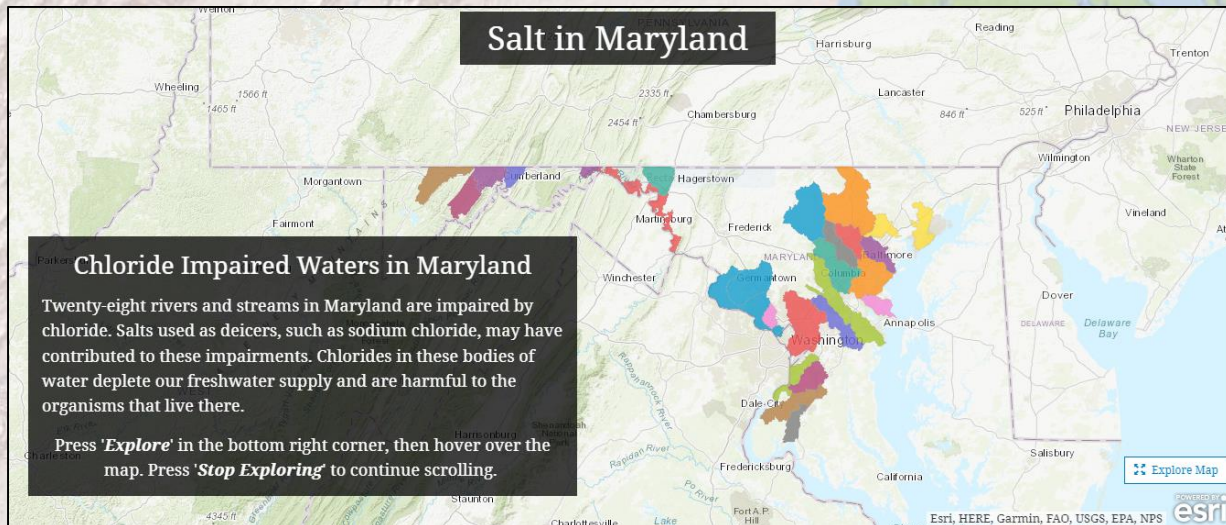




What's New continued...

Chloride Trends

- Increasing trend of chloride in non-tidal streams due to road deicers.
- 28 watersheds impaired for chloride.
- New for 2020-2022, MDE created a Subcategory 5s (Waterbody impairment is caused by chloride from road salt) to specifically acknowledge the ongoing pollution contribution from road salt.
- Addressing chloride impairments (5s) using 'straight-to-implementation' approaches.



[MDE Chloride Webpage and Salt Story Map](#)



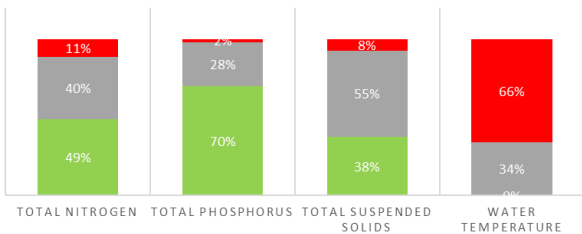
Water Quality Successes

Nutrient Reductions

- Trend analyses show that historical Chesapeake Bay restoration spending has been successful!
- Significant reductions in nitrogen, phosphorus and sediment in tidal and non-tidal waters.
- Nutrient trends are improving and that the restoration efforts had measurable positive impacts on water quality.

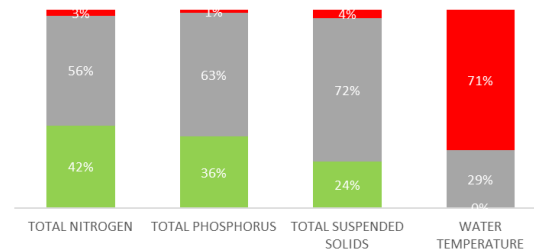
DNR NON-TIDAL TRENDS

■ Improving ■ No trend ■ Degrading



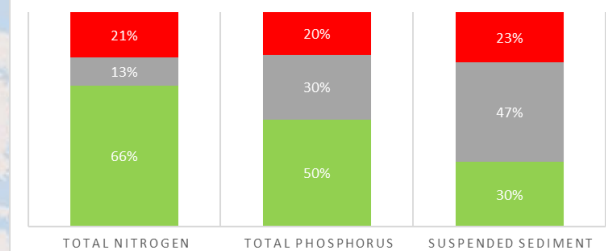
DNR TIDAL TRENDS

■ Improving ■ No trend ■ Degrading



USGS NON-TIDAL TREND

■ Improving ■ No Trend ■ Degrading





Water Quality Successes continued...

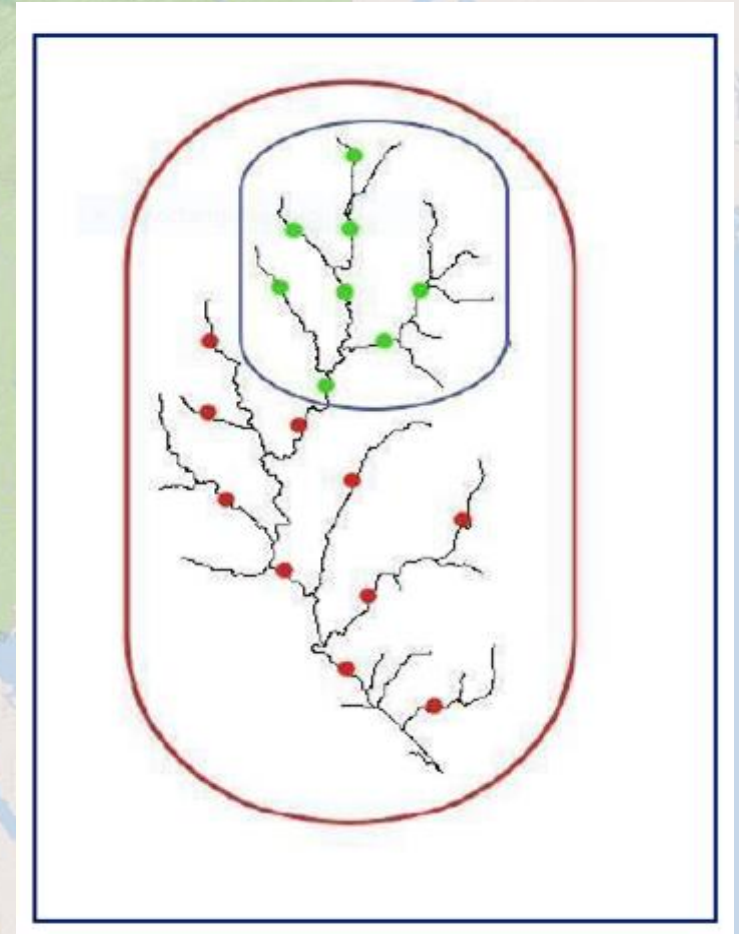
Delisting Methodology

- MDE Developed [The Delisting Methodology](#) for Biological Assessments in Maryland!
 - Refine the spatial scale of impairments, demonstrate progress and identify areas that are attaining biocriteria.

Other Assessment Methodology Updates

- Bacteria
- Fish Tissue
- Temperature

*May comment during the public comment period for IR





Integrated Report Resources Available Online



- [Full Length 2020-2022 Integrated Report](#)
 - Also includes an IR Fact Sheet and the complete 2020-2022 IR Access Database available for download (Excel)
- [Assessment Methodologies](#)
- [Water Quality Mapping Center](#)
 - Features maps for water quality, use class information, shellfish harvesting areas, and high quality waters (Tier II)
 - *ArcGIS files available for download*
- [Searchable Integrated Report Database and Clickable Map](#)

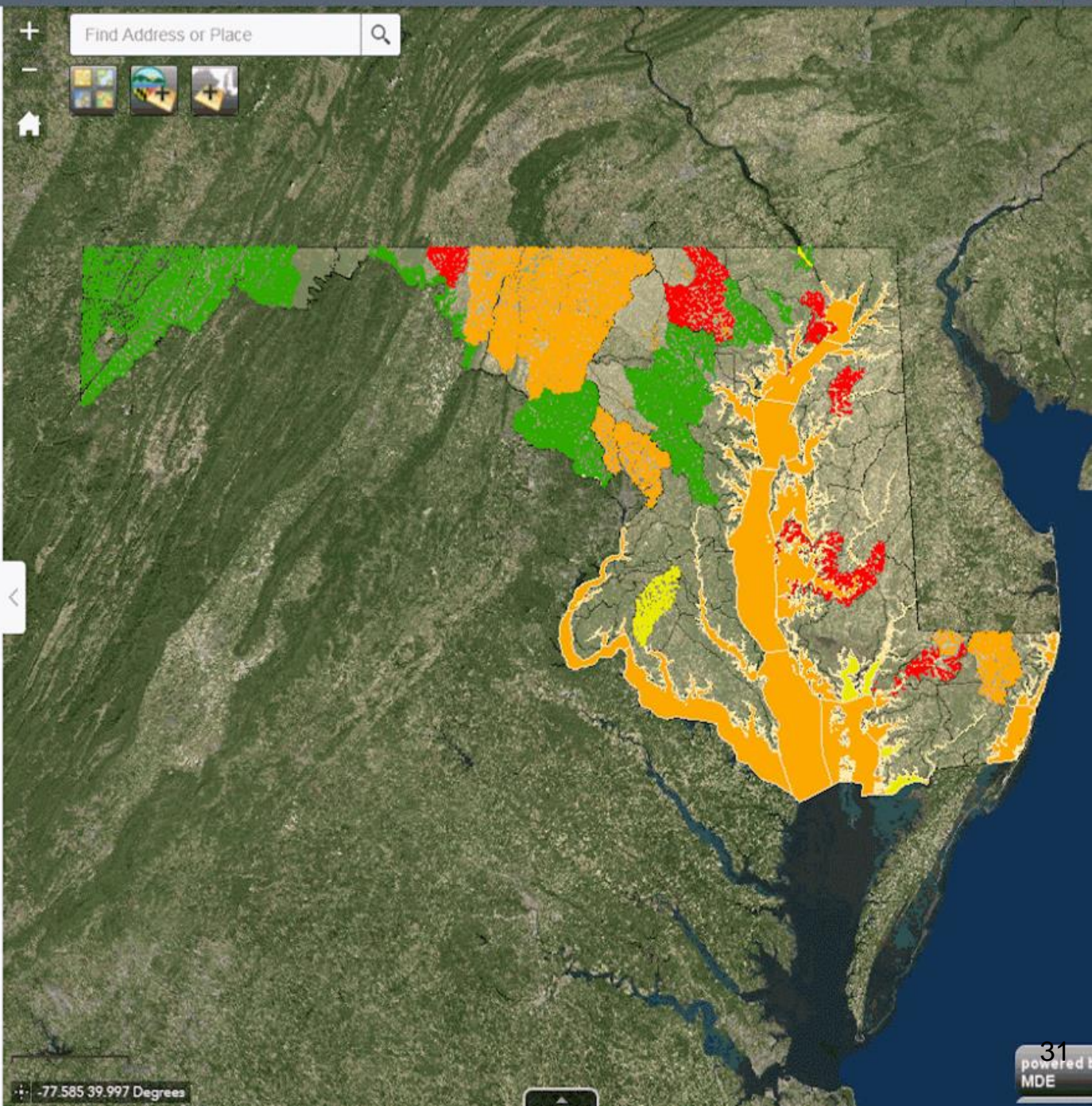


Use Check Box to turn on/off Layers; Use Arrows in Layers to expand/compact Layers

- Bacteria ...
- Biological ...
- Debris Floatables & Trash ...
- Ions ...
- Metals ...
- Nutrients ...
- BOD ...
- Nitrogen ...
- Phosphorus ...
- PCBs ...
- Pesticides ...
- pH ...
- Sediments ...
- Stream Modification ...
- Temperature ...
- Toxics ...
- County Boundaries ...

Find Address or Place



-77.585 39.997 Degrees



How to Get Involved!

- For the 2020-2022 IR
 - **[Submit comments by January 17, 2022](#)**
- Contact us about submitting data for the 2024 IR
 - Winter of 2022!
 - **[MDE's Data Solicitation Webpage](#)**
- Work with the **[Chesapeake Monitoring Cooperative](#)** (CMC)



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