



Department of the Environment

2014 Integrated Report of Surface Water Quality

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

Monday, September 8th, 2014

6:00 pm

Montgomery Park, Lobby Conference Rooms



Purpose of This Meeting

- Provide General Information/Updates on 2014 IR
- Encourage public dialogue, request comments
- Answer questions and address concerns related to the 2014 IR
- Increase water quality awareness and increase the utilization of the IR for water quality planning

Note: 45-day public comment period ends on September 24th, 2014!





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

5



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: Loch Raven Reservoir – Total Phosphorus
Aaron's Run – pH

- E. Historical Info regarding the Chesapeake Bay Listings

6





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
 - 4c – Impairment not caused by a pollutant (eg. Dam, habitat modification, etc)
- **Category 5** - impaired waters that require a TMDL (*Historically known as the 303(d) List*).

7



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)
 - Project Partnerships – leverage funding



8





Goals of this Effort

- To bring impaired waters back into compliance with water quality standards (Categories 1 and 2)
- Doesn't always require a TMDL (Categories 4B and 4C)
- Protect those water bodies already in compliance

9



What's New with the 2014 IR?



- New assessment methodology for Stream temperature in Use Class III and III-P waters
- Revised assessment methodologies for:
 - *Bacteria*
 - *Non-tidal Biological Assessments including Biological Data Quality Guidelines*
 - *Toxics*
- Incorporation of more non-state data than ever before (e.g. South River Federation, Baltimore and Frederick Counties, etc)

10





What's New continued...

- Delisting of several 4B toxics listings in the Patapsco River
- First ever delisting based solely on state-lead restoration project – Aaron Run – pH
- Detailed history of Chesapeake Bay and watershed listings

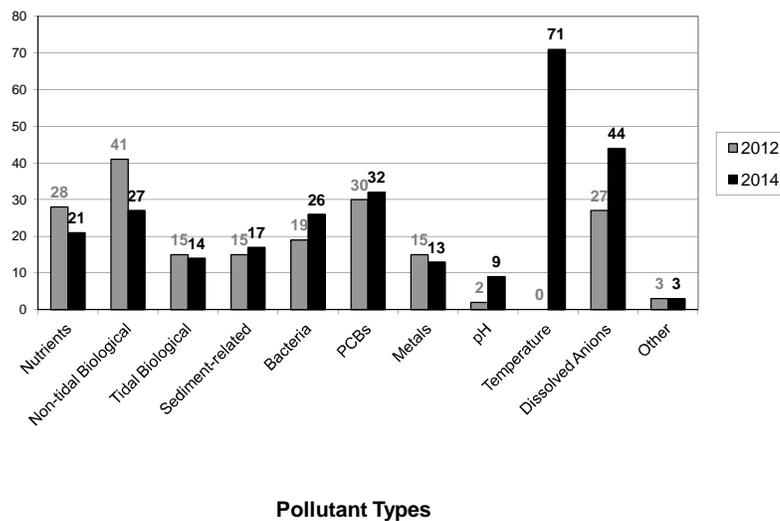
11



2014 IR Summary Info

Reporting Cycle Comparison

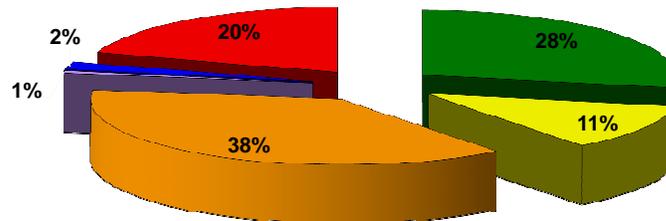
Number of Impairment Listings (Category 5)





2014 Listings by Categories

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



New Delistings - no longer impaired

Type of Impairment Listing	Number of Listings Removed from Category 5
Generic Biological Listings – specific pollutant now specified (BSID process)	21
Total Phosphorus – Meeting standards	4
Manganese - Drinking water standards met in finished water	4
Sediments – Meeting standards – <i>LNB Potomac & Conowingo Dam (streams only)</i>	2
Chromium – Meeting standards – <i>PATMH - Bear Creek and NW Branch</i>	2
Biological Listing - now meeting aquatic life designated use – <i>CHOMH1</i>	1
Hg - Fish Tissue Concentrations now meeting fishing designated use – <i>Liberty Reservoir</i>	1
Copper - Meeting standards – <i>Bodkin Creek</i>	1
Heptachlor epoxide - Meeting standards – <i>NW Branch Anacostia</i>	1
Sediments – Moved to Category 3 – lack of impairment data, potential use change – <i>Atkisson Reservoir</i>	1
Total Phosphorus – Removed the IR completely – impoundment properly classified as a stormwater pond – <i>Edgewater Village Lake</i>	1
2014 Total Number of Delistings	39



New Impairment Listings (Category 5)

Type of Impairment Listing	Number of additions to Category 5
Stream (segments) Temperature Listings	71
Biological Stressor Identification Listings - 10 chlorides, 8 TSS, 7 sulfates, 6 TP, 4 pH	35
Fish Tissue Assessments for PCBs	8
Shellfish Harvesting Areas – Fecal coliform	7
Biological Evaluations	7
Fish Tissue Assessments for Mercury	6
High pH in streams	3
Heptachlor epoxide	1
Total New Category 5 Impairments	138

15



2014 IR Summary Stats

Waters impaired by each pollutant (by size)

Cause	Category on the Integrated List						
	Cat. 1	Cat. 2	Cat. 3	Cat. 4a	Cat. 4b	Cat. 4c	Cat. 5
Aluminum		121.53	15.32				10.89
Fecal coliform		291.14	78.50	439.40			8.83
Heptachlor Epoxide							171.19
Iron			121.53				26.21
Mercury in Fish Tissue		1,588.05	441.25				
Nickel		424.59					
Nitrogen (Total)		1,272.23	146.30				
PCB in Fish Tissue		855.78	534.86				1,133.29
pH, Low		435.07	6.14	795.73	5.10		14.35
Phosphorus (Total)		1,741.04	146.30	465.47			2,507.46
Total Suspended Solids (TSS)		258.22		2,266.43			2,072.57

- Geographical area impaired by various pollutants
- Geographical area not supporting certain designated uses

16





Trend Information

Long Term USGS measurements indicate:

Out of ~30 sites sampled in the Chesapeake Bay Watershed from 1985-2012

- ~70% had improving/decreasing TN & TP concentrations (~10% had degrading and ~15% had no significant trend)
- ~28% had improving while another 28% had degrading sediment concentrations (45% had no significant trend)
- Short term analyses (10 yr, 2003-2012) show fewer significant trends but still indicate improving nutrient concentrations but generally degrading sediment concentrations

17

Source: <http://cbrim.er.usgs.gov/trendandyieldhighlights.html>



Trend Information continued...

Maryland – Trends from reported implementation efforts:

- Maryland has achieved 41% of its nitrogen and 62% of its phosphorus reduction goals per the Phase II WIP
- From 1985 to 2013, wastewater sector reported a 63% reduction, the agricultural sector reported a 39% reduction, and the urban sector reported a 17% increase in nitrogen loadings.
- From 1985 to 2013, the wastewater sector reported a 74% reduction, the agricultural sector reported a 25% reduction and the urban sector reported a 12% reduction in phosphorus loadings.
- From 1985 to 2013, there has been a 69% (1.2 million lbs) increase in nitrogen loads coming from septic systems.

18





Integrated Report Resources Available Online

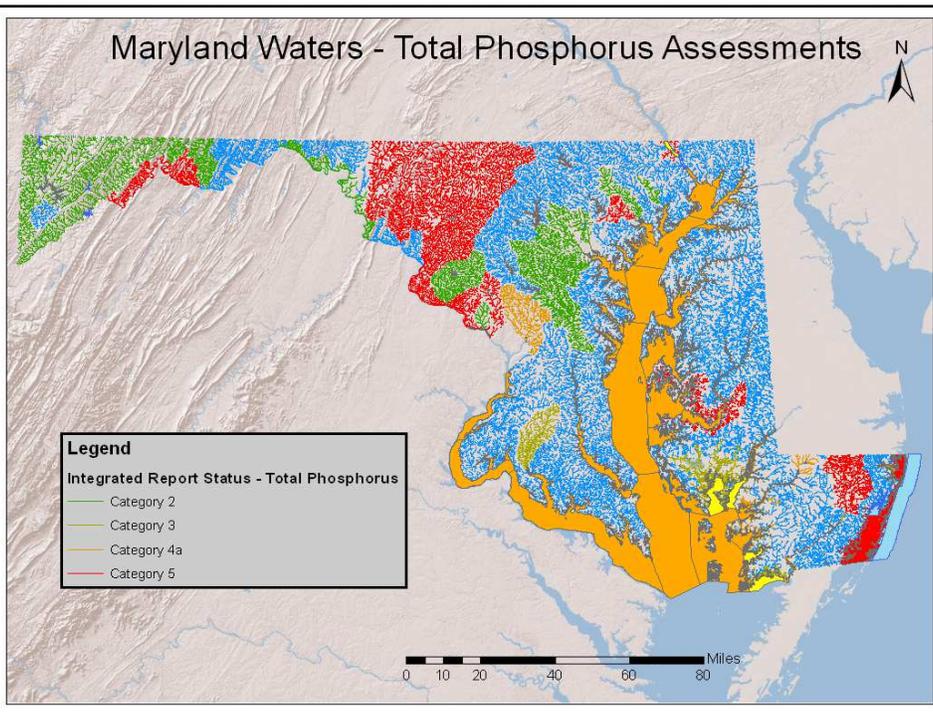
- [Full Length 2014 Integrated Report](#)
- [Assessment Methodologies](#)
- [Water Quality Mapping Center](#)
 - Features maps for water quality, use class info, shellfish harvesting areas, and high quality waters (Tier II)
 - *ArcGIS files available for download*
- [Searchable Integrated Report Database and Clickable Map](#)



19 For electronic copies of the IR database (MS Access) please email me at matthew.stover@maryland.gov



Maryland Waters - Total Phosphorus Assessments





Contact Info for the IR

Matthew Stover
Science Services Administration
Maryland Department of the
Environment 410-537-3611
matthew.stover@maryland.gov

1800 Washington Boulevard | Baltimore, MD 21230-1718
410-537-3000 | TTY Users: 1-800-735-2258
www.mde.state.md.us



Other Resources

- [Watershed Finder](#)
- [Use Class Map](#) (Not yet updated)
- [Tier II High Quality Waters Information](#)
- [TMDL Data Center](#)
- [Chesapeake Bay TMDL and WIP Information](#)





IR Resource: Searchable Database and clickable Map

Tips for Using the Searchable Database

1. Use the basin code to search a certain area to have a more inclusive search
2. Using the basin name can take you to the wrong type of listings (tidal vs. non-tidal) if you're not familiar with the new names
3. When viewing listings be sure to check "AU_ID" field and the "Water Type" fields to see if listing applies to a refined location (eg. Stream segment, reservoir, etc)
4. Read all the notes to see if a TMDL was completed for a portion of the waterbody
5. You can click on the category field to access the TMDL or WQA page for that particular listing

23



Rules of Thumb for Using these Resources

- Geographic specificity – The better spatial information you have, the easier it will be to find the information you're looking for
- Attention to detail – Have to read all of the information associated with a listing to ensure you know the spatial extent as well as if any TMDLs have been completed

24

