

# Results of the 2016 Delaware River and Bay Water Quality Assessment

## Water Quality Advisory Committee

July 28, 2016

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Presented to an advisory committee of the DRBC on July 28, 2016.  
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# DRBC's Assessment Responsibilities



- \* Perform assessment for all mainstem segments (Zones 1A through Zone 6) every even numbered year;
- \* Clean Water Act Section 305b;
- \* Coordinated with states in support of their listing decisions under 303d;
- \* Coordinated with EPA as a deliverable under 106 Grant;
- \* **Compare observations to water quality standards.**

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# Uses to be Protected by Zone

	Non-Tidal					Tidal				
	1A	1B	1C	1D	1E	2	3	4	5	6
Aquatic Life	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Drinking Water	✓	✓	✓	✓	✓	✓	✓			
Primary Recreation	✓	✓	✓	✓	✓	✓		✓	✓	✓
Secondary Recreation							✓	✓		
Fish Consumption	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Shellfish Consumption										✓

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# Select Highlights: Dissolved Oxygen

Zone	% Meeting Daily Mean	% Meeting Seasonal	% Meeting Instant. Min
1A	100%	100% (trout spawning minimum)	100%
1B	100%	N/A	99.8%
1C	100% (presumed)	N/A	100%
1D	100% (presumed)	N/A	100%
1E	100%	N/A	100%
2	99.0%	100%	N/A
3	100%	100%	N/A
4	100%	100%	N/A
5	98.5%	100%	N/A
6	90.8% (presumed)	N/A	97.9%

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Zone	% Observations Meeting Daily Mean Criteria	% Meeting Seasonal Criteria	% Meeting Instantaneous Minimum Criteria	Primary Data Source(s)	Notes
1C	100% (presumed)	N/A	100%	<ul style="list-style-type: none"> <li>SRMP Monitoring</li> <li>USGS NJ</li> </ul>	Daytime spot measurements only for assessment. Continuous monitor data is available beginning October 2014. Given that this duration covers only a small portion of the assessment window, we did not rely on this data. We did review the available continuous monitor data and it supports that the zone is fully meeting criteria.
1D	100% (presumed)	N/A	100%	<ul style="list-style-type: none"> <li>SRMP / Lower Delaware Monitoring</li> <li>USGS (PA &amp; NJ)</li> <li>PADEP</li> </ul>	Daytime spot measurements only
1E	100%	N/A	100%	<ul style="list-style-type: none"> <li>USGS 01463500 Delaware River at Trenton NJ</li> <li>USGS 01458500 Delaware River at Frenchtown NJ</li> </ul>	Frenchtown data began in September 2014

# Report Detail

- \* Report versions of tables include much more detail;
  - \* Source of data;
  - \* Data period of record;
  - \* Edits for data quality and other notes.

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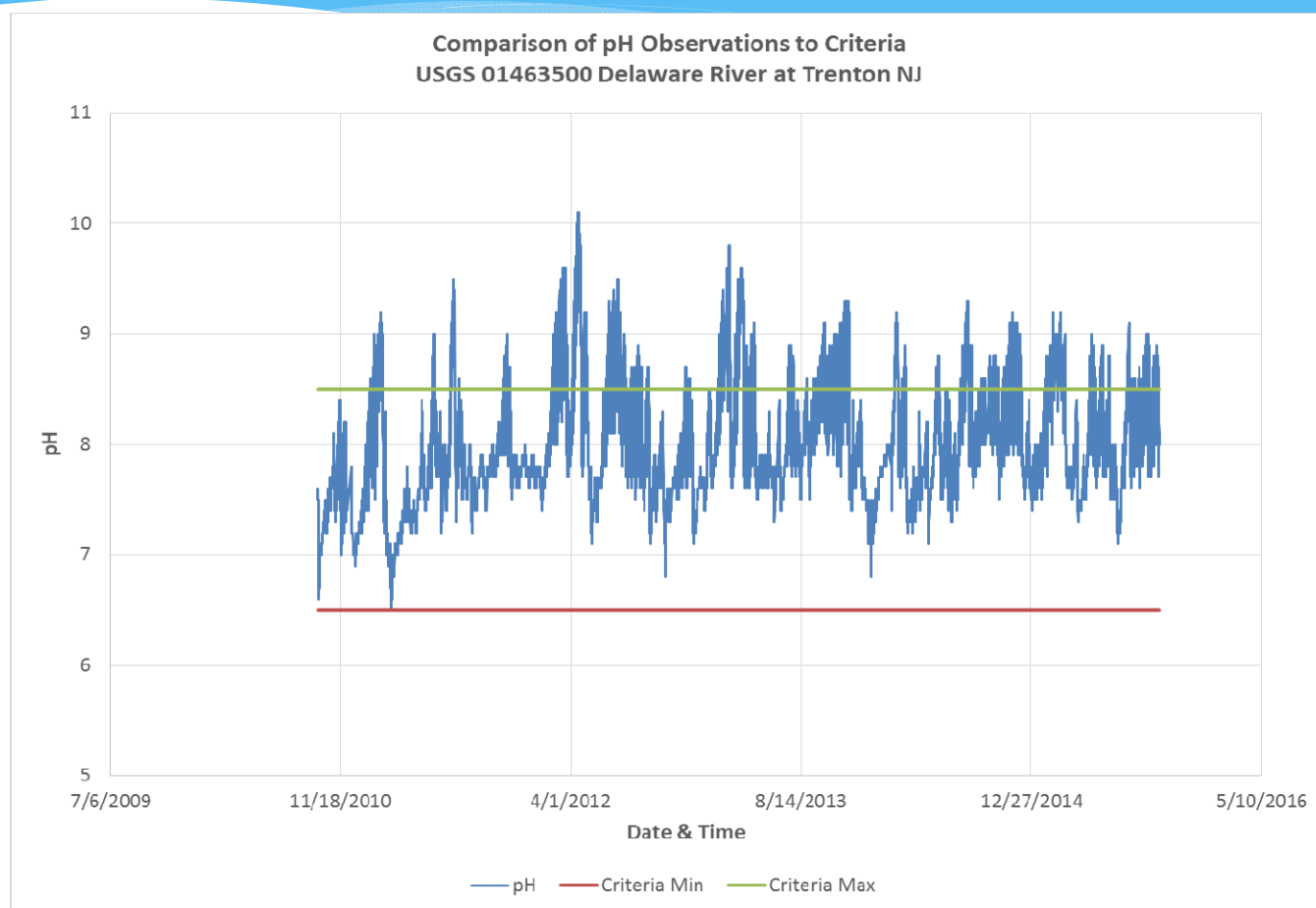
# Select Highlights: pH

Zone	% Meeting Criteria
1A	71%
1B	62%
1C	95%
1D	96%
1E	69%
2	99%
3	100%
4	100%
5	100%
6	98%

- \* Criteria: Between 6.5 and 8.5 inclusive, unless outside this range due to natural conditions.
- \* Assistance from WQAC to define natural conditions?

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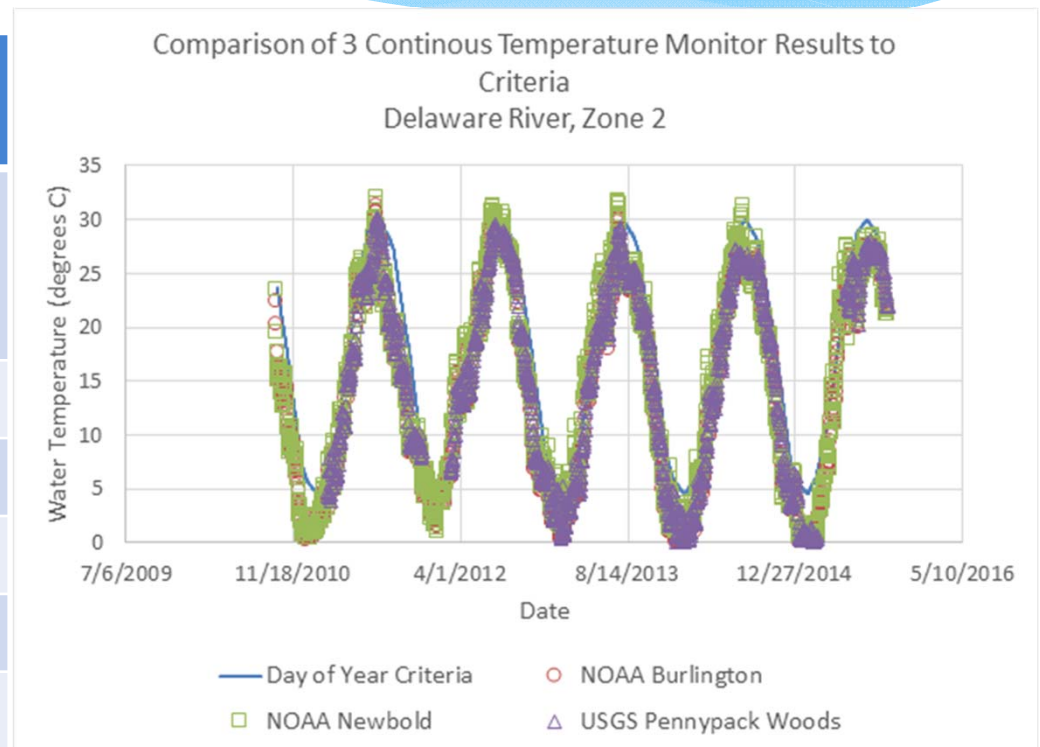
# pH Compared to Criteria USGS Delaware River at Trenton



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# Select Highlights: Temperature

Zone	% Meeting Criteria
1A through 1E	No applicable criteria – other agenda item
2	87%
3	96%
4	93%
5	99%
6	99%



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# Primary & Secondary Contact Recreation

Zone	Fecal Coliform		Enterococcus	
	Primary	Secondary	Primary	Secondary
1A	Insufficient data	Insufficient data	NA	NA
1B	Supporting	Supporting		
1C	Supporting	Supporting		
1D	Supporting	Supporting		
1E	Supporting	Supporting		
2	Supporting	Supporting	Supporting	Supporting
3	NA	Supporting	NA	Supporting
4 (> RM 81.8)		Supporting		Supporting
4 (< RM 81.8)	Insufficient data	Insufficient data	Insufficient data	Insufficient data
5	Supporting	Supporting	Supporting	Supporting
6	Supporting	Supporting	Supporting	Supporting

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# Select Highlights: Biological Assessment

Zone	Years of Data	Stations per Assessment Unit	% of samples in time window with 6-metric IBI < 75.6
1A	2 years (2010 & 2012)	4	0%
1B		3	17%
1C		4	13%
1D		5	20%
1E		7	40%

For this assessment 0% is good and higher percentages are bad



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# Toxics

DRBC has adopted **numeric toxics criteria in Zones 2 through 6**. In addition, DRBC has a **narrative standard** applicable to waters of the Basin requiring that: “the waters shall be substantially **free from** ... substances in **concentrations or combinations** which are **toxic or harmful** to human, animal, plant, or aquatic life”

In 2016 WQA, the **most stringent** of basin state standards was used in Zone 1.

# Future Toxics Action



- \* Develop uniform aquatic life criteria for Zone 1
- \* Collection of high quality copper data
  - \* site specific dissolved organic carbon (DOC) if Biotic Ligand Model (BLM) is used in any assessment
- \* Review analytical and assessment methodologies for polycyclic aromatic hydrocarbons (PAHs)
- \* Further characterization of persistent and bioaccumulative perfluorinated compounds (PFAS)
- \* Additional monitoring and assessment of pesticides
- \* Aluminum criteria and concentrations in Zone 4 warrant further attention

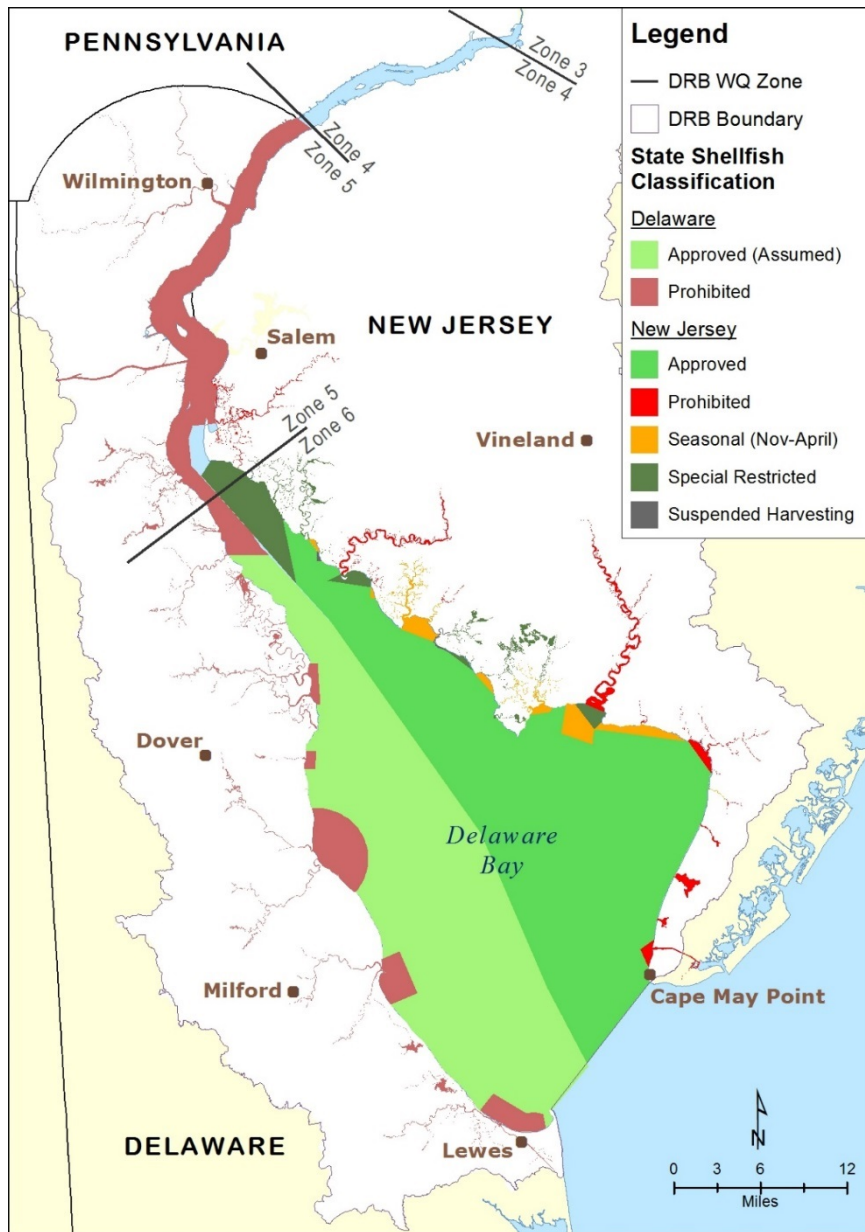
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Initially presented to the Toxics Advisory Committee (TAC) on June 23, 2016;  
[http://www.nj.gov/drbc/library/documents/TAC/06232016/macgillivray\\_WQA.pdf](http://www.nj.gov/drbc/library/documents/TAC/06232016/macgillivray_WQA.pdf)

# Fish Consumption Advisories

- \* Report includes a summary table of current fish consumption advisories by state;
- \* *The waters of the Basin shall not contain substances ... sufficient to preclude the specified water uses to be protected;*
- \* *If a consumption advisory is present, presume we are not supporting the above statement;*
- \* Advisories present for every Zone

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# Shellfish

- \* States lead on shellfish harvesting;
- \* Summarize the status of shellfish waters;
- \* DRBC protected use in Zone 6;
- \* Consider adding use for Zone 5?

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# Grab Bag of other results

- \* Turbidity – mostly meeting criteria (> 96% all Zones)
- \* TDS - mostly meeting where applicable (> 99% all Zones)
- \* Hardness – all meeting where applicable
- \* Chlorides – all meeting where applicable (Zones 2 & 3)

# Status and Next Steps

- \* Draft Submitted to EPA, states, April 1, 2016;
- \* EPA Comments to DRBC on July 15, 2016 – DRBC preparing comment response;
- \* Expect final on DRBC web site in August 2016.

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# Other Assessments...

- \* **Lower Delaware EWQ Assessment;**
  - \* Presented today;
  - \* Compare new data to existing water quality at lower Delaware BCPs (tributaries) and ICPs (mainstem);
  - \* Completed, publication on DRBC web site early August;
- \* **TREB Updates;**
  - \* Specific indicators including those *without* criteria;
  - \* Basin wide;
  - \* Time trends, period of record;
  - \* Draft by December 2016;
- \* **Water Quality Dashboard**
  - \* <http://drbc.net/Sky/waterq.htm>

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# Results of the 2016 Delaware River and Bay Water Quality Assessment

- \* Questions?
- \* Discussion



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