Delaware River and Bay Water Quality Assessment 2024

Draft Report

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April 23, 2024

Water Quality Advisory Committee

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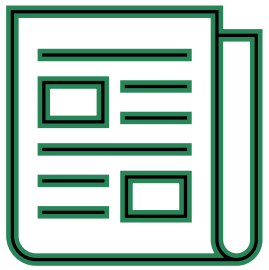
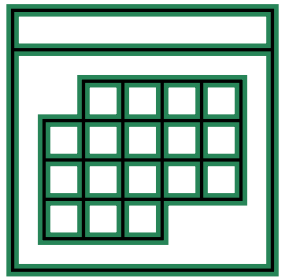
This content is draft, preliminary and for discussion at the April 23, 2024, WQAC Meeting. Content may not be published or re-posted in whole or in-part without the DRBC's permission.



Background

DRAFT Assessment Results



Status & Next Steps

Clean Water Act basis for Water Quality Assessment

- Water Quality Assessment (CWA 305b) States and Interstates
- Listing (CWA 303d) States (not interstates)
- Our watershed states consider DRBC's Water Quality Assessment in their listing decisions

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Delaware River and Bay Water Quality Assessment

- Published every even numbered year
- Compares observations to DRBC criteria
- Five-year data window (ending September 30, 2023)
- Where multiple data types are present, preferentially use data type that is best aligned with criteria
- Readily available data
  - Generated by DRBC
  - Sent to us in response to Methodology
  - Delaware River data in National Water Quality Data Portal or NWIS

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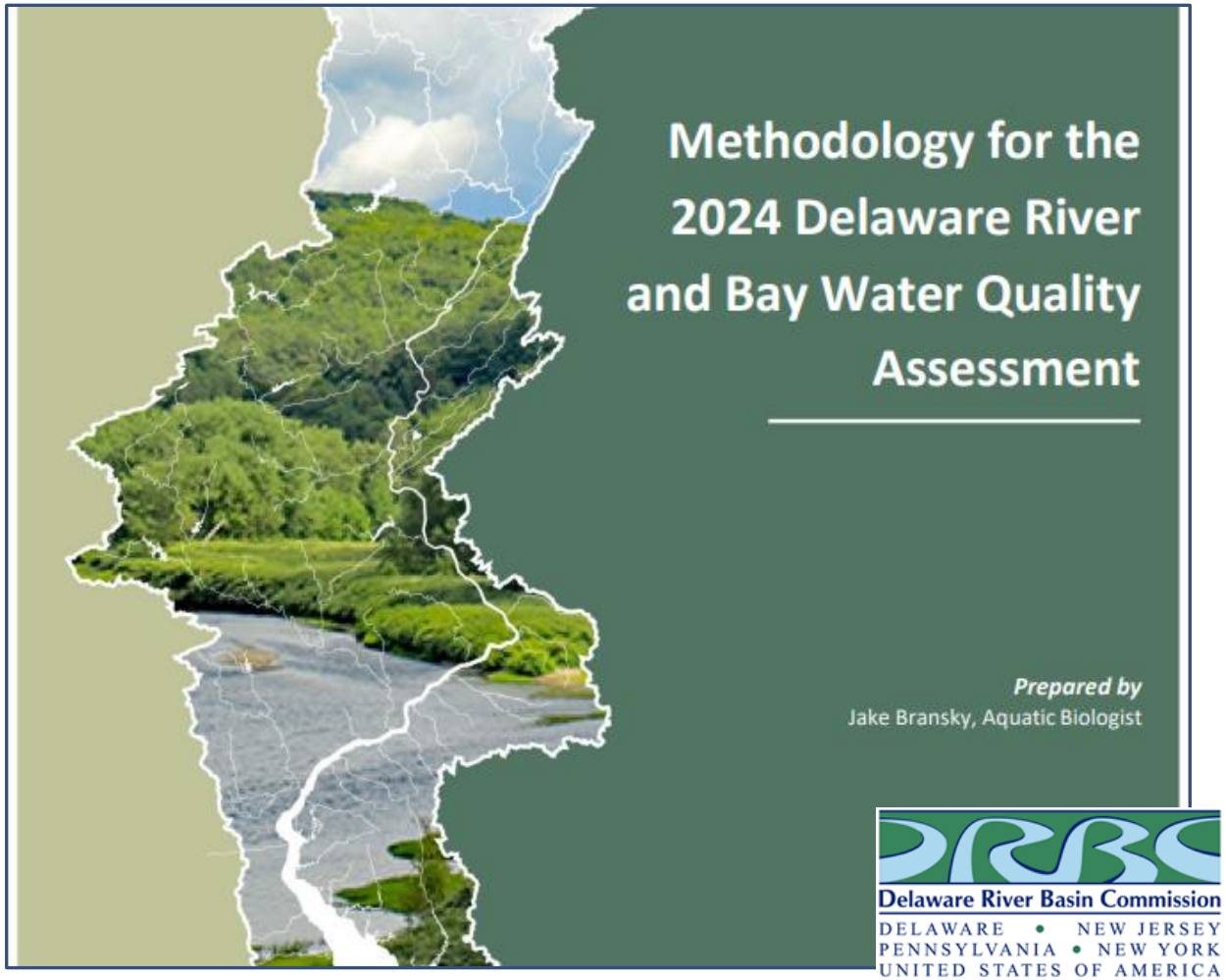
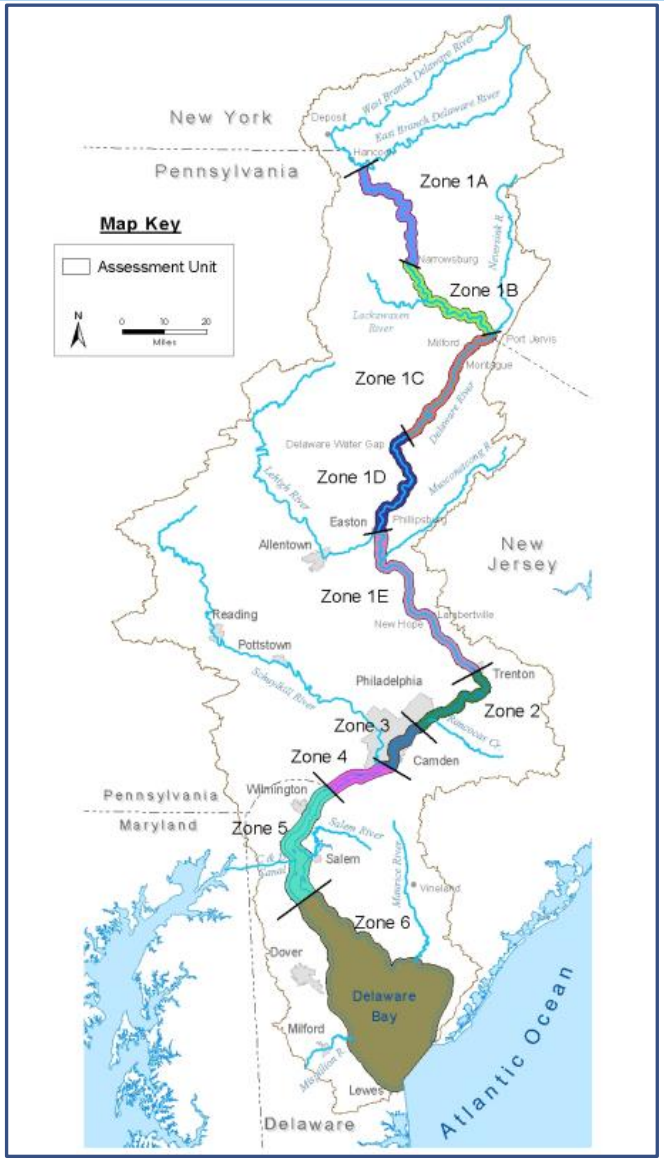
Publication of Proposed Methodology

- Draft Methodology published on DRBC website October 2023
- Federal Register notice
- Published on DRBC website at https://www.nj.gov/drbc/library/documents/WQAssessmentReport2024MethodologyFINAL040324.pdf



Water Quality Management Zones



WQM zone	Location (River Mile)
1A	330.7 – 289.9
1B	289.9 – 254.75
1C	254.75 – 217.0
1D	217.0 – 183.66
1E	183.66 – 133.4
2	133.4 – 108.4
3	108.4 – 95.0
4	95.0 – 78.8
5	78.8 – 48.2
6	48.2 – 0.0

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Uses to be Protected and Zones

Designated Use	DRBC WQM Zone or AU									
	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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Mapping Uses to Analytical Parameters

Aquatic Life
DO
pH
Temperature
Turbidity
TDS
Alkalinity
Toxic Pollutants
Biological Monitoring

Drinking Water
TDS
Hardness
Chlorides
Odor
Phenols
Sodium (Na)
Turbidity
Systemic Toxicants
Carcinogens
Drinking Water Closures

Recreation
Fecal coliform
Enterococcus

Fish Consumption
Fish Consumption Advisories

Shellfish Consumption
Shellfish Consumption Classifications

Use
Parameter 1
Parameter 2

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Aquatic Life: Dissolved Oxygen

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Zone	% Meeting Daily Mean	% Meeting Seasonal	% Meeting Instantaneous Minimum	Source	Notes
1a	99.9%	100%	100%	USGS 01427207 & 01427510	
1b	100% (presumed)	NA	100%	DRBC, PADEP	Day spot measurements
1c	100%	NA	100%	USGS 01438500	
1d	100% (presumed)	NA	100%	DRBC, PADEP	Day spot measurements
1e	100%	NA	100%	USGS 01458500 & 01463500	
2	99.9%	100%	NA	USGS 014670261	
3	100%	100%	NA	USGS 01467200	
4	100%	100%	NA	USGS 01477050	
5	92.2%	100%	NA	USGS 01482800	
6	95.1% (presumed)	NA	100%	DNREC, DRBC, NJDEP	Day spot measurements

Aquatic Life: pH

Zone	% Observations Meeting Criteria	Source	Notes
1a	94.6%	USGS 01427207 & 01427510	Most violations were higher than the pH maximum (8.5). Few violations observed below the pH minimum (6.5).
1b	88.1%	DRBC,PADEP,USGS_NYWSC	Daytime spot measurements only
1c	93.3%	USGS 01438500	All violations were higher than the pH maximum (8.5). No violations observed below the pH minimum (6.5).
1d	98.1%	DRBC, PADEP, USGS_PAWSC	Daytime spot measurements only
1e	94.3%	USGS 01458500 & 01463500	All violations were higher than the pH maximum (8.5). No violations observed below the pH minimum (6.5).
2	100%	USGS 014670261	
3	100%	USGS 01467200	
4	100%	USGS 01477050	
5	100%	USGS 01482800	
6	98.0%	DNREC,DRBC,NJDEP,USGS_NJWSC	Daytime spot measurements only

Aquatic Life: Turbidity

Zone	% Observations Meeting Max Criteria	% Meeting 30-day Average Criteria	Source	Notes
1a	Insufficient data	NA		
1b	100%	NA	DRBC, NYSDEC	Spot measurements only
1c	100%	NA	DRBC, USGS_NJWSC	Spot measurements only
1d	100%	NA	DRBC, PADEP, USGS_PAWSC	Spot measurements only
1e	99.8%	100%	USGS_01463500	
2	100%	100%	USGS_014670261	
3	99.8%	NA	DRBC, PADEP, USGS_NJWSC	Spot measurements only
4	99.0%	NA	DRBC, PADEP, USGS_NJWSC	Spot measurements only
5	99.2%	NA	DNREC, DRBC, USGS_NJWSC	Spot measurements only
6	99.1%	NA	DNREC, DRBC, NJDEP	Spot measurements only

Aquatic Life: Temperature

Zone	% Observation Days Meeting Day-of-Year Criteria	% Observation Days Meeting Criteria Instantaneous Maximum	Source
1	DRBC Criteria applicable to Heat Dissipation Areas only for Zone 1 AU's *		
2	95.0%	100%	NOAA 8539094 & 8548989, USGS 014670261
3	96.0%	100%	NOAA 8545240 & 8546252, USGS 01467200
4	96.5%	100%	NOAA 8540433, USGS 01474703 & 01477050
5	NA	98.7%	NOAA 8551762 & 8551910, USGS 01482800
6	NA	100%	NOAA 8536110 & 8537121 & 8557380

Aquatic Life: Temperature

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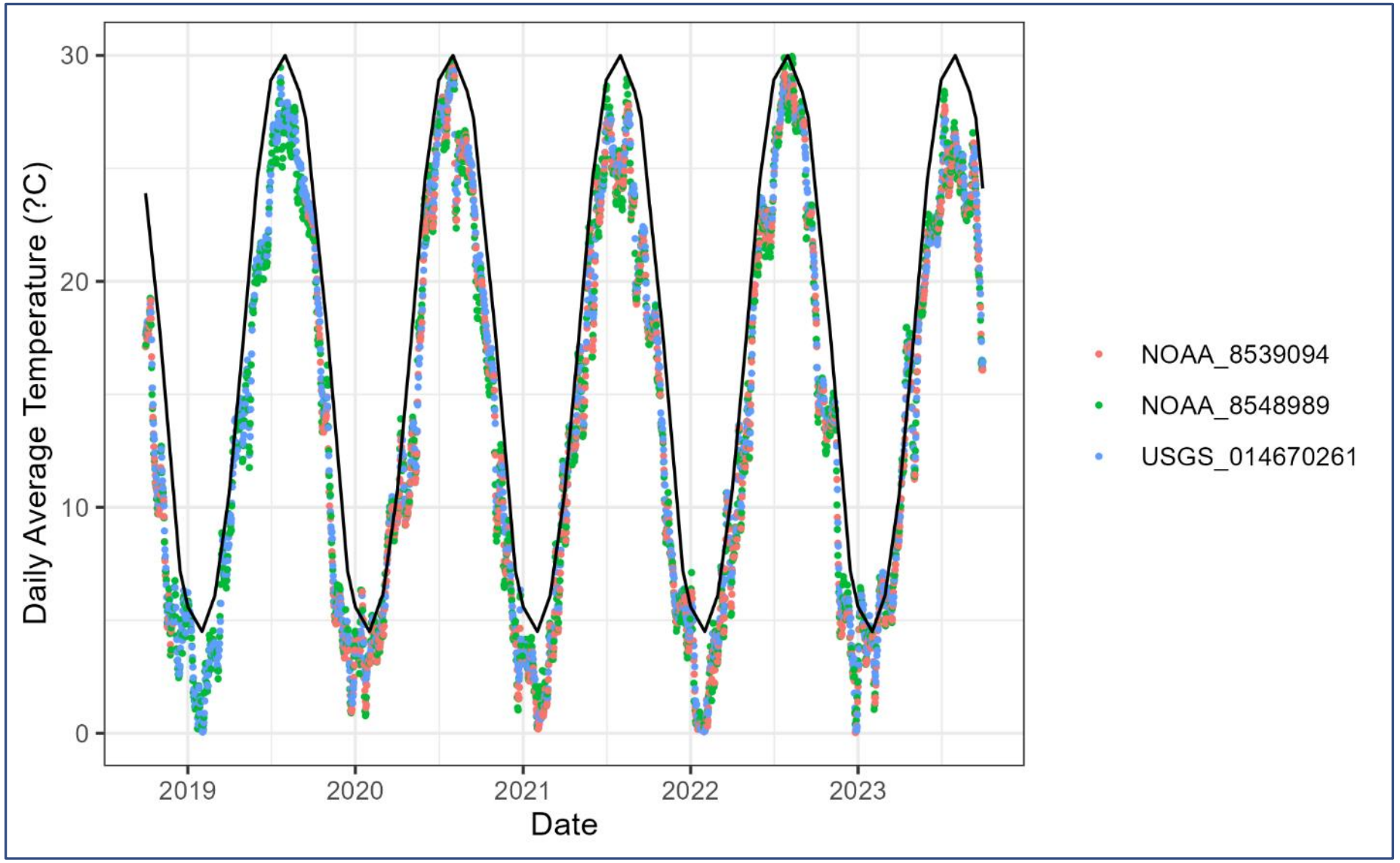

Aquatic Life: Total Dissolved Solids (TDS)

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Zone	% Observations Meeting 133% of Background Criteria	% Observations Meeting 500 mg/l criteria	Source
1a	100%	100%	PADEP,USGS_NYWSC
1b	100%	100%	PADEP,USGS_NYWSC
1c	93.1%	100%	DRBC,USGS_NJWSC
1d	96.8%	100%	DRBC,PADEP,USGS_PAWSC
1e	97.5%	100%	DRBC,PADEP
2	99.4%	100%	DRBC
3	100%	100%	DRBC,USGS_NJWSC
4	Does not apply		
5	No Criteria		
6			

Aquatic Life: Alkalinity

Zone	% Observations Meeting Criteria	Source
1a	No Criteria	
1b		
1c		
1d		
1e	100%	DRBC,PADEP
2	100%	DRBC
3	100%	DRBC
4	100%	DRBC,PADEP
5	100%	DNREC,DRBC
6	99.8%	DNREC,DRBC,NJDEP

Aquatic Life: Toxic Pollutants

- Compare observations to acute and chronic criteria
- Of all comparisons:
  - Copper – sporadic exceedances of both acute and chronic criteria
    - More to say about this in final report
  - Lead – single exceedance of chronic criteria
- All others either no exceedances or not measured during this assessment window

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Aquatic Life: Biological Monitoring

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Zone	Years of Data	Stations per Assessment Unit	% of samples in time window w/ 6-metric IBI < 75.6
1a	1 (2017)	5	0%
1b		3	0%
1c		6	17%
1d		5	20%
1e		7	29%

Public Water Supply: Hardness

Zone	% Observations Meeting Criteria	Source	Notes
1a	No Criteria		
1b			
1c			
1d			
1e			
2	95.9%	DRBC	Spot measurements only, insufficient data to calculate 30-day mean criteria
3	100%	DRBC,USGS_NJWSC	No individual observation exceeded criteria, therefore, attainment of 30- day mean criteria is presumed
4	Use not applicable in these zones		
5			
6			

Public Water Supply: Chlorides

Zone	% Observations Meeting Criteria	Source	Notes
1a	No Criteria		
1b			
1c			
1d			
1e			
2	99.4%	DRBC	Only a single observation exceeded criteria, therefore, attainment of 30- day mean criteria is presumed
3	100%	DRBC, USGS_NJWSC	No individual observation exceeded criteria, therefore, attainment of 30- day mean criteria is presumed
4	Use not applicable in these zones		
5			
6			

Public Water Supply: Toxic Pollutants & Drinking Water Closures

- **No exceedances** for **systemic toxicants** (except PCBs for which a TMDL has been adopted)
- **No exceedances** for **carcinogens** (except PCBs for which a TMDL has been adopted)
- **No exceedances for MCLs** applied as human health stream quality objectives
- **Drinking Water Closures** - In 2023, a spill in Zone 2 of the Estuary resulted in precautionary drinking water closures. While intakes were briefly shutdown, drinking water was never tainted and service was not interrupted for customers in the affected area. Therefore, for the Assessment Period, there were no administrative closures to drinking water intakes as a result of water quality issues or violations.

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Recreation: Fecal Coliform & Enterococcus

- Zone 2 – Exceedance of criteria for **Enterococcus** for **Primary Contact recreation**
- All other zones met **applicable criteria** for **Fecal Coliform and & Enterococcus**

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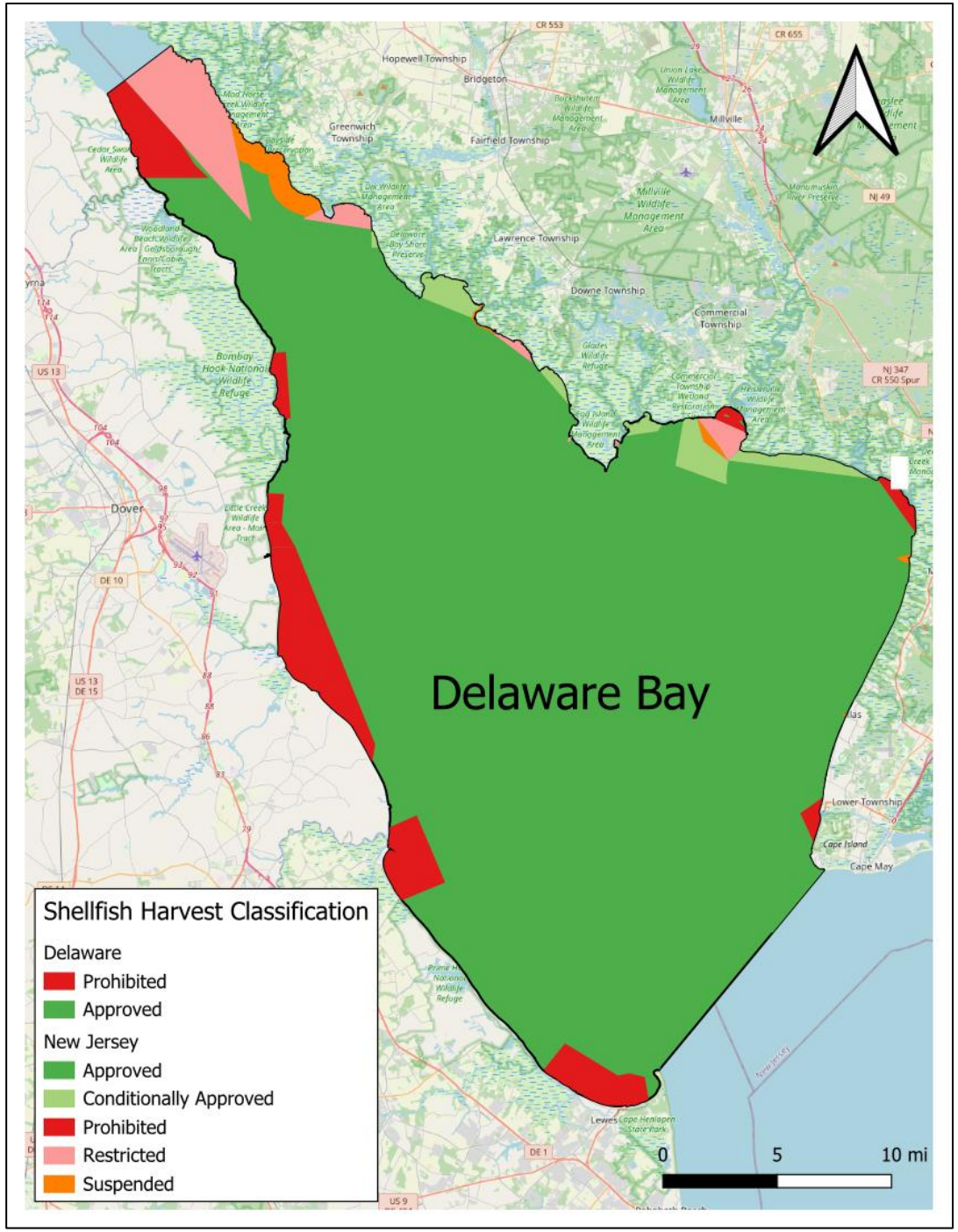
Fish Consumption: Fish Consumption Advisories

	Fish Consumption Advisory – General Population									
Zone	1A	1B	1C	1D	1E	2	3	4	5	6
Advisories in place?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

- Where contaminant is indicated in state fish consumption advisories, primarily
  1. PCBs
  2. Mercury
  3. Dioxins & furans
  4. Dieldrin

Shellfish Consumption:
Shellfish Consumption Classifications

State	Approved (S)		Prohibited, Restricted, or Suspended (NS)	
	mi^2	%	mi^2	%
Delaware	296	89	37	11
New Jersey	330	92	27	8



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Status & Next Steps

- Shared with EPA and Basin States for review and comment (April)
  - Incorporate comments
- Finalize & publish on DRBC web site

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