

# Delaware River Basin Commission

## Recreational Uses Update

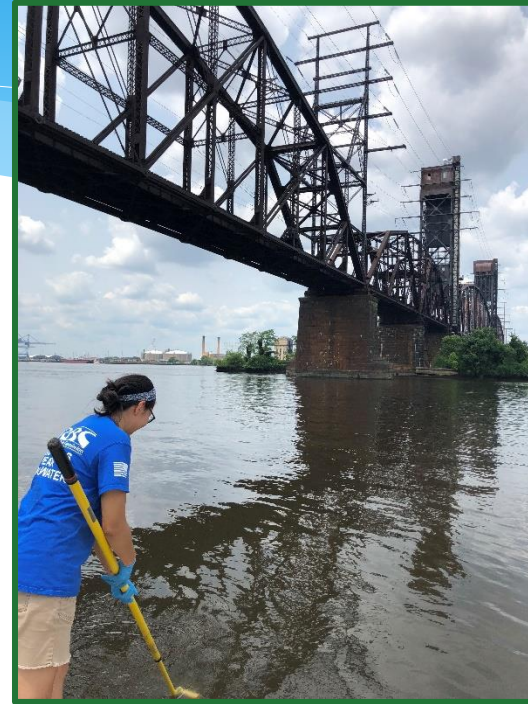
WQAC

May 18, 2022

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# 2022 Bacteria Monitoring

- Microbial source tracking to differentiate bacteria derived from humans, cows, horses, Canada geese, deer, and dogs
- 3 wet weather & 3 dry weather events
- 9 sites
- NJ Center for Water Science & Technology, Montclair State University
- Planned May start
- Continue shore-based E. Coli, Fecal Coliform, and Enterococci as in 2019-2021 and boat run

Target	Primers/Probes	Sequence	Amplicon	Reference
Universal	AllBacF	GAGAGGAAGGTCCCCAC	106	Layton et al. 2006
	AllBacR	CGCTACTTGGCTGGTTCAG		
	AllBacP	[6-FAM]- CCATTGACCAATATTCCTCACTGCTG CCT-[BHQ]		
Human	HF183	ATCATGAGTTCACATGTCCG	126	USEPA Method 1696
	BacR287	CTTCCTCTCAGAACCCCTATCC		
	BacP234MGB	[6-FAM]- CTAATGGAACGCATCCC – [MGB]		
Cow	CF128F	CCAACYTCCCGWTACTC	177	Kildare et al. 2007
	BacCow-305R	GGACCGTGTCTCAGTCCAGTG		
	BacCow-257P	[6-FAM]- TAGGGGTTCTGAGAGGAAGGTCCC CC-[BHQ]		
Horse	Hof597F	CCAGCCGTAATAATAGTCGG	129	Dick et al.2005
	Bac708R	CAATCGGAGTTCCTCGTG		
Canada goose	CanadaGooseFor	CTAACATCAAATCCCTCGACCCA	77	Caldwell and Levine, 2009
	CanadaGooseRev	TCCTATTCAGCCTCCTAGTGCTCT		
	CanadaGoosePro	[6-FAM]- TACTCACC GCCATAGCCCTAGCCT- [BHQ]		
Deer	Deer Forward	TAACCCGATTCTTCGCCTTCTC	122	Caldwell and Levine, 2009
	Deer Reverse	GTCTGCGTCTGATGGAATTCCTGAT		
	DeerProbe	[6-FAM]- CCTCCCATTTATCATCGCAGCACTTG CT-[BHQ]		
Dog	BacCanF	GGAGCGCAGACGGGTTTT	145	Kildare et al. 2007
	BacUni690R	CAATCGGAGTTCCTCGTGATATCTA		
	BacUni656P	[6-FAM]-TGGTGTAGCGGTGAAA- [BHQ]		

# Recent Activity: Recreational Uses

## *Partial List*

- July 18, 2018 – WQAC – Status and revisit 1988 Study
- 2019 to Present – expanded data collection including shore-based monitoring and boat transects
- March 2, 2020 – Petition by Delaware Riverkeeper Network, Clean Air Council, PennFuture, Environment New Jersey, PennEnvironment, River Network, Bartram's Garden, Glen Foerd on the Delaware, Darby Creek Valley Association, Clean Water Action
- April 30, 2020 – WQAC – Monitoring Results and PWD Monitoring
- July 28, 2020 – WQAC – Presentation by Petitioners
- December 3, 2020 – WQAC – Monitoring Results, Seeking prioritization and recommendations for action
- April 15, 2021 – WQAC – Potential Options Matrix, Water Resources program

# Rec Use Co-Regulator Process

- Convened a co-regulator group to consider recreational uses
- Developed a Near-Term and Long-Term Activities
- **Sharing with you today**
  
- Near-Term and Long-Term Activities included in Water Resources Program draft dated April 27<sup>th</sup>

# Rec Use Co-Regulator Participants

- Tom Barron (PADEP)
- Gary Walters (PADEP)
- Summer Kunkel (PADEP)
- Josh Lookenbill (PADEP)
- Pravin Patel (PADEP)
- Frank Klapinski (NJDEP)
- Biswarup Guha (NJDEP)
- Jeff Hoffman (NJ)
- Stephen Seeberger (NJDEP)
- Marzooq Alebus (NJDEP)
- Susan Rosenwinkel (NJDEP)
- David Wolanski (DNREC)
- Bhanu Paudel (DNREC)
- Greg Voigt (EPA3)
- KL Lai (EPA3)
- Bill Richardson (EPA3)
- Denise Hakowski (EPA3)
- Dana Hales (EPA3)
- Katherine Bentley (EPA3)
- Brent Gaylord (EPA2)
- Wayne Jackson (EPA2)
- Namsoo Suk (DRBC)
- John Yagecic (DRBC)

# Rec Use Co-Regulator Meetings

- May 5, 2021
- June 3, 2021
- August 17, 2021
- September 14, 2021
- January 6, 2022
- February 23, 2022
- April 12, 2022

# Introduction

The coregulators share a combined long-term goal of designating primary contact recreation as the applicable recreation use for Zones 3 and upper Zone 4 of the Delaware Estuary.

The coregulators met throughout 2021 to develop the following near and long-term activities for implementation that support the goal of designating primary contact recreation as the applicable recreation use for Zones 3 and upper Zone 4 of the Delaware Estuary.

# Near Term Activities (5 years)

- Assess whether existing criteria are protective of primary contact recreation in Zone 2 and lower Zone 4- Zone 6. If necessary, establish new criteria that are protective of the primary contact designated use.
- Assess guidance on primary and secondary contact recreation according to activity and location as it would apply to Zones 3 and upper 4 of the Delaware Estuary.
- Continue data collection to define which areas are more or less likely to support primary contact recreation.
- Continue data collection to differentiate proportions of human-derived versus animal-derived bacteria especially during dry weather.
- Evaluate the duration of bacteria exceedances and relationship to wet weather.
- Develop bacteria models that simulate current and projected bacteria loads.



# Near Term Activities (5 years) continued

- Evaluate hazard report developed by PWD and other stakeholders.
- Explore and evaluate hazard mitigation and risk reduction recommendations for recreational use in this area.
- Review and consider results of the University of Pennsylvania Water Center Study.
- Evaluate performance of the Fluidion<sup>®</sup> (near real-time) bacterial monitors deployed by USGS at sites in the Delaware Estuary.
- Assess whether existing criteria are protective of secondary contact recreation in Zones 3 and upper Zone 4. If necessary, establish new criteria that are protective of the secondary contact designated use.
- Continue and/or enhance CSO permit oversight, enforcement and compliance assistance
  - a. Use existing regulatory and enforcement tools to ensure implementation of LTCPs .
  - b. Forecast post-LTCP water quality conditions.
  - c. Identify funding opportunities for CSO infrastructure upgrades.

# Long Term Activities (+ 5 years)

- Upon completion of the above Near-Term Activities and where the data and evaluation support it, the DRBC would recommend site-specific locations and conditions for rulemaking to revise the designated use to primary recreation.
- As appropriate, evaluate the positive impacts of green and gray infrastructure on bacterial water quality given the ongoing execution of CSO Long Term Control Plans (LTCPs) and wet weather flow treatment enhancements.
- As major CSO controls are implemented and at conclusion of CSO LTCP implementation, assess CSO permittee sampling plans and results of CSO Post Construction Compliance Monitoring to verify compliance with water quality standards and protection of designated uses as well as to ascertain the effectiveness of CSO controls.

# Questions & Discussion