

## Esopus Creek

### Community Water Quality Monitoring Results, 2010-17

#### Who Is Testing the Water?



Riverkeeper began testing the Hudson River for fecal contamination in 2006, and began partnering with community groups to sample the Hudson's tributaries soon after. Riverkeeper and our network of organizational partners have sampled over 450 locations throughout the Hudson River Estuary and its watershed. Community scientists and Riverkeeper have tested the water in the Esopus Creek since 2010. This work was made possible by funders including the NYS Environmental Protection Fund through the Hudson

River Estuary Program of NYSDEC and Riverkeeper members.

#### Why Test for Fecal Contamination?

People should be able to get into the water for swimming, boating, playing and wading, and they need to know if it is safe to do so. If untreated waste is present in the water, there is a greater chance that pathogens may be present, and a greater chance that contact with the water will make us sick. Sources of fecal contamination may include combined sewer overflows, sewage infrastructure failures, inadequate sewage treatment, urban runoff, septic system failures, agricultural runoff, and wildlife.

#### What Is *Enterococcus*?

*Enterococcus* ("Entero") is a type of bacteria that lives in the guts of humans and other animals. The Entero commonly found in the environment usually does not make people sick. It is an indicator of fecal contamination, similar to coliforms and *E. coli*. To reduce risk of illness from exposure to fecal contamination, the EPA's Recreational Water Quality Criteria include three thresholds for the concentration of Entero in water that should not be exceeded. Two thresholds are presented here: the Beach Action Value (BAV), a threshold for each sample of water; and the Geometric Mean (GM), a threshold for the weighted average of many samples. Both are measured in Entero cells per 100 mL of water. Single samples should not exceed the BAV of 60 and the geometric mean ("average") of samples should not exceed the GM of 30.

#### Esopus Creek Watershed Water Quality Snapshot

To date, Esopus Creek community scientists have collected 498 routine Entero monitoring samples (once per month from May to October). Results from the non-tidal portion of the creek only are summarized below. Our study is designed to learn about broad trends. The data can help inform choices about recreation, but cannot predict future water quality at any particular time and place.



EPA GM Threshold	Esopus Creek GM
<b>30</b>	<b>44</b>

## Esopus Creek Watershed Wastewater Infrastructure Snapshot

The upper Esopus Creek feeds the Ashokan Reservoir, the largest reservoir in New York City's drinking water supply. The lower Esopus flows out of the Catskill Mountains and reaches the Hudson River Estuary at the Village of Saugerties. It is the fourth-largest tributary to the tidal Hudson River.

7 public wastewater treatment facilities\*

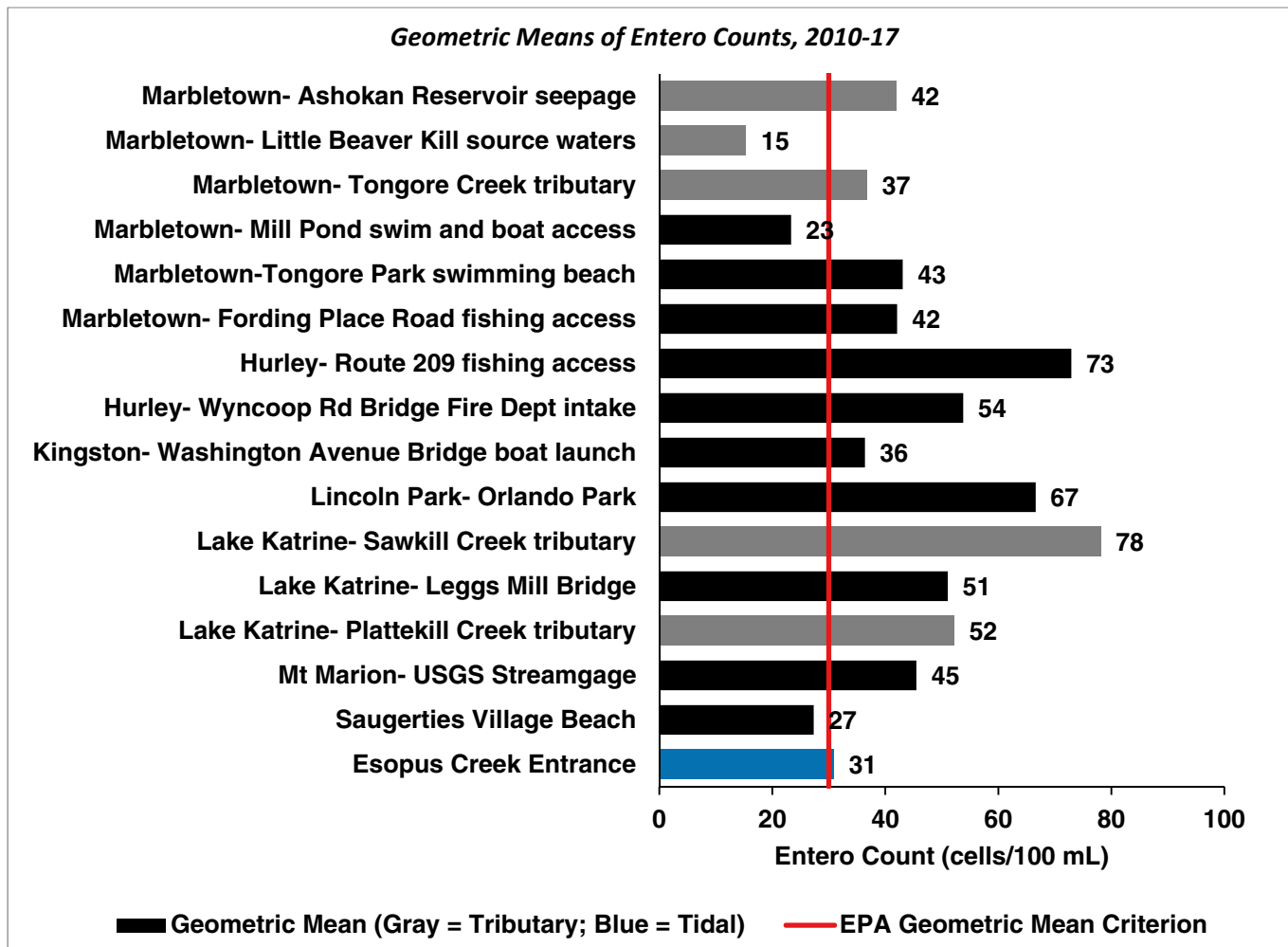
135 miles of pipes

69 average pipe age

\$4M needs estimated

\*The City of Kingston wastewater infrastructure is included in this summary. The facility and the combined sewer overflows are located in Rondout Creek, but pipes extend into the Esopus Creek Watershed.

## How's the Water in the Esopus Creek?



## What Can We Do with This Information?

The Esopus Creek Watershed has good water quality compared to other places we have sampled. However, more than one third of samples taken have exceeded the EPA's recommended threshold for beach closure and public notification. The longterm average Entero count at the Saugerties Village Beach shows water quality suitable for swimming, while the Marbletown Beach is not. It is important to note that conditions vary over time at both sites. Sampling procedures at these beaches should be updated to utilize Entero, with more frequent testing and routine public notification of results.

To see all the results visit [riverkeeper.org/water-quality/citizen-data/esopus-creek](http://riverkeeper.org/water-quality/citizen-data/esopus-creek).