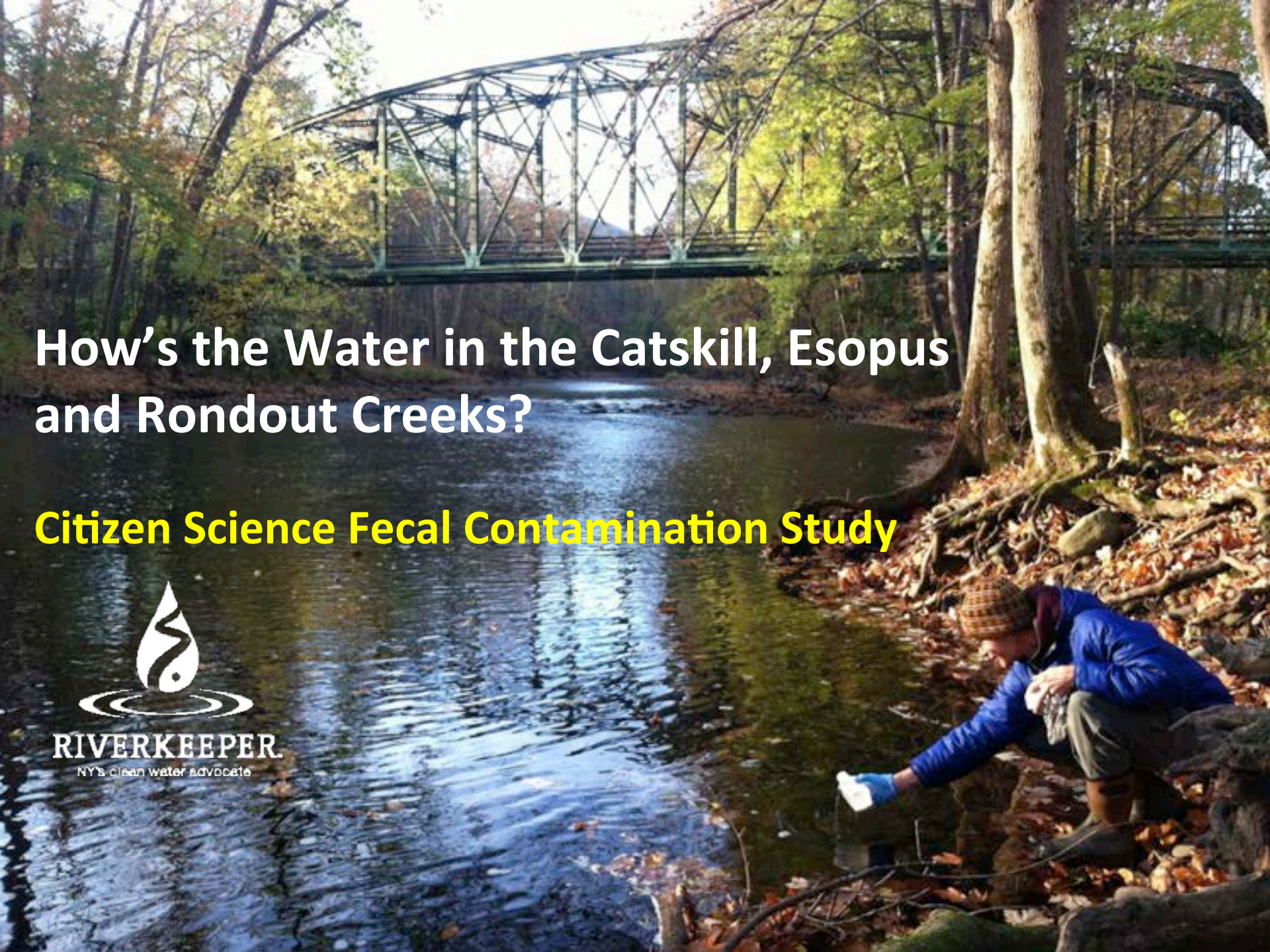

How's the Water in the Catskill, Esopus and Rondout Creeks?
Citizen Science Fecal Contamination Study
RIVERKEEPER
NY's clean water advocate

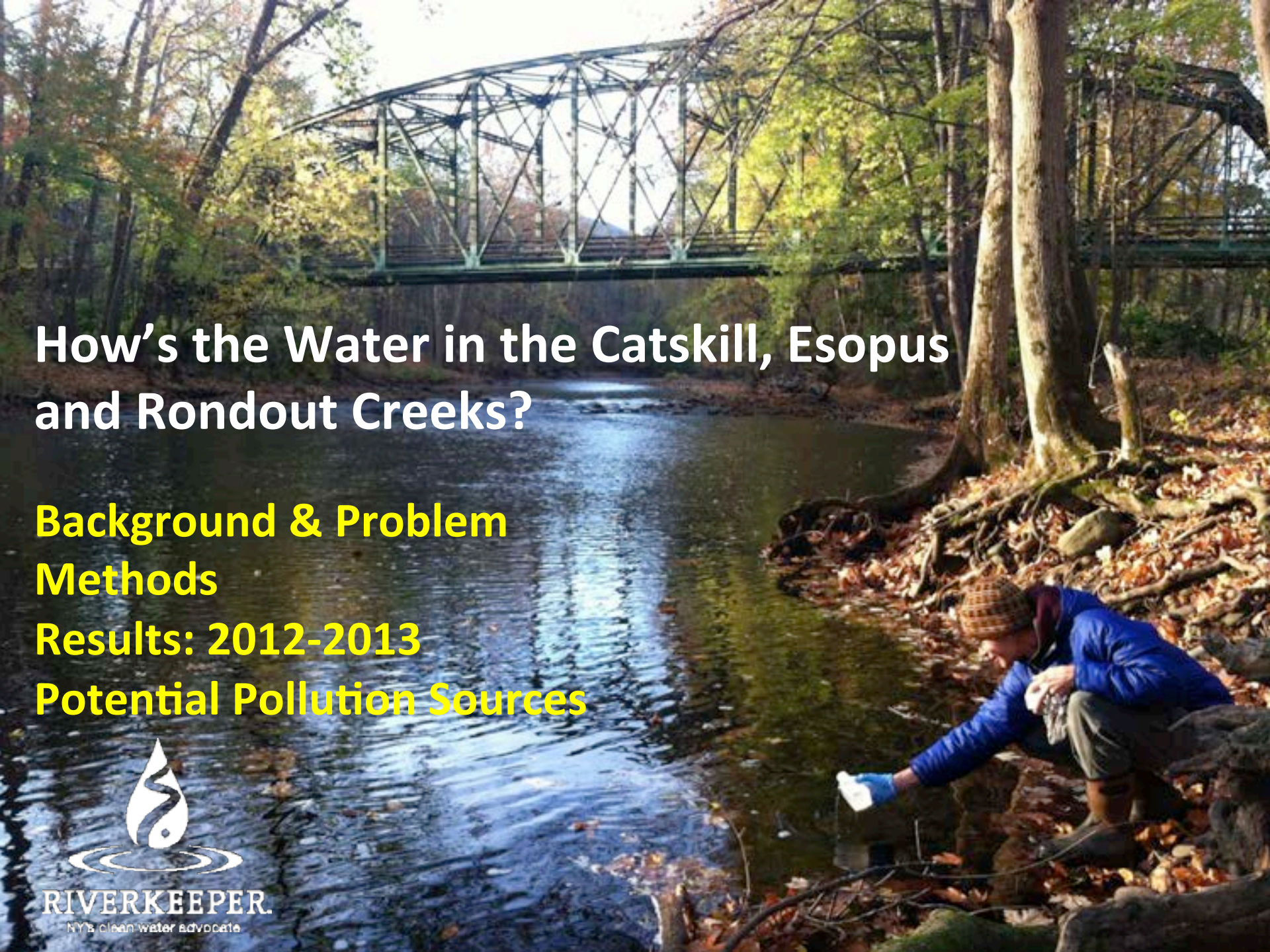

How's the Water in the Catskill, Esopus and Rondout Creeks?
Background & Problem
Methods
Results: 2012-2013
Potential Pollution Sources
RIVERKEEPER
NY's clean water advocate

Photo: Rob Friedman

Government Pathogen Testing

Riverkeeper's Fecal Contamination Study

2006 - Present

Enterococcus ("Entero")

EPA-recommended fecal indicator

Monthly sampling: May – Oct

EPA Guideline for Primary Contact:

- Acceptable: 0-60 Entero per 100 mL
- Beach Advisory: >60 Entero per 100 mL

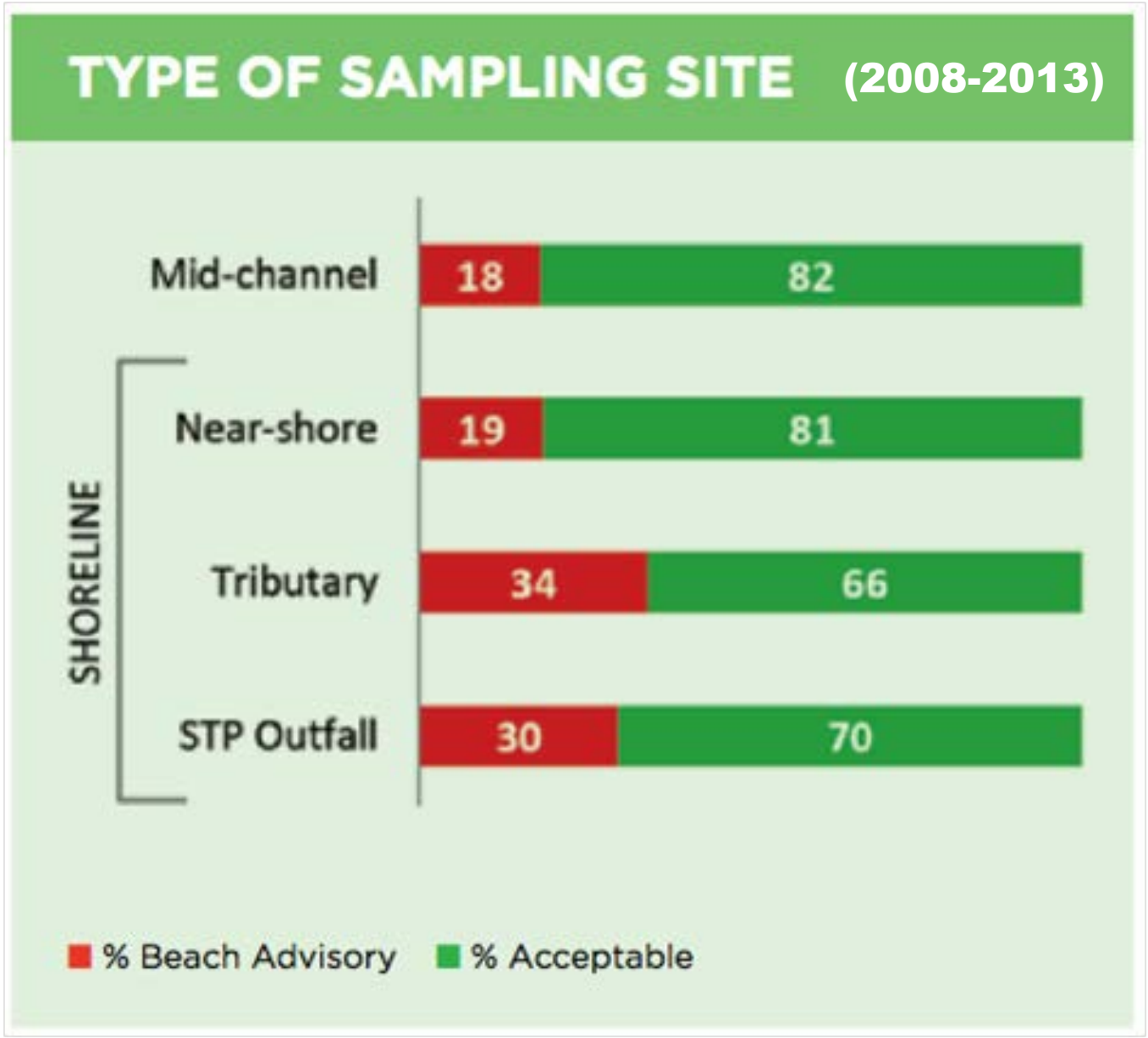
Science Partners & Supporters

Funders

- HSBC
- Clinton Global Initiative
- The Eppley Foundation for Research
- The Dextra Baldwin McGonagle Foundation, Inc.
- The Hudson River Foundation for Science and Environmental Research, Inc.
- Hudson River Estuary Program, NYS DEC
- New England Interstate Water Pollution Control Commission

Science Partners

- Dr. Gregory O'Mullan Queens College, City University of New York
- Dr. Andrew Juhl, Lamont-Doherty Earth Observatory, Columbia University

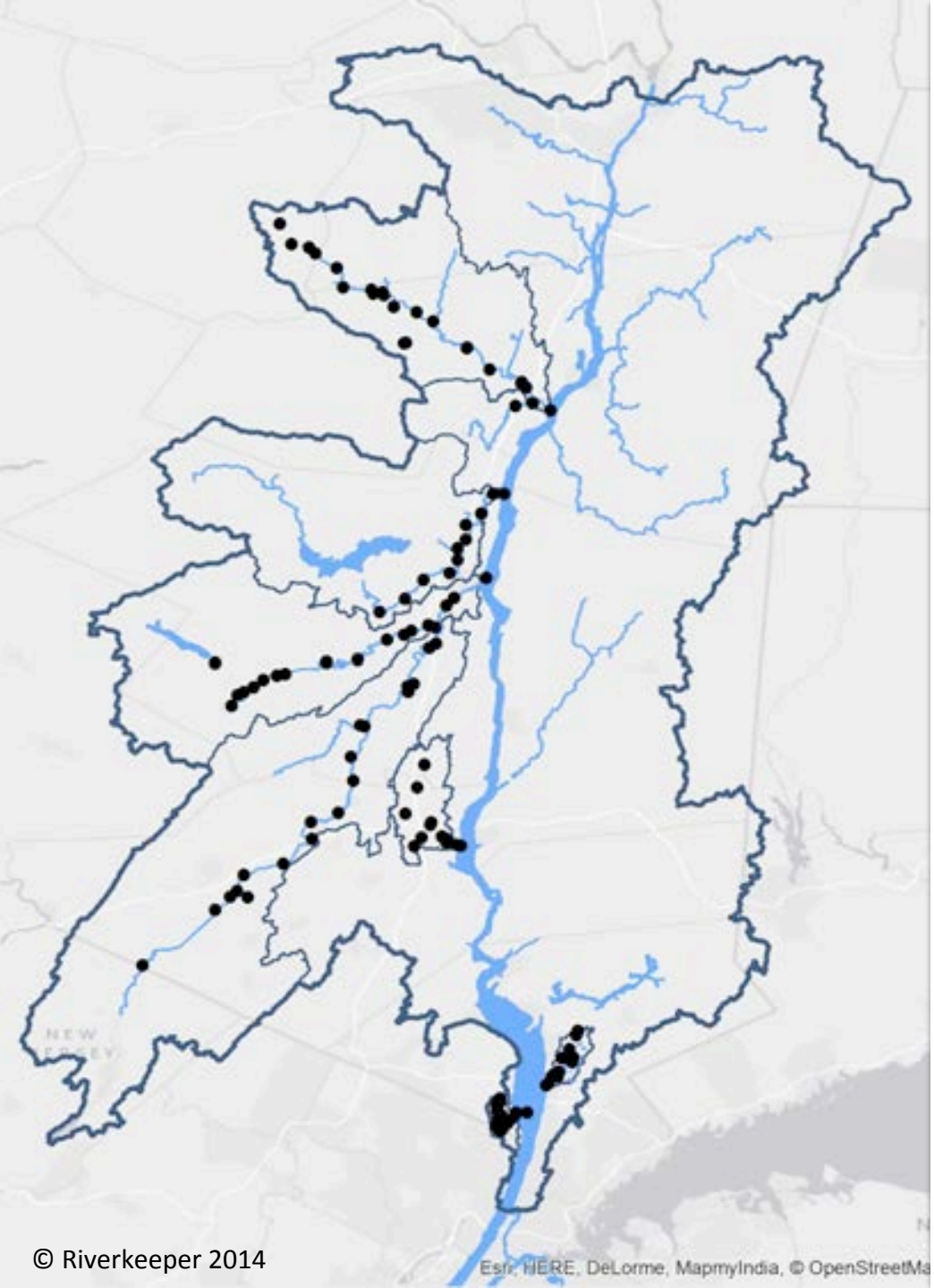


Riverkeeper's Citizen Science Program Goals

1. Fill a data gap

2. Raise awareness about fecal contamination in tributaries

3. Involve local residents in finding and eliminating sources of contamination



Riverkeeper's Citizen Science Studies

Tributaries sampled:

- **Catskill Creek**
  - **45 river miles**
  - **19 sites (many added in 2014)**
- **Esopus Creek**
  - **25 river miles**
  - **10 sites**
- **Rondout Creek**
  - **43 river miles**
  - **17 sites**
- Wallkill River
- Quassaick Creek
- Pocantico River
- Sparkill Creek
- NYC Waterfront

Sampling Partners

Catskill

- Catskill Creek Watershed Awareness Project at Cornell Cooperative Extension
- Local residents

Esopus

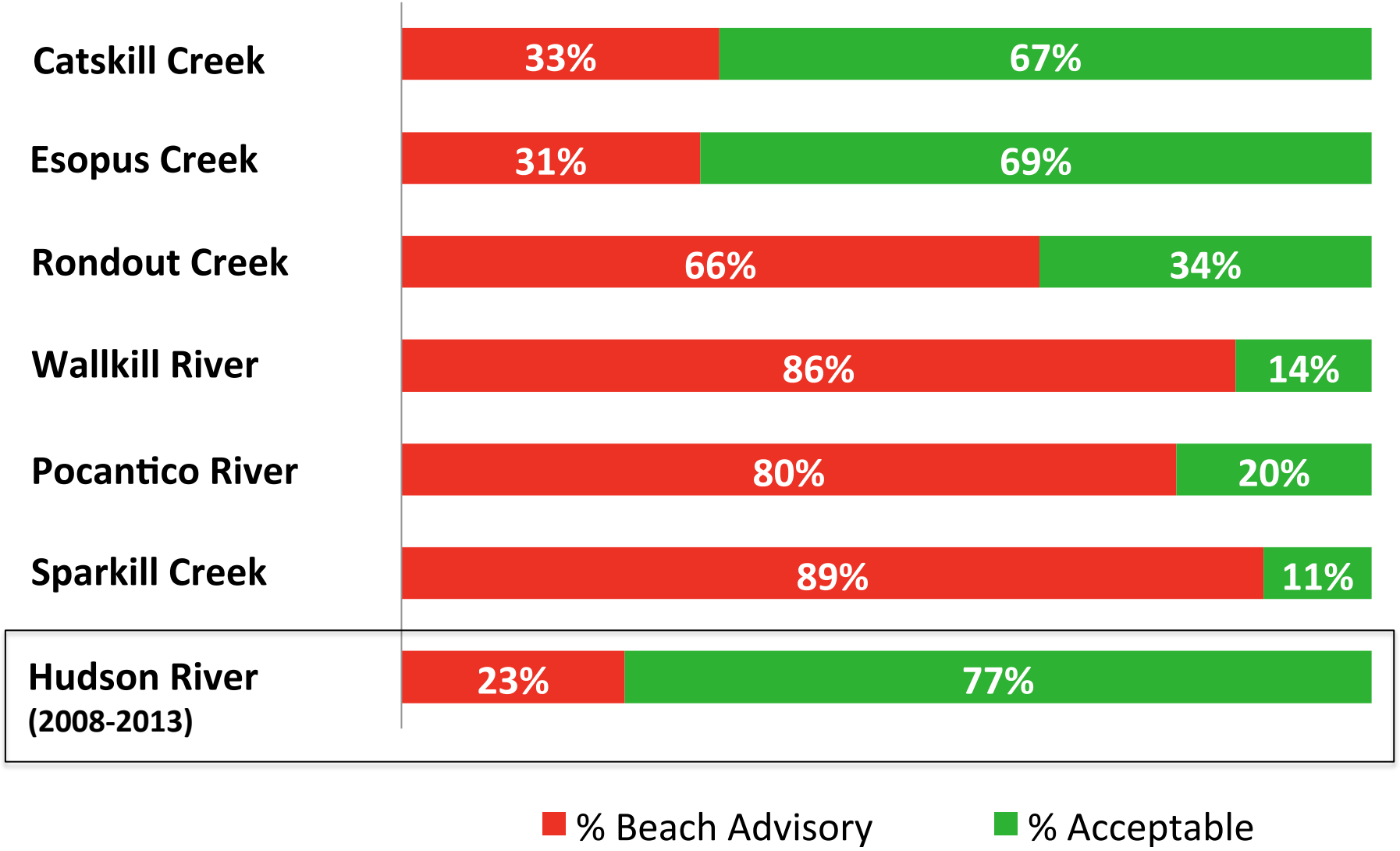
- Local residents

Rondout

- Rosendale Commission for Conservation of the Environment
- Town of Rochester Environmental Conservation Commission
- Town of Wawarsing Environmental Conservation Commission
- Local residents

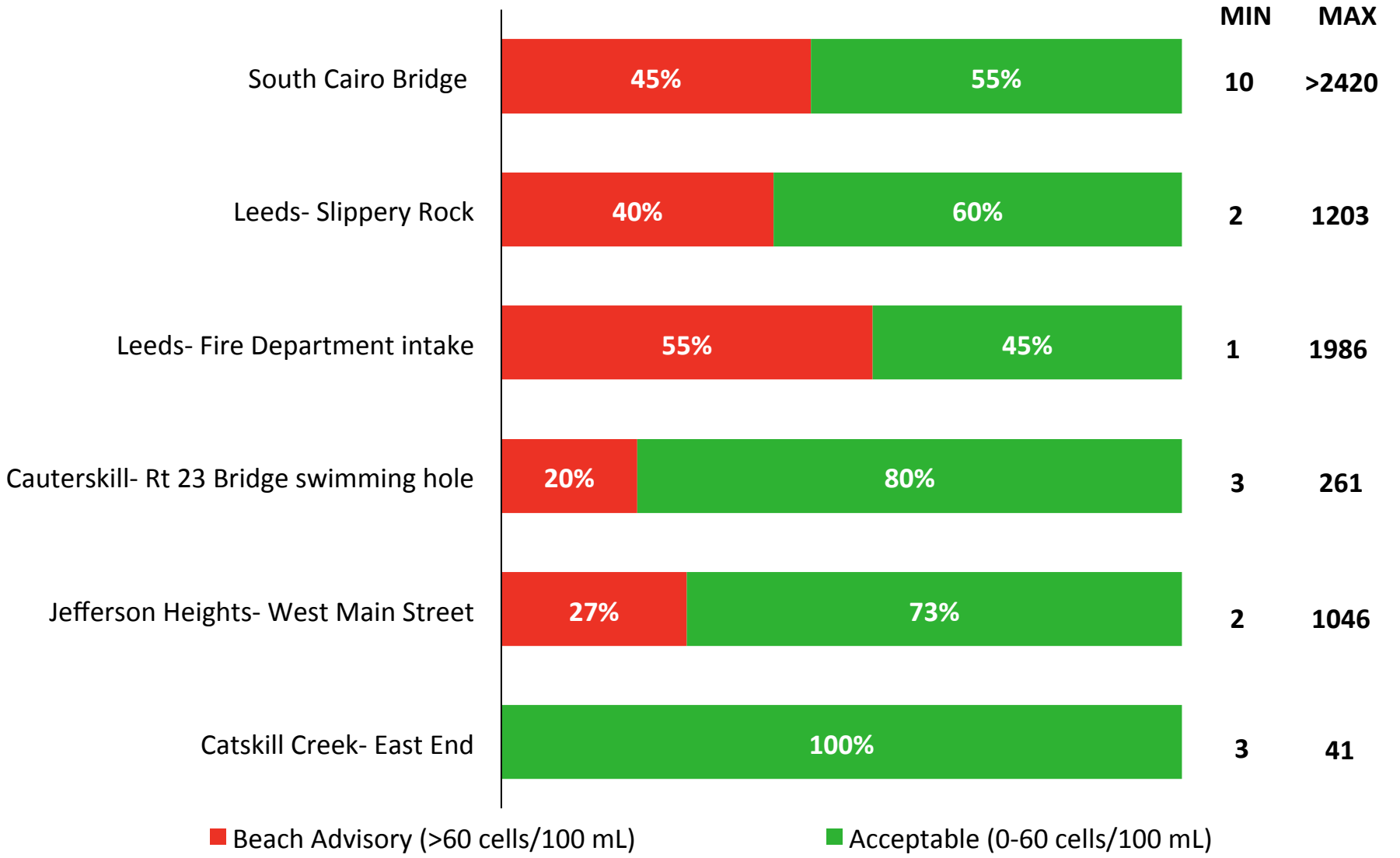
Citizen Non-Tidal Tributary Sampling Sites

% Samples Failing EPA-Recommended Beach Advisory Value (2012-2013)



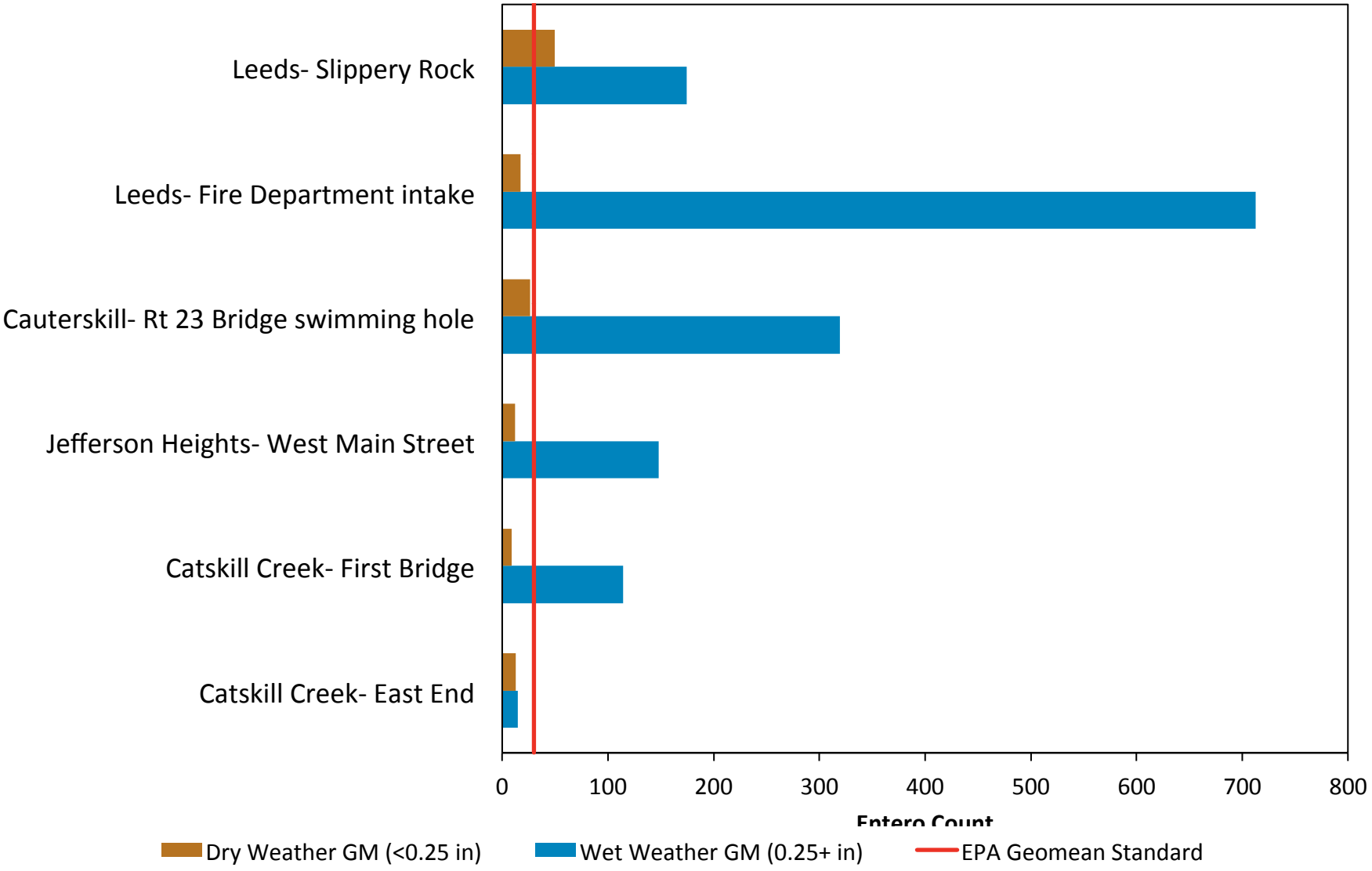
Catskill Creek

% Samples Failing EPA-Recommended Beach Advisory Value (2012-2013)



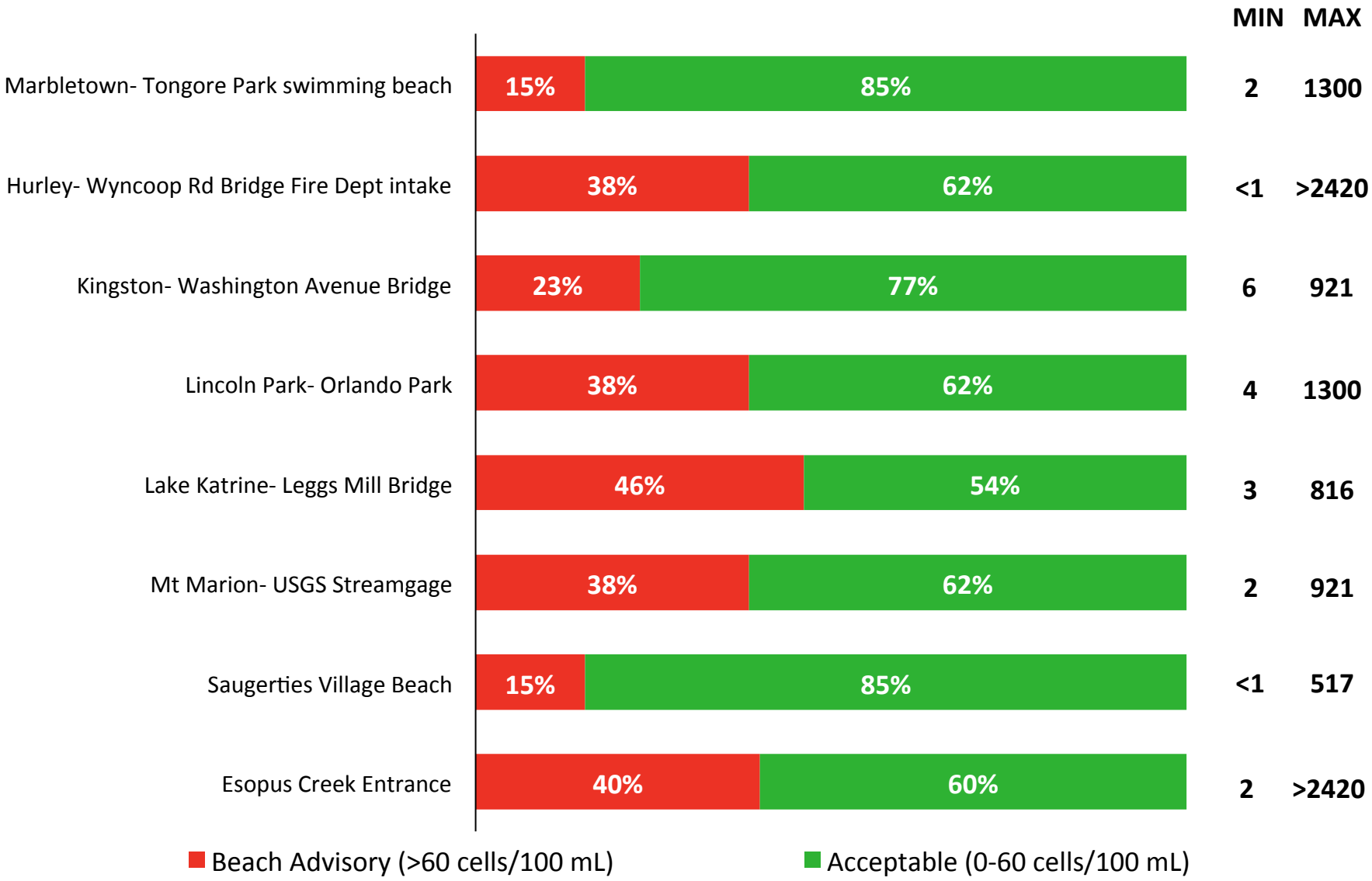
Catskill Creek

Geometric Means of Entero Counts- Wet and Dry Weather (2012-2013)



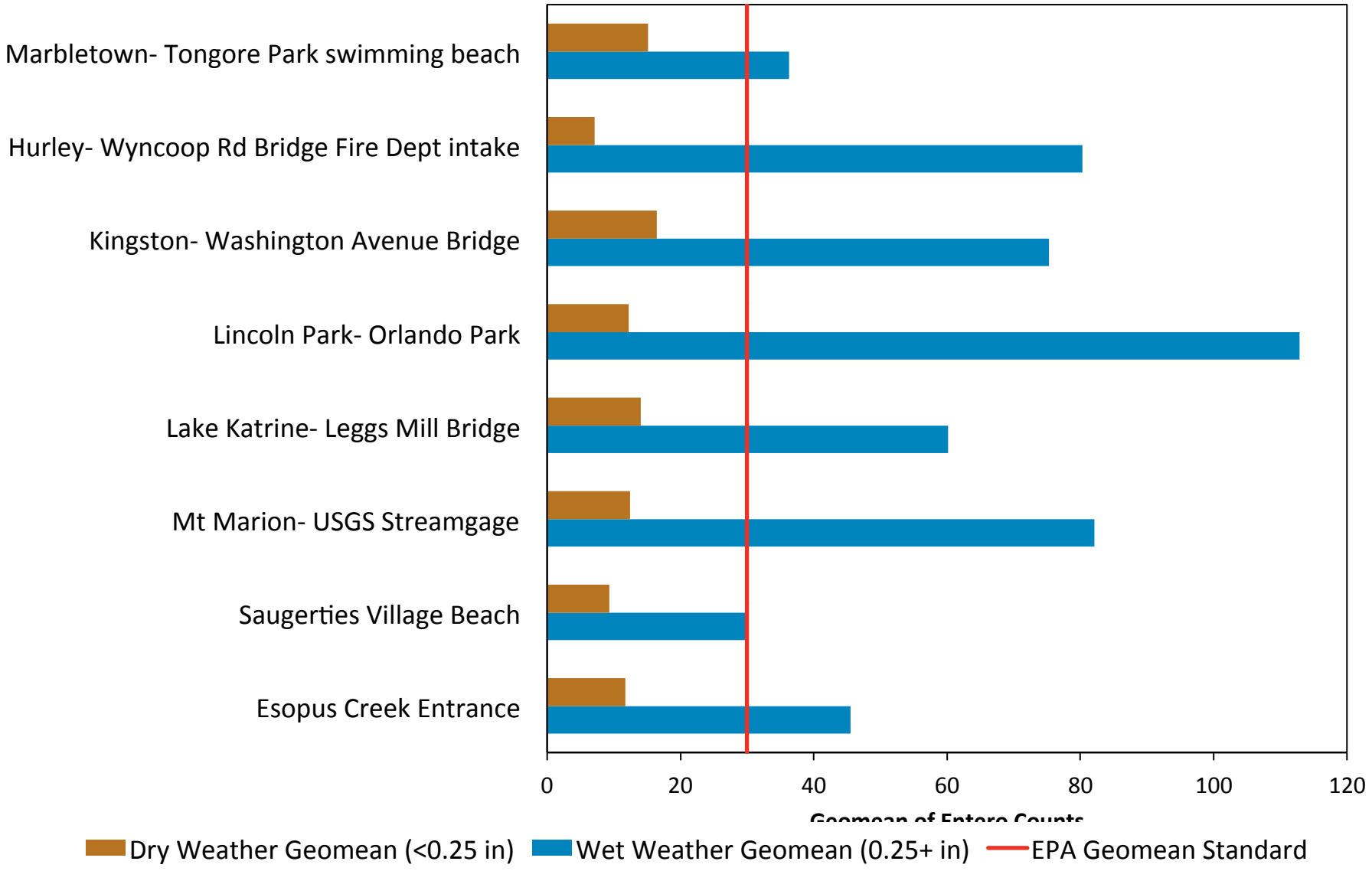
Esopus Creek

% Samples Failing EPA-Recommended Beach Advisory Value (2012-2013)



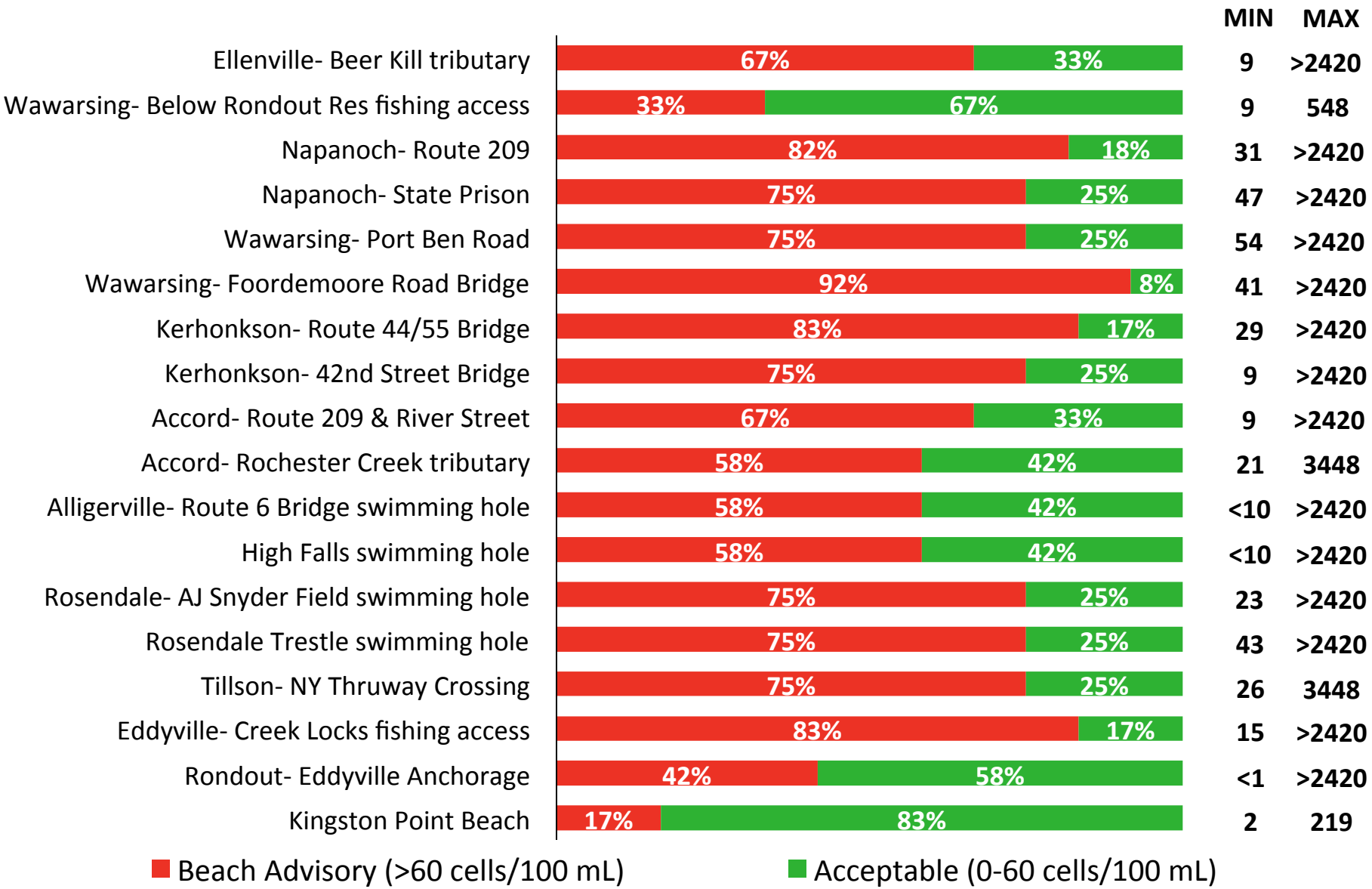
Esopus Creek

Geometric Means of Entero Counts- Wet and Dry Weather (2012-2013)



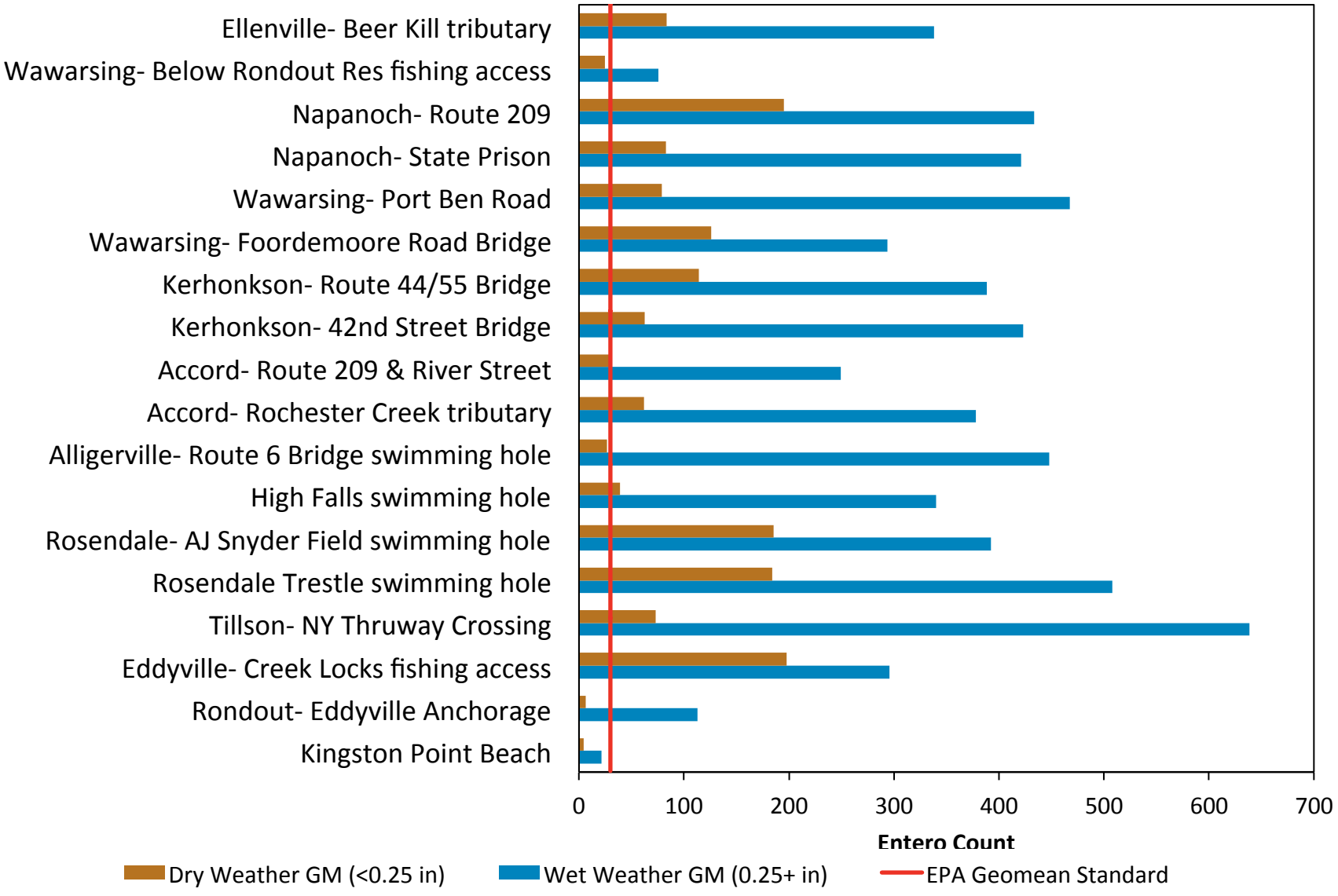
Rondout Creek

% Samples Failing EPA-Recommended Beach Advisory Value (2012-2013)



Rondout Creek

Geometric Means of Entero Counts- Wet and Dry Weather (2012-2013)



Known and Potential Sources

Known and Potential Sources

Hudson River Estuary Watershed (not including NYC & NJ)

- 113 CSO outfalls in 14 Hudson River communities *(source: Riverkeeper)*
- 140 publicly owned sewage treatment plants *(source: DEC)*
- 190 publicly owned sewage collection systems *(source: DEC)*
- 475 MS4 areas in 150 municipalities *(source: DEC)*
- 851 other wastewater discharge permits (private, commercial and institutional) *(source: DEC)*
- 5,326 farms (incl. Washington & Saratoga counties) *(source: Glynwood)*
- 484,000 septic systems (Hudson & Mohawk counties; excluding Westchester) *(source: Cornell WRI)*
- ?? other potential sources

Thank You

RIVERKEEPER
NY's clean water advocate

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