



BRIARCLIFFE ACRES VOLUNTEER WATER QUALITY MONITORING

Information Fact Sheet (09/13/18)

WHAT IS *Volunteer Monitoring*?

- When trained citizen volunteers collect scientific data.
- Examples: water quality, bird counts, turtle counts, weather, oysters (SCORE)

WHAT ARE THE BENEFITS?

- Leverages brains, experience and insights of the volunteers
- Get more sampling done.
- Better connect data collection to community concerns and policy decisions
- Help meet Briarcliffe Acre's federal Clean Water Act stormwater management requirements
- Promotes environmental stewardship
- Intergenerational activity

HOW ARE THE DATA USED?

- Identify hot spots.
- Detect illicit discharges.
- Detect trends over time.
- Document improvements from stormwater management activities

WHAT IS MEASURED, WHY AND HOW?

- Bacteria (*E. coli* and Total Coliform) – Easygel incubation – dual confirmation. Monitors fecal pathogen pollution for recreational safety.
- Nutrients (ammonia, nitrate, nitrite) – test strips. Monitors excess fertilizer and septage. Pollution can cause algal blooms and low oxygen levels (hypoxia).
- Turbidity – desktop meter. Monitors sediment pollution. Sediment can carry pollutants including bacteria and interfere with aquatic life.
- Salinity, temperature, oxygen, pH – field meters. Monitors water source and oxygen levels. Low oxygen can kill animals.

WHO ELSE IS DOING THIS LOCALLY?

- Surfside Beach (2 sites biweekly) since 2010
- Murrells Inlet (8 sites biweekly) since 2008
- Waccamaw River (12 sites biweekly) since 2006

Volunteer monitoring program data are posted at: <http://www.coastal.edu/wwa/vm/index.html>



WHAT DOES CCU PROVIDE?

- Provision of training, all equipment and supplies
 - includes replacement of aging/broken equipment
- Quality control of all data
 - Retraining if data is not meeting quality control requirements or at your request
- Standard Operating Procedures and Forms
- Online data entry
- Secure data archiving
- One data conference per year including data interpretation
- Rapid response reports for illicit discharge detection
- One meeting of the volunteers per year (luncheon or breakfast)
- Project cards with web site URL
- Project web site including online interactive data delivery
 - One month lag on average

WHAT OTHER MONITORING IS BEING DONE (OR HAS BEEN DONE) IN BRIARCLIFFE?

1997-present: Weekly beach monitoring of fecal bacteria (*Enterococcus*) from May to October in surf zone at mouth of White Point Swash and along the beach in front of the cabana and Beach Drive road end. Switched to year round in March 2013. WAC-09A (White Point Swash) is on federal list of impaired waters (303d list).

2000: Microbial source tracking of storm water outfalls on Grand Strand. *Spot sampling at bridge over swash at Beach Drive found significant percentage of human-sourced fecal bacteria.*

2003-2005: Spot sampling in lakes for fecal bacteria. *Low levels reported.*

2009-2010: First genotypic microbial source tracking project on Grand Strand as part of a watershed study of Briarcliffe Acres and the Meher Baba property. *Concluded human sourced bacteria were present in BA swash during wet and dry conditions.*

2012-2017: Groundwater study to improve management of lake levels during droughts. *Concluded water table near the swash was often high enough to intercept septic tank leach lines.*

2015: Microbial source tracking to compare discharges from BA swash and White Point swash. *Concluded both swashes were contributing to downstream impairment at WAC-09A.*

WHAT DO WE DO NEXT?

- Pick sampling sites
 - What is it that you are looking to know?
 - Practicality
 - *Enterococcus* samples: \$32.88 per sample for 3 sites and \$38.95 for 2 sites
- Pick sampling date and time
- Designate a field leader (?)
- Recruit and train volunteers
- Sign contract, CCU buys equipment