Delaware's Non-Tidal Monitoring Update for CY 2011

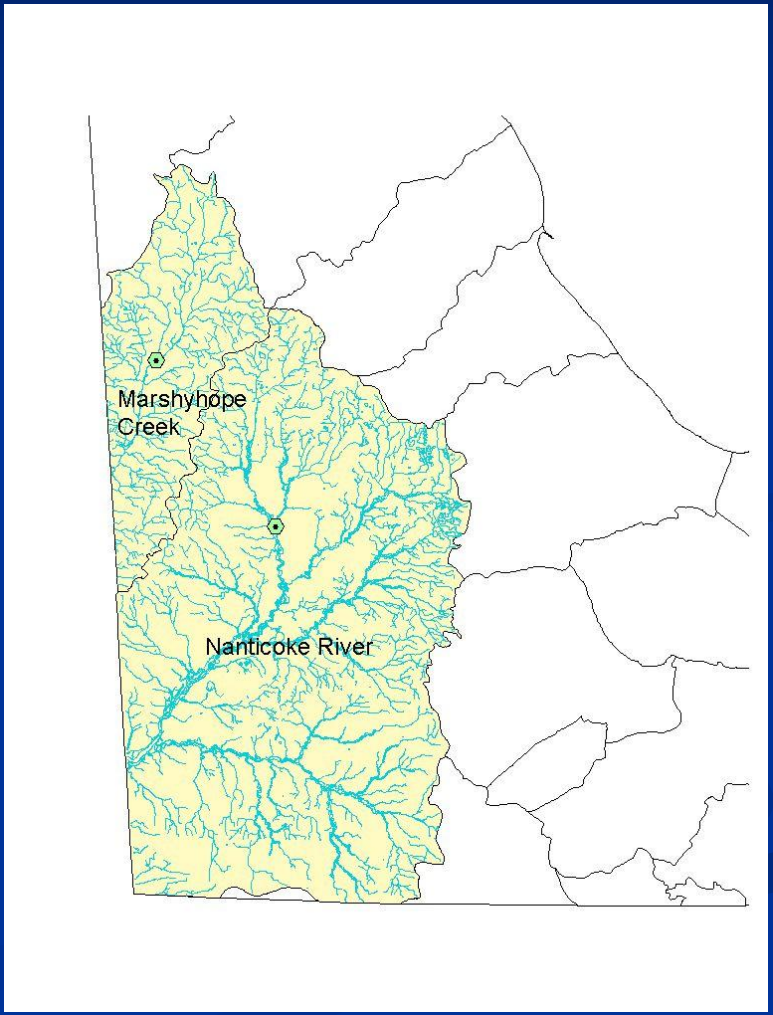
February 8, 2012

Monitoring Sites

Two sites in Delaware:

1. **Nanticoke River**
   USGS - 01487000
   STORET – 304191

2. **Marshyhope Creek**
   USGS - 01488500
   STORET - 302031



Monitoring Sites

Nanticoke River

Marshyhope Creek

Status

- Monthly sampling started in Oct. 04
- Stations were upgraded to primary in Oct. 05
- Storm samples are sent to the USGS Kentucky lab for suspended sediment/sand-fine particle analysis. The remaining parameters are analyzed by DNREC Environmental Laboratory Services in Dover, DE.
- The sampling protocol developed by the Non-tidal workgroup is being followed.

The following parameters are analyzed at DNREC lab (or measured in the field)

- **Nutrients**
  - Total Phosphorus
  - Soluble Ortho-phosphorus
  - Total Nitrogen
  - Ammonia Nitrogen
  - Nitrite+Nitrate N
- **Carbon and Organics**
  - Total Organic Carbon
  - Dissolved Organic Carbon
  - Chlorophyll-a
  - BOD_5, N-Inhib (CBOD)
  - BOD_{20}, N-Inhib (CBOD)
- **General Chemistry**
  - Dissolved oxygen
  - Total Suspended Solids
  - Alkalinity
  - Chloride
  - Hardness
  - pH
  - Conductivity
  - Salinity
  - Temperature
  - Secchi Depth
  - Turbidity
- **Bacteria**
  - Enterococcus

Sampling Performed during 2011

Number of Sampling Events	Goal	Completed
Base Flow	12	12
Stormflow	4-8	5

Challenges

- Collection of required number of storm samples is still a challenge. However, we took some steps last year and as the result, we are doing better now

Funding

- Monitoring at the Non-tidal monitoring sites in Delaware is supported by State General Fund and 106 Grant.
- During last couple of years, we faced significant cuts in our monitoring budget. However, it did not impact the Non-tidal monitoring program
- For 2012, we expect to be able to fully fund the Non-tidal monitoring.

New Activity for CY 2012

- We have recently signed a contract with University of Delaware to relocate our high-frequency water quality data analyzer (Aqulab by GreenSpan) from a site in the Inland Bays to Bridgeville site on the Nanticoke River
- We expect data analyzer to be installed and be ready for operation by early spring 2012
- The Aqualab can be programmed to collect samples with high frequency (for example , every hour or every 2 hours) and analyze them for several water quality parameters (including nutrients)

New Activity for CY 2012, cont.

- We plan to keep Aqualab at Bridgeville site for at least 2 years
- Data collected by Aqualab can be used to very accurately calculate nutrients load