Susquehanna Flats sampling and modeling plans during 2012

April 16, 2012 update

1. Steve Scott at the USACE ERDC is developing a 2-D hydrodynamic (and sediment transport?) model of the region between the dam and a line across the Bay near Aberdeen. I am not sure about the period or conditions to be modeled. He sent several of us a very nice contour plot of digitized old NOAA bathymetry, and is willing to share the data file behind it.

2. Jeff Halka/MGS will be heading out in mid-April to collect sediment grab samples at about 16 sites, primarily for grain size.

3. Mike Kemp, Cassie Gurbisz, and Debbie Hinkle here at Horn Point are beginning a Sea Grant study investigating the grass bed ecosystem, with associated nutrient and sediment dynamics. They will be starting with a reconnaissance survey in mid-April and carrying out field work through the 2012 growing season. Specifically, they will conduct:
(1) Monthly sampling of SAV biomass, water quality and sediment characteristics from Apr-Oct;
(2) Bi-monthly measurements (May, Jul, Sep) of fine-scale water quality over tidal cycles at three stations outside the bed, just inside the bed's outer edge, and near the bed center. This will be coordinated with the MDNR Eyes on the Bay Monitoring;
(3) Bi-monthly measurements of nutrients in plant biomass, solid-phase surface sediments, and sediment porewaters and epiphytic algae;
(4) Bi-monthly measurements of short term sedimentation rates for three stations using 7Be methods. They can provide support for routine sampling in the vicinity of the SF SAV bed.

4. The MDDNR Shallow Water Monitoring Program has just restarted their continuous water quality sensor at Havre de Grace (see figure 1), for which real-time data are available online at mddnr.chesapeakebay.net/newmontech/contmon/eotb_results_graphs.cfm?station=havredegrace. The location in the center of the grass bed (Figure 1) is only internally recording, so data do not become available until after servicing and downloading. The site in the grass bed records pressure (depth) internally, but these data are not available online. It is not clear whether the site at Havre de Grace records pressure internally, but the data are not available online. Data for both sites are available since 2007.

5. MDDNR also conducts routine monthly CB Mainstem and tributary water quality monitoring at the locations of the red squares in figure 1. In addition, Lee Karrh and DNR's SAV team will be conducting SAV ground truthing in the Flats, partly to help assess the potential long-term impacts of TS Lee and Hurricane Irene. DNR has also been in discussions with USGS about adding continuous nitrate and turbidity sensors at the Conowingo Dam river Input Station.

5. The NOAA CBIBS real-time buoy in the channel near Havre de Grace has not yet come online for 2012, but hopefully it will soon. When it is online, it yields valuable information on wind, waves, water

properties, and currents. MDDNR is conducting the routine maintenance and calibration of the NOAA CBIBS buoys.

6. Routine monitoring of flow plus spot samples of sediment concentration and nutrients at Conowingo Dam are carried out by USGS. USGS Harrisburg plans to deploy a continuous turbidity sensor at Conowingo in the near future.

7. It is still not clear whether continuous tide data are available at Havre de Grace. There is no benchmarked tide gauge there, but there may be submerged pressure data. This would be very valuable.

8. Larry Sanford will be carrying out several day time series observations of currents and waves in the center of the SAV bed near the DNR continuous monitoring site, along with seasonal sediment erodibility testing along a depth gradient from outside to inside, on two occasions later during 2012. Specific times are yet to be determined.

Monitoring Types & Stations

- Water Quality Mapping (http://mddnr.chesapeakebay/sim/index.cfm)
- Continuous Monitoring (http://mddnr.chesapeakebay/newmontech/contmon/index.cfm)
- Long-Term Monitoring (http://mddnr.chesapeakebay/bay_cond/index.cfm)

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Station Legend

- Long-Term Fixed Station
- Dataflow / Water Quality Mapping Segment
- Continuous Monitoring Station with Real-time