

USGS Maryland-Delaware-District of Columbia Water Science Center

Seminar Series

Monday, July 20, 2015 11:00 a.m.

Using Bank-Stability and Toe-Erosion Model (BSTEM) in the Chesapeake Bay Watershed by Dr. Andrew Simon



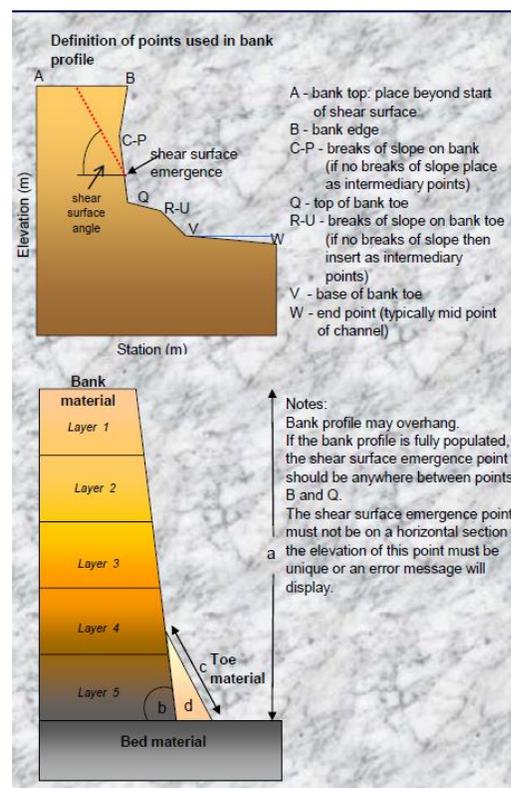
Dr. Andrew Simon, formerly with the USGS, then USDA-ARS, National Sedimentation Laboratory and now with *Cardno*, is the senior developer of BSTEM. The model has been applied to receiving water bodies all over the world including the Coral Sea and the Great Barrier Reef, Kaipara Harbor, NZ and Lake Champlain, USA.

Streambank erosion is an important contributor to total sediment loads but is not accounted for in any kind of meaningful way in many catchment-scale models. It is not uncommon for bank-derived sediment to make up more than 50% of the total suspended load, particularly in regions disturbed by European Settlement and other impacts that resulted in increased runoff rates. Greater connectivity of streambanks to the flow (as opposed to upland sources) mean that once eroded, bank-derived sediments have a much better opportunity to be transported through the system to receiving waters.

Gridded or sub-catchment approaches are used to simulated rainfall-runoff relations and associated erosion by raindrop impact and overland flow using empirical methods. Similar techniques can be used in combination with reach-specific, process-based models of bank erosion to determine loadings by size class. For more information, see BSTEM; (<http://www.ars.usda.gov/Research/docs.htm?docid=5044>)

This presentation will also be available remotely via Webex:

<https://usqs.webex.com/usqs/j.php?MTID=mf4746295ff760be82ebc98fded45e1e3>



For directions to the USGS MD-DE-DC WSC: <http://md.water.usgs.gov/directions/baltimore.html>.