Workgroup Status

Workgroup: Legacy Sediment

Status Report Date: Legacy Sediment Workgroup Meeting March 27, 2006

Team Leader(s): Jeffrey Hartranft, Chair; Dorothy Merritts and Robert Walter, Co-chairs

Issue (s) Addressed:

Finalized Definitions of Legacy Sediment

Generic Definition

Legacy Sediment - Sediment that was eroded from upland areas after the arrival of early Pennsylvania settlers and during centuries of intensive land uses; that deposited in valley bottoms along stream corridors, burying pre-settlement streams, floodplains, wetlands, and valley bottoms; and that altered and continues to impair the hydrologic, biologic, aquatic, riparian, and water quality functions of pre-settlement and modern environments. Legacy sediment often accumulated behind ubiquitous low-head mill dams and in their slackwater environments, resulting in thick accumulations of fine-grained sediment that contain significant amounts of nutrients.

Technical Definition

Legacy Sediment (n.) Sediment that (1) was eroded from upland slopes during several centuries of intensive land clearing, agriculture, and milling (in the eastern U.S., this occurred from the late 17th to late 19th Centuries); (2) collected along stream corridors and valley bottoms, burying pre-settlement streams, floodplains, wetlands, and dry valleys; and that altered the hydrologic, biologic, aquatic, riparian, and chemical functions of pre-settlement streams and floodplains; (3) accumulated behind ubiquitous low-head mill dams in slackwater environments, resulting in thick accumulations of fine-grained sediment, which distinguishes "legacy sediment" from fluvial deposits associated with meandering streams; (4) can also accumulate as coarser grained, more poorly sorted colluvial (not associated with stream transport) deposits, usually at valley margins; (5) can contain varying amounts of total phosphorus and nitgrogen, which contribute to nutrient loads in downstream waterways from bank erosion processes. Widespread indicators of impaired streams and watersheds due to legacy sediments include high banks, rapid rates of bank erosion, high sediment loads in streams, habitat degradation (aquatic and riparian), and diminished recharge of groundwater and denitrification capability.

Progress on Short Term Goals

- Chesapeake Bay Commission has agreed to fund efforts of Franklin and Marshall research so that nutrient content in legacy sediment is accurately quantified. Total funding agreement is $109,000
- Additional funding sources are being considered and pursued.

Progress on Long Term Goals

- Lewis Linker, EPA Chesapeake Bay Watershed Model Coordinator has been advising the Workgroup on strategies to include legacy sediment loads in the Phase 5 Model. Calibration of the Phase 5 Model will be complete by 2008.

- Action strategies for comments/concerns from previous workgroup meetings will be discussed at the next Workgroup meeting scheduled for Monday, May 1, 2006.