

Managing and Understanding Sediments in Your Watershed
U.S. Army Corps of Engineers, Detroit District
Great Lakes Hydraulics and Hydrology Office
8-9 December 2009
Marine Corps Naval Reserve Training Center
3 Porter Avenue, Buffalo, NY

Agenda

Note: Advance registration and a picture ID will be required to enter the Naval Reserve Facility. Please allow extra time to pass through security, find parking, and enter the building. Directions will be provided at the facility entrance gate.

8 DECEMBER - CLASSROOM

- 8:00 – 8:30 Introduction (Jim Selegean
Class overview USACE – Detroit District)
Section 516 Program
- 8:30 – 9:30 Sediment: The Good and the Bad (Travis Dahl
The influence of sediment on: USACE – Detroit District)
- Fish
 - Benthic invertebrates
 - Flooding, erosion, etc.
- 9:30 – 9:45 BREAK
- 9:45 – 10:45 Sources of Sediment (Jim Selegean
USACE – Detroit District)
- Sediment production
- Raindrops and entrainment
 - Benefits of a closed forest/vegetation
 - Incision and channel evolution
 - Dam removal
- Constructing a sediment budget
- Sources (bank erosion, overland runoff)
 - Sinks
 - Data sets
 - Corps guidance
- Generalizations about urban, agricultural and forested watersheds
Historical sediment supplies (Pre-European settlement to present)
The geomorphic assessment in sediment studies
- 10:45 – 11:45 Monitoring for sediment (Hank Zajd – USGS
Ithica, NY)
- Sampling equipment
Sampling methods
Accessing historic data

- 11:45 – 12:30 LUNCH (provided)
- 12:30 – 1:30 Web-based tools for soil erosion assessment/management (Glenn O’Neil - MSU)
- High (sediment) Impact Targeting
 - Digital Watershed
 - RUSLE tool for agriculture and construction sites
- 1:30 – 2:30 Other Web-based tools for soil erosion assessment (Calvin Creech, USACE – Detroit District.)
- L-THIA (Long-Term Hydrologic Impact Assessment) Model
 - SEDSPEC - A Web-based Tool to Estimate Peak Runoff and Design Runoff and Erosion Control Structures
 - Web-based Environmental Decision Support Tools
 - NCDC Tools
 - Other tools
- 2:30 – 2:45 BREAK
- 2:45 – 3:15 Ditch-sediment management tool (Travis Dahl USACE – Detroit District)
- 3:15 – 4:00 Advanced Tools (Jim Selegean USACE – Detroit District)
- 1-d sediment yield using SWAT
 - 2-d sediment yield using GSSHA
 - 1-d sediment transport with HEC-RAS – mobile bed
 - 1-d sediment transport with HEC-RAS – SIAM
 - Multi-dimensional sediment transport with CH3D-SED, EFDC, RMA-2, etc.

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9 DECEMBER – CLASSROOM

SEDIMENT PREVENTION / STABILIZATION METHODS

- 8:00 – 9:00 Riparian Zone Mitigation (Rich Fischer
USACE - ERDC)
- Buffer Strip design
 - Riparian Corridors
- 9:00 – 10:00 In-Stream Mitigation (Dave Derrick
USACE - ERDC)
- Bank stabilization methods
 - Grade control methods
 - Sediment and flow retention basins?
- 10:00 – 10:15 BREAK
- 10:15 – 10:45 Urban and construction BMPs for sediment (Paula Smith,
Monroe County, NY)
- 10:45 – 11:15 NRCS Programs for soil conservation (John Whitney
NRCS, Erie County)
- 11:15 – 11:30 GL Basin Program for Soil Erosion and Sediment Control (Great Lakes Commission)
- 11:30 – 12:00 Restoration case study - (Dave Derrick
USACE – ERDC)

9 DECEMBER - FIELD

- 12:00 – 5:00 Box lunch and visit field sites. Lunch will be provided, but transportation to the field site(s) is on your own.