

**National Association of Conservation Districts
Great Lakes Sediment Reduction Technical Task Force
February 1, 2005
Notes**

Charge of the Technical Task Force

To improve/revise the NACD Great Lakes Committee's sediment reduction goal: A forty percent decrease in sediment delivered to the Great Lakes and their tributaries by 2013.

To recommend how to:

- (a) Develop a sediment reduction goal or goals for the Great Lakes.*
- (b) Develop one or more methods to measure sediment reduction in Great Lakes urban, forested and agricultural watersheds. Measurement methods should:

 - (i) Provide a way to measure progress toward sediment reduction goals.*
 - (ii) Be widely accepted by experts in the Great Lakes Basin.**

Participants:

Gene Clark	Dan Binder
Tim Gieseke	John Perrecone
James Stafford	Dr. Tim Loftus
Chi Hua Huang	Keith Eichorst
Tom Middleton	Christa Jones
Marilyn Shy	

Suggested first step: Identify HUC-8 digit with high sediment delivery

- We need to decide if we need a goal for each of the five lakes, or for the entire basin. Or individual goals for each lake with an overall goal for the basin.
- We need to decide if 40 % sediment reduction is achievable. (reality check)
- We need to know how bad (environmentally) the problem is, and how much it's costing us (financially). (Baseline)
- How many years do we want to take to establish a baseline?
- We need to decide how to establish a baseline for sediment delivery, one that can be accepted by all the players
- We need to decide what scale is appropriate for the goal(s): basin-wide, HUC 11 watershed, HUC 8 ???
- We need to consider sediment's relationship to nutrients such as phosphorus, goals for which may already be established in many sub-watersheds
- We need to have some mechanism (forum for modelers) to communicate, develop goals and policy regionally
- We need hard core data to calibrate and validate the models we choose
- Is the charge achievable based on existing data? Possibly for Lake Erie, quite a bit of sediment loading data exists.

- We need to engage more survey research, to deepen our understanding of the economic obstacles and drivers associated with sedimentation (survey at local level to estimate economic effects for individual lakes and basin-wide).
- We need consistent funding for adequate baseline water quality monitoring efforts, expand authorities under existing programs to include monitoring
- We need to inform interested parties across the basin (of what the tech task force is doing)
- We need to make sure this group's efforts feed into a mechanism to formulate policy (example is regional collaboration effort) (John will share information with Christa)
- Where stream monitoring data is insufficient, we can use sediment delivery ratio, if we can agree on what ratio is suitable
- We need to consider forested and urban areas as well as agricultural
- We need to know what the sources are (human-incurred v. natural) and how much loading results from each

How do we develop a sediment reduction goal or goals for the Great Lakes? How long will it take to set a goal?

1. Identify sources of existing data and trends.
2. Identify gaps in the data.
3. Establish a baseline of sediment being delivered for each lake or basin-wide. Annual loading number? How long a trend?

Lake Erie/Sandusky has 20 years data.

4. Is/are the sediment levels detrimental? To the streams? To the lakes? How do we know? If yes, how much is from natural sources? Determine sources that we can do something about.
5. Establish different goals for different lakes.
Negotiate different goals for different watersheds. Some watersheds may not need much reduction. Some may be experiencing significant erosion.

Set a timeline.

What size watershed?

What are the best methods/programs that are currently used or available for measuring/assessing soil loss and/or sedimentation?

Make a list of methods

Evaluate methods

Choose the best ones with available knowledge

Discuss the limitations, assumptions, and constraints of the chosen methods

Recommend method(s) appropriate for assessing sedimentation

Choose representative watersheds across the Great Lakes from which we can learn

Can we choose one lake for a test?

- Turbidity data available from drinking water treatment facilities
- Direct profile data collected for a particular area (shoreline, site specific)
- Ohio Tributary Monitoring Program quantifies suspended sediment (Tim Loftus); physical collection and analysis
- USGS/NAWQA stream gauging stations measure suspended sediment
- Secchi disc (turbidity)
- NRCS National Resources Inventory (field data) (ag land)
- Volumetric measurement and/or volume of dredged material (USACE)

Models:

- USGS Wisconsin: predictive model of nutrient loss (includes sediment) (John Perrecone) (ag land)
- Digital Watershed Tool for Measuring Sediment Delivery (MSU Model) (Jon Bartholic) (row crop ag land only)
- AVGWLF-arcview generalized watershed loading function (PA) (all watersheds) Marilyn
- RUSLE/AGNPS/SWAT (all are based on USLE technology) (sequence of models developed by ARS) can be used for all watersheds (maybe not developed land) Chi Hua
- Midwest Spatial Decision Support System partnership (soil loss, sedimentation (USEPA Region 5) (all watershed types) John Perrecone
- Sediment budget (SW Wisconsin)
- TNC in the St. Joe (Larry Clemens)

What do we want to reduce by 40%? Surface erosion? Channel storage? Gully erosion? Sediment delivery?

How do we develop (or choose) one or more methods to measure sediment reduction in Great Lakes urban, forested and agricultural watersheds?

- Review sediment TMDLs—John will bring info
- First identify sediment loading

How can we efficiently review how successful sediment and other nonpoint source pollutant reduction efforts are measured both within and outside of the Great Lakes basin (to find the best examples)?

Measurement method examples:

- phosphorus reduction credit per acre of conservation tillage (ag watershed)
- Lake Erie CREP: buffers implementation translates into sediment reduction
- Secchi disc measurement (Headwaters of Great Miami River showed 60% reduction in turbidity)
- Center for Watershed Protection can provide urban models/analyses
- Idea: 75% producers qualify for CSP Tier 2 = 40% sediment reduction

- Idea: ____ acres flood plain restoration = _____% of sediment reduction
- ____ reduction in dredging cost = ____ % sediment reduction
- measure impacts on recreation over time
- Discovery farms (WI)
- MS4 includes monitoring component (urban sediment)

Next Steps and Schedule for Technical Task Force

1. Answer this question: Do we want to use modeling to measure sediment reduction? If yes, what model? Can we use gauge data (USGS National Water Quality Assessment, Heidelberg, USACE Detroit District (Gene will ask what kinds of data USACE collects related to sediment))?
2. Familiarize ourselves with sediment TMDLs. (John will find out if there are sediment TMDLs developed for the Midwest by 2-15-05. If not, we'll look at approved sediment TMDLs from other parts of country.)
3. Familiarize ourselves with AVG.....model
4. Find out how many water bodies in the Great Lakes basin are impaired for sediment? (John check 303 d list)
5. Marilyn get draft proceedings from Post PLUARG to share with group
6. Structure teleconference to move us ahead (Marilyn, Christa, Tim, Tim)
7. Christa will clean up and send out notes to all.

August 1, 2005 Technical Task Force completes recommendations to NACD Great Lakes Committee.

List of potentially useful websites:

- 1) Conservation Effects Assessment Project Bibliographies
<http://www.nal.usda.gov/wqic/ceap/ceapbibs/html>
- 2) EPA Total Maximum Daily Load site:
<http://www.epa.gov/owow/tmdl/>
- 3) Association of State Water Pollution Control Administrators, America's Clean Water Partnership: <http://www.tmdls.net/> Foundation, EPA
- 4) Chesapeake Bay Sediment Reduction Goal pages:
<http://www.chesapeakebay.net/info/wqcriteria/v/allocations.cfm>

Who is not here that needs to be?

Great Lakes Commission representative

Jan Miller

IJC—Bruce Kirschner

RC&D?

State water quality agency rep. concerned with sediment TMDL

Environmental Defense representative for policy committee???? Or for this committee?

Canadian (Environment Canada and/or Ontario)