

**Decision Methodology for Solids
For the
April 2002 Water Quality Inventory¹**

There are numerous impairments for “sediments” in the IR. Many of these were assessed and projected based on land use and the likelihood of such impairments. Unfortunately the term "sediments" does not accurately inform the public as to the nature of the impairment, nor provide helpful guidance to those who need to develop TMDLs to remediate the problem.

In this current list, impairments previously listed for sediments, and new impairments evaluated for this report will be determined and listed as described below.

Free-flowing Streams
Water Clarity

Impairing substance: Total Suspended Solids (TSS)
Measure: Turbidity as measured in Nephelometer Turbidity Units (NTUs)
Criterion: Turbidity criteria are addressed in COMAR §26.08.02.03-3(A)(5):

- (5) Turbidity
 - (a) Turbidity may not exceed levels detrimental to aquatic life.
 - (b) Turbidity in the surface water resulting from any discharge may not exceed 150 units at any time for 50 units as a monthly average. Units shall be measured in Nephelometer Turbidity Units.

Erosional and Depositional Impacts (limited to wadeable streams)

Impairing substance: Sedimentation/siltation
Measure: Biocriteria. The application of biocriteria for assessment decisions for the 303(d) List is addressed elsewhere in this document.
Criterion: Addressed under the narrative criteria:

- 26.08.02.02(B) Specific designated uses.
 - (1) Use I: Water Contact Recreation, and Protection of Aquatic Life. This use designation includes waters which are suitable for:
 - (c) The growth and propagation of fish (other than trout), **other aquatic life**, and wildlife
 - (4) Use III: Natural Trout Waters. This use designation includes waters which have the potential or are:

¹ The majority of this document was created in May of 2001 and has not changed significantly since then.

- (a) Suitable for the growth and propagation of trout; and
 - (b) Capable of supporting self-sustaining trout populations and **their associated food organisms**.
- (5) Use IV: Recreational Trout Waters.
- (a) Capable of holding or supporting adult trout for put-and-take fishing; and
 - (b) Managed as a special fishery by periodic stocking and seasonal catching.

Waters must be protected for these designated uses (26.08.02.02(A)). Key phrases supporting the use of biocriteria to protect against impacts from eroded or deposited sediments are highlighted.

- If MBSS data indicate impairment, the habitat data related to sediments will be assessed.
- If there is no indication of a sediment problem (e.g., embeddedness does not indicate a problem), the listing will be for "degraded aquatic community."
- If there does appear to be a sediment problem, it will be listed for soils or sediment.

Impoundments

Maryland has no natural lakes. This decision rule covers reservoirs and other manmade lakes. Estuaries, such as Chesapeake Bay will be covered under new regulations currently being developed and which specifically address water clarity and sediment.

Water Clarity

Impairing substance: Sedimentation/siltation
Measure: Turbidity as measured in Nephelometer Turbidity Units (NTUs)
Criterion: Turbidity criteria are addressed in COMAR §26.08.02.03-3(A)(5):

- (5) Turbidity
- (d) Turbidity may not exceed levels detrimental to aquatic life.
- (e) Turbidity in the surface water resulting from any discharge may not exceed 150 units at any time for 50 units as a monthly average. Units shall be measured in Nephelometer Turbidity Units.

If turbidity exceeds the indicated levels, chlorophyll shall also be measured. If chlorophyll is high, the impairment will be attributed to nutrient enrichment (eutrophication), rather than solids. Exceptions may be made and professional judgment applied in areas where soil and local geologic conditions would normally have high sediment runoff.

Geographic Scale of Assessments

Starting with the 2012 Integrated Report, all assessments will be georeferenced in a GIS. In order to maintain consistency in assessment scale, MDE has adopted the following protocols for georeferencing assessments derived from sediment monitoring data.

Free-Flowing Streams

Streams and other non-tidal waters will have a flexible listing scale that will enable a wide range of assessment sizes. For instance, sediment information may only be available for headwater streams. In this case the assessment, whether impaired or not, will be applied to the stream from the monitoring location up to the headwaters. In other scenarios, data may be available for the outlet of an 8-digit watershed. In these cases, the Department may choose to assess the entire 8-digit watershed (Maryland 8-digit watershed, not 8-digit Federal Hydrologic Unit Code watershed). Generally speaking, for sediments, Maryland most often assesses and establishes TMDLs at the 8-digit scale (for non-tidal waters).

Impoundments

MDE acknowledges that in many cases the sources for lake impairments originate in the upstream watershed. However, assessments for lakes will not be applied to the upstream waters unless it is determined that uses are also threatened in these upstream waters. In other words, assessments for lakes will be georeferenced to the polygonal water surface that represents a lake's area.