

Narrative Bottom Deposits Standard Implementation Procedures



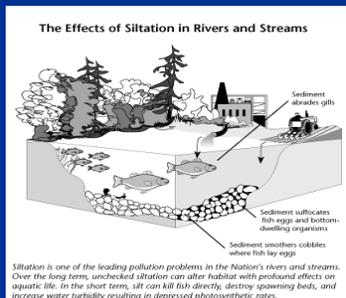
Narrative Bottom Deposits Standard



- R18-11-108(A)(1):
“A surface water shall be free from pollutants in amounts or concentrations that settle to form bottom deposits that inhibit or prohibit the habitation, growth, or propagation of aquatic life.”

Purpose

- To prevent excessive sedimentation and siltation that adversely affects aquatic life.



How Much Sediment Is Too Much?

Sedimentation and siltation is excessive when the amount of deposited sediment:

- Reduces habitat by filling in pools and substrate interstitial spaces for bottom-dwelling macroinvertebrates.
- Reduces the abundance and diversity of aquatic organisms.
- Smothers fish eggs in redds, alters spawning habitat, and reduces over-wintering habitat for fry.

Where Will Narrative Bottom Deposits IPs Apply Initially?

- In wadeable, perennial streams with riffle / run habitats.



We Know It When We See It!

- How do we translate the narrative bottom deposits standard into measures that can be consistently implemented and objectively determined?

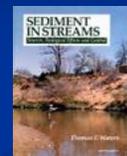


What Indicator Will ADEQ Use to Implement the Narrative Bottom Deposits Standard?

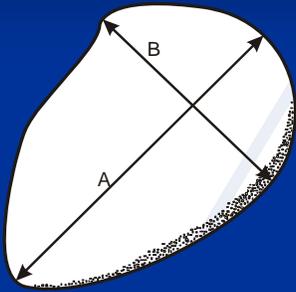
- The percentage of fine sediment in riffle habitats as determined by a pebble count.

How Much Sediment Is Too Much?

- The scientific literature tells us that when the percentage of fine sediments in riffle habitats exceeds 20%-35%, aquatic life is adversely affected.
- Bjornn, et. al (1977) [20-30%]
- Relyea, et. al (2000) [20% to 35%]



How Will ADEQ Determine Percent Fines?



- Using a modified Wolman pebble count
- Sample along transects in riffle habitats where bioassessments are done.
- 100-particle count
- Measure median particle size

§305(b) Assessment

- If the average percent fines in riffle habitats is $<20\%$, ADEQ will determine that the stream is attaining the narrative bottom deposits standard.
- 20% to 35% percent fines: Inconclusive. Need bioassessment to confirm biological impairment.
- If the average percent fines in riffle habitats is $\geq 35\%$, ADEQ will determine that the stream is NOT attaining the narrative bottom deposits standard (without bioassessment).

§303(d) Listing

- A violation of the narrative bottom deposits standard as indicated by a determination that the percentage of fines in riffle habitats is $\geq 35\%$ is grounds for 303(d) listing.
- If the percentage of fines in riffle habitats is between 20% and 35% AND a bioassessment index score indicates an impaired biological community, ADEQ will find that there is a violation of the narrative bottom deposits standard and there are grounds for a §303(d) listing.