



# Sediment Management for Dam Removal:

a review of regulations, guidance,  
and best practices

NCER 2018

100,000+

# Opportunities

Regulatory compliance

Restore/mimic natural conditions

Provide ecological lift

Overall project success

# Impounded sediment





# Rivers naturally carry sediment





# Not all dams have a lot of sediment





# Not all sediment moves



# Sediment can be harmful or beneficial

Fine grain sediment release (clay and silt)

Can clog habitat downstream

Can have direct impacts on species respiration

Coarse grain (cobble and gravel)

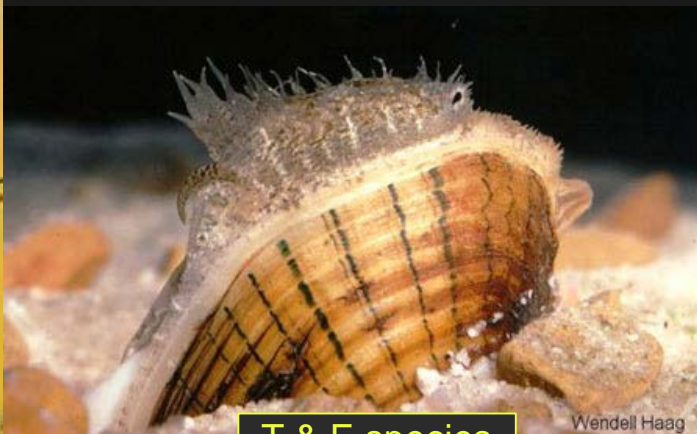
Forms the basis of habitat for many species



# Potential long-term impacts



contaminants



T & E species



infrastructure

who is responsible for determining what  
is and is not acceptable?

# Pennsylvania

Recognizes dam removal  
as river restoration strategy

Restoration Waiver

Assumption of sediment  
mobilization

Risk-based sediment  
testing



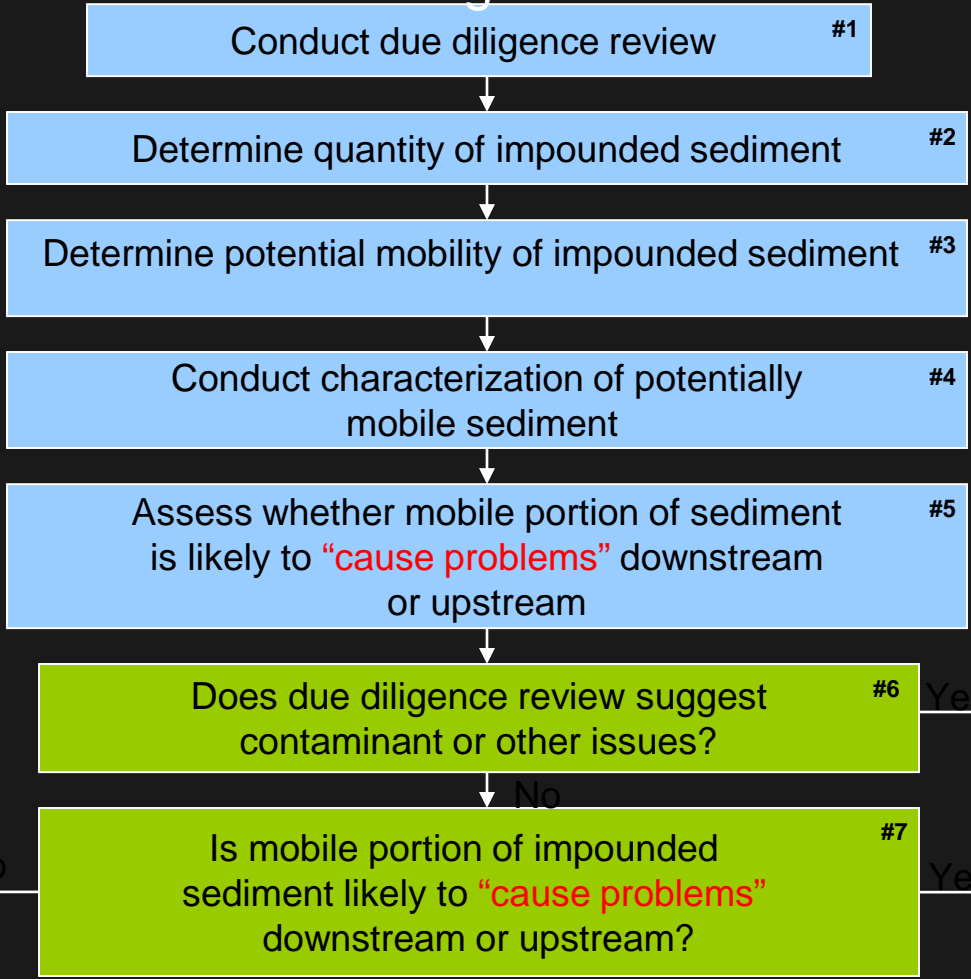


# NH Barrier Removal Sediment Assessment & Management Protocol Flow Chart

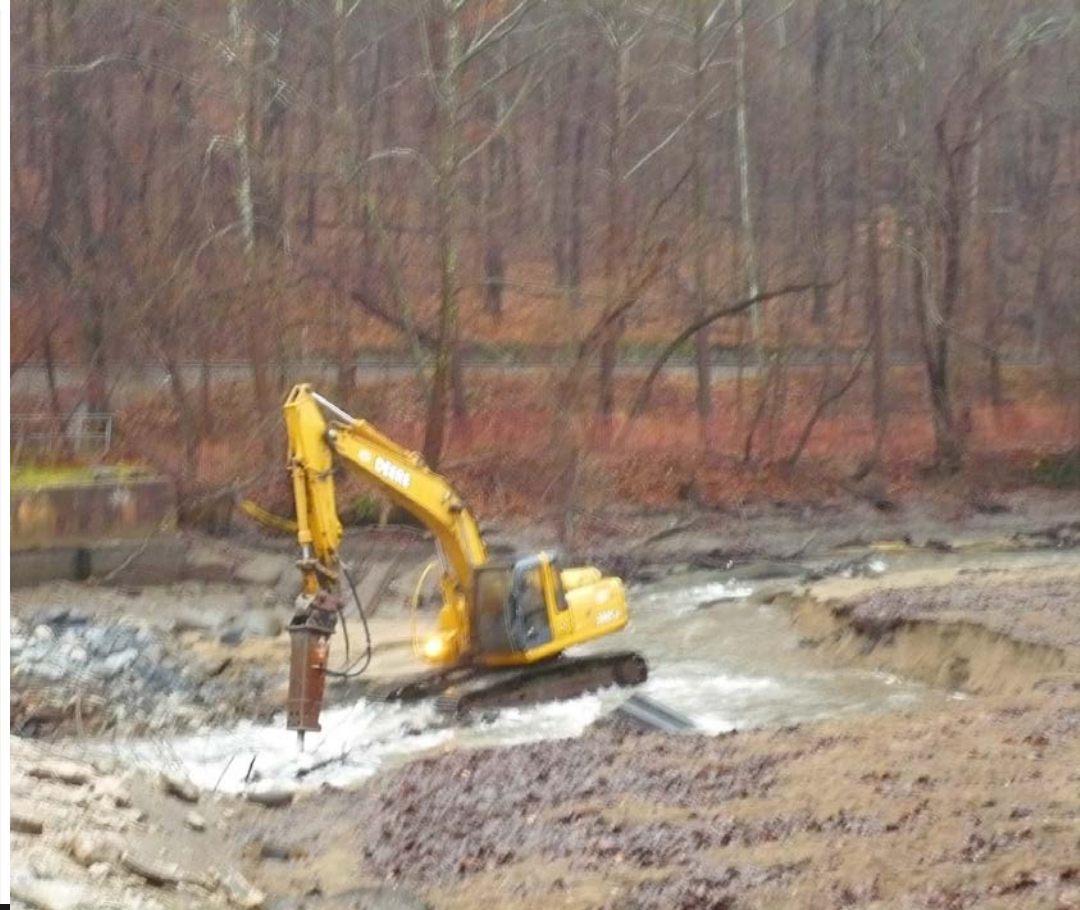
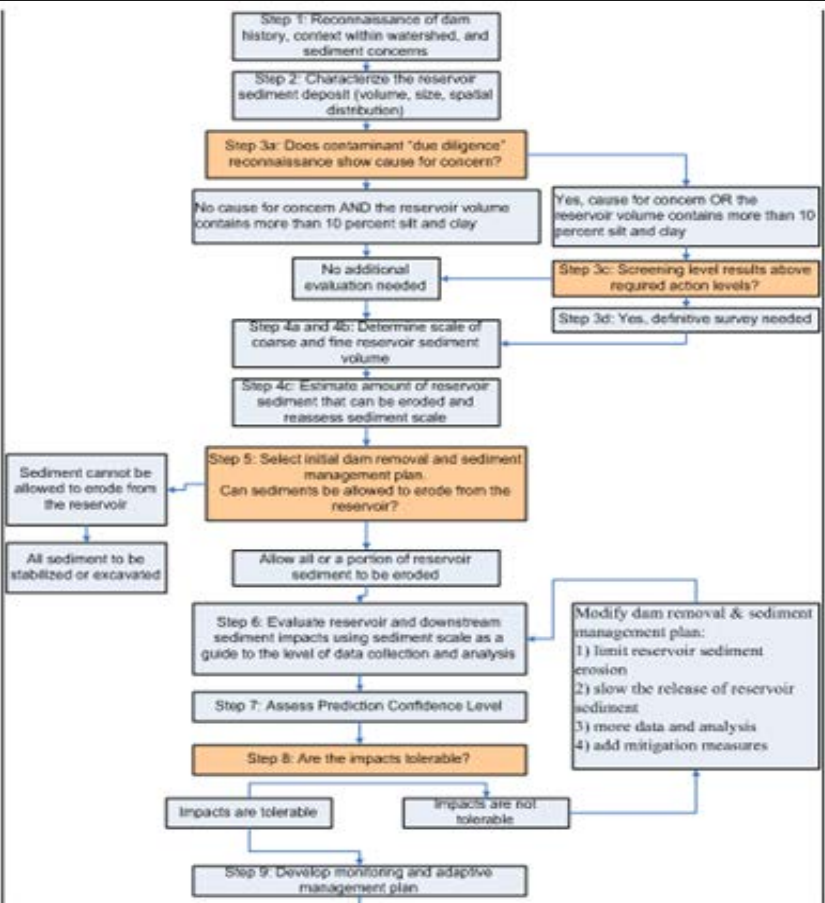
Assumptions:

- Anthropogenic barrier removal is beneficial to river health.
- The total volume of potentially mobile impounded sediment is critical to the sediment management process. As such, the level of sediment contaminant testing should be commensurate with the volume of potentially mobile impounded sediment.
- Projects with small amounts of potentially mobile impounded sediment and no or limited due diligence issues should be able to proceed with no contaminant testing.
- Sediment assessment and management protocols should not always be determined on a case-by-case basis. A standardized sediment assessment and management protocol should be utilized until specific sediment volume or contamination thresholds are exceeded.

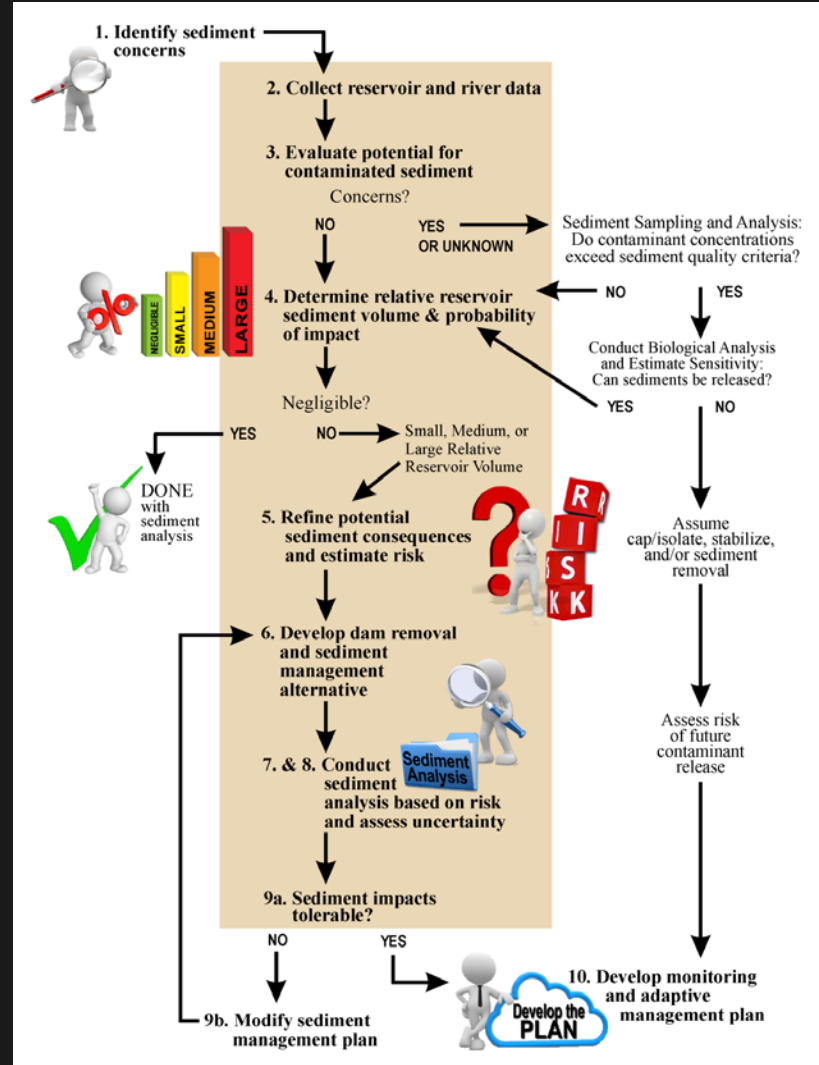
#8  
 No contaminant testing or sediment management required



# regulatory guidance for managing sediment



# Bureau of Reclamation Subcommittee on Sedimentation 2017





# Recent regulatory strides

Risk-based assessment

Negotiated scope of investigations

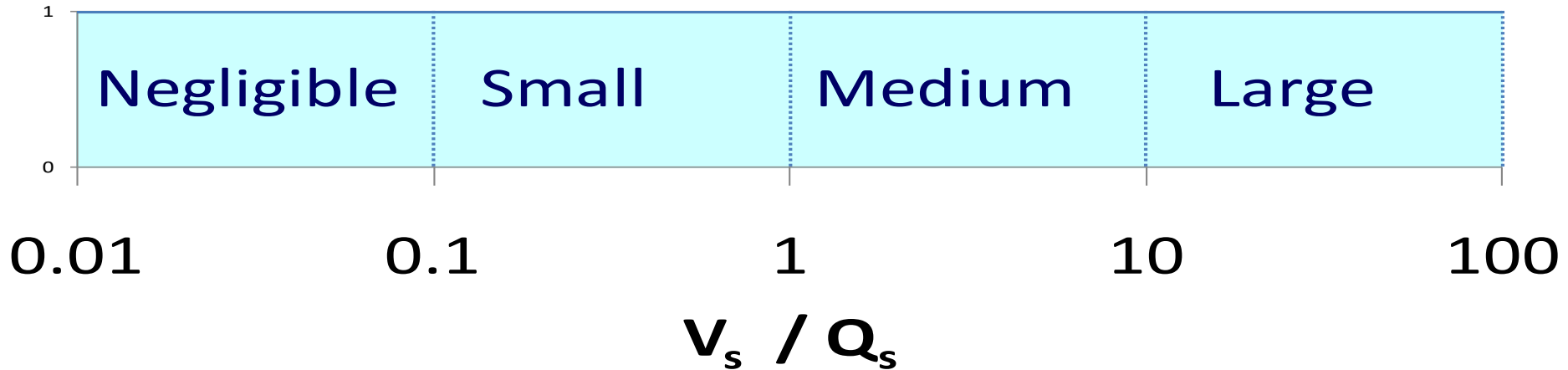
EPA CWA variance

USACE Nationwide 53



# Scale analysis and management to sediment volume

**Reservoir Sediment Volume ( $V_s$ )  
Relative to the Average Annual  
Sediment Load ( $Q_s$ )**



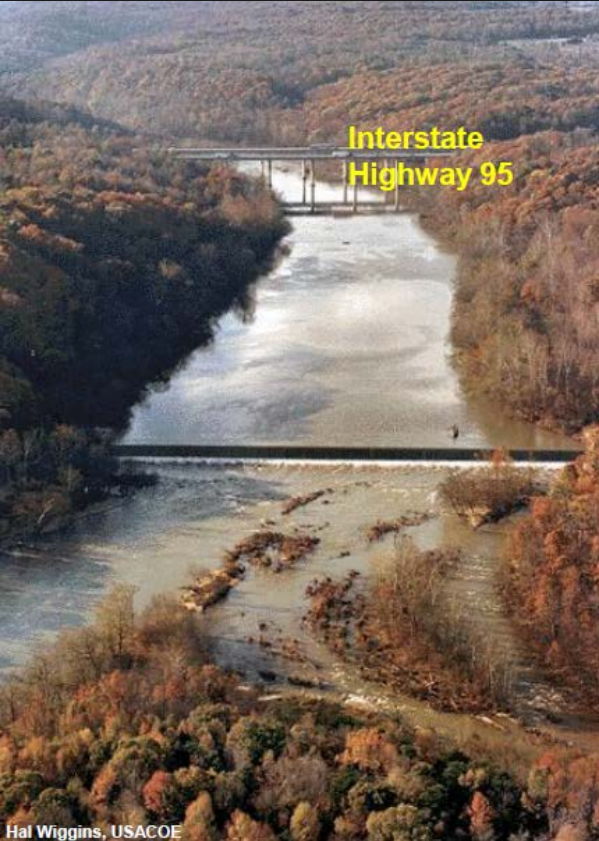


consider long-term benefits vs short-term impacts





# Embrey Dam Removal, Rappahannock River, VA





# Gold Ray Dam, Rogue River, OR











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Nationalgeographic.com

Elaine Thompson, Associated Press



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