
OUTCOMES FROM STREAM RESTORATION IN THE PAST

EVOLUTION IN THE STREAM RESTORATION PROTOCOLS

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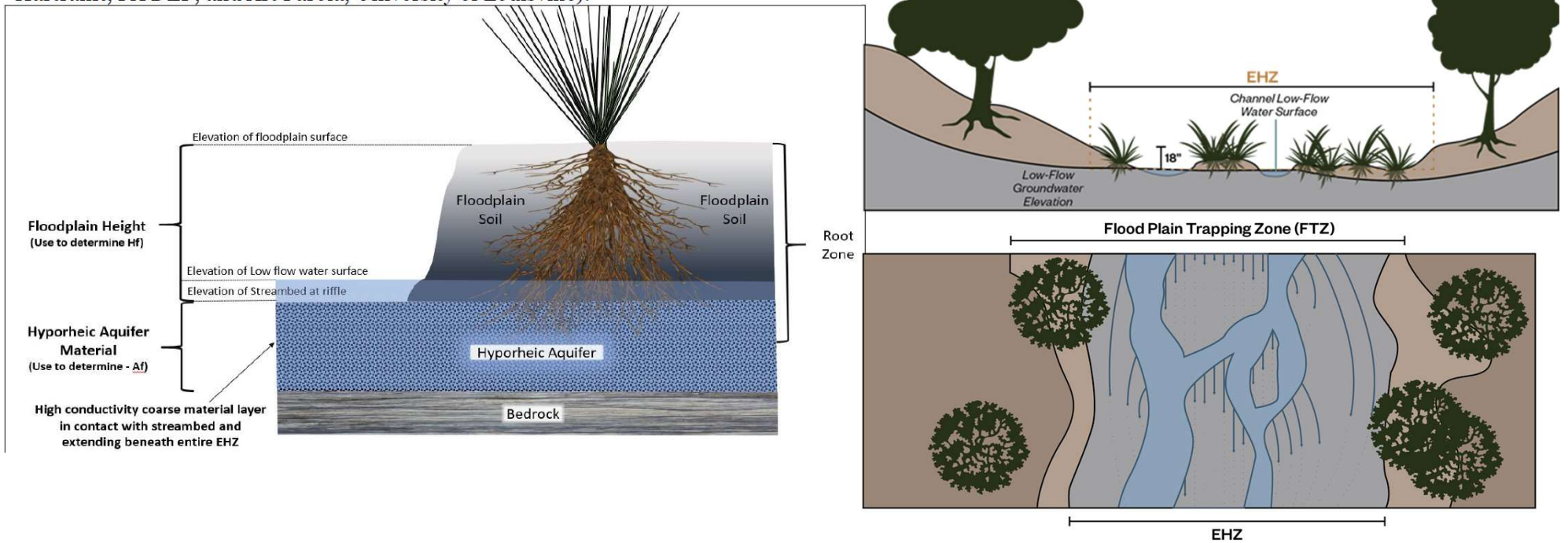
EVOLUTION OF STREAM RESTORATION CREDITING

Key Themes:

- Improved understanding of floodplain restoration approaches
- More focus on site-specific monitoring
- Emphasis on qualifying criteria and avoiding unintended consequences
- Need for long-term project verification

FOCUS ON THE FLOODPLAIN

Figure 4. Illustration of site-specific discount factors for Protocol 2 (Courtesy: Jeff Hartranft, PA DEP; and Art Parola, University of Louisiana).



EMPHASIS ON SITE-LEVEL MONITORING

Courtesy: Stantec



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QUALIFYING CRITERIA AND UNINTENDED CONSEQUENCES

Non-Creditable

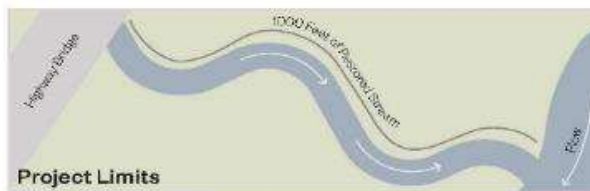
Definition: Hard, permanent structures used to protect critical infrastructure and stabilize banks. Techniques are not consistent with long-term, comprehensive restoration approaches.

- Concrete Retaining Wall
- Sheet Piling/ Planking
- Gabion
- Engineered Block Walls
- A-Jacks
- Dumped Rip Rap

- New definitions for types of bank stabilization techniques that can be used for TMDL credit.
- More emphasis on existing criteria
- Projects must demonstrate consideration of unintended consequences



NEED FOR LONG-TERM VERIFICATION



Defining Loss of Pollutant Reduction Function for Protocol 1

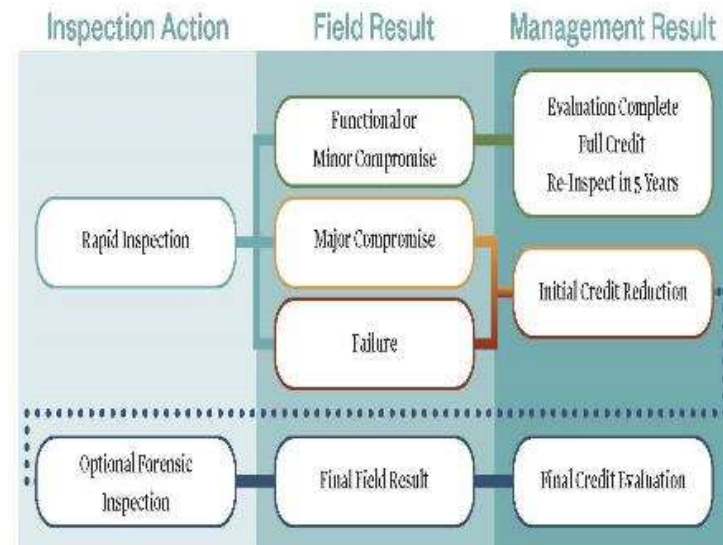
Criteria for Loss

Evidence of bank or bed instability such that the project delivers more sediment downstream than designed,

Key Visual Indicators

- Severe bank undercutting (bare earth exposed)
- Incising bed (bed erosion evident)
- Flanking or down structures
- Failure or collapse practices

Status	% Failing *
Functioning	0 to 10% of reach
Showing Major Compromise	20 to 40% of reach
Project Failure	50% or more of reach



QUESTIONS?

