



Pooled Monitoring Initiative's Restoration Research Award Program

Project Title

More than dirt: Soil health tradeoffs with stream and floodplain restorations

Lead Entity

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Partners

Sujay Kaushal, U. of Maryland

Research question(s)

- How do floodplain restoration activities impair soil health and what are the quantitative changes in soil physical, chemical, and biological attributes due to restoration?
- Do soil health attributes recover with time post restoration, and if yes, how do they compare with “desirable” or reference soil conditions?

Issue addressed

Soil health is rarely studied or addressed in floodplain restorations even though it is an important contributor to floodplain functions and ecosystem services.

A better understanding of soil health and its changes post restoration will help us better quantify the effectiveness of restorations.

Project findings

- Soil health parameters are affected by restorations but to varying extents.
- Some soil health parameters recover quickly while other take a longer time.
- Selection of “reference” conditions to compare against is important and will dictate the expected soil recovery.

Recommendations

This study identified specific soil health metrics that can be adopted for restoration monitoring. Soil metrics with varying recovery rates should be selected to provide a robust assessment of floodplain restoration recovery. Caution should be exercised when comparing restorations against “reference” sites.

Award # XXXXX

The Pooled Monitoring Initiative pools resources to support scientists who answer key restoration questions posed by the regulatory and practitioner communities. The research teams then provide the answers back to those who asked the questions for direct application. The goal of the program is to answer these key restoration questions that serve as a barrier to watershed restoration project implementation.

Questions? See cbtrust.org/grants/restoration-research/



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Project Title

Memories of the soils:
Evaluation of soil nitrogen stable isotope as a robust metric to assess floodplain restoration and nitrogen removal effectiveness

Lead Entity

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Partners

Sujay Kaushal, U. of Maryland

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Why does this study matter?

Currently there are no robust and/or easy soil health metrics to assess effectiveness of floodplain restorations.

This study fills that knowledge gap.

What should we do with this information?

Selected soil health metrics can be used by practitioners for assessing effectiveness of floodplain restorations.

Comparisons with reference conditions provides guidance on how we should select references.

What will the end-user (regulator/manager and practitioner) do with this information?

Establish protocols to include measurement of selected soil health properties in floodplain monitoring post restoration.

For more information:

Please contact Shreeram Inamdar (Inamdar@udel.edu) or Joe Galella (jgalella@udel.edu).