

Patuxent Wildlife Research Center

Making decisions for headwater stream conservation at the watershed scale



Photo credit: Andrew Dietrich

The Challenge: Headwater stream ecosystems are important to natural resource managers not only because of their unique aquatic biodiversity, but also because they influence the availability of clean water, mitigate flood control, and have recreational value to hikers and anglers. Balancing these multiple objectives within and among natural resource organizations is generally challenging and may have consequences for headwater stream conservation across large spatial scales.

The Science: We are working with federal, state, local and non-profit natural resource organizations throughout the Deerfield and Merrimack Watersheds, two watersheds located in the northeastern US, to identify the impediments to effective headwater stream conservation and explore how alternative forms of collaboration may influence ecological outcomes. The successful application of structured decision making (SDM) requires the involvement of resource managers at each step in the decision. Though they may identify a decision which is not optimal for each management organization, species group, or protected area of a given watershed individually, collectively results will be able to satisfy the regional objectives for headwater stream systems.



Photo credit: Andrew Dietrich

The Future: Results will provide decision analyses that are (1) relevant to the management partners in question; (2) emblematic of landscape-scale cooperative decisions; and (3) sensitive to the practical consequences of climate change. Results will also inform monitoring and research needs that can be integrated into an adaptive management framework. Additionally, the decision-framework will be generalized to address major challenges to large landscape scale decision making for a wide range of conservation concerns.

For more information visit the project webpage at <https://sites.google.com/site/headwaterstreams/>



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