

Boundary Objects, Brokers and Conversation Starters: The Role of Tactical Management Tools for Non-Point Phosphorus Mitigation in the Lake Champlain Basin

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Abstract:

The use of computational models to simulate complex natural-human coupled systems continues to receive much attention in terms of deepening our capacity to understand the impact of human land use decisions on ecosystems. Over the past several years, the Soil and Water Assessment Tool (SWAT) and other models have been devised to simulate these complex dynamics, especially in non-point nutrient management scenarios. Even more recently, these models have been employed to support adaptive management and integrative policy approaches to achieve water quality and ecosystem sustainability goals. In this article, the utilization by stakeholder groups of a tactical management tool, the Critical Source Area/Soil and Water Assessment Tool (CSA/SWAT model), for non-point phosphorous mitigation in the Missisquoi Basin in northern Lake Champlain, Vermont is examined in this qualitative case study. Drawing on the use of the output of computer simulation models like this one as “boundary objects” (Star, 1989), this study examines the extent to which a community of practice (Wenger, 1998) has emerged around the use of the model outputs as a feature of an adaptive management strategy to mitigate nutrient loading in the region. To examine the treatment of the tool as a boundary object and cull the policy implications stemming from its uses, interviews with key stakeholders, source document analysis, and participant observations are used to study the tool’s current and potential uses.