Center for Community-Based Resource Management (CBRM)

Natural Resources Institute, University of Manitoba

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Date:	**05/05/2013**	**Entry Number:**	**1311**
Case Study Name:	**Effectiveness of a participatory modeling effort to identify and advance community water resource goals in St. Albans, Vermont**		
Author:	Erica J. Brown Gaddis, Hilary Harp Falk, Clare Ginger, Alexey Voinov		
Document Type:	Journal paper		
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Region:	North America		
Country:	USA		
Ecosystem Type:	Watershed area (St. Albans Bay watershed, Vermont), agricultural		
Social Characteristics:	Proactive community,		
Scale of Study:	Regional		
Resource Type:	Water resources		

Type of Initiative:	Research-driven project
Community-Based Work:	Conservation, resource planning, watershed, environmental management
Keywords:	Watershed management, social dynamics, participatory modeling, Lake Champlain, pollution, environmental management
Summary:	**Natural resource managers face complex challenges in addressing non-point source water pollution. A participatory modeling approach was applied in the St. Albans Bay watershed to identify the most effective phosphorus control options to achieve the load reductions required by the Lake Champlain Phosphorus Total Maximum Daily Load (TMDL). Stakeholders participated in the collection of data in the watershed, model creation, development of policy scenarios, and interpretation of model results. The participatory modeling approach employed in this study led to the identification of new solutions to an old water resource problem regarding phosphorus loads to streams and St. Albans Bay. The modeling process provided a perceived neutral atmosphere for discussing water pollution issues that have historically been divisive and provided participants with greater understanding of local environmental issues and reduced historic conflict among actors. This study highlights the importance of considering the dynamics of social and technical factors in the use of modeling in natural resource planning processes. The approach led to stakeholder agreement about problems and potential solutions generated in the modeling process. As the process ended, local decision makers were moving forward to implement solutions identified to be most cost-effective.**