Lake Champlain Basin Summary

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Fitting Place to Decision-making, Extended Abstract Draft

Commentary on the state of the practice that critiques and suggests new directions for integrating place, decision-making, and relevance to planning.

Inspired decision-making in the Lake Champlain Basin: integrated, place-based alternatives to legislation and regulation rooted in engaged citizen and resource management approaches to watershed protection

Abstract

Decision-making challenges and opportunities emerge when jointly managing international waters shared by two countries and two states with considerably different political and governmental systems. Lake Champlain's vast watershed is shared by the states of Vermont and New York in the United States and the Province of Quebec in Canada. Transboundary decision-making is characterized by consensus reached through a continuous sequence of nonbinding, nonregulatory environmental agreements revolving around engaged government resource management agencies integrated with an engaged and educated citizenry.

Since the historic 1988 *Memorandum of Understanding on Environmental Cooperation on the Management of Lake Champlain*, 16 additional agreements have been signed—averaging nearly one per year. They range from joint declarations and watershed plans to phosphorus standards and toxic spill responses. They are renewable, encompassing agreements bearing the support and participation of state, provincial, and federal agencies; local government; and businesses with a very strong citizen component. In 2008-09, four of these agreements are slated for renewal.

This progression of cooperative agreements falls under the auspices of the Lake Champlain Basin Program, a quasi-governmental, public-private partnership among Vermont, New York and Quebec that coordinates Lake Champlain's long-term management plan, *Opportunities for Action: an Evolving Plan for the Future of the Lake Champlain Basin*.

The Lake Champlain Basin Program achieves significant watershed improvements through its consensus-based, decision-making policies bolstered by state-to-state, state-to-province agreements. This incremental approach, steeped in multi-level partnerships and institutions, epitomizes the theory of natural resource regimes which emphasize roles of intermediate institutions in environmental management.

Use of nonbinding, renewable agreements more easily bridges differences among jurisdictions, whether interstate, intrastate or international. Additionally, such agreements can be updated more immediately as new information and technologies emerge. These agreements can be assembled more quickly than pursuing a traditional regulatory or legislative response. It is precisely the voluntary nature of these agreements and their successes that has captured the attention of other basins worldwide as a model for replication and reaching agreement on difficult issues. Due to this integrated decision-making model, UNESCO designated the Lake Champlain Basin as one

of seven demonstration watersheds within its Hydrology, Environment, Life, and Policy (UNESCO HELP) program in 2005.

Lake Champlain Basin description and place names

Lake Champlain's vast watershed is shared by Vermont, New York and Quebec. The basin extends from peaks of the Adirondack Mountains in New York east towards the Green Mountains in Vermont and north into Quebec. Through the Richelieu River, Lake Champlain shares the St. Lawrence River drainage with the Great Lakes. From north to south, the lake spans 193 km, yet it is surprisingly narrow—only 19 km at its widest point. Its greatest depth is 122 m and the watershed is 21,326 km^2.

Lake Champlain's long length and narrow width, in addition to many bays and 70 islands, contribute to the lake being divided into five major segments and many smaller bays. Each segment has unique physical characteristics and different land uses in its surrounding subbasin which influence the water quality of that segment. The public is conversant in and identifies with names of the five major segments: North Lake, South Lake, Broad Lake, the small Malletts Bay, and the interestingly named Inland Sea. The North Lake, which includes Missisquoi Bay shared with Canada, and South Lake have the most eutrophic waters due to predominantly agricultural land uses, although lake-wide, urban land uses contribute a higher percentage of phosphorus to the lake. Consequently, many concerns for Lake Champlain are location-specific. While extensive blue-green algae blooms are a serious problem in Missisquoi Bay, they have not proved problematic in the South Lake. For phosphorus targeting purposes, especially within the federally required Lake Champlain Phosphorus TMDL, the lake basin is further subdivided into 13 lake segments and 19 subwatersheds or catchments.

A multitude of citizen groups have formed in and around these major lake segments. In an interesting juxtaposition, many watershed residents identify themselves by the place names which are now synonymous as the most polluted regions of the lake, such as the South Lake, Missisquoi Bay, and Carry Bay and the Alburgh Passage.

According to 2000 United States and Canadian census data, the Lake Champlain Basin population is 571,000 people, and as population climbs, evolving impacts on the lake continue to cause concern. The overall watershed land cover is about 66% forested, 14% agricultural, 5% urban and suburban, and 15% water and wetlands.

A new (2007) land use and land cover study of the basin indicates that urban and suburban land (only 5% of land cover) contribute about 46% of phosphorus runoff to Lake Champlain overall and agricultural lands contribute about 38%. However, these proportions vary significantly among the various subwatersheds. Agricultural land use is still the greatest contributor of phosphorus (about 70%) in the Missisquoi Bay subwatershed. While only 7% of the watershed lies in Quebec, Vermont and Quebec share Missisquoi Bay, the single most impaired region of Lake Champlain. Therefore, Quebec's participation is crucial to the health of the rest of the lake.

Lake Champlain Basin Program—A model for originality and innovation in stakeholder involvement

The Lake Champlain Basin Program is a quasi-governmental, public-private partnership among Vermont, New York and Quebec with federal funding that coordinates Lake Champlain's long-term management plan *Opportunities for Action: an Evolving Plan for the Future of the Lake*

Champlain Basin. The Lake Champlain Basin Program achieves significant watershed improvements through its consensus-based, decision-making policies supported by state-to-state, state-to-province agreements. This incremental approach emphasizes partnerships, local actions and involvement of citizens. The Lake Champlain Basin Program offers a proven, original process that can be transferred to other basins.

Inclusive committee structure: The Lake Champlain Basin Program committee structure offers many opportunities and varying roles for stakeholder participation. Multiple stakeholders from the three jurisdictions of Vermont, New York and Quebec represent local, state, provincial, and federal partners. There is a high level of citizen involvement. The Citizens Advisory Committees of Vermont, New York and Quebec are independent committees representing recreation, tourism, agriculture, business, and cultural heritage interests, environmental advocacy groups, and legislative leaders. They advise the public about lake issues and listen to citizen concerns. The Basin Program also has a Technical Advisory Committee, Education and Outreach Committee and a Cultural Heritage and Recreation Advisory Committee. All six advisory committee chairs have a seat on the Lake Champlain Steering Committee, the governing body for the Lake Champlain Basin Program.

Partnerships: Successful implementation of *Opportunities for Action* is achieved by developing many partnerships. As a neutral party with the participation and support of scientists, policymakers, citizens, and resource managers, the Lake Champlain Basin Program transcends litigation, political elections, and regulation to offer a truly integrated partnership-based dialogue for solving difficult problems. To implement the plan, the Lake Champlain Basin Program makes grant awards to citizen, watershed, municipal, government, and business groups. Since 1992, more than $3 million (US Dollars) have been spent on over 600 projects to reduce phosphorus, prevent the spread of invasive aquatic species, improve watershed education, and attain lake improvement goals.

Consensus: Consensus and trust-building have helped Vermont, New York and Quebec leaders overcome policy conflicts. A consensus approach to decision-making creates a win-win atmosphere where minority opinions are usually incorporated into decisions that pass by majority vote. This process encourages open and public discussion, so that committee members can freely explore decisions before making commitments. While the consensus process minimizes conflict, it does require that they share common goals. The consensus approach gives participants a meaningful role in developing viable solutions and results in group ownership of decisions unattainable through other means.

Effective framework: The Lake Champlain Basin Program forms an effective framework for water policy leaders, water resource managers, and scientists to work collaboratively. This proven framework defines watershed management issues according to the needs of the watershed residents or “users.” A user-driven approach requires active involvement of policy and citizen groups to ensure scientific investigations will benefit community needs. Because policy leaders and resource managers contend with legal, institutional, regulatory, and economic interests, they need to understand which scientific information is most needed and communicate these needs to scientists. The Lake Champlain Basin Program annually funds more than $500,000 (US Dollars) for research and education in the basin. Trend analysis of long-term lake monitoring data allows scientists, resource managers and policy leaders to determine whether management goals and targets are on track and being met.

Place-based collaboration: engaged citizens and engaged resource management agencies

Background: The Lake Champlain Basin Program's incremental, non-regulatory approach provided the supportive framework for the Governor of Vermont to initiate the *Clean and Clear Action Plan* in 2003 to find the estimated $142 million (USD) that will reduce phosphorus pollution to Lake Champlain. In 2007, the Vermont Agency of Natural Resources initiated an agency-wide reorganization designed to better integrate disciplines and expertise among environmental conservation, fish and wildlife, and forests and parks departments and be more responsive to public interests. The very highest priority and first action was to designate the new "Center for Clean and Clear" to not only implement *Clean and Clear Action Plan* funding, but also to target and accelerate the clean up of northern Lake Champlain, the single most polluted reach of the lake. (The author is a member of the new Center for Clean and Clear team).

Center for Clean and Clear and the Northern Waters Partners: While a soon to be mobilized Vermont Agency of Natural Resources Center for Watershed Management will cover watersheds throughout Vermont, the Center for Clean and Clear is solely focused on the North Lake. This designation is largely due to the mobilization of several organized yet very small citizen groups (ranging in size from a few dozen to a couple hundred members). In 2006, seven of these smaller groups joined into a larger collaboration called the Northern Waters Partners. The larger group includes the Missisquoi River Basin Association, Friends of Missisquoi Bay, St. Albans Bay Areawide Association, Franklin Watershed Committee, Northern Lake Champlain Committee for Carry Bay and the Alburgh Passage, and Lake Carmi Association. Their very kitchen meeting front porch style coalition has not only unified them into an educated, savvy entity, but they have been extremely successful in gaining recognition and commitments from the Vermont Legislature and Quebec provincial governments. Even the federal government has become more intimately engaged when the USDA Natural Resources Conservation Service created in 2008 the citizen collaborative regional plan entitled the *Missisquoi Basin Areawide Plan*. To better meet the needs of the Northern Waters Partners, the Center for Clean and Clear opened a small office in northern Lake Champlain which decentralizes resource management from Vermont Agency for Natural Resources headquarters or regional offices elsewhere.

Blue-green algae citizen and government monitoring: Given Northern Lake Champlain's eutrophic conditions, it has also become plagued with blue-green algae blooms (although interestingly, the South Lake remains immune to date) which have seriously compromised recreation uses and property values. A unique public notification system has been developed and continues to be tweaked that involves the Lake Champlain Basin Program, University of Vermont, Vermont Agency of Natural Resources, Vermont Department of Health, Quebec Ministry of Sustainable Development and Environment, New York State Department of Environmental Conservation, and most importantly citizen monitors. While Vermont and New York last year adopted identical standards of blue-green algae thresholds to close beaches, Quebec uses a different standard. Confusion results from situation when Quebec closes its beaches on Missisquoi Bay and Vermont does not. The public notification starts with sample results that are shared among the various jurisdictions. While the states monitor blue-green algae in the lake, shoreline sampling is covered by citizen monitors whose data is vital to understanding where blooms are moving and which shoreline areas are impacted. The monitors are trained by the University of Vermont, the data is analyzed by the State of Vermont, and the Vermont Department of Health posts the data and initiates the public notification system

with its New York and Quebec counterparts. This year, Vermont Department of Health personnel began to learn French to better communicate with their Quebecois partners.

LESSONS LEARNED TO BE SHARED WITH OTHER LAKE AND RIVER BASINS

- **A consensual policy style versus an adversarial policy style results in reliable and evolving commitments by Vermont, New York and Quebec.** Nearly one agreement has been signed each year on average among two or three of the jurisdictions which reaffirms their continuing commitment towards shared management of the Lake Champlain Basin. This approach encourages a higher level of participation in watershed cleanup activities than required by bureaucratic regulation.

- **Less regulation and renewable, flexible agreements result in substantial financial commitments by Vermont, New York and Quebec.** In partnership with the Lake Champlain Basin Program, the three jurisdictions have invested millions of dollars annually, primarily to reduce point source phosphorus pollution and cleanup hazardous waste dumps, and also for aquatic nuisance species control and water quality research. Partnering with the basin program allows the three jurisdictions to proactively plan lake and watershed improvements for their respective geographic regions without being required to do so.

- **Political will supports sustainability of the Lake Champlain Basin Program and observance of its operating principles.** The signatures of the Governors of Vermont and New York, Premier of Quebec and the Regional Administrators of the United States Environmental Protection Agency give the *Opportunities for Action* management plan significant credibility. The nonbinding, voluntary and incremental aspects of signing agreements encourages their participation while still allowing for different implementation styles and creative thinking such as Vermont's *Clean and Clear Action Plan*, New York's *Clean Air/Clean Water Bond Act* (New York State, 1995), and Quebec's new, model, extensive riparian buffer policies.

- **Leadership by key individuals serves an important role in solving transboundary challenges.** The Lake Champlain Basin Program process involves multiple committees, task forces and public meetings. Participation by high-ranking individuals, such as city mayors, executive directors, legislators, and natural resource policy leaders garners support within larger audiences and attracts significant funding and far-reaching collaboration.

- **A built-in renewal schedule for voluntary bilateral and trilateral agreements results in immediacy and accountability**. Voluntary agreements evolve more rapidly than traditional regulation and legislation. Regularly revisiting agreements allows emerging scientific information and public needs to be incorporated quickly to improve accountability. Currently, the emergency spill response and permit exchange agreements, which lack built-in renewal schedules, need updated procedures. There have been a few incidents on Lake Champlain where either the wrong individuals were contacted regarding an emergency spill, or new staff did not follow the procedure because it was out of date (Stickney, 2003; 2006).

- **"Leapfrogging" or developing agreements incrementally keeps them linked together and looking forward.** The original 1988 *Memorandum of Understanding* called for a cooperative approach to lake management and for in-lake phosphorus criteria to be developed in the future. The 1993 *Water Quality Agreement* established in-lake phosphorus criteria and called for phosphorus loading targets to be developed in the future. The 1996

Phosphorus Reduction Agreement established phosphorus loads and called for Vermont and Quebec to divide responsibility for reducing phosphorus in Missisquoi Bay. The *Missisquoi Bay Agreement* established the division of responsibility between Vermont and Quebec. Each agreement made progress and set a future target that was met within a few years (Stickney, 2003; 2006).

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