

# The Geography of Environmentalism in Water Resources Planning in the Lake Champlain Basin

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Peer Review

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## INTRODUCTION

In this paper we examine the way in which water resources planning has dealt with environmental concerns, values, and policy preferences of residents within a drainage basin. We specifically consider the challenges of planning for the Lake Champlain Basin, a watershed which encompasses a variety of physical and human environments in the States of New York and Vermont, as well as the Canadian Province of Quebec. See Figure 1. We explore the strategies for public involvement in the current planning process which are premised, we argue, on a perception of geographical uniformity in environmental beliefs. In addition, we examine how these strategies were implemented with respect to geographical variations in the environmental beliefs of residents within the Basin. Based upon a public opinion survey conducted in 1992, we identify significant differences between the environmental concerns and policy preferences of New Yorkers and Vermonters who live within the Basin. These differences bring into question the current process of water resources planning which all but ignores geographical variations in environmental

values and beliefs.

Researchers in many disciplines have been investigating environmental concerns, values and policy preferences for some time. While it is beyond the scope of this paper to review or summarize this enormous literature, we have identified two important themes to contextualize our study. First, although researchers have noted that the public's ranking of environmental problems differs in major respects from the views of experts and is likely to continue to do so, very few studies have probed the geographical variations in such rankings (Miller and Keller 1991). Second, despite the fact that studies have documented a pervasive dissensus in the literature about the nature of conflict over environmental concerns and policy (deHaven-Smith, 1991; Dietz, Stern and Rycroft, 1989; Kartez, 1989; Sandman, 1991), few studies have systematically examined such dissensus within a particular planning process (exceptions include deHaven-Smith, 1991; Gale and Hart, 1992; and Waterstone, 1992). In order to address this lack of attention to environmental values within a planning process, we will explore a geography of environmentalism. The study of environmentalism in this paper is focused on the interrelations between environmental concerns, public policy preferences, and a watershed planning process. Our paper

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approaches this analysis by synthesizing two distinct assessments. First, we systematically examine the way in which water resources planning for the Lake Champlain Basin has dealt with environmental values, public participation and policy preferences. Then, we present and discuss an independent evaluation of the environmental concerns and policy preferences of residents within the New York and Vermont portions of the basin and relate those to the approach taken by the Lake Champlain Basin Program. While there are many spatial patterns which could be examined within the Basin, for purposes of simplicity and brevity, we have focussed on a comparison and contrast between the environmental beliefs in New York and Vermont. Also, it should be apparent that many factors influence environmental concerns and policy preferences within a particular region. For example, differences in land use, social class, state laws, gender, and age may all have an impact on environmental beliefs. In this paper, though, we seek to identify the holistic character of environmental concerns and policy preferences in two regions (New York and Vermont) and the manner in which the Lake Champlain Basin Program (LCBP) has dealt with such geographical differences.

A brief sketch of the political geography of the Lake Champlain Basin includes the

land area and population distribution for the three primary political entities, shown in Table 1 (p. 28). Another major political entity with authority in a substantial portion of the New York area of the Basin is the Adirondack Park. See Figure 1. The Park was created by the New York Legislature in 1892 and has also been the focus of a controversial regional planning effort during the past twenty years. In fact, sixty-seven percent of the total Adirondack Park population and thirty-five percent of the Park land area falls within the Lake Champlain Basin. In addition to these large scale government jurisdictions, the Basin also has over two hundred towns, villages or cities, that exhibit significant differences in property values, incomes, and a wide variety of other social indicators (Holmes et al., 1993).

#### WATER RESOURCES PLANNING

In the United States, the use of drainage basins and their sub-watersheds as the fundamental unit for data collection and policy formulation has met with mixed success. Rutherford Platt offers a concise history of the role of the trend which began in the 1920's and extended through the era of the Tennessee Valley Authority. The influence of basin-wide studies is assessed as limited and often illusory in the face of the power of Congressional politics. The 1960's and early 1970's brought another

phase of basin planning with the appointment of the United States Water Resources Council and the creation of river basin commissions. These commissions produced a series of advisory plans for water resources including a comprehensive plan for the Lake Champlain Basin. The commissions were abolished in 1982 by the Reagan Administration (Platt 1993:38-40).

Platt concludes that "with the demise of the river planning institutions established under the 1965 Act, the basin scale declined in prominence in American water planning in favor of more generic and place-specific topics of water research" (1993:40). Water resources planning and management efforts at the basin scale have continued in a few cases, however. Examples include the Great Lakes, Chesapeake and Narragansett Bays and, most recently the Lake Champlain Basin.

The processes of planning for interstate and international drainage basins are clearly complex. It is important to consider the foundations of planning and the connections between the natural environment, regional economies, environmental values, and public policy preferences. Arguments have been made for the value of watershed-based resource planning as an essential strategy for coordination of conservation activities. (See, for example, Foster, 1984.) However, just like the broader envi-



ronmental commentary sketched above, the literature on water resources policy and planning reveals a pervasive dissensus on the nature of conflict over water resources. Identification and interpretation of the latter is evident in research from a variety of theoretical orientations (for example, see Gottlieb, 1991; Mann, 1993; Reisner, 1986; Worster, 1985).

A number of these analysts have claimed that the central paradox of water resources management has been its core faith in central planning which is led and put into effect by experts. They argue that, predictably, such programs have relied on planning procedures which are essentially undemocratic in nature and generally inaccessible to the people at large (Kelley, 1992; Mann, 1993). From this perspective, limiting the discussion of watershed planning to whether "natural" or "political" boundaries are most appropriate ignores crucial issues about integrating natural science, social science and participation within a planning process.

#### NATURAL SCIENCE, SOCIAL SCIENCE, AND PUBLIC PARTICIPATION IN THE LAKE CHAMPLAIN BASIN PROGRAM

The Lake Champlain Basin Program is not the first basin planning endeavor for the Lake Champlain watershed. In 1949 an advisory bistate agency, the New York-Vermont Interstate Commission on Lake Champlain, was established. It was poorly funded and planning efforts were limited. A five-year management plan was completed in 1979 as part of an in-depth study funded by the New England River Basin

Commission (Lake Champlain Basin Study, 1979). Funds were only available to implement this plan for one year and then the Commission was abolished. In 1988, a Memorandum of Understanding on Environmental Cooperation on the Management of Lake Champlain was signed by officials of New York, Vermont and Quebec. This allowed for information exchange and encouraged joint planning efforts (Lake Champlain Basin Program, 1992a). It also supported a parallel effort in April 1989, when an international committee from the United Nations Educational, Scientific and Cultural Organization (UNESCO) Man and the Biosphere Program (MAB) officially designated the twenty million acre Champlain Adirondack Biosphere Reserve. The water resources planning process under the Lake Champlain Basin Program was initiated when the US Congress signed into law the Lake Champlain Special Designation Act on November 15th 1990 (Yellow Wood Associates, 1995).

This Federal legislation was the impetus, and provided the funding for, a complex arrangement of committees and agencies which would directly and indirectly develop and implement a pollution prevention and restoration plan for the Lake Champlain Basin. The committee structure was broadly based on the one used in the Chesapeake Bay watershed planning process. An overarching Lake Champlain Management Conference (LCMC), consisting of appointees from New York and Vermont, includes elected officials, Federal and State agency representatives, and representatives from industry, agriculture and the general

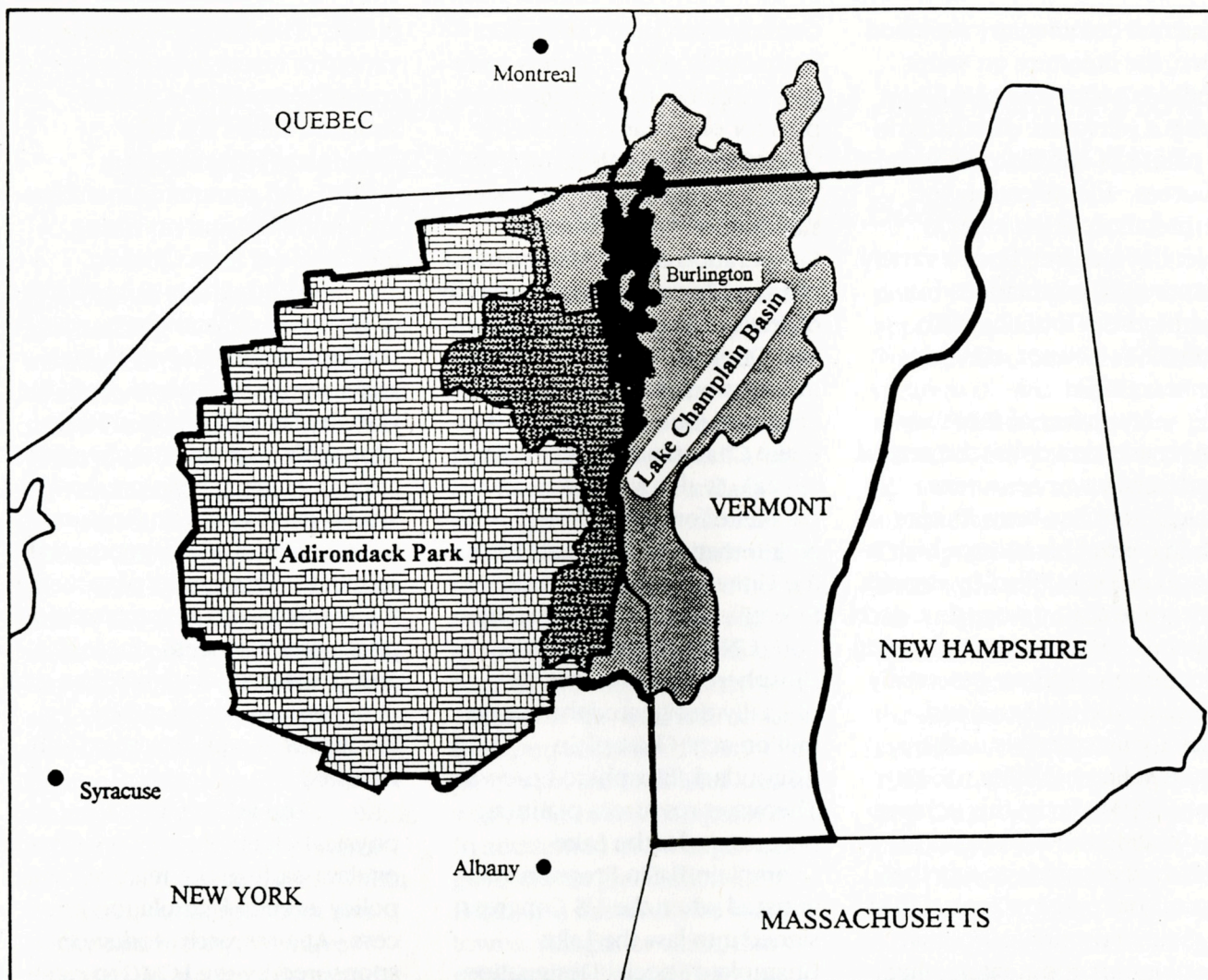
public. This body is served by a variety of research and policy committees with the overall structure called the Lake Champlain Basin Program (LCBP). All committee members are appointed and no voting members are from Quebec.

Although, as our review of literature demonstrates, watershed planning involves human and natural dimensions, from the start the Lake Champlain Basin Program's approach to planning appears to have been predicated almost exclusively on a natural science model of environmental research. This can be observed in the research and characterization phase of the process, the topics and development of the plan, and in the way in which public involvement was organized and reported.

The influence of the physical and biological sciences is evident early in the research and policy agenda formulation process. At a research workshop sponsored by the LCMC to establish a research agenda for the Lake, the most critical research needs were almost exclusively identified with the natural sciences (Watzin, 1991:181-185). Since natural scientists constituted the majority of technical assistance committee members, they were able to establish control of the research and planning agenda. Thus, research was not targeted to examine the variation in human activities and values, thereby precluding the impact these might have had on the planning process.

A lack of social science researchers was also evident on the Lake Champlain Research Consortium Board, a body representing academic institutions in the region, and another primary





## The Lake Champlain Basin

shaper of the regional institutional research environment. Membership and the disciplinary focus of the Lake Champlain Research Consortium Board, was essentially limited to practitioners in the physical and biological sciences. Scant, if any, attention was given to social and behavioral issues as agenda items for Board discussion and, at one point, actually became an issue for the Board itself. The transition between the research and characterization phase and a practical plan for the future is far less clear. There is strong support for the position that the physical

and natural model has been the dominant paradigm of the planning process.

The conception of the watershed as a physical object for analysis was directly transferred to the human dimension of the planning effort. The broader planning process was driven by an optimistic and perhaps naive presumption that the Lake Champlain Basin is a single "human" watershed for management. For example, the LCBP Newsletter, *Castn' The Basin* notes that:

*As the Lake Champlain Basin continues to grow and*

*develop, New Yorkers and Vermonters will work cooperatively to produce an all encompassing pollution prevention effort...*

*When the Senators began their efforts to create a Lake Champlain Special Designation Act, their ultimate goal was for all aspects of human and ecological life within the basin to be maintained in harmony with one another. The Lake Champlain Basin Program is well on its way to accomplishing this goal.*

(LCBP, 1992b:2)

Furthermore, the Lake Champlain Basin Program motto "One Lake, One Basin, One



Future," which has been used in most of the program publicity and on the program stationery, implies a single object for study.

In the physical science inquiry, empirical research has uncovered important spatial variations. This is demonstrated, for example, in the identification of toxic hotspots and in the dynamics of water flows and water chemistry. Also, ecologists and others had already established that Lake Champlain proper actually operates as five distinct units: Mallet's Bay, Inland Sea, Broad Lake, South Lake and Mississquoi Bay, (See, for example, Lake Champlain Committee, 1990). Despite the recognition of geographical variations in the physical environment, the corresponding variations in environmental beliefs, values and policy preferences that might coincide with these have been essentially ignored. In the broader context of planning, the human dimension has also been addressed quite narrowly, even when the Lake Champlain Basin Program's own inquiries indicate that, in reality, the basin is a complex and uneven human system. In our view, this naturalistic vision has played a determinative role in the character of public involvement in the planning process which, as we show below, has been structured and streamlined in a particular manner. At a fundamental level, social research and meaningful public participation appears to have been a secondary concern.

This lack of systematic social study is the exact opposite of the public relations materials of the Basin Program, where the diversity of appointees to the Management Conference (a farmer, a businessman, a scientist,

a wildlife planner) is frequently cited as evidence of broad ranging involvement and where a self-congratulatory tone pervades the Program's assessment of its own efforts to foster participation. In marked contrast, *A Public Involvement Manual: Involving the Public in Water and Power Resources Decisions*, published by

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the U.S. Department of the Interior, clearly states that appointed officials and advisory committees cannot substitute for the involvement and engagement of the general public (Creighton, 1980). In addition, as will become clear, the efforts made by the Basin Program to formally engage the public and explore the character of public perspectives have been limited and unsystematic. Most importantly though, it is unclear if, or how, they have influenced the nature of the draft plan (LCBP, 1994c) that is now in circulation. The water resources public participation manual, noted above, and the broader planning literature both stress that an assessment of how public involvement shapes actual plans is a crucial element in the feasibility and legitimacy of planning

efforts.

## PUBLIC INVOLVEMENT IN DEVELOPING THE LCBP PLAN

A brief review of public input activities pursued from the inception of the Basin Program is included here to explore both the timeliness and the degree of effectiveness of public involvement efforts. The first round of public input meetings were conducted in various locations in a variety of formats during April and May of 1993. Each opened with an audio-visual presentation of the Basin Program's activities and an analysis of lake-related issues. Meetings were attended by a total of just over two-hundred individuals from a New York/Vermont basin population of over one half-million.

Each session concluded with an exit survey which was to be "used" in formulating the draft plan. However, the exit survey was not administered in a representative manner (the sample was self-selected and no provisions were made to check for statistical representativeness). The report on this round of meetings was released as an Program Education Report in October, 1993 (LCBP, 1993b). A significant proportion of the report was based on anecdotal observation and the reporting of exit survey results. However, even discounting the lack of representativeness, one important finding of the exit survey was that seventy percent of those who attended felt that they had not had adequate input into the planning process.

Another telling aspect of this initial garnering of public input was that few basin-wide common themes appeared. Authors of the report warned of



the potential impact of the geographic variation:

*Citizens' perceptions in one area of the basin tend to be very different from another, and this should be taken into account in the development of management options for Lake Champlain... It is possible that the structure of the plan needs to account for geographic issues and concerns.* (Lake Champlain Basin Program, 1993b:5)

Although this statement formally called into question the adequacy of a unitary geographical vision for the watershed, the Basin Program subsequently made very limited systematic effort to analyze or assess the geography of environmental concerns or policy preferences. It is consequently impossible to determine how the geography of environmental values is being adequately addressed.

During 1993-94 the Basin Program did fund an independently designed and executed focus group study which included 16 sessions held throughout the Basin. Utilizing four open-ended questions, a wide variety of interest groups and government officials were systematically interviewed. The first question in these interviews was, "People have different views about nature and the environment. Some see it as a bundle of resources to be harvested and consumed. Others see it as a sanctuary to be appreciated and preserved. What is your view?" The responses to this question are indicative of the overall character. Approximately twelve percent of all the respondents mentioned "harvested and consumed," twelve percent "sanctuary to be appreciated and preserved," twenty-five percent indicated a "balance," "middle

ground," or "both" and the remaining fifty percent of the respondents expressed a view of nature which did not rely on the framework or continuum offered in the question.

Although this study did not compare New York and Vermont responses, it clearly demonstrated a lack of consensus or single ideological framework for analysis on key topics (Higgins, et al., 1994). Furthermore, the lack of consensus documented in this report was never mentioned or addressed in the Draft Plan. Thus, it appears that the findings were ignored in developing the Draft Plan. Moreover, when the LCBP embarked on its second major public involvement effort, no further effort was made to systematically assess the presence or lack of geographical differences.

Again meetings were scheduled in various locations throughout the Basin. Prior to the meetings, which took place during March and April of 1994, 117,000 copies of a twenty page brochure, "Opportunities for Action," were distributed, mostly in area newspapers. This document laid out, in broad terms, the parameters for the planning process and sought public input. The document presented background information on the Lake and the Basin and then offered a series of policy areas for assessment. Each section was prefaced with a background digest to "educate" the reader. "Telling" the public about the LCBP and the parameters of the plan seemed to be a more dominant facet of the document than exploring the environmental concerns or preferences of the public.

This emphasis on one-way communication has been

identified as a problematic feature in other attempts to resolve environmental controversy (Sandman, 1991). The nature of the input sought, in this case, was limited to agreement or disagreement with a set of goals which were very broadly drafted. In some instances, expectations for disagreement can be assessed, a priori, as quite unlikely. For example, consider the section on human health. In this section, the LCBP requested opinion of the following goal (on a standard "strongly agree, agree, neutral, disagree, strongly disagree" scale):

*Minimize the risks to humans from water-related environmental health hazards in the Lake Champlain Basin.* (Lake Champlain Basin Program, 1994a:5)

Also consider the section on managing non-point source pollution, where the extent of agreement with the following was probed:

*Reduce non-point source discharges of phosphorus, sediment, pathogens and toxic substances to promote a healthy, diverse ecosystem and maintain the social and economic vitality of the basin* (Lake Champlain Basin Program, 1994a:8)

It is difficult to evaluate the significance of responses to this kind of language. In each section of the newspaper insert such goal statements were followed by a request for the prioritization of sets of actions (high, medium, low), each of which contained an extensive series of possible preferred actions which readers were requested to endorse. The methods by which responses were to be coded and analyzed was, and has remained, unspeci-



fied. It is important to point out that no question in the entire survey instrument asked for the respondents' place of residence. With no spatial coding it is impossible to assess geographical variation in the resulting public opinion. In addition, respondents' age, sex, education, economic standing etc. were not requested so it is not possible to assess the bias of any sample data. Finally, to our knowledge, no other survey projects or social impact studies have been funded as part of the LCBP public involvement process.

The Basin Program reported that three hundred and twenty people attended the twelve meetings held in the Basin and that they received three hundred written responses to the document (LCBP, 1994a:3). If one assumes that those who attended meetings also completed the document, this garnering of public input would be derived from just over one half of one percent of the population of the U.S. portion of the Basin. The extent to which these findings are representative of the sentiments of population of the Basin is impossible to determine.

We also note that the Basin Program held a series of focus group meetings with specific interest groups. The LCBP has not reported on methods, content or possible implications. Furthermore, it remains unclear if, or how, these sessions have influenced the development of the Draft Plan. Although the Draft Plan (LCBP, 1994c) was released in October 1994, as of February, 1995 there was no formal reporting or assessment of either the public meetings or the LCBP-executed focus groups held in the spring of 1994. In its

only report on the second round of the public involvement process, a story in the newsletter *Castin' the Basin*, the LCBP again alludes to geographically specific concerns: "[p]ublic comment varied to some extent depending on geographic location..." (LCBP, 1994b:2) but again, basin-wide themes were the focus of the report. It is telling that respondents once again expressed concern over the nature of the planning process and their involvement in it:

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“The state-based results indicate that rising taxes, citizen participation, and the lack of jobs are the highest ranking concerns in the New York State portion of the Basin, while sewage run-off, water quality and toxic waste rank highest within the Vermont portion.”

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*[I]n most cases the public supported the overall goals...but felt that they needed more additional information on each issue presented in the Plan in order to*

*evaluate proposed actions and make informed decisions; the public also wanted research results and data to be more accessible to the public and presented in an understandable format (LCBP, 1994b:5)*

To sum up, efforts by the LCBP to assess the import of social differences in the basin as well as to account for, and address, public concerns have been very limited in extent, unsystematic in methodology and unspecified in the Draft Plan. In our view, this lack of systematic attention to the geography of environmental concerns and policy preferences raises serious questions about the character and legitimacy of basin-wide planning process.

#### GEOGRAPHICAL UNIFORMITY OR DIVERSITY: ENVIRONMENTAL CONCERNS, VALUES, AND POLICY PREFERENCES

A pivotal question for this discussion is whether or not significant differences are found between the environmental concerns and public policy preferences of residents in the New York and Vermont portions of the Basin. Responses to our public opinion survey offer an opportunity to explore this question in some detail. The survey project was initiated by the New York Citizen's Advisory Committee on Lake Champlain Management as strictly a New York survey. A survey instrument was developed and its content was reviewed by the NYCAC and an independent panel of survey experts (See Higgins, 1992 for details). Shortly after this, and using an identical instrument and protocol, the survey was extended to the Vermont portion of



the basin. The Vermont Citizen's Advisory Committee declined to endorse or support this Vermont portion of the survey.

Administration of the survey was based on the proved and widely regarded "Total Design Method" developed by Donald Dillman (Dillman, 1978: 161-178). This method advocates attention to detail and the use of multiple reminders to improve administration and response rates. A random sample was drawn from current telephone directories using interval sampling. The protocol included a maximum of three mailings to each respondent. A total of 1082 surveys were mailed during 1992. A substitute entry was used for surveys which were returned as non-deliverable. A total of 573 useable surveys (254 or 44% were from New York, 319 or 56% were from Vermont) were received for an overall response rate of 53%. Since the number of respondents for each state did not precisely match the 1990 New York/Vermont population distribution within the Basin, a weighting process was used to correct for this lack of coincidence. All summary statistics and statistical analyses are based on this weighted pooled sample. Note that the weighting scheme was executed to preserve the size of the overall sample and used a technique which minimizes distortion in statistical tests of, for example, cross tabulations (SPSS Inc., 1983:154-158).

In terms of Basin demographic characteristics, a majority of the respondents were males (57%), most had lived in the Basin for all or most of their adult life, and just less than a fifth (19%) of the respondents rented their homes. Comparing the demo-

graphic composition of the survey respondents to the 1990 statistics of the US Census indicates the respondents were not markedly different from the general population. A complete account of the methodological process as well as geographic and statistical representativeness for each state is provided in Higgins (1992) and Kujawa (1994).

Geographic variations in environmental concerns and policy preferences are clearly evident in the survey data. For example, based on a series of questions which yielded an implicit ranking of environmental, recreational and economic problems a specific ordering of policy issues emerged. Water quality, rising taxes, sewage runoff and toxic and industrial waste topped the list for the basin sample.

Yet when disaggregated by State, a dramatically different picture appears. The state-based results indicate that rising taxes, citizen participation and the lack of jobs are the highest ranking concerns in the New York State portion of the Basin while sewage run-off, water quality and toxic waste rank highest within the Vermont portion. Given these very different priorities, environmental planning should directly consider public preferences in both policy development and implementation. In the Adirondack Park, which makes up a significant portion of the Basin, recent plans and regulations have been quite controversial (French, 1994; Beckley, 1992; Heiman, 1988). Indeed, research on resident perceptions in this region underscore the importance of addressing public concerns (Buerger and Pasquarello, 1992). In a recent study, Buerger em-

phatically concluded that "[i]n the case of the Adirondack Park, understanding park residents' perceptions concerning changing land use is an important step in the process of planning and managing the Adirondack Park of the future" (Buerger, 1994:29).

In addition to the ranking of problems, our Lake Champlain survey contained items related to public policy, regulation, and government involvement in the planning process. The format of survey questions was varied. For example, there were single issue questions which requested agreement or disagreement with a policy position, questions which sought assessment of the current state of development regulations, and questions which sought to explore the relationship between economic growth and the environment. Again, the two states differed to a significant extent on several individual items. For the purposes of brevity we will confine our discussion to four of them. We should note though that of eight policy-related questions on the survey only two (a question on citizen participation, and one on approval for the application of a lampricide) did not reveal statistically significant differences between the two states (at the 0.01 level using a chi-square test).

For example, one question sought agreement or disagreement with the following statement:

*The State [printed as either New York or Vermont in the actual surveys] needs stronger regulations to protect against water pollution in Lake Champlain.*

For the pooled sample, 84.6 percent agreed, 7.0 percent disagreed, 8.4 percent selected the middle ground. If the re-



sponses for New York and Vermont are cross-tabulated, however, a different impression is given. As shown in Table 2, the agreement percentage decreases to 73.7% for New Yorkers and increases to 90% for Vermonters.

The differences and their implications become even more compelling in other cases. For example, a similar question probed for assessment of the need for stronger laws to protect fish and wildlife. The pooled NY/VT data reveal 62.7 percent agreement, 15.5 percent disagreement with a further 21.6 percent taking a noncommittal stance. Again, when cross-tabulated, the two States differ significantly with a lower 54 percent of the New Yorkers agreeing compared to 67 percent of the Vermonters surveyed. These results are displayed in Table 3 and bring into question the potential legitimacy of a basin-wide attempt to develop stronger fish and wildlife laws. An examination of the geography of public opinion has demonstrated the lack of uniformity, and suggested the further exploration of the nature of the differences between these two sections of the basin.

Another item explored the relationship between government, the economy, and the environment by requesting that respondents select from a list of options that came closest to their opinion. The exact wording of the options is important:

**Option #1**

If there is a good possibility that a new subdivision or economic development will harm the natural environment, then government should not allow it to be built;

**Option #2**

Government should be

concerned about the natural environment, but not so concerned that it is unwilling to take chances when allowing a new housing subdivision or economic development;

**Option #3**

Government should be concerned less with the environment than with making sure that there are plenty of jobs and houses.

The phrasing of this type of question implies different degrees of risk and an assessment of the degree of that risk and the possible extent of such damage is not specified in the question. Nevertheless, ninety-three percent of those surveyed were willing to discriminate between the options and the results offer further insight into the geography of environmentalism in the Basin. Basin-wide, 63.1 percent of respondents selected the first option with a further 30.6 percent selecting the second option and just less than six percent selecting the third option. As Table 4 shows, when the results are disaggregated by State, dramatic differences appear with the New Yorkers support for Option 1 decreasing to less than 50%. The lack of support for the unconditional protection of the environment (Option 1) in the New York portion of the basin coheres with some other findings in the survey. It does not however mean that all government endeavors should be curtailed. The strength of support for the "taking of risks" option supports the contention that the assessment of the risk of environmental damage and some knowledge of the possible extent of the damage becomes important — 43.5% for New York versus 24.1 for Vermont. Another possible

implication is that consideration of local public opinion and local government strategies is indeed relevant. Support for government intervention, then, becomes conditional and contingent.

Another survey item probed the sensitivity of respondents to the geography of economic activity and the role of government in industrial policy. In this case, respondents were asked "Do you think the State should:

**Option #1**

Try to attract business and industry to Lake Champlain;

**Option #2**

Let the regional economy develop on its own;

**Option #3**

Discourage business and industry from locating directly on the Lake.

Ninety-seven percent of respondents were willing to express an opinion on this item. As shown in Table 5, on a basin-wide basis, almost a third (32.8%) selected the first option which implies governmental economic development efforts, a quarter (25.3%) selected the second option which implies a classic laissez-faire stance for the government, and just over forty percent (42.8%) selected the third option which implies a protective role for government in the environmental context. Of course, the three positions are not necessarily mutually exclusive in the real world, but responses can reveal something of the priorities individuals might set in the context of economic development. The pooled data reveal a marginal plurality for the third option but certainly no dramatic swings are evident. However, when the data



are disaggregated by state, the preference for one option for each State is much more clearly evident. But it is a different option for each. As the table shows, the proportion of responses in the laissez-faire option remains fairly similar, but the proportions in the economic development and environment protection options are exactly reversed with the New Yorkers more strongly supporting the economic development option (48%) and the Vermonters more strongly supporting the environmental protection option (51.5%). In each case by a margin of nearly two to one over the other two options.

Coupled with the insights of other questions, this highly uneven geography of environmentalism calls into question the assumption of uniformity that the present Basin Program approach to planning and implementation has offered. It calls for a direct assessment of the geography of environmentalism and therefore for the application of social research rather than exclusively natural science analyses.

One other finding from the Lake Champlain survey is germane, respondents resoundingly supported the notion that the State (printed in surveys as either New York or Vermont) should guarantee citizen participation in the decision-making for Lake Champlain's future. Eighty five percent of the sample agreed with this statement with no statistically significant differences between respondents from the two states. This uniformity of opinion was not demonstrated in most other survey items. It coheres with the Basin Program's own findings, discussed above, that public involvement and participation is perceived by the

public itself to be important.

## CONCLUSION

Water resources planning for an international watershed is certainly a complex and challenging process. The Lake Champlain Basin offers a physical system which can, to varying degrees, be modeled and monitored. Within this physical system, spatial variations have been seen as central to planning efforts and natural science research has been directed toward this goal.

However, the basin is also a social system with, we have argued, a geography of environmentalism. We have demonstrated that environmental concerns and policy preferences clearly vary between New York and Vermont. We have also argued that the current planning process under the auspices of the Lake Champlain Basin Program has in some cases ignored and in other cases underplayed these geographical differences. In effect, the LCBP have disregarded their own preliminary findings about the geographical variations of citizen concerns. In contrast, our survey findings identified statistically significant geographical differences with environmental concerns and policy preferences that have direct relevance to the efforts of the program. Given this substantial divergence, the legitimacy of the planning effort and the feasibility of plan implementation may be compromised unless a systematic and substantial effort is made to characterize and incorporate the geographical differences in environmental concerns and policy preferences into the planning process.

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# TABLES

Table 1 Lake Champlain Basin: Territory and Population

	Area (mi <sup>2</sup> )	Percent	Population	Percent
New York	3047	37%	210,117	34.6%
Vermont	4611	56%	371,350	61.1%
Province of Quebec	576	7%	26,321	4.3%
TOTAL 8234	100%	607,788	100%	

Table 2 The State Needs Stronger Regulations  
to Protect Against Water Pollution

	Basin	New York	Vermont
Agree	84.6%	73.7%	90.0%
Neither	8.4	15.5	4.8
Disagree	7.0	10.8	5.2

Table 3 State Needs Stronger Laws to Protect Fish /Wildlife

	Basin	New York	Vermont
Agree	62.7%	54.2%	67.0%
Neither	21.6	23.5	20.7
Disagree	15.5	21.9	12.3

Table 4 Policy Scenarios

	Basin	New York	Vermont
Option 1	63.1%	46.4%	71.7%
Option 2	30.6	43.5	24.1
Option 3	5.8	9.2	4.1

Table 5 Geography of Economic Activity and Government

	Basin	New York	Vermont
Option 1	32.0%	48.0%	24.3%
Option 2	25.2	27.0	24.3
Option 3	42.8	25.0	51.5