Public Opinion Poll Results in the Study of Select Economic Values of New Hampshire Lakes, Rivers, Streams and Ponds

Phase III Report

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~ SECTION 1 ~
BACKGROUND

The Lakes, Rivers, Streams, and Ponds Partnership ("Partnership") has successfully completed three phases of its Study on the economic value of surface waters in New Hampshire. The overarching goal of the Study, which was commissioned by the New Hampshire Lakes Association (NHLA) on behalf of the Partnership,[1] has been to provide policymakers with accurate and useful information about the economic value of the State's surface waters and the factors that underlie and impact that value. With this information, policymakers can make informed choices when faced with decisions among multiple and sometimes competing uses of these public waters.

In Phase I of the Study (*Preliminary Assessment of the Existing Literature, Data, and Methodological Approaches to Estimating the Economic Value of Surface Water, August 2001),* Gallagher, Callahan & Gartrell (GCG) reviewed efforts to estimate the value of surface waters in other states, identified what types of uses are likely to add significant economic value in New Hampshire, and surveyed what local data are publicly available from which estimates could be made. The Phase I Study identified five uses to be examined in-depth in Phase II of the Study.

- Boating
- Swimming
- Fishing
- Public drinking water
- Waterfront property

In Phase II of the Study *(Estimates of Select Economic Values of New Hampshire Lakes, Rivers, Streams & Ponds, June 2003),* GCG estimated the economic impacts from the first four uses of New Hampshire surface waters listed above, along with the property tax payments made by waterfront property owners on lakes, rivers, streams and ponds.[2] With respect to the first four uses, the general methodology used estimated: 1) the amount of Direct Sales that are made to residents, nonresidents, and tourists when they spend money (e.g., trip costs, equipment purchases, water utility bills) on each use, and 2) the participation levels by residents, nonresidents, and tourists for each use. These estimates formed the basis for estimating economic value in terms of Total Sales, Household Income and full-time and part-time Jobs. The estimated economic values that provided the low and high ends of each range were derived by using a model called Impact Analysis for Planning, or IMPLAN, and by using multipliers from the federal government's Regional Input-Output Modeling System, or RIMS II.

[1] Members of the Partnership's Steering Committee include New Hampshire Lakes Association, the NH Rivers Council, NH Department of Environmental Services, NH Fish and Game Department, Squam Lakes Association, Lake Sunapee Protective Association, and Newfound Lake Region Association. Please contact NHLA for a list of organizations that have contributed funding for the Study.

[2] This report did not estimate the economic impacts from these property tax payments.

As a result of the Phase II Study, New Hampshire's policymakers now have an estimate of the economic values of some of the recreational and non-recreational uses (boating, fishing, swimming, drinking water supplies, and shorefront property taxes) of the State's freshwaters. The Phase II Study shows that these five uses annually contribute an estimated $1.8 billion to the New Hampshire economy, and nearly $1.2 billion[3] of this is due to freshwater boating, swimming, and fishing.

The purpose of Phase III of the Study was to ascertain public opinion about:

- the relative importance of different freshwater attributes, such as overall beauty of the area, water quality, pollution, and crowding, when New Hampshire residents decide to use the State's surface waters for recreational purposes, and
- how residents' attitudes and behaviors would change if these freshwater attributes were altered.

The Partnership gathered this data through a statewide telephone survey of five hundred and four (504) New Hampshire residents conducted by the University of New Hampshire Survey Center. Thirty-three survey questions (see Section 4) were developed by the Partnership, with the assistance of GCG and the UNH Survey Center, and were field tested before the survey was conducted by trained pollsters. The Phase III Public Opinion Survey excluded non-residents and did not specifically target freshwater shorefront property owners, customers of public water utilities using surface water supplies, or members of the business community, although some members of these groups may been surveyed. While these groups have a significant impact on the economic value of New Hampshire's freshwaters, it was determined that gathering their opinions, perceptions, and behaviors was beyond the scope and budget of Phase III, and that such efforts could be coordinated through other surveys of lakes, rivers, streams, and ponds.

The survey results herein provide important insights into understanding how the quality and the diversity of recreational freshwater experiences impact residents' usage patterns and thus the overall economic value of the State's surface waters. These results may also serve as an important baseline for future research, including tracking trends in residents' opinions over time and expanding the survey to other groups not targeted in the Phase III Public Opinion Survey such as freshwater shorefront property owners, customers of public water utilities using surface water supplies, and members of the business community.

[3] Economic values are expressed in 2002 dollars.

~ SECTION 2 ~
UNIVERSITY OF NEW HAMPSHIRE SURVEY CENTER REPORT
"GRANITE STATE POLL FOR THE LAKES, RIVERS, STREAMS AND PONDS PARTNERSHIP"

GRANITE STATE POLL

FOR THE

LAKES, RIVERS, STREAMS AND PONDS PARTNERSHIP

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Dennis M. Junius, M.A.

The Survey Center
University of New Hampshire

August, 2004

The University of New Hampshire (UNH)

Survey Center

The UNH Survey Center is an independent, non-partisan academic survey research organization and a division of the UNH Institute for Policy and Social Science Research.

The Survey Center conducts telephone, mail, e-mail, Internet, and self-administered surveys, as well as focus groups and other qualitative research for university researchers, government agencies, public non-profit organizations, private businesses, and media clients.

Our senior staff have more than 40 years experience in designing and conducting custom research on a broad range of political, social, health care, and other public policy issues.

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SUMMARY

The University of New Hampshire Survey Center included a series of thirty-three (33) questions in its June 2004 Granite State Poll for the Lakes, Rivers, Streams & Ponds Partnership. The major purpose of these questions was to assess the knowledge and attitudes of New Hampshire residents concerning New Hampshire freshwater bodies and issues surrounding them. Five hundred and four (504) New Hampshire adults were interviewed by telephone between June 16 and July 2, 2004. The margin of sampling error for this survey is +/- 4.4%, due to the fact that not all New Hampshire residents were interviewed. The confidence interval is 95%, which means that 95 out of 100 times the finding will fall within a band of +/- 4.4% of the reported finding. (See Technical Report in Section 5 for a more detailed description of survey methods.) The following figures display survey results.[4] The major findings of the survey include:

Overall Satisfaction

New Hampshire residents are generally satisfied with their overall experience at freshwater bodies in the state. More than 90% were either "very satisfied" or "somewhat satisfied" with their overall experience when asked at both the beginning of the survey and at the end of the survey. However, when asked at the beginning of the survey, 60% of residents reported being "very satisfied" with their overall experience at the State's freshwater bodies, while only 44% reported being "very satisfied" when asked at the end of the survey . (*See Figure 2-1, page 8*)

- The most important reason that New Hampshire residents visit a specific New Hampshire freshwater body is that it offers the best fishing, boating, or swimming. Overall beauty of the area is the second most important reason to visit specific New Hampshire freshwater bodies. (*See Figure 2-2, page 8*)

- The most important reasons people stay away from specific New Hampshire freshwater bodies are pollution, overcrowding of people and boats, and poor water quality. (*See Figure 2-3, page 9*)

Activities at Freshwaters

- Lake Winnipesaukee is the most popular freshwater body in New Hampshire. Other popular freshwater bodies in the State include Newfound Lake, Lake Sunapee, Squam Lake, the Merrimack River, and Massabesic Lake. (See Figure 2-4, page 9)

- Almost six-in-ten (58%) New Hampshire adults have been using New Hampshire freshwater bodies for over 20 years. Of those, thirty-six percent have used them between 21 and 40 years and 22 percent have used them for more than 40 years. Five percent said that they don't use New Hampshire freshwater bodies. (*See Figure 2-5, page 10*)

[4] These figures may sum to slightly less or slightly more than 100% due to rounding, or in some cases when "don't know / not sure" was not included.

- When asked about the frequency of participating in activities during the recreational season at New Hampshire freshwater bodies, there is a wide range of usage among New Hampshire adults. Twenty-three percent visit New Hampshire freshwater bodies for activities a few times a year, 27 percent visit them once or twice a month, 17 percent visit them once a week, and 21 percent visit them more than once a week. (*See Figure 2-6, page 10*)
    - Thirty-three percent said that they go boating in a motorboat a few times a year or less, only 9 percent said that they go motorboating once a week or more, and 7 percent go motorboating once or twice a month. Fifty-two percent said that they do not go boating in a motorboat.
    - Forty-four percent of New Hampshire adults said they go boating in a non-motorboat a few times a year or less in New Hampshire freshwater bodies, 10 percent said they go boating in a non-motorboat once a week or more, and 15 percent go non-motorboating once or twice a month. Thirty-one percent don't go boating in a non-motorboat.
    - Twenty-seven percent of New Hampshire adults said that they fish a few times a year or less, and 24 percent said they fish once or twice a month or more often. Almost half (49%) do not fish in New Hampshire freshwater bodies.
    - One-quarter (26%) of New Hampshire adults said that they swim in a New Hampshire freshwater body once a week or more often, 21 percent swim in New Hampshire freshwater bodies once or twice a month, 24 percent swim in them a few times a year, and 13 percent swim in them less than a few times a year. Only 16 percent said they do not swim in New Hampshire freshwater bodies.
    - Twenty-eight percent of New Hampshire adults said they participate in onshore activities (picnicking, sunbathing, etc.) at New Hampshire freshwater bodies once a week or more often. Twenty-three percent participate in onshore activities once or twice a month, and 38 percent participate in onshore activities a few times a year or less. Eleven percent do not participate in on-shore activities.

- Almost half (47%) of New Hampshire residents plan on taking a day trip in the next 12 months that will include freshwater boating, fishing, or swimming, 14 percent plan on taking an overnight trip, and 23 percent plan on such a trip for more than two days. Twenty-nine percent don't plan on taking such a trip. (*See Figure 2-7, page 11*)

<u>Water Quality</u>

- More people rate the overall quality, clarity, and purity of New Hampshire freshwater bodies as good (58%) than excellent (20%). Fourteen percent rate it as fair, 2 percent poor, 1 percent very poor, and 6 percent don't know. (*See Figure 2-8, page 11*)

- Respondents were asked whether they have noticed a change regarding specific attributes of the state's freshwater bodies: overall quality and character of freshwater bodies; water quality, clarity, and purity; and the natural views and scenery.
    - Nearly half said that both the overall quality and character of New Hampshire freshwater

bodies and water quality, clarity, purity have stayed about the same based on their experience (45% and 49% respectively). (*See Figure 2-9, page 12*)

- Fifty-eight percent said that the natural views and scenery of New Hampshire freshwater bodies have gotten worse based on their experience. (*See Figure 2-9, page 12*)

- Six-out-of-ten said that they feel that the federal government, state government, and local government should be equally responsible for protecting and improving environmental conditions and overall characteristics of freshwater bodies in New Hampshire. (*See Figure 2-10, page 12*)

- At a minimum, 58 percent said that they would decrease their activities in freshwater bodies if certain problems got worse, and at most 75 percent said they would decrease such activities if certain problems got worse. (*See Figure 2-11, page 13*)
  - 75% would decrease use if crowding got worse;
  - 71% would decrease use if mercury got worse;
  - 70% would decrease use if algae blooms got worse;
  - 67% would decrease use if invasive plants got worse;
  - 58% would decrease use if water levels/flows got worse

- Sixty-eight percent said that invasive plants and crowding are either a "very serious" or "somewhat serious" problem. *(See Figure 2-12, page 13)*
- Fifty-two percent said water levels and/or water flow are a "very serious" or "somewhat serious" problem. *(See Figure 2-12, page 13)*
- Forty-eight percent said that mercury is a "very serious" or "somewhat serious" problem and forty-four percent said that algae blooms are a "very serious" or "somewhat serious" problem. *(See Figure 2-12, page 13)*

<u>Ownership</u>

- When asked whether they own property on or close by a New Hampshire freshwater body (lake, pond, river or stream), 43 percent said they do own such property and 57 percent said they don't own such property. (*See Figure 2-13, page 14*)
- Of those that do own property on or near a New Hampshire freshwater body, 22 percent said that the property was on the waterfront, 19 percent said their property was within 50 yards of the waterfront, 32 percent said their property was within ½ mile, and 26 percent said their property was more than ½ mile away. (*See Figure 2-14, page 14*)
- Eighty-three percent said that their waterfront property is their primary residence, 16 percent said it was their second home.
- Property owners who live on or near on freshwater bodies are more likely to feel that invasive plants are a "very serious" problem than those who do not own property near New Hampshire freshwater bodies (52% versus 32%).

FIGURES

Figure 2-1

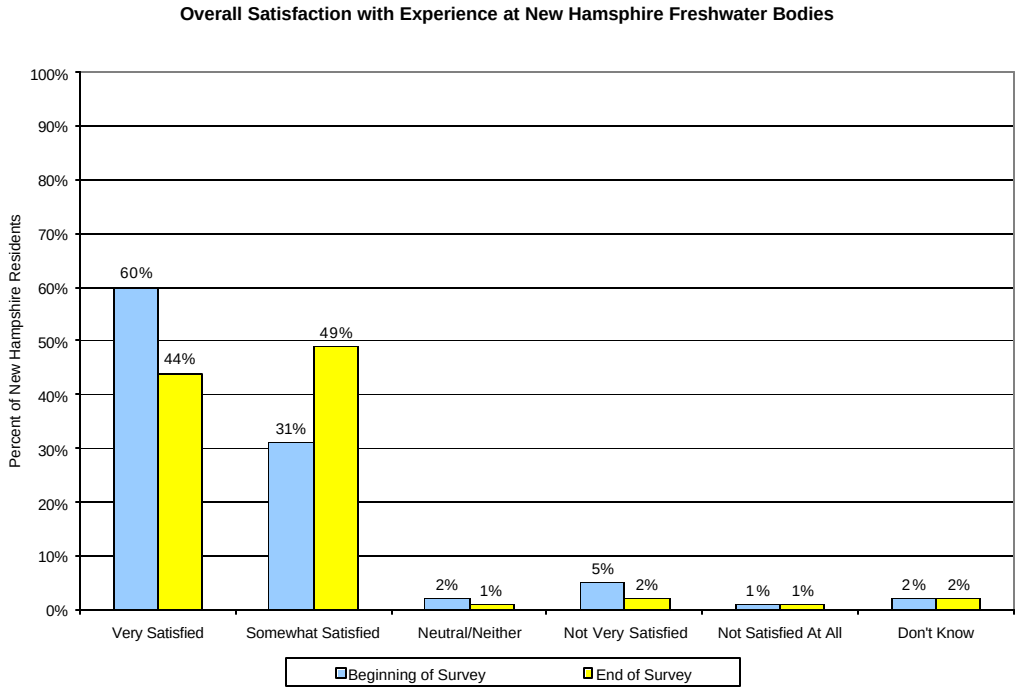
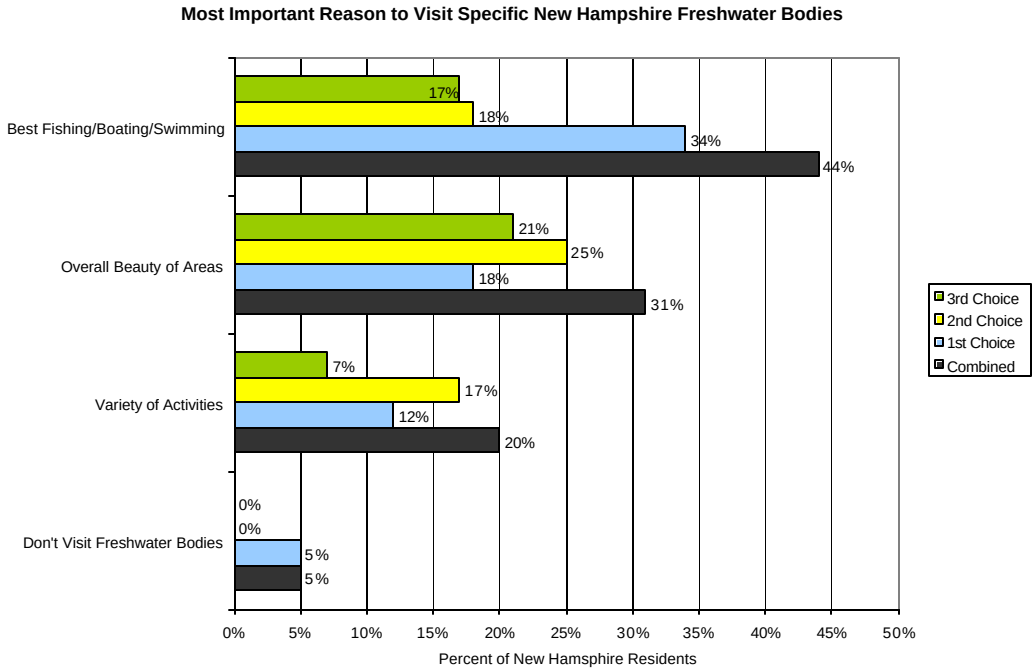


Figure 2-2[5]



[5] Combined reflects the 1st, 2nd, and 3rd choice responses supporting a given reason as a percent of all responses. In the combined category, percentages sum to more than 100% because there was a multiple response possible.

Figure 2-3[6]

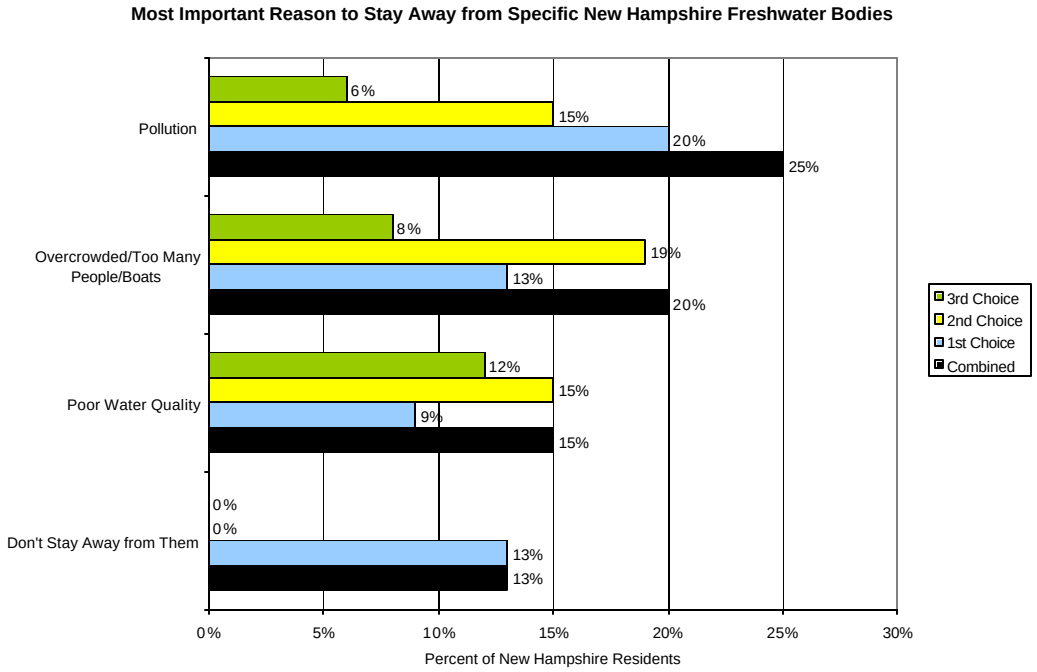
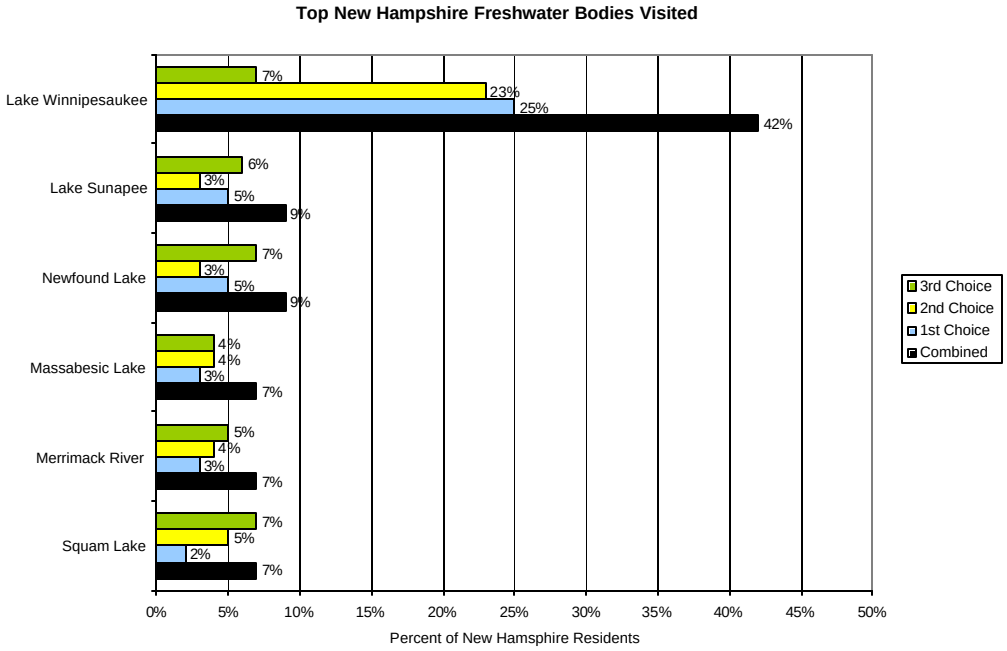


Figure 2-4



[6] Combined reflects the 1st, 2nd, and 3rd choice responses supporting a given reason as a percent of all responses. In the combined category, percentages sum to more than 100% because there was a multiple response possible.

Figure 2-5

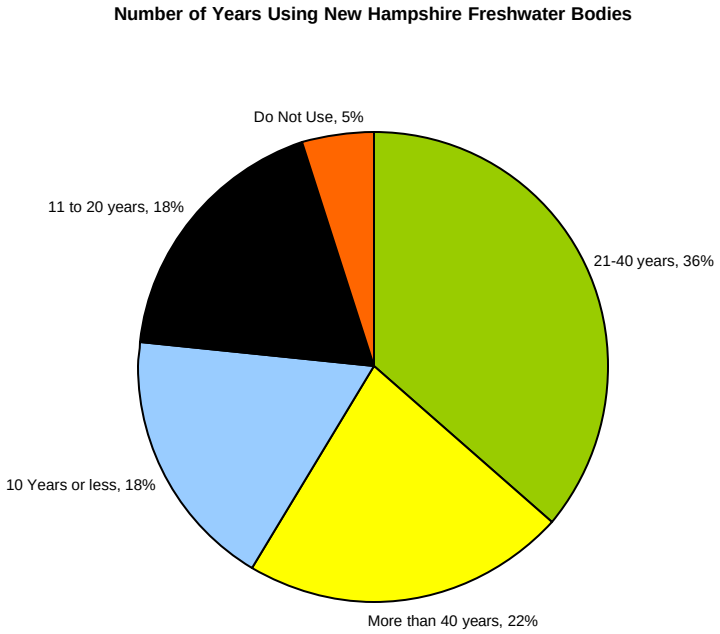
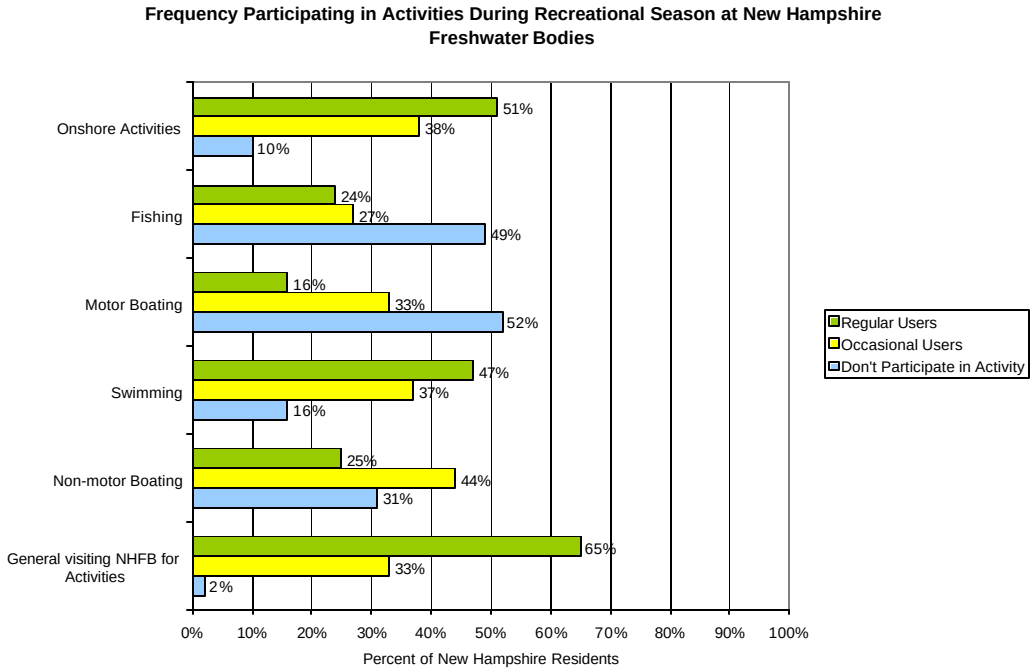


Figure 2-6[7]



[7] Regular users are those that participate in such activities once or twice a month or more and occasional users are those that participate in such activities a few times a year or less. NHFB stands for New Hampshire Freshwater Bodies.

Figure 2-7

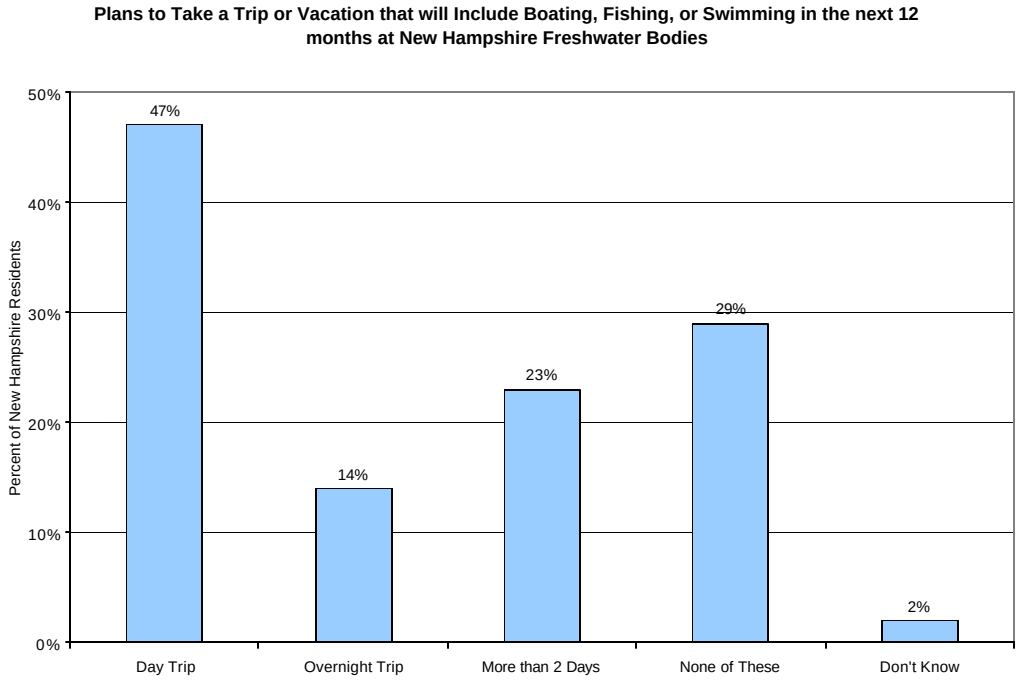


Figure 2-8

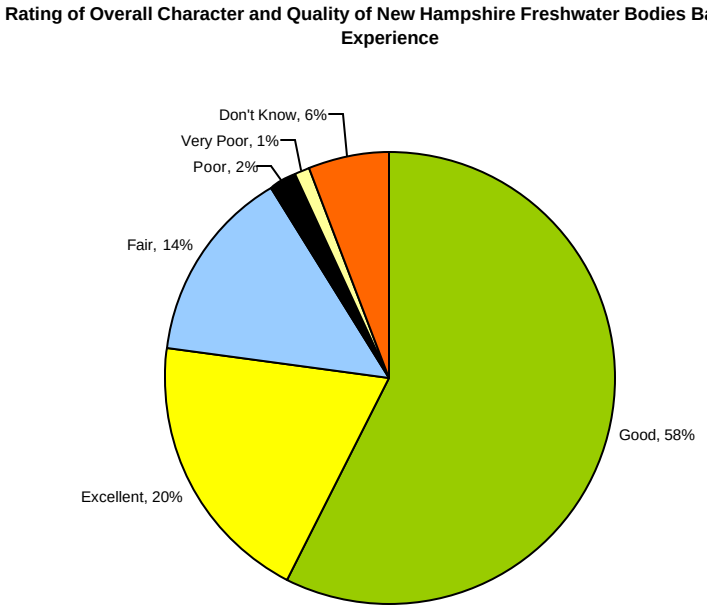


Figure 2-9

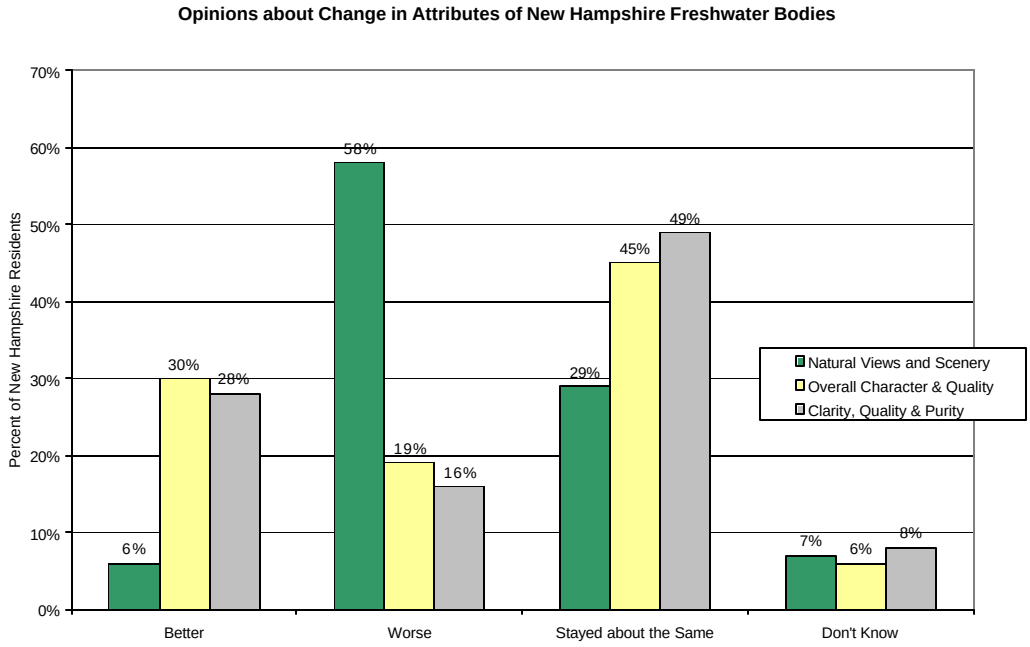


Figure 2-10

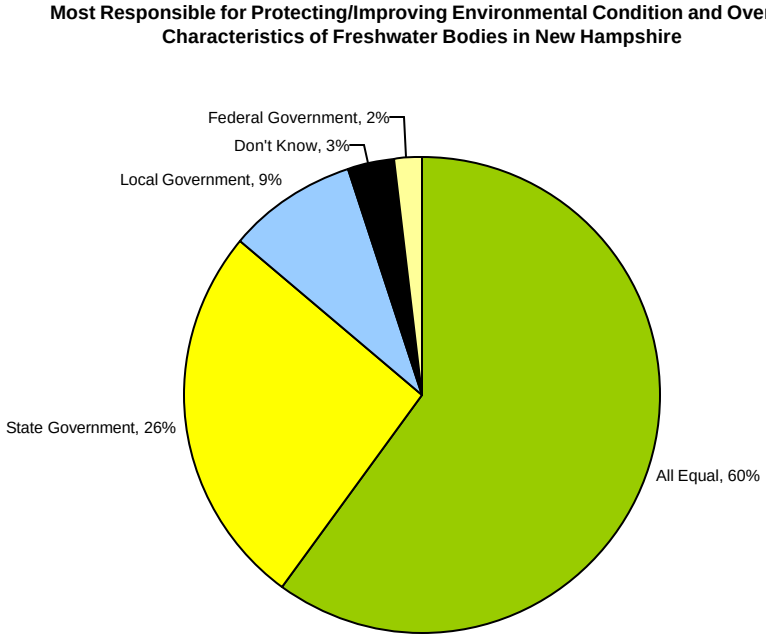


Figure 2-11

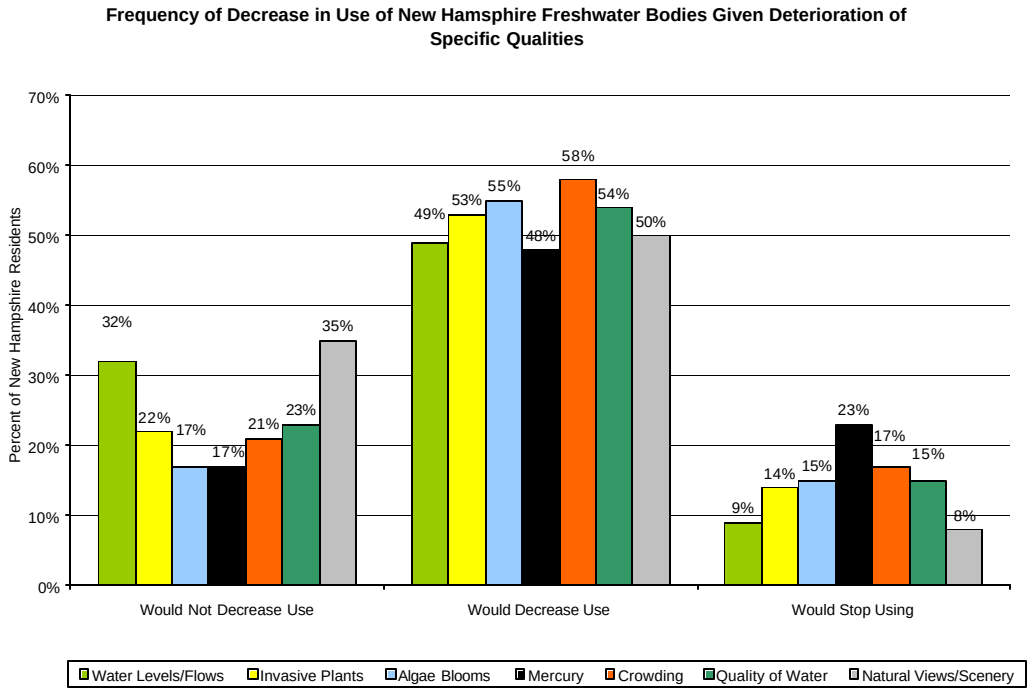


Figure 2-12

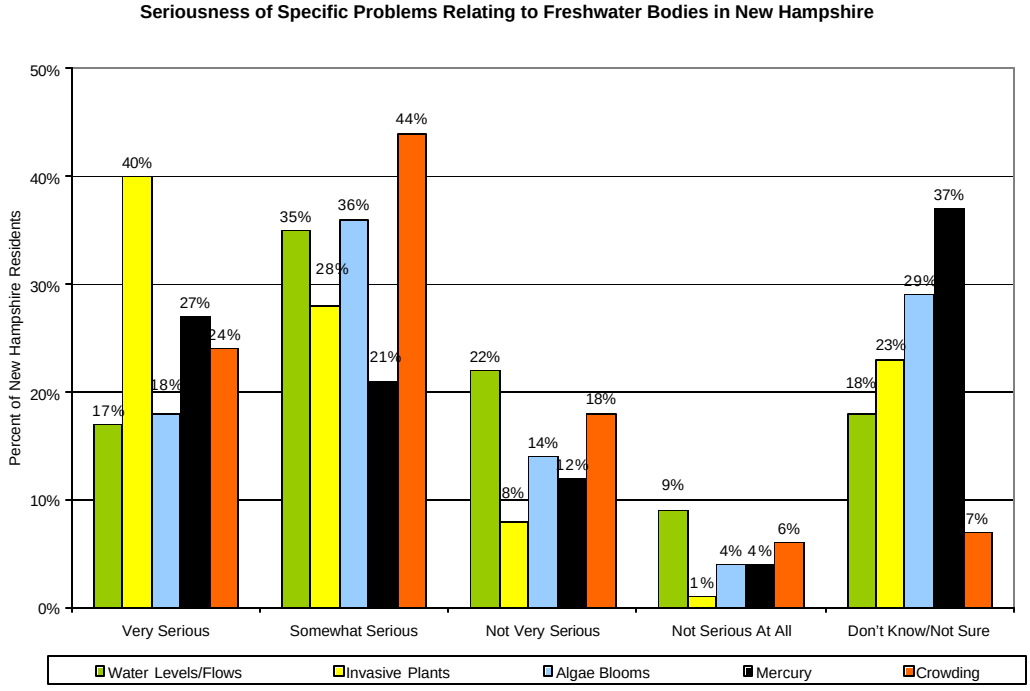


Figure 2-13

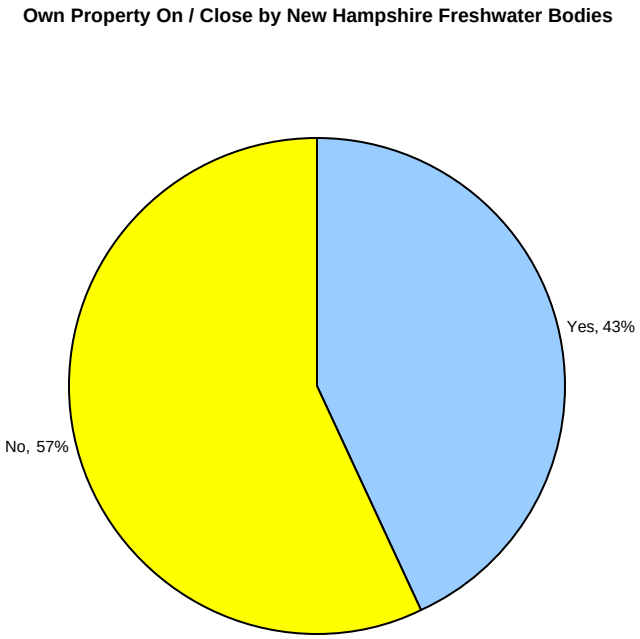
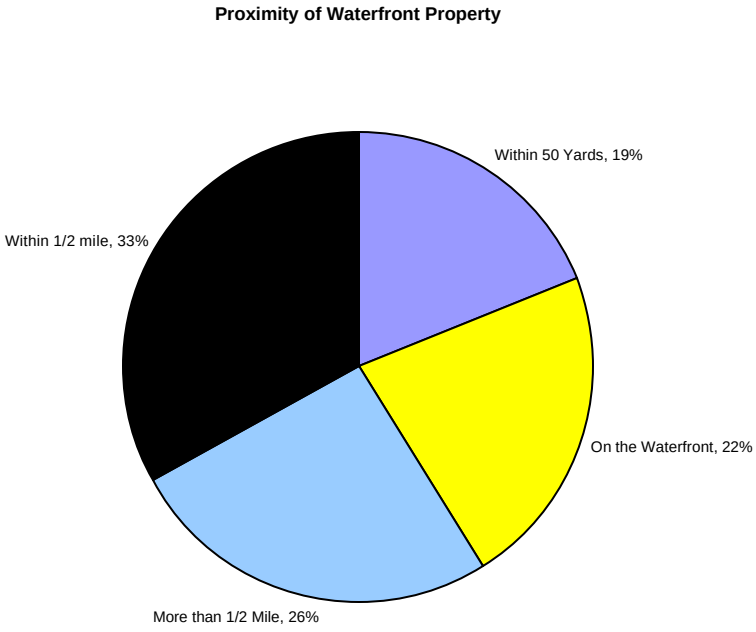


Figure 2-14



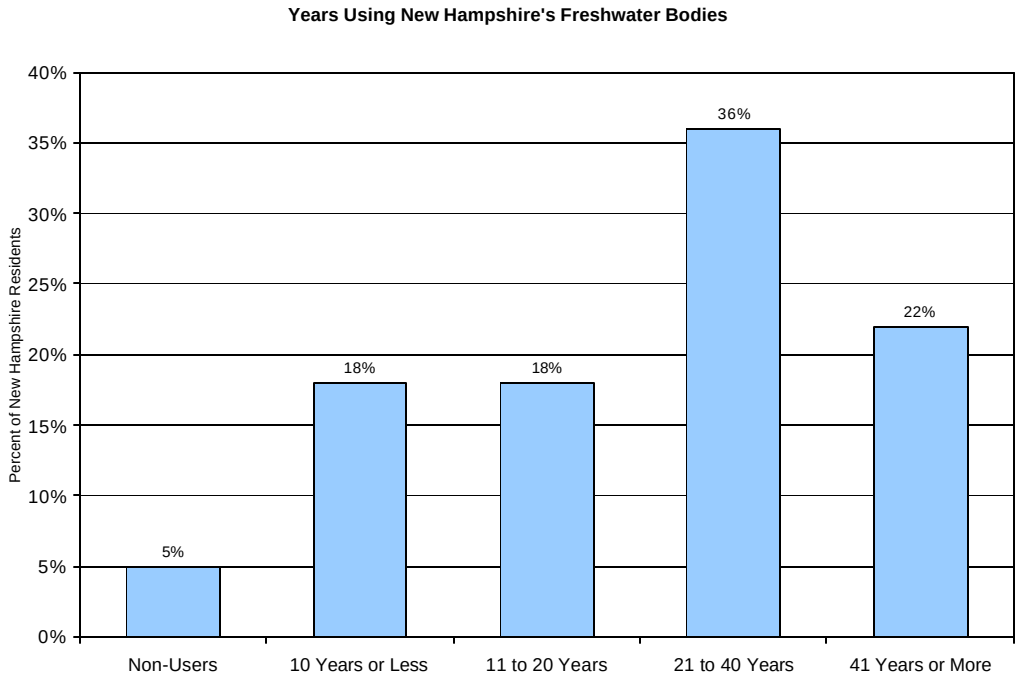
~ SECTION 3 ~
GALLAGHER, CALLAHAN, & GARTRELL
ADDITIONAL ANALYSES OF SURVEY RESULTS

The results from the Phase III Public Opinion Survey indicate that many different factors contribute to the quality and diversity of New Hampshire residents' experiences when they visit the roughly 1,000 freshwater lakes and ponds and 10,000 miles of rivers and streams in the State. Nonetheless, residents share many of the same opinions about these experiences, about the relative importance of different freshwater attributes, and about the problems that would lead them to reduce their use of freshwaters, thereby jeopardizing the economic value of the State's lakes, rivers, streams, and ponds. This section provides additional analyses of the results in the UNH Survey Center Report in the context of Phase II of the Study.

Most New Hampshire Residents are Satisfied, Long-Term Users of New Hampshire's Freshwaters

Ninety-five percent of New Hampshire residents report using the State's lakes, rivers, streams, and ponds for recreational purposes, such as boating, fishing, swimming, and onshore activities like sunbathing, hiking, and picnicking. As Figure 3-1 shows, 58% of residents have used them for more than twenty years; another 18% have used them have used them for 11-20 years.

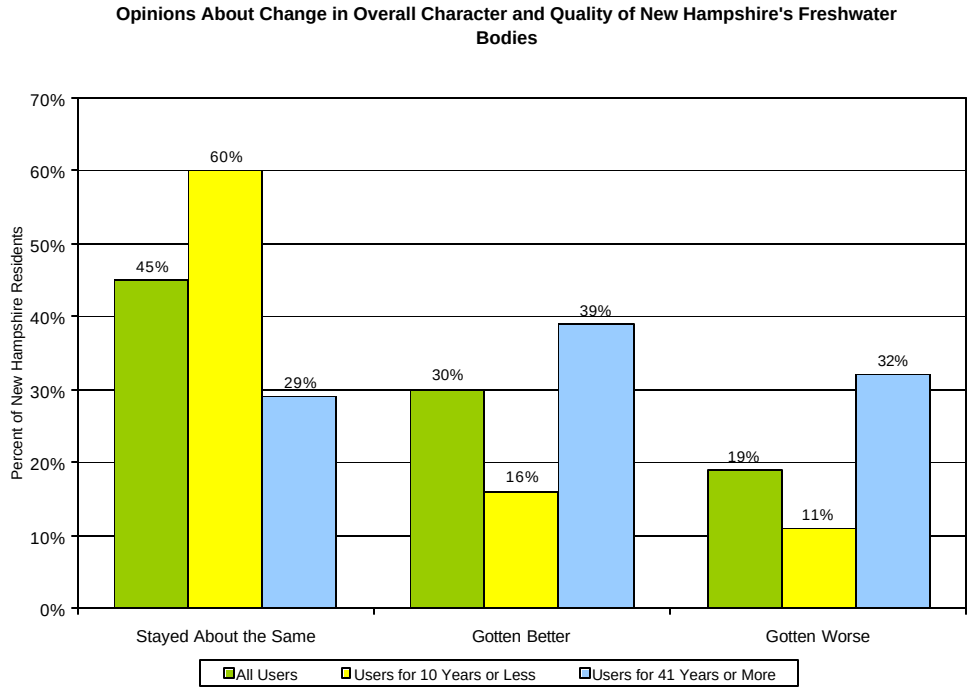
Figure 3-1



When asked at both the beginning and the end of the survey, over 90% of residents said they are either "very satisfied" or "somewhat satisfied" with their overall experience at the State's freshwater bodies.[8] This relatively high level of satisfaction is clearly a driving factor behind the estimated $1.2 billion per year in economic value associated with recreational fishing, boating, and swimming at New Hampshire's freshwaters.[9]

Forty-five percent of all survey respondents who use New Hampshire's freshwaters say that, based on their years of experience, the overall character and quality of these freshwater bodies has stayed about the same, while 30% say that it has gotten better and 19% say that it has gotten worse. The opinion that the overall character and quality has stayed about the same is more common among people who have been using New Hampshire's freshwaters for 10 years or less (60%) than among those who have been using New Hampshire's freshwaters for more than 40 years (29%). Among these long-time users, 39% say the overall character and quality has gotten better, while 32% say it has gotten worse. (*See Figure 3-2*) These findings suggest that it may take longer periods of time for people to notice changes in the overall character and quality of New Hampshire's freshwaters. A little more than one third (37%) of New Hampshire residents report that they have changed the places they typically go in New Hampshire for freshwater recreational activities, but usually not because of a change in freshwater attributes. The most common reasons were changes in personal circumstances and preferred recreational activities, although reasons for changing varied considerably.

Figure 3-2



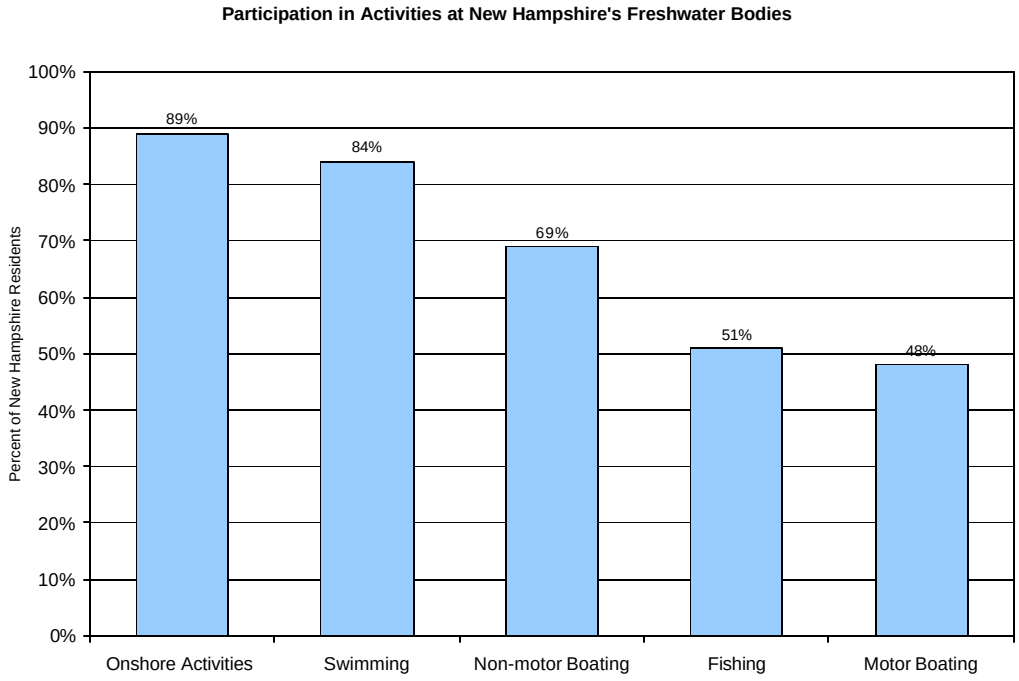
[8] Please refer to page 5 for earlier discussion of resident satisfaction.

[9] Economic values are expressed in 2002 dollars.

Non-Motorized Activities are the Most Popular, Especially among Frequent Freshwater Users

Onshore activities (such as sunbathing, hiking, and picnicking) and swimming are the most popular freshwater activities overall among New Hampshire residents. Eighty-nine percent participate in activities such as sunbathing, hiking, picnicking, and/or other onshore activities near freshwater in New Hampshire and 84% swim. Sixty-nine percent go non-motorboating (namely sailing, canoeing, row boating, paddle boating, and/or kayaking), 51% go fishing, and 48% go motorboating. (*See Figure 3-3*) These participation profiles are generally consistent with the participation levels used in the Phase II Study, where swimming was estimated at 8 million visitor days, boating at 3.6 million visitor days, and fishing at 3.1 million visitor days.

Figure 3-3



The frequency of participation in freshwater activities varies among residents (*also see figure 2-6, page 10*). More than a third (38%) of New Hampshire adults participate once a week or more in one or more of the above-mentioned activities during the recreational season at New Hampshire freshwater bodies, and another 27% participate at least once or twice a month. Only 10% participate less than a few times a year. Among the weekly and monthly users, onshore activities are the most common (51%), followed by swimming (47%), non-motor-boating (25%), and fishing (24%); motorboating is the least common (16%) among these regular freshwater users. Among occasional users (a few times a year or less), non-motorboating is the most common activity (44%), followed by onshore activities (38%), swimming (37%), motorboating (33%), and then fishing (27%).

New Hampshire's Freshwaters are a Travel Destination for Residents

Nearly three quarters of the State's residents (71%) plan on taking some type of trip or vacation in the next 12 months that will include freshwater boating, fishing, or swimming. Almost half (47%) plan on taking a day trip that will include one or more of these activities; 23% plan on taking a trip for more than two days, and 14% plan on taking an overnight trip. (*See Figure 2-7, page 11*) These trips are a major contributor to the nearly $1.2 billion in economic value that stems from freshwater boating, fishing, and swimming in New Hampshire, as residents spend money on food, lodging, transportation, and entertainment in addition to sporting equipment and gear.

Quality and Variety of Recreational Activities and Overall Beauty are the Primary Reasons Residents go to New Hampshire's Freshwaters; Pollution, Overcrowding, and Poor Water Quality are Major Deterrents

In an open-ended question, New Hampshire residents were asked to list up to three of their most important reasons for choosing to visit a specific freshwater body in New Hampshire. The most important reason cited is that the freshwater body offers the best fishing, boating, or swimming (44%). (*See Figure 2-2, page 8*) Overall beauty of the area is the second most important reason to visit specific New Hampshire freshwater bodies (31%); the third reason is the variety in activities that freshwaters afford (20%). Water quality just missed being among the top three reasons, with 16% citing it as the most important reason to visit a freshwater body. Safety, on-site facilities, nearby amenities, and family activities were infrequently cited as "most important" reasons to visit.

In another open-ended question, residents said that pollution, overcrowding of people and boats, and poor water quality are the most important reasons they stay away from specific New Hampshire freshwater bodies. (*See Figure 2-3, page 9*) Cost, regulations, personal safety, the behavior of other recreational users, noise, and car traffic were all cited infrequently by survey respondents as the most important reasons for staying away.

These answers suggest that protecting high-quality freshwater recreational opportunities, overall beauty, variety, and water quality will help safeguard the economic value that New Hampshire's freshwaters bring to the State.

Overall Water Quality Rated as Good and Staying the Same; but Future Declines Would Spur Drop in Use

Twenty percent (20%) of New Hampshire residents rate the current overall quality, clarity, and purity of the water in the State's freshwaters as excellent, another 58% as good, and 14% as fair. (*See Figure 3-4, page 19*) Based on their varying years of experience using freshwaters for recreational purposes, 16% of all respondents said that the overall quality, clarity, and purity of New Hampshire freshwaters has gotten worse, while 28% said that it has gotten better, and about half said that it has stayed about the same. (*See Figure 3-5, page 20*) This latter opinion, like that about the overall quality and character of New Hampshire's freshwaters, was more common among people who have been using these waters for 10 years or less (69%) than

among those who have been using New Hampshire's freshwaters for more than 40 years (31%). Thirty-nine percent of these long-time users said the overall quality has gotten better, while 25% said it has gotten worse – these are similar to the opinions about the trend in overall quality and character of freshwaters. Regardless of years of use, though, 69% of New Hampshire residents say that they would decrease their activities at New Hampshire freshwater bodies if water quality were to get worse. (*See Figure 3-6, page 20*)

Figure 3-4

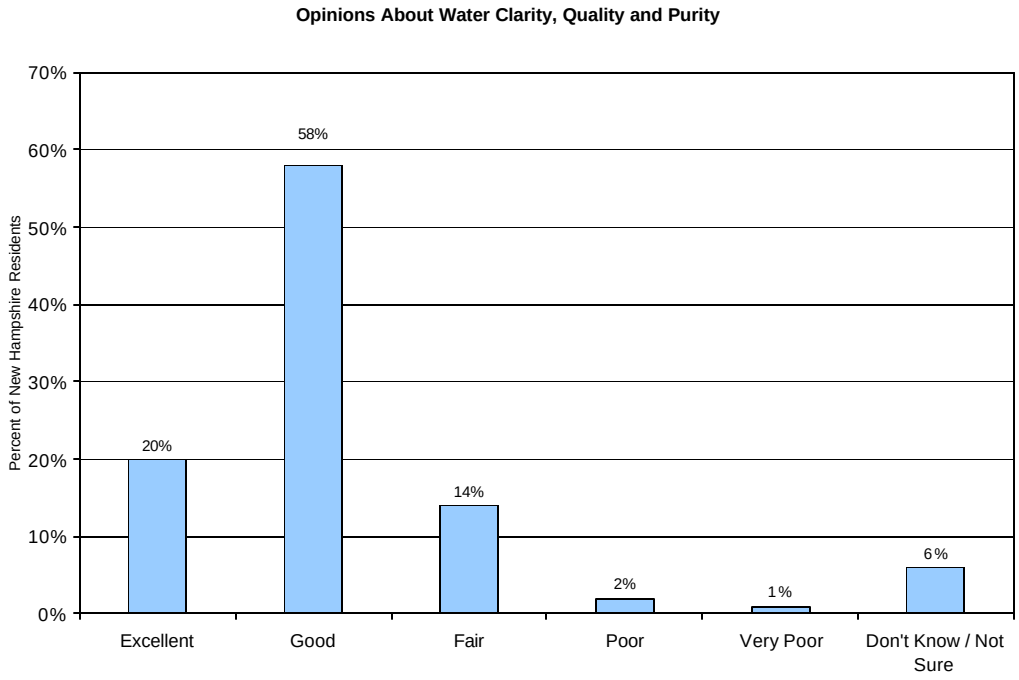


Figure 3-5

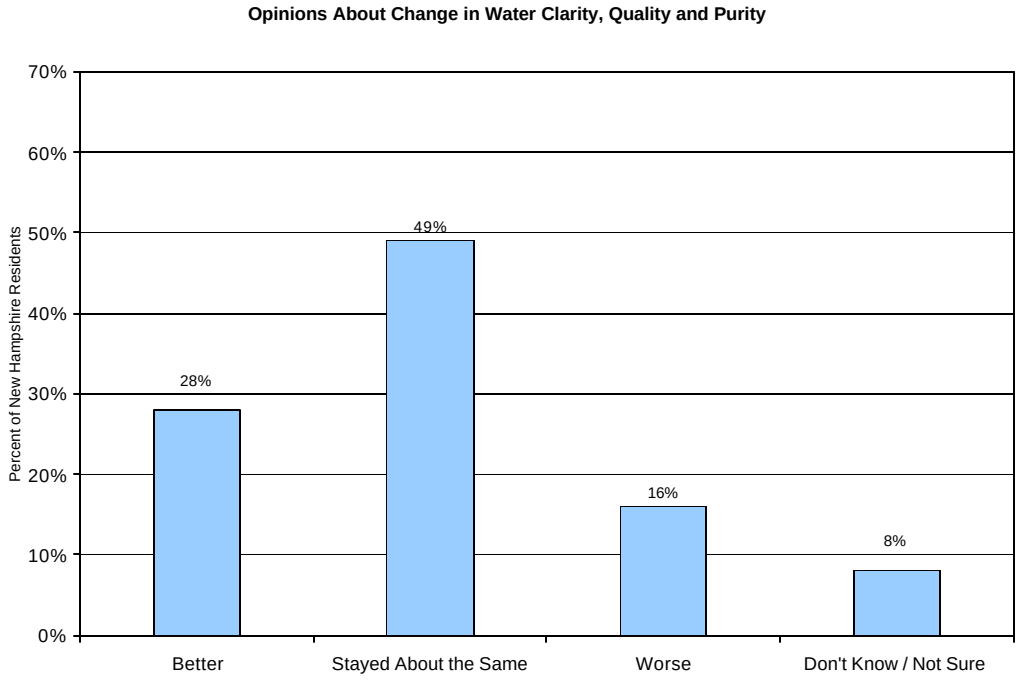
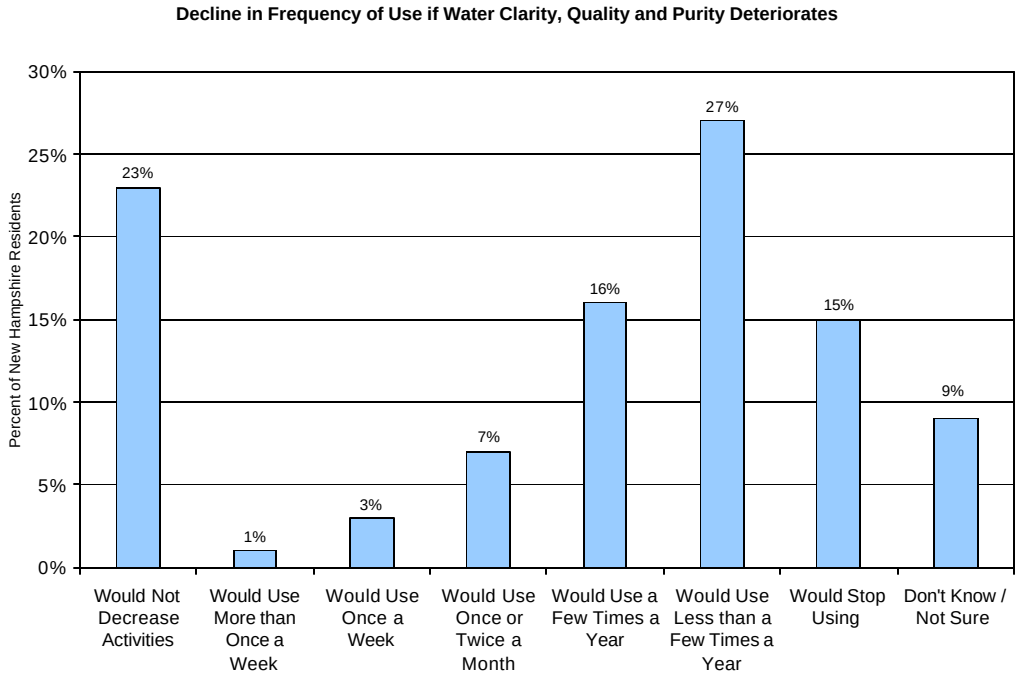


Figure 3-6



Invasive Plants and Crowding Seen as Most Serious Problems; Algae Blooms, Water Levels/Flows and Mercury also Cause for Concern

The problems of invasive plants, such as milfoil, and crowding are rated most often (68%) by respondents as either "very serious" or "somewhat serious", as summarized in Figure 3-7. Invasive plants is most frequently rated as "very serious" (40%). Residents apparently believe that invasive species and crowding would negatively impact the most important reasons why they visit New Hampshire freshwaters, as evidenced by the fact that approximately two thirds to three quarters say they would decrease their activities if either problem got worse, and the majority would decrease their activities to less than a few times a year. (*See Figure 3-8, page 22*) These findings suggest that if invasive plants or crowding at lakes, rivers, streams, and ponds gets worse, then the economic value derived from freshwater recreational activities would likely be diminished.

Figure 3-7

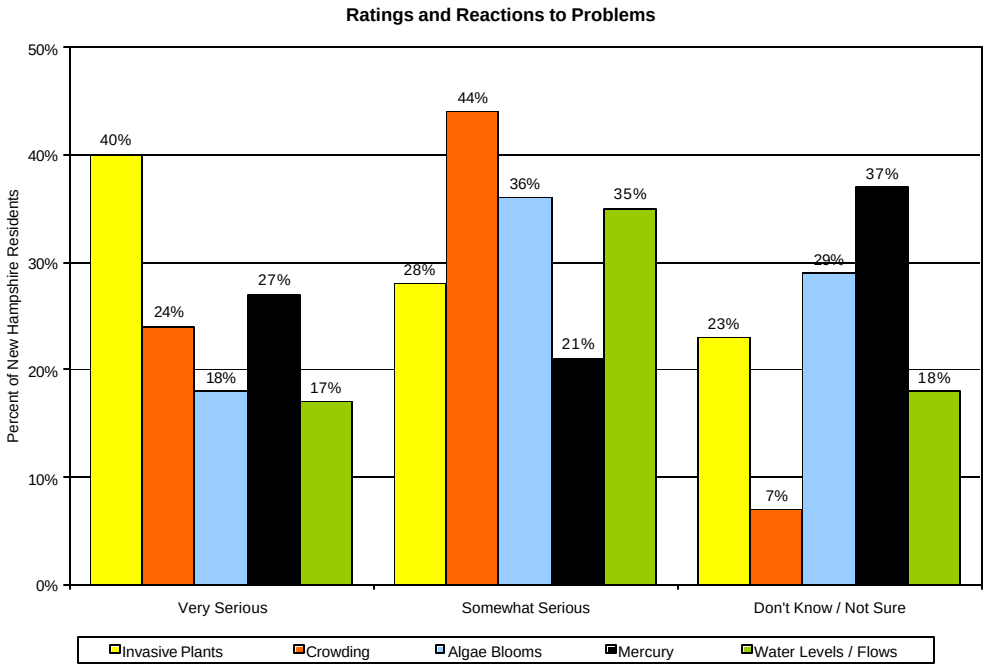
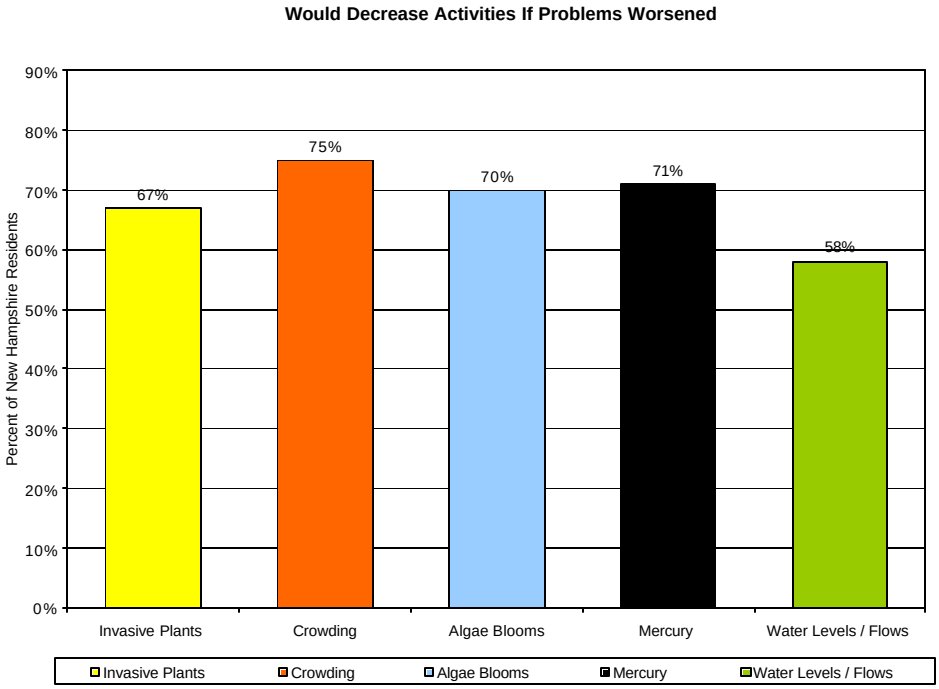


Figure 3-8



Furthermore, invasive plants could also cause declines in waterfront property values and thus economic value. One study found that exotic species can lower property values around New Hampshire lakes by as much as 16%,[10] and another study found that a change in water clarity lowered property values around Lake Champlain in Vermont by as much as 20%.[11] Such declines could explain why the Phase III Public Opinion Survey found that 52% of residents who own property near New Hampshire freshwaters feel that invasive plants such as milfoil are a "very serious" problem compared to 32% of non-owners who feel this way.

After invasive plants, mercury is the next problem rated as "very serious" among respondents (27%), crowding is rated very serious by 24%, while algae blooms are rated "very serious" by 18 percent. (*See Figure 3-7, page 21*) Although many people report not knowing or not being sure about the seriousness of two of these problems (37% for mercury and 29% for algae blooms), these two problems would reportedly trigger a significant decrease in residents' freshwater activities. Approximately seventy percent of New Hampshire residents said that they would decrease their activities at New Hampshire freshwater bodies if either algae blooms or mercury got worse, and the majority of residents would decrease their use of freshwaters to less than a few times a year. However, 75% of residents would decrease their use if crowding got worse on the state's freshwaters. (*See Figure 3-8*)

[10] *An Hedonic Analysis of The Effects of an Exotic Invader (Myrriophyllum herterophyllum) on New Hampshire Lakefront Properties*, Halstead, Michaud, Hallas-Burt, and Gibbs, 2001.

[11] *The Influence of Water Quality on the Value of Recreational Properties Adjacent to St. Alban's Bay*, Young and Teti, 1984.

In aggregate, 52% cited water levels/flows as either a "very serious" or "somewhat serious" problem; 48% cited mercury and 54% cited algae blooms as either "very serious" or "somewhat serious." (*See Figure 2-12, page 13)* Nearly one quarter (23%) of survey respondents say they would stop using New Hampshire freshwaters altogether if mercury levels get worse, compared to 17% or less in reaction to a worsening of other problems. An additional 48-58% would decrease their use if conditions worsened. (*See Figure 2-11, page 13*)

Natural Views and Scenery Seen as Getting Worse Due to Development

Declines in the natural views and scenery around freshwater bodies may also pose a threat to New Hampshire freshwaters' economic value. The overall beauty of an area is cited as the second most important reason to visit freshwaters, and yet 58% of all survey respondents say that the natural views and scenery around these waters have gotten worse due to residential and commercial development. Furthermore, 58% would decrease their activities if the natural views and scenery around freshwaters declined due to more development, and the majority would decrease their activities to less than a few times a year. Of note, the recreational users who are most likely to say that natural views and scenery have gotten worse are those who go non-motorboating more than once a week (69%); none of these users report an improvement or being uncertain. The users who are most likely to decrease their recreational activities if the views get worse in the future are those who go non-motorboating once or twice a month. (*See Figure 3-9, page 24*)

Reported Levels of Satisfaction Drop During Survey

Surveys are not without bias, and the questions themselves can become a factor in people's perceptions. When asked at the beginning of the survey, 60% of residents reported being "very satisfied" with their overall experience at the State's freshwater bodies, while only 44% reported being "very satisfied" when asked at the end of the survey. The percentages of respondents who reported being "neutral" and "not very satisfied" also dropped, but only from 2% to 1% and from 5% to 2%, respectively. Thus, after considering various problems that could impact New Hampshire's freshwaters, some residents express less positive view about their overall satisfaction levels. (*See Figure 3-10, page 24*)

Figure 3-9

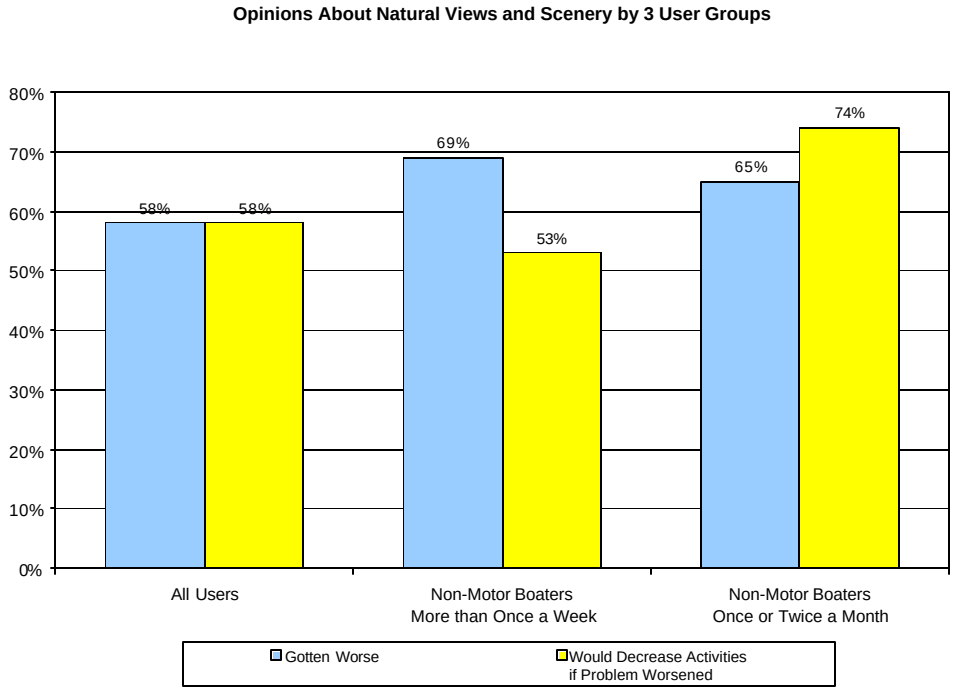
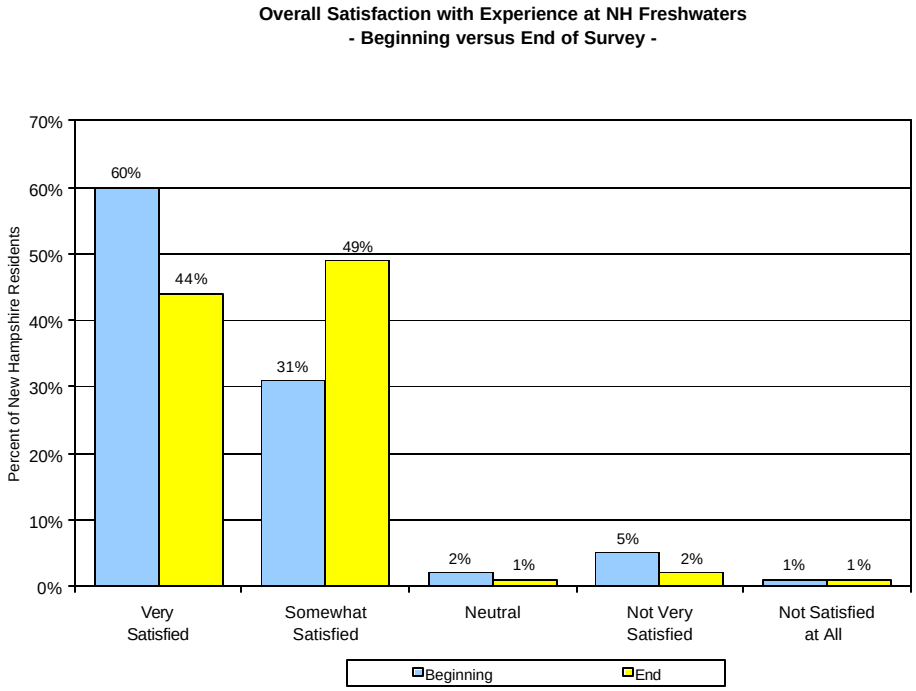


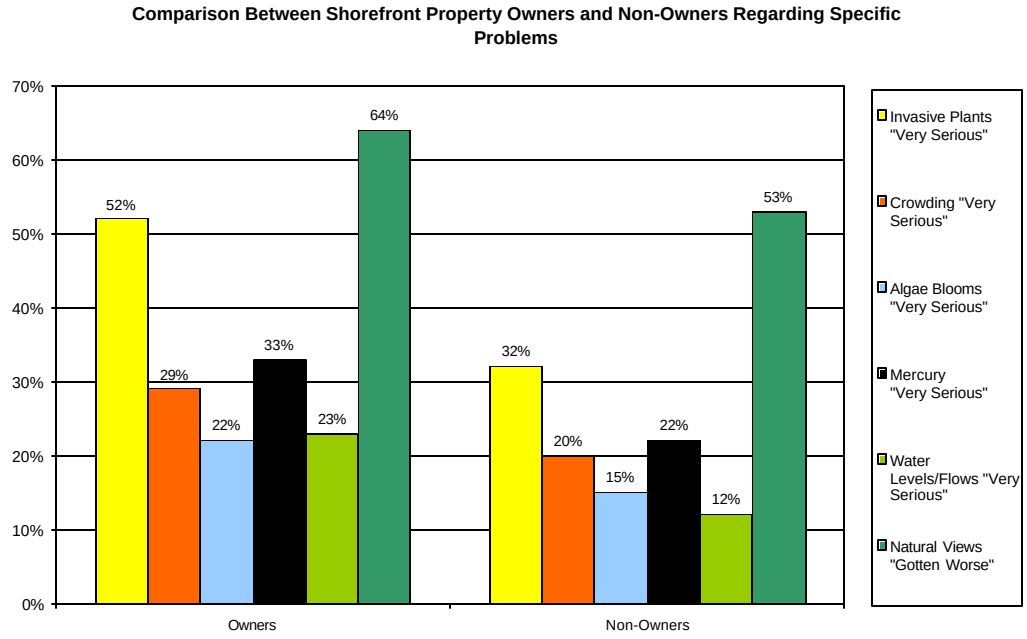
Figure 3-10



Freshwater Property Owners Use Waters More and Have Greater Concerns

Forty-three percent of survey respondents own property on or close by a New Hampshire freshwater body, and 41% of these owners' properties are on or within 50 yards of the waterfront. (*See Figure 2-14, page 14*) Eighty-three percent say that their waterfront property is their primary residence. Half of freshwater property owners participate once a week or more in some activity during the recreational season at New Hampshire freshwater bodies, compared to 27% of non-owners. Freshwater property owners are also more likely to perceive that each of the various problems mentioned earlier are "very serious" problems or problems that have "gotten worse," compared to the opinions given by residents who do not own property near New Hampshire freshwater bodies. (*See Figure 3-11*)

Figure 3-11



All Levels of Government Have a Role in Protecting and Improving New Hampshire's Freshwaters

Many New Hampshire residents believe that all levels of government have a role in protecting and improving the environmental conditions and overall characteristics of freshwater bodies in New Hampshire. (*See Figure 2-10, page 12*) Sixty percent of the State's residents said that federal, state, and local governments should be equally responsible for protecting and improving freshwaters in New Hampshire. Twenty-six percent said that state government should be most responsible, while just 9% feel that local government should be most responsible.

Summary

The four most important reasons why New Hampshire residents go to the state's freshwaters are the quality of the fishing, boating, and/or swimming; the overall beauty of the area; the variety in activities that freshwaters afford; and the quality of the water. These reasons suggest that protecting these freshwater attributes will help safeguard the significant economic value that New Hampshire's lakes, rivers, streams, and ponds bring to the State. When asked about certain factors that could impact the wellbeing of the State's freshwaters, such as invasive plants, crowding, mercury, algae blooms, water levels/flows, and residential and commercial development around freshwaters, residents expressed varying levels of concern. Most residents report that if any such problem were to worsen, they would react by decreasing their participation in freshwater activities, and the commonly cited decrease was down to less than a few times a year. Such decreases would undoubtedly have a negative impact on the estimated $1.2 billion per year in economic value associated with recreational fishing, boating, and swimming at New Hampshire's freshwaters.

~ SECTION 4 ~
SURVEY QUESTIONS

FRESHWATER1
"Now I'd like to ask you some questions about freshwater lakes, rivers, ponds and streams in New Hampshire."
"First, what is the MOST important reason why you choose to visit a specific freshwater body in New Hampshire, such as a lake, river, pond or stream?" "Anything else?" CLICK UP TO THREE REASONS

1 OVERALL BEAUTY OF AREA
2 QUALITY OF WATER
3 EASE OF ACCESS
4 TYPE OF PEOPLE STAFFING FACILITIES
5 LOW COST
6 QUIET
7 SAFE
8 VARIETY OF ACTIVITIES
9 NEARBY RESTAURANTS, BARS, SHOPS, etc.
10 BEST FISHING / SWIMMING / BOATING AVAILABLE
11 SMALL CROWDS – FEW PEOPLE
12 LOOSE REGULATIONS
13 PROXIMITY / DISTANCE
14 WILDERNESS / REMOTENESS
15 FACILITIES (BATHROOMS, SHOWERS, ETC.)
16 BEHAVIOR OF OTHER RECREATIONAL USERS
17 OTHER (SPECIFY)

98 DK / NOT SURE – PROBE: "In general …"
99 NA / REFUSED

FRESHWATER2
"Now, what is the MOST important reason you stay away from specific New Hampshire freshwater bodies?" "Any other reasons?" CLICK UP TO THREE REASONS

1 LACK OF OVERALL BEAUTY OF AREA
2 OVERCROWED / TOO MANY PEOPLE, BOATS, ETC.
3 POOR WATER QUALITY
4 POLLUTION
5 PLANT INFESTATION (MILFOIL, ETC.)
6 EROSION
7 TOO MUCH NOISE
8 TOO MUCH CAR TRAFFIC
9 TOO DIFFICULT TO ACCESS
10 TOO COSTLY
11 TYPE OF PEOPLE STAFFING FACILITIES
12 LACK OF NEARBY RESTAURANTS, BARS, STORES, etc.
13 BETTER SPOTS IN OTHER STATES
14 REGULATIONS TOO TOUGH
15 PERSONAL SAFETY
16 PROXIMITY / DISTANCE
17 NO / POOR FACILITIES (BATHROOM, SHOWER, ETC.)
18 POOR FISHING / BOATING / SWIMMING AVAILABLE
19 BEHAVIOR OF OTHER RECREATIONAL USERS
20 LACK OF WILDERNESS / REMOTENESS
21 LACK OF VARIETY OF ACTIVITIES
22 OTHER (SPECIFY)

98 DK / NOT SURE – PROBE: "In general …"
99 NA / REFUSED

FRESHWATER3
"Overall, how satisfied are you with your overall experience at freshwater lakes, rivers, ponds, and streams in New Hampshire ... would you say you are very satisfied ... somewhat satisfied ... not very satisfied ... or not satisfied at all?"

1 VERY SATISFIED
2 SOMEWHAT SATISFIED
3 NEUTRAL/NEITHER
4 NOT VERY SATISFIED
5 NOT SATISFIED AT ALL

98 DK / NOT SURE → PROBE: "In general …"
99 NA/REFUSED

FRESHWATER4
"For how many years have you been using freshwater lakes, ponds, rivers, or streams in New Hampshire for recreational purposes, such as boating, fishing, swimming, sunbathing, hiking, picnicking, or other onshore activities?

IF "ALL MY LIFE" ASK – "About how many years is that?"

RECORD EXACT NUMBER OF YEARS OF USE

___
| |
|__|

0 DO NOT USE / NEVER USED → SKIP TO FRESHWATER8
1 ONE YEAR OR LESS

96 96 YEARS OR MORE
97 REFUSED
98 DK
99 NA

FRESHWATER5
"How often do you typically go to freshwater lakes, ponds, rivers, and streams in New Hampshire to participate in these types of activities during the recreational season … more than once a week ... once a week ... once or twice a month ... a few times a year ... or less often?"

1 MORE THAN ONCE A WEEK
2 ONCE A WEEK
3 ONCE OR TWICE A MONTH
4 A FEW TIMES A YEAR
5 LESS THAN A FEW TIMES A YEAR
6 DO NOT PARTICIPATE IN ACTIVITY

98 DK PROBE – "In general …"
99 NA / REFUSED

FRESHWATER6
"Based on your experience, do you think that the overall character and quality of freshwater bodies in New Hampshire has gotten better, gotten worse, or stayed about the same?"

1 BETTER
2 WORSE
3 STAYED ABOUT THE SAME

98 DK / NOT SURE – PROBE: "In general …"
99 NA / REFUSED

FRESHWATER7
"Which are the top three freshwater lakes, rivers, ponds or streams in New Hampshire that you visit most often?"
(NOTE: GREAT BAY & PISCATAQUA RIVER ARE NOT FRESHWATER)

1 CONNECTICUT LAKES
2 MASCOMA LAKE
3 MASSABESIC LAKE
4 MERRYMEETING LAKE
5 NEWFOUND LAKE
6 OSSIPEE LAKE
7 PAWTUCKAWAY LAKE
8 PLEASANT LAKE
9 SILVER LAKE
10 SQUAM LAKE
11 LAKE SUNAPEE
12 LAKE UMBAGOG
13 WENTWORTH LAKE
14 LAKE WINNEPESAUKEE
15 WINNISQUAM LAKE
16 ANDROSCOGGIN RIVER
17 ASHUELOT RIVER
18 CONNECTICUT RIVER
19 MERRIMACK RIVER
20 PEMIGEWASSIT RIVER
21 SACO RIVER
22 PISCATAQUAG RIVER
22 OTHER LAKE / POND (SPECIFY)
23 OTHER RIVER / STREAM (SPECIFY)

97 NONE
98 DK / NOT SURE
99 NA / REFUSED

FRESHWATER8
"I'd like to ask you about plans you might have to take a trip or a vacation in New Hampshire in the next 12 months that includes boating, fishing or swimming at a lake, river, pond or stream. Do you plan to take a day trip, either for part or all of the day; an over-night trip; or a vacation lasting more than 2 days that will include freshwater boating, fishing or swimming? READ SLOWLY AND CLICK ALL THAT APPLY

1 A DAY TRIP, EITHER FOR PART OR ALL OF THE DAY
2 AN OVER-NIGHT TRIP
3 A VACATION LASTING MORE THAN 2 DAYS
4 NONE OF THESE

5 DK / NOT SURE
6 NA / REFUSED

FRESHWATER9
"Do you own property on or close by a freshwater body in New Hampshire, such as a lake, a pond, a river, or a stream?"

1 YES
2 NO → SKIP TO FRESHWATER 11

98 DK / NOT SURE - DO NOT PROBE → SKIP TO FRESHWATER11
99 NA / REFUSED → SKIP TO FRESHWATER11

(FRESHWATER9A)
IF YES: "How close is your property to the lake, pond, river, or stream? Would you say … on the waterfront … within 50 yards from the waterfront … within a half mile from the waterfront …or more than a half mile from the waterfront?"

1 ON THE WATERFRONT
2 WITHIN 50 YARDS FROM THE WATERFRONT
3 WITHIN ½ MILE FROM THE WATERFRONT
4 MORE THAN ½ MILE FROM THE WATERFRONT

98 DON'T KNOW/NOT SURE
99 NA/REFUSED

FRESHWATER10
"Is this property your primary residence or a second home?"
1 PRIMARY RESIDENCE
2 SECOND HOME
3 OTHER

98 DK / NOT SURE
99 NA / REFUSED

FRESHWATER 11
"Now I'd like to ask you about <u>specific</u> recreational activities you do on and around freshwater in New Hampshire."

"How often do you typically participate in freshwater motorboating or use other motorized vessels such as jet skis in New Hampshire during the boating season … more than once a week ... once a week ... once or twice a month ... a few times a year ... or less often?"

1 MORE THAN ONCE A WEEK
2 ONCE A WEEK
3 ONCE OR TWICE A MONTH
4 A FEW TIMES A YEAR
5 LESS THAN A FEW TIMES A YEAR

6 DO NOT PARTICIPATE IN ACTIVITY

98 DK PROBE – "In general …"
99 NA / REFUSED

FRESHWATER12
"How often do you typically participate in freshwater non-motorized boating such as sailboats, canoes, row boats, paddleboats, or kayaks in New Hampshire during the boating season … more than once a week ... once a week ... once or twice a month ... a few times a year ... or less often?"

1 MORE THAN ONCE A WEEK
2 ONCE A WEEK
3 ONCE OR TWICE A MONTH
4 A FEW TIMES A YEAR
5 LESS THAN A FEW TIMES A YEAR

6 DO NOT PARTICIPATE IN ACTIVITY

98 DK PROBE – "In general …"
99 NA / REFUSED

FRESHWATER13
"How often do you typically fish in freshwater lakes, ponds, rivers, and streams in New Hampshire during the fishing season … more than once a week ... once a week ... once or twice a month ... a few times a year ... or less often?"

1 MORE THAN ONCE A WEEK
2 ONCE A WEEK
3 ONCE OR TWICE A MONTH
4 A FEW TIMES A YEAR
5 LESS THAN A FEW TIMES A YEAR

6 DO NOT PARTICIPATE IN ACTIVITY

98 DK PROBE – "In general …"
99 NA / REFUSED

FRESHWATER14
"How often do you typically swim in freshwater lakes, ponds, rivers, and streams in New Hampshire during the swimming season … more than once a week ... once a week ... once or twice a month ... a few times a year ... or less often?"

1 MORE THAN ONCE A WEEK
2 ONCE A WEEK
3 ONCE OR TWICE A MONTH
4 A FEW TIMES A YEAR
5 LESS THAN A FEW TIMES A YEAR

6 DO NOT PARTICIPATE IN ACTIVITY

98 DK PROBE – "In general …"
99 NA / REFUSED

FRESHWATER15
"How often do you typically participate in activities such as sunbathing, hiking, picnicking, or other onshore activities near freshwater in New Hampshire … more than once a week ... once a week ... once or twice a month ... a few times a year ... or less often?"

1 MORE THAN ONCE A WEEK
2 ONCE A WEEK
3 ONCE OR TWICE A MONTH
4 A FEW TIMES A YEAR
5 LESS THAN A FEW TIMES A YEAR

6 DO NOT PARTICIPATE IN ACTIVITY

98 DK PROBE – "In general …"
99 NA / REFUSED

FRESHWATER16
"People sometimes change the places they typically go for freshwater recreational activities. Have you changed the places you typically go in New Hampshire for freshwater boating, fishing, or swimming?"

IF YES: "What were the three main reasons you changed locations?" CLICK UP TO THREE REASONS

1 CHANGE IN OVERALL BEAUTY OF AREAS
2 OVERCROWED / TOO MANY PEOPLE, BOATS, ETC.
3 POOR WATER QUALITY
4 POLLUTION
5 PLANT INFESTATION (MILFOIL, ETC.)
6 EROSION
7 TOO MUCH NOISE
8 TOO MUCH CAR TRAFFIC
9 TOO DIFFICULT TO ACCESS
10 TOO COSTLY
11 CHANGE IN TYPE OF PEOPLE AT FACILITIES / AMENITIES
12 LACK OF NEARBY RESTAURANTS, BARS, STORES, etc.
13 BETTER SPOTS IN OTHER STATES
14 REGULATIONS TOO TOUGH
15 CHANGE IN PERSONAL CIRCUMSTANCES
16 PERSONAL SAFETY
17 POOR FISHING / BOATING / SWIMMING AVAILABLE
18 PROXIMITY / DISTANCE
19 NO / POOR FACILITIES (BATHROOM, SHOWER, ETC.)

20 BEHAVIOR OF OTHER RECREATIONAL USERS
21 CHANGE IN WILDERNESS / REMOTENESS
22 CHANGE IN VARIETY OF ACTIVITIES
23 OTHER (SPECIFY)
24 DK / NS – PROBE: "In general …"
25 DO NOT GO TO FRESHWATER BODIES FOR RECREATION
26 NA / REFUSED

FRESHWATER17
"How would you personally rate the overall clarity, quality and purity of the water in lakes, ponds, rivers, and streams in New Hampshire … would you say the overall water clarity, quality and purity is excellent … good … fair … poor … or very poor?"

1 EXCELLENT
2 GOOD
3 FAIR
4 POOR
5 VERY POOR

98 DK / NOT SURE – PROBE: "In general …"
99 NA/REFUSED

FRESHWATER18
"Based on your experience, has the water clarity, quality, and purity of lakes, ponds, rivers, and streams in New Hampshire gotten better over time … gotten worse … or stayed about the same?"

1 BETTER
2 WORSE
3 STAYED ABOUT THE SAME

98 DK / NOT SURE – PROBE: "In general …"
99 NA / REFUSED

FRESHWATER19
"If the quality of water in New Hampshire's lakes, ponds, rivers, and streams got worse than it is now, would you decrease your boating, fishing, or swimming activities?"

IF YES: "Given that you would decrease your activities if the quality of water got worse, then how often would you participate in freshwater boating, fishing, or swimming activities … more than once a week ... once a week ... once or twice a month ... a few times a year ... or less often?"

0 WOULD NOT DECREASE

1 MORE THAN ONCE A WEEK
2 ONCE A WEEK

3 ONCE OR TWICE A MONTH
4 A FEW TIMES A YEAR
5 LESS THAN A FEW TIMES A YEAR

6 WOULD STOP USING

98 DK / NOT SURE – PROBE: "In general …"
99 NA/REFUSED

FRESHWATER20
"In your opinion, how serious a problem are water levels or water flow in freshwater bodies in New Hampshire … very serious … somewhat serious … not very serious … or not serious at all?"

1 VERY SERIOUS
2 SOMEWHAT SERIOUS
3 NOT VERY SERIOUS
4 NOT SERIOUS AT ALL

98 DK / NOT SURE – PROBE: "Based on what you have read or heard …"
99 NA / REFUSED

FRESHWATER21
"If water levels or water flow in freshwater bodies in New Hampshire got worse than they are now, would you decrease your freshwater boating, fishing, or swimming activities?"

IF YES: "Given that you would decrease your activities if water levels or water flow got worse, then how often would you participate in freshwater boating, fishing, or swimming activities … more than once a week ... once a week ... once or twice a month ... a few times a year ... or less often?"

0 WOULD NOT DECREASE

1 MORE THAN ONCE A WEEK
2 ONCE A WEEK
3 ONCE OR TWICE A MONTH
4 A FEW TIMES A YEAR
5 LESS THAN A FEW TIMES A YEAR

6 WOULD STOP USING

98 DK / NOT SURE – PROBE: "In general …"
99 NA/REFUSED

FRESHWATER22
"Now I'd like to ask you a question about invasive plants, such as milfoil, in New Hampshire's lakes, rivers, ponds, and streams. In your opinion, how serious a problem are invasive plants, such as milfoil, in freshwater bodies in New Hampshire … very serious … somewhat serious … not very serious … or not serious at all?"

1 VERY SERIOUS
2 SOMEWHAT SERIOUS
3 NOT VERY SERIOUS
4 NOT SERIOUS AT ALL

98 DK / NOT SURE – PROBE: "Based on what you have read or heard …"
99 NA / REFUSED

FRESHWATER 23
"If the problem of invasive plants in freshwater bodies in New Hampshire got worse than it is now, would you decrease your freshwater boating, fishing, or swimming activities?"

IF YES: "Given that you would decrease your activities if invasive plants got worse, then how often would you participate in freshwater boating, fishing, or swimming activities … more than once a week ... once a week ... once or twice a month ... a few times a year ... or less often?"

0 WOULD NOT DECREASE

1 MORE THAN ONCE A WEEK
2 ONCE A WEEK
3 ONCE OR TWICE A MONTH
4 A FEW TIMES A YEAR
5 LESS THAN A FEW TIMES A YEAR

6 WOULD STOP USING

98 DK / NOT SURE – PROBE: "In general …"
99 NA/REFUSED

FRESHWATER24
"Think for a minute about changes in the natural views and scenery because of residential and commercial development around freshwater bodies in New Hampshire. In your opinion, would you say that natural views and scenery around lakes, ponds, rivers, and streams in New Hampshire have gotten better in the last five years … gotten worse … or stayed about the same?"

1 BETTER
2 WORSE
3 STAYED ABOUT THE SAME

98 DK / NOT SURE – PROBE: "In general …"
99 NA / REFUSED

FRESHWATER25
"Would you decrease your freshwater boating, fishing, or swimming activities if the natural views and scenery around freshwater bodies declined due to more development?"

IF YES: "Given that you would decrease your activities if the natural views and scenery around freshwater got worse, then how often would you participate in freshwater boating, fishing, or swimming activities … more than once a week ... once a week ... once or twice a month ... a few times a year ... or less often?"

0 WOULD NOT DECREASE

1 MORE THAN ONCE A WEEK
2 ONCE A WEEK
3 ONCE OR TWICE A MONTH
4 A FEW TIMES A YEAR
5 LESS THAN A FEW TIMES A YEAR

6 WOULD STOP USING

98 DK / NOT SURE – PROBE: "In general …"
99 NA/REFUSED

INTRO: "Now I'd like to ask you how serious a problem some other things are for the freshwater lakes, ponds, rivers, and streams in New Hampshire and if they got worse, how that would affect your freshwater activities."

FRESHWATER26
"How serious a problem are algae blooms in freshwater bodies in New Hampshire … very serious … somewhat serious … not very serious … or not serious at all?"

1 VERY SERIOUS
2 SOMEWHAT SERIOUS
3 NOT VERY SERIOUS
4 NOT SERIOUS AT ALL

98 DK / NOT SURE – PROBE: "Based on what you have read or heard …"
99 NA / REFUSED

FRESHWATER27
“If the problem of algae blooms in freshwater bodies in New Hampshire got worse than it is now, would you decrease your freshwater boating, fishing, or swimming activities?”

IF YES: “Given that you would decrease your activity if algae blooms got worse, then how often would you participate in freshwater boating, fishing, or swimming activities … more than once a week ... once a week ... once or twice a month ... a few times a year ... or less often?”

0 WOULD NOT DECREASE

1 MORE THAN ONCE A WEEK
2 ONCE A WEEK
3 ONCE OR TWICE A MONTH
4 A FEW TIMES A YEAR
5 LESS THAN A FEW TIMES A YEAR

6 WOULD STOP USING

98 DK / NOT SURE – PROBE: “In general …”
99 NA/REFUSED

FRESHWATER28
"How serious a problem is mercury in freshwater bodies in New Hampshire … very serious … somewhat serious … not very serious … or not serious at all?”

1 VERY SERIOUS
2 SOMEWHAT SERIOUS
3 NOT VERY SERIOUS
4 NOT SERIOUS AT ALL

98 DK / NOT SURE – PROBE: “Based on what you have read or heard …”
99 NA / REFUSED

FRESHWATER29
“If the problem of mercury in freshwater bodies in New Hampshire got worse than it is now, would you decrease your freshwater boating, fishing, or swimming activities?”

IF YES: “Given that you would decrease your activity if mercury in freshwater bodies got worse, then how often would you participate in freshwater boating, fishing, or swimming activities … more than once a week ... once a week ... once or twice a month ... a few times a year ... or less often?”

0 WOULD NOT DECREASE

1 MORE THAN ONCE A WEEK
2 ONCE A WEEK
3 ONCE OR TWICE A MONTH
4 A FEW TIMES A YEAR
5 LESS THAN A FEW TIMES A YEAR

6 WOULD STOP USING

98 DK / NOT SURE – PROBE: “In general …”
99 NA/REFUSED

FRESHWATER30
"How serious a problem is crowding on and around freshwater bodies in New Hampshire … very serious … somewhat serious … not very serious … or not serious at all?”

1 VERY SERIOUS
2 SOMEWHAT SERIOUS
3 NOT VERY SERIOUS
4 NOT SERIOUS AT ALL

98 DK / NOT SURE – PROBE: “Based on what you have read or heard …”
99 NA / REFUSED

FRESHWATER31
"If the problem of crowding in freshwater bodies in New Hampshire got worse than it is now, would you decrease your freshwater boating, fishing, or swimming activities?"

IF YES: "Given that you would decrease your activity if crowding got worse, then how often would you participate in freshwater boating, fishing, or swimming activities … more than once a week ... once a week ... once or twice a month ... a few times a year ... or less often?"

0 WOULD NOT DECREASE

1 MORE THAN ONCE A WEEK
2 ONCE A WEEK
3 ONCE OR TWICE A MONTH
4 A FEW TIMES A YEAR
5 LESS THAN A FEW TIMES A YEAR

6 WOULD STOP USING

98 DK / NOT SURE – PROBE: "In general …"
99 NA/REFUSED

FRESHWATER32
"Who do you think should be most responsible for protecting or improving the environmental condition and overall characteristics of the freshwater bodies in New Hampshire … the federal government … the state government … local governments …or all three forms of government equally?"

1 FEDERAL GOVERNMENT
2 STATE GOVERNMENT
3 LOCAL GOVERNMENT
4 ALL EQUAL

98 DK / NOT SURE – PROBE: "In general …"
99 NA / REFUSED

FRESHWATER33
"Now that you've had a chance to think more about some of the issues concerning freshwater lakes, ponds, rivers, and streams in New Hampshire, how satisfied are you with your overall experience at freshwater lakes, rivers, ponds, and streams in New Hampshire ... would you say you are very satisfied ... somewhat satisfied ... not very satisfied ... or not satisfied at all?"

1 VERY SATISFIED
2 SOMEWHAT SATISFIED
3 NEUTRAL/NEITHER
4 NOT VERY SATISFIED
5 NOT SATISFIED AT ALL

98 DK / NOT SURE → PROBE: "In general …"
99 NA/REFUSED

~ SECTION 5 ~
TECHNICAL REPORT

TECHNICAL REPORT

How the Sample Was Selected

The Summer 2004 Granite State Poll was a survey of five hundred and four (504) randomly selected adults in the state of New Hampshire. This survey was conducted using a procedure called Random Digit Dialing (RDD) which is described below.

A sample of households in New Hampshire was selected by a procedure known as random digit dialing. The way this works is as follows. First, with the aid of the computer, one of the three-digit telephone exchanges that are currently used in the area (e.g., 772) is randomly selected. The computer then randomly selects one of the "working blocks"--the first two of the last four numbers in a telephone number (e.g., 64)--and attaches it to the randomly selected exchange. Finally, the computer program then generates a two-digit random number between 00 and 99 (e.g., 57) which is attached to the previously selected prefix (772), and the previously selected working block (64) resulting in a complete telephone number -- i.e., 772-6457. This procedure is then repeated numerous times by the computer to generate more random numbers, so that we have a sufficient quantity to conduct the survey. The end result is that each household in the area in which there is a telephone has an equally likely chance of being selected into the sample.

The random sample used in the Granite State Poll was purchased from Marketing Systems Group, (MSG) Fort Washington, Pennsylvania. MSG screens each selected telephone number to eliminate non-working numbers, disconnected numbers, and business numbers to improve the efficiency of the sample, reducing the amount of time interviewers spend calling non-usable numbers.

Each of these randomly generated telephone numbers is called by one of our trained interviewers from a centrally supervised facility at the UNH Survey Center. If the number called is found not to be a residential one, it is discarded and another random number is called. (Approximately forty-five percent of the numbers were discarded because they were found to be businesses, institutions, or not assigned.) If it is a residential number, the interviewer then randomly selects a member of the household by asking to speak with the adult currently living in the household who has had the most recent birthday. This selection process ensures that every adult (18 years of age or older) in the household has an equally likely chance of being included in the survey. No substitutions are allowed. If, for example, the randomly selected adult is not at home when the household is first contacted, the interviewer cannot substitute by selecting someone else who just happens to be there at the time. Instead, he or she must make an

appointment to call back when the randomly selected adult is at home. In this way, respondent selection bias is minimized.

When the Interviewing Was Done

New Hampshire adults in the Granite State Poll: Lakes, Rivers, Streams & Ponds Partnership were interviewed between June 16 and July 2, 2004. Each selected respondent was called by a professional UNH Survey Center interviewer from a centrally supervised facility at the UNH Survey Center. Telephone calls during the field period were made between 10:00 AM and 9:00 PM.

Response Rates

Attempts were made to contact three thousand nine hundred ninety-five (3,995) New Hampshire adults in the RDD survey. Table 1 shows the percentage of these contacts in the first survey which resulted in completed interviews (13%), refusals (21%), failures to interview because the telephone was busy, the phone was not answered, the telephone was answered by an answering machine, appointments were broken, or the respondent was away on business, vacation, or was otherwise unavailable during the interviewing period (44%). Failure to interview because the number was changed, disconnected, or was a business (23%).

TABLE 1

Response Rates for the July, 2004 Granite State Poll: Lakes, Rivers, Streams & Ponds Partnership

	Number	Percentage of Calls
Completed Interviews	504	12.6%
Refusals	844	21.1%
Unable to Interview -- (no answer, busy, answering machine, broken appointment, or the respondent was away on business, vacation, illness, etc.)	1742	43.6%
Disconnect, Changed Number, Business, Fax, Modem	905	22.6%
TOTALS	3,995	99.9%

Sampling Error

The Granite State Poll, like all surveys, is subject to sampling error due to the fact that all residents in the area were not interviewed. For those questions asked of five hundred (500) or so respondents, the error is +/-4.4%. For those questions where fewer than 500 persons responded, the sampling error can be calculated as follows:

$$\text{Sampling error} = +/- (1.96) \sqrt{\frac{P(1-P)}{N}}$$

Where **P** is the percentage of responses in the answer category being evaluated and **N** is the total number of persons answering the particular question.

For example, suppose you had the following distribution of answers to the question, "Should the state spend more money on road repair even if that means higher taxes?" Assume 1,000 respondents answered the question as follows:

YES	- 47%
NO	- 48%
DON'T KNOW	- 5%

The sampling error for the "YES" percentage of 47% would be

$$+/-(1.96) \sqrt{\frac{(47)(53)}{1{,}000}} = +/-3.1\%;$$

for the "NO" percentage of 48% it would be

$$+/-(1.96) \sqrt{\frac{(48)(52)}{1{,}000}} = +/-3.1\%;$$

and for the "DON'T KNOW" percentage of 5% it would be

$$+/-(1.96) \sqrt{\frac{(5)(95)}{1{,}000}} = +/-1.4\%;$$

In this case we would expect the true population figures to be within the following ranges:

YES	43.9% - 50.1% (i.e., 47% +/-3.1%)
NO	44.9% - 51.1% (i.e., 48% +/-3.1%)
DON'T KNOW	3.6% - 6.4% (i.e., 5% +/-1.4%)