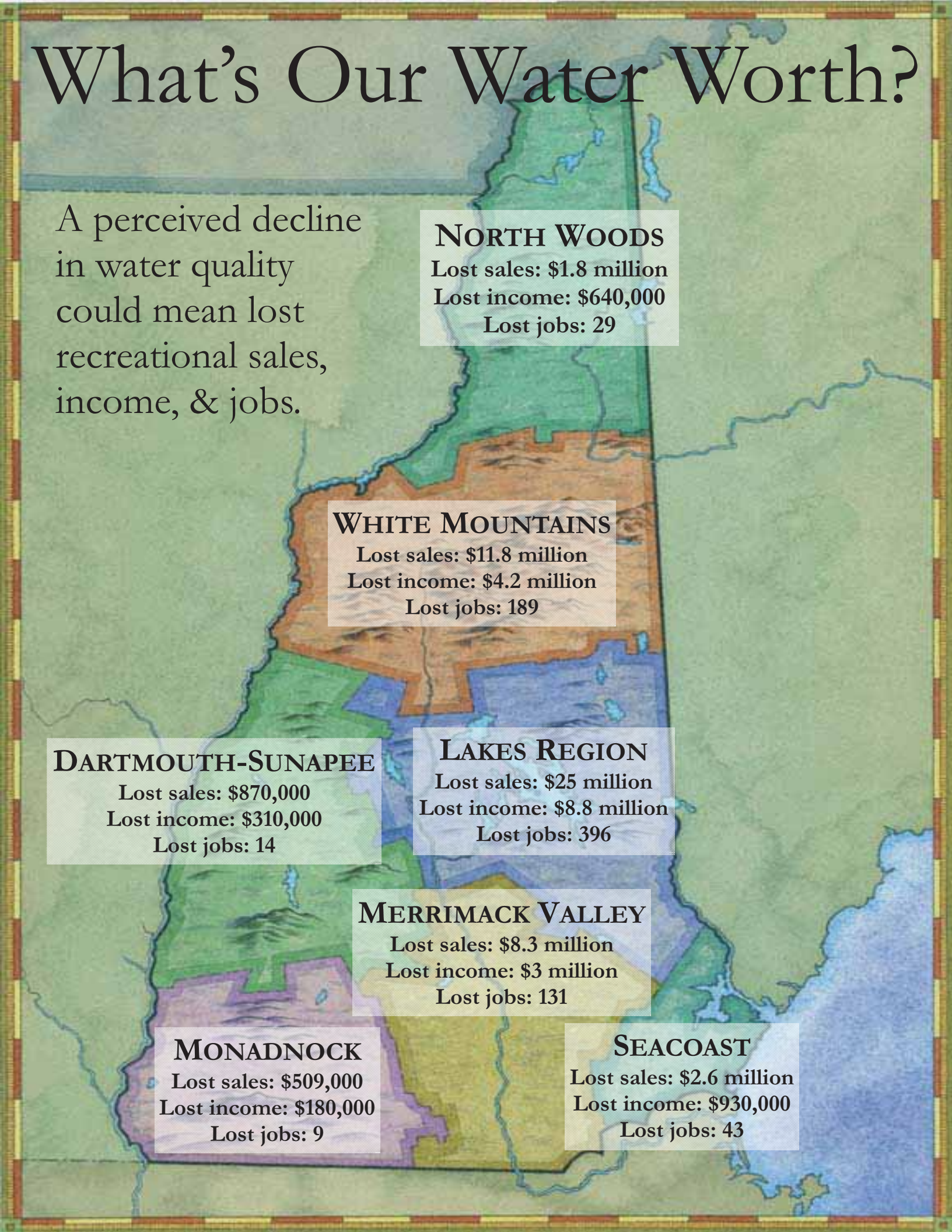
What's Our Water Worth?

A perceived decline in water quality could mean lost recreational sales, income, & jobs.



North Woods
Lost sales: $1.8 million
Lost income: $640,000
Lost jobs: 29

White Mountains
Lost sales: $11.8 million
Lost income: $4.2 million
Lost jobs: 189

Dartmouth-Sunapee
Lost sales: $870,000
Lost income: $310,000
Lost jobs: 14

Lakes Region
Lost sales: $25 million
Lost income: $8.8 million
Lost jobs: 396

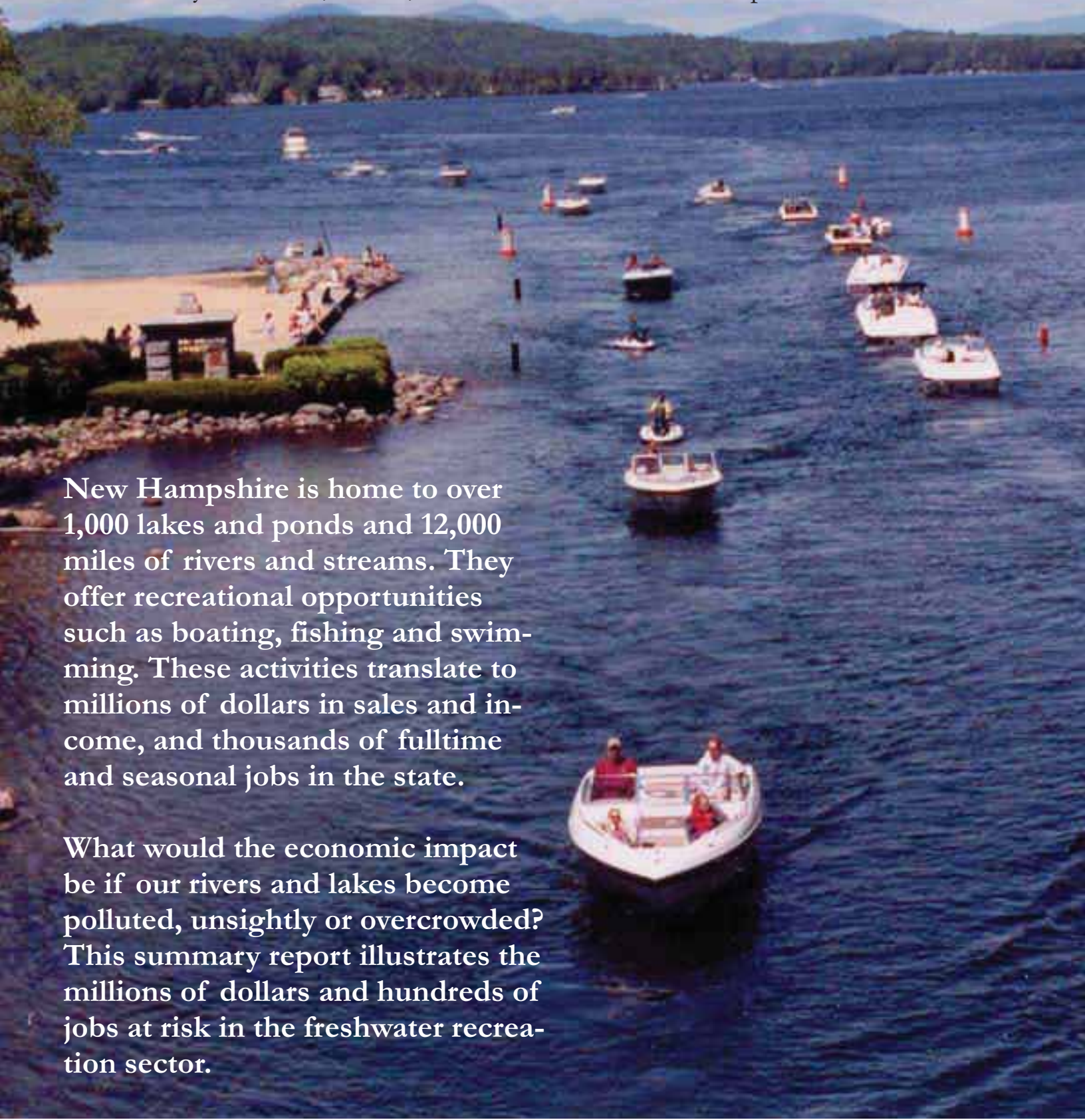
Merrimack Valley
Lost sales: $8.3 million
Lost income: $3 million
Lost jobs: 131

Monadnock
Lost sales: $509,000
Lost income: $180,000
Lost jobs: 9

Seacoast
Lost sales: $2.6 million
Lost income: $930,000
Lost jobs: 43

The Economic Impact of Deteriorating Water Quality

The fourth in a series estimating the economic value of New Hampshire surface waters.
Conducted by the Lakes, Rivers, Streams & Ponds Partnership.

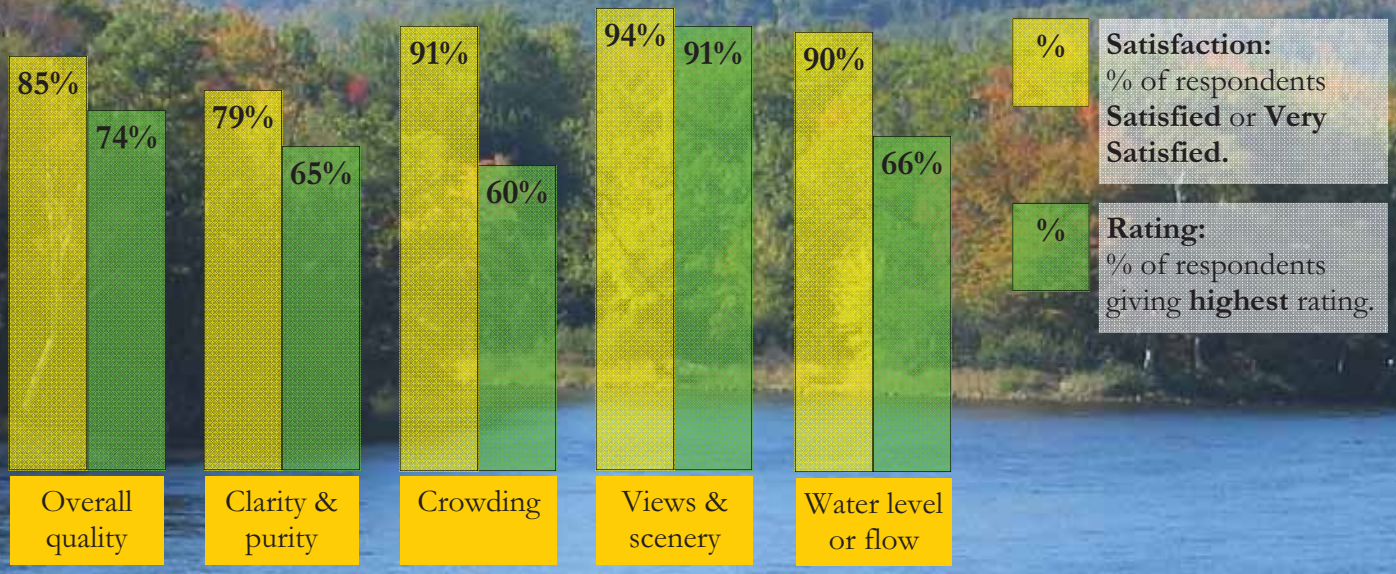


New Hampshire is home to over 1,000 lakes and ponds and 12,000 miles of rivers and streams. They offer recreational opportunities such as boating, fishing and swimming. These activities translate to millions of dollars in sales and income, and thousands of fulltime and seasonal jobs in the state.

What would the economic impact be if our rivers and lakes become polluted, unsightly or overcrowded? This summary report illustrates the millions of dollars and hundreds of jobs at risk in the freshwater recreation sector.

Key Statewide Findings

Current perception of water quality is very good.



Economic impact of swimming, fishing, boating is significant.

	Sales	Income	Jobs
Current Values	$379 million	$134 million	5,990

Perceived water quality decline could mean economic losses.

	Lost Sales	Lost Income	Lost Jobs
Decrease in water clarity or purity	$51 million	$18 million	810
Change in water levels or flows	$29 million	$10 million	460
Change in views or scenery	$28 million	$10 million	440
Increased crowding	$19 million	$7 million	310

NOTE: The issues selected for this study are interdependent. For example, a decrease in quality of views might be connected to an increase in crowding. The artificial separation of these issues for this research will result in a probable **under-estimation** of the economic costs of changing water quality.

Key Regional Findings

Perceived water quality decline could mean varying economic losses for state's regions.

North Woods	Lost Sales*	Lost Income*	Lost Jobs
Clarity & purity	$1.8 million	$640,000	29
Water level & flow	$1.4 million	$480,000	21
Views & scenery	$970,000	$350,000	15
Crowding	$780,000	$280,000	12

White Mountains	Lost Sales	Lost Income	Lost Jobs
Clarity & purity	$11.8 million	$4.2 million	189
Water level & flow	$5.7 million	$2 million	93
Views & scenery	$5.8 million	$2.1 million	94
Crowding	$4.3 million	$1.5 million	71

Dartmouth - Sun.	Lost Sales	Lost Income	Lost Jobs
Clarity & purity	$870, 000	$310,000	14
Water level & flow	$580,000	$188,000	9
Views & scenery	$553,000	$172,000	9
Crowding	$334,000	$118,000	6

Lakes Region	Lost Sales	Lost Income	Lost Jobs
Clarity & purity	$25 million	$8.8 million	396
Water level & flow	$15.3 million	$5.5 million	247
Views & scenery	$14.4 million	$5.1 million	231
Crowding	$9.5 million	$3.3 million	149

Monadnock	Lost Sales	Lost Income	Lost Jobs
Clarity & purity	$509,000	$181,000	9
Water level & flow	$522,000	$165,000	8
Views & scenery	$443,000	$130,000	7
Crowding	$216,000	$76,000	4

Merrimack Valley	Lost Sales	Lost Income	Lost Jobs
Clarity & purity	$8.3 million	$3 million	131
Water level & flow	$4.1 million	$1.4 million	63
Views & scenery	$4.1 million	$1.5 million	65
Crowding	$3 million	$1.1 million	47

Seacoast	Lost Sales	Lost Income	Lost Jobs
Clarity & purity	$2.6 million	$931,000	43
Water level & flow	$1.3 million	$452,000	21
Views & scenery	$1.4 million	$464,000	21
Crowding	$954,000	$337,000	16

* Lost Sales and Lost Income figures are rounded to the nearest $100,000 when figures are in the millions, and nearest $1,000 when figures are in the hundred thousands.

About this Study

Purpose

The primary goal of this study was to answer the question:
"How would the state economy be affected if residents and visitors who fish, boat and swim perceive any negative changes to the water quality in the areas where they recreate?"

The secondary study goals were to create useful information for policy makers, and promote "big picture" thinking that overcomes the perception that growth and healthy public waters are mutually exclusive.

Methodology

This study collected data from residents and visitors who fish, swim and boat.

During the summer of 2006 seventy-five freshwater access points were randomly selected from 400 public and quasi-public sites. These sites represent the state's seven tourism regions.

A questionnaire was administered to 912 people, producing 843 sets of usable data. Respondents were asked about their annual use of state waters and how it might be affected if they perceived negative changes in four areas of water quality:

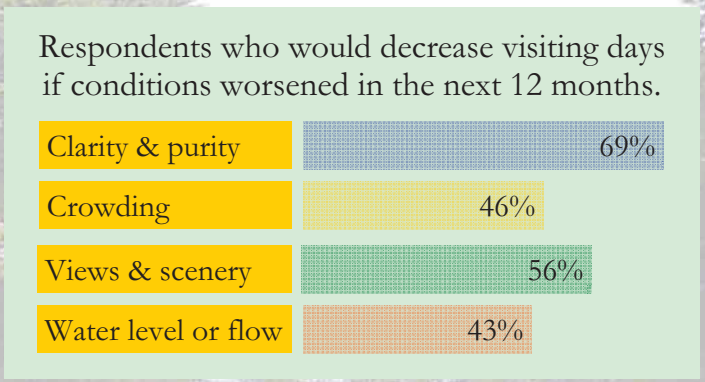
- Crowding
- Natural beauty and scenery
- Water clarity and purity (algae, mercury, milfoil, other invasives)
- Water levels and flows.

By combining two methods of assessment this report determined the estimated economic impact in a unique manner. First, survey respondents were asked **how much they spend** and **how often they visit** when they swim, boat or fish.

Second, they were asked how water quality changes would impact the **number of times they visited**. The link between actual spending and the hypothetical change in visitation gives the potential economic impact of changing water quality.

Notable Findings

- Visitor days by anglers, boaters and swimmers total **14.9 million** or 29% of the 51.4 million visitor days per year in the state.



- Annual sales generated by anglers, boaters and swimmers is over **$379 million**. This exceeds revenues from Laconia's Bike Week, two annual NASCAR events, Off-Highway Vehicle spending and spending at agricultural fairs.
- Annual total household income generated is about **$134 million.**
- Nearly **6,000 fulltime and seasonal jobs** are generated by these activities.
- **Between 79% and 94%** of respondents reported high levels of satisfaction with water quality, views, crowding levels and water levels.
- **Between 1/2 and 2/3** of visitors would decrease their visits to a site if they perceived a decline in water quality, views, crowding or water levels.
- Perceived declines in water clarity and purity would have the greatest economic impact - **$51 million** in lost sales, **$18 million** in lost income and **800** lost jobs.

Intended Use

The Lakes, Rivers, Streams and Ponds Partnership commissioned this study to inform state legislators, agency officials, mayors, town managers, selectmen, planning boards, non-profit organizations, the media and the general public. The full report is available online at a variety of sites, including www.nhrivers.org, www.nhlakes.org, and www.des.state.nh.us/wmb/lakes/economicvalues.html.

The raw data is available to applicants on a case-by-case basis. Contact New Hampshire Lakes for details.

Author

Anne Nordstrom, Ph.D. was the Project Manager and author of this study.

Previous Reports

Estimates of Select Economic Values of NH lakes, Rivers, Streams & Ponds, (June 2003), revealed that surface waters annually contribute an estimated $247 million in property taxes and $1.5 billion in total sales from fishing, boating, swimming and public drinking water supplies.

Public Opinion Poll Results in the Study of Select Economic Values of NH Lakes, Rivers, Streams and Ponds, (December 2004), determined the most important reasons residents visit freshwaters are:

- Quality of fishing, boating, or swimming
- Overall beauty of the area
- Variety of activities
- Water quality.

Most residents report that if conditions worsen, they would decrease participation in activities to less than a few times a year.

The Economic Impact of Potential Decline in New Hampshire Water Quality: The Link Between Visitor Perceptions, Usage and Spending

Phase IV Report, May 2007

Steering Committee of the
Lakes, Rivers, Streams & Ponds Partnership

New Hampshire Lakes
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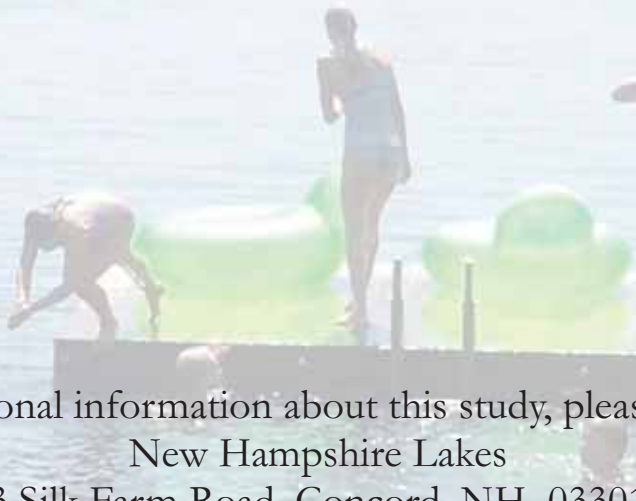
New Hampshire Fish and Game Department
Squam Lakes Association
Lake Sunapee Protective Association
Newfound Lake Region Association

Newfound Lake Region Association

Lake Sunapee Protective Association



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