

# **ECHO Lake Aquarium and Science Center**

## **2008 Vermonter Poll Report**

**Prepared by:  
Jessica Hyman**

**April 14, 2008**



**207 Morrill Hall  
College of Agriculture and Life Sciences  
University of Vermont  
Burlington, Vermont 05405-0106  
(802) 656-9897 • <http://crs.uvm.edu>**



## Table of Contents

<b>Introduction</b> .....	3
<b>Methodology</b> .....	3
<b>General Findings</b> .....	3
<b>Frequency Report</b> .....	4
<b>Visited ECHO</b> .....	4
<b>Number of visits in past year</b> .....	4
<b>Watershed identification</b> .....	5
<b>Watershed match</b> .....	6
<b>Bi-variate Analysis</b> .....	6
<b>Watershed identification</b> .....	6
<b>Watershed match</b> .....	8
<b>Appendix A. Vermonter Poll Questions</b> .....	13
<b>Appendix B. Vermont Agency of Natural Resources Planning Basins</b> .....	14

## Introduction

The Vermonter Poll is an annual public opinion survey of Vermont residents 18 years old and older conducted by the Center for Rural Studies at the University of Vermont. The telephone survey gauges Vermonter's opinions on current issues of interest to non-profit agencies, government officials and researchers. The 2008 Vermonter Poll included three questions for ECHO Lake Aquarium and Science Center. Respondents were asked if they had ever visited ECHO, the frequency of their visits in the past year and to identify the watershed in which their homes are located (see Appendix A).

This report includes a basic frequency report for the three questions and demographic variables and bivariate analysis of the relationships between watershed awareness and having visited ECHO, as well as additional analysis using the demographic information collected in the survey.

## Methodology

The data used in this report were collected by the Center for Rural Studies at the University of Vermont as part of the annual Vermonter Poll. The telephone polling was conducted from the University of Vermont between the hours of 4 and 9 p.m. from Feb. 19 to Feb. 25, 2008 using computer-aided telephone interviewing (CATI). A random sample for the poll was drawn from a Vermont phone list that is updated quarterly. Only Vermont residents over the age of 18 were interviewed. There were 645 respondents to the 2008 Vermonter Poll (Version I). The results based on a group of this size have a confidence interval of 95% with a margin of error of +/-4%.

A list of towns by watershed was generated using the Vermont Agency of Natural Resources Planning Basins (see Appendix B). Responses to Question 3, "Which watershed do you live in?" were evaluated for accuracy by comparing the answers to the actual watersheds located in each town.

## General Findings

Slightly more than half of respondents (53.4%) offered responses when asked to identify which watershed they lived in. Of these, 42.2% gave a water-related response. Each response was matched with the respondents' town of residence and compared to a list of watersheds for each town. Seventy percent of these respondents correctly identified their watersheds.

Five variables were significantly related to respondents' responses to the watershed identification question. Respondents who had visited ECHO were more likely to have attempted to answer the watershed identification question (as opposed to saying "don't know") than those who had never been to ECHO. Also, males, those with higher levels of education and income and those living in Chittenden County were more likely to have attempted to answer the watershed identification question.

It is important to note that these variables did not necessarily affect the *accuracy* of the responses. A respondent was deemed to have "correctly identified" their watershed if they identified any of the watersheds in his/her town. Two variables were significantly related to respondents' correctly identifying their watersheds. Respondents who lived in suburban areas were most likely to correctly identify their watershed. Respondents who had visited ECHO two or three times in the past year were slightly less likely to correctly identify their watersheds than those who had only visited ECHO once.

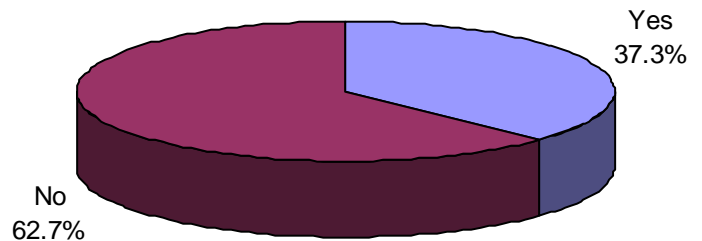
## Frequency Report

### Visited ECHO

Table 1 shows that 37.3% of Vermonter Poll respondents had visited ECHO at the Leahy Center at Lake Champlain.

**Table 1.** Have you ever been to ECHO?

	Frequency	Percent
Yes	240	37.3
No	404	62.7
Total	644	100.0

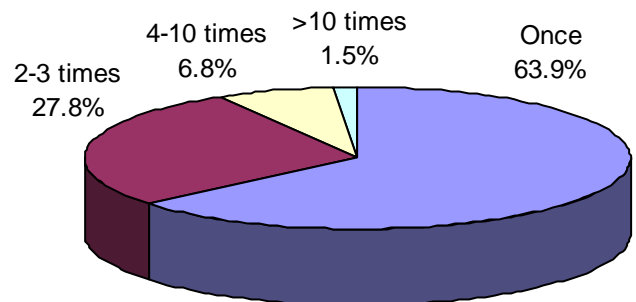


### Number of visits in past year

Table 2 shows that of the respondents who had visited ECHO in the past year, 63.9% had visited once, 27.8% had visited two or three times, 6.8% had visited four to 10 times and 1.5% had visited more than 10 times.

**Table 2.** How many times did you visit ECHO in the past year?

	Frequency	Percent
Once	131	63.9
2-3 times	57	27.8
4-10 times	14	6.8
>10 times	3	1.5
Total	205	100.0

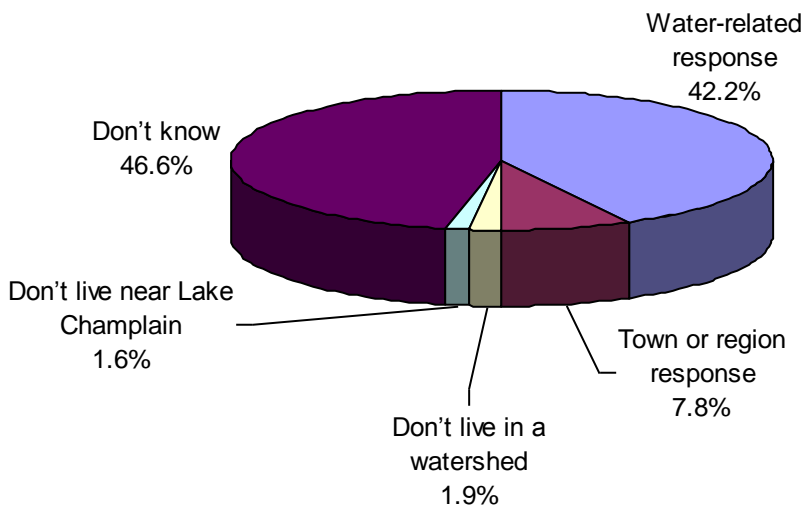


### Watershed identification

Slightly more than half of respondents (53.4%) offered responses when asked to identify which watershed they lived in. Of these, 42.2% gave a water-related response, 7.8% gave a town or region response, 1.9% said they did not live in a watershed and 1.6% said they did not live near Lake Champlain.

**Table 3.** What watershed do you live in?

	Frequency	Percent
Water-related response	270	42.2
Town or region response	50	7.8
Don't live in a watershed	12	1.9
Don't live near Lake Champlain	10	1.6
Don't know	298	46.6
<b>Total</b>	<b>640</b>	<b>100.0</b>

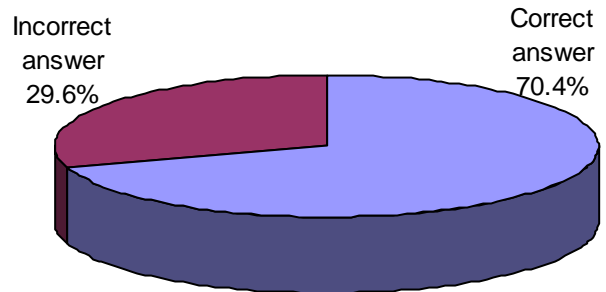


### Watershed match

Of those who gave water-related responses to the watershed question, 70.4% correctly identified their watershed. (Respondents were asked their town of residence. A “correct” designation was given to the watershed ID if the respondent accurately identified any of the watersheds in his/her town.)

**Table 4.** Watershed match

	Frequency	Percent
Correct answer	190	70.4
Incorrect answer	80	29.6
Total	205	100.0



## Bi-variate Analysis

### Watershed identification

Five variables were significantly related to respondents’ responses to the watershed identification question. Having visited ECHO and gender were most significant, followed by education level, whether the respondent lived in Chittenden County and household income.

The variables of age, years lived in Vermont, whether the respondent lived in a rural, urban or suburban area and the number of times he/she had visited ECHO in the past year were not significant in respondents’ answers to the watershed identification question.

It is important to note that this part of the analysis is for whether the respondent offered an answer other than “don’t know” to the watershed identification question. A detailed analysis of the *accuracy* of the respondents’ answers is on Page 8.

Having visited ECHO was significantly related to responses to the watershed identification question ( $\chi^2=22.397$   $p \leq .01$ ). Respondents who had visited ECHO were more likely to have attempted to answer the question (see Table 5).

**Table 5.** Watershed match by having visited ECHO

	Have you been to ECHO?	
	Yes	No
Response	63.4%	47.6%
Don't know	36.6%	52.4%
Total respondents	238	401

Education level was significantly related to responses to the watershed identification question ( $\chi^2=38.744$   $p<.05$ ). Generally, the higher a respondent's education, the more likely he/she was to have attempted to answer the question (see Table 6).

**Table 6.** Watershed match by education

	Highest level of education						
	<9 <sup>th</sup> grade	9-12 grade (no diploma)	High school graduate	Some college	Associates/ technical degree	Bachelor's degree	Post graduate/ professional degree
Response	0%	40.9%	49.6%	45.6%	47.4%	59.4%	61.8%
Don't know	100%	59.1%	50.4%	54.4%	52.6%	40.4%	38.2%
Total respondents	8	22	139	90	57	183	136

Household income was significantly related to responses to the watershed identification question ( $\chi^2=25.444$   $p<.10$ ). Generally, the higher a respondent's household income, the more likely he/she was to have attempted to answer the question (see Table 7). It is important to note that these results are at a lower significance level than the other cross-tabulations.

**Table 7.** Watershed match by education

	Household income				
	<\$25,000	\$25,000- \$49,999	\$50,000- \$74,999	\$75,000- \$99,999	>\$100,000
Response	40.2%	55.1%	50.5%	58.7%	60.9%
Don't know	59.8%	44.9%	49.5%	41.3%	39.1%
Total respondents	102	138	91	138	110

Whether a respondent lives in Chittenden County or not was significantly related to their responses to the watershed identification question ( $\chi^2=12.881$   $p\leq.05$ ). Chittenden County residents were slightly more likely to have attempted to answer the question (see Table 8).

**Table 8.** Watershed match by Chittenden County

	Chittenden County or other	
	Chittenden	Other
Response	63.2%	51.3%
Don't know	36.8%	48.7%
Total respondents	114	526

Respondents' gender was significantly related to responses to the watershed identification question ( $\chi^2=50.976$   $p\leq.01$ ). Males were more likely to have attempted to answer the question (see Table 9).

**Table 9.** Watershed match by gender

	Gender	
	Male	Female
Response	67.4%	41.8%
Don't know	32.6%	58.2%
Total respondents	291	349

### Watershed match

A respondent was deemed to have "correctly identified" his/her watershed if they identified any of the watersheds in his/her town. Two variables were significantly related to respondents' correctly identifying their watersheds. Whether the respondent lived in a rural, suburban or urban location was most significant, followed by the number of times in the past year that the respondent has visited ECHO.

The variables of age, years lived in Vermont, education level, income, gender and having ever visited ECHO were not significant in the respondents' correctly identifying their watersheds.



It is important to note that these results refer to the water-related responses, which represent 42.2% of the total responses.

Whether the respondent lived in a rural, suburban or urban location was significantly related to the accuracy of their responses ( $\chi^2=6.659$   $p\leq.05$ ). Respondents who lived in suburban areas were most likely to correctly identify their watersheds. Rural residents were least likely to correctly identify their watersheds (see Table 10).

**Table 10.** Watershed match by rural, suburban or urban area

	Area		
	Rural	Suburban	Urban
Correct response	65.1%	81.5%	77.8%
Incorrect response	34.9%	18.5%	22.2%
Total respondents	169	54	45

The number of times respondents had visited ECHO in the past year was significantly related to the accuracy of their responses ( $\chi^2=8.109$   $p\leq.05$ ). Interestingly, respondents who had visited ECHO two or three times in the past year were slightly less likely to correctly identify their watersheds than those who had only visited ECHO once (see Table 11). Only eight respondents had visited ECHO more than three times in the past year.

**Table 11.** Watershed match by number of visits

	Visits to ECHO in the past year			
	Once	2-3	4-10	>10
Correct response	76.9%	75.8%	28.6%	100%
Incorrect response	23.1%	24.2%	71.4%	0%
Total respondents	65	33	7	1

## Demographics

The general demographic characteristics of the respondents are roughly in line with those of the state as a whole, although the respondents were generally of a higher age and education level than the general population.<sup>1</sup>

The age of the respondents ranged from 20 to 101, with a median age of 55 (mean: 54.5). This is 14 years higher than the median age of Vermonters, 41 years. Respondents were almost evenly split along gender lines with 56.4% being female and 45.4% being male. Statewide, the split is 51% female and 49% male.

Respondents reported an average of 2.5 household members, with a range of one to eight, and the average number of household members under the age of 18 of .5, with a range of zero to four. The average household size for the state is 2.4 people.

The total number of years respondents reported having lived in Vermont, including all earlier periods, ranged from less than a year to 100 years, with an average of 34.8 years and a mode of 30 years.

Almost all the respondents (95.2%) had graduated high school and 50.3 % had bachelor's or higher degrees. However, according to the U.S. Census, 89.8% of Vermonters aged 25 and older are high school graduates and 32.4% have bachelor's or higher degrees.

**Table 12.** *Education level*

	Frequency	Percent
<9th grade	8	1.3
9-12 grade (no diploma)	22	3.5
High school graduate (incl. GED)	139	21.9
Some college (no degree)	90	14.2
Associates/technical	57	9.0
Bachelor	184	28.9
Post-graduate/professional	136	21.4
Total	636	100.0

<sup>1</sup> Source: U.S. Census Bureau, 2006 American Community Survey

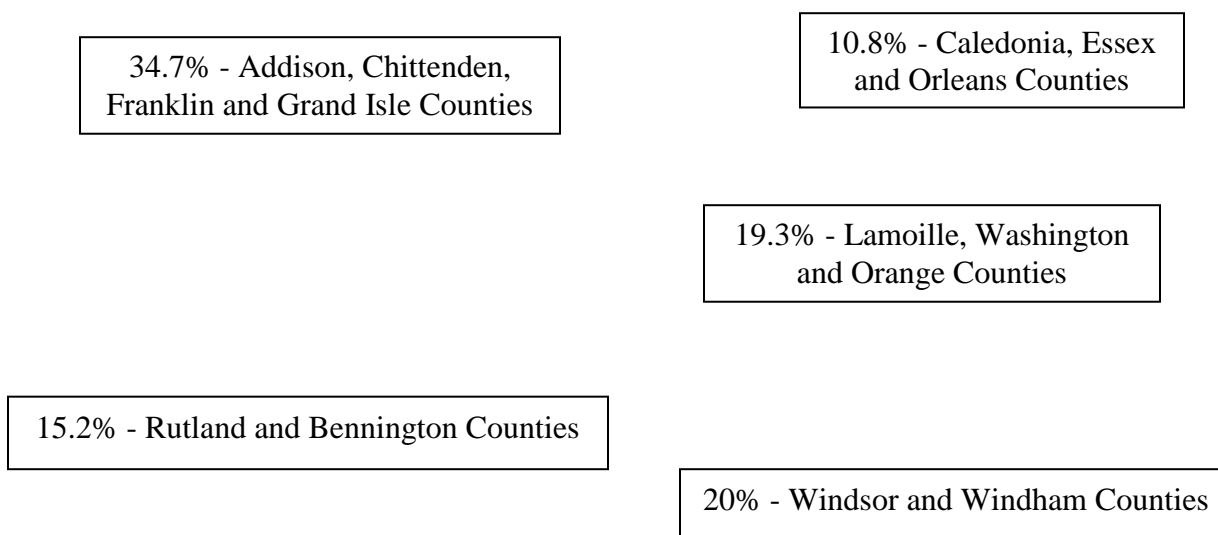
Slightly more than half of respondents (58.6%) had household incomes above the median household income for Vermont, which is \$47,665<sup>2</sup>; 41.4% of respondents had household incomes at about or lower than the median.

**Table 13. Income**

	Frequency	Percent
<\$25,000	102	17.6
\$25,000-\$49,999	138	23.8
\$50,000-\$74,999	91	15.7
\$75,000-\$99,999	138	23.8
>\$100,000	111	19.1
Total	580	100.0

Respondents were spread throughout the state, roughly in line with the population. The proportion of respondents from each county was within 6% of the proportion by county from the 2006 U.S. Census population estimates (see Table 14).

Figure 1. Geographic location of respondents



<sup>2</sup> Source: U.S. Census Bureau, 2006 American Community Survey (2006 inflation-adjusted dollars, with a margin of error of +/- \$1,270)

**Table 14.** *Respondent town of residence by county*

County	Frequency	Percent	Percent of Vermont population <sup>3</sup>
Addison	61	9.7	5.9
Bennington	33	5.2	5.9
Caledonia	30	4.8	4.9
Chittenden	114	18.1	24.1
Essex	4	.6	1.1
Franklin	33	5.2	7.7
Grand Isle	11	1.7	1.2
Lamoille	19	3.0	3.9
Orange	43	6.8	4.7
Orleans	34	5.4	4.4
Rutland	63	10.0	10.2
Washington	60	9.5	9.6
Windham	51	8.1	7.0
Windsor	75	11.9	9.2
Total	631	100.0	100.0

The majority of respondents reported living in a rural area (64.9%), with the balance of respondents being fairly evenly split between suburban (18.3%) and urban (16.7%) areas.

**Table 15.** *Rural, suburban or urban?*

	Frequency	Percent
Rural	415	64.9
Suburban	117	18.3
Urban	107	16.7
Total	639	100.0

<sup>3</sup> Source: U.S. Census Bureau, 2006 population estimate

## **Appendix A. Vermonter Poll Questions**

1. ECHO at the Leahy Center for Lake Champlain is a lake aquarium and science center in Burlington with 70 different species of reptiles, amphibians and fish and more than 100 interactive exhibits.

Have you ever been to ECHO?

1. Yes
2. No
3. Don't Know
4. Refused

2. Thinking back over the past year, approximately how many times did you visit ECHO?

1. Once
2. Two or three times
3. Four to 10 times
4. More than 10 times
5. Don't know
6. Refused

3. Vermont has seven watersheds that drain into Lake Champlain. These rivers and streams carry runoff from your back yard to the lake. Which watershed do you live in?

(Open-ended response)

## **Appendix B. Vermont Agency of Natural Resources Planning Basins**

Battenkill, Hoosic, Walloomsac

Deerfield

Lake Memphremagog

Lamoille

Lower Connecticut

Missisquoi

Northern Lake Champlain

Ottauquechee, Black

Otter Creek, Little Otter Creek, Lewis Creek

Passumpsic

Poultney, Mettawee

Southern Lake Champlain

Stevens, Wells, Waits, Ompompanoosuc

Upper Connecticut

West, Williams, Saxton

White

Winooski