

# **WATER QUALITY OPINION SURVEY 2000: PUBLIC ATTITUDES AND KNOWLEDGE REGARDING WATER QUALITY IN MONROE COUNTY, NEW YORK**

## **INTRODUCTION**

Clean water is essential for public health and enjoyment. The purpose of the survey was to explore public perceptions and knowledge of water quality. Community attitudes and knowledge about water quality issues in 2000 were explored through a random sample phone survey of 516 registered voters in Monroe County, New York.

The study was initiated by the Monroe County Health Department. The New York Great Lakes Protection Fund provided basic funding. The grant was, by request, administered by the Research Foundation of the State University of New York College at Brockport. The survey was a cooperative venture between the Monroe County Health Department and the State University of New York College at Brockport.

## **METHODOLOGY**

The decision was made to use registered voters in Monroe County as the sampling frame for this study. This population has been used previously to explore social issues and includes most (76%) of the adults in Monroe County. This allowed a true random sample to be drawn from a specified population within Monroe County, the registered voters, enabling scientifically valid generalizations from the sample findings to that population with a certain identifiable probability.

The current telephone interviews were completed over three evenings with the participation of 84 volunteers: 17 Monroe County Health Department staff persons, 26 volunteers from Monroe County water quality community committees and 41 SUNY Brockport student volunteers from sociology statistics and methods courses. A side benefit was a positive field experience for the all volunteers. Each volunteer attended a one-hour training session before conducting the phone survey to ensure consistency.

Health Department sponsorship of the survey was identified at the beginning of each phone interview. All interviewed respondents provided informed consent before proceeding with the interview. The refusal rate was 36%; therefore 64% of the contacted eligible persons were successfully interviewed. In summary, 516 persons were successfully interviewed by telephone, exceeding the target of 500.

The confidence limits, set at  $\pm 5\%$ , indicate the range of values around a sample finding with a 95% probability of containing the value that exists in the population from which the sample is drawn. For the current sample of 516, the confidence limits for the findings are  $\pm 5\%$ .

## **FINDINGS**

### **DEMOGRAPHICS**

The interviewed random sample of registered voters is approximately equally divided by gender, with 52% females and 48% males, which is not significantly different from the 54% females and 46% males reported for the entire population of registered voters in Monroe County. About 22% are 18-39 years of age; 50% are 40-59; and 26% are 60 and older. The mean age of the interviewed random sample of registered voters is 52, which is slightly, but significantly, older than the mean age of 49 for the entire population of registered voters from which the

sample is drawn. Most respondents (56%) have college degrees: 16% associate's, 22% bachelor's and 19% with master's or doctoral degrees. Most persons in the registered voter sample are long-time residents of Monroe County. Nearly half (43%) are life-long residents and another third (37%) have lived here for more than 20 years. Only 20% have lived here 20 years or less; only 7% have lived here less than 10 years.

#### PERCEPTIONS OF WATER QUALITY

Most persons, over half, regard the waters of Lake Ontario (54%) and the Genesee River (69%) as somewhat or severely polluted. More often than not, they regard Lake Ontario as having improved over time: (40% improved, 22% worse), but they are divided over whether the Genesee River has improved or gotten worse (22% improved, 18% worse). The perceptions are quite different for Lake Ontario and the Genesee River. The Genesee River is more often regarded as polluted and less likely to be seen as improved than Lake Ontario.

Industrial pollution is selected most often (51%) as the main cause of pollution from a choice of seven options, with sewage a distant second (12%), and lawn chemicals third (8%). Contamination from farms is selected as a main cause of water pollution by only 3% of the respondents.

Respondents are remarkably positive about water quality in the future: 62% expect it to be better in 20 years as compared to 13% who expect water quality to be worse.

#### WATER-RELATED KNOWLEDGE AND AWARENESS

Newspapers are the single communication medium cited most often (33%) as the source of information about water quality, followed by television (11%). All other media, including radio (0.4%) and the Internet (0.4%), trail well behind.

When asked about the source of tap water, 9% report their water comes from wells or groundwater. Of the others, there are approximately equal numbers identifying Lake Ontario and Hemlock Lake as the source of tap water. In Monroe County, the water supplied to many residents from these two sources varies from time to time throughout the year because the systems are interconnected. Residents are supplied with water from Lake Ontario by the Monroe County's Shoremont and Brockport Water Treatment Plants and with Hemlock Lake water by the City of Rochester's treatment plant.

Most people report being aware of the health advisory about eating fish caught in Lake Ontario (76%). The advisory is complex and people were not questioned about specific details. Most people select high bacteria count as a main reason for Ontario Beach closings (71%), with seaweed or algae a distant second cause (14%).

When asked if they thought they know the meaning of five water-related terms seen as important in water quality management, most report that they know the meaning of wetlands (87%), stormwater runoff (84%), and groundwater (83%). About half (55%) report that they know the meaning of a watershed, but only a small number (22%) report that they know the meaning of a Remedial Action Plan. In summary, only 17% report knowing the meaning of all five terms; 36% 4 of 5; 27% 3; 19% 2 or fewer. The respondents were not asked to specifically define these terms. After these questions, almost all (93%) of the respondents agree that people need to learn more about water quality.

#### WATER-RELATED ACTIVITIES

Almost all persons drink tap water (83%), but a substantial number do not (16%). Fully a third (33%) filter their tap water, although this may signify a wide range of practices. In the last

year, 34% report wading or swimming in Lake Ontario, 30% report boating on Lake Ontario in one form or another, and 20% report fishing in Lake Ontario.

### COMMUNITY INVOLVEMENT

Only a small number report that they have ever volunteered for any project involving water quality (8%). The respondents are equally divided about whether they would or might be interested in volunteering for projects to protect water quality (49%) and those who indicated that they would not be interested (47%).

Most people (64%) respond that they would be willing to reduce the use of lawn fertilizers and pesticides to improve water quality. Another 7% indicate that they may be willing to reduce use of lawn fertilizers and pesticides. A substantial number (17%) report that they don't use fertilizer or pesticide on their lawns. A small number of respondents (4%) report not having a lawn. Only 4% respond that they would not be willing to reduce use of lawn fertilizers and pesticides.

Most persons (88%) say that they are willing to be contacted with further questions in the future, which suggests that being interviewed is generally a positive experience.

### COMPARISONS OF PUBLIC PERCEPTIONS, 1983 AND 2000

Some topics from another water quality opinion survey conducted in 1983 were selected for inclusion in the current survey, enabling comparisons over time. The earlier survey had 308 completed telephone-interviews of area residents using random digit telephone numbers. The patterns observed for area residents in 1983 may be legitimately compared to the patterns observed in 2000 to see how these patterns differ. The observed frequency in 2000 was compared to the expected frequency based on the 1983 findings. All comparisons over time show differences that are statistically significant, using the Chi-square statistic, at the .05 level of probability.

People are more likely to regard Lake Ontario as polluted now (54%), than they did in 1983 (41%). They are slightly more likely to regard the Genesee River as polluted (69%) now, than in 1983 (62%).

<i>Lake Ontario</i>	<i>1983</i>	<i>2000</i>	<i>Genesee River</i>	<i>1983</i>	<i>2000</i>
Very Good or Acceptable	40%	33%	Very Good or Acceptable	18%	13%
Polluted	41%	54%	Polluted	62%	69%

People more often regard the Genesee River as polluted than Lake Ontario at both points in time.

In 2000, the patterns of perceived improvement for Lake Ontario and the Genesee River are similar to what was observed in 1983:

<i>Lake Ontario</i>	<i>1983</i>	<i>2000</i>	<i>Genesee River</i>	<i>1983</i>	<i>2000</i>
Improved	57%	40%	Improved	20%	22%
Same	13%	26%	Same	41%	39%
Worse	8%	22%	Worse	14%	18%

The perceptions of improvement of water quality are quite different for the two bodies of water. More people regard the water quality of Lake Ontario as improved than the Genesee River at both points in time.

## **CONCLUSION**

We have a picture of how Monroe County voters perceive water quality in the year 2000. The survey responses to specific items indicate respondents' perceptions and knowledge about water quality. The survey findings suggest that voters in our community are generally willing to learn about water quality issues and to have contact with water quality program personnel. The survey provides existing data that may be used, without re-sampling, to explore additional questions with multivariate analyses in future research.

Plans are being implemented to disseminate the findings to interested individuals and organizations. Community educational efforts are being redefined, based on survey findings. The results of the survey will be used to: 1) guide public education efforts about water quality; 2) improve upon existing public outreach and education programs that address water quality; and 3) guide the work of the Water Education Collaborative, a group whose purpose will be community-wide water quality outreach and education (being formed in 2000/2001).

For additional information about the Monroe County Water Quality Opinion Survey, you may contact Margit Brazda of the Monroe County Department of Health or Robert Rutzen at the State University of New York College at Brockport.

# Water Quality Opinion Survey 2000

## Monroe County, New York

### Tables and Charts

#### **Basic Information:**

<u>Page</u>	<u>Question</u>
7	Q1 – Informed consent given by respondent?
8	Q2 – How would you rate water quality today in Lake Ontario?
9	Q3 – Since you've lived in Monroe County, do you think that Lake Ontario water quality has:
10	Q4 – How would you rate water quality today in the Genesee River?
11	Q5 – Since you've lived in Monroe County, do you think the Genesee River's water quality has:
12	Q6 – Twenty years from now, do you think the water quality in Monroe County will probably be:
13	Q7 – What do you think is the main cause of water pollution in Monroe County today?
14	Q8 – Have you, or anyone in your household, fished in Lake in last year?
15	Q9 – Are you aware that there is a health advisory about eating fish caught in Lake Ontario?
16	Q10 – Have you, or anyone in your household, been boating on Lake Ontario in the last year?
17	Q11 – Have you, or anyone in your household, used Lake Ontario for wading or swimming in the last year?
18	Q12 – What do you think is the main reason that Ontario Beach at Charlotte is closed for swimming on some days in the summer?
19	Q13 – Where does your tap water come from?
20	Q14 – Do you drink water from the tap in your home?
21	Q15 – Do you filter your tap water?
22	Q16 – Would you be willing to reduce applications of fertilizer and pesticides to your lawn if it would improve water quality?
23	Q17 – Where do you get your information about local water quality?
24	Q18 – Do you know the meaning of the term watershed?
25	Q19 – Do you know the meaning of the term wetlands?
26	Q20 – Do you know the meaning of the term groundwater?
27	Q21 – Do you know the meaning of the term stormwater runoff?
28	Q22 – Do you know the meaning of the term Remedial Action Plan?

## **Water Quality Opinion Survey 2000, Monroe County, New York**

- 29 Q23 – Total number of yes answers to the five term questions.
- 30 Q24 – Do you think people in the community need to learn more about how to keep water clean?
- 31 Q25 & Q26 – How long have you lived in Monroe County?
- 32 Q27 – How much formal education have you completed?
- 33 Q29 – Do you have any questions about water quality for me?
- 34 Q30 – May we contact you in the future with additional questions about water quality?
- 35 Q31 – Have you ever volunteered for any projects that help protect water quality?
- 36 Q32 – Would you be interested in possibly volunteering for any projects to protect water quality?
- 37 Q33 – Gender of respondent.
- 38 Q34 – Age of respondent.

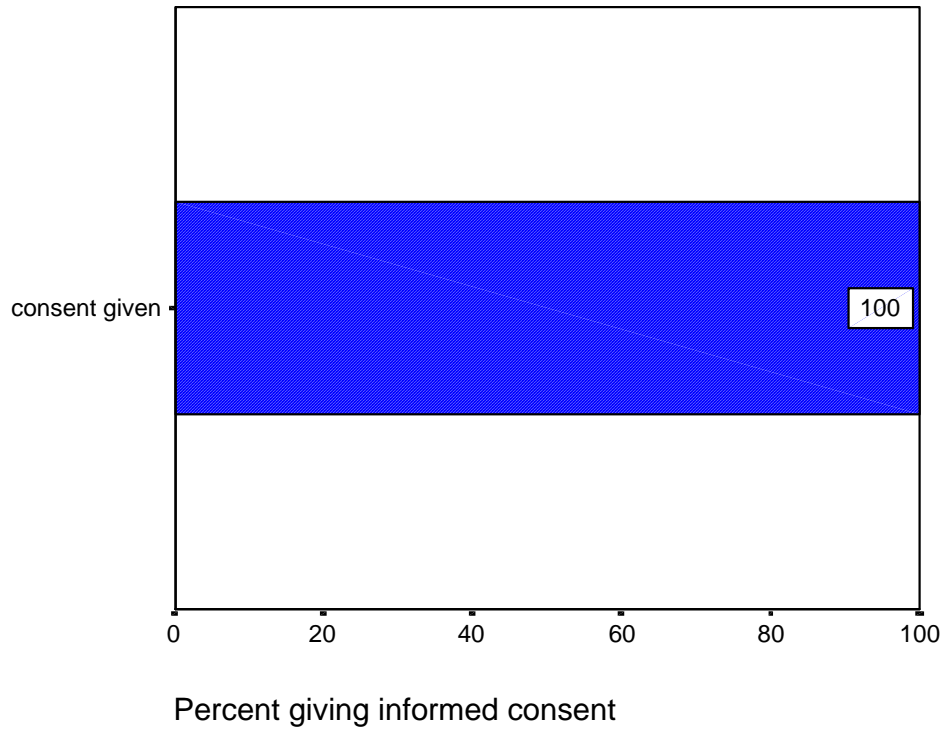
### **Time Comparisons:**

- 35 Rating of water quality for Lake Ontario in 1983 and 2000.  
Rating of water quality for the Genesee River in 1983 and 2000.
- 36 Perceived improvement of the water quality of Lake Ontario in 1983 and 2000.  
Perceived improvement of the water quality of the Genesee River in 1983 and 2000.

# Water Quality Opinion Survey 2000 Monroe County, New York

Q1. Informed consent given by respondent?

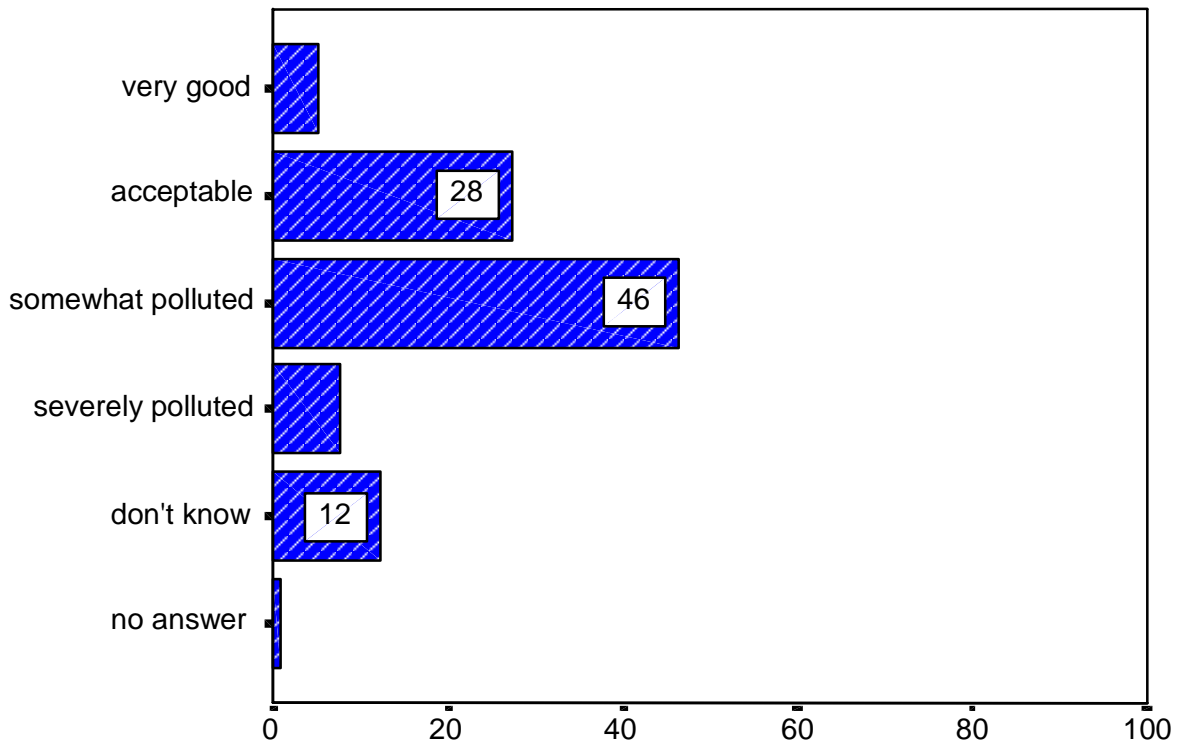
	Frequency	Percent
consent given	516	100.0



## Water Quality Opinion Survey 2000 Monroe County, New York

Q2. How would you rate water quality today in Lake Ontario?

	Frequency	Percent
very good	27	5.2
acceptable	142	27.5
somewhat polluted	239	46.3
severely polluted	40	7.8
don't know	63	12.2
no answer	5	1.0
Total	516	100.0



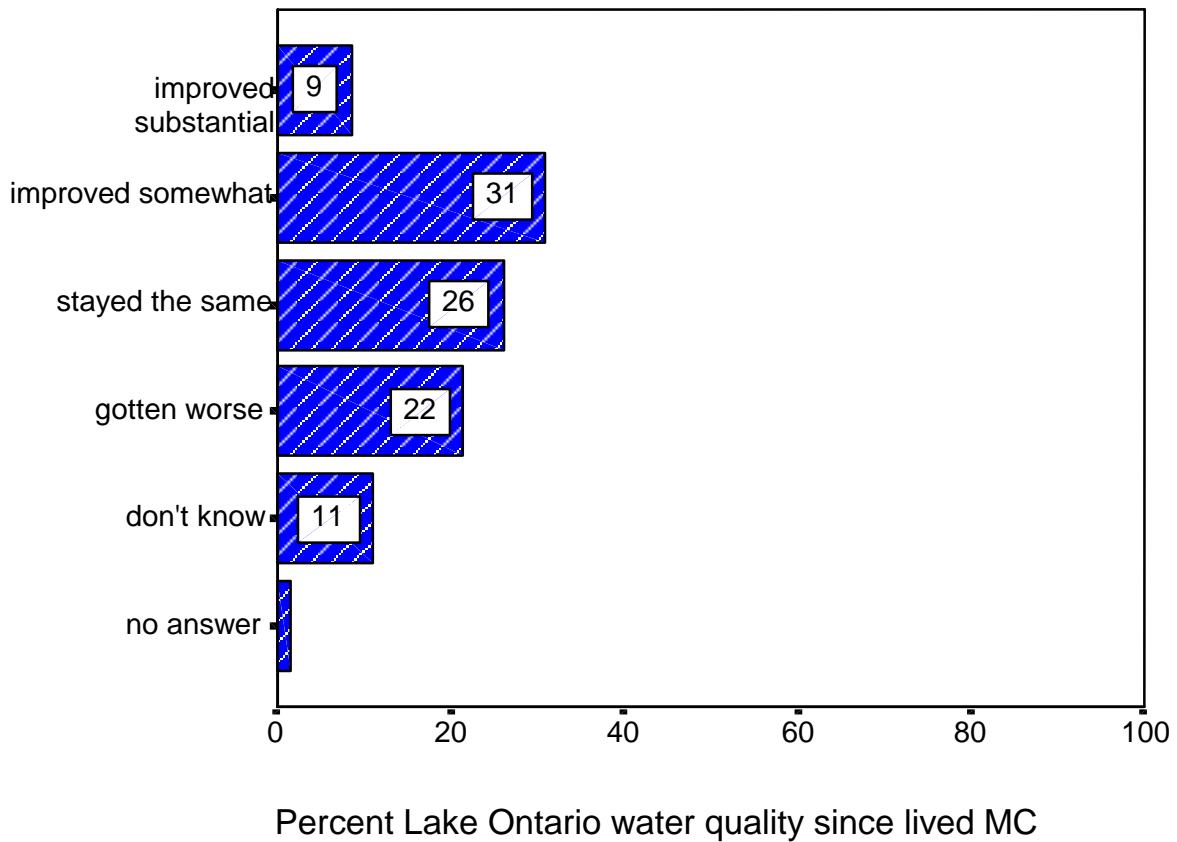
Percent water quality of Lake Ontario today



## Water Quality Opinion Survey 2000 Monroe County, New York

Q3. Since you've lived in Monroe County, do you think that Lake Ontario water quality has:

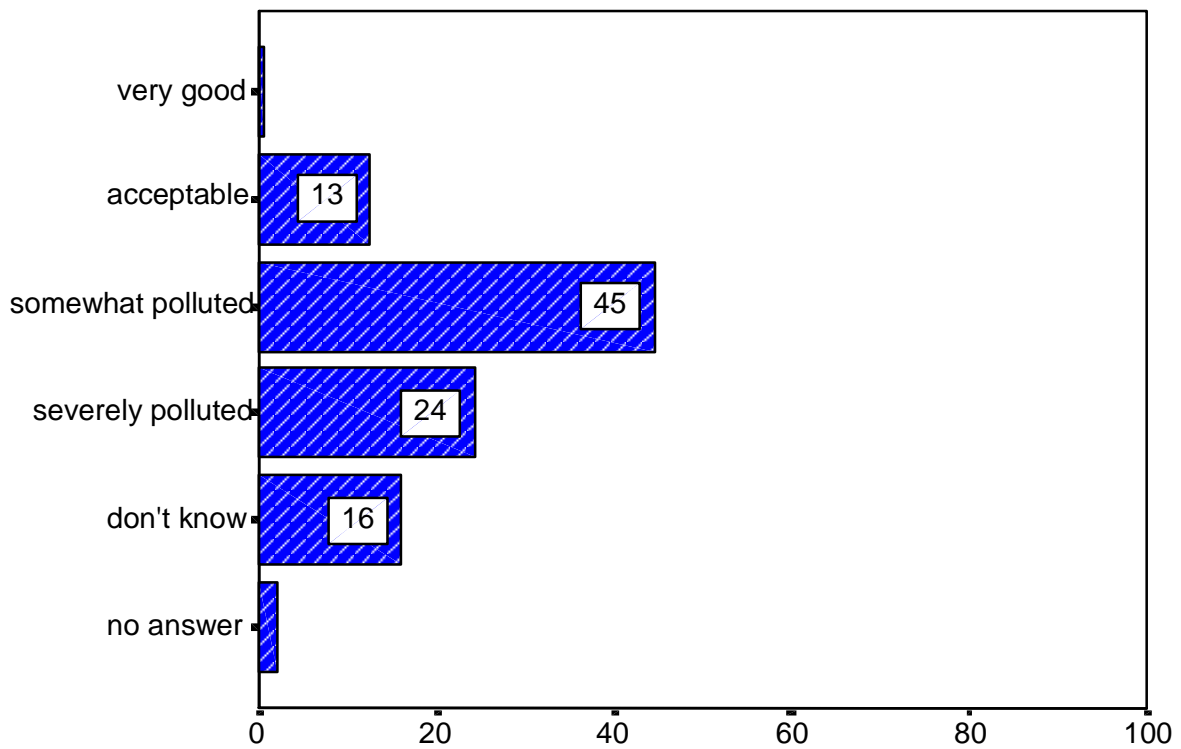
	Frequency	Percent
improved substantially	45	8.7
improved somewhat	160	31.0
stayed the same	135	26.2
gotten worse	111	21.5
don't know	57	11.0
no answer	8	1.6
Total	516	100.0



# Water Quality Opinion Survey 2000 Monroe County, New York

Q4. How would you rate water quality today in the Genesee River?

	Frequency	Percent
very good	3	.6
acceptable	65	12.6
somewhat polluted	230	44.6
severely polluted	125	24.2
don't know	83	16.1
no answer	10	1.9
Total	516	100.0

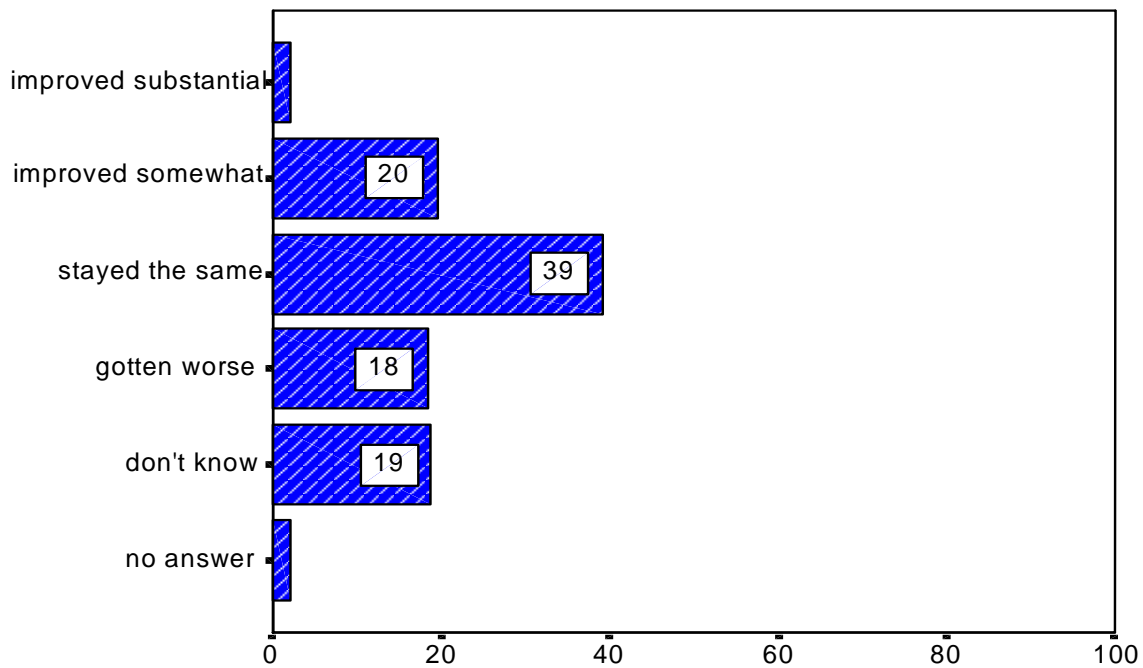


Percent water quality Genesee River today

## Water Quality Opinion Survey 2000 Monroe County, New York

Q5. Since you've lived in Monroe County, do you think that the Genesee River water quality has:

	Frequency	Percent
improved substantially	11	2.1
improved somewhat	101	19.6
stayed the same	202	39.1
gotten worse	95	18.4
don't know	97	18.8
no answer	10	1.9
Total	516	100.0

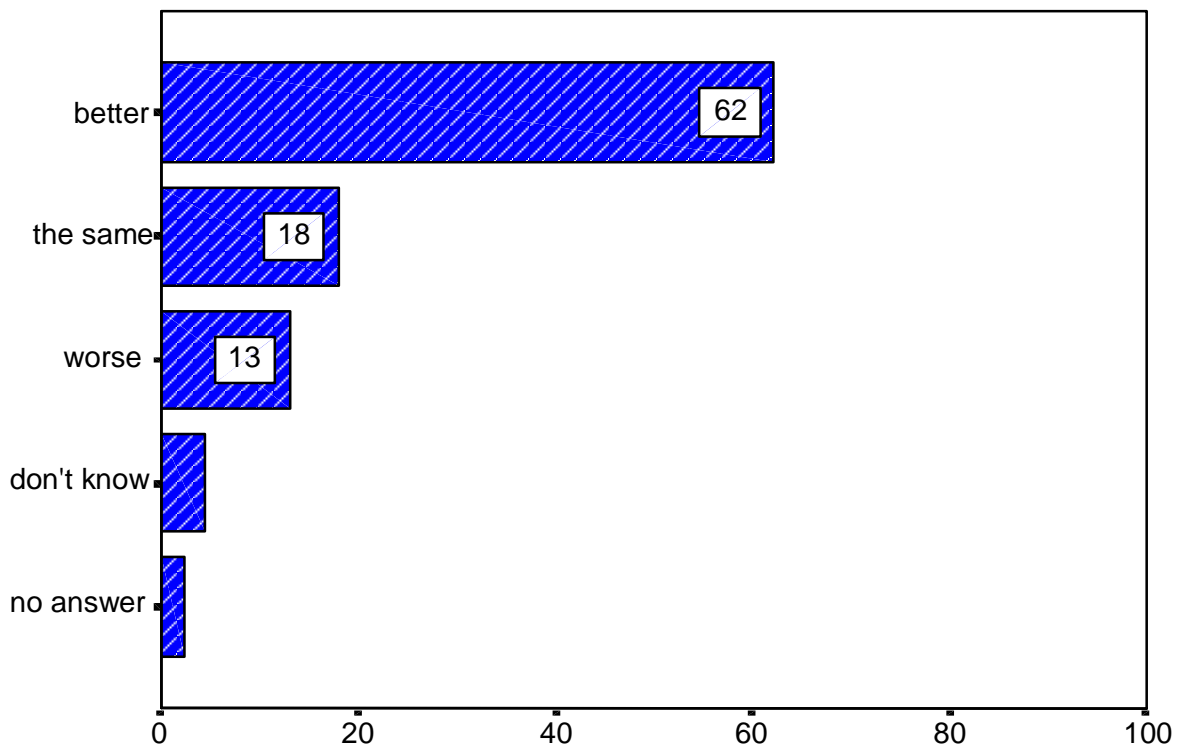


Percent Genesee River water quality since lived MC

## Water Quality Opinion Survey 2000 Monroe County, New York

Q6. Twenty years from now, do you think water quality in Monroe County will probably be:

	Frequency	Percent
better	321	62.2
the same	93	18.0
worse	67	13.0
don't know	23	4.5
no answer	12	2.3
Total	516	100.0

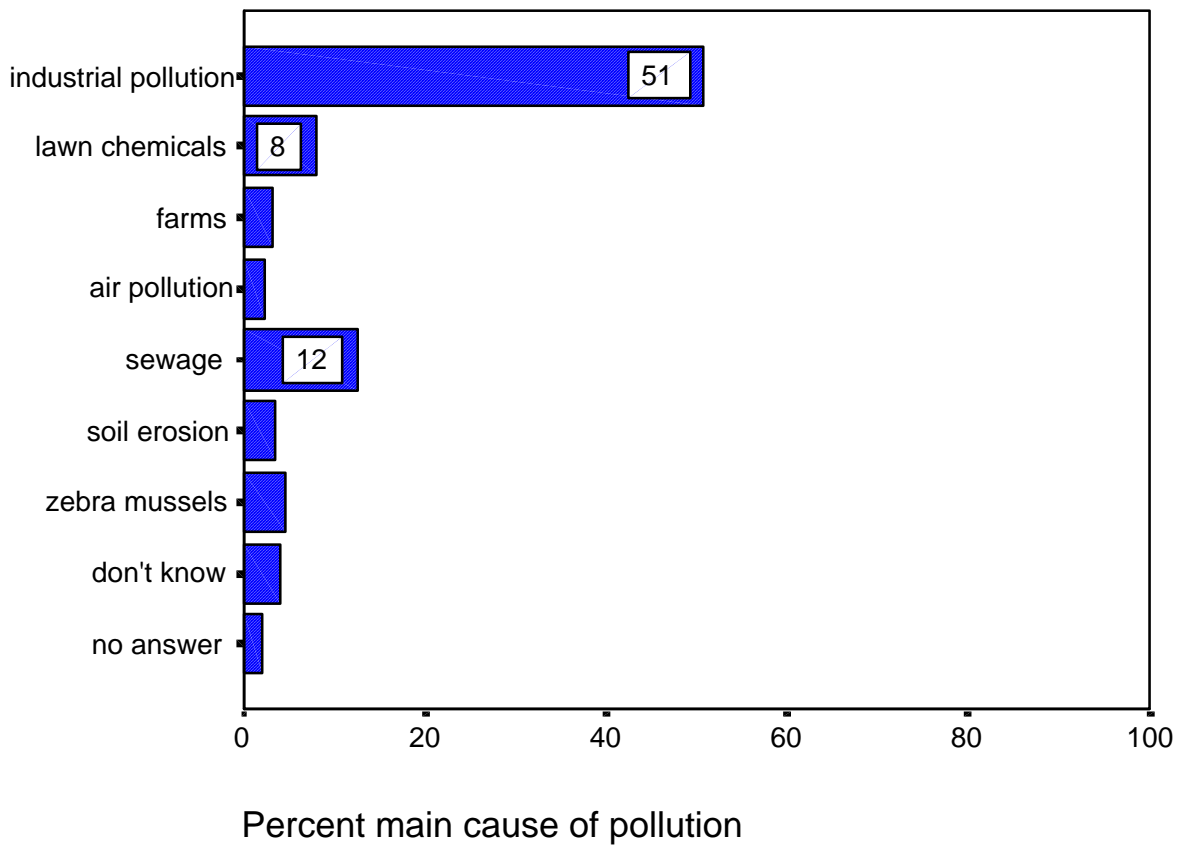


Percent Monroe County water quality in 20 yrs.

# Water Quality Opinion Survey 2000 Monroe County, New York

Q7. What do you think is the **main cause** of water pollution in Monroe County today?

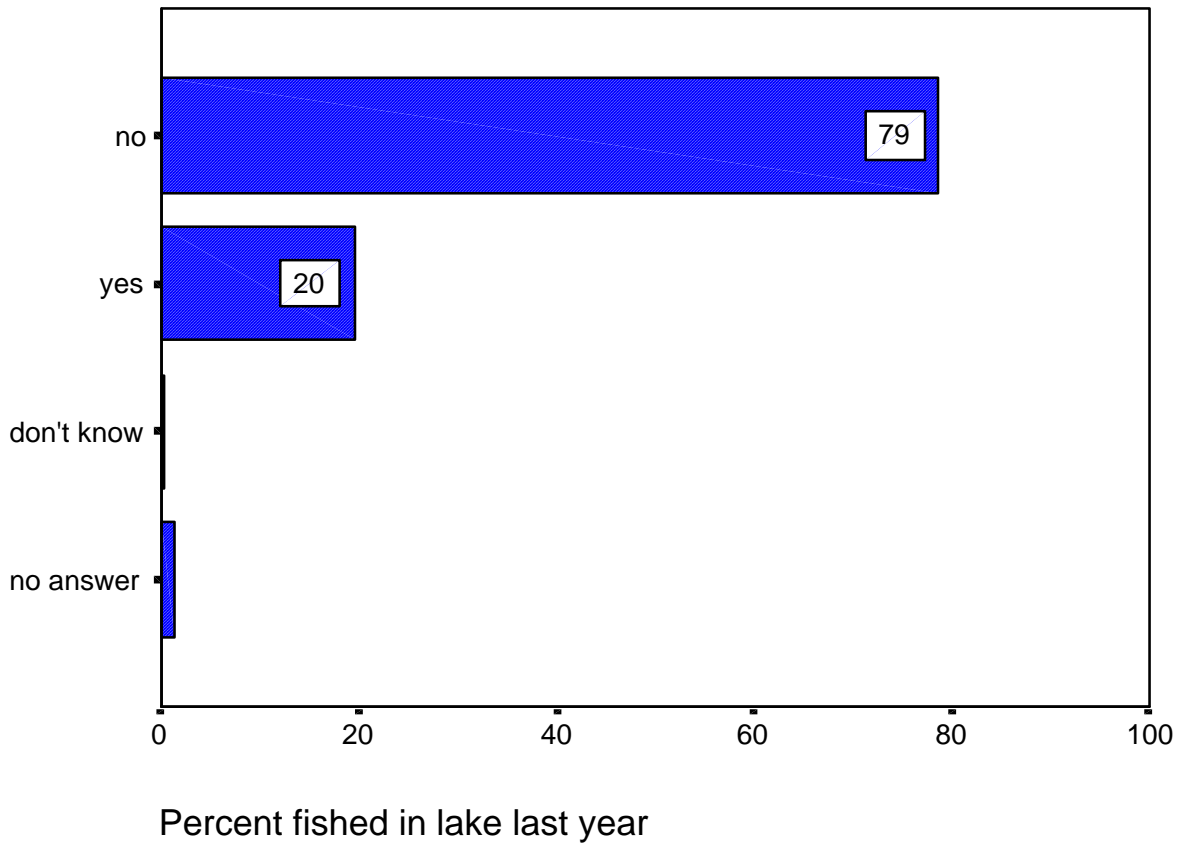
	Frequency	Percent
industrial pollution	262	50.8
lawn chemicals	41	7.9
farms	16	3.1
air pollution	12	2.3
sewage	64	12.4
soil erosion	18	3.5
zebra mussels	23	4.5
don't know	21	4.1
no answer	11	2.1



# Water Quality Opinion Survey 2000 Monroe County, New York

Q8. Have you, or anyone in your household, **fished** in Lake in last year?

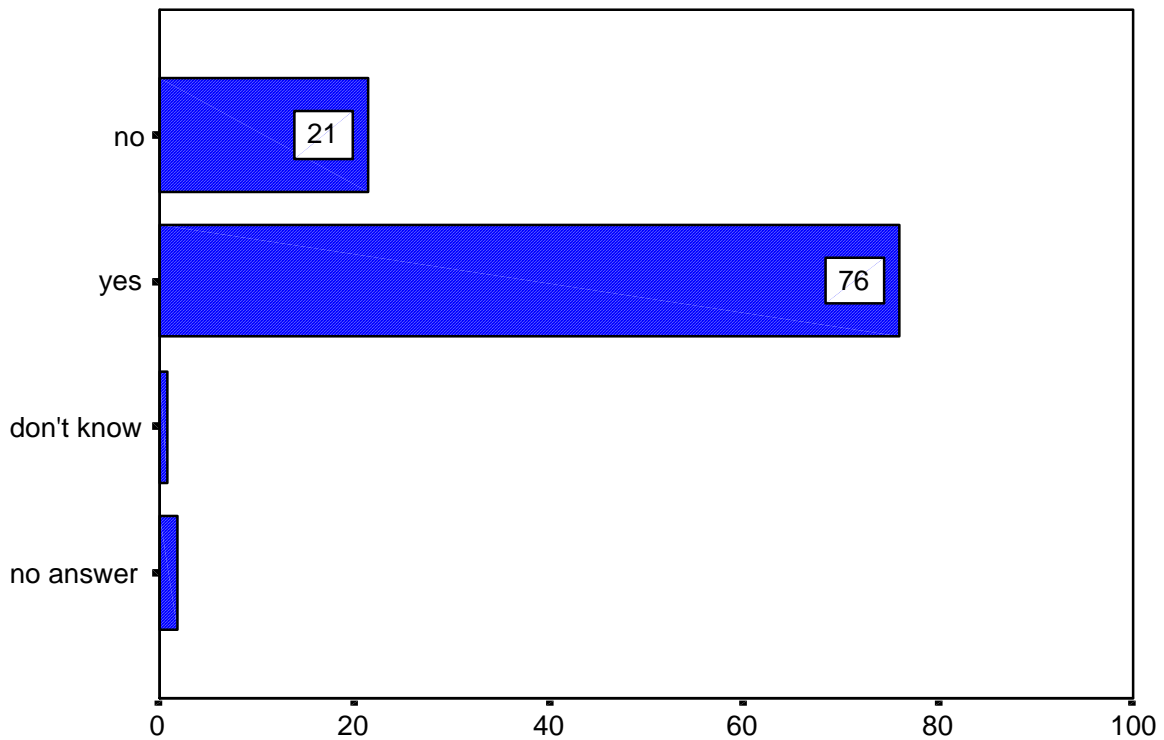
	Frequency	Percent
no	406	78.7
yes	101	19.6
don't know	2	.4
no answer	7	1.4
Total	516	100.0



# Water Quality Opinion Survey 2000 Monroe County, New York

Q9. Are you aware that there is a **health advisory** about eating fish caught in Lake Ontario?

	Frequency	Percent
no	110	21.3
yes	392	76.0
don't know	4	.8
no answer	10	1.9
Total	516	100.0

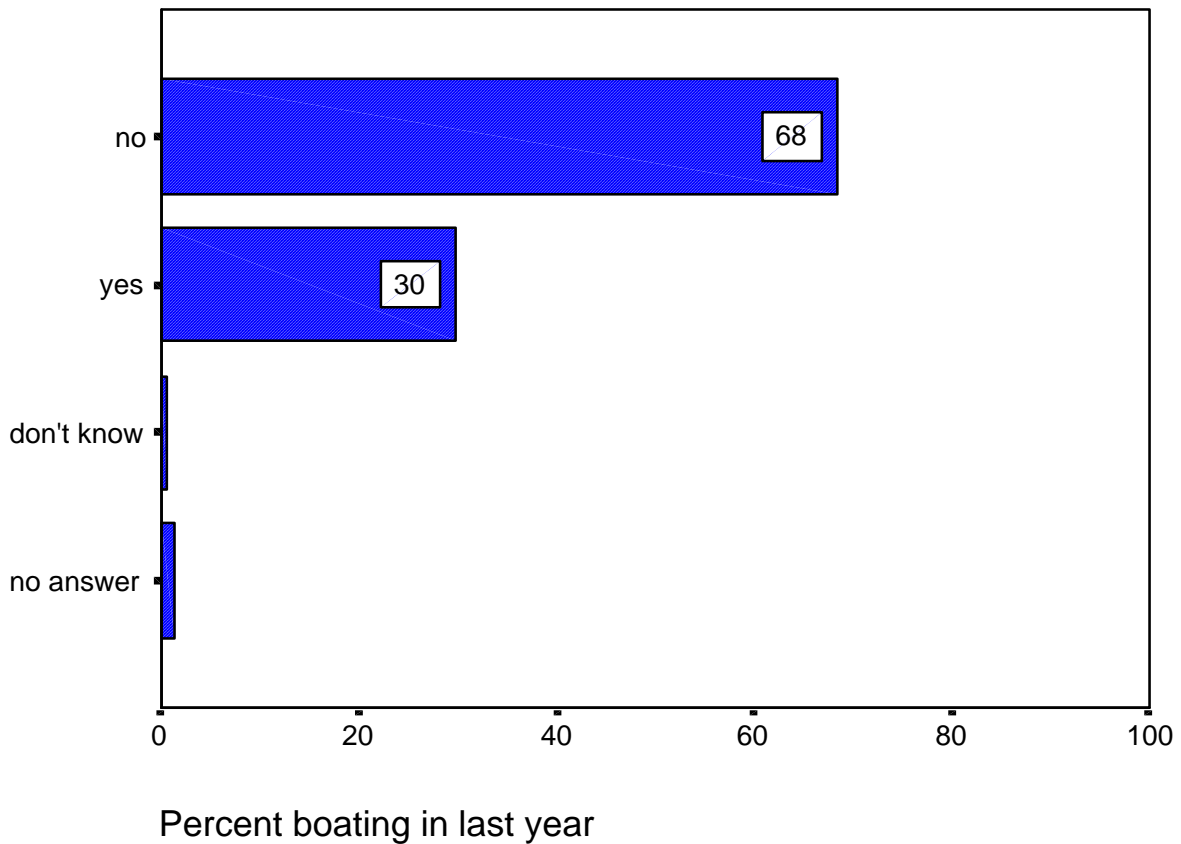


Percent aware of health advisory

# Water Quality Opinion Survey 2000 Monroe County, New York

Q10. Have you, or anyone in your household, been **boating** on Lake Ontario in the last year?

	Frequency	Percent
no	353	68.4
yes	153	29.7
don't know	3	.6
no answer	7	1.4
Total	516	100.0

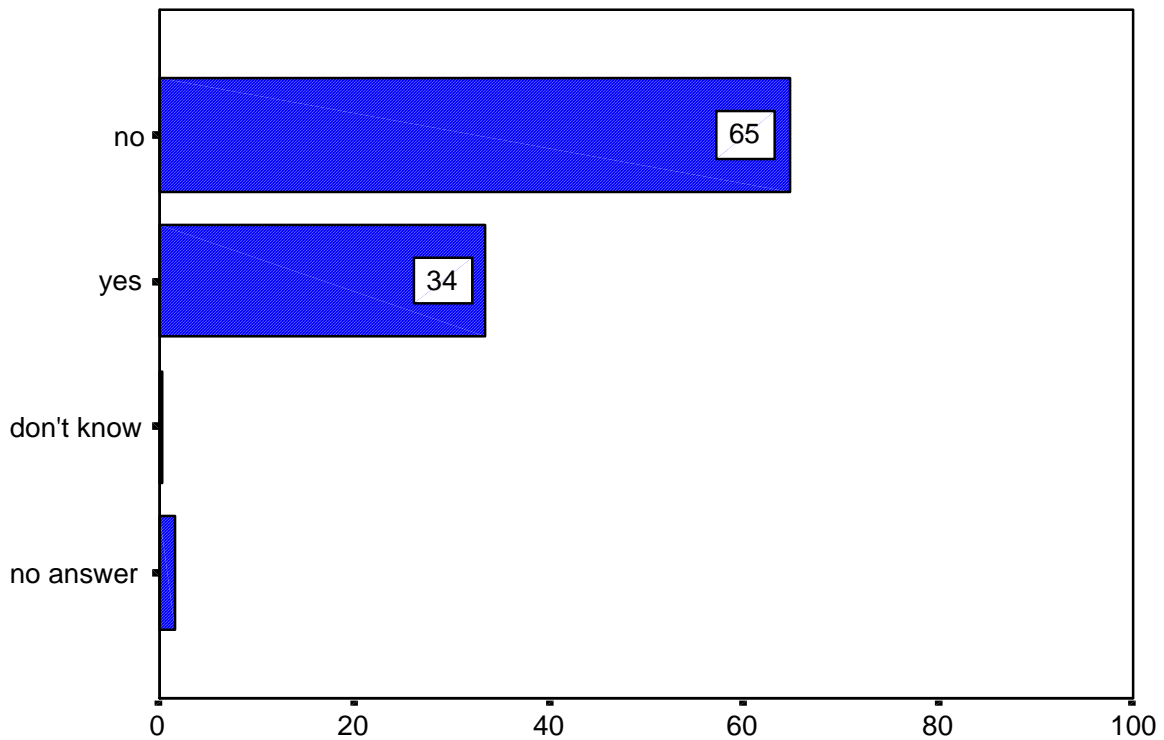




# Water Quality Opinion Survey 2000 Monroe County, New York

Q11. Have you, or anyone in your household, used Lake Ontario for **wading or swimming** in the last year?

	Frequency	Percent
no	334	64.7
yes	173	33.5
don't know	1	.2
no answer	8	1.6
Total	516	100.0

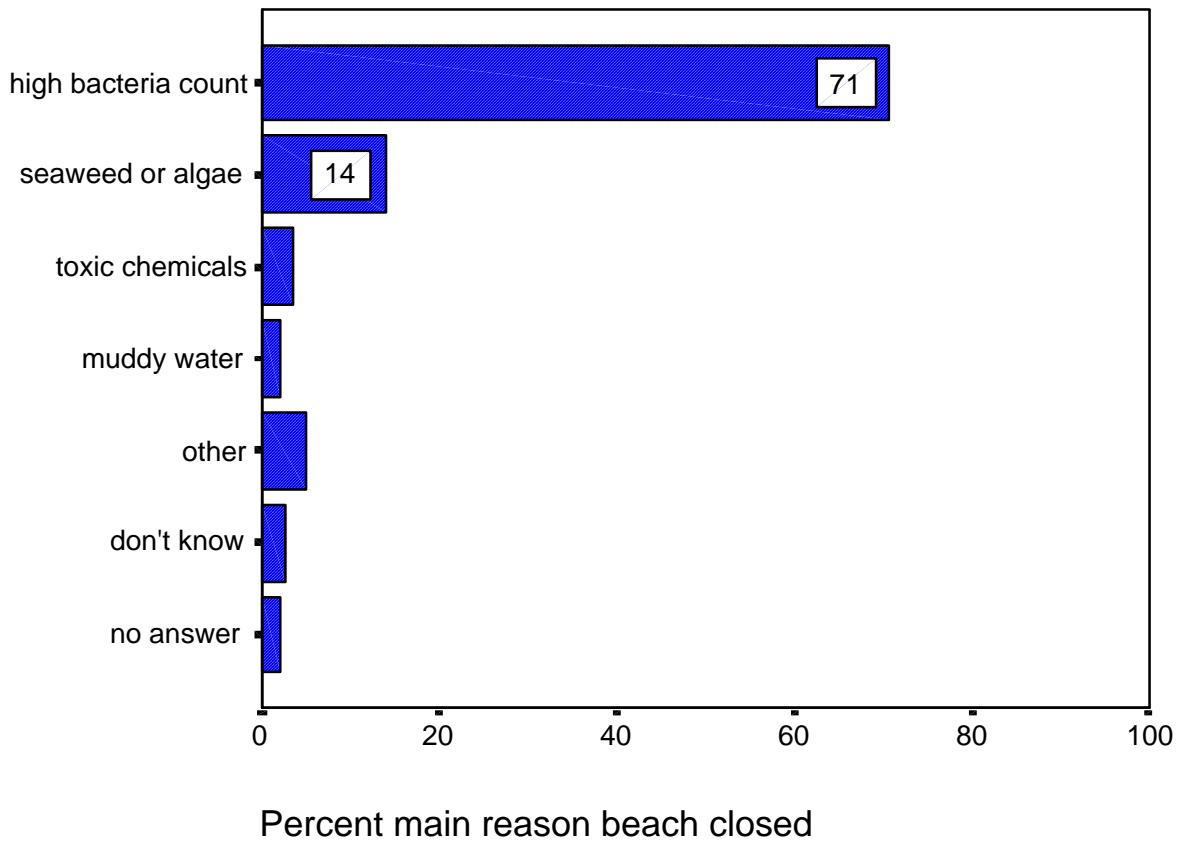


Percent wade/swim lake last year

# Water Quality Opinion Survey 2000 Monroe County, New York

Q12. What do you think is the **main reason** that Ontario Beach at Charlotte is closed for swimming on some days in the summer?

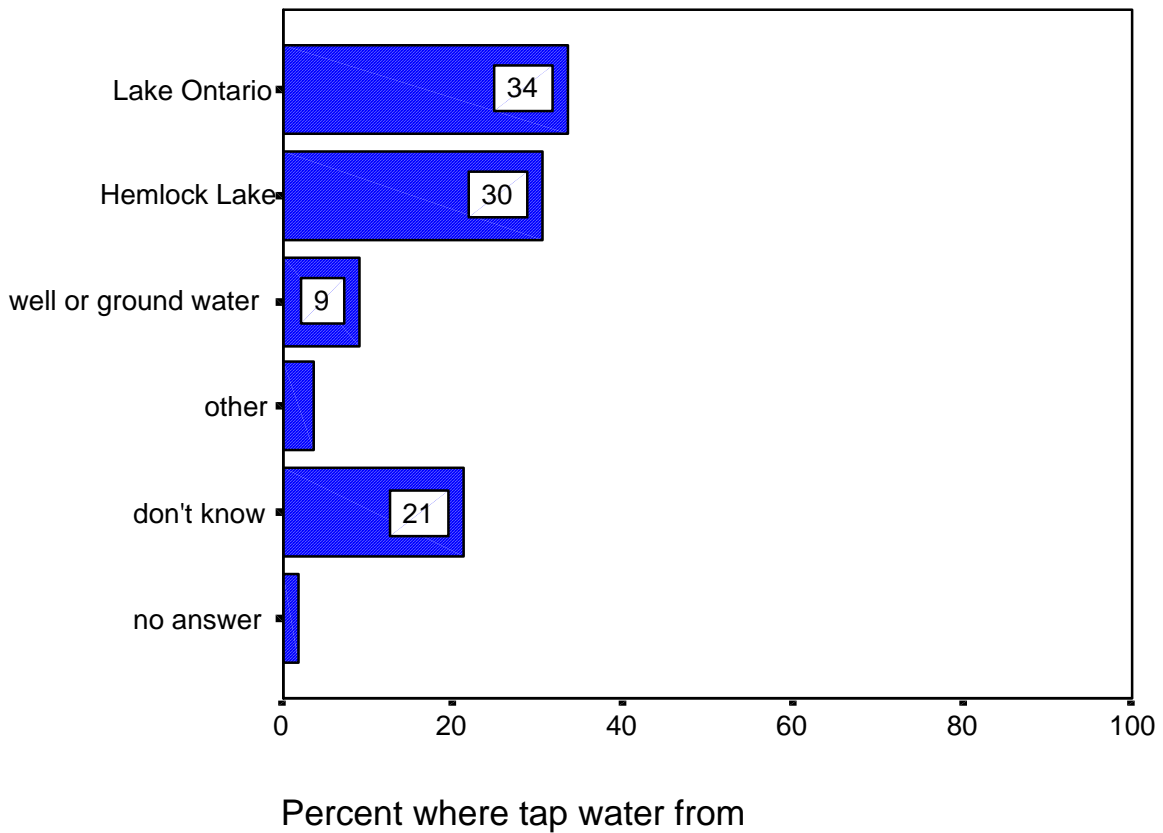
	Frequency	Percent
high bacteria count	365	70.7
seaweed or algae	72	14.0
toxic chemicals	18	3.5
muddy water	11	2.1
other	25	4.8
don't know	14	2.7
no answer	11	2.1
Total	516	100.0



# Water Quality Opinion Survey 2000 Monroe County, New York

Q13. Where does your tap water come from?

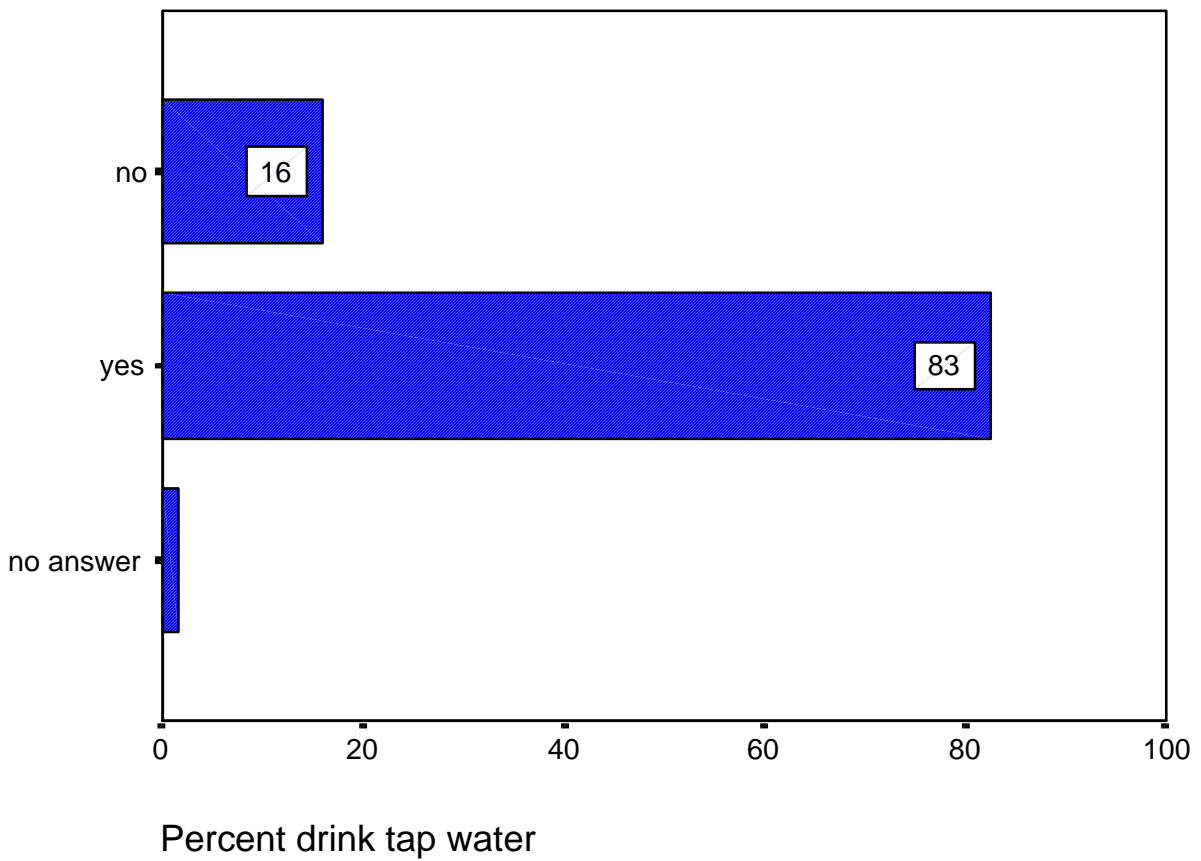
	Frequency	Percent
Lake Ontario	173	33.5
Hemlock Lake	157	30.4
well or ground water	47	9.1
other	19	3.7
don't know	110	21.3
no answer	10	1.9
Total	516	100.0



# Water Quality Opinion Survey 2000 Monroe County, New York

Q14. Do you drink water from the tap in your home?

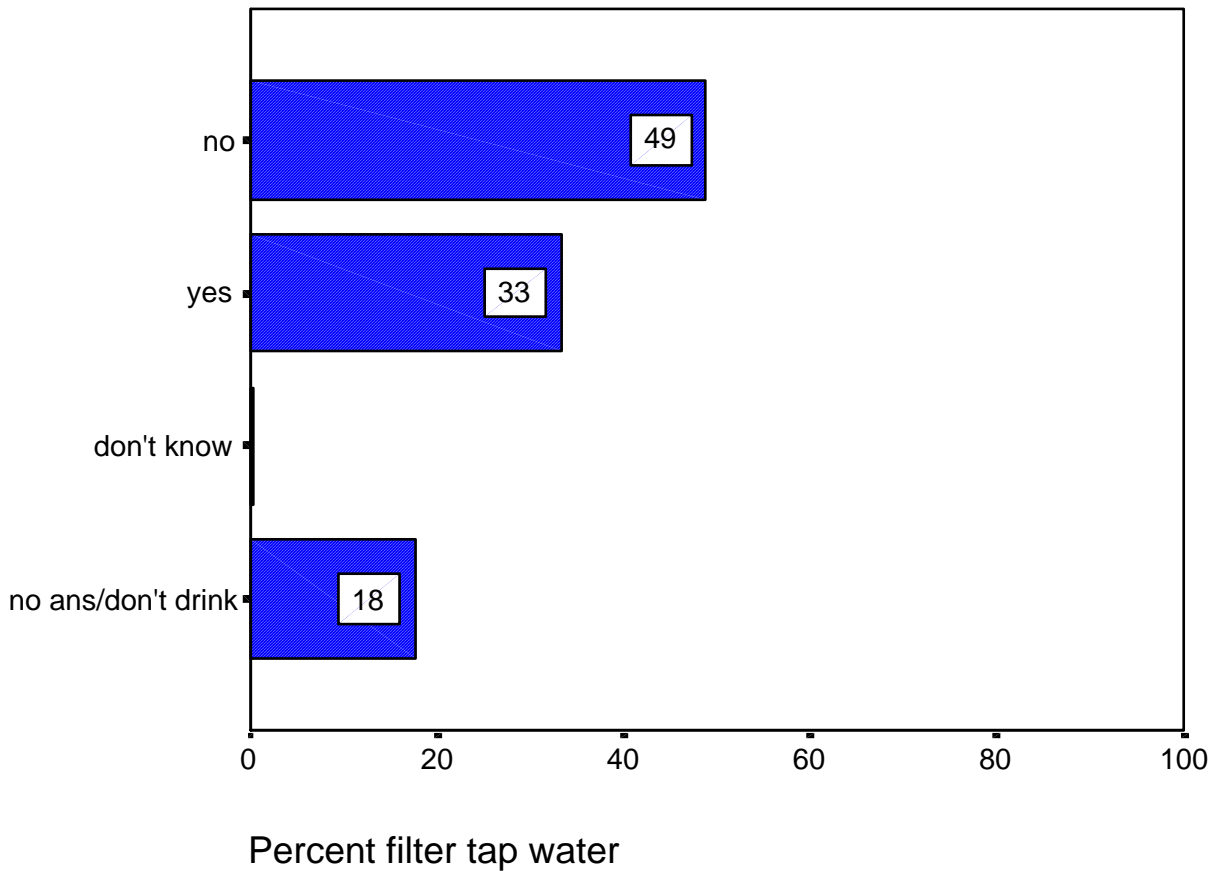
	Frequency	Percent
no	82	15.9
yes	426	82.6
no answer	8	1.6
Total	516	100.0



# Water Quality Opinion Survey 2000 Monroe County, New York

Q15. Do you filter your tap water?

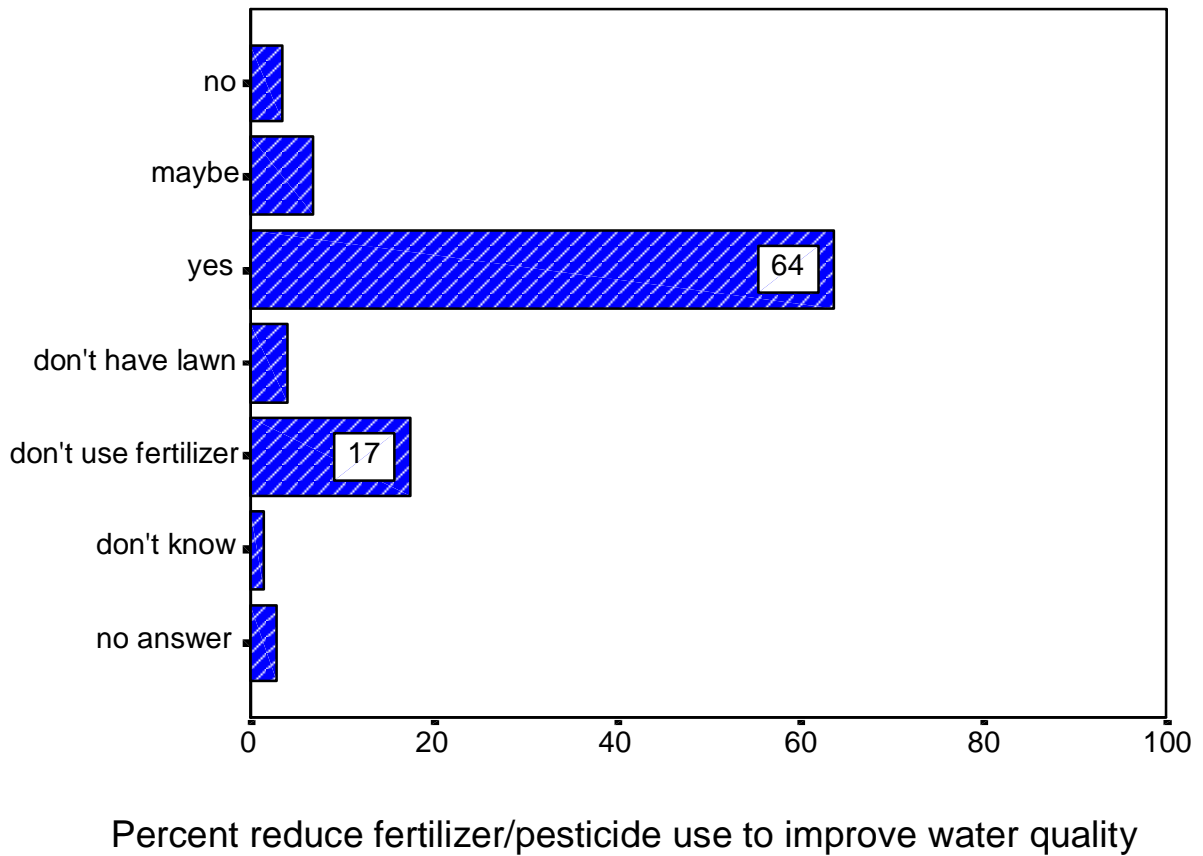
	Frequency	Percent
no	252	48.8
yes	172	33.3
don't know	1	.2
no ans or don't drink	91	17.6
Total	516	100.0



## Water Quality Opinion Survey 2000 Monroe County, New York

Q16. Would you be willing to reduce applications of fertilizer and pesticides to your lawn if it would improve water quality?

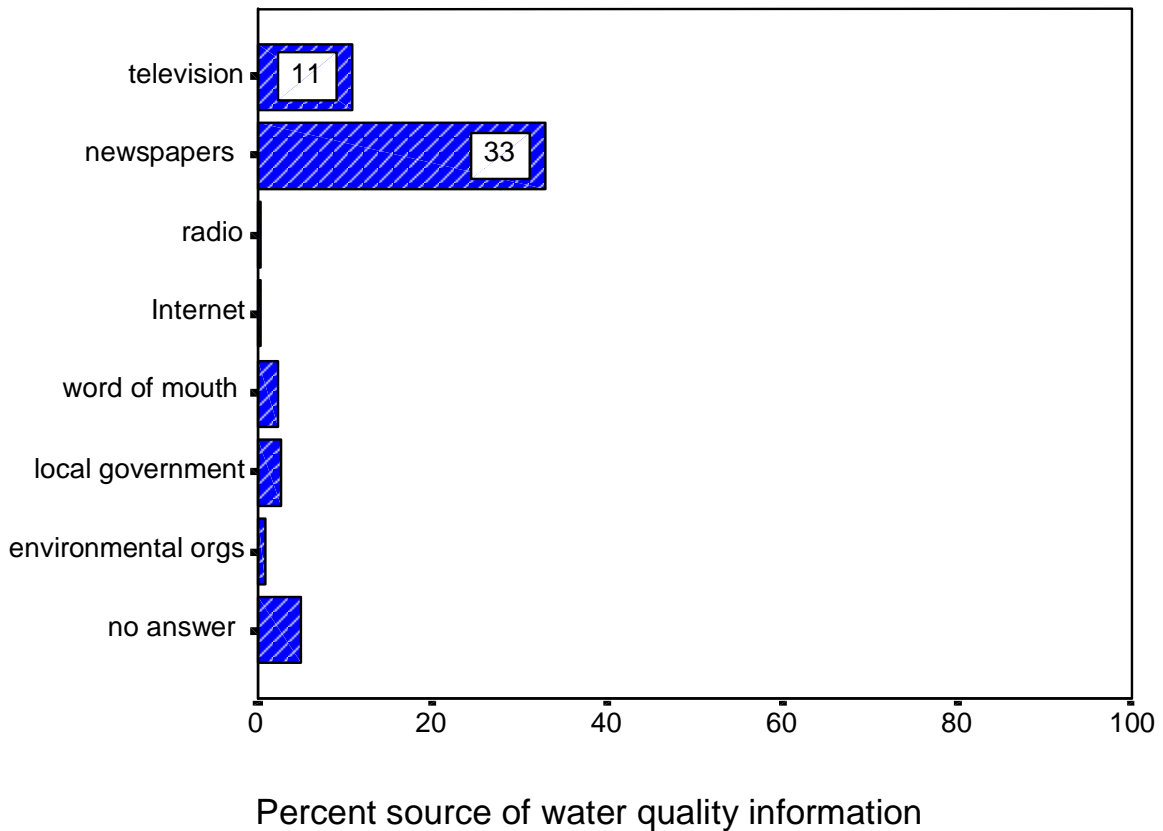
	Frequency	Percent
no	18	3.5
maybe	35	6.8
yes	329	63.8
don't use fertilizer or pesticide	90	17.4
don't know	8	1.6
don't have lawn	21	4.1
no answer	15	2.9
Total	516	100.0



# Water Quality Opinion Survey 2000 Monroe County, New York

Q17. Where do you get your information about local water quality?

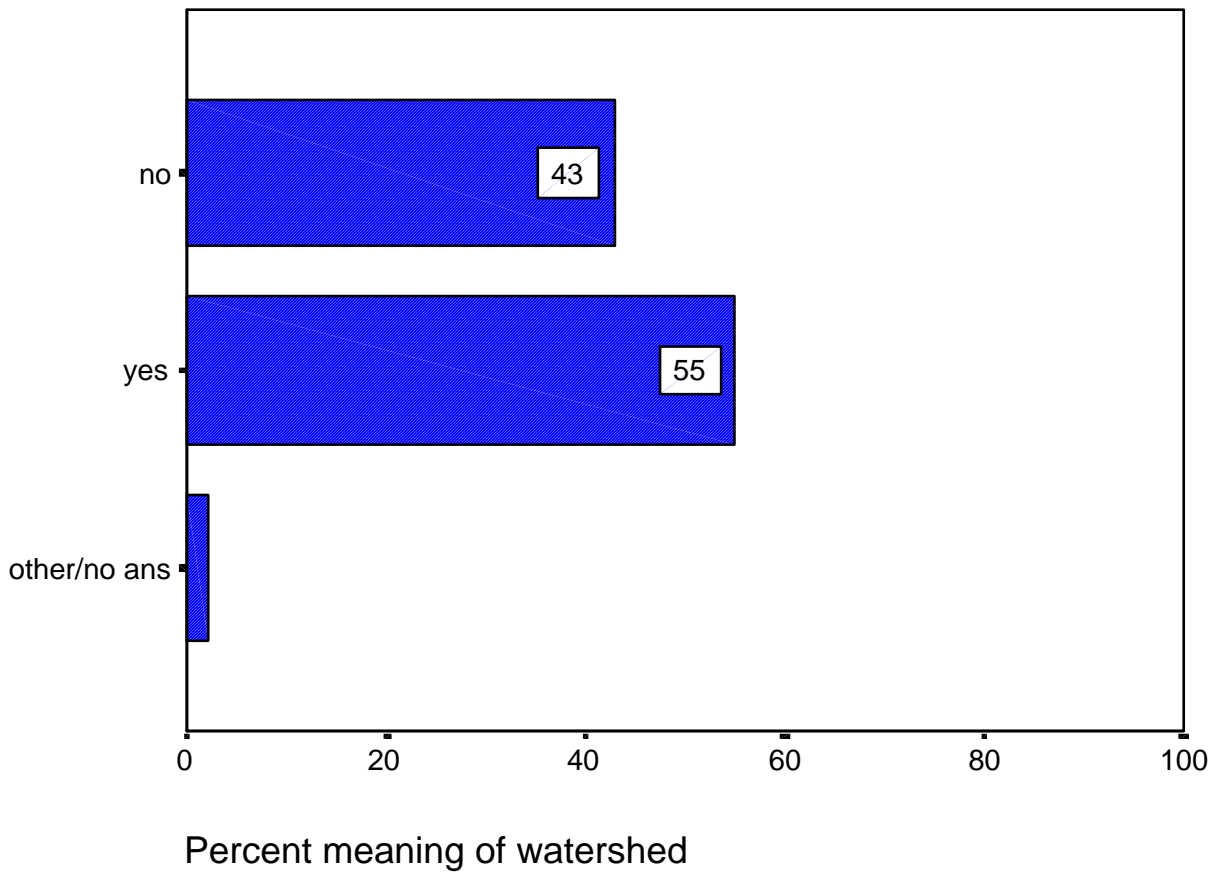
	Frequency	Percent
television	55	10.7
newspapers	169	32.8
radio	2	.4
Internet	2	.4
word of mouth	12	2.3
local government	14	2.7
environmental orgs	4	.8
no answer	25	4.8



# Water Quality Opinion Survey 2000 Monroe County, New York

Q18. Do you know the meaning of the term **watershed**?

	Frequency	Percent
no	221	42.8
yes	284	55.0
other/no ans	11	2.1
Total	516	100.0

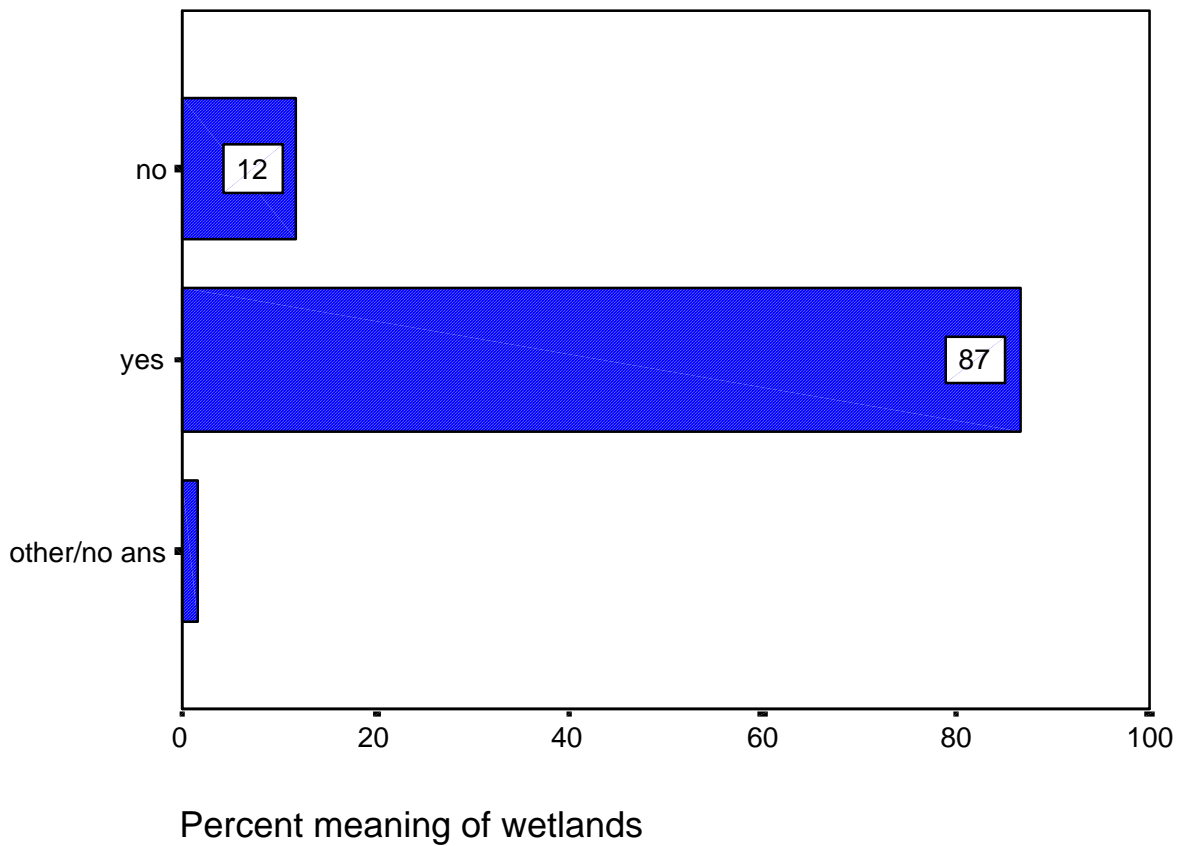




# Water Quality Opinion Survey 2000 Monroe County, New York

Q19. Do you know the meaning of the term **wetlands**?

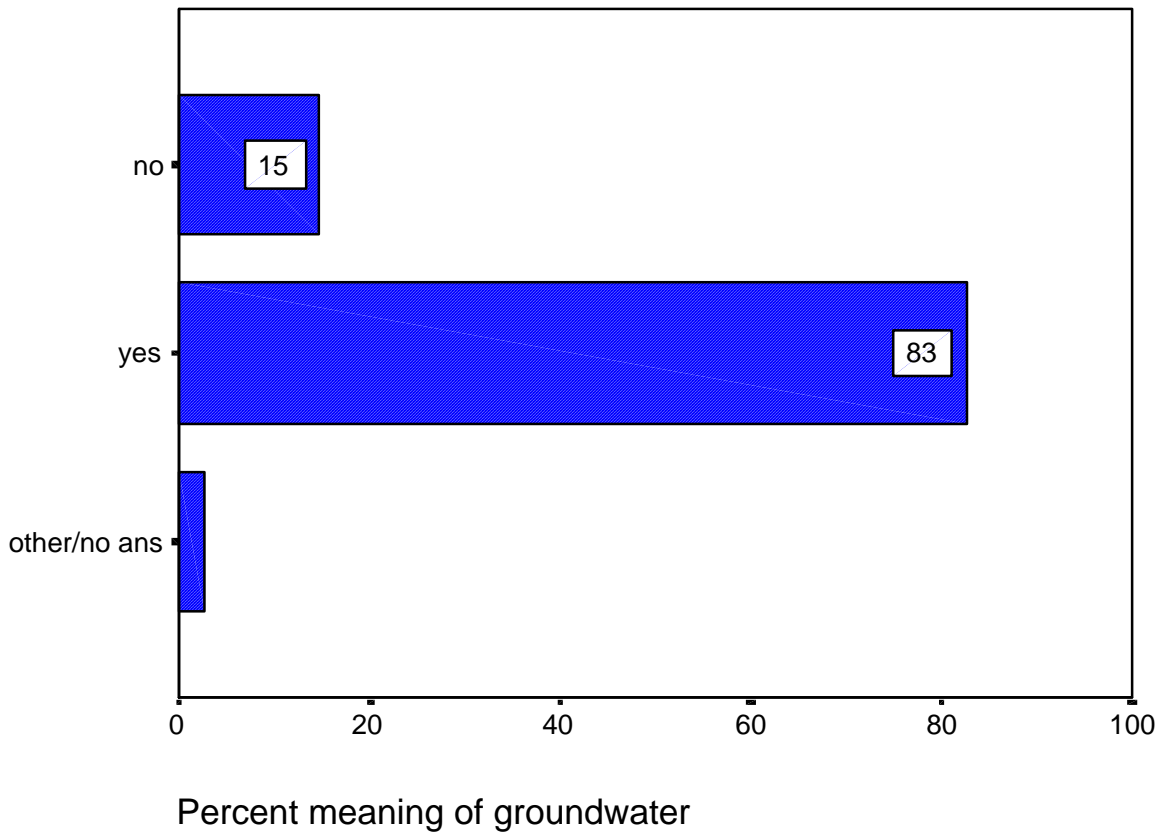
	Frequency	Percent
no	61	11.8
yes	447	86.6
other/no ans	8	1.6
Total	516	100.0



# Water Quality Opinion Survey 2000 Monroe County, New York

Q20. Do you know the meaning of the term **groundwater**?

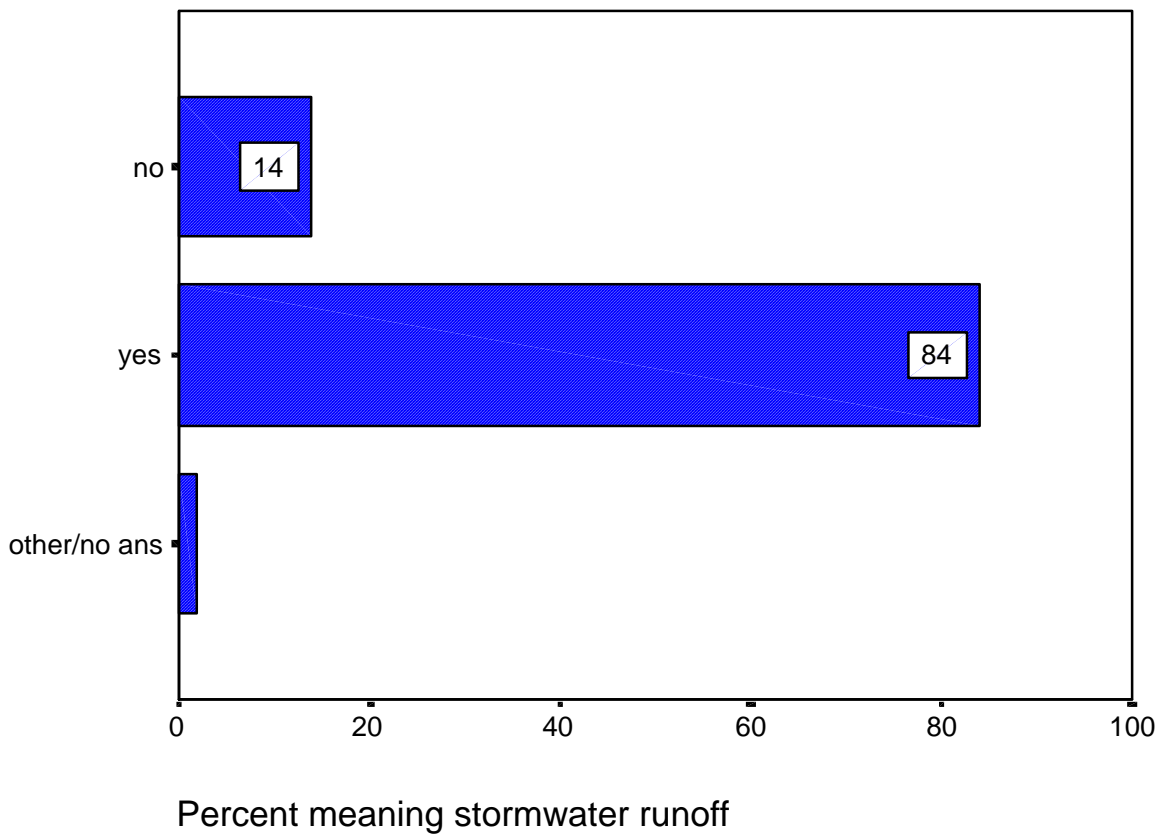
	Frequency	Percent
no	76	14.7
yes	426	82.6
other/no ans	14	2.7
Total	516	100.0



# Water Quality Opinion Survey 2000 Monroe County, New York

Q21. Do you know the meaning of the term **stormwater runoff** ?

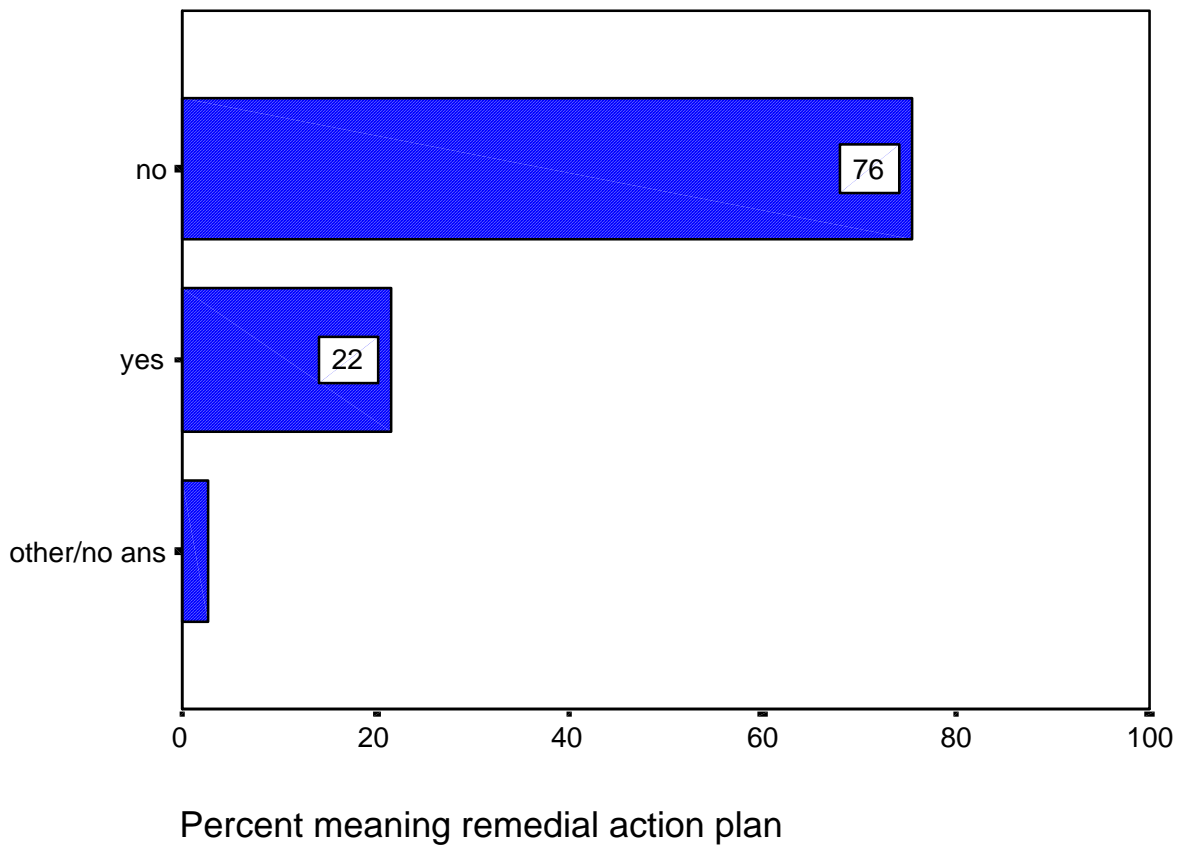
	Frequency	Percent
no	72	14.0
yes	434	84.1
other/no ans	10	1.9
Total	516	100.0



# Water Quality Opinion Survey 2000 Monroe County, New York

Q22. Do you know the meaning of the term **Remedial Action Plan**?

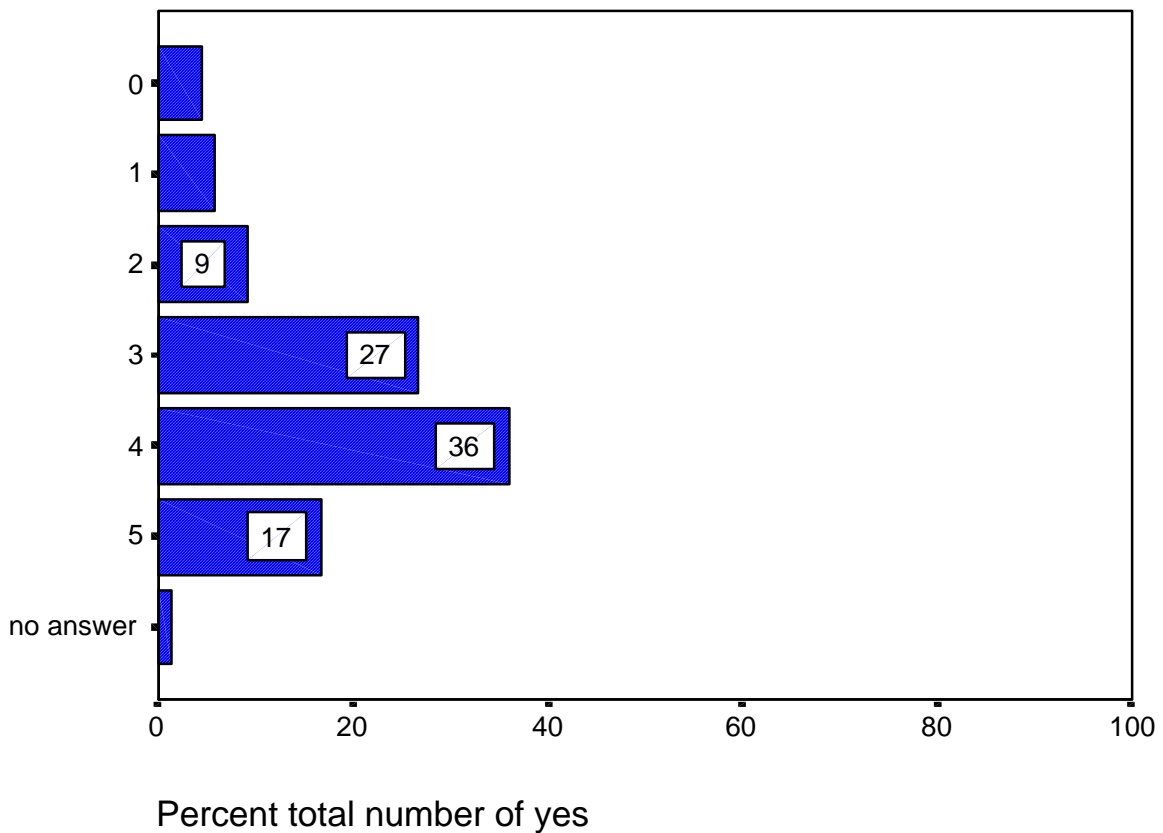
	Frequency	Percent
no	390	75.6
yes	112	21.7
other/no ans	14	2.7
Total	516	100.0



## Water Quality Opinion Survey 2000 Monroe County, New York

Q23. Total number of yes answers to the five "terms" questions.

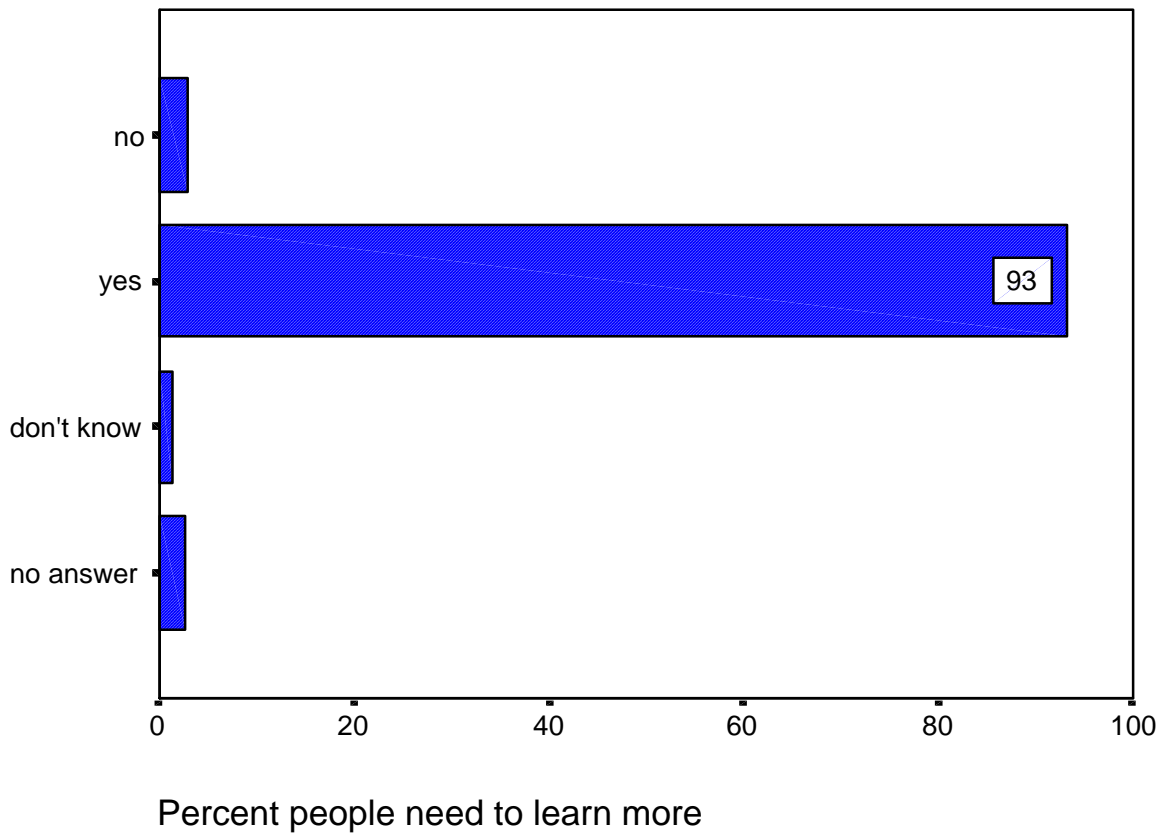
	Frequency	Percent
0	23	4.5
1	29	5.6
2	47	9.1
3	138	26.7
4	186	36.0
5	86	16.7
no answer	7	1.4
Total	516	100.0



# Water Quality Opinion Survey 2000 Monroe County, New York

Q24. Do you think people in the community need to learn more about how to keep water clean?

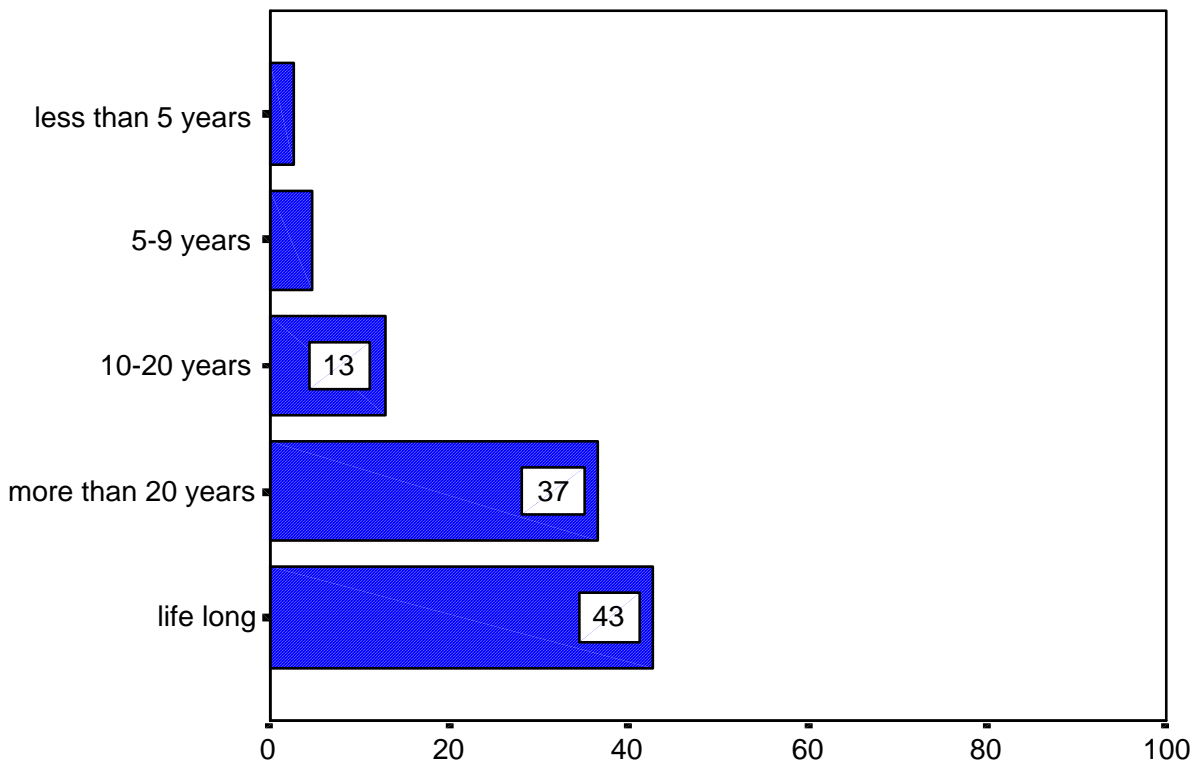
	Frequency	Percent
no	15	2.9
yes	481	93.2
don't know	7	1.4
no answer	13	2.5
Total	516	100.0



# Water Quality Opinion Survey 2000 Monroe County, New York

Q25 & 26. How long have you lived in Monroe County?

	Frequency	Percent
less than 5 years	14	2.7
5-9 years	24	4.7
10-20 years	66	12.8
more than 20 years	189	36.6
life long	221	42.8
other	2	.4
Total	516	100.0

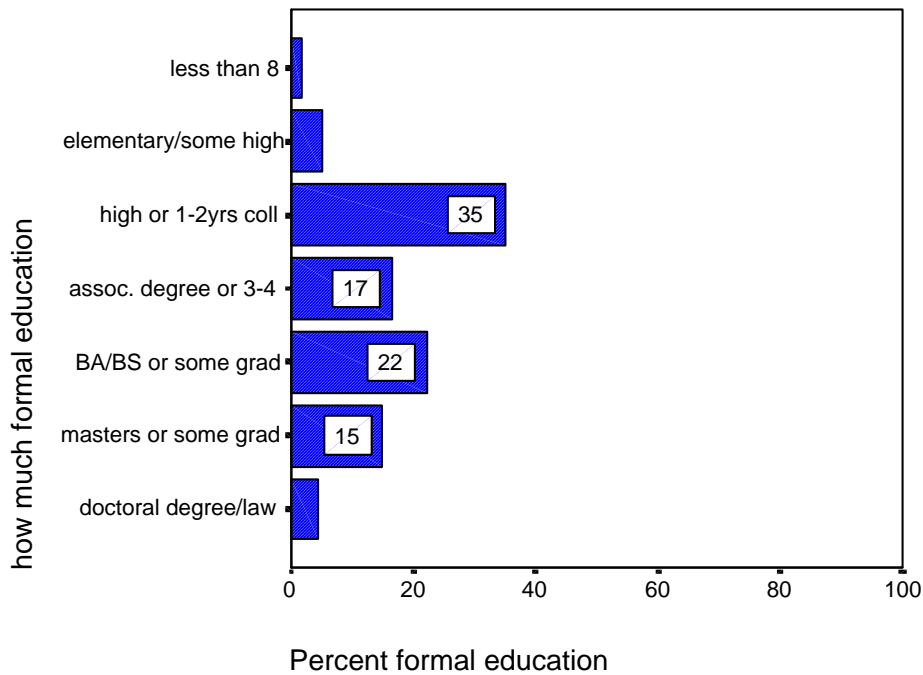


Percent how many years Monroe County

# Water Quality Opinion Survey 2000 Monroe County, New York

Q27. How much formal education have you completed?

	Frequency	Percent
less than 8	8	1.6
elementary/some high school	26	5.0
high or 1-2yrs college	176	34.1
assoc. degree or 3-4 yrs college	83	16.1
BA/BS or some grad school	111	21.5
masters or some grad work	75	14.5
doctoral degree/law degree/etc	22	4.3
don't know/not determinable	1	.2
no answer	14	2.7
Total	516	100.0

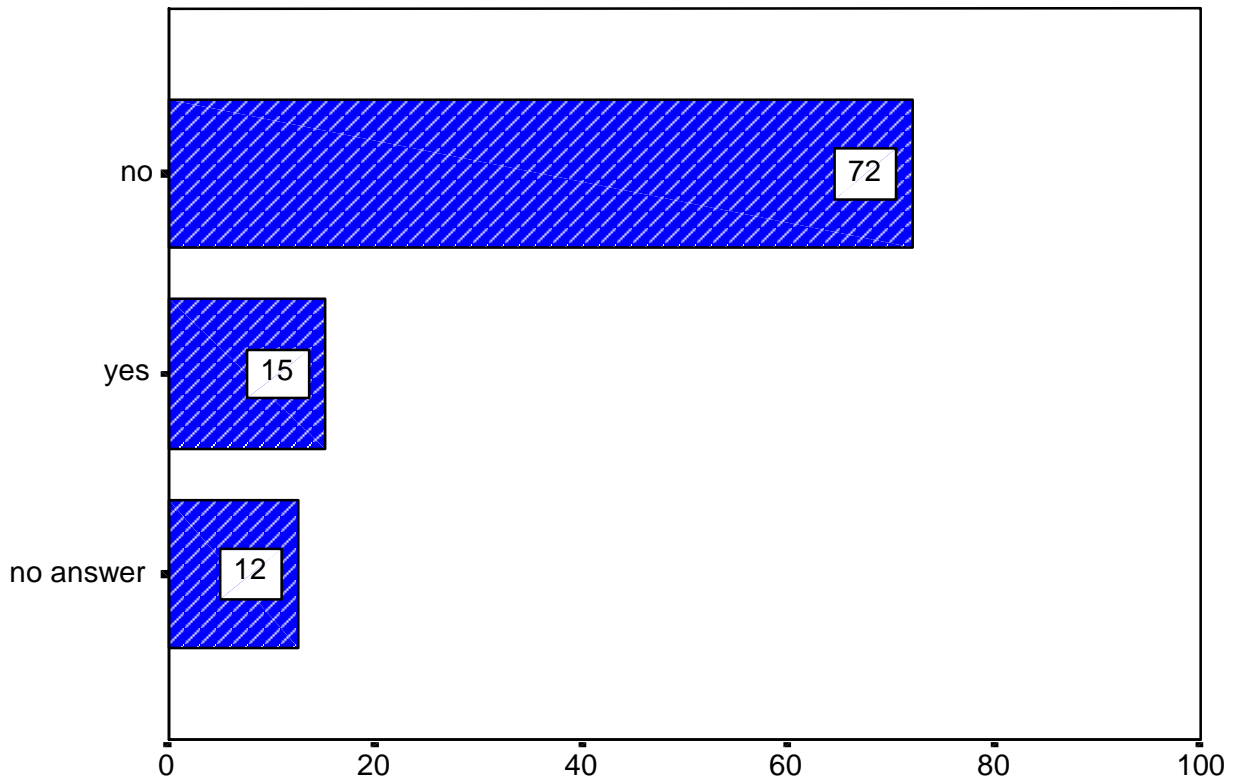




# Water Quality Opinion Survey 2000 Monroe County, New York

Q29. Do you have any questions about water quality for me?

	Frequency	Percent
no	372	72.1
yes	78	15.1
don't know	2	.4
no answer	64	12.4
Total	516	100.0

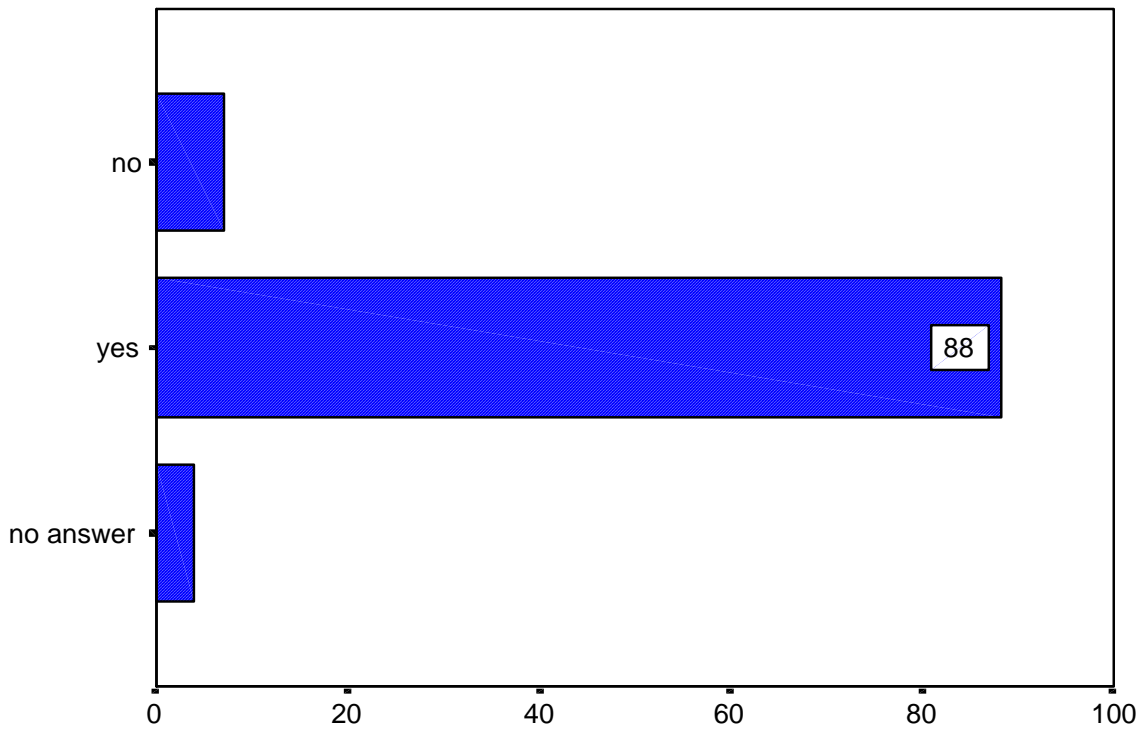


Percent with any questions about water quality

# Water Quality Opinion Survey 2000 Monroe County, New York

Q30. May we contact you in the future with additional questions about water quality?

	Frequency	Percent
no	36	7.0
yes	456	88.4
don't know	4	.8
no answer	20	3.9
Total	516	100.0

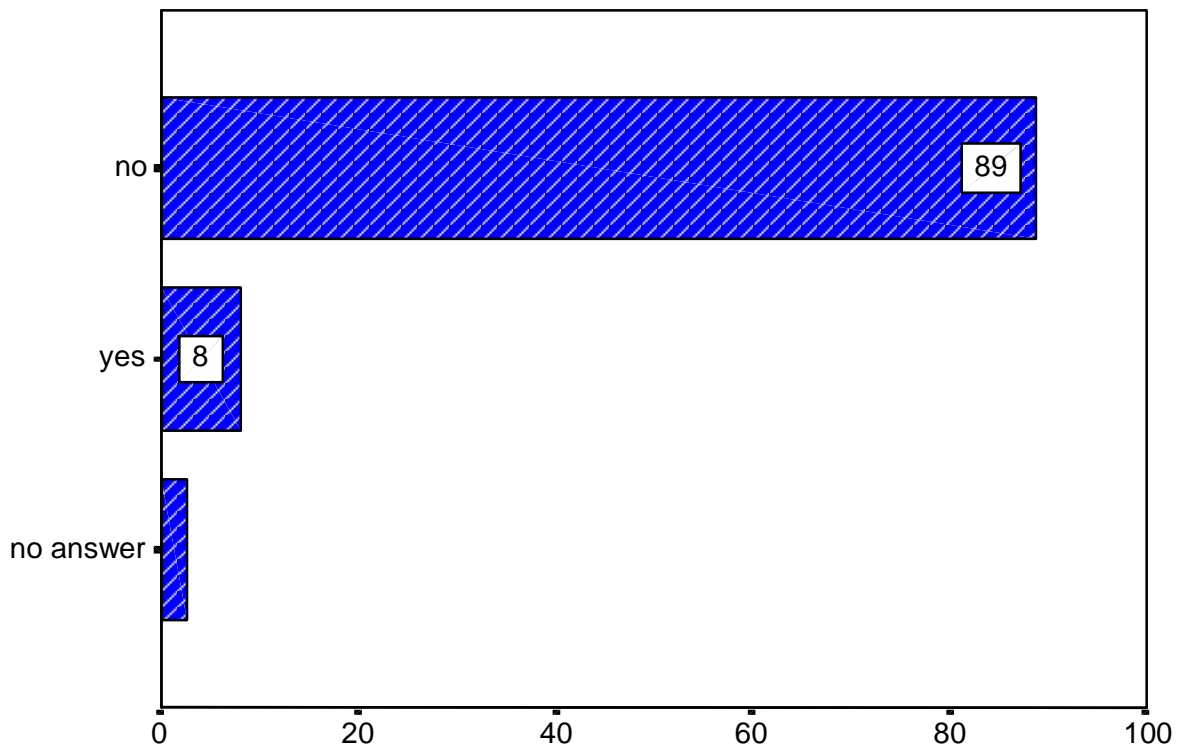


Percent may we contact in future

# Water Quality Opinion Survey 2000 Monroe County, New York

Q31. Have you ever volunteered for any projects that help protect water quality?

	Frequency	Percent
no	458	88.8
yes	42	8.1
don't know	2	.4
no answer	14	2.7
Total	516	100.0

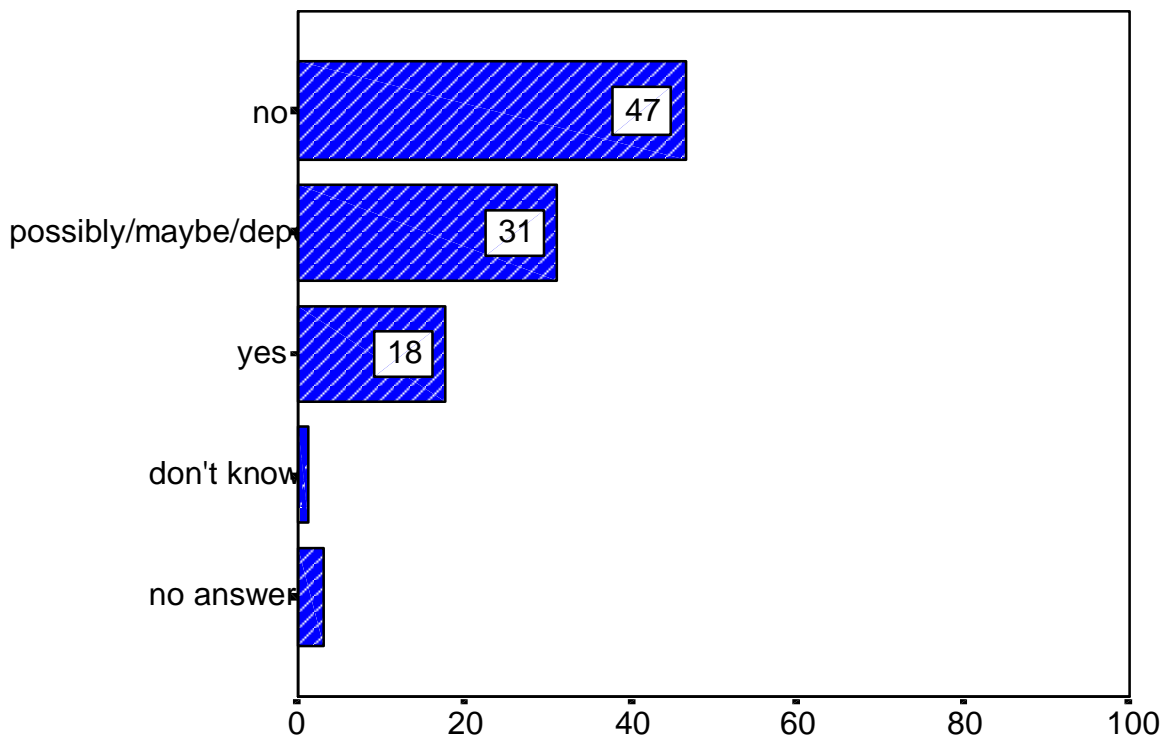


Percent who ever volunteered for a water quality project

## Water Quality Opinion Survey 2000 Monroe County, New York

Q32. Would you be interested in possibly volunteering for any projects to protect water quality?

	Frequency	Percent
no	241	46.7
possibly/maybe/depends	161	31.2
yes	92	17.8
don't know	7	1.4
no answer	15	2.9
Total	516	100.0

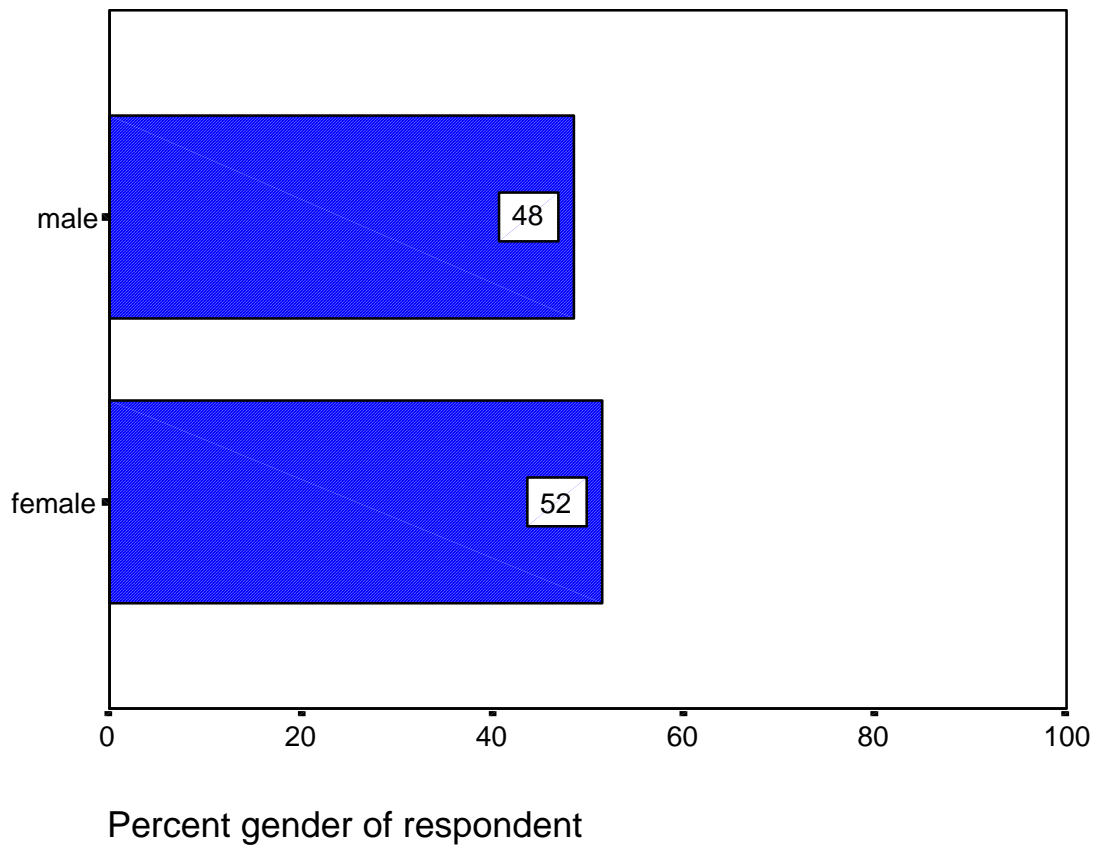


Percent having interest in being a future water quality volunteer

# Water Quality Opinion Survey 2000 Monroe County, New York

Q33. Gender of respondent

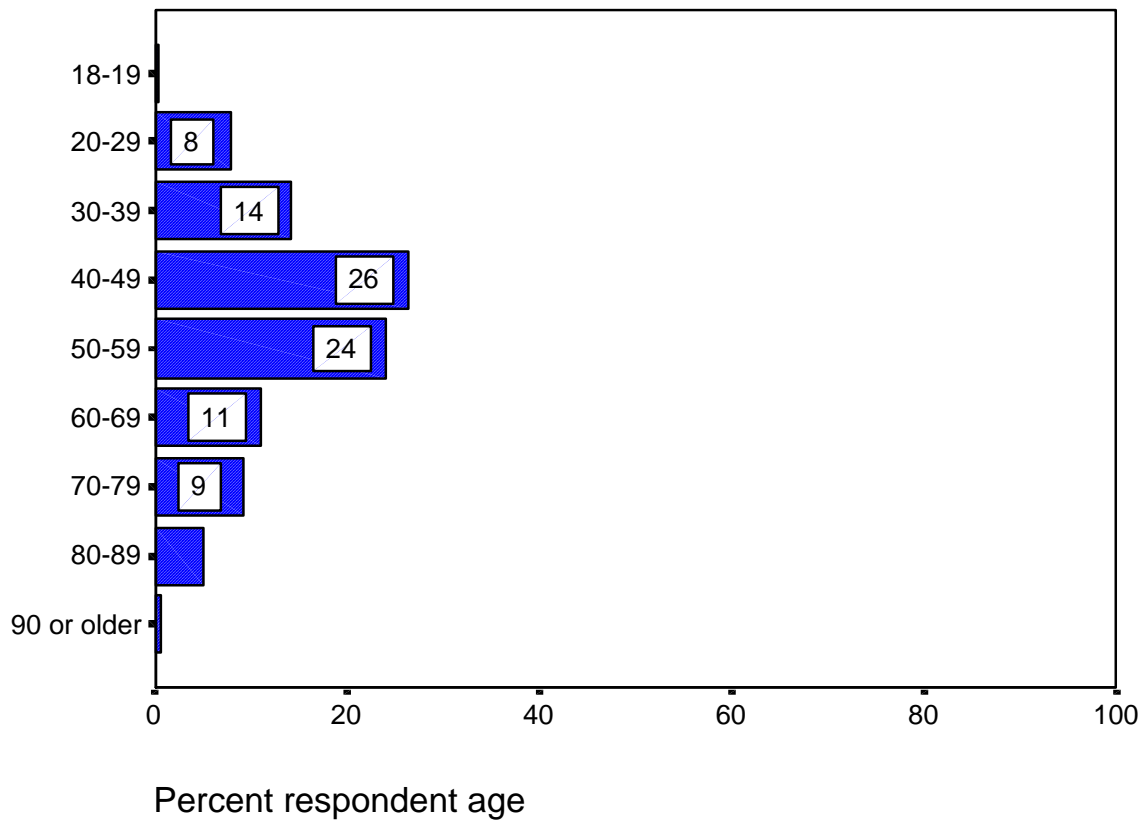
	Frequency	Percent	Valid Percent
male	240	46.5	48.5
female	255	49.4	51.5
Total	495	95.9	100.0
not determinable	21	4.1	
Total	516	100.0	



# Water Quality Opinion Survey 2000 Monroe County, New York

Q34. Age of respondent.

	Frequency	Percent
18-19	1	.2
20-29	40	7.8
30-39	73	14.1
40-49	136	26.4
50-59	123	23.8
60-69	56	10.9
70-79	47	9.1
80-89	26	5.0
90 or older	3	.6
not determinable	11	.6
Total	516	100.0



### Rating of water quality for Lake Ontario in 1983 and 2000

Q 1a - 1983: How would you rate water quality today in Lake Ontario?

Q 2 - 2000: Same as 1983 question.

Values	1983	2000
	percent	percent
Very good	5.8%	5.2%
Acceptable	35.4%	27.5%
Somewhat polluted	35.1%	46.3%
Severely polluted	4.5%	7.8%
Don't know	19.2%	12.2%
No answer	n/a	1.0%
	Totals	100.0%
	Total Number	(308)
		(516)

Statistically significant difference,  $p < .05$

### Rating of water quality for the Genesee River in 1983 and 2000

Q 2a - 1983: Would you tell me how you would rate water quality today in the Genesee River?

Q 4 - 2000: How would you rate water quality today in the Genesee River?

Values	1983	2000
	percent	percent
Very good	1.9%	0.6%
Acceptable	16.2%	12.6%
Somewhat polluted	35.4%	44.6%
Severely polluted	26.3%	24.2%
Don't know	19.2%	16.1%
No answer	1.0%	1.9%
	Totals	100.0%
	Total Number	(308)
		(516)

Statistically significant difference,  $p < .05$

**Perceived improvement of the water quality of Lake Ontario in 1983 and 2000.**

Q 1b - 1983: Do you think that the lakes water quality has:

Q 3 - 2000: Since you've lived in Monroe County,  
do you think that Lake Ontario water quality has:

Values	1983	2000
	percent	percent
Improved substantially	16.9%	8.7%
Improved somewhat	40.5%	31.0%
Stayed the same	13.3%	26.2%
Gotten worse	7.5%	21.5%
Don't know	21.8%	11.0%
No answer	n/a	1.6%
Totals	100.0%	100.0%
Total Number	(308)	(516)

Statistically significant difference,  $p < .05$

**Perceived improvement of the water quality of the Genesee River in 1983 and 2000.**

Q 2b - 1983: Do you think that the river's quality has:

Q 5 - 2000: Since you've lived in Monroe County, do you think  
the Genesee River's quality has:

Value	1983	2000
	percent	percent
Improved substantially	2.6%	2.1%
Improved somewhat	16.9%	19.6%
Stayed the same	41.2%	39.1%
Gotten worse	14.3%	18.4%
Don't know	23.4%	18.8%
No answer	1.6%	1.9%
Totals	100.0%	100.0%
Total Number	(308)	(516)

Statistically significant difference,  $p < .05$