

Second Binational Great Lakes Basin Poll



Prepared by the Great Lakes Water Quality Board

**Submitted to the International Joint Commission
May 2018**

Table of Contents

Key findings	2
Methodology and logistics	6
Background and overview	6
Questionnaire	6
Survey method	6
Logistics	6
Sample frame	7
Script Used in Phone Call	7
Study sample and error rates	7
Reporting notes	8
Acknowledgments	9
Executive overview	9
Section 1. Introduction – concerns and issues	9
Section 2. Watershed protection	15
Section 3. Household water	24
Section 4. Water activities	27
Section 5. Information interest and sources	29
Section 6. International Joint Commission	31
Section 7. Value statements	35
Section 8. Summary	36
Results by question	40

Key findings

- An overwhelming majority of survey respondents (88%) feel it is important to protect the Great Lakes, up from 85% in the 2015 poll. Results are strong and consistent across all cohorts, but especially high among those that identify as Indigenous or Metis (98%). While 42% felt that everyone is responsible to protect the lakes in the 2015 poll, 39% now respond with this answer. Twenty three percent list the federal governments as responsible for protecting the health and water quality of the lakes (highest among Indigenous or Metis respondents at 34%), while 18% identify state and provincial governments. With respect to who should be responsible for protection, 32% said everyone, 28% federal governments and 21% state or provincial governments. There were significant differences with respect to those who said federal governments, including 42% of Indigenous or Metis respondents, 35% of liberals, 34% of Minnesotans and 33% of Ontarians.
- An equally strong majority continue to feel that they as individuals play an important role in protecting the lakes, and that they can take action by being aware of and careful about what they dispose down household drains (83%, highest among millennials 18-34-years-old at 90%), conserve water (74%, especially with mid-earners in the \$50,000-\$74,999 range at 95%), engage in online forums or groups (37%, most popular among First Nations / Metis persons at 71%, the politically liberal at 54% and 18-34 year old's at 52%), contact an elected or government official (32% – 64% of Indigenous / Metis, 47% of liberals & 44% of 55 to 64 year old's), or attend a meeting (29% – 45% of liberals & 36 of those 18 to 34). Residents who don't know of personal actions they can take decreased from 30% in the 2015 poll to 25% in this poll.
- Pollution is again mentioned as the most significant problem facing the Great Lakes by 19%, down slightly by 1% from the 2015 poll. When combined with the third most mentioned issue, industrial pollution, 30% of respondents identify pollution as the most significant problem facing the lakes. Invasive species ranks second at 17%. A new response in the 2018 poll is climate change, identified by 3% of respondents.
- In comparison, when residents were asked to name a threat to the lakes, 26% respond with invasive species, including zebra mussels and Asian carp. Pollution in general follows at 12%, industrial pollution at 7%, garbage or waste at 6% and algae at 5%. Seventeen percent don't know of a threat, down from 25% in 2015. Invasive species were most named by residents of Indiana (34%) and Wisconsin (31%), while algae concerns were most cited by Indigenous or Metis respondents (15%) and Pennsylvanians (14%).

- A 4% difference remains between whether residents feel the environmental health and water quality of the Great Lakes are deteriorating or staying the same, although more respond deteriorating in 2018 (33% versus 26%) and slightly less for the lakes remaining in the same condition (29% versus 30%). The percentage of people responding that they don't know the answer in this category also declined for this question, from 24% to 22%.
- In a new series of questions, residents were asked to rank the negative impact of ten issues on Great Lakes environmental health and water quality. Respondents feel all ten have highly negative to extremely negative impacts, including invasive species by 80%, algae blooms by 76%, municipal wastewater runoff by 74%, both climate change and the petroleum industry (pipelines, drilling, fracking) by 73%, the impact of heavy rainstorms by 72%, followed by flooding (70%), nuclear waste (68%), loss of wetlands (67%) and manure or animal waste runoff (66%). This last issue also received the highest percentage of respondents who feel it has no or little impact (20%).
- Only 5% of those interviewed believe there are too many regulations in place to protect the Great Lakes, compared with 7% in 2015. While a sizeable number (53%) feel more regulations should be in place, 26% do not know if the current level of regulation is sufficient or not. Those that tended to say there are too few regulations or that more are needed included Indigenous or Metis respondents (95%), the politically liberal (65%) and 18-34-year old's (61%). Residents that have lived in a Great Lakes community for less than five years had a higher number of those saying there are too many regulations (12%) as did conservatives (9%).
- A new question asking whether residents are willing to pay more for certain consumer products as a result of increased regulations to protect the lakes, with an overwhelming 55% responding yes. Twenty seven percent are unsure and 18% responded no. Results are equally divided as to whether new regulations would have a positive, negative or no impact on the economy. Willingness to pay more was most expressed by the Indigenous / Metis (91%), liberals (68%), 18-34-year old's (64%), higher earners (\$100,000 or more – 59%) and females (59%).
- In terms of personal water use, 33% believe groundwater is their source for drinking water, followed by local lakes (21%) and unknown (19%). A slightly smaller percentage than the 2015 poll (28% versus 33%) don't know where their wastewater ends up, followed by 16% who respond septic system and 12% responding wastewater treatment facilities. In response to two new questions concerning the

quality of their drinking water, 58% feel they have access to clean drinking water. But, 52% feel their community provides safe drinking water and treats wastewater at an affordable rate for all residents.

- Almost nine in ten or 89% feel it is important that the Great Lakes are available for recreation, a 3% increase from 2015. Forty four percent have used the lakes for swimming or beach visits, boating, fishing, canoeing, kayaking, paddle boarding, windsurfing, skating, cross country skiing, or snowshoeing, listed in order of prominence. Lake Michigan is listed most often in terms of recreational use (34%), followed by Lake Ontario (22%), Lake Erie (19%), Lake Superior (14%) and Lake Huron (7%).
- A large percentage of residents (59%) express interest in news and information about the Great Lakes, an increase of 9% from the 2015 poll. Newspapers and the internet are the most common sources used to find this information, and are also preferred over social media, television, radio, emails, or correspondence from organizations and utilities.
- Despite the continued low awareness of the International Joint Commission and the Great Lakes Water Quality Agreement (21% and 15%, respectively), an overwhelming 80% feel it is important for the United States and Canada to cooperate on issues facing the lakes. Importance was most articulated by residents that identify as Indigenous or Metis (96%), younger respondents 18-34 (87%) and 35-54 years old (84%) as well as liberals (84%). In addition, 78% feel it is important or very important to have an organization like the IJC and seven in ten feel that it should be adequately funded to fulfill its objectives. Results were higher among Indigenous or Metis respondents (86%), 18-34-year old's (81%) and liberals (81%).
- Seventy nine percent believe it is essential to protect the Great Lakes for the health of fish and wildlife and for the health of the region's economy (78%). As in 2015, the third most important reason to protect the health of the Great Lakes is to ensure their health and water quality for future generations (77%). While 76% are most concerned about the health and water quality of the lake closest to them, concern about the Great Lakes as a whole rose 7% from the 2015 poll to 60%.
- This 2018 poll includes interviews with 300 Indigenous peoples, including First Nation, Tribal and Métis respondents. Their results show consistent and strong support for Great Lakes protection (99%) as well as high levels of awareness of the lakes and issues affecting them (only 8% were unable to name an issue facing them compared to the 24% average). As in 2015, a high level of importance is placed on

protection of the Great Lakes from all demographic groups and geographic jurisdictions. Younger respondents, especially millennials (85%), and people who expressed liberal political viewpoints (87%) were most likely to feel it is important for the individual to play a role to ensure the lakes are protected, and will act on those beliefs (references in paragraph two above). Please see the [Crosstabulation report](#) for additional demographic breakdowns.

Methodology and logistics

Background and overview

- In 2015, Oraclepoll conducted the first baseline Great Lakes basin telephone poll for the International Joint Commission's (IJC) Great Lakes Water Quality Board (WQB) among residents of the Great Lakes basin catchment area.
- That survey established benchmark data across an array of indicators ranging from perceived threats to the Great Lakes, the importance of watershed and Great Lakes protection, awareness of the IJC, awareness of cross-border water protection efforts and the importance of cross-border solutions to achieving a healthy Great Lakes system.
- This 2018 survey is a follow-up to the 2015 poll. In addition to tracking several key indicators, it also established new data points. When and where possible, findings are compared over time to determine any variances.

Questionnaire

- The telephone survey instrument was designed by Oraclepoll in consultation with participants from the WQB. While many of the original baseline indicators were retained, there were revisions to some and new questions were added. Both the revisions and additions are identified in this report document.
- The 2018 questionnaire was first pilot tested among N=20 respondents to ensure clarity of design and that there were no errors in the CATI programming prior to full data collection.

Survey method

- The survey was conducted by telephone using live person to person interviewers – computer-assisted telephone interviewing (CATI). All calls were made by Oraclepoll research staff at the Ontario-based Oraclepoll research facility.
- The simple random number selection (RDD) method was used, with one resident at each household 18 years of age or older being interviewed.
- Initial calls to each number were made between the hours of 6 p.m. and 9 p.m. Subsequent call-backs of no-answers and busy numbers were made up to 5 times from 10 a.m. to 9 p.m. over a seven-day period until contact was made. In addition, telephone interview appointments were attempted with those respondents unable to complete the survey at the time of contact. If no contact was made at a number after the fifth attempt, the number was discarded and a new one was used.
- A total of 20% of all interviews were monitored and the management of Oraclepoll Research Limited supervised 100% for quality assurance.

Logistics

- Interviews were conducted between January 5 and January 30, 2018.

Sample frame

- A dual sample frame RDD telephone number database was used, that included landlines as well as cell phones of residents in the Great Lakes basin catchment area.

Script used in phone call

To help reduce the possibility of any bias among respondents, a short and clear start to tube conversation was used there was no lead in with a “water quality” or “great lakes” theme potentially impacting a bias. Survey callers followed this script to start the call and recorded responses accordingly.

Good evening my name is \$i and I am calling from the research firm Oraclepoll. We are conducting a research survey of <PROV/STATE> residents on some issues affecting residents.

Please be assured the following is for research purposes only and we are not attempting to sell anything. Your responses to this survey will be confidential as only overall or aggregate results will be reported on.

Would you have a few minutes **please** to help us conduct this study?

1: Are you a resident of <PROV/STATE> who is 18 years of age or older?

- ☐ **Yes go to Screen 2**
- ☐ **No ask for respondent who meets criteria/if no politely end**
- ☐ **BUSY Schedule back time / telephone appointment**
- ☐ **REFUSED end interview**

IF NEEDED

- “Your telephone number was randomly selected”
- **Provide 800 toll free number to call in to verify / complete survey**
- **Online option only offered to those who request it**

Study sample and error rates

- Sample quotas were set to reflect the populations of the nine jurisdictions that comprise the Great Lakes basin catchment area and its approximate 40 million residents.
- In total, 4,250 interviews were completed among residents 18 years of age and older.
- The margin of error for the total survey sample is +/- 1.5%, 19/20 times. The margin of error for the each of the area breakouts is included in the table below.
- This table also includes the completed number (N) of interviews for the sample by catchment area or jurisdiction and their percentage (%) of the total completed sample.

		Sample (N)	Percent (%)	Error Rate (95% Confidence Level)
	Ontario	1180	27.8	±2.9%
	Michigan	1160	27.3	±2.9%
	New York	475	11.2	±4.5%
	Ohio	375	8.8	±5.1%
	Illinois	375	8.8	±5.1%
	Wisconsin	305	7.2	±5.6%
	Indiana	140	3.3	±8.3%
	Pennsylvania	120	2.8	±8.9%
	Minnesota	120	2.8	±8.9%
	Total	4250	100.0	±1.5%

- A quota was set to ensure Indigenous, (CDA-First Nations) (US-Native American or Tribes) or Métis respondents were reached. As a result, there was an oversampling of this cohort to ensure we reached N=300 ($\pm 5.7\%$, 19/20 times). This was achieved by asking D4 [Do you identify as Indigenous, (CDA- First Nations) (US-Native American or Tribes) or Métis?] as an opening screening question.
- The Indigenous/Métis breakdown by area is as follows: *Ontario N=80, Michigan N=60 New York N=25, Ohio N=25, Illinois N=25, Wisconsin N=25, Indiana N=20, Pennsylvania N=20 & Minnesota N=20.*

Reporting notes

- This report contains an Executive Overview section that highlights and summarizes this survey's findings using tables, charts and a narrative, as well as findings of the survey with the associated questionnaire (i.e. exact questions asked) in the Results by Question section. Where and when possible, data is referenced and compared over the two survey periods (2015 and 2018).
- A separate [Crosstabulation report](#) provides a breakdown of results by the nine jurisdictions as well as demographic cohorts.
- Open-ended or verbatim results have been coded by Oraclepoll and the combined responses have been included in the Executive Overview as well as Results by Question sections. The uncoded verbatim responses are presented in the [Crosstabulation report](#).
- The Executive Overview section is built around the following seven themes of the questionnaire, plus a summary section at the end. Within each section the results for each question are presented with the question number referenced for easy access and viewing. Each section starts with a Q1.

<i>Section 1.</i>	<i>Introduction – Great Lakes Water Quality Concerns and Issues</i>
<i>Section 2.</i>	<i>Watershed Protection</i>
<i>Section 3.</i>	<i>Sources of Water and Drinking Water</i>
<i>Section 4.</i>	<i>Recreational Water Activities</i>
<i>Section 5.</i>	<i>Information Sources</i>
<i>Section 6.</i>	<i>International Joint Commission</i>
<i>Section 7.</i>	<i>Value Statements</i>
<i>Section 8.</i>	<i>Summary</i>

- Variances or statistically significant differences as a function of area and demographics are highlighted. **Only statistically significant effects are referenced**, and these effects are significant at the $p < .05$ level, which means there are less than five chances in 100 that a reported effect does not reflect a true effect.
- Some numbers displayed in charts and graphs may not add up to 100% as a result of rounding.

Acknowledgements

The Great Lakes Water Quality Board acknowledges the excellent and extensive efforts of Oraclepoll Research Limited and the Engagement Work Group in the development of this report. The majority of this report has been taken directly from work completed by Oraclepoll on behalf of the Board's Engagement Work Group.

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Executive Overview

Results

Section 1. Introduction – concerns and issues

The survey began with an introductory set of questions related to respondents' perceptions of the Great Lakes.

Most significant problems facing the Great Lakes

Respondents were first asked in an open or unaided question to identify what they believed is the most significant problem facing the Great Lakes as it relates to their environmental health and water quality. One top of mind response was accepted. The following table highlights the mentions provided that have been coded into general categories.

Q1. “When thinking about the environmental health and water quality of the Great Lakes, what in your opinion are the most significant problems facing them?”

TOP OF MIND SIGNIFICANT PROBLEMS	Percent
Don't know	24%
Pollution (in general)	19%
Invasive species	17%
Industrial pollution	11%
Waste being dumped into the lakes	6%
Algae/green algae/blooms	4%
Water levels/fluctuations	3%
Oil industry/spills/oil pipelines	3%
Endangered species/fishing depleted in the lakes	3%
Climate change/extreme weather	3%
Drainage/runoff	2%
Agricultural pollution/waste/runoff	1%
Fracking	1%
Acid rain	1%
Lack of regulations	<1%
Mercury levels	<.5
Government policy	<.5

In 2018, fewer respondents or 24% were unsure of what the most significant problem was facing the Great Lakes compared to 31% that did not know in the previous 2015 poll. Pollution in general remained the most named top-of-mind issue that 19% of respondents cited, although down slightly from the 2015 poll (-1%). The issue of invasive species followed at 17%, up +1% over 2015, and industrial pollution was the third most mentioned issue at 11%, down -1%.

Others mentioned included waste or refuse being dumped into the Great Lakes by 6% (unchanged), the issue of algae by 4% (+2%), fluctuating water levels by 3% (-2%), the impact of the petroleum industry by 3% (+1%) and endangered species by 3% (+2%). Three percent felt climate change and extreme weather were the biggest problem (+3%) and 2% drainage or runoff (unchanged).

Threats to Great Lakes

In another open-ended or unaided question allowing for multiple (up to three) answers, respondents were asked to name anything they considered might threaten the waterways surrounding and flowing into the Great Lakes. The multiple answers from N=5126 mentions were coded into the categories provided in the table below.

Q2. “Can you name anything that you feel may pose a threat to the lakes and rivers that surround and feed into the Great Lakes?”

THREATS:COMBINED MULTIPLE RESPONSES	Percent
Invasive species (zebra mussels, Asian carp)	26%
Don't know	17%
Pollution (in general)	12%
Industrial pollution /waste	7%
Garbage/waste	6%
Algae/green algae	5%
Population growth/urban sprawl	4%
Chemical pollution	3%
Pesticides	2%
Oil industry/spills/pipelines	2%
Agricultural pollution/waste/runoff	2%
Climate change/extreme weather	2%
Water levels/Fluctuations	2%
Not enough conservation of water	2%
Runoff (in general)	2%
Fracking	1%
Traffic on the water	1%
People/human populations	1%
Illegal fishing/overfishing	1%
Mercury levels	1%
Water being removed from the watershed	1%
Winter road salt	<1%
Lack of regulations/laws	<1%
Commercial vessels	<.5
Acid rain	<.5
Tourism	<.5

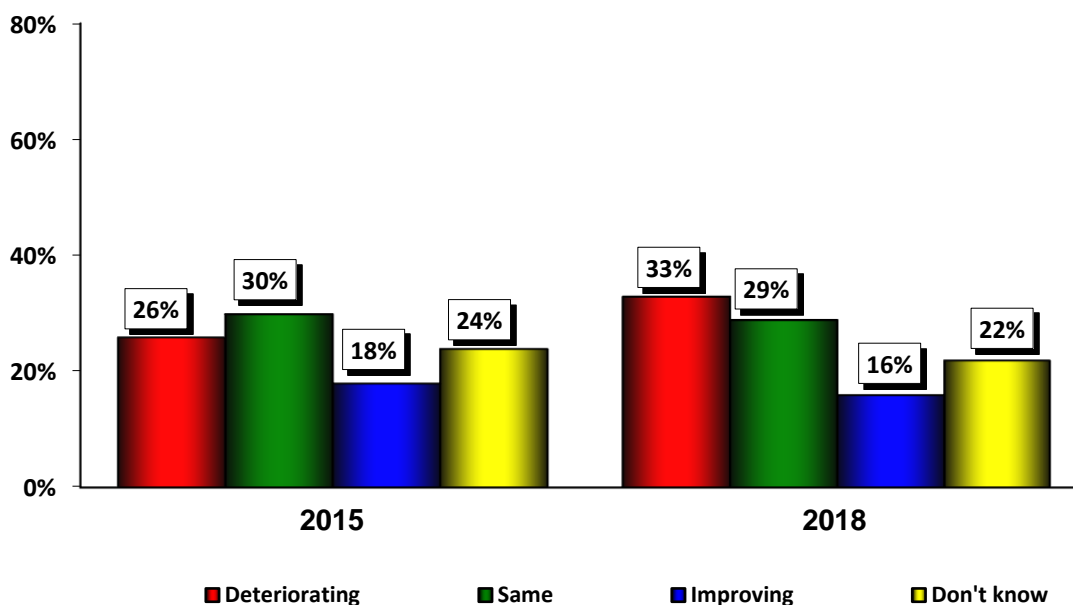
As in 2015, the threat with the most number of combined citations was invasive species at 26%, up 3% from the 23% that named it in the previous polling period. Pollution in general was second, named by 12% (13% in 2015), followed by industrial pollution/waste at 7% (unchanged), garbage or waste at 6% (-3%) and algae at 5% (+2%). Others mentioned included sprawl or population growth (4%) and chemicals or chemical pollutants (3%), while 2% named either pesticides, the petroleum industry, agricultural production, climate change or extreme

weather, water level fluctuations, a lack of conservation, or water runoffs into the lakes. There were 17% who answered do not know or were unsure, compared to 25% in 2015.

Direction of environmental health

Next, all respondents were asked in an aided question about the future direction of the environmental health and water quality of the Great Lakes.

Q3. “In your opinion, is the environmental health and water quality of the Great Lakes improving, deteriorating or staying about the same?”



There was a +7% increase compared to 2015 in the number of residents who believed the environmental health and water quality of the Great Lakes is deteriorating. While one-third (33%) said things are getting worse, -2% fewer feel the Great Lakes are improving (16%), -1% less that they are about the same (29%) and 22% were unsure (-2%).

Those more likely to answer deteriorating were millennials 18-34-years of age (39%), those that self-identified as politically liberal (41%), Indigenous/Metis (48%) and more females (35%) compared to males (29%). A higher number of Pennsylvania (36%) and Ontario residents (34%) said things are deteriorating, followed by those from Michigan (32%) and Minnesota (32%).

Why the Great Lakes should be protected

In another open-ended or unaided question allowing up to three multiple responses, survey participants were asked to state why the Great Lakes need to be protected.

Q4. “Can you tell me why you think that the Great Lakes need to be protected?”

PROTECTION: COMBINED MULTIPLE RESPONSES	Percent
Drinking/household water	19%
Valuable resource	18%
Don't know	17%
One of the few sources for fresh water	8%
For the fish/fishing	7%
Our health	6%
For recreational purposes (swimming, boating)	5%
Important for the ecosystem/environment	5%
For the wildlife	5%
Good for the economy	3%
Important for the future	3%
From development (residential, commercial, pipelines, etc.)	2%
For future generations/children/grandchildren	2%
It's the right thing to do/it's needed	1%
Historic significance	<.5%

The most identified reasons for protecting the Great Lakes revolved around the belief that they are a source for drinking water and freshwater, with 18% of all combined responses (20% in 2015), and because the lakes are a valuable resource at 18% (19% in 2015).

Eight percent said they are a last remaining source of freshwater (+2% over 2015), while 7% cited the fish or aquatic life (+1%), 6% for human health (unchanged), 5% recreational purposes (+1%), 3% the ecosystem or environment (+2%), 5% for wildlife (-1%) and 3% that it is good for the economy (unchanged).

Other areas that saw increases were comments related to the lakes' importance for the future by 3% (+3%), for future generations by 2% (+2%) and that it is the right thing to do by 1% (+1%).

Factors impacting environmental health and water quality

In a new series of questions, respondents were asked to rate the impact that each of ten factors have on the environmental, health and water quality of the Great Lakes. Respondents were asked to rate each area using a five-point Likert scale from 1-no negative impact at all, to 5-very negative impact. The chart below combines the 1 and 2 responses (low and no impact) and the 4 and 5 scores (high and extreme negative impact.)

“How much of an impact do you feel that each of the following have on the environmental health and water quality of the Great Lakes? Please use a scale from one no negative impact at all to five a very negative impact.”

IMPACT AREAS	1-No impact and 2-low negative	3-Neutral	4-high negative and 5-extreme negative	Don't know
Q5. Climate change/Global warming	15%	11%	73%	1%
Q6. Flooding	16%	12%	70%	2%
Q7. Nuclear waste	17%	11%	68%	4%
Q8. Loss of wetlands	15%	13%	67%	5%
Q9. Manure or animal waste runoff	20%	13%	66%	1%
Q10. Municipal wastewater runoff	14%	11%	74%	1%
Q11. The impact of heavy rainstorms	14%	13%	72%	1%
Q12. Algae blooms	13%	9%	76%	2%
Q13. Invasive species such as zebra and quagga mussels, Asian carp	11%	8%	80%	1%
Q14. The petroleum industry, such as pipelines, drilling, fracking	14%	11%	73%	2%

While all areas were seen by a majority to have a high or extreme negative impact on the environmental, health and water quality of the Great Lakes, invasive species were perceived to be the greatest threat by eight in ten or 80% (4-high negative 25.7% and 5-extreme 53.8%).

The next highest scored in terms of a negative impact were algae blooms at 76% (4-high negative 31.5% and 5-extreme 44.5%) and municipal waste water runoff by 74% (4-high negative 29.6% and 5-extreme 43.6%),

The petroleum industry was named by 73% (4-high negative 28.9% and 5-extreme 43.7%) as was climate change at 73% (4-high negative 30.7% and 5-extreme 41.8%). Two areas that may be considered to be linked with a changing climate or extreme weather followed, including the impact of heavy rainstorms by 72% (4-high negative 29.5% and 5-extreme 42.8%) and flooding by 70% (4-high negative 30.2% and 5-extreme 40.3%),

Three issues that rated lowest included nuclear waste by 68% (4-high negative 28.8% and 5-extreme 39.5%), the loss of wetlands by 67% (4-high negative 28.9% and 5-extreme 38.3%), and agricultural runoff by 66% (4-high negative 27.8% and 5-extreme 38.1%).

Regardless of the media attention given to each issue, it appears that those that are tangible and observable have a higher resonance and are the issues that people can best identify as having a negative impact – e.g. invasive species, algae blooms and municipal runoff.

Section 2. Watershed Protection

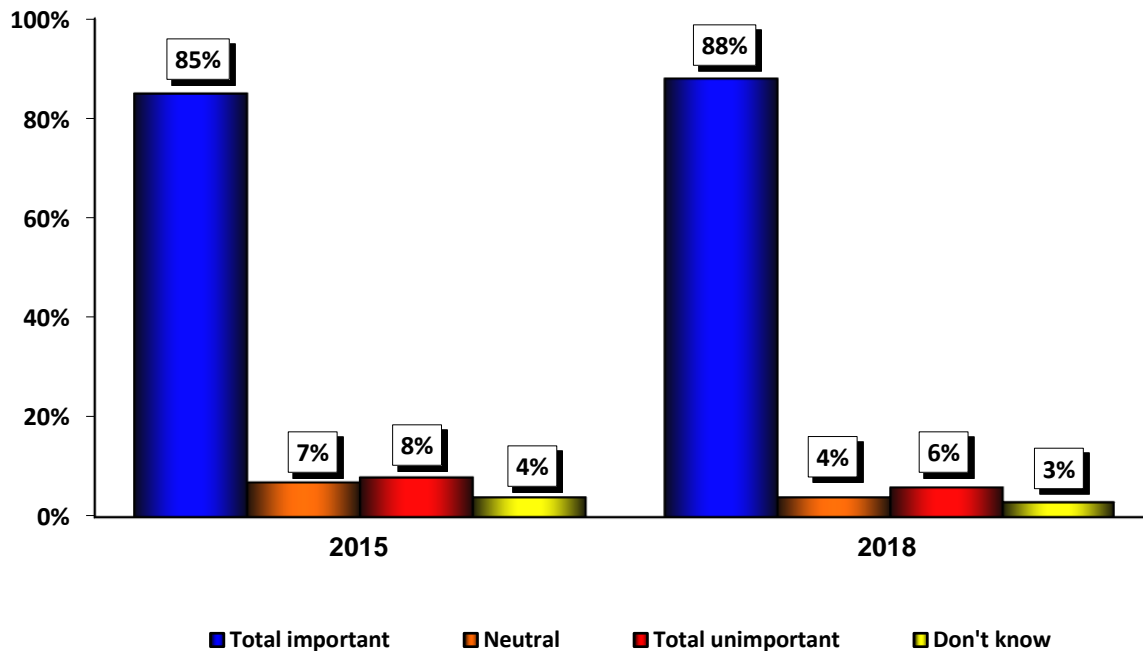
The next section relates to issues around watershed protection, including its importance, awareness of actions to ensure its health, the perceived roles and responsibilities for protection, and a willingness to take actions. Respondents were first read the following short descriptive preamble prior to questioning.

“The Great Lakes basin consists of the Great Lakes and the area of land and water that surrounds the lakes and feeds into them from the states of Illinois, Indiana, Michigan, Minnesota, New York, Ohio, Pennsylvania, and Wisconsin in the United States, and the province of Ontario in Canada.”

Importance of protecting

The first question asked was about the importance of protecting the Great Lakes basin. Results in the following graph combine the total important (very important-5 and important-4) as well as total unimportant findings (not at all important-1 and not important-2).

Q1. “How important is it that the health and water quality of the Great Lakes basin be protected? Please respond using a scale from one not at all important, to five very important.”



Almost nine in ten or 88% felt that it is important (8%) or very important (80%) that the health and water quality of the Great Lakes be protected, a 3% increase over the 2015 survey period. Only 6% stated it is not important (3%) or not at all important (3%), while 6% held a neutral opinion of neither important nor unimportant and 3% were unsure.

Virtually all or 99% of those that identify as Indigenous or Métis claimed protection is important (3%) or very important (96%). As in 2015, a high level of importance was placed on protection by respondents from all other demographic groups and geographic jurisdictions, but results were slightly higher among 18-34-year olds (91%) and people who expressed liberal political viewpoints (91%). In addition, a higher percentage of respondents who said the health of the Great Lakes is deteriorating claimed it is important or very important to protect the health of the lakes (96%) compared to those that stated the lakes' health is staying the same (85%), improving (84%) or did not know (81%).

Responsibility for protecting

Respondents were asked two semi-open questions. The first (Q2) was about who they felt is currently responsible for protecting the health of the Great Lakes basin and the second (Q3), who they believe should be responsible for protecting their health and water quality. Potential responses from a pre-established list were only read to respondents if they answered do not know to each question. One response was accepted from respondents for each question.

Q2. “Who, in your opinion, is currently responsible for protecting the health and water quality of the Great Lakes basin?”

CURRENTLY RESPONSIBLE	Percent
Everyone/all	39%
Federal governments	23%
State/provincial governments	18%
Don't know	10%
Residents/individuals	4%
All levels of government	2%
EPA	2%
City/local government	2%
Industry	1%

In the first question, who they felt is currently responsible for protecting the health of the Great Lakes, there remained a sense that this is a concerted effort as 39% said everyone, although this is down -3% from the 42% that stated the same in the 2015 poll. Individual ownership was further reinforced as 4% also named residents (unchanged from 2015).

Federal governments were named by 23%, 5% higher than the 18% in 2015, while 18% cited state or provincial governments (17% in 2015), 2% city or local governments (unchanged) and 2% all levels of government (unchanged). There were 2% that recalled the EPA and only 1% industry, while 9% were unsure (11% in 2015).

The following question dealt with who respondents feel should be responsible for protection.

Q3. “Who in your opinion should be responsible for protecting the health and water quality of the Great Lakes basin?”

SHOULD BE RESPONSIBLE	Percent
Everyone/all	32%
Federal governments	28%
State/provincial governments	21%
Residents/individuals	5%
Don't know	5%
City/local government	4%
All levels of government	2%
EPA	1%
Industry	1%

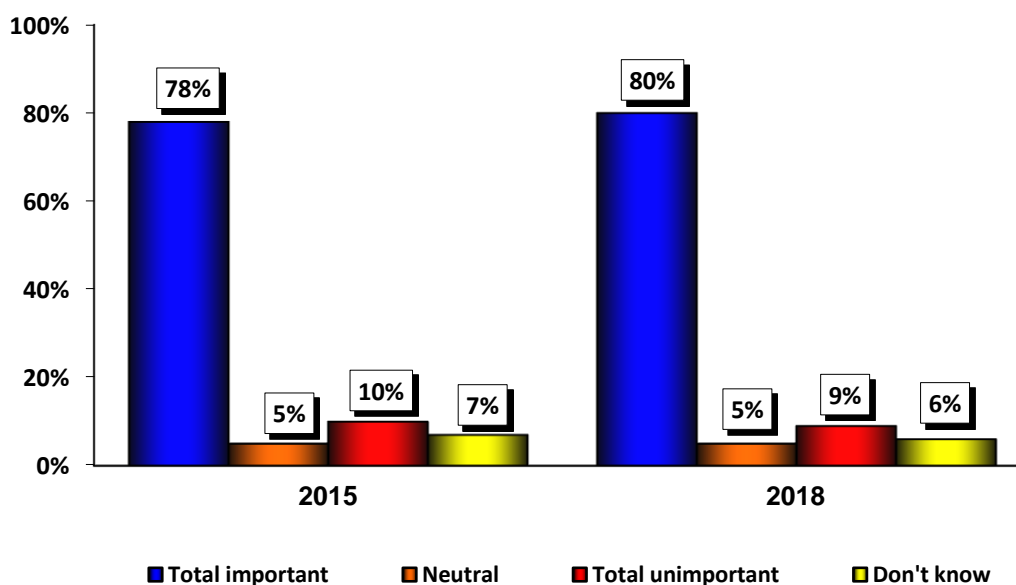
When it came to the topic of who should be responsible for protecting the health of the Great Lakes, everyone or all was once again most named but by a lesser 32% (35% in 2015), while an additional 5% said residents or individuals (-1% over 2015).

There was also a higher pull or demand for senior levels of government to play a role, with 28% stating their federal government (+5% higher than the 23% in 2015) and 21% their state or provincial government (+1% higher than in 2015). Lesser mentions included municipalities (4%), all levels of government (2%), the EPA (1%) and industry (1%). Only 5% did not know or were unsure, down from 7% in 2015.

Role of the individual and actions

Next the questioning moved specifically to the role of the individual or household in protecting the health and water quality of the Great Lakes. It began with a scaled question (1-5) in the perceived importance or role of the individual in this process. The graph below combines the results of very important (5) and important (4) as well as not at all important (1) and not important (2).

Q4. “How important is the role of the individual or individual household in protecting the health and water quality of the Great Lakes basin? Please respond using a scale from one not at all important to five very important.”



In total, 80% of respondents hold the view that the individual or their household has an important (16%) or very important (64%) role to play in protecting Great Lakes health and water quality, a +2% increase from 2015. Those more likely to feel that the role of the individual is important included Indigenous or Métis respondents (97%), the politically liberal (87%) and 18-34-year olds or millennials (85%).

In a follow-up indicator, respondents were asked in an open-ended unaided question allowing for multiple responses about what they felt **they or their household could do to protect the Great Lakes basin (Q5)**. When combining the responses provided (N=4871), comments related to disposing of waste properly by not dumping it down drains or recycling were most cited with 18% of mentions (19% in 2015), followed by 17% that said conserving more water (16% in 2015). Eleven percent named staying informed or educated on the issues (12% in 2015), 9% said take political action at the ballot box or through lobbying/writing politicians (8% in 2015) and 4% said pollute less (unchanged).

Others mentioned included fighting or protesting harmful development projects by 2% (+2%), volunteering time or money by 2% (unchanged), limiting household water runoff by 2% (+1%) and working to stop industrial pollution by 2% (+1%). One percent cited either being environmentally aware, following laws and regulations, taking care of the environment, reducing carbon footprints, continuing what we are doing and everyone needs to do their part. Twenty five percent said they did not know (30% in 2015) and 3% that stated nothing, down 1% from 2015 (4%).

Another open-ended question allowed for multiple responses and asked respondents to **name the actions that they are willing to take in order to help protect the water quality of the Great Lakes (Q6)**. The most mentioned response related to conserving water by 18% (+4% compared to 2015), closely followed by properly disposing of waste and not down drains by 15% (+5%). There were 20% of responses that related to activism and included taking political actions such as lobbying/writing politicians or voting by 11% (+2%), volunteering time or money by 6% (+1%) and fighting or protesting harmful developments by 3% (+3%).

Other responses included doing everything they can by 9% (-1%), keeping informed or educated on the issues by 7% (+1%), polluting/wasting less by 5% (+1%) and taking care of the environment by 3% (+1%), while 1% named either telling authorities about polluters, not using bottled water, or continuing doing what they are doing. There were 19% who did not know or were unsure, -16% lower than in 2015 (35%) and 3% that said nothing (unchanged).

Respondents were then read a list of five action areas and were asked whether they do or would take part in each of them.

Q7. “Which of the following actions would you be likely to do or take part in to help protect the water quality of the Great Lakes?”

ACTION AREAS AND PARTICIPATION	YES
A. Attend a public meeting organized by government or nongovernment organizations	29%
B. Engage in an online forum or group	37%
C. Contact a local elected representative or government official	32%
D. Conserve water at home by using less or installing water efficient fixtures	74%
E. Be aware of or be more careful about what you are disposing down household drains	83%

The activity most likely to be taken by residents is to be more aware or careful of what they dispose down household drains at 83%, with these results showing consistency across demographic and geographic areas. A significant 74% said that they would also be inclined to conserve water – although results were lower among participants in larger households (four – 70% & 5 or more people – 66%), higher incomes (\$100,000 or more – 71%) and older respondents (65 or older – 70%).

There are 37% that said they would engage in an online forum or group. Younger residents aged 18-34 (52%) and 35-44 (39%) were most likely to do so as are the politically liberal (54%).

Slightly less than one-third or 32% said they would contact an elected representative or government official. People who expressed liberal political viewpoints would be more likely to do this (47%) as would residents of Pennsylvania (43%), university/college graduates (36%) and those in the middle-aged cohort of 55 to 64 (44%).

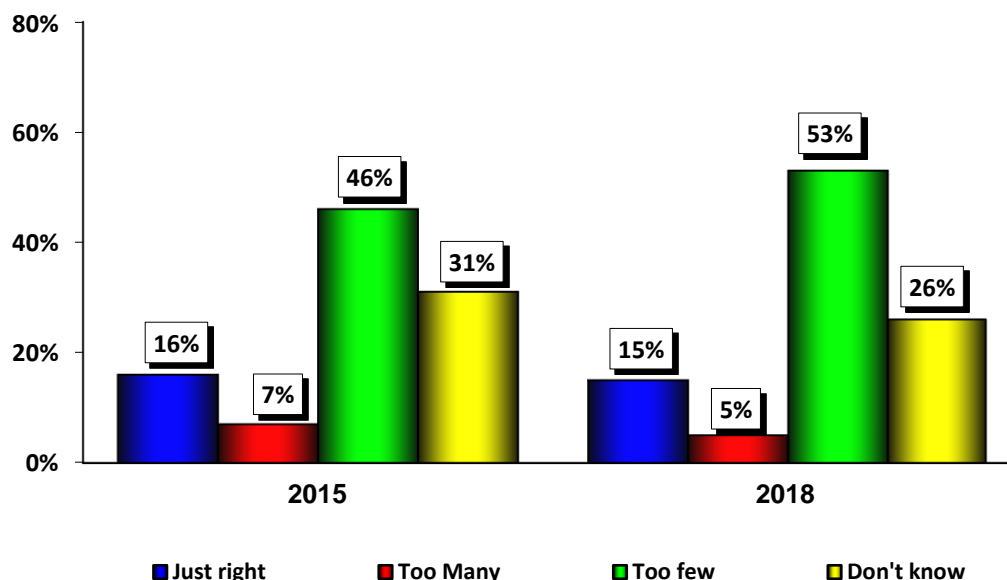
A total of 29% claimed that they would be likely to attend a public meeting with 18-34 (36%) and 35-44 (32%) year old’s being more likely to do so as would people who expressed liberal political viewpoints (45%) and Pennsylvania residents (40%).

Indigenous and Métis respondents expressed a very high willingness to attend meetings (70%), take part in online forums (71%) and contact an elected representative or government official (64%).

Policies, regulations and cross-border efforts

Respondents were then asked a series of indicators about awareness of policies, regulations and cross-border efforts to protect the Great Lakes.

Q8. “Thinking about the policies and regulations in place to protect the water quality of the Great Lakes, do you feel there are too many, too few or just the right amount?”

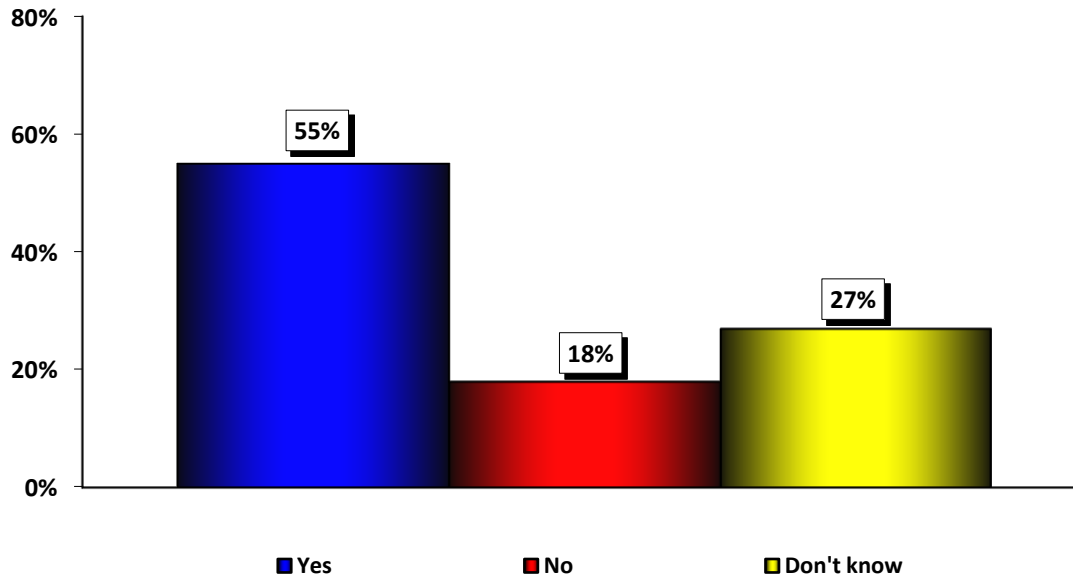


Only 5% of respondents interviewed claimed that there are too many policies and regulations in place to protect the Great Lakes, down from 7% in 2015. A 53% majority hold the view that there are too few regulations, an increase of 7% compared to the 46% in the previous survey period.

A similar 15% (-1%) said there are the right amount of policies and regulations, while 26% were unsure (-5%). Those most likely to say that there are too few regulations are younger respondents 18-34 (61%), people who expressed liberal political viewpoints (65%), Minnesotans (61%), from larger households of five or more people (66%), four (56%) and three people (61%), and Indigenous or Métis (95%).

A new question posed in the 2018 survey asked respondents whether they would be willing to have **increased regulations and enforcement to protect the Great Lakes even if it resulted in higher costs of consumer items.**

Q9. “Would you be willing to have greater protection of the Great Lakes through regulations and their enforcement even if it means that it may increase the cost of certain consumer products?”



In total, 55% said that they would be willing to have greater protection of the Great Lakes through regulations and their enforcement, even if it meant an increase in the cost of some consumer products. Eighteen percent would not, but a significant 27% were unsure. Those less likely to answer yes included lower earners (under \$50,000 – 49%), older residents 65+ (48%) and males (53%) in relation to females (58%).

In another new question, respondents were asked their opinion on having **greater protection and its perceived impact on jobs and the economy**.

Q10. “In your opinion, would having greater protection through regulations and their enforcement have a positive, negative or no impact on jobs and the economy?”

		Percent
	Positive	23%
	Negative	27%
	No impact	30%
	Don't know	20%

Results were mixed with 30% who responded that there would be no impact, 27% felt there would be negative implications and 23% said the effect would be positive, while 20% were undecided.

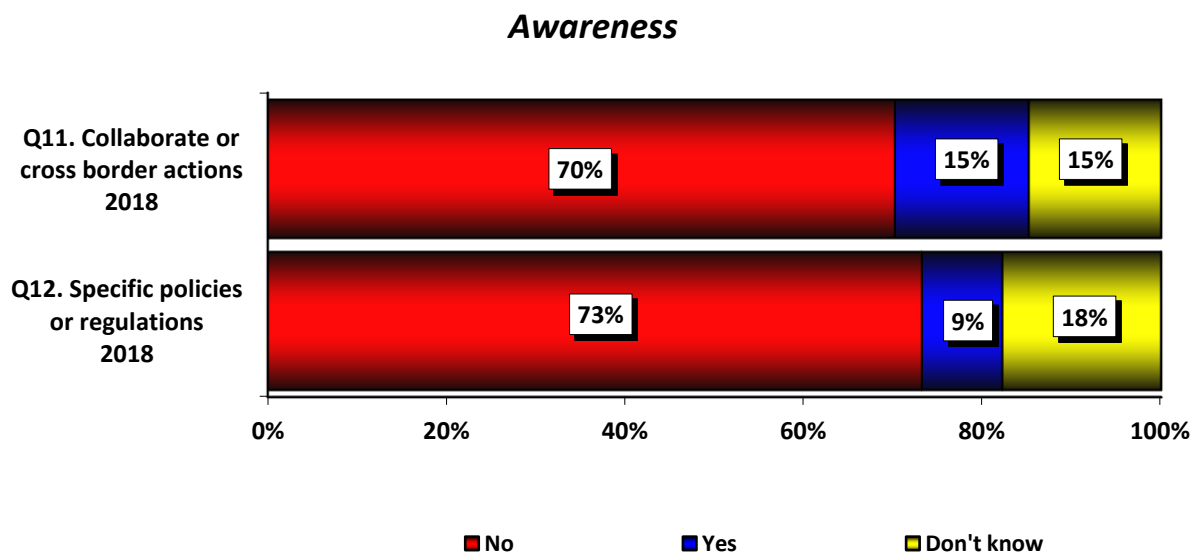
People who expressed liberal political viewpoints were most inclined to say positive effects (64%), conservatives negative effects (82%) and moderates no effect (52%) as well as do not know (34%). More females also said positive (28%) than males (18%), while men were more likely to name negative effects (33%) in relation to females (32%).

Indigenous or Métis (53%) and 18-34-year-olds (32%) had the highest numbers of positive responses, while participants 65+ years, the most negative (33%).

People earning \$100,000+ were split, having both the highest percentage of income cohorts saying positive (33%) and negative (38%). Middle-income earners were most inclined to mention no impact (\$50,000 to \$74,999 – 46% and \$75,000 to \$99,999 – 43%).

Geographically, Minnesota residents most named positive effects (37%), Wisconsin respondents negative (34%) and Pennsylvanians no impact (33%).

Survey participants were asked if they were aware of any **collaborative or cross-border actions** between the US and Canada that help to protect the Great Lakes and whether they were aware of **any specific policies or regulations** to protect the Great Lakes.



As in the 2015 survey, awareness (“yes”) remains consistently low for both areas, including collaborative or cross-border actions or efforts at 15% (14% in 2015) and especially for specific policies or regulations to protect the Great Lakes at only 9% (10% in 2015).

The 9% (N=393) of respondents who stated in Q12 that they were aware of specific policies or actions were then asked a follow-up question, (Q13) **which probed them to name which one or ones they could recall**. Allowing for multiple responses (N=412 provided) the most mentioned

were Clean Water Act by N=72 or 17%, followed by efforts to deal with invasive species by N=58 or 14%, and general cooperation between the US and Canada by N=37 or 9%. There were 16% or N=64 that could not remember or recall. The following is a list of other mentions.

• <i>Public education</i>	<i>N=31</i>	<i>8%</i>
• <i>Warnings about the dangers of dumping waste</i>	<i>N=30</i>	<i>7%</i>
• <i>Dealing with runoffs</i>	<i>N=27</i>	<i>7%</i>
• <i>Great Lakes Commission</i>	<i>N=21</i>	<i>5%</i>
• <i>The International Joint Commission</i>	<i>N=17</i>	<i>4%</i>
• <i>Great Lakes Protection Act</i>	<i>N=14</i>	<i>3%</i>
• <i>Advisories/notifications about water</i>	<i>N=13</i>	<i>3%</i>
• <i>Plan to restore Great Lakes/Great Lakes (Action) Plan</i>	<i>N=6</i>	<i>1%</i>
• <i>Clean water standards/safe drinking water</i>	<i>N=6</i>	<i>1%</i>
• <i>EPA</i>	<i>N=6</i>	<i>1%</i>
• <i>Algae blooms (Lake Erie cleanup of)</i>	<i>N=4</i>	<i>1%</i>
• <i>NAFTA</i>	<i>N=3</i>	<i>1%</i>
• <i>Dredging</i>	<i>N=1</i>	<i><.5%</i>
• <i>Underwater oil pipeline</i>	<i>N=1</i>	<i><.5%</i>
• <i>Anishinabek Nation plan / strategy</i>	<i>N=1</i>	<i><.5%</i>

Section 3. Household water

Source of drinking water

In the first question of this section, respondents were asked to recall unprompted or unaided, the source of their drinking water.

Q1. “Can you tell me the source of where your drinking water comes from?”

DRINKING WATER SOURCES	Percent
Groundwater sources (wells/springs, etc.)	33%
Lakes/local lakes/surface reservoir	21%
Don't know	19%
Lake Michigan	7%
Lake Ontario	6%
Lake Erie	4%
Municipal water treatment plant/water supply	3%
Local rivers	2%
Lake Superior	2%
Lake Huron	1%
Great Lakes (not specified)	1%
Georgian Bay	<.5%

One third of respondents (33%) identified groundwater sources such as wells or springs as their drinking water source (34% in 2015), followed by 21% (20% in 2015) that said local lakes and an additional 2% (unchanged) said local rivers. When combining results, the Great Lakes or individual Great Lakes were named by a total of 21% of respondents (19% in 2015). This included 7% that named Lake Michigan, 6% Lake Ontario, 4% Lake Erie, 2% Lake Superior, 1% Lake Huron and 1% the Great Lakes in general.

A total of 3% (1% in 2015) cited municipal water systems including water treatment plants, and 19% (23% in 2015) did not know or could not name the source of their drinking water.

Wastewater

Next, in another open-ended probe respondents were asked to name where they thought wastewater from their home usage goes or ends up.

Q2. “Can you tell me where the waste water from your home usage ultimately ends up?”

WASTEWATER DESTINATION	Percent
Don't know	28%
Septic system	16%
Wastewater treatment facilities	12%
Sewage plant	11%
Sewers (unspecified)	8%
Into local lakes, rivers, etc.	8%
Into the ground/groundwater sources	5%
Lake Michigan	3%
Runoff to farms/field beds	2%
Lake Ontario	2%
Lake Erie	2%
Lake Huron	1%
Lake Superior	1%
Into Great Lakes	1%
A reservoir	1%

The most respondents were unsure as to where their wastewater ends up as 28% answered do not know, which is lower than the 31% that didn't know in 2015. Specific answers to this question included a septic system by 16% (17% in 2015), followed by a wastewater treatment facility by 12% (11% in 2015), a sewage plant by 11% (13% in 2015), sewers by 8% (7% in 2015), into local lakes or rivers by 8% (7% in 2015) and into the ground or groundwater sources by 5% (4%

in 2015). A total of 10% (8% in 2015) named a Great Lake including Michigan (3%), Ontario (2%), Erie (2%), Huron (1%), Superior (1%) and a Great Lake in general (1%).

Water quality

In two new questions, respondents were asked to rate their level of agreement with two statements related to the quality of their drinking water. A 5-point rating scale was used, and the table below combines the total disagree (1-strongly disagree and 2-disagree) as well as the total agree (4-agree and 5-strongly agree) responses.

“Please rate your level of agreement with the following two statements related to drinking water in your community using a scale from one strongly disagree to five strongly agree.”

IMPACT AREAS	Total Disagree (1 and 2)	3-Neither agree nor disagree	Total Agree (4 and 5)	Don't know
Q3. I have access to clean, safe drinking water in my community	18%	17%	58%	7%
Q4. My community provides clean, safe drinking water and treats wastewater at an affordable rate for all community members	20%	20%	52%	8%

In total, 58% of residents agreed (33%) or strongly agreed (25%) that they have access to clean, safe drinking water in their community, compared to 18% that disagreed (11%) or strongly disagreed (7%); 17% neither agreed nor disagreed and 7% were unsure. Agreement was highest among Ontario respondents at 75%, followed by those from New York at 65% and Minnesota at 64%. Results were lower among residents in Indiana (58%), Ohio (56%), Illinois (54%), Wisconsin (53%) and Pennsylvania (53%), while poorest in Michigan where only 40% agreed. Among Indigenous or Métis respondents only 28% agreed, however when reviewing the results from Indigenous respondents who live on reserves, only 16% agreed that they have access to clean, safe drinking water.

With respect to the question as to communities providing clean, safe drinking water and treating wastewater at an affordable rate for all community members, total agreement dropped to 52% (30% agree and 22% strongly agree). Twenty percent disagreed (12% disagreed and 8% strongly disagreed), while 20% neither agreed nor disagreed and 8% did not know.

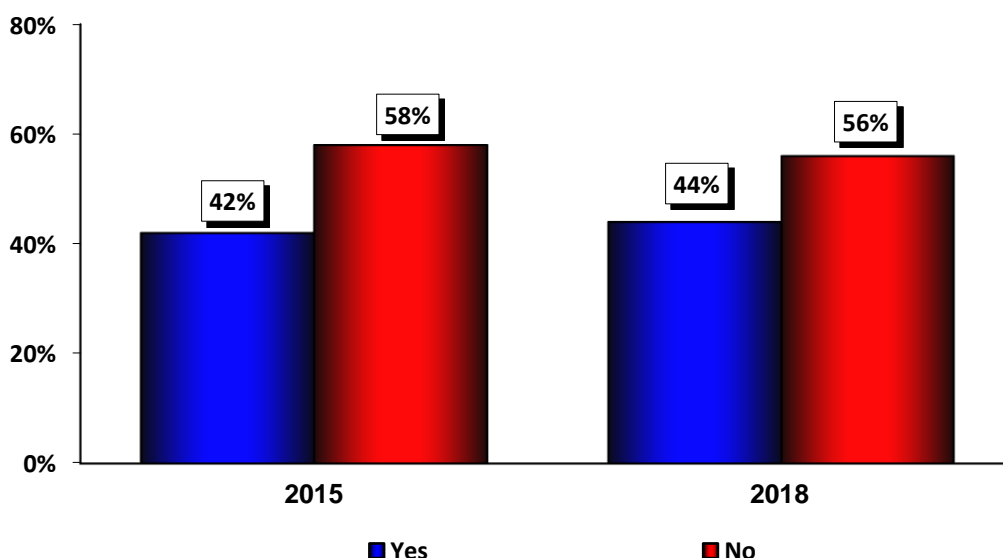
Section 4. Water Activities

The next section and series of questions dealt with usage of the Great Lakes for recreational purposes, including their importance for these activities.

Use of Great Lakes – recreational purposes

Respondents were first asked if they or a member of their household use the Great Lakes for activities related to leisure or recreation.

Q1. “Do you or any members of your household use the Great Lakes for leisure or recreational purposes?”



A total of 44% (N=1856) of those surveyed said they or a member of their residence use the Great Lakes for recreational purposes, up slightly (+2%) from 2015. The highest usage was among Indigenous or Métis respondents (60%), participants aged 45-54 (50%), 35-44 (47%) and 18-34 (46%) and larger households of five or more (54%), four (48%) and three (49%).

The 44% (N=1856) that have used a Great Lake for recreational purposes were asked an unaided follow-up question allowing for multiple responses to **name the types of activities that you engage in (Q2)**. When combining the total N=3476 responses, 35% related to swimming/beach visits, 27% boating, 20% fishing, 11% canoeing, kayaking, paddle boarding or wind surfing and 5% winter activities, including skating, cross country skiing and snowshoeing. One percent named leisure or scenic viewing and <1% could not remember or recall.

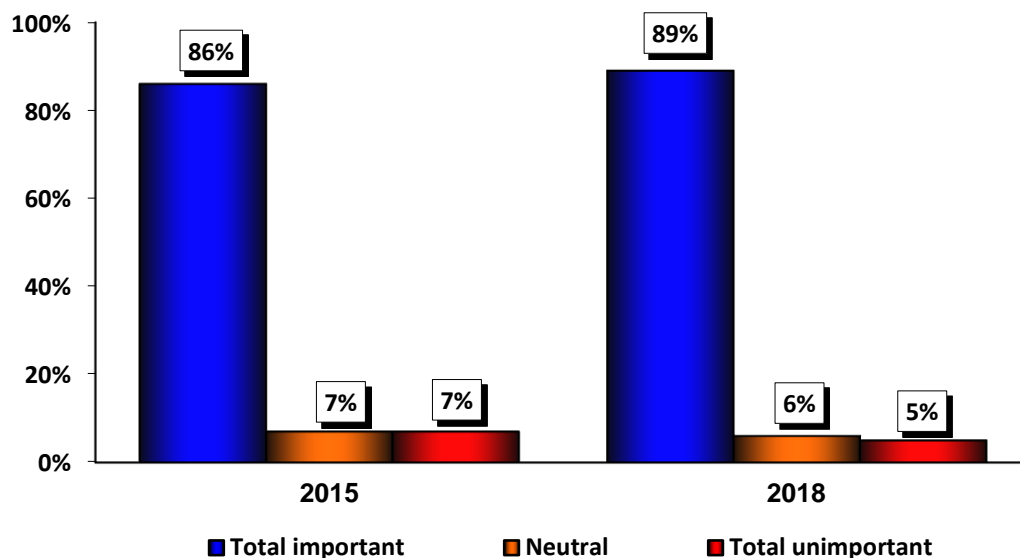
The 44% (N=1856) of Great Lakes users were then asked to state **when they or a household member last used or visited a Great Lake (Q3)**. Just under three-quarters or 73% (70% in 2015) said within the last six months, 7% (5% in 2015) in the past 12 months, 6% (8% in 2015) in the previous two years and 14% (17% in 2015) in a window of two years or more. When the

42% of leisure users were asked to **name the Great Lake that they or a household member last visited (Q4)**, 34% named Michigan, 22% Ontario, 19% Erie, 14% Superior, 7% Huron and 5% several or many.

Importance of Great Lakes and concerns – recreational purposes

Leisure visitors to the Great Lakes (N=1856) rated the importance of having the lakes available for recreational uses. A 5-point importance rating scale was used, with the graph below combining the total unimportant (1-not at all important and 2-not important) as well as the total important (4-important and 5-very important) responses.

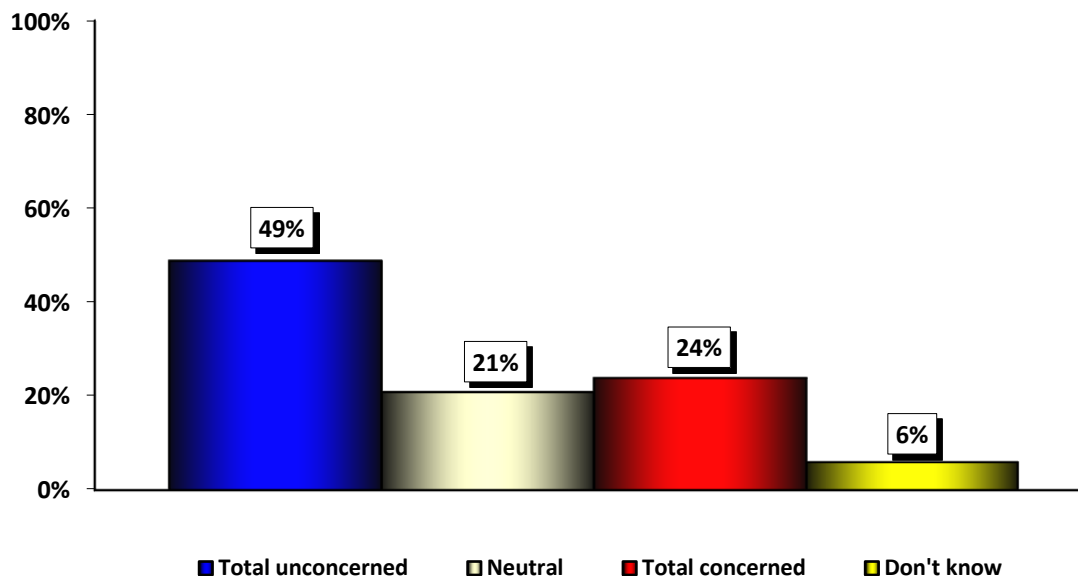
Q5. “How important is it to you that the Great Lakes are available for leisure or recreational purposes? Please respond using a scale from one, not at all important, to five for very important.”



Almost nine in ten or 89% said that it is very important (82%) or important (7%) to have the Great Lakes available for recreational purposes, 3% higher than in 2015. Only 5% claimed it was not at all important (2%) or not important (3%), while 6% provided a neutral answer of neither important nor unimportant.

The 44% (N=1856) who have used a Great Lake for recreational purposes were then asked to rate their level of concern with their local lakes or waterways in terms of being safe for recreational purposes. The following graph below combines the total unconcerned (1-not at all concerned and 2-not concerned) as well as the total concerned (4-concerned and 5-very concerned) responses.

Q6. “How concerned are you with the environmental health or water quality of your local lakes or waterways in terms of them being safe for access and recreational purposes? Please use a scale from one, not at all concerned, to five, very concerned.”



Almost half or 49% are unconcerned (21% not at all concerned and 28% not concerned) with the environmental health or water quality of their local lakes or waterways, while 24% are concerned (16%) or very concerned (8%). A total of 21% had a neutral opinion of neither concerned nor unconcerned, and 6% were unsure or did not know. Concern was highest in Michigan (35%), followed by Ohio (30%), Illinois (29%), New York (27%) and Pennsylvania (27%), while lower in Wisconsin (20%), Indiana (18%), Minnesota (16%) and Ontario (12%).

When asked (N=1856) how they **obtain local information about water, beach and fishing safety, including warnings or pollutant advisories (Q7)**, 37% named news or media releases, 27% websites (including government), 9% social media, 8% through word of mouth and 3% public notices (at site). There were 11% that said they do not obtain information and 5% answered do not know.

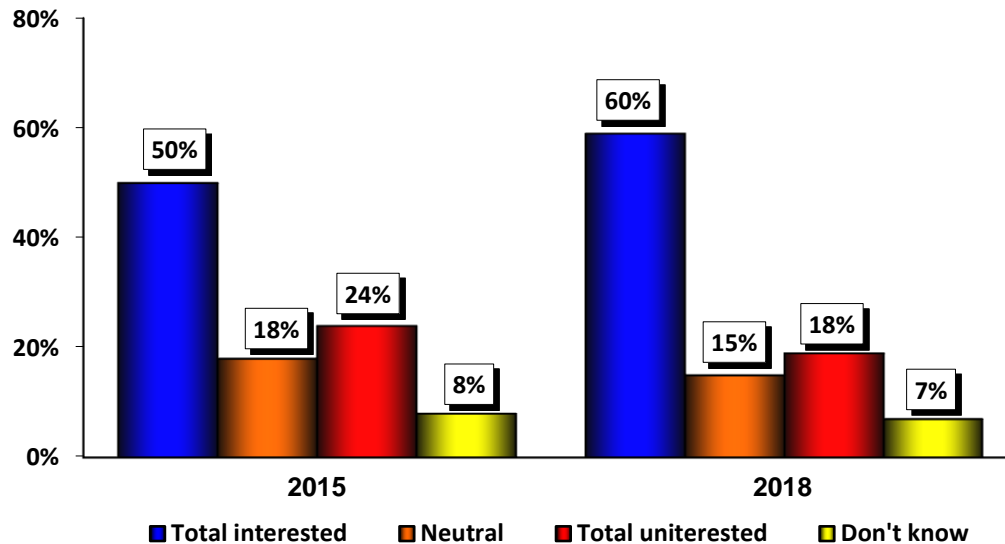
Section 5. Information interest and sources

Respondents were asked three questions in this section on information, including interest in receiving information, how they currently get it and their preferred sources.

Interest in Information

The following scaled question was asked to respondents about their interest in news and other information about issues affecting the Great Lakes. Results in this graph combine the results of very interested (5) and interested (4) as well as not at all interested (1) and not interested (2).

Q1. “How interested are you in news and other information related to issues affecting the Great Lakes? Please use a scale from one being not at all interested to five, very interested.”



Six in ten or 60% expressed interest with 35.4% being very interested and 24.4% interested, a +10% gain compared to the 2015 survey. Total disinterest was low at 18% (-6% compared with 2015), with 11.6% claiming that they were not at all interested and 6.6% not interested. There were 15% that were neutral or neither interested nor disinterested and 7% answered do not know. Those most likely to be interested in news and other information related to Great Lakes issues were most Metis respondents, younger residents 18-34 (68%) and 35-44 (60%), the politically liberal (67%) and citizens of Indiana (70%), Minnesota (65%), Ontario (65%) and Michigan (61%).

Information sources

All respondents were asked an open-ended question that allowed them to provide multiple answers about **where they currently get information about the Great Lakes and related environmental issues (Q2)**. When combining the N=7352 mentions provided, online or hard copy newspapers were named by 24% (26% in 2016), internet sources by 24% (22% in 2016), television by 16% (22% in 2015), social media by 14% (5% in 2015), radio by 9% (10% in 2015) and word of mouth by 5% (7% in 2015). Lesser named mentions included magazines (1%), environmental organizations (1%) and water bills or through utilities (<1%), while 6% were unsure or could not recall (7% in 2015).

In the final question of this section, another open probe that allowed for up to three responses asked about their **preferred sources to get information about the Great Lakes as well as**

related environmental issues (Q3). There were N=6103 answers provided, and the most cited mention was the internet at 29% (+4 over 2015), followed by newspapers by 19% (-1%), social media by 16% (+7%), television by 16% (-6%), radio by 7% (-1%) and email by 2% (+2%). Lower responses were provided for word of mouth (1%), environmental organizations (1%), magazines (<1%) and water bills or utilities (<1%). There were 8% (-1%) who did not know or were unsure.

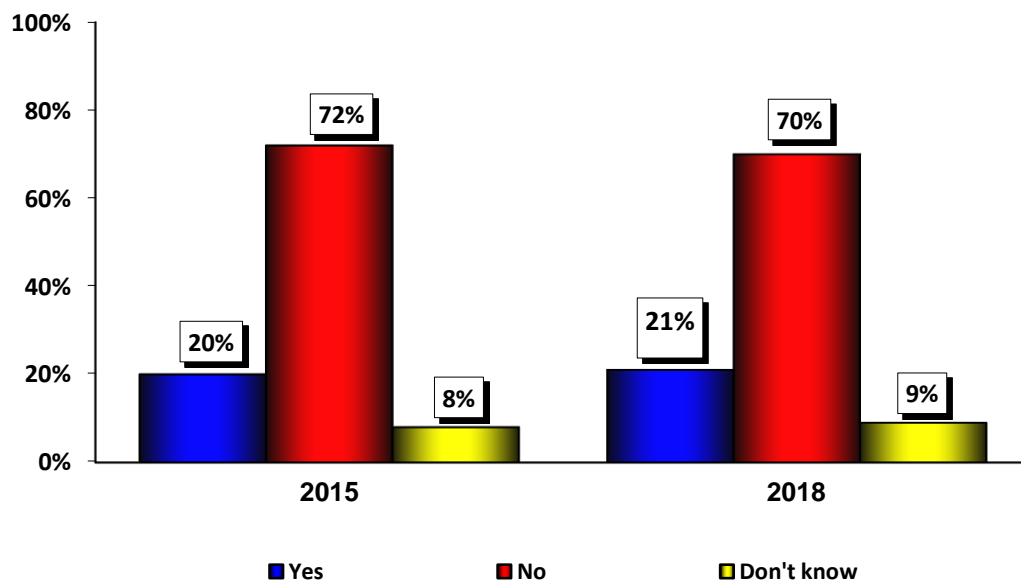
Social media was most named by 18-34-year olds (31%), the internet by 18-34 (34%) and 35-44 year olds (34%), newspapers by those 65+ (37%), while those in age cohorts from 45 to 64 tended to name the internet, newspapers and television in equal numbers (45-54: 26%, 23% and 18%, respectively, and 55-64: 28%, 22% and 19%, respectively).

Section 6. International Joint Commission

Questioning moved onto the topic of the International Joint Commission (IJC): awareness of the organization, the importance of having this or an organization like it, and its perceived role.

Awareness and perceived role

Q1. “Have you heard of or are you aware of the International Joint Commission (IJC)?”



A total of 21% (N=908) of respondents have heard of or were aware of the IJC – up slightly from 20% in 2015. The 21% or N=908 were asked a series of follow-up questions, starting with **what they perceive to be the IJC’s role (Q2)**. A total of 36% (37% in 2015) who were aware of the organization said that the IJC protects the Great Lakes, 30% (23% in 2015) that it helps the US and Canada cooperate in Great Lakes protection, 11% (12% in 2015) that it assists in cleaning up the lakes’ waters, and 5% (4% in 2015) that it ensures that legislation is in place for protection.

In total, 19% (24% in 2015) of those aware of the IJC could not recall a mention as it related to its role.

IJC and media

The 21% of respondents (N=908) that were aware of the IJC were then asked **if they have seen or heard anything in the media about the IJC's work in the Great Lakes (Q3)**. In total, 7% or N=65 (6% in 2015) said that they have seen or heard something, after which they were asked **what they have seen or heard (Q4)**. When the N=65 were asked what they had seen or heard, responses included: N=22 could not recall; N=8 that they are trying to protect the lakes; N=8 something in the media in general; N=6 water protection/safe drinking water/wastewater; N=5 consultations or hearings; N=5 general information/updates; N=4 a state of the lakes/water quality report or update; N=4 water levels; N=2 warnings or advisories; and N=1 new commissioners appointed.

In another question allowing for multiple responses, the N=44 that had seen or heard advertising were asked **from what sources they seen or heard this information (Q5)**. Television news was the most named by 29%, followed by online or print newspapers (28%), radio news (21%), the internet or websites (15%), social media (5%), the IJC website (1%) and word of mouth (1%).

Great Lakes Water Quality Agreement

In a new question, all survey respondents were asked if they have heard of or were aware of the Great Lakes Water Quality Agreement.

Q6. "Have you heard of or are you aware of the "Great Lakes Water Quality Agreement?"

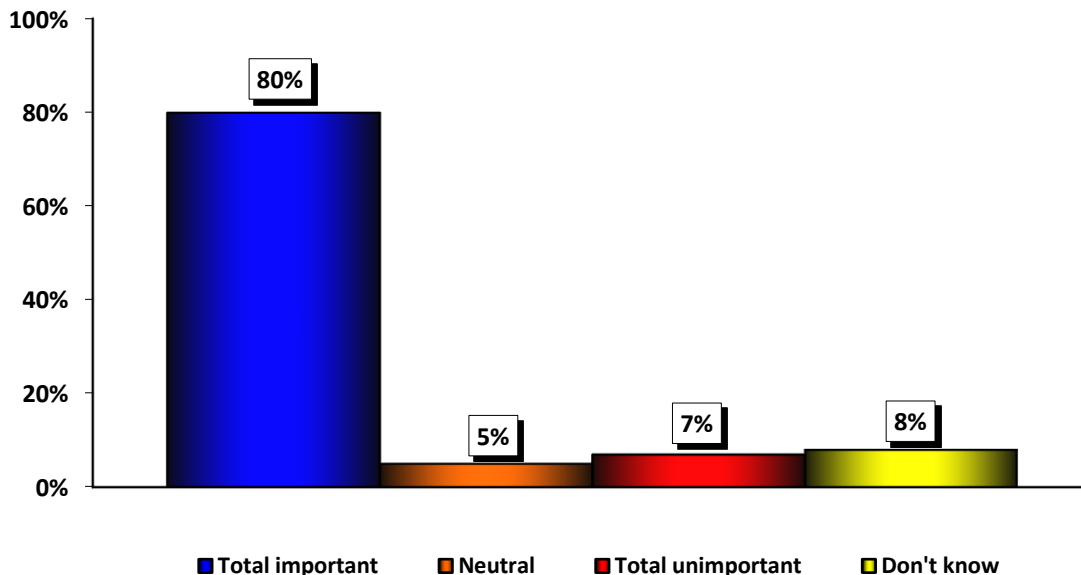
	Yes	15%
	No	79%
	Don't know	6%

In total, 15% said that they were aware of the agreement. The main demographic variance was a function of education, with university/college graduates responding as most aware (23%) of the agreement.

Importance of IJC

All survey respondents were asked about the importance of cross-border collaboration. Results for this question are not comparable with the previous survey as this indicator was only asked to those aware of the IJC in 2015.

Q7. “How important is it that the US and Canada work together on dealing with Great Lakes issues? Please respond using a scale from one not at all important to five very important.”



Eight in ten or 80% feel that it is important (13%) or very important (63%) for the United States and Canada to work together to deal with Great Lakes issues. Only 7% said it is not important (3%) or not at all important (4%), while 5% claimed it was neither important nor unimportant (neutral) and 8% were unsure.

The following preamble describing the role of the IJC was read to all survey respondents, after which they were asked three follow-up questions.

“The International Joint Commission is an independent binational organization established by the United States and Canada. The purpose of the Commission is to help prevent and resolve disputes about the use and quality of boundary waters affecting both countries. It also works to monitor progress on the Great Lakes Water Quality Agreement to restore and protect the lakes.”

IMPACT AREAS	1 and 2 Totally Unimportant		3-Neutral		4 and 5 Totally Important		Don't know	
	2015	2018	2015	2018	2015	2018	2015	2018
Q8. In your opinion, how important is it to have an organization like the IJC? Please use a scale from one, not at all important to five, very important	7%	6%	5%	4%	74%	78%	14%	12%
Q9. How important is it that the IJC be adequately funded in order to fulfill its objective?	5%	5%	8%	9%	65%	70%	22%	17%

Among all respondents, 78% said it is important (13%) or very important (65%) to have an organization like the IJC – an increase of 4% compared to 2015. Results were higher across all jurisdictions but slightly stronger in Ontario (80%). Findings were also higher for 18-34-year olds (81%) and those identifying as liberal (81%) as well as Indigenous / Métis (96%).

There was also an increase of +5% to 70% among respondents who agreed (15%) and strongly agreed (65%) that the IJC be adequately funded to fulfill its objective. While the unimportant and neutral (neither important nor unimportant) results were consistent, there was a significant -5% drop in the number of undecided responses or those saying they do not know.

In the final question on the IJC, an open-ended probe was asked to all respondents about **what they consider to be the most important role of the IJC or where it should focus its priorities for Great Lakes work (Q10)**. While 34% said they do not know or were unsure of where the organization needs to focus its energies, 34% stated that it should protect the quality of water. Other mentions included protecting the lakes from invasive species (7%), reducing industrial/agricultural pollution (6%), promoting cooperation between the United States and Canada (4%), ensuring fish stocks or species are protected, educating the public (4%) and punishing polluters (3%). Lesser citations included ensuring clean, safe drinking water (2%), dealing with algae (2%), upholding laws and regulations (2%), helping to provide more enforcement (1%) and monitoring water levels (1%).

Section 7. Value Statements

In the final section of the survey respondents were asked to rate their level of agreement on a scale from one, strongly disagree, to five, strongly agree, with eight value statements related to the Great Lakes. Results in this table combine the total agree results of strongly agree (5) and agree (4) as well as the total disagree results of strongly disagree (1) and disagree (2).

“I am now going to read a short list of statements and after each one please rate your level of agreement with each one using a scale from one strongly disagree to five strongly agree.”

AGREEMENT STATEMENTS	1 and 2 Totally Disagree		3-Neither Agree nor Disagree		4 and 5 Totally Agree		Don't know	
	2015	2018	2015	2018	2015	2018	2015	2018
Q1. Actions should be taken now to ensure the health and water quality of the Great Lakes for future generations	3%	2%	11%	9%	73%	77%	14%	12%
Q2. It is important to protect the Great Lakes water quality for the personal benefits that I receive	6%	6%	18%	15%	60%	65%	16%	14%
Q3. Great Lakes water quality should be protected for the benefit of people living in the Great Lakes basin	8%	6%	12%	11%	68%	72%	12%	11%
Q4. Great Lakes water quality should be protected for the benefit of fish and wildlife who depend on the lakes	5%	4%	4%	3%	76%	79%	15%	13%
Q5. The economy of the region will suffer if the Great Lakes are not healthy	2%	2%	7%	6%	76%	78%	15%	14%
Q6. The health of residents in the region will suffer without healthy Great Lakes	3%	2%	12%	11%	72%	74%	13%	14%
Q7. I am concerned about the health and water quality of the Great Lakes as a whole	9%	7%	25%	21%	53%	60%	13%	12%
Q8. I am most concerned about the health and water quality of the lake that is closest to me	3%	3%	13%	12%	74%	76%	10%	9%

The strongest level of agreement at 79% related to the need to protect the Great Lakes for the benefits of fish and wildlife, and that the region's economy will suffer (78%) if the Great Lakes are not healthy. As in 2015, the buy-in for these two areas continues to rate highest and the total agreement scores for each increased +2 and +3%, respectively. The third highest agreement score that follows closely at 77% relates to the belief that actions should be taken now to ensure the health and water quality of the Great Lakes for future generations – a +4% gain over 2015.

More than three-quarters or 76% are concerned with the Great Lake that is closest to them – the level of agreement with this statement is +2% higher than in the previous 2015 survey. While the lowest rated statement relates to the concern with the Great Lakes as a whole at 60%, there was a +5% increase in concern with the Great Lakes as a whole – to a six in ten majority buy-in.

More than seven in ten or 72% agreed that Great Lakes water quality should be protected for the benefit of people living in the Great Lakes basin – a 4% increase compared to 2015. Despite the generalized concern for the Great Lakes for the common good, the direct personal benefits of having healthy lakes is still less important to residents. A lower 65% agreed that the Great Lakes should be protected for the advantages that they receive, although this number is +5% higher than the 60% in 2015.

In short, residents have majority buy-in to all areas and there have been improvement gains across all categories. General ecological and economic concerns are high, and a strong majority wants the Great Lakes healthy for future generations. While it is not surprising that residents are still more concerned with the lake closest to them, they nonetheless are also concerned with the entire Great Lakes system.

Section 8. Summary

As in the baseline 2015 poll, the danger of pollution remains the biggest (unaided) concern among four in ten residents living the Great Lakes basin catchment area, as it relates to the environmental health and water quality of the Great Lakes. This includes the abstract concept of pollution as well as industrial pollution, including the petroleum industry and waste dumped into the lakes. Other key concerns among residents are the issues of invasive species and problems with algae.

With respect to specific threats facing the Great Lakes, invasive species continue to top the unaided list, followed by pollution from various sources or waste, algae and the impact of human population expansion. When specifically asked about dangers, invasive species and algae blooms rated highest, two areas that residents can easily identify with because they can be observed. The next highest in terms of perceived negative impact was municipal runoff, then the oil industry,

climate change, and extreme weather and its effects. Lower rated issues included the nuclear industry, wetland loss and farming.

There has been an increase (+7%) over 2015 in the number of residents that believe the environmental health and water quality of the Great Lakes is deteriorating, while a low number (16%) hold that things are improving. Survey participants believe the Great Lakes should be protected because they are seen as a valuable source of fresh drinking water and a valuable resource. Residents also want them to remain healthy for the sake of the environment, including fish and wildlife, the health of residents, and because of the benefits associated with recreational and economic activities.

A very strong majority or 88% feel that it is important or very important that the health and water quality of the Great Lakes be protected – a 3% increase over the 2015 survey period. There is also a sense of buy-in when it comes to current and future protection, as more than four in ten said it is everyone's responsibility or that of residents or individuals to protect the lakes. There was a split between those who named federal and state or provincial governments as those responsible for the health of the lakes.

This buy-in or ownership is further reinforced by eight in ten respondents, who hold the view that the individual or their household has an important or very important role to play in protecting Great Lakes health and water quality (+2 higher over 2015). When asked, residents most feel that they can help by conserving water, being aware of what they dispose down drains, staying educated or aware and to a lesser extent through activism, including engaging in forums or taking political actions such as lobbying/writing politicians or voting.

Very few or 5% (-5% less than in 2015) believe that there are too many regulations in place to protect the Great Lakes and a significant 53% (+7%) feel that there should be more regulations put in place. More than one-quarter were unsure. Further, 55% also said that they would be willing to have greater protection of the Great Lakes through regulations and their enforcement, even if it meant an increase the cost of some consumer products. However, results were equally divided on what impact (negative, positive, no impact or unsure) that more regulations would have on the economy. As in 2015, specific awareness of collaborative or cross-border actions or efforts and for specific policies or regulations to protect the Great Lakes remains low (15% and 9%, respectively).

Most respondents were able to name a source for their drinking water, including groundwater sources, local lakes and the Great Lakes, which were named by 21%. However, there was a higher uncertainty (28%) as to where they thought their wastewater goes. The top responses to this question included a septic system, followed by a wastewater treatment facility, a sewage plant, sewers and local lakes or rivers. Ten percent cited a Great Lake. When it came to

perceptions of their drinking water, 58% feel that they have access to clean drinking water but only slightly more than half or 52% feel that their community provides clean, safe drinking water and treats wastewater at an affordable rate for all community members. Results were very low among Michigan residents and especially among Indigenous respondents living on a reserve.

A significant number of residents have used the Great Lakes for recreational purposes (44%) and most have done so in the past six months (73%). Among users, a strong majority of 89% (+3%) feel it is important that the Great Lakes are available for recreational purposes. Almost one-quarter of survey participants are concerned with the environmental health or water quality of their local lakes or waterways in terms of their safety for access and recreational purposes.

There is strong demand or interest in news and other information related to issues affecting the Great Lakes by 59%, a +9% increase compared to the 2015 survey period. The internet or websites, online and print newspapers and social media are the preferred vehicles to get information – with millennials most preferring digital channels.

Awareness of the IJC remains consistent at 21% (+1%), while awareness of the Great Lakes Water Quality Agreement is 15%. On the perceived role of the IJC, a total of 36% (37% in 2015) of those aware of the organization said that the IJC protects the Great Lakes, 30% (23% in 2015) that it helps the United States and Canada cooperate in lake protection, 11% (12% in 2015) that it assists in cleaning up lake waters, and 5% (4% in 2015) that it ensures that legislation is in place for protection. In total, 19% (24% in 2015) of those aware of the IJC could not recall a mention as it related to its role.

Despite the low awareness of the IJC and cross-border collaborative actions on water, a strong eight in ten of all respondents feel it is important to have the United States and Canada cooperate on Great Lakes water issues. In addition, 78% (+4%) said it is important or very important to have the IJC and seven in ten (+5%) feel that it should be adequately funded to fulfill its objective. While approximately one-third do not know where the IJC should focus its energies, 34% identified protecting the quality of water. Other mentions included protecting the lakes from invasive species (7%), reducing industrial/agricultural pollution (6%), promoting cooperation between the United States and Canada (4%), ensuring fish stocks or species are protected, and educating the public (4%).

There is strong buy-in (79%) related to the need to protect the Great Lakes for the benefits of fish and wildlife and that the region's economy will suffer (78%) if the Great Lakes are not healthy. In addition, 77% feel that actions should be taken to ensure the health and water quality of the Great Lakes for future generations. There were increases in perception result for all three of these indicators over 2015 (+3%, +2% & +4%, respectively). Seventy-two percent (+4%) agreed that Great Lakes water quality should be protected for the benefit of people living in the Great Lakes

basin, but a lower 65% (+5%) agreed that the Great Lakes should be protected for the advantages that they receive. Seventy-six percent (+2%) are concerned with the lake that is closest to them and 60% are concerned with the Great Lakes as a whole. While the lowest rated statement relates to the concern with the Great Lakes as a whole at 60%, there was a +5% increase in concern with the Great Lakes as a whole – to a six in ten majority buy-in.

Concern and support for Great Lakes protection continues, and more residents now feel that the lakes' health and water quality are deteriorating. Results do reveal demographic variances, with younger respondents (especially millennials), people who expressed liberal political viewpoints and Indigenous peoples being most aware, concerned and in support of initiatives to protect the lakes. There are also geographic differences, with Michigan residents having higher concerns especially as it relates to drinking water, and Ontarians backing initiatives to protect the Great Lakes.

While awareness of the IJC is low, there is support in principal for the organization and for the role that it plays as it relates to the health and water quality of the Great Lakes. In addition, there is growing support among residents for obtaining information and a stronger sense that the individual can play a role in protecting the Great Lakes.

Results by question

Introduction: Great Lakes water quality concerns and issues

Q1. When thinking about the environmental health and water quality of the Great Lakes, what in your opinion are the most significant problems facing them?		
	Frequency	Percent
Don't know	1018	24.0
Pollution (in general)	816	19.2
Invasive species	734	17.3
Industrial pollution	485	11.4
Waste being dumped into the lakes	245	5.8
Algae/green algae/blooms	156	3.7
Water levels/fluctuations	146	3.4
Oil industry/spills/oil pipelines	130	3.1
Endangered species/fishing depleted in the lakes	123	2.9
Climate change/extreme weather	115	2.7
Drainage/runoff	106	2.5
Agricultural pollution/waste/runoff	55	1.3
Fracking	49	1.2
Acid rain	30	.7
Lack of regulations	22	.5
Mercury levels	15	.4
Government policy	5	.1
Total	4250	100.0

Q2. Can you name anything that you feel may pose a threat to the lakes and rivers that surround and feed into the Great Lakes? (MULTIPLE RESPONSES ACCEPTED)

	Responses	
	N	Percent
Invasive species (zebra mussels, Asian carp)	1312	25.6%
Don't know	866	16.9%
Pollution (in general)	618	12.1%
Industrial pollution/waste	369	7.2%
Garbage/waste	325	6.3%
Algae/green algae	255	5.0%
Population growth/urban sprawl	196	3.8%
Chemical pollution	134	2.6%
Pesticides	114	2.2%
Oil industry/spills/pipelines	95	1.9%
Agricultural pollution/waste/runoff	93	1.8%
Water levels/fluctuations	92	1.8%
Not enough conservation of water	82	1.6%
Climate change/extreme weather	82	1.6%
Runoff (in general)	76	1.5%
Fracking	72	1.4%
People/human populations	56	1.1%
Traffic on the water	55	1.1%
Illegal fishing/over fishing	53	1.0%
Mercury levels	43	.8%
Water being removed from the watershed	34	.7%
Lack of regulations/laws	27	.5%
Winter road salt	25	.5%
Tourism/recreational activities	19	.4%
Acid rain	18	.4%
Commercial vessels	15	.3%
Total	5126	100.0%

Q3. In your opinion, is the environmental health and water quality of the Great Lakes improving, deteriorating or staying about the same?

	Frequency	Percent
Improving	702	16.5
Deteriorating	1380	32.5
Staying the same	1226	28.8
Don't know	942	22.2
Total	4250	100.0

**Q4. Can you tell me why you think that the Great Lakes need to be protected?
(MULTIPLE RESPONSES ACCEPTED)**

	Responses	
	N	Percent
Drinking/ household water	910	19.1%
Valuable resource	863	18.1%
Don't know	812	17.0%
One of the few sources for freshwater	368	7.7%
For the fish/fishing	344	7.2%
Our health	270	5.7%
For the wildlife	261	5.5%
Important for the ecosystem/environment	258	5.4%
For recreational purposes (swimming, boating)	228	4.8%
Good for the economy	138	2.9%
Important for the future	124	2.6%
For future generations/children/grandchildren	86	1.8%
From development (residential, commercial, pipelines, etc.)	73	1.5%
It's the right thing to do/it's needed	31	.6%
Historic significance	8	.2%
Total	4774	100.0%

How much of an impact do you feel that each of the following have on the environmental health and water quality of the Great Lakes? Please use a scale from one, no negative impact at all to five, a very negative impact.

Q5. Climate change/Global warming

	Frequency	Percent
No impact	219	5.2
Low negative impact	417	9.8
Neutral	476	11.2
High negative impact	1303	30.7
Extreme impact	1776	41.8
Don't know	59	1.4
Total	4250	100.0

Q6. Flooding

	Frequency	Percent
No impact	239	5.6
Low negative impact	421	9.9
Neutral	514	12.1
High negative impact	1282	30.2
Extreme impact	1713	40.3
Don't know	81	1.9
Total	4250	100.0

Q7. Nuclear waste

	Frequency	Percent
No impact	219	5.2
Low negative impact	487	11.5
Neutral	484	11.4
High negative impact	1226	28.8
Extreme impact	1677	39.5
Don't know	157	3.7
Total	4250	100.0

Q8. Loss of wetlands		
	Frequency	Percent
No impact	235	5.5
Low negative impact	400	9.4
Neutral	536	12.6
High negative impact	1229	28.9
Extreme impact	1626	38.3
Don't know	224	5.3
Total	4250	100.0

Q9. Manure or animal waste runoff		
	Frequency	Percent
No impact	306	7.2
Low negative impact	544	12.8
Neutral	546	12.8
High negative impact	1182	27.8
Extreme impact	1621	38.1
Don't know	51	1.2
Total	4250	100.0

Q10. Municipal waste water runoff		
	Frequency	Percent
No impact	204	4.8
Low negative impact	396	9.3
Neutral	477	11.2
High negative impact	1258	29.6
Extreme impact	1855	43.6
Don't know	60	1.4
Total	4250	100.0

Q11. The impact of heavy rainstorms		
	Frequency	Percent
No impact	189	4.4
Low negative impact	390	9.2
Neutral	545	12.8
High negative impact	1253	29.5
Extreme impact	1820	42.8
Don't know	53	1.2
Total	4250	100.0

Q12. Algae blooms		
	Frequency	Percent
No impact	187	4.4
Low negative impact	375	8.8
Neutral	383	9.0
High negative impact	1338	31.5
Extreme impact	1892	44.5
Don't know	75	1.8
Total	4250	100.0

Q13. Invasive species such as zebra and quagga mussels, Asian carp		
	Frequency	Percent
No impact	175	4.1
Low negative impact	305	7.2
Neutral	347	8.2
High negative impact	1093	25.7
Extreme impact	2288	53.8
Don't know	42	1.0
Total	4250	100.0

Q14. The petroleum industry, such as pipelines, drilling, fracking		
	Frequency	Percent
No impact	213	5.0
Low negative impact	400	9.4
Neutral	476	11.2
High negative impact	1230	28.9
Extreme impact	1857	43.7
Don't know	74	1.7
Total	4250	100.0

Watershed Protection

The Great Lakes basin consists of the Great Lakes and the area of land and water that surrounds the lakes, and feeds into them from the states of Illinois, Indiana, Michigan, Minnesota, New York, Ohio, Pennsylvania and Wisconsin in the United States, and the province of Ontario in Canada.

Q1. How important is it that the health and water quality of the Great Lakes basin be protected?

	Frequency	Percent
1-not at all important	117	2.8
2-not important	130	3.1
3-neither important nor unimportant	162	3.8
4-important	330	7.8
5-very important	3390	79.8
Don't know	121	2.8
Total	4250	100.0

Q2. Who in your opinion is currently responsible for protecting the health and water quality of the Great Lakes basin?

	Frequency	Percent
Everyone/all	1659	39.0
Federal governments	991	23.3
State/provincial governments	771	18.1
Don't know	400	9.4
Residents/individuals	168	4.0
All levels of government	92	2.2
EPA	73	1.7
City/local government	66	1.6
Industry	30	.7
Total	4250	100.0

Q3. Who in your opinion should be responsible for protecting the health and water quality of the Great Lakes basin?

	Frequency	Percent
Everyone/all	1372	32.3
Federal governments	1197	28.2
State/provincial governments	908	21.4
Residents/individuals	230	5.4
Don't know	213	5.0
City/local government	167	3.9
All levels of government	92	2.2
EPA	46	1.1
Industry	25	.6
Total	4250	100.0

Q4. How important is the role of the individual or individual household in protecting the health and water quality of the Great Lakes basin? Please respond using a scale from one not at all important to five very important.

	Frequency	Percent
1-not at all important	153	3.6
2-not important	243	5.7
3-neither important nor unimportant	199	4.7
4-important	662	15.6
5-very important	2735	64.4
Don't know	258	6.1
Total	4250	100.0

Q5. What in your opinion, what can you or your household do to help protect the water quality of the Great Lakes basin? (MULTIPLE RESPONSES ACCEPTED)

	Responses	
	N	Percent
Don't know	1229	25.2%
Dispose of waste properly/don't dump down drain/recycle	879	18.0%
Conserve more water	829	17.0%
Keep informed/educated	549	11.3%
Political action (support, lobby, vote for party/write politicians)	425	8.7%
Pollute less	208	4.3%
Nothing	148	3.0%
Volunteer time/money to protection of Great Lakes	105	2.2%
Fighting against/protest developments	101	2.1%
Watch/limit household water runoff	99	2.0%
Fight to stop industrial pollution	73	1.5%
Follow the laws and regulations	38	.8%
Be environmentally aware	38	.8%
Take care of the natural environment	35	.7%
Reduce my carbon footprint	33	.7%
Continue doing what we are doing	32	.7%
Everyone needs to do their part	27	.6%
Be careful (not to pollute) around the water	23	.5%
Total	4871	100.0%

**Q6. What actions are you willing to do to help protect the water quality of the Great Lakes?
(MULTIPLE RESPONSES ACCEPTED)**

	Responses	
	N	Percent
Don't know	886	18.6%
Conserve water	842	17.7%
Dispose of waste properly/not down drain/recycle	737	15.5%
Political action (support, lobby, vote for party/politician)	536	11.3%
Anything I can	429	9.0%
Keep informed/educated	320	6.7%
Volunteer time/money to causes that will help	264	5.6%
Pollute less/use less waste	229	4.8%
Take care of the environment	148	3.1%
Nothing	125	2.6%
Fighting against/protest developments	122	2.6%
Don't use bottled water/depletes our lakes	34	.7%
Tell authorities about polluters	28	.6%
Continue what I am doing	25	.5%
Don't allow boating/fishing on them	20	.4%
Healthy living	11	.2%
Total	4756	100.0%

Q7a. Attend a public meeting organized by government or nongovernment organizations

	Frequency	Percent
Yes	1249	29.4
No	3001	70.6
Total	4250	100.0

Q7b. Engage in an online forum or group

	Frequency	Percent
Yes	1560	36.7
No	2690	63.3
Total	4250	100.0

Q7c. Contact a local elected representative or government official

	Frequency	Percent
Yes	1377	32.4
No	2873	67.6
Total	4250	100.0

Q7d. Conserve water at home by using less or installing water efficient fixtures

	Frequency	Percent
Yes	3154	74.2
No	1096	25.8
Total	4250	100.0

Q7e. Be aware of or be more careful about what you are disposing down household drains

	Frequency	Percent
Yes	3510	82.6
No	740	17.4
Total	4250	100.0

Q8. Thinking about the policies and regulations in place to protect the Great Lakes, do you feel there are too many, too few or just the right amount?

	Frequency	Percent
Too many	226	5.3
Too few	2267	53.3
Just the right amount	641	15.1
Don't know	1116	26.3
Total	4250	100.0

Q9. Would you be willing to have greater protection of the Great Lakes through regulations and their enforcement even if it means that it may increase the cost of certain consumer products?

	Frequency	Percent
Yes	2350	55.3
No	770	18.1
Don't know	1130	26.6
Total	4250	100.0

Q10. In your opinion, would having greater protection through regulations and their enforcement have a positive, negative or no impact on jobs and the economy?

	Frequency	Percent
Positive	988	23.2
Negative	1130	26.6
No impact	1289	30.3
Don't know	843	19.8
Total	4250	100.0

Q11. Are you aware of any collaborative or cross-border actions between the United States and Canada that help to protect the Great Lakes?

	Frequency	Percent
Yes	642	15.1
No	2973	70.0
Don't know	635	14.9
Total	4250	100.0

Q12. Are you aware of any specific policies or regulations to protect the Great Lakes?

	Frequency	Percent
Yes	393	9.2
No	3092	72.8
Don't know	765	18.0
Total	4250	100.0

[If answer yes, continue to Q13]

Q13. Which ones are you aware of? (MULTIPLE RESPONSES ACCEPTED)

	Responses	
	N	Percent
Clean Water Act	72	17.5%
Don't know	64	15.5%
Invasive species/plans for foreign species	58	14.1%
Cooperation between the United States and Canada	37	9.0%
Public education	31	7.5%
Warnings about the dangers of dumping waste	30	7.3%
Dealing with runoffs	27	6.6%
Great Lakes Commission	21	5.1%
The International Joint Commission	17	4.1%
Great Lakes Protection Act	14	3.4%
Advisories/notifications about water	13	3.2%
Plan to restore Great Lakes/Great Lakes (Action) Plan	6	1.5%
Clean water standards/safe drinking water	6	1.5%
EPA	6	1.5%
Algae blooms (Lake Erie cleanup of)	4	1.0%
NAFTA	3	.7%
Dredging	1	.2%
Underwater oil pipeline	1	.2%
Anishinabek Nation plan / strategy	1	.2%
Total	412	100.0%

Sources of water and drinking water

Q1. Can you tell me the source of where your drinking water comes from?		
	Frequency	Percent
Groundwater sources (wells/springs, etc.)	1393	32.8
Lakes/local lakes/surface reservoir	879	20.7
Don't know	825	19.4
Lake Michigan	302	7.1
Lake Ontario	266	6.3
Lake Erie	157	3.7
Municipal water treatment plant/water supply	148	3.5
Local rivers	101	2.4
Lake Superior	100	2.4
Lake Huron	44	1.0
Great Lakes (not specified)	32	.8
Georgian Bay	3	.1
Total	4250	100.0

Q2. Can you tell me where the wastewater from your home usage ultimately ends up?		
	Frequency	Percent
Don't know	1194	28.1
Septic system	692	16.3
Wastewater treatment facilities	518	12.2
Sewage plant	484	11.4
Sewers (unspecified)	323	7.6
Into local lakes, rivers, etc.	321	7.6
Into the ground/groundwater sources	215	5.1
Lake Michigan	114	2.7
Runoff to farms/field beds	94	2.2
Lake Ontario	88	2.1
Lake Erie	68	1.6
Lake Huron	41	1.0
Lake Superior	38	.9
Into Great Lakes	31	.7
A reservoir	29	.7
Total	4250	100.0

Please rate your level of agreement with the following two statements related to drinking water in your community using a scale from one strongly disagree to five strongly agree.

Q3. I have access to clean, safe drinking water in my community

	Frequency	Percent
1-strongly disagree	308	7.2
2-disagree	465	10.9
3-neither agree nor disagree	730	17.2
4-agree	1401	33.0
5-strongly agree	1053	24.8
Don't know	293	6.9
Total	4250	100.0

Q4. My community provides clean, safe drinking water and treats wastewater at an affordable rate for all community members

	Frequency	Percent
1-strongly disagree	335	7.9
2-disagree	507	11.9
3-neither agree nor disagree	864	20.3
4-agree	1285	30.2
5-strongly agree	932	21.9
Don't know	327	7.7
Total	4250	100.0

Recreational Water Activities

Q1. Do you or any members of your household use the Great Lakes for leisure or recreational purposes?

	Frequency	Percent
Yes	1856	43.7
No	2394	56.3
Total	4250	100.0

IF YES ASK Q2/ NO GO TO NEXT SECTION

Q2. What types of activities do you engage in? (MULTIPLE RESPONSES ACCEPTED)

	Responses	
	N	Percent
Swimming/beach visits	1221	35.1%
Boating	947	27.2%
Fishing/ice fishing	687	19.8%
Canoeing/kayaking/windsurfing/paddle boarding	375	10.8%
Winter activities (skiing, skating, snow shoeing, sleds)	188	5.4%
Scenic viewing/recreational (e.g. picnicking, bird watching)	35	1.0%
Don't know	23	.7%
Total	3476	100.0%

Q3. When was the last time that you or a member of your household visited a Great Lake for recreational or leisure purposes?

	Frequency	Percent
Within last 6 months	1352	72.8
Within last 12 months	134	7.2
One - two years	109	5.9
Two or more years ago	261	14.1
Total	1856	100.0

Q4. What lakes did you or a member of your household visit for recreational or leisure purposes?

	Frequency	Percent
Lake Michigan	634	34.2
Lake Ontario	404	21.8
Lake Erie	349	18.8
Lake Superior	252	13.6
Lake Huron	126	6.8
Several/Many/All	91	4.9
Total	1856	100.0

Q5. How important is it to you that the Great Lakes are available for leisure or recreational purposes? Please respond using a scale from one, not at all important to five, very important.

	Frequency	Percent
1-not at all important	47	2.5
2-not important	54	2.9
3-neither important nor unimportant	113	6.1
4-important	126	6.8
5-very important	1516	81.7
Total	1856	100.0

Q6. How concerned are you with the environmental health or water quality of your local lakes or waterways in terms of being safe for access and recreational purposes?

	Frequency	Percent
Not at all concerned	390	21.0
Not concerned	513	27.6
Neither concerned nor unconcerned	387	20.9
Concerned	300	16.2
Very concerned	154	8.3
Don't know	112	6.0
Total	1856	100.0

Q7. How do you obtain local information about water, beach and fishing safety, including warnings or pollutant advisories?

	Frequency	Percent
Media releases/advisories	682	36.7
Websites (government)	506	27.3
Do not obtain	197	10.6
Social media	175	9.4
Word of mouth/from others	146	7.9
Don't know	92	5.0
Public notices	58	3.1
Total	1856	100.0

Information Sources

Q1. How interested are you in news and other information related to issues affecting the Great Lakes? Please use a scale from one, not at all interested to five, very interested.

	Frequency	Percent
1-not at all interested	492	11.6
2-not interested	280	6.6
3-neither interested nor uninterested	641	15.1
4-interested	1038	24.4
5-very interested	1506	35.4
Don't know	293	6.9
Total	4250	100.0

Q2. From what sources do you get information about the Great Lakes and related environmental issues? (MULTIPLE RESPONSES ACCEPTED)

	Responses	
	N	Percent
Internet (in general)	1771	24.1%
Newspapers (online or print)	1750	23.8%
Television	1148	15.6%
Social media	1055	14.3%
Radio	690	9.4%
Don't know	411	5.6%
Word of mouth	391	5.3%
Environmental organizations	53	.7%
Magazines	44	.6%
Water bills/utilities	39	.5%
Total	7352	100.0%

Q3. What are your preferred sources to get information about the Great Lakes and related environmental issues? (MULTIPLE RESPONSES ACCEPTED)

	Responses	
	N	Percent
Internet (in general)	1771	29.0%
Newspapers (online or print)	1180	19.3%
Social media	971	15.9%
Television	963	15.8%
Don't know	507	8.3%
Radio	403	6.6%
Email	145	2.4%
Word of mouth	80	1.3%
Environmental organizations	52	.9%
Water bill / utilities	21	.3%
Magazines	10	.2%
Total	6103	100.0%

International Joint Commission

Q1. Have you heard of or are you aware of the International Joint Commission (IJC)?

	Frequency	Percent
Yes	908	21.4
No	2947	69.3
Don't know	395	9.3
Total	4250	100.0

Q2. What in your opinion is the role of the IJC?

	Frequency	Valid Percent
To protect the lakes	322	35.5
To help both countries cooperate in protecting the lakes	275	30.3
Don't know	161	17.7
Help to clean up the Great Lakes	102	11.2
To ensure there are laws to protect the lakes	48	5.3
Total	908	100.0

Q3. Have you seen or heard anything in the media about the IJC's work in the Great Lakes?

	Frequency	Percent
Yes	65	7.2
No	802	88.3
Don't know	41	4.5
Total	908	100.0

Q4. What have you seen or heard?

	Frequency	Valid Percent
Don't know	22	33.8
Something in the media	8	12.3
They are trying to protect the lakes	8	12.3
Water protection/safe drinking water/wastewater	6	9.2
General information/updates	5	7.7
Consultations/hearings	5	7.7
State of the lakes/water quality report or update	4	6.2
Water levels	4	6.2
Warnings or advisories	2	3.1
New commissioners	1	1.5
Total	65	100.0

**Q5. From what sources have seen or heard this information?
(MULTIPLE RESPONSES ACCEPTED)**

	Responses	
	N	Percent
Television news	34	29.1%
Newspapers (online or print) news	33	28.2%
Radio news	24	20.5%
Internet (in general)	18	15.4%
Social media	6	5.1%
IJC website	1	.9%
Word of mouth	1	.9%
Total	117	100.0%

Q6. Have you heard of or are you aware of the "Great Lakes Water Quality Agreement?"

	Frequency	Percent
Yes	630	14.8
No	3354	78.9
Don't know	266	6.3
Total	4250	100.0

Q7. How important is it that the United States and Canada work together on dealing with Great Lakes issues? Please respond using a scale from one, not at all important to five, very important.

	Frequency	Percent
1-not at all important	173	4.1
2-not important	112	2.6
3-neither important nor unimportant	232	5.5
4-important	554	13.0
5-very important	2827	66.5
Don't know	352	8.3
Total	4250	100.0

The International Joint Commission is an independent binational organization established by the United States and Canada. The purpose of the Commission is to help prevent and resolve disputes about the use and quality of boundary waters affecting both countries. It also works to monitor progress on the Great Lakes Water Agreement to restore and protect the lakes.

Q8. In your opinion, how important is it to have an organization like the IJC? Please use a scale from one, not at all important to five, very important.

	Frequency	Percent
1-not at all important	174	4.1
2-not important	100	2.4
3-neither important nor unimportant	157	3.7
4-important	536	12.6
5-very important	2757	64.9
Don't know	526	12.4
Total	4250	100.0

Q9. How important is it that the IJC be adequately funded in order to fulfill its objective?

	Frequency	Percent
1-not at all important	81	1.9
2-not important	126	3.0
3-neither important nor unimportant	366	8.6
4-important	641	15.1
5-very important	2324	54.7
Don't know	712	16.8
Total	4250	100.0

Q10. What do you consider to be the most important role of the IJC, in other words, where should it focus its priorities in its Great Lakes work?

	Frequency	Percent
Don't know	1429	33.6
Helping to protect the quality of the water	1332	31.3
Help protect the lakes from invasive species	284	6.7
Help reduce industrial/agricultural pollution	260	6.1
Cooperation between the United States and Canada	180	4.2
Ensure species are protected/fish stocks	169	4.0
Educate the public	153	3.6
Punish those that are polluting the lakes	115	2.7
Ensure clean/safe drinking water	92	2.2
Deal with algae	67	1.6
To uphold the laws and regulations	65	1.5
Watching the water levels	61	1.4
Need more enforcement	43	1.0
Total	4250	100.0

Value Statements

I am now going to read a short list of statements and after each one please rate your level of agreement with each one, using a scale from one, strongly disagree to five, strongly agree.

Q1. Actions should be taken now to ensure the health and water quality of the Great Lakes for future generations

	Frequency	Percent
1-strongly disagree	51	1.2
2-disagree	37	.9
3-neither agree nor disagree	397	9.3
4-agree	457	10.8
5-strongly agree	2786	65.6
Don't know	522	12.3
Total	4250	100.0

Q2. It is important to protect the Great Lakes water quality for the personal benefits that I receive

	Frequency	Percent
1-strongly disagree	52	1.2
2-disagree	193	4.5
3-neither agree nor disagree	654	15.4
4-agree	549	12.9
5-strongly agree	2198	51.7
Don't know	604	14.2
Total	4250	100.0

Q3. The Great Lakes water quality should be protected for the benefit of people living in the Great Lakes basin

	Frequency	Percent
1-strongly disagree	68	1.6
2-disagree	194	4.6
3-neither agree nor disagree	452	10.6
4-agree	687	16.2
5-strongly agree	2373	55.8
Don't know	476	11.2
Total	4250	100.0

Q4. The Great Lakes water quality should be protected for the benefit of fish and wildlife who depend on the lakes

	Frequency	Percent
1-strongly disagree	95	2.2
2-disagree	91	2.1
3-neither agree nor disagree	141	3.3
4-agree	523	12.3
5-strongly agree	2830	66.6
Don't know	570	13.4
Total	4250	100.0

Q5. The economy of the region will suffer if the Great Lakes are not healthy

	Frequency	Percent
1-strongly disagree	52	1.2
2-disagree	59	1.4
3-neither agree nor disagree	263	6.2
4-agree	842	19.8
5-strongly agree	2458	57.8
Don't know	576	13.6
Total	4250	100.0

Q6. The health of residents in the region will suffer without healthy Great Lakes

	Frequency	Percent
1-strongly disagree	36	.8
2-disagree	70	1.6
3-neither agree nor disagree	474	11.2
4-agree	746	17.6
5-strongly agree	2409	56.7
Don't know	515	12.1
Total	4250	100.0

Q7. I am concerned about the health and water quality of the Great Lakes as a whole

	Frequency	Percent
1-strongly disagree	122	2.9
2-disagree	184	4.3
3-neither agree nor disagree	909	21.4
4-agree	759	17.9
5-strongly agree	1767	41.6
Don't know	509	12.0
Total	4250	100.0

Q8. I am most concerned about the health and water quality of the lake that is closest to me

	Frequency	Percent
1-strongly disagree	81	1.9
2-disagree	36	.8
3-neither agree nor disagree	521	12.3
4-agree	852	20.0
5-strongly agree	2363	55.6
Don't know	397	9.3
Total	4250	100.0

Demographics

The final few questions are of a personal nature and involve collecting demographic information.
Please be assured that this information will remain strictly confidential and
will be used for statistical purposes only.

D1. Which of the following age groups may I place you in?

	Frequency	Percent
18-34	1268	29.8
35-44	907	21.3
45-54	823	19.4
55-64	543	12.8
65 or older	709	16.7
Total	4250	100.0

D2. What is the highest level of education that you have completed?

	Frequency	Percent
Some high school or less	284	6.7
Graduated high school	601	14.1
Some post-secondary (college, university)	1029	24.2
Graduated university/college	1986	46.7
Don't know / refused	350	8.2
Total	4250	100.0

D3. What is your combined family income?

	Frequency	Percent
Less than \$50,000	978	23.0
\$50,000 to \$74,999	755	17.8
\$75,000 to \$99,999	381	9.0
\$100,000 or more	837	19.7
Don't know / refused	1299	30.6
Total	4250	100.0

D4. Do you identify as Indigenous, (CDA-First Nations) (US-Native American/Tribes) or Métis?

	Frequency	Percent
Yes INDIGENOUS	283	6.7
Yes Metis	17	.4
No	3950	92.9
Total	4250	100.0

IF YES INDIGENOUS AND CANADIAN ASK D5 / YES INDIGENOUS AND AMERICAN GO TO D6 /
ALL OTHERS GO TO D8

D5. Are you a Status Indian (Registered or Treaty Indian as defined by the Indian Act of Canada)?

	Frequency	Percent
Yes STATUS	58	81.7
No	13	18.3
Total	71	100.0

D6. Are you enrolled or not enrolled?

	Frequency	Percent
Enrolled	182	85.8
Not enrolled	30	14.2
Total	212	100.0

D7. Do you live on or off Reserve?

	Frequency	Percent
On	202	71.4
Off	81	28.6
Total	283	100.0

D8. How many people live at this household?

	Frequency	Percent
One	846	19.9
Two	2020	47.5
Three	424	10.0
Four	351	8.3
Five or more	232	5.5
Don't know/refused	377	8.9
Total	4250	100.0

D9. How long have you lived in a Great Lakes area community?

	Frequency	Percent
Less than 5 years	334	7.9
5-9	445	10.5
10+	3253	76.5
Don't know	218	5.1
Total	4250	100.0

D10. Finally, do you consider yourself to be politically conservative, liberal or moderate?

	Frequency	Percent
Conservative	1229	28.9
Liberal	1360	32.0
Moderate	1312	30.9
Don't know	349	8.2
Total	4250	100.0

D6. Gender

	Frequency	Percent
Male	2048	48.2
Female	2202	51.8
Total	4250	100.0