



ILLINOIS
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SURVEY



Public Perceptions of Water Quality in Illinois: A Report to the Lumpkin Family Foundation



Craig A. Miller, Ph.D.
Program Leader and Principal Investigator
Human Dimensions Research Program
Illinois Natural History Survey

Report prepared by
Craig A. Miller, Ph.D.,
Christopher B. Colligan,
Linda K. Campbell,
and Ashley Peterson

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Public Attitudes Toward Water Quality in Illinois

Summary

A survey of residents of Illinois and county policy-makers in east-central Illinois was conducted during spring 2003. Illinois residents were stratified by those residing in counties served by the Lumpkin Family Foundation and the remainder of the state. Response rates were 49% for residents of counties in the Lumpkin Foundation area of focus, 43% from residents of the remaining counties in Illinois, and 44% from county policymakers. A summary of other results is as follows:

- Water quality is a very important issue among Illinois residents, rated as the issue of highest importance by 59% of public respondents out of a list of 10 community issues.
- Illinois residents are concerned about fertilizer, pesticide, and herbicide contaminants in their drinking water, and this concern is higher among residents in east-central Illinois than other regions of the state.
- Contaminants in runoff from agriculture, specifically fertilizers, pesticide, and herbicide residue are viewed as the greatest threat to surface water by Illinois citizens.
- Residents from counties served by the Lumpkin Family Foundation are more concerned about chemicals from agriculture contaminating water in their area and the state than are residents from the remainder of the state.
- Members of the public view chemical contaminants in water as a greater threat than do county policy-makers.

- Significant differences in attitudes toward water protection, regulation, and enforcement were found in 11 (71%) of the 15 statements measuring attitudes. A twelfth item produced difference, though not statistically significant.
- Illinois residents want greater protection of water by the state of Illinois.
- Respondents from the public feel the Clean Water Act needs to be strengthened.

In general, members of the public are more concerned about water quality than county decision-makers. Citizens of Illinois are knowledgeable about their water supplies and want to see these supplies protected.

Introduction

Water quality is an issue of increasing importance throughout North America. Public concerns over nitrate, pesticide, and other chemical contaminants continue to increase, and in many regions are beginning to influence public policy (Lichenberg and Zimmerman, 1999; Napier and Tucker, 2001; Kaplowitz and Kerr, 2003). Changes in agriculture practices and landuse, including increased urban sprawl, concern people in all regions of the nation. In a recent survey, 90% of Illinois residents reported water quality as the number one issue facing their community (McDonald, Miller, and Stewart, 2003). Issues affecting water quality and supply promise to dominate public policy debates in coming years, especially in regions where agriculture or urban sprawl dominate the landscape.

The purpose of this study was to investigate public perceptions of water quality in Illinois and determine perceived risks of contaminants to surface water and domestic water supplies. A second intention of this study was to compare attitudes toward water issues held by members of the public with those of county policy-makers. Associated with these inquiries was the question of differing attitudes between residents of those counties served by the Lumpkin Family Foundation and residents of the remaining Illinois counties.

Methods

Two objectives of this study determined the sampling methods employed. The first objective was to determine attitudes of members of the public toward water quality issues in general, and specifically of residents from counties served by the Lumpkin Family Foundation. The second objective was to identify attitudes toward water quality held by members of various county-level governing boards in the counties served by the Lumpkin Family Foundation. These governing boards included: county boards, soil and water conservation district boards, regional planning commissions, drainage district boards, county forest preserve boards, and county park districts.

Sampling

Two separate sampling frames were utilized for this study. Study participants for the general public portion of the study were drawn by Survey Sampling, Inc. (Fairfield, CN) from single-family households listed in public telephone directories. From this sample frame 1,000 individuals were selected from counties served by the Lumpkin Family Foundation (Appendix A) and 2,000 from the remainder of the state of Illinois. County policy-makers presented a more difficult problem, as no central sample frame containing names and addresses existed. To ensure that county policy-makers were randomly sampled and adequately represented, names and addresses of individuals serving on the boards and commissions representing county policy-makers were requested from the offices of county commissioners and courthouses in each county served by the Lumpkin Family Foundation. As numbers of board members, committee

members, and others serving on these boards and committees differed from one another, no systematic random sampling procedure was applicable across all boards and committees. Where lists exceeded 20 members, 6-8 were randomly selected, from lists with 10-19 members 5 were randomly sampled, and all members were selected from lists having less than 10 members. In this fashion, a total sample of 375 county policy-makers was selected (Appendix B).

Questionnaire Design

The questionnaire was designed to determine Illinois citizens' perceptions of water quality compared to other community issues, perceptions of drinking water quality, threats to water quality both in the area where they live and in Illinois as a whole, perceived threats to surface water in their area and Illinois, and attitudes toward water regulations, contaminants, wildlife, and the relationship between water quality and economic growth. The questionnaire was reviewed by representatives of the Lumpkin Family Foundation and specialists in water policy and regulations (Appendices C and D).

Survey Questionnaire Mailings

Individuals selected as a participant in the study were mailed a cover letter explaining the purpose of the study, survey questionnaire, and a stamped return envelope during the spring of 2003. Each individual listed on one of the two mailing lists was assigned a unique numerical code that was used to identify the person on the particular mailing list; the participant's name did not appear on the questionnaire. As questionnaires were returned, respondents were deleted from the lists by use of the

numeric code identifier. After 10 days following the mailing of the survey questionnaire, a postcard reminder was mailed to all nonrespondents. Ten days following the postcard reminder, a second copy of the survey questionnaire, cover letter, and stamped return envelope was mailed to nonrespondents. This procedure of questionnaire mailing followed 10 days later by a postcard reminder was conducted three times for participants in both the public and county policy-makers groups. Detailed description of the mailing protocol employed in this study may be found in Dillman (1978).

Data Analysis

Responses to all questionnaire items were numerically coded prior to collecting data. Data were entered into a computer database using SPSS 10.0. Respondents were stratified by one of 3 groups: county policy-makers, residents of counties served by the Lumpkin Family Foundation, and residents of remaining counties in Illinois. Response types ranged from bivariate (“Yes/No”), rankings, and numeric scale items.

Questionnaire items that measured attitudes through a Likert scale (a 7-point scale where 1 = “Strongly Disagree” and 7 = “Strongly Agree”) were analyzed using Principal Components Factor Analysis to determine grouping of variables. In addition, responses from policy-makers, residents of counties served by the Lumpkin Family Foundation, and residents of remaining counties in Illinois were stratified for Likert scale statements measuring attitudes toward water issues. These responses were analyzed using one-way Analysis of Variance (ANOVA) with Bonferroni post hoc tests to determine which groups differed from the others. Other statistical analyses included K-means Cluster Analysis, Cronbach’s alpha reliability tests, and Chi-square where appropriate.

Results and Discussion

Of the 3,000 names on the initial general public mailing list, 206 were deleted due to unusable or incomplete addresses, or because the individual was deceased. A total of 1,206 (43%) questionnaires were received from the general public sample. We received 444 (49%) questionnaires from the subsample of east-central Illinois residents and 762 (43%) from the group that comprised the remainder of the state. From the initial 375 policy-makers in the sample, 6 were deleted due to unusable addresses, and 158 (43%) questionnaires were received from this group.

Water Sources

Most respondents (96% public, 99% policy-makers) were aware of the sources for their water. The majority of respondents (52%) from the policy-makers received their water from wells, whereas most (82%) of individuals from the public group were on municipal water sources (Figure 1). Of the policy-makers on municipal water systems, most (64%) were supplied from underground aquifers, 33% from surface water systems (dams, reservoirs, lakes, or rivers), with 3% not sure where their water originated. A majority (55%) of respondents from the public group on municipal systems reported they received their water from surface water systems, 19% from underground aquifers, and 25% were unsure of their water sources. Majorities from both groups (80% policy-makers, 65% public) rated the quality of their drinking water as “good” to “excellent” (Figure 2). Problems with tap water cited most frequently were iron or “hard” water, calcium, and sediments (Table 1).

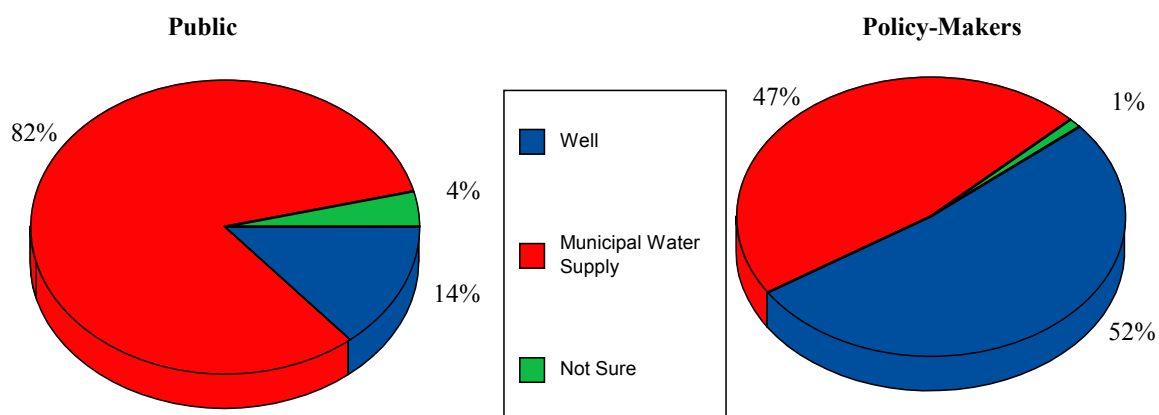


Figure 1. Sources of domestic water supply, by survey group.

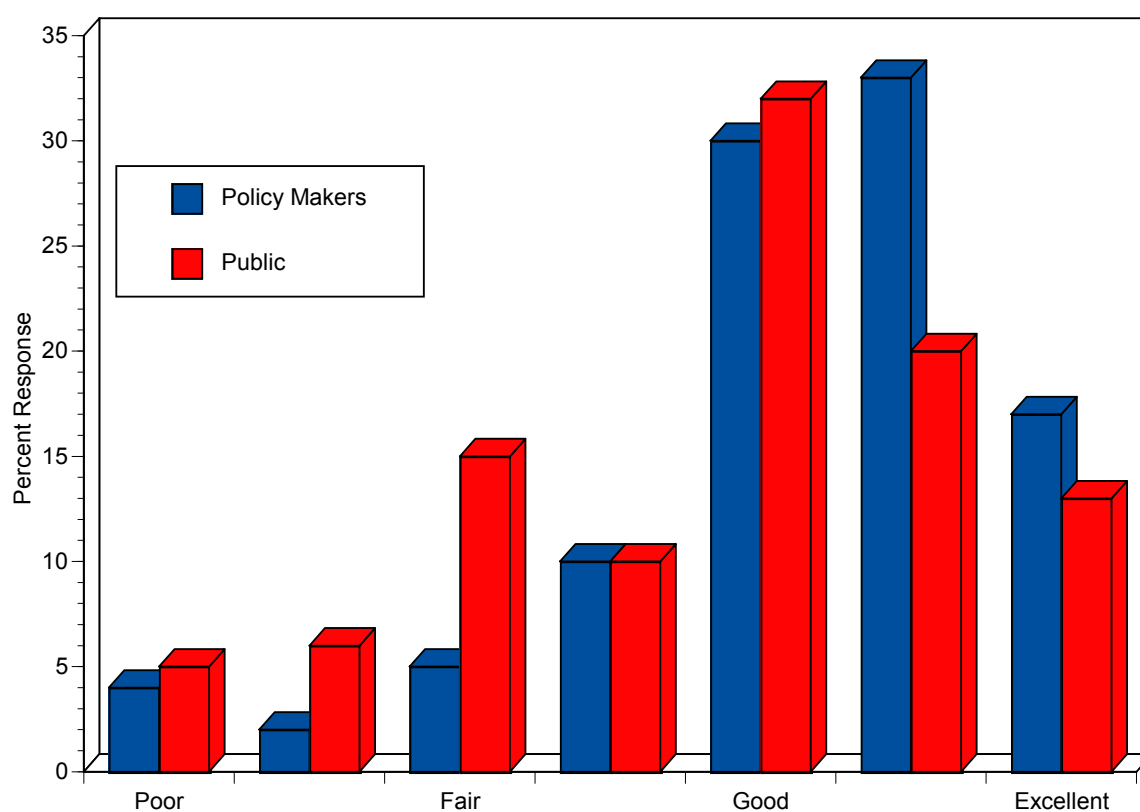


Figure 2. Perceptions of drinking water quality by Illinois public and policy-makers.

Table 1. Problems with tap water, by survey group.

Problem	Public	Policy-makers
Iron or “hard” water	43%	60%
Calcium or “soft” water	21	22
Sediments (rust, particles, etc.)	19	21
Sulfur odor	7	9
Other	17	10

Water Quality and Community Issues

Survey participants were asked to rate the importance of several issues facing communities in Illinois, ranging from “Preventing and reducing crime,” “Improving public schools,” to “Protecting water quality” and “Protecting wetlands.” Of the 10 items listed on the importance scale, protecting water quality was rated highest by all respondents: “Very Important” or “Extremely Important” by most (92%) respondents in the general public sample (Lumpkin region and statewide respondents combined), and a majority of policy-makers (87%) (Figure 3). These findings on the importance of water quality support those from a study on public attitudes toward open space protection in Illinois, where respondents also reported “protecting water quality” as the most important issue facing their community (McDonald, Miller, and Stewart 2003). Given that two independent studies of Illinois citizens have produced similar results, the conclusion can be made with confidence that water quality is an important issue among Illinois residents.

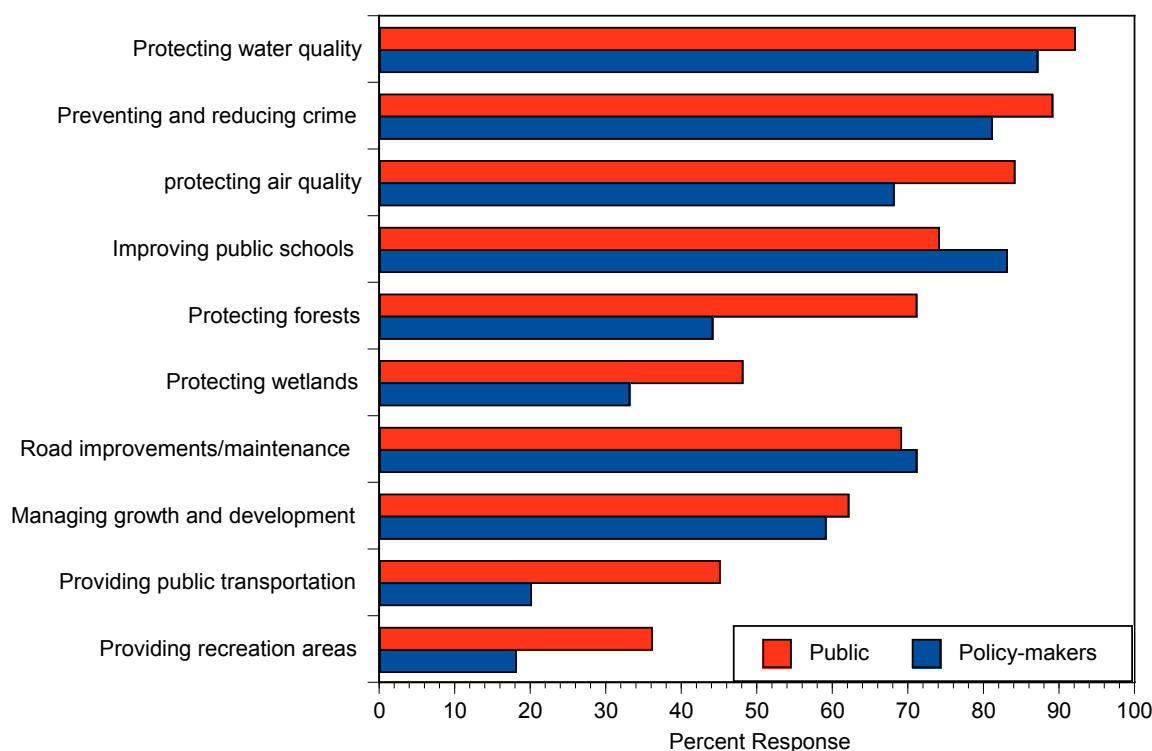


Figure 3. Importance of water quality and other community issues in Illinois.
(Percent reporting “Very Important” or “Extremely Important” ratings.)

Drinking Water Quality and Quantity

Perceived threats to drinking water quality in Illinois differed significantly between members of the public and policy-makers (Figure 4). Although both the general public and policy-makers perceived chemical residue from pesticides, herbicides, and fertilizers to be the greatest threat to drinking water quality in Illinois, more members of the total public (combined respondents from the statewide group and counties served by the Lumpkin Family Foundation) perceived these threats to be “high” or “very high” (29% viewed both fertilizer and herbicides and 28% pesticide residue as “high” to “very high”) compared to policy-makers (18%, 20%, and 21%, respectively). Respondents from counties served by the Lumpkin Family Foundation perceived residue from

fertilizers, pesticides, and herbicides to be a greater threat than respondents from the remainder of Illinois. Another area where policy-makers departed from public opinion was on the impact of silt from construction on drinking water quality in Illinois, as 6% of policy-makers felt this was a “high” to “very high” threat, compared to 19% of the general public.

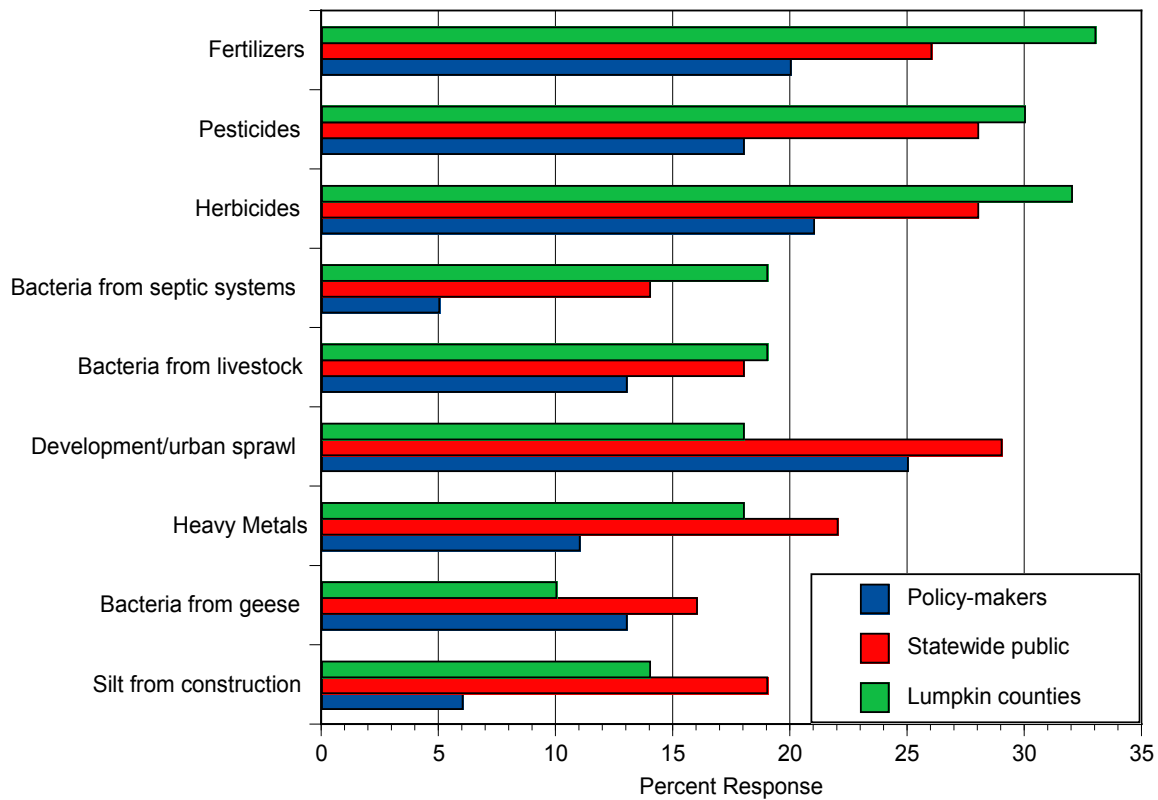


Figure 4. Perceived threats to drinking water quality in Illinois.
(Percent reporting “High” or “Very High” ratings.)

When questioned about their perceived threats to drinking water in the area in which they lived, both the public and policy-makers rated chemical residue from pesticides, herbicides, and fertilizers highest among 9 potential threats listed (Figure 5). Public (combined responses from the Lumpkin and statewide groups) ratings of threats as

“High” and “Very High” were: herbicides 21%, pesticides 20%, and fertilizers 19%. The same threats were rated similarly by policy-makers: herbicides 20%, pesticides 19%, and fertilizers 18%. Perceived threats were lowest for bacteria from geese (42% for policy-makers and 26% for public), bacteria from livestock feedlots (25% for public), and development and urban sprawl (32% for policy-makers). Respondents from Lumpkin counties perceived fertilizer, pesticide, and herbicide residue to be a more serious threat to the water in their area than respondents from the remainder of the state.

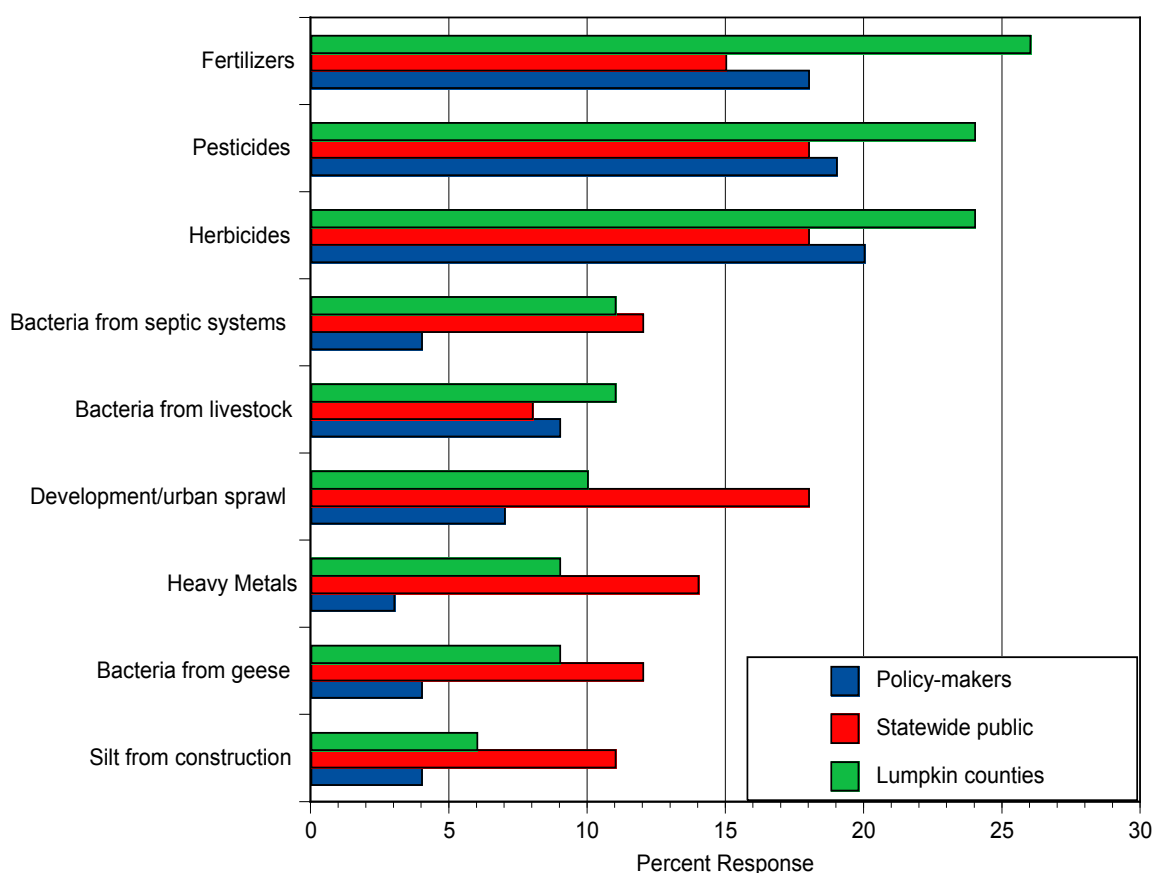


Figure 5. Perceived chemical threats to drinking water in area of residence (percent reporting “High” or “Very High” ratings).

Most respondents felt there was little threat to drinking water availability in the area where they lived. A majority (86%) of the respondents from the public felt there was no threat to the amount of drinking water in their area, and a similar percentage (84%) of policy-makers did not foresee a threat to the amount of drinking water where they lived. No discernable pattern of demographic factors or county of residence could be found to explain the respondents who felt there was a threat to drinking water supplies. Of the potential threats to the amount of drinking water available in Illinois, industrial operations were rated as “Severe threat” or “Extreme threat” most frequently (21% of public and 19% of policy-makers) (Table 2). Lawn and other landscape operations were rated as a “Severe threat” or “Extreme threat” to the supply of drinking water in Illinois by 20% of respondents from the public group and 19% of policy-makers.

Table 2. Comparison of perceived risks to drinking water quantity in Illinois.

Threat Source	Group	No Threat	Slight Threat	Moderate Threat	Severe Threat	Extreme Threat
Industrial manufacturing	Public	16%	23%	40%	16%	5%
	Policy	14	21	45	16	3
Lawn/other landscape operations	Public	16	24	40	14	6
	Policy	14	33	33	14	5
Irrigation for agriculture	Public	22	28	38	10	2
	Policy	26	38	24	10	3
Energy production	Public	20	29	38	10	3
	Policy	17	31	42	9	1
Contamination from mining operations	Public	30	32	27	7	4
	Policy	27	37	25	8	3
Residential water usage	Public	22	28	40	8	2
	Policy	29	32	31	7	0

Uses for industries such as water bottling plants	Public	26	33	31	7	3
	Policy	30	41	23	6	0

Water Testing

Most (81%) of the policy-makers had their water tested at some point, compared to 34% of respondents from the public groups (Table 3). Differences between respondents from counties served by the Lumpkin Family Foundation and residents of remaining counties in Illinois were less than 1% for responses to questions regarding types of tests conducted, therefore responses were combined and represented by one category “public.” High percentages of members of the policy-maker group had their water tested for more substances than individuals in the public group. Bacteria and nitrates were the substances tested most often; 45% of respondents from the policy-maker group had their water tested for these substances, compared to respondents from the public group, of whom 9% reported having their water tested for bacteria and 8% for nitrates. Of the substances tested, water was tested least often for arsenic by members of both groups. Results presented in Table 3 show that individuals in the policy-maker group are more likely to have their water tested than members of the public as a whole. This difference may be due to more policy-makers being served by wells for their domestic water supply than members of the general public. In addition, policy-makers may be more aware of water problems or opportunities to have their water tested. When asked if they had received a report of water quality from their supplier, 33% of public respondents reported they had received a report (Figure 6). Of those who received a report, approximately 50% felt the report was easy to understand.

Table 3. Water tests on home water, by survey group.		
Substance Tested	Public	Policy-makers
Bacteria	9%	45%
Nitrates	8	45
Heavy Metals (mercury, lead, etc.)	7	20
Herbicides	5	22
Pesticides	4	21
Arsenic	4	16

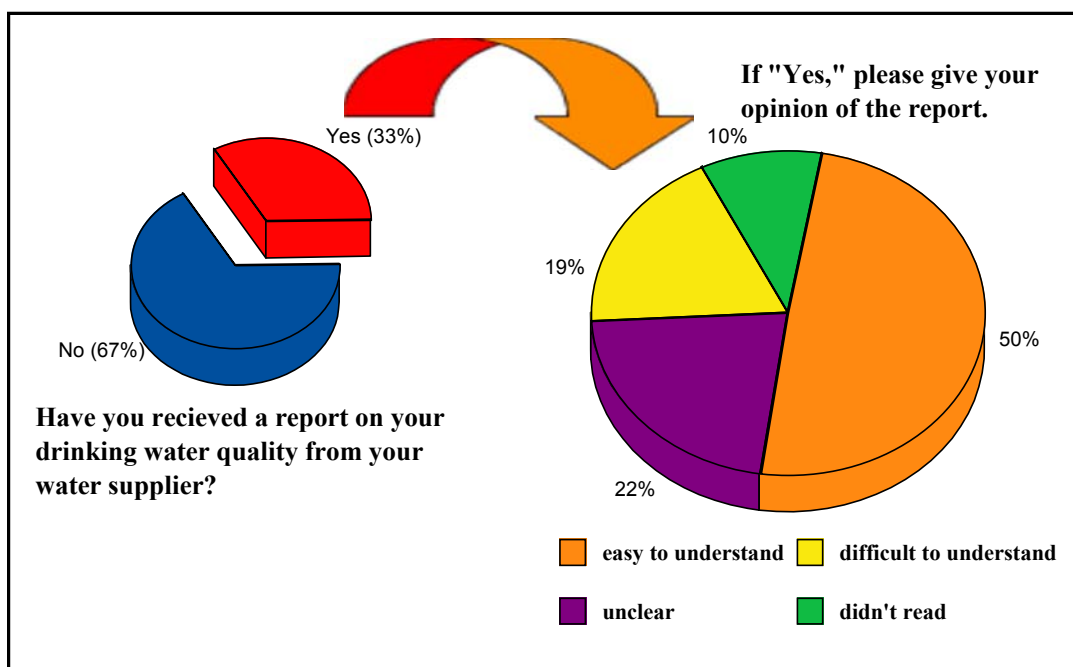


Figure 6. Percent of public respondents who received water quality report from supplier.

Surface Water Quality

In order to determine perceived threats to surface water in Illinois, participants were presented with a list of nine possible sources of surface water contamination. Rankings were similar between the statewide public and Lumpkin Foundation county groups, but varied widely between these two groups and county policy-makers (Table 4). Two exceptions to the rankings between the statewide public respondents and those from counties served by the Lumpkin Family Foundation were rankings for surface runoff from fertilizers and bacteria from commercial livestock feedlots. Both of these risk factors were ranked higher by respondents in the Lumpkin counties versus statewide respondents; threat from livestock operations was ranked fourth highest in Lumpkin counties and fifth statewide, whereas rankings for development and urban sprawl was reversed for the two groups. Statewide respondents ranked chemical residue from pesticides highest, whereas fertilizer runoff was ranked highest by both residents of Lumpkin counties and county policy-makers. A greater percentage of members of the public (46%) ranked “development/urban sprawl” as a threat to surface water in Illinois compared to respondents from the Lumpkin counties (36%) or county decision-maker (26%) groups. Greatest differences in perceived threats to surface water were found between the two public groups and county policy-makers for the threats posed by heavy metals and mine runoff. In both the statewide public and residents from Lumpkin counties, approximately one-third (38% and 31%, respectively) perceived heavy metals to be a threat, compared to 7% of county policy-makers. Similarly, more respondents from the statewide public and Lumpkin county residents felt mine runoff was a potential

threat to surface water in Illinois (16% of the statewide group, 17% from residents of Lumpkin counties) relative to county policy-makers (3%).

Table 4. Perceived threats to surface water in Illinois, by survey group.

Threat	Lumpkin Counties (%)	Statewide Public (%)	Policy- makers (%)
Chemical residue from pesticides	71	66	53
Fertilizers from fields	75	64	61
Chemical residue from herbicides	64	58	53
Development/ urban sprawl	36	46	26
Bacteria from commercial livestock feedlots	39	40	13
Heavy metals (mercury, lead, arsenic, etc.)	31	38	7
Bacteria from septic systems	22	31	20
Silt from construction	20	28	12
Mine runoff	17	16	3
None of the above/ no threats	10	11	19

In addition to perceived threats to surface water in Illinois, survey participants were asked to rank what they perceived as the most serious threats to surface water in the area where they lived. With few exceptions, rankings were similar for the two groups, varying mostly by frequency in which they were selected (Table 5). Policy-makers responded that fertilizers from fields was the most serious threat (61%), with chemical residue from pesticides and herbicides as the second-most serious threats. Overall, members of the public (combined responses from both Lumpkin and statewide groups) felt chemical residue from pesticides was the most serious (51%) and fertilizers was

second-most serious (49%) threat. Residents of counties served by the Lumpkin Family Foundation ranked fertilizers (64%) and pesticides (60%) as higher threats than the public as a whole. Members of both groups ranked “chemical residue from herbicides” as the third threat and “development/urban sprawl” fourth.

Table 5. Perceived threats to surface water in area of residence, by survey group.

Threat	Lumpkin Counties (%)	Statewide Public (%)	Policy-makers (%)
Fertilizers from fields	64	41	61
Chemical residue from pesticides	60	47	53
Chemical residue from herbicides	52	40	53
Development/ urban sprawl	16	38	26
Bacteria from commercial livestock feedlots	24	16	13
Heavy metals (mercury, lead, arsenic, etc.)	17	24	7
Bacteria from septic systems	19	21	20
Silt from construction	11	21	12
Mine runoff	4	5	3
None of the above/ no threats	20	21	19

Fishing and Consumption of Freshwater Fish

Fishing was a recreational activity enjoyed by many of the respondents to this survey, as 45% of both the public and policy-maker groups reported they had fished during the 12 months prior to the study. A majority of individuals (60%) in the policy-

maker group stated they consumed fish caught in Illinois, whereas approximately half (49%) of respondents among the public consumed Illinois fish (Figure 7). Of those who ate fish caught in Illinois, most consumed it less than 6 times per year (57% policy-makers; 64% public) and a small proportion (12-16%) ate Illinois fish on a regular basis (once or more per month). Reasons for not eating fish included: not eating fish in general, concerns over heavy metal contaminants, and chemical pollutants from run-off.

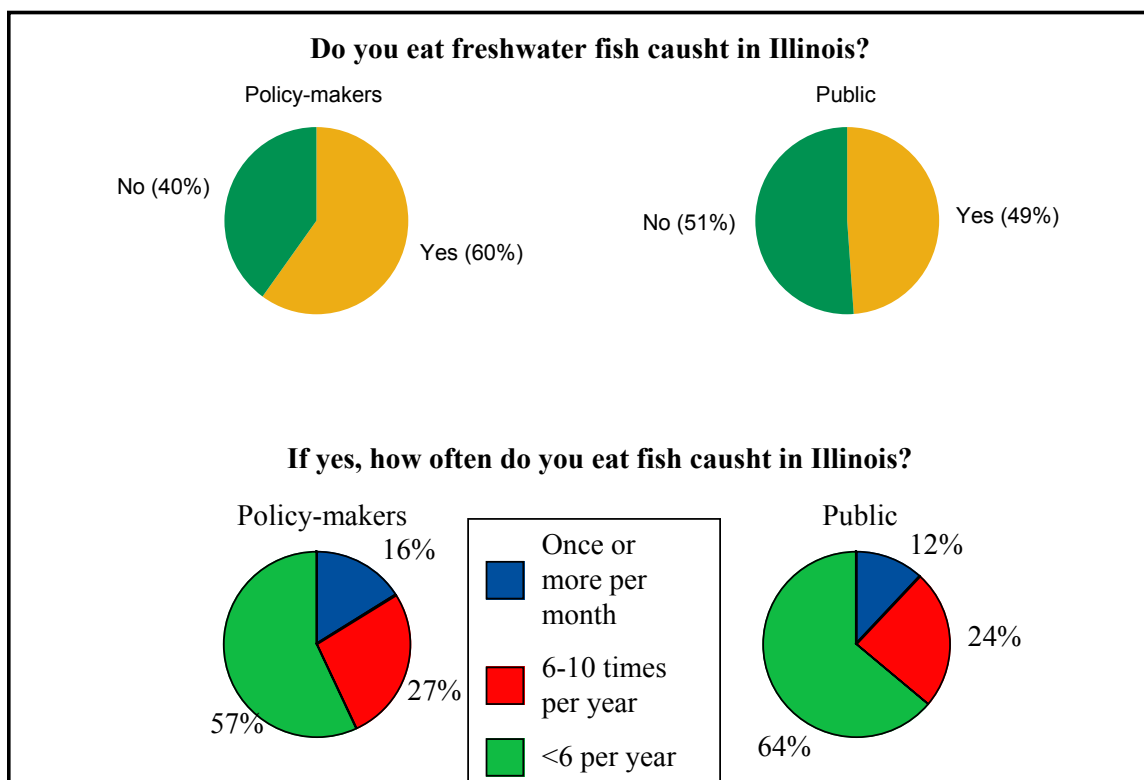


Figure 7. Consumption of fish caught in Illinois, by policy-makers and public

Water-based Recreation

In addition to fishing, many respondents reported they went swimming during the 12-month period prior to the study (53% of the public; 43% of policy-makers) (Table 6). Boating was popular with slightly more than one-third of respondents; 37% of respondents from the public group and 36% of policy-makers had boated during the previous 12 months. Participation in other water-based recreation activities (e.g. canoeing, kayaking, sailing) was low, reported by approximately 10% or less of respondents. In response to the statement “Access to streams and rivers for recreation is difficult in Illinois,” 25% of respondents overall agreed, 27% were unsure, and 48% disagreed. Analyzing responses by participation in water-based recreation, however, showed a high percentage of canoeists (36%) and kayakers (48%) agreed with the statement. Samples were too low to analyze by groups.

Table 6. Recreational participation during previous 12 months.

Activity	Policy-makers	Public
Gardening	65%	61%
Swimming	43	53
Fishing	45	45
Picnicking	35	45
Boating	36	37
Wildlife viewing	32	36
Camping	19	29
Bird watching	22	22
Canoeing	11	11
Water Skiing	9	10
Ice fishing	4	6
Waterfowl hunting	6	4
Sailing	1	4
Kayaking	<1	3
Whitewater rafting	<1	2

Attitudes Toward Water Quality and Policy

Significant differences were found for 15 of the 18 Likert scale items used to measure attitudes toward various aspects of water quality (Table 7 – 10). Differences in these statements were found to exist between county policy-makers and one or both of the public groups for 11 (71%) of the 15 statements. Among the 3 remaining statements that produced differences in attitudes, 2 differed between all three of the groups examined (residents of Lumpkin counties, statewide residents, and county policy-makers).

Attitudes toward the remaining statement “There is enough ground water to support development in my area,” differed between county policy-makers and statewide residents.

Water regulations

Six statements addressed attitudes toward regulatory protection of water in Illinois (Table 7). Attitudes (when analyzed by the 3 groups) to five of these statements differed significantly. Responses to the statement “There is enough protection for drinking water in Illinois” differed slightly across the 3 groups, with the difference existing between the county policy-makers and the 2 public groups. More policy-makers (39%) agreed with the statement than residents of the Lumpkin region (23%) or the remainder of the state (24%). A higher proportion of members from each of the 2 public groups disagreed with the statement, with 36% of residents of the Lumpkin Family Foundation region and 40% of respondents from the remainder of Illinois in disagreement. Fewer policy-makers (34%) disagreed than agreed (39%) that there was enough protection of drinking water in

the state, whereas more respondents from the 2 public groups expressed the opposite attitude. Differences were also found in the percentage of respondents who were unsure: 42% of residents of the area served by the Lumpkin Family Foundation, 36% of residents from the rest of Illinois, and 26% of county policy-makers were unsure. The proportion of unsure compared to those who agreed or disagreed suggests a lack of awareness of existing water regulations on the part of members of the general public.

Attitudes toward the statement “Water pollution laws are too tough in Illinois” found more than twice as many policy-makers (14%) in agreement with the statement than either of the 2 public groups (6% for each). More than half of respondents in all 3 groups disagreed with the statement (58% residents outside the Lumpkin counties, 56% of residents of Lumpkin counties, and 52% of policy-makers). Differences in responses for this statement were statistically significant.

A majority of residents (58%) in the counties outside the Lumpkin region agreed with the statement “We need stronger federal laws to protect our water quality,” with approximately half (49%) of residents from the Lumpkin Family Foundation in agreement, whereas less than one-third (30%) of county policy-makers agreed. A significant difference was found in the percentage of respondents who disagreed with the statement: almost half of policy-makers (48%) disagreed with the statement, compared to 21% of residents from the Lumpkin counties and 18% of residents from the remainder of the state.

Significant differences were found in response to the statement “I feel the Clean Water Act needs to be strengthened.” This statement was agreed upon by 54% of the non-Lumpkin county residents, 51% of residents of the Lumpkin counties, and 33% of

policy-makers. Almost as many policy-makers (32%) disagreed that the Clean Water Act needed to be strengthened, compared to 12% from each of the 2 public groups.

Approximately one-third of each group was unsure of this statement.

Survey participants were asked for their attitudes toward the statement “Not enough attention is given to protecting water quality in Illinois.” A plurality of respondents from both counties served by the Lumpkin Family Foundation (44%) and the remaining counties (43%) agreed with this statement, as did 37% of county policy-makers. In contrast, however, approximately as many policy-makers (36%) disagreed with this statement as agreed, compared to 16% of residents from the Lumpkin region and 18% of residents from the remainder of Illinois. These differences were statistically significant, with the significance due primarily to the high percentage of policy-makers who disagreed that water quality needed greater protection in Illinois.

The sixth statement measured attitudes toward regulations protecting water with respect to economic development. Although the following section describes results of attitudes toward economic development and water quality, this statement was found (through statistical reliability tests) to be related more closely to attitudes toward regulations and is therefore included in this section. In responding to the statement “Tough water laws hurt economic development,” more than one-third (36%) of policy-makers agreed, compared to 16% of residents from counties served by the Lumpkin Family Foundation and 14% of residents from the remainder of Illinois. An approximately equal (37%) number of policy-makers disagreed, in contrast to 49% of residents from Lumpkin counties and 54% of the rest of Illinois. Responses to this statement were found to be statistically significant.

Water quality and economic growth

Three attitude statements addressed public perspectives of water quality related to economic growth (Table 8). Individuals in all 3 groups shared the attitude that “Economic prosperity depends on a healthy environment.” Although differences were not statistically significant, a higher percentage of residents outside of the area (85%) were in agreement with the statement, compared to county policy-makers (83%) or respondents from the Lumpkin Family Foundation area (80%). More policy-makers (9%) also disagreed with the statement than either of the public groups (7% from Lumpkin area residents and 6% from the remainder of the state). Majorities of respondents from each of the 3 groups agreed with the statement “High quality water is needed for strong economic growth”: 85% of county policy-makers, 84% from respondents from the remainder of Illinois, and 82% of residents from Lumpkin counties. Significant differences were found, however, between members of the public from the non-Lumpkin counties and county policy-makers in their attitudes toward the statement “There is enough ground water to support development in my area.” A minority (19%) of residents outside the Lumpkin counties agreed that there was enough ground water to support development, compared to approximately half (49%) of policy-makers. Residents from counties served by the Lumpkin Family Foundation did not show significant differences with either group, as their responses fell in between the other groups.

Table 7. Attitudes toward water regulations in Illinois, by survey group.

Statement ^a		Agree (%)	Unsure (%)	Disagree (%)
There is enough protection for drinking water in Illinois.	Lumpkin Counties	23	42	36
	Remaining Counties	24	36	40
	Total Public	23	38	38
	Policy-makers	39	26	34
Water pollution laws are too tough in Illinois.	Lumpkin Counties	6	38	56
	Remaining Counties	6	36	58
	Total Public	6	37	57
	Policy-makers	14	34	52
We need stronger federal laws to protect our water quality.	Lumpkin Counties	49	30	21
	Remaining Counties	58	24	18
	Total Public	55	26	19
	Policy-makers	30	22	48
I feel the Clean Water Act needs to be strengthened.	Lumpkin Counties	51	38	12
	Remaining Counties	54	34	12
	Total Public	53	35	12
	Policy-makers	33	36	32
Not enough attention is given to protecting water quality in Illinois.	Lumpkin Counties	44	40	16
	Remaining Counties	43	40	18
	Total Public	43	40	17
	Policy-makers	37	27	36
Tough water protection laws hurt economic development.	Lumpkin Counties	16	35	49
	Remaining Counties	14	32	54
	Total Public	15	34	52
	Policy-makers	36	27	37

^a Percentages may not add to 100% due to rounding of decimals.

Table 8. Attitudes toward water quality and economic growth in Illinois, by survey group.

Statement ^a		Agree	Unsure	Disagree
Economic prosperity depends on a healthy environment.	Lumpkin Counties	80%	13%	7%
	Remaining Counties	85	9	6
	Total Public	83	11	6
	Policy-makers	83	9	9
High quality water is needed for strong economic growth.	Lumpkin Counties	82	14	5
	Remaining Counties	84	11	6
	Total Public	83	12	5
	Policy-makers	85	8	8
There is enough ground water to support development in my area.	Lumpkin Counties	31	48	23
	Remaining Counties	19	48	21
	Total Public	30	48	22
	Policy-makers	49	28	23

^a Percentages may not add to 100% due to rounding of decimals.

Water contaminants

Five statements were used to measure respondents' attitudes toward contaminants in the water supply (Table 9). Responses to the statement "Water contamination from lawn care products are a threat to water quality in my area" differed significantly between members of the public outside of the area served by the Lumpkin Family Foundation and both county policy-makers and those members of the public from the counties served by the Lumpkin Family Foundation. Of the residents in the counties outside of the area of emphasis, 39% agreed with the statement, whereas 26% of the public in the area served by the Lumpkin Family Foundation and 34% of county policy-makers agreed with the statement. When presented with the statement "Water contamination from livestock operations is a problem in Illinois," differences existed between county policy-makers

and both public groups. Approximately one-third (34%) of policy-makers agreed with the statement, compared to 38% in the Lumpkin Family Foundation counties and 32% of residents in the remainder of Illinois. A majority of survey respondents agreed with the statement “I am concerned about chemicals in my drinking water,” although responses differed significantly between county policy-makers and the 2 public groups. Agreement with the statement was highest (72%) for members of the public living outside of the Lumpkin Family Foundation counties, followed by 68% of those individuals residing in the counties served by the Lumpkin Family Foundation, and 54% of county policy-makers. The fourth statement measuring respondents’ attitudes toward water quality was “Chemicals from agriculture are a threat to my drinking water.” Of the 3 groups, residents of the counties served by the Lumpkin Family Foundation (53%) were most in agreement with this statement. Slightly more than one-third (34%) of county policy-makers and 38% of members of the public in the remainder of the state agreed with the statement. A fifth statement, “Drinking water contamination is not a problem where I live,” examined perceptions of existing water contamination in the respondent’s area of residence. A majority (67%) of county policy-makers agreed with this statement, whereas less than a majority (42%) of residents from Lumpkin Family Foundation counties and 47% of residents from the remainder of the state felt that drinking water contamination was not a problem in their area.

Table 9. Attitudes toward water contaminants in Illinois, by survey group.

Statement ^a		Agree	Unsure	Disagree
Water contamination from lawn care products is a threat to water quality in my area.	Lumpkin Counties	26%	38%	37%
	Remaining Counties	39	33	28
	Total Public	34	35	31
	Policy-makers	34	22	44
Water contamination from livestock operations is a problem in Illinois.	Lumpkin Counties	38	44	19
	Remaining Counties	32	50	17
	Total Public	34	48	18
	Policy-makers	34	19	47
I am concerned about chemicals in my drinking water.	Lumpkin Counties	68	12	21
	Remaining Counties	72	9	20
	Total Public	70	10	21
	Policy-makers	54	12	34
Chemicals from agriculture are a threat to my drinking water.	Lumpkin Counties	53	30	18
	Remaining Counties	38	33	29
	Total Public	43	32	25
	Policy-makers	34	17	49
Drinking water contamination is not a problem where I live.	Lumpkin Counties	42	28	31
	Remaining Counties	47	29	25
	Total Public	45	28	27
	Policy-makers	67	15	19

^a Percentages may not add to 100% due to rounding of decimals.

Wildlife habitat and water

To gauge concerns for issues affecting wildlife habitat and surface water, survey participants were presented with 3 statements that measured their attitudes toward wildlife, wildlife habitat, and stream ecology (Table 10). In response to the statement “More protection needs to be given to wildlife habitat along streams and rivers in Illinois,” approximately two-thirds of members from each of the public groups agreed (60% from residents in the Lumpkin Foundation region, and 69% from the remainder of Illinois), whereas less than half (46%) of county policy-makers agreed with the statement. More than twice as many policy-makers (38%) disagreed with the statement than did residents from the Lumpkin counties (17%) or the remaining counties (14%). Significant differences were found in the attitudes expressed toward the statement “Too much attention is given to wildlife in deciding how land is to be used in Illinois,” with differences most notable between county policy-makers (52% agreed with the statement) and residents of the counties served by the Lumpkin Family Foundation (22% agreed) and residents of the other counties (19% agreed). Differences existed in disagreements to the statement: 56% of respondents from outside the Lumpkin Family Foundation region disagreed and 49% of respondents from the Lumpkin area disagreed, compared to 33% from the county policy-makers. In response to the statement “Brush and fallen trees are good for the ecological health of streams and rivers,” a plurality of residents (46%) from the Lumpkin Family Foundation counties agreed, followed by 40% of residents from the remaining counties, and 30% of county policy-makers. A plurality of policy-makers (36%) disagreed with the statement, whereas a minority (15%) of respondents from the

Lumpkin counties and other counties (16%) disagreed. A plurality (44%) of respondents from the counties outside of the Lumpkin Family Foundation area were unsure of the statement, and 39% of residents in the region served by the foundation were also unsure.

Table 10. Attitudes toward wildlife policies in Illinois, by survey group.

Statement ^a		Agree	Unsure	Disagree
More protection needs to be given to wildlife habitat along streams and rivers in Illinois.	Lumpkin Counties	60%	24%	17%
	Remaining Counties	69	17	14
	Total Public	66	20	15
	Policy-makers	46	16	38
Too much attention is given to wildlife in deciding how land is to be used in Illinois.	Lumpkin Counties	22	30	49
	Remaining Counties	19	25	56
	Total Public	20	27	54
	Policy-makers	52	14	33
Brush and fallen trees are good for the ecological health of streams and rivers.	Lumpkin Counties	46	39	15
	Remaining Counties	40	44	16
	Total Public	42	42	16
	Policy-makers	30	34	36

^a Percentages may not add to 100% due to rounding of decimals.

Profile of Respondents

Respondents to the public survey were mostly male (59%), Caucasian (89%), had some college education with no degree (21%), lived in small cities between 10,000 to 100,000 people, had a median total household income of \$40,000 to \$59,999, and averaged 54 years of age. Demographics for the public group in this study differed from the population demographics for Illinois by gender (51% female) and ethnic group (74% Caucasian), but was fairly representative of education (22% had some college, no degree)

and income (median total household income = \$46,590). Differences in gender and ethnic composition was likely due to over-sampling residents in rural regions of the state (approximately 75% of Illinois residents live in Cook and surrounding counties).

Respondents from the policy-makers differed from the public group. This group was represented by more males (88%), Caucasians (97%), more individuals had received a bachelor's degree (24%), lived in a small town under 10,000 people (29%), had a median total household income of \$40,000 to \$59,999, and averaged 60 years of age.

Conclusions

Residents of Illinois know the source of their domestic water supply, and few perceive threats to the availability of drinking water they receive. Residents are concerned, however, about residue from fertilizers, pesticides, and herbicides in their drinking water and see this as a problem both in their local area and statewide. Risks of such chemical residues are perceived higher by members of the public than county policy-makers. County policy-makers differ significantly from members of the public in their attitudes toward water issues, especially the need for greater regulations protecting water supplies and quality. Residents of Illinois see greater need for protecting water from harmful chemicals than do county leaders, and Illinois citizens want stronger protection of their water from state and federal laws. The majority of residents in Illinois want a stronger Clean Water Act, whereas less than one-third of county leaders felt it was necessary. This public support was independent of demographic variables of age, income, or place of residence. Overall, county leaders did not favor stronger regulations

that would give greater protection to water resources in Illinois. Policy leaders tended to view stronger water regulations as a deterrent to economic development, although they recognized a healthy environment as essential for economic prosperity. These leaders were also much less supportive of wildlife conservation than the public they represent.

Residents of the counties served by the Lumpkin Family Foundation were more concerned about harmful chemical residue in domestic and surface water from fertilizer, pesticides, and herbicides at both the local and state levels than members of the public in general. Such perceptions are likely due to the intensive agricultural activities in these counties compared with the state as a whole. Of these concerns, chemical residue from fertilizer is the greatest concern of these residents. A majority of residents of these counties express concern for chemicals from the agricultural industry infiltrating their water. Members of the public from these counties are less concerned with chemicals from lawn care products, perhaps as a result of the rural character of these counties, where the agricultural industry far out shadows the lawn care industry. Residents of these counties are generally supportive of wildlife conservation efforts and show a high understanding of the need for brush and trees in riparian zones and the role fallen trees play in the health of riparian systems.

In conclusion, citizens of Illinois are concerned about water quality in their area and throughout the state. In general, county policy-makers do not reflect the attitudes held by the people they represent on various boards and commissions. Members of the public perceive threats to their water and want strong state and federal regulations to protect their water supplies.

References

- Adams, L.A., L.E. Dove, and D.L. Leedy. 1984. Public attitudes toward urban wetlands for stormwater control and wildlife enhancement. *Wildlife Society Bulletin*, 12:299-303.
- Canter, L.W., D.I. Nelson, and J. W. Everett. 1994. Public perception of water quality risks – influencing factors and enhancement opportunities. *Journal of Environmental Systems*, 22(2):163-187.
- Dillman, D.A. 1978. *Mail and telephone surveys: The total design method*. J. Wiley and Sons, New York.
- Kaplowitz, M.D. and J. Kerr. 2003. Michigan residents' perceptions of wetlands and mitigation. *Wetlands*, 23(2):267-277.
- Kreutzwiser, R.D. and L.J. Pietraszko. 1986. Wetland values and protection strategies: A study of landowner attitudes in southern Ontario. *Journal of Environmental Management*, 22:13-23.
- Lichenberg, E. and R. Zimmerman. 1999. Adverse health experiences, environmental attitudes, and pesticide usage behavior of farm operators. *Risk Analysis*, 19(2):283-294.
- McDonald, C.D., C.A. Miller, and W.P. Stewart. 2003. Public attitudes toward open space initiatives in Illinois. Report to the Illinois Department of Natural Resources, Springfield, IL.
- Napier, T.L. and M. Tucker. 2001. Use of soil and water protection practices among farmers in three Midwest watersheds. *Environmental Management*, 27(2):269-279.

- O'Conner, R.E., R.J. Bord, and A. Fisher. 1994. Perceptions of freshwater. *National Geographic Research and Exploration*, 10(3):318-341.
- Rajagopol, R. and G. Tobin. 1989. Expert opinion and ground water quality protection: The case of nitrate in drinking water. *Ground Water*, 27(6):835-847.
- Stevens, T.H., S. Benin, and J.S. Larson. 1995. Public attitudes and economic values for wetland preservation in New England. *Wetlands*, 15(3):226-231.

Appendix A. Counties in the Lumpkin Family Foundation service region.

Bond

Champaign

Christian

Clark

Coles

Cumberland

Douglas

Edgar

Effingham

Fayette

McLean

Macon

Madison

Montgomery

Moultrie

Piatt

Sangamon

Shelby

Vermilion

Appendix B. Water Quality Opinion Leader Survey, Numbers of Possible Subjects

County	Drainage (#of members)	County Board	Forest Preserve	Park District	Conservation District	Soil and Water	Chambers of Commerce	Regional Planning
Bond	0	5(2)	0	1(1)	0	5(1)	0	0
Champaign	102(21)	27(3)	5(5)	4(4)	0	5(1)	1(1)	1(1)
Christian	110(26)	16(2)	0	2(2)	0	5(1)	0	0
Clark	0	7(3)	0	1(1)	0	5(1)	0	0
Coles	90(18)	12(4)	0	2(2)	0	5(1)	1(1)	1(1)
Cumberland	0	6(3)	0	2(2)	0	5(1)	0	0
Douglas	180(20)	7(3)	0	0	0	5(1)	0	0
Edgar	0	7(4)	0	0	0	5(1)	1(1)	0
Effingham	14(13)	9(4)	0	2(2)	0	5(1)	1(1)	1(1)
Fayette	0	14(3)	0	3(3)	0	5(1)	0	0
McLean	52(11)	20(4)	0	2(2)	0	5(1)	1(1)	1(1)
Macon	90(23)	21(4)	0	2(2)	1(1)	5(1)	1(1)	1(1)
Madison	16(16)	28(4)	0	6(6)	0	5(1)	1(1)	0
Montgomery	108(22)	21(4)	0	3(3)	0	5(1)	0	0
Moultrie	78(14)	9(3)	0	0	0	5(1)	0	0
Piatt	101(18)	6(3)	5(5)	0	0	5(1)	0	0
Sangamon	5(3)	28(4)	0	1(1)	0	5(1)	1(1)	1(1)
Shelby	57(10)	22(4)	0	0	0	5(1)	0	0
Vermilion	136(21)	27(4)	0	0	1(1)	5(1)	1(1)	0
Totals	1139(236)	292(65)	10(10)	31(31)	2(2)	95(19)	9(9)	6(6)

¹Numbers in parenthesis represent sample taken from each category

Water Quality in Illinois

Responses from 2 public groups

ALL RESPONSES ARE CONFIDENTIAL

THANK YOU FOR YOUR COOPERATION!

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Illinois Natural History Survey

Please take 15 minutes of your time to complete this questionnaire. Your responses will tell us more about how Illinois residents feel about important water quality issues in Illinois.

Section 1. Important issue facing our communities.

1. Listed below are several concerns facing many communities throughout the state of Illinois. How important is each issue to you? (Circle one number for EACH concern).

Concern	Not At All Important	Slightly Important	Moderately Important	Very Important	Extremely Important
Protecting water quality	<1%	1%	7%	33%	59%
Improving public schools	3	5	18	36	38
Managing growth & new development	3	8	28	39	23
Providing more recreation areas	8	18	39	24	12
Road improvements & maintenance	1	4	26	46	23
Protecting air quality	1	2	12	36	48
Protecting forests	2	6	21	35	36
Preventing and reducing crime	<1	2	9	32	57
Protecting wetlands	3	13	26	32	26
Providing convenient public transportation	9	16	32	27	18

Section 2. Drinking Water Quality.

1. What is the source of your water? Please choose one.

14% 1) well

82% 2) municipal water supply

4% 3) I'm not sure

2. If your water comes from a municipal supply, what is the source of that supply? Please choose one.

19% 1) underground aquifer

55% 2) dam, reservoir, lake, or river

25% 3) I'm not sure

3. Please rate the quality of your drinking water by circling the number that matches your opinion.

Poor	Fair	Good	Excellent
5%	6%	15%	10%
32%	20%	13%	

4. Which of the following apply to your tap water? Please check all that apply.

19% sediments (rust, particles, etc.)

21% calcium or “soft” water

43% iron or “hard” water

7% sulfur odor

17% other (please identify): _____

5. Have you ever had your water tested for any of the following? Please check all that apply.

9% bacteria

7% heavy metals (mercury, lead, etc.)

8% nitrates

3% arsenic

5% herbicides

4% pesticides

4% other (please identify): _____

5a. If you had your water tested for any of the above, were any of the substances found?

27% Yes 73% No

Please identify the substances found in your water: _____

6. Have you received a report on your drinking water quality from your water supplier?

33% Yes 67% No

6a. If “Yes,” please give your opinion of the report by checking the number that matches your response.

50% The report was easy to understand

22% The report was unclear in some parts

19% The report was not easy to understand

10% I did not read the report

7. Have any of the following ever happened to you while living in Illinois? Please check all that apply.

39% had to follow a boil water advisory

6% had your well run dry

8% had a contamination advisory to not drink municipal tap water

30% had a strange odor come from your tap water

6% other (please identify): _____

8. Please rate your opinion of the **safety** of your drinking water by circling the number that matches your opinion.

Poor

Fair

Good

Excellent

5%

21%

51%

23%

9. Please rate the following as how you feel they threaten **drinking water quality IN THE AREA WHERE YOU LIVE**. Please circle the number that matches your response.

	None	Very Low	Low	Medium	High	Very High				
Heavy metals (mercury, lead, arsenic, etc.)	17%	21%	6%	20%	7%	13%	5%	6%	1%	5%
Bacteria from livestock feedlots	25	22	6	18	5	10	5	5	1	3
Chemical residue from pesticides	14	15	6	13	9	16	7	10	3	7
Fertilizers from agricultural operation	18	14	8	15	7	11	8	9	4	6
Chemical residue from herbicides	15	15	7	13	8	13	9	10	4	7
Bacteria from septic systems	23	19	9	16	8	10	4	6	3	4
Silt from construction	22	21	9	15	9	10	5	5	2	3
Development / urban sprawl	20	17	8	13	9	11	6	7	3	5
Bacteria from geese	26	21	8	14	7	8	5	6	2	3

10. Do you feel there is a threat of a drinking water shortage in the **area where you live**?

14% Yes, Please identify what you feel is the threat to your water supply): _____

86% No

11. Do you have water-saving devices (low-flow faucets, toilets, showerheads, etc.) installed in your home?

64% Yes

36% No

12. Do you use bottled water for drinking and/or cooking in your home?

35% Yes

65% No

13. Do you use a water purification device for your tap water?

30% Yes

70% No

14. Please rate the following by how you feel they threaten **drinking water QUALITY in Illinois**. Please circle the number that matches your response.

Threat to Quality	None	Very Low		Low		Medium		High		Very High
Heavy metals (mercury, lead, arsenic, etc.)	10%	11%	5%	17%	10%	20%	8%	10%	3%	7%
Bacteria from livestock feedlots	10	11	5	15	12	19	9	9	2	7
Chemical residue from pesticides	8	8	3	11	11	18	12	14	4	10
Fertilizers from agricultural operation	9	7	3	11	11	18	12	14	5	10
Chemical residue from herbicides	8	8	3	11	11	19	11	14	5	10
Bacteria from septic systems	11	12	9	17	13	14	7	8	3	6
Silt from construction	11	10	9	17	12	16	7	8	4	6
Development / urban sprawl	11	9	6	13	12	16	9	11	5	8
Bacteria from geese	16	15	8	16	13	13	5	7	3	4

15. Please rate the following as **threats to the AMOUNT of drinking water in Illinois**. Please circle the number that matches your opinion.

Threat to Amount of drinking water in Illinois	No Threat	Slight Threat	Moderate Threat	Severe Threat	Extreme Threat
Residential drinking uses	22%	28%	40%	8%	2%
Lawn and other landscape operations	16	24	40	14	6
Irrigation for agriculture	22	28	38	10	2
Industrial manufacturing	16	23	40	16	5
Energy production	20	29	38	10	3
Uses for industries such as water bottling plants	26	33	31	7	3
Contamination from mining operations	30	32	27	7	4

Section 3. Surface Water Quality. Please answer the following questions about surface water (lakes, streams, and rivers) in Illinois.

1. Which of the following do you feel are the most serious threats to **surface water IN THE AREA WHERE YOU LIVE**? Please check all that apply.

- | | |
|--|--|
| <u>21%</u> heavy metals (mercury, lead, arsenic, etc.) | <u>19%</u> bacteria from industrial livestock feedlots |
| <u>51%</u> chemical residue from pesticides | <u>44%</u> chemical residue from herbicides |
| <u>49%</u> fertilizers from fields | <u>5%</u> mine runoff |
| <u>20%</u> bacteria from septic systems | <u>17%</u> silt from construction |
| <u>30%</u> development / urban sprawl | |
| <u>21%</u> None of the above. I don't feel there are any threats to drinking quality water in the area where I live. | |

2. Which of the following do you feel are the most serious threats to **surface water throughout the STATE OF ILLINOIS**? Please check all that apply.

- | | |
|---|--|
| <u>35%</u> heavy metals (mercury, lead, arsenic, etc.) | <u>40%</u> bacteria from industrial livestock feedlots |
| <u>68%</u> chemical residue from pesticides | <u>60%</u> chemical residue from herbicides |
| <u>68%</u> fertilizers from fields | <u>16%</u> mine runoff |
| <u>27%</u> bacteria from septic systems | <u>25%</u> silt from construction |
| <u>42%</u> development / urban sprawl | |
| <u>11%</u> None of the above. I don't feel there are any threats to drinking quality water in Illinois. | |

3. People participate in many different types of water-related recreational activities. Check each activity you or members of your family have participated in **during the past 12 months**.

- | | | |
|-----------------------------|-------------------------|------------------------------|
| <u>45%</u> Fishing | <u>11%</u> Canoeing | <u>4%</u> Waterfowl hunting |
| <u>37%</u> Boating | <u>3%</u> Kayaking | <u>53%</u> Swimming |
| <u>4%</u> Sailing | <u>10%</u> Water Skiing | <u>2%</u> Whitewater rafting |
| <u>36%</u> Wildlife viewing | <u>29%</u> Camping | <u>22%</u> Bird watching |
| <u>45%</u> Picnicking | <u>61%</u> Gardening | <u>6%</u> Ice fishing |

4. If you fish, do you eat fish caught in Illinois? 49% Yes 51% No

- 4a. If "Yes," how often do you eat fish caught in Illinois? 12% once or more per month
24% about 6-10 times per year
64% less than 6 times per year

5. If you do not eat fish caught in Illinois, why? Please choose all that apply:

- | | |
|---|--------------------------------|
| <u>16%</u> heavy metal contaminants such as mercury | <u>31%</u> I don't eat fish |
| <u>16%</u> chemical pollutants from runoff | <u>12%</u> bacteria or disease |
| <u>23%</u> other (please identify): _____ | |

Section 4. Attitudes toward water quality issues. Illinois residents face a number of water quality issues. Please give your opinion of the following statements by circling the number that matches your response.

	Strongly Disagree	Disagree	Moderately Disagree	Unsure	Moderately Agree	Agree	Strongly Agree
Access to streams and rivers for recreation is difficult in Illinois.	8%	25%	15%	28%	13%	8%	4%
There is enough protection for drinking water in Illinois.	8	15	15	38	11	10	3
Water pollution laws are too tough in Illinois.	15	28	15	37	3	1	2
Economic prosperity depends on a healthy environment.	1	2	3	11	19	38	26
More protection needs to be given to wildlife habitat along streams and rivers in Illinois.	2	5	8	20	24	23	18
Water contamination from lawn-care products are a threat to water quality in my area.	5	15	11	35	16	12	6
We need stronger federal laws to protect our water quality.	4	8	7	26	19	20	16
Water contamination from livestock operations is a problem in Illinois.	3	7	8	48	20	10	5
I am concerned about chemicals in my drinking water.	4	9	8	10	26	25	19
Too much attention is given to wildlife in deciding how land is to be used in Illinois.	15	21	17	26	10	7	3
I feel the Clean Water Act needs to be strengthened.	2	5	5	35	19	18	16
Quality water is needed for strong economic growth.	1	2	3	12	23	36	24
There is enough ground water to support development in my area.	5	9	9	48	12	15	3
Chemicals from agriculture are a threat to my drinking water.	3	11	11	32	22	13	8
Brush and fallen trees are good for the ecological health of streams and rivers.	3	7	6	42	21	15	6
Drinking water contamination is not a problem where I live.	5	10	12	28	18	22	5
Not enough attention is given to protect water quality in Illinois.	1	8	8	39	20	15	9
Tough water protection laws hurt economic development.	12	23	17	33	9	4	2

Section 5: General Household Information

The following information is helpful to describe different groups of households. Your answers will be used for statistical purposes and will not be identified with you personally.

1. Are you: (Please check) 59% 1) Male 41% 2) Female
2. How old are you? (Fill in blank) Years old Average = 54
3. What is your county of residence? _____ County
4. What is your ethnic/cultural group? (Check one number)

<u>89%</u> 1) Caucasian/White	<u>2%</u> 4) Hispanic
<u>4%</u> 2) African-American	<u>1%</u> 5) Native American (American Indian)
<u>3%</u> 3) Asian-American	<u>1%</u> 6) Other (please specify) _____
5. What is the highest level of education you have completed? (Check one number)

<u>5%</u> 1) Less than high school	<u>8%</u> 5) Associate degree (2 years of college)
<u>23%</u> 2) Graduated high school	<u>16%</u> 6) Bachelor's degree
<u>6%</u> 3) Technical/Vocational school	<u>5%</u> 7) Some graduate study
<u>21%</u> 4) Some college	<u>16%</u> 8) Graduate degree or professional school
6. How would you describe the size of your community? (Check one number)

<u>8%</u> 1) Rural, farm	<u>46%</u> 4) Small city, 10,000 to 100,000 people
<u>4%</u> 2) Rural non-farm	<u>11%</u> 5) Mid-sized city, 100,000 to 1 million people
<u>22%</u> 3) Small town, under 10,000 people	<u>9%</u> 6) Large city, over 1 million people
7. What was your approximate total household income before taxes in 2001? (Check one number)

<u>13%</u> 1) Under \$20,000	<u>18%</u> 4) \$60,000-\$79,999
<u>22%</u> 2) \$20,000-\$39,999	<u>10%</u> 5) \$80,000-\$99,999
<u>24%</u> 3) \$40,000-\$59,999	<u>13%</u> 6) \$100,000 or more
8. Do you belong to any of the following conservation or environmental organizations? Check all that apply.

<u>2%</u> National Audubon Society	<u>3%</u> World Wildlife Fund	<u>3%</u> Sierra Club
<u>1%</u> Defenders of Wildlife	<u>2%</u> Ducks Unlimited	<u><1%</u> American Rivers
<u>4%</u> National Wildlife Federation	<u>4%</u> The Nature Conservancy	<u><1%</u> Isaac Walton League
<u><1%</u> Prairie Rivers Network	<u>1%</u> Environmental Defense Fund	
<u><1%</u> Illinois Conservation Foundation	<u>6%</u> Other (Please identify): _____	

Please mail the completed survey in the self-addressed envelope

THANK YOU FOR YOUR HELP AND COOPERATION

This study was conducted in cooperation with the Illinois Natural History Survey. The Illinois Natural History Survey receives federal assistance and therefore must comply with federal anti-discrimination laws. In compliance with the Illinois Human Rights Act, the Illinois Constitution, Title VI of the 1964 Civil Rights Act, Section 504 of the Rehabilitation Act as amended, and the U.S. Constitution, the Illinois Natural History Survey does not discriminate on the basis of race, color, sex, national origin, age, or disability. If you believe you have been discriminated against in any program, activity, or facility, please contact the Equal Employment Opportunity Officer, Department of Natural Resources, 524 S. Second St., Springfield, IL 62701-1787, (217) 782-7616 or the officer of Human Resources, U.S. Fish and Wildlife Service, Washington, D.C. 20240.

Water Quality in Illinois

ALL RESPONSES ARE CONFIDENTIAL

THANK YOU FOR YOUR COOPERATION!

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Illinois Natural History Survey

Please take 15 minutes of your time to complete this questionnaire. Your responses will tell us more about how Illinois residents feel about important water quality issues in Illinois.

Section 1. Important issue facing our communities.

1. Listed below are several concerns facing many communities throughout the state of Illinois. How important is each issue to you? (Circle one number for EACH concern).

Concern	Not At All Important	Slightly Important	Moderately Important	Very Important	Extremely Important
Protecting water quality	<1%	3%	10%	36%	51%
	3	3	11	33	50
Improving public schools					
Managing growth & new development	3	7	30	38	21
Providing more recreation areas	15	30	38	13	5
Road improvements & maintenance	1	2	25	53	18
Protecting air quality	4	9	19	39	29
Protecting forests	10	16	31	30	14
Preventing and reducing crime	2	4	14	45	36
Protecting wetlands	16	26	24	24	9
Providing convenient public transportation	19	27	34	17	3

Section 2. Drinking Water Quality.

1. What is the source of your water? Please choose one.

52% 1) well

47% 2) municipal water supply

1% 3) I'm not sure

2. If your water comes from a municipal supply, what is the source of that supply? Please choose one.

64% 1) underground aquifer

33% 2) dam, reservoir, lake, or river

3% 3) I'm not sure

3. Please rate the quality of your drinking water by circling the number that matches your opinion.

Poor	Fair	Good	Excellent
4%	2%	5%	10%
30%	33%	17%	

4. Which of the following apply to your tap water? Please check all that apply.

21% sediments (rust, particles, etc.)

22% calcium or “soft” water

60% iron or “hard” water

9% sulfur odor

10% other (please identify): _____

5. Have you ever had your water tested for any of the following? Please check all that apply.

45% bacteria

20% heavy metals (mercury, lead, etc.)

45% nitrates

16% arsenic

22% herbicides

21% pesticides

5% other (please identify): _____

5a. If you had your water tested for any of the above, were any of the substances found?

35% Yes 57% No

Please identify the substances found in your water: _____

6. Have you received a report on your drinking water quality from your water supplier?

43% Yes 57% No

6a. If “Yes,” please give your opinion of the report by checking the number that matches your response.

54% The report was easy to understand

22% The report was unclear in some parts

16% The report was not easy to understand

8% I did not read the report

7. Have any of the following ever happened to you while living in Illinois? Please check all that apply.

37% had to follow a boil water advisory

24% had your well run dry

5% had a contamination advisory to not drink municipal tap water

25% had a strange odor come from your tap water

3% other (please identify): _____

8. Please rate your opinion of the **safety** of your drinking water by circling the number that matches your opinion.

Poor

Fair

Good

Excellent

2%

10%

55%

33%

9. Please rate the following as how you feel they threaten **drinking water quality IN THE AREA WHERE YOU LIVE**. Please circle the number that matches your response.

	None	Very Low	Low	Medium	High	Very High				
Heavy metals (mercury, lead, arsenic, etc.)	23%	26%	11%	23%	4%	8%	3%	1%	1%	<1%
Bacteria from livestock feedlots	23	25	9	20	4	8	3	2	3	4
Chemical residue from pesticides	14	13	12	14	11	12	5	10	3	6
Fertilizers from agricultural operation	16	11	12	12	9	14	7	6	5	7
Chemical residue from herbicides	14	10	12	16	12	10	6	8	5	7
Bacteria from septic systems	23	20	12	19	8	12	2	2	1	1
Silt from construction	29	19	15	21	6	6	0	2	2	0
Development / urban sprawl	32	17	13	14	5	6	6	3	2	2
Bacteria from geese	42	22	13	9	4	4	<1	<1	1	3

10. Do you feel there is a threat of a drinking water shortage in the **area where you live**?

16% Yes (Please identify what you feel is the threat to your water supply): _____

84% No

11. Do you have water-saving devices (low-flow faucets, toilets, showerheads, etc.) installed in your home?

58% Yes

42% No

12. Do you use bottled water for drinking and/or cooking in your home?

22% Yes

78% No

13. Do you use a water purification device for your tap water?

30% Yes

70% No

14. Please rate the following by how you feel they threaten **drinking water QUALITY in Illinois**. Please circle the number that matches your response.

Threat to Quality	None	Very Low	Low	Medium	High	Very High				
Heavy metals (mercury, lead, arsenic, etc.)	9%	19%	4%	21%	10%	18%	8%	6%	2%	3%
Bacteria from livestock feedlots	9	15	9	23	13	13	4	8	3	2
Chemical residue from pesticides	7	8	8	18	15	18	8	9	4	6
Fertilizers from agricultural operation	8	7	6	19	15	16	7	7	4	9
Chemical residue from herbicides	8	8	6	17	16	18	7	8	5	8
Bacteria from septic systems	10	13	12	21	14	20	5	4	<1	<1
Silt from construction	9	15	11	21	17	15	6	2	3	1
Development / urban sprawl	9	12	6	11	11	16	10	13	4	8
Bacteria from geese	19	19	14	18	11	6	4	4	1	2

15. Please rate the following as **threats to the AMOUNT of drinking water in Illinois**. Please circle the number that matches your opinion.

Threat to Amount of drinking water in Illinois	No Threat	Slight Threat	Moderate Threat	Severe Threat	Extreme Threat
Residential drinking uses	29%	32%	31%	7%	0%
Lawn and other landscape operations	14	33	33	14	5
Irrigation for agriculture	26	38	24	10	3
Industrial manufacturing	14	21	45	16	3
Energy production	17	31	42	9	1
Uses for industries such as water bottling plants	30	41	23	6	0
Contamination from mining operations	27	37	25	8	3

Section 3. Surface Water Quality. Please answer the following questions about surface water (lakes, streams, and rivers) in Illinois.

1. Which of the following do you feel are the most serious threats to **surface water IN THE AREA WHERE YOU LIVE**? Please check all that apply.

- | | |
|--|--|
| <u>7%</u> heavy metals (mercury, lead, arsenic, etc.) | <u>13%</u> bacteria from industrial livestock feedlots |
| <u>53%</u> chemical residue from pesticides | <u>53%</u> chemical residue from herbicides |
| <u>61%</u> fertilizers from fields | <u>3%</u> mine runoff |
| <u>20%</u> bacteria from septic systems | <u>12%</u> silt from construction |
| <u>26%</u> development / urban sprawl | |
| <u>19%</u> None of the above. I don't feel there are any threats to drinking quality water in the area where I live. | |

2. Which of the following do you feel are the most serious threats to **surface water throughout the STATE OF ILLINOIS**? Please check all that apply.

- | | |
|--|--|
| <u>25%</u> heavy metals (mercury, lead, arsenic, etc.) | <u>35%</u> bacteria from industrial livestock feedlots |
| <u>59%</u> chemical residue from pesticides | <u>54%</u> chemical residue from herbicides |
| <u>59%</u> fertilizers from fields | <u>10%</u> mine runoff |
| <u>24%</u> bacteria from septic systems | <u>28%</u> silt from construction |
| <u>56%</u> development / urban sprawl | |
| <u>9%</u> None of the above. I don't feel there are any threats to drinking quality water in Illinois. | |

3. People participate in many different types of water-related recreational activities. Check each activity you or members of your family have participated in **during the past 12 months**.

- | | | |
|-----------------------------|------------------------|----------------------------------|
| <u>45%</u> Fishing | <u>11%</u> Canoeing | <u>6%</u> Waterfowl hunting |
| <u>36%</u> Boating | <u><1%</u> Kayaking | <u>43%</u> Swimming |
| <u>1%</u> Sailing | <u>9%</u> Water Skiing | <u><1%</u> Whitewater rafting |
| <u>32%</u> Wildlife viewing | <u>19%</u> Camping | <u>22%</u> Bird watching |
| <u>35%</u> Picnicking | <u>65%</u> Gardening | <u>4%</u> Ice fishing |

4. If you fish, do you eat fish caught in Illinois? 60% Yes 40% No

- 4a. If "Yes," how often do you eat fish caught in Illinois? 16% once or more per month
27% about 6-10 times per year
57% less than 6 times per year

5. If you do not eat fish caught in Illinois, why? Please choose all that apply:

- | | |
|---|-------------------------------|
| <u>13%</u> heavy metal contaminants such as mercury | <u>37%</u> I don't eat fish |
| <u>19%</u> chemical pollutants from runoff | <u>7%</u> bacteria or disease |
| <u>35%</u> other (please identify): _____ | |

Section 4. Attitudes toward water quality issues. Illinois residents face a number of water quality issues. Please give your opinion of the following statements by circling the number that matches your response.

	Strongly Disagree	Disagree	Moderately Disagree	Unsure	Moderately Agree	Agree	Strongly Agree
Access to streams and rivers for recreation is difficult in Illinois.	6%	31%	15%	28%	13%	5%	2%
There is enough protection for drinking water in Illinois.	6	13	16	26	23	14	3
Water pollution laws are too tough in Illinois.	9	20	24	34	7	4	3
Economic prosperity depends on a healthy environment.	7	2	6	9	21	41	20
More protection needs to be given to wildlife habitat along streams and rivers in Illinois.	8	15	15	16	20	16	10
Water contamination from lawn-care products are a threat to water quality in my area.	7	18	18	22	21	9	5
We need stronger federal laws to protect our water quality.	11	17	20	22	15	7	8
Water contamination from livestock operations is a problem in Illinois.	9	17	21	19	19	9	6
I am concerned about chemicals in my drinking water.	9	12	14	12	31	17	6
Too much attention is given to wildlife in deciding how land is to be used in Illinois.	12	8	14	14	22	17	13
I feel the Clean Water Act needs to be strengthened.	9	11	12	36	17	13	3
Quality water is needed for strong economic growth.	1	2	5	8	26	41	18
There is enough ground water to support development in my area.	5	10	8	28	20	23	6
Chemicals from agriculture are a threat to my drinking water.	12	20	17	17	18	12	4
Brush and fallen trees are good for the ecological health of streams and rivers.	8	15	13	34	13	15	2
Drinking water contamination is not a problem where I live.	3	9	7	15	27	33	7
Not enough attention is given to protect water quality in Illinois.	6	13	17	27	23	11	3
Tough water protection laws hurt economic development.	4	16	17	27	27	7	3

Section 5: General Household Information

The following information is helpful to describe different groups of households. Your answers will be used for statistical purposes and will not be identified with you personally.

1. Are you: (Please check) 88% 1) Male 12% 2) Female
2. How old are you? (Fill in blank) Years old Average = 60 years
3. What is your county of residence? _____ County
4. What is your ethnic/cultural group? (Check one number)

<u>97%</u> 1) Caucasian/White	<u>0%</u> 4) Hispanic
<u>1%</u> 2) African-American	<u>1%</u> 5) Native American (American Indian)
<u>0%</u> 3) Asian-American	<u>1%</u> 6) Other (please specify) _____
5. What is the highest level of education you have completed? (Check one number)

<u>6%</u> 1) Less than high school	<u>5%</u> 5) Associate degree (2 years of college)
<u>19%</u> 2) Graduated high school	<u>24%</u> 6) Bachelor's degree
<u>7%</u> 3) Technical/Vocational school	<u>9%</u> 7) Some graduate study
<u>20%</u> 4) Some college	<u>10%</u> 8) Graduate degree or professional school
6. How would you describe the size of your community? (Check one number)

<u>51%</u> 1) Rural, farm	<u>15%</u> 4) Small city, 10,000 to 100,000 people
<u>3%</u> 2) Rural non-farm	<u>3%</u> 5) Mid-sized city, 100,000 to 1 million people
<u>29%</u> 3) Small town, under 10,000 people	<u>0%</u> 6) Large city, over 1 million people
7. What was your approximate total household income before taxes in 2001? (Check one number)

<u>4%</u> 1) Under \$20,000	<u>13%</u> 4) \$60,000-\$79,999
<u>19%</u> 2) \$20,000-\$39,999	<u>11%</u> 5) \$80,000-\$99,999
<u>34%</u> 3) \$40,000-\$59,999	<u>19%</u> 6) \$100,000 or more
8. Do you belong to any of the following conservation or environmental organizations? Check all that apply.

<u>2%</u> National Audubon Society	<u>1%</u> World Wildlife Fund	<u>3%</u> Sierra Club
<u>0%</u> Defenders of Wildlife	<u>11%</u> Ducks Unlimited	<u>0%</u> American Rivers
<u>6%</u> National Wildlife Federation	<u>10%</u> The Nature Conservancy	<u>0%</u> Isaac Walton League
<u>5%</u> Prairie Rivers Network	<u>0%</u> Environmental Defense Fund	
<u>3%</u> Illinois Conservation Foundation	<u>13%</u> Other (Please identify): _____	

Please mail the completed survey in the self-addressed envelope

THANK YOU FOR YOUR HELP AND COOPERATION

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