

**Public Opinion  
of  
Water Quality Issues  
and  
Funding Options  
in Idaho**

*by*

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and  
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- The Idaho Forest, Wildlife and Range Policy Analysis Group was established by the Idaho Legislature in 1989 to provide objective analysis of the impacts of natural resource proposals (see Idaho Code § 38-714).
- The Policy Analysis Group is administered through the University of Idaho's College of Forestry, Wildlife and Range Sciences, Charles R. Hatch, Dean.

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14. Idaho water quality policy for nonpoint source pollution: a manual for decision-makers. *J. O'Laughlin* (December 1996, with separate Executive Summary).
15. Guidelines for managing cattle grazing in riparian areas to protect water quality: review of research and best management practices policy. *J.C. Mosley, P.S. Cook, A.J. Griffis, and J. O'Laughlin* (December 1997).
16. History and analysis of federally administered lands in Idaho. *J. O'Laughlin, W.R. Hundrup, and P.S. Cook* (June 1998).

# **Public Opinion of Water Quality Issues and Funding Options in Idaho**

by

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The legislature declares that it is the purpose of this act to enhance and preserve the quality and value of the surface water resources of the state ... [and]

it is hereby declared to be the policy of the state of Idaho to protect this natural resource by monitoring and controlling water pollution.

*It is the intent of the legislature that the state of Idaho fully meet the goals and requirements of the federal clean water act.*

— Idaho Code § 39-3601  
(emphasis added)

Agricultural pollution and its prevention and control is and will continue to be a challenge. Current *programs for agricultural and other nonpoint source pollution control* are only the beginning of a lengthy process that *will require a long-term commitment of time, resources, and funds from every sector*. A number of experimental programs have documented varying degrees of success, and much can be accomplished once commitments have been made, including working together with diverse groups.

— *Water Quality: Prevention, Identification, and Management of Diffuse Pollution*  
(Novotny and Olem 1994)  
(emphasis added)

Funding will be needed for monitoring and as incentives to encourage the adoption of BMPs where they are not required. *The source of that funding is likely to remain the largest obstacle in water quality management*. Along with funding, patience will be needed. Reversing the cumulative effects of environmental damage will take time.

— “Idaho Water Quality Policy for Nonpoint Source Pollution: A Manual for Decision-Makers”  
Policy Analysis Group Report 14  
(O’Laughlin 1996, page 81)  
(emphasis added)

## About the Policy Analysis Group (PAG)

**Role and Mission.** The Idaho Legislature created the Policy Analysis Group (or "PAG") in 1989 as a way for the University of Idaho to respond quickly to requests for information and analysis about current natural resource issues. The PAG's formal mission is to provide timely, scientific and objective data and analysis, and analytical and information services, on resource and land use questions of general interest to the people of Idaho.

**PAG Reports.** This is the seventeenth report of the Policy Analysis Group (see inside cover). The PAG is required by law to report the findings of all its work, whether tentative or conclusive, and make them freely available. PAG reports are primarily policy education documents, as one would expect from a state university program funded by legislative appropriation. The PAG identifies and analyzes scientific and institutional problems associated with natural resource policy issues. In keeping with the PAG's mandate, several alternative policy options are developed and their potential benefits and detrimental effects are analyzed. As an operational policy the PAG does not recommend an alternative.

**Advisory Committee.** A standing Advisory Committee (see inside cover) has specific functions assigned by the PAG's enabling legislation. The committee's main charge is to review current issues and suggest topics for analysis. Based on those suggestions, the dean of the College of Forestry, Wildlife and Range Sciences works closely with the PAG director to design analysis projects. The Advisory Committee has a responsibility to suggest the appropriate focus of the analysis. This is done iteratively, until an outline for the project is mutually agreed upon by the committee and the PAG. The outline is usually organized as a series of focus questions, and the PAG's analytical tasks are to develop replies to the questions. The PAG uses the resources of the university and other public and private organizations as needed. When the PAG becomes active on a project, the committee receives periodic oral progress reports. This process defines the scope of PAG report content and provides freedom for the PAG to conduct unbiased analysis.

**Technical Review.** Peer review of PAG work is absolutely essential for ensuring not only technical accuracy but also impartiality and fairness. A technical advisory committee and technical reviewers are selected separately for each project by the dean and PAG director, sometimes upon recommendation of the Advisory Committee, to ensure that a wide range of expertise is reflected in the design and execution of PAG reports, and that no point of view is favored. Report review criteria used by the National Research Council of the National Academy of Sciences are the guidelines furnished to PAG reviewers.

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## Executive Summary

Public opinion of funding options for programs to reduce water pollution from nonpoint source\* activities not regulated by the state, and willingness to pay taxes for that purpose, were measured at the request of a state legislator. People were also asked about the relative importance of water quality issues, their knowledge about these issues, and responsibilities for water quality program operations and funding. With a 52% questionnaire return rate, we are 95% confident that survey results below represent the opinions of the citizens of Idaho, with a margin of error of  $\pm 5\%$ .

### Relative Importance of Water Quality Issues

- “Protecting our natural resources” is a high priority concern for Idahoans (58% of respondents), exceeded on our list of concerns only by K-12 education (74% of respondents).
- “Improving the quality of water resources” is a high priority in the spectrum of natural resources management issues (61% of respondents), exceeded on our list only by air quality (71%).
- Protecting household water supplies (77% of respondents) and agricultural water supplies (56%) are high priority water uses. Other high priority uses are water for wildlife (47%), fish habitat (41%), scenic value (31%), industrial supply (24%), and recreation (20%).

### Knowledge About Water Quality Issues

- Newspapers and television are most often the sources of information about water quality.
- Sources of water pollution respondents “have personally experienced” were livestock operations (34% of respondents), agriculture (32%), and recreational activities (31%).

### Responsibility for Nonpoint Source Pollution\* Control Program Operations and Funding

- State government should be most responsible for *operating* programs to control water pollution from road construction (61% of respondents), recreational areas and activities (56% and 51%), agriculture (49%), and livestock operations (42%). Local government should be most responsible for operating programs in urban areas (59%) and construction areas (42%).
- State government should be most responsible for *funding* programs to control water pollution from recreational areas and activities (55% and 51% of respondents), road construction (54%), and agricultural activities (40%). The private sector should be most responsible for funding water pollution control from livestock operations (41%) and construction areas (35%), and should have some responsibility for agricultural activities (32%).

### Funding Options and Willingness to Pay for Nonpoint Source Pollution\* Control Programs

- Six options were *avored* by a majority of the respondents (see Figure 1): charge polluters (80%), user fees for water-based recreation (61%), lottery (59%), tax credits (58%), alcohol and tobacco tax (57%), and corporate income tax (54%).
- Three more options were *acceptable* to a majority of the respondents (see Figure 1): other licenses and fees (62%), motor fuel (gasoline) taxes (54%), and state sales tax (53%).
- Three options were *not acceptable* to respondents (see Figure 1): state income tax (43%), estate tax (59%), and local property tax (59%).
- A majority of the respondents are *willing to pay* at least a ½% increase in either gasoline tax (56%) or state sales tax (52%) for programs to control nonpoint source pollution.\*

### Conclusion

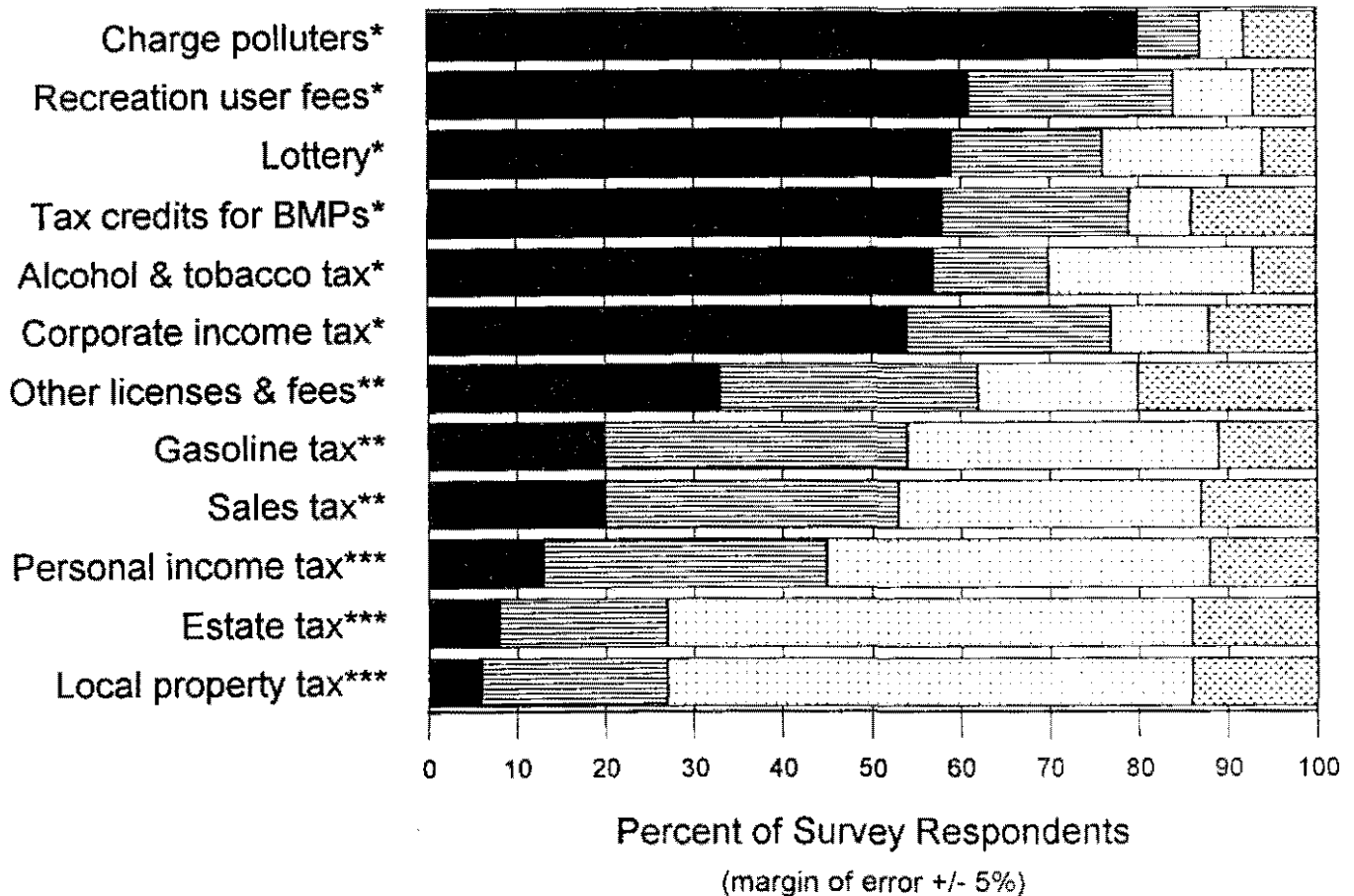
Idaho citizens favor the idea that polluters pay the costs of pollution control. However, water quality issues are high priority concerns, and many, if not most, Idahoans would accept a modest increase in gasoline or sales taxes to fund water quality programs. Policy-makers should be aware of other funding options people would favor more than gasoline or sales taxes (see Figure 1).

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\* Nonpoint source pollution and other technical terms are defined in the **Glossary**.

-- Figure 1 --

## Public Opinion of Water Quality Funding Options #



- Do favor
- ▨ Do not favor but accept it
- ▩ Would not accept
- ▤ Need more information

# Funding options are specifically for programs for reducing pollution from nonpoint source activities that are not regulated by the state, including agricultural activities, livestock operations, construction areas, urban areas, recreational activities and areas, and highway or road construction (with the exception of logging roads, which are regulated).

\* **Favored** options are those with "Do favor" response rates greater than 50%.

\*\* **Acceptable** options are those with combined "Do favor" and "Do not favor but accept it" response rates greater than 50%.

\*\*\* **Not acceptable** options are those with combined "Do favor" and "Do not favor but accept it" response rates less than 50%.

## Chapter 1. Introduction

The State of Idaho faces the expensive task of designing and implementing programs to reduce nonpoint source pollution in Idaho's watersheds. Protecting water quality in Idaho, as it does elsewhere, involves preventing excessive levels of pollution from occurring and restoring the quality of waters that have been impaired by past activities. The federal Clean Water Act (Public Law 92-500, 1972) mandates that each state develop programs to meet the nation's unfinished agenda in controlling pollution from nonpoint sources,\* or, as it is sometimes called, polluted runoff.

If the state's programs are judged unsatisfactory by the federal court, program control over Idaho's water resources could be ceded to the federal government (see O'Laughlin 1996). Federal funding sources for water quality programs are uncertain, and the tasks Idaho faces in the near future will require additional expenditures. In-depth analysis of problems Idaho has implementing the Clean Water Act is provided in Policy Analysis Group Report 14 (see O'Laughlin 1996). In short, sediment is the most widespread pollutant, and agricultural activities are the most widespread source of human-caused sedimentation (IDEQ 1989). This is the situation nationwide, as well as in Idaho (EPA 1998).

The costs of preparing the Total Maximum Daily Load (TMDL)\* analysis required by the Clean Water Act are substantial. For example, the State of Washington estimates its personnel costs for TMDL preparation and implementation at more than \$6 million per year for the next 15 years (Wrye 1998). Idaho has at least as many water bodies requiring TMDLs as does Washington. The TMDL and subsequent watershed management plans based on it are basic Clean Water Act requirements for watersheds that do not meet water quality standards (see O'Laughlin 1996).

Following the preparation of TMDLs, the costs of actions to reduce water pollution to acceptable levels in water bodies that do not meet current standards will also be substantial. Sources of funding for these tasks are uncertain.

In December 1997 Senator Cecil Ingram, who at the time was Chair, Agricultural Affairs Committee, suggested that the Idaho Forest, Wildlife and Range Policy Analysis Group (the PAG) measure public opinion about potential funding sources for water quality programs aimed at reducing nonpoint source pollution, especially in the agricultural sector. This report focuses on

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\* This and other technical terms are defined in the **Glossary**.

four facets of public opinion, attitude, or orientation towards water quality issues in Idaho:

- 1) relative importance of water quality issues,
- 2) knowledge about water pollution problems,
- 3) responsibility for water pollution control program operations and funding, and
- 4) acceptable options for sources of funding and willingness to pay increased taxes for water quality programs, specifically programs for reducing pollution from nonpoint source activities not regulated by state law.

### **Report Organization**

To address the concerns Idaho policy-makers might have about water quality programs and funding, we asked four sets of questions, as described immediately above. These four facets of water quality issues are chapter titles in the report. The first set of questions placed water-related issues in a broader context (Chapter 2). The purpose was to see how people think about the priority of water-related issues in relation to other public policy issues, and to other natural resources issues. Then we asked respondents for their knowledge about water pollution source activities (Chapter 3). Opinions were solicited as to who should be responsible for operating programs to reduce nonpoint source pollution from activities not regulated by the state, and where funding for such programs should come from (Chapter 4). Finally we asked two questions related to the main purpose of this research: a) acceptability of various options or sources of funding for programs to reduce water pollution from nonpoint source activities not regulated by the state, and b) whether or not people would be willing to pay an increase in some common taxes for the purpose of reducing pollution from these nonpoint source activities (Chapter 5).

The presentation and discussion of survey research results in this report follows the order in which the questions were presented to a random sample of Idahoans in a mail questionnaire, or survey instrument (see Appendix A). However, the order of listed items in the survey instrument questions has been rearranged to enhance readability and understanding by ranking the items according to responses. Also, each question in the survey instrument provided an "Other" category that respondents could use to indicate another choice if it was not on the list of items presented. These "Other" responses were relatively few in number and most of them were closely related to the listed items in each of the questions. The survey instrument concluded with an open-ended question, "Is there anything else you would like to mention about water issues in Idaho?" Responses to this question are analyzed at the end of Chapter 5. Chapter 6 analyzes water quality program funding alternatives, incorporating the survey research results.

## Methods

A mail questionnaire was developed in March 1998 and sent to a random sample of 600 Idaho households from a list furnished by a commercial survey research firm. People were asked a range of questions related to Idaho's water quality, public knowledge of water quality issues and programs, and their opinion regarding some funding source options. After repeated follow-ups using Dillman's (1978) methods, we received 240 responses, or a 40% return. This we judged to be an insufficient number to provide a reliable statistical basis upon which to base inferences about Idaho citizens. Results from the March 1998 questionnaire are not reported herein. However, the reactions to some of the questions from this initial effort did provide insights that we used to redesign the questionnaire.

The services of the Social Survey Research Unit of the University of Idaho's College of Agriculture were engaged to help redesign the questionnaire and to administer the survey. Another random sample of Idaho households was obtained from the same commercial firm and the revised questionnaire was mailed in September 1998. This survey instrument is provided herein as Appendix A.

In early December 1998 a sufficient number of surveys (377) of the 725 that had been mailed (52% response rate) had been returned so that responses have a sampling error of approximately  $\pm 5\%$ . We did not do a follow-up questionnaire to test for non-response bias. Although statistically reliable as a whole, the sample population is too small to develop inferences on subsets of the sample, such as regions of the state. When we say these survey results represent the citizens of Idaho, we do so with 95% confidence, and the reader should be aware that there is a sampling margin of error of  $\pm 5\%$  associated with each response.

## Limitations of Survey Research

The uses of survey research date back to the Old Testament. Today it is perhaps the most widely used method of observation in the social sciences. In short, the researcher selects a sample of respondents to represent a larger population and administers a standardized questionnaire to them to measure attitudes and orientations for the purpose of making inferences about the larger population (Babbie 1995).

• *Strengths and Weaknesses.*— Survey research has its strengths and weaknesses. A carefully selected probability sample together with a standardized questionnaire offers the possibility of making descriptive assertions about a large population, such as that of an entire

state. Surveys have been used to determine unemployment rates, voting intentions, and the like with considerable accuracy, something which no other method of observation in the social sciences can offer (Babbie 1995).

Strengths of survey research include flexibility. Researchers can ask many questions on a given topic, which provides a considerable amount of analytical flexibility. Measurement is enhanced through standardization of data collected. Another strength is that the ambiguity of the concepts under study is reduced by having to ask exactly the same questions of all subjects, and imputing the same intent to all respondents giving a particular response (Babbie 1995).

Survey research has a number of weaknesses. Standardized questionnaire items on complex topics often appear to be superficial. Questions that will be at least minimally appropriate to all respondents may overlook what is most appropriate to many respondents. This problem is inherent in survey research. Another problem is that although surveys are flexible in providing the opportunity to ask many questions on a topic, they are inflexible in the sense that an initial study design remains unchanged throughout the study. Perhaps the main weakness of surveys is artificiality, especially in the realm of action. Survey instruments cannot measure people's actions, they can only collect self-reports of recalled past action or of prospective or hypothetical action (Babbie 1995).

There are two aspects of this artificiality problem (Babbie 1995). First, the topic of study may not be amenable to measurement through questionnaires. We do not feel this is the case with water-related issues, as no one can deny the importance of water. The researcher does have to be careful with what the survey instrument is attempting to measure, and not everyone is comfortable grasping at the complex terminology associated with water quality policy. Nonetheless our task was to make the arcane comprehensible, and there is some evidence in the responses that we did not do this to everyone's satisfaction (see Appendix B, item 2). Second, a survey respondent may have given no thought to whether water pollution should be controlled or how such programs should be funded until we asked for his or her opinion in this questionnaire.

Survey research has a validity problem. At best, survey responses can be regarded as approximate indicators of what the researcher has in mind when framing the questions. Reliability is less of a problem, as careful wording of questions can significantly reduce the subject's inherent unreliability (Babbie 1995).

In summary, survey research has the weaknesses of being somewhat artificial and potentially superficial. A full sense of social processes in their natural settings can only be approximated through the use of surveys (Babbie 1995).

● **Sampling Error.**— One of the limitations of survey research lies in the difficulty of drawing a sample that is representative of the larger population. In order to reach our goal of  $\pm 5\%$  sample error, it is necessary to have approximately 380 respondents (Salant and Dillman 1994). How can a few hundred people represent the larger population of Idaho, with more than one million people? Through probability sampling, whereby members of the larger population are selected at random to form a sample. The sample can represent the larger population only to the extent that the sample mirrors the attributes of the larger population. The **Representativeness** section to follow analyzes the representativeness of the sample drawn for this survey. The problems revealed are not unexpected, nor is it likely, as confirmed through statistical testing, that the survey results are not representative of the larger population. Of course, the usual caveats of probability sampling hold. We are confident at the 95% level that the sample results portrayed herein are within  $\pm 5\%$  of the population of the State of Idaho.

● **Other Sources of Error.**— In addition to sampling error, survey researchers must be aware of three other sources of error (from Salant and Dillman 1994).

Coverage error arises when results are extended beyond the sampling frame. Inferences from sample results can be extended to a larger population if the list from which the sample population was drawn (the sampling frame) is a complete list of the larger population. We tried to reduce coverage error by purchasing a random sample of Idaho citizens from a reliable commercial firm.

Measurement error is the difference between the respondent's answer to a question and the "correct" answer. Measurement errors can arise from several sources. One is the survey method, in this case a mail survey. Another is the questionnaire, which in this case was redesigned based on what we learned from an inadequate response to an initial attempt. Another is the interviewer, which is not a problem with a mail survey. Yet another is the respondent, who may deliberately or inadvertently answer "incorrectly." We tried to reduce measurement error by careful design and sequencing of the nine questions in the mail survey instrument, explained in Chapters 2 through 5.

Non-response error is generally associated with a low response rate. Anything under 60% is a "red flag" for a general public mail survey (Salant and Dillman 1994). Due to additional expenses and time involved, we did not perform a non-response bias test even though our response rate of 52% would warrant it. Based on responses to the concluding open-ended question on the survey instrument (see Appendix B, item 2), we speculate that complex Clean Water Act terminology (for example, "nonpoint source pollution from non-regulated sources"), the variety of public agency programs for water quality, and the diverse funding options we asked about acted in



combination to send some questionnaires to the wastebasket instead of the mailbox.

### Representativeness of Survey Respondents

The questionnaire included a set of demographic questions (Appendix A). The responses to these particular questions are provided in Appendix C. On average, respondents to the survey have lived in Idaho for 35 years and in their current county for 20 years. More than ninety percent of the respondents are registered voters. The median age of respondents was 51. Almost three-fourths of the respondents were male, which could pose a representativeness problem. Possible gender bias and some other measures that can be compared to census data are analyzed in this section.

• **Income.**— We compared income categories of the sample population (Appendix C) to what would be expected in the statewide population by extrapolating the 1990 census data. The sample population may be considered representative of the population of Idaho.

Household Income Class	Sample Population	Expected Population
less than \$10,000	5%	10%
\$10,000-\$14,999	8%	8%
\$15,000-\$49,999	52%	49%
\$50,000-\$74,999	21%	18%
\$75,000-\$99,999	9%	8%
more than \$100,000	5%	7%

• **Age.**— We also compared sample population data on age-class distribution (Appendix C) to what would be expected in the statewide population by extrapolating the 1990 census data:

Age Class	Sample Population	Expected Population
25-34 years	10%	22%
35-44 years	21%	26%
45-54 years	26%	20%
55-64 years	18%	12%
older than 65 years	25%	20%

The data indicated that the sample population has a potential age-class distribution problem. The 25-34 and 35-44 years age-classes were undersampled and the 45-54, 55-64, and older than 65 years age-classes were oversampled. To determine how this sampling problem might affect survey results, the question upon which the results in Figure 1 are based (Q-8, Appendix A) was tested for age-class bias. We used Pearson's Chi-Square ( $\chi^2 < 0.100$ ) to test for the "goodness of fit" of the responses of the sample population to those expected in the larger population (see Babbie 1995). Only one of the 12 funding options demonstrated a statistically significant age-class bias.

Older respondents were less likely to indicate they "Do favor" the corporate income tax option, and they were more likely to indicate they "Need more information" about this option than were the younger respondents ( $\chi^2 = 0.094$ ). This may be interpreted as follows. Idaho citizens are likely to favor the corporate income tax option more than the respondents to the survey, in which 53% of the respondents indicated they "Do favor" this funding option for programs to reduce pollution from nonpoint source activities not subject to regulation by the state.

• **Gender.** One would generally expect a representative sample to be approximately half male and half female. Our sample was 74% male and 26% female (Appendix C). As we did for age, we tested the question upon which the results in Figure 1 were based (Q-8, Appendix A) for gender bias. Statistical analysis shows that of the 12 funding options presented in the question, males were more likely to indicate they "Would not accept" the state sales tax ( $\chi^2 = 0.011$ ), local property tax ( $\chi^2 = 0.050$ ), motor fuel tax ( $\chi^2 = 0.000$ ), or estate tax ( $\chi^2 = 0.042$ ) than were females. For the other 8 options, differences between responses of males and females were not statistically significant, defined as  $\chi^2 < 0.100$ . The statistically significant differences may be interpreted as follows. The "Would not accept" response in Figure 1 for state sales tax, local property tax, motor fuel tax, and estate tax are likely to be somewhat high, as there are more males in the sample than one might expect in a more representative sample of Idaho citizens.

## **Chapter 2. Priority on Water Quality Issues**

One of the problems policy-makers face is that limited financial resources must be allocated across a seemingly endless need for funding in many program areas other than natural resources, and among many different natural resources programs. Given that the task of funding water quality programs involves distribution of limited resources, informed decisions in a democratic process would reflect the relative importance of issues to citizens.

We used three survey questions to address the issue of relative importance, or priority, of water-related issues. These questions reflect the orientations people have about water quality within the larger context of natural resources management issues, which are nested within a broad range of societal concerns. We began the questionnaire by asking people what priority “protecting our natural resources” should be given relative to other societal concerns in Idaho (Table 1). Then we asked what priority water quality issues should be given in relation to other natural resources management issues (Table 2). To help understand the priority of water quality concerns related to different water uses, we asked people what priority various uses of water should be given with regard to protecting water resources (Table 3).

By opening the questionnaire with this sequence of three questions, moving from broad general concerns toward more specific water quality areas, we intended to give people an introduction that would place the topics of water quality program funding responsibilities, funding options, and willingness to pay additional taxes within the context other societal concerns.

### **Priority on Protecting Natural Resources in Relation to Other Societal Concerns**

“The opening question is more likely than any other to determine whether a questionnaire is destined for the mailbox or the garbage” (Dillman 1978, p. 127). The first question presented a list of societal concerns and asked respondents to indicate how much priority each should be given with regard to the welfare of the people of Idaho — high priority, medium, low, or none. (See Q-1 in Appendix A for the list of concerns and response choices as the respondents saw them.) The question places natural resources issues in a broader public policy context by asking people how much priority “protecting our natural resources” should be given in comparison to other societal concerns. The results (Table 1) are a list of concerns ranked by the sum of the “high priority” and “medium priority” response percentages.

**Table 1. Priority on protecting our natural resources in relation to other societal concerns.**

Listed below are a number of areas that affect the people of Idaho. Respondents considered each category and indicated how much priority it should be given with regard to the welfare of the people of Idaho.

	How much priority?*			
	-----percentages (n=367)-----			
	No	Low	Medium	High
Education (elementary, junior and senior high school) . . . . .	2	3	21	74
<b>Protecting our natural resources</b> . . . . .	2	7	33	58
Crime/delinquency prevention and control . . . . .	1	8	34	57
Health care programs . . . . .	2	8	36	54
Maintaining our natural resource industries . . . . .	3	11	38	48
Education at college or university level . . . . .	3	16	46	35
Transportation (highway, air, rail) . . . . .	3	16	56	25
Providing services/safety net for poor families . . . . .	3	27	49	21
Industrial development . . . . .	5	29	46	20

\* Concerns are ranked by sum of "high" and "medium" response percentages.

The highest priority concern among those listed is primary and secondary (or K-12) education, with 95% of the respondents giving it a high (74%) or medium (21%) priority. The second highest priority is protecting our natural resources, with 91% of the respondents giving it a high (58%) or medium (33%) priority. Closely following are crime/delinquency prevention and control, and then health care programs and other concerns (see Table 1).

The question in Table 1 replicates a survey research question used in 1995 by the Social Survey Research Unit in the University of Idaho's College of Agriculture. The high priority people placed on protecting natural resources in 1998 is consistent with responses to this same question in the 1995 survey (Table 1a).

In the 1995 survey, Carlson (1995) determined that there were statistically significant differences in the responses of females and males regarding three of these societal concerns (see Table 1a). Because we undersampled females, the higher priority ranking our sample population

gave these three items in 1998 as compared to in 1995 helps support what appears to be a change in the ranking of protecting natural resources, health care programs, and providing services/safety net for poor families (Table 1a).

	Ranking	
	1995	1998
Education (elementary, junior and senior high school) . . . . .	1	1
<b>Protecting our natural resources</b> . . . . .	3*	2
Crime/delinquency prevention and control . . . . .	2	3
Health care programs . . . . .	5**	4
Maintaining our natural resource industries . . . . .	4	5
Education at college or university level . . . . .	6	6
Transportation (highway, air, rail) . . . . .	7	7
Providing services/safety net for poor families . . . . .	9**	8
Industrial development . . . . .	8	9

\* Females placed higher priority on this than males did ( $p < .01$ ).

\*\* Females placed higher priority on this than males did ( $p < .001$ ).

Source: Carlson (1995) and this report (1998).

Two earlier surveys conducted in 1984 and 1974 used slightly different wording to describe societal concerns than those conducted in 1995 and 1998, but focused on the same sets of concerns (Carlson 1995). Results from 1974 to 1995 reveal consistent priority rankings of the three top priority societal concerns among the general public in Idaho. First is education at the primary and secondary level (or K-12). Vying for second is protecting our natural resources, and crime/delinquency prevention and control (Carlson 1995). These 1998 survey results are consistent with that pattern.

### **Priority on Water Quality in Relation to Other Natural Resources Issues**

The second question presents a list of natural resource issues affecting the people of Idaho

(Table 2). The list was intended to provide a balanced range of issues or program areas within the “Protecting our natural resources” category in the preceding question. “Improve the quality of water resources” is on the list, thus water quality issues are placed in a broader natural resources context by asking people how much priority should be given to efforts to improve water quality in comparison to other natural resources management issues.

**Table 2. Priority on water quality in relation to other natural resources issues.**

Listed below are a range of natural resource issues that affect the people of Idaho. Respondents considered each category and indicated how much priority it should be given with regard to managing our natural resources.

	How much priority?*			
	-----percentages (n=367)-----			
	No	Low	Medium	High
Maintain clean air . . . . .	2	3	24	71
Improve the quality of water resources . . . .	2	4	33	61
Sustain harvestable forest resources . . . . .	1	9	44	46
Reduce the loss of topsoil . . . . .	2	8	44	46
Maintain sport fish and game populations	1	17	48	34
Keep some rivers in a free flowing condition . . . . .	4	15	36	45
Preserve some lands in a wild condition . . .	5	17	34	44
Improve the condition of rangeland . . . . .	3	26	52	19
Restore and maintain native fish runs . . . . .	5	28	39	28
Maintain non-game fish and wildlife populations . . . . .	5	32	42	21
Protect rare plant and animal species . . . . .	9	35	33	23

\* Issues are ranked by sum of “high” and “medium” response percentages.

The results indicate that Idaho citizens place a high priority on water quality issues, exceeded only by clean air issues in the spectrum of natural resources issues on our list (Table 2).

### Priority on Types of Water Uses

The third question (Table 3) performs a structural role by helping to further narrow the focus of the survey and leading respondents to think about specific uses of water in Idaho. Idaho’s

water quality protection programs are targeted through various state agencies on the “designated beneficial uses” of water in order to conform with water quality standards, which are key elements in implementing the federal Clean Water Act (see O’Laughlin 1996). A modified list of officially designated uses in Idaho was provided (Table 3) and the respondents were asked their opinion about the priority these water uses should be given with regard to protecting water resources.

**Table 3. Priority on types of water uses.**

Listed below are a number of uses of water within the State of Idaho. Respondents considered each one and indicated how much priority it should be given with regard to protecting our water resources.

	How much priority?*			
	-----percentages (n=367)-----			
	No	Low	Medium	High
Household water supply . . . . .	1	2	20	77
Agricultural water supply . . . . .	1	6	37	56
Wildlife habitat . . . . .	1	9	43	47
Fish habitat . . . . .	1	13	45	41
Scenic value . . . . .	3	23	43	31
Industrial water supply . . . . .	3	24	49	24
Water related recreation . . . . .	4	28	48	20

\* Water uses are ranked by sum of “high” and “medium” response percentages.

Water for household (or domestic) supply was the highest priority use for protection (77%), followed by agricultural water supply (56%). Respondents gave these two consumptive uses of water higher priority for protection than non-consumptive uses such as wildlife (47%) or fish habitat (41%), scenic value (31%), and water-related recreation use (20%). Domestic and agricultural uses are the most direct and tangible water uses for most people in the state, a point which supports this ranking of water use priorities with regard to protecting water resources. However, no uses of water were considered low or no priority by more than 32% of the respondents (Table 3), and each use was therefore a medium or high protection priority for a super-majority (>68%) of the respondents.

### Chapter 3. Knowledge About Water Pollution Problems

Water quality issues are high priority societal concerns in Idaho (Tables 1 and 2), and a supermajority (>68%) of respondents indicated all water uses need to be protected (Table 3). Water pollution control program funding competes with other programs, making it relevant to know whether people's concerns about water quality are based upon knowledge of water pollution in Idaho. Furthermore, a question arises whether concerns about water quality are based on personal experience with water pollution or knowledge based on hearsay.

Respondents were asked about various media sources of information about water quality issues (Table 4). Then we asked a question designed to reveal whether respondents had personally experienced water pollution from different source activities or, instead, had heard about or not heard about water pollution from these source activities (Table 5).

#### Media Sources of Knowledge On Water Quality Issues

If policy-makers find a need to provide more information about water quality programs to their constituents, it would be helpful to know which media are likely to be most important in doing so.

We asked about sources of second-hand knowledge of water quality issues in Idaho (Table 4).

	How often?*			
	-----percentages (n=348)-----			
	Never	Seldom	Sometimes	Often
Newspaper . . . . .	4	11	45	40
Television . . . . .	4	15	46	35
Radio . . . . .	12	36	38	14
Magazines . . . . .	23	34	35	8
Library books . . . . .	51	33	14	2
Internet . . . . .	60	24	14	2

\* Media are ranked by sum of "often" and "sometimes" response percentages.

Respondents obtain knowledge about water quality issues primarily from newspapers and



television. People also get information from sources other than those in Table 4. A farmer may get information from a county extension agent. Some people may get information through formal education at a college or university. Others may get information by word of mouth from friends and neighbors, as more than a few respondents indicated in the “Other” category on their questionnaire.

### **Knowledge About Sources of Water Pollution**

The next question asks whether or not respondents had heard about or personally experienced different types of water pollution in Idaho (Table 5). Perhaps more important, this question serves the purpose of introducing respondents to the key distinction between water pollution from point sources and nonpoint sources. Furthermore, respondents are informed through the design of the question that there are some activities responsible for nonpoint source pollution that are regulated through existing state programs — specifically, mining, timber harvesting/forestry, and logging roads — and some activities that are not regulated by the state, including agriculture and livestock operations. Having made that distinction and identified some nonpoint source activities as non-regulated, we were then in a position to focus the next series of questions specifically on pollution from nonpoint source activities that are not regulated by the state.

Because a relatively small proportion of respondents “Have not heard about” the various sources of water pollution (from 10% to 29% depending on the type of pollution, Table 5), we can say that a large majority of the respondents are knowledgeable about water pollution sources. Most of the knowledge is acquired by hearsay (53% to 82%, depending on the type of water pollution, Table 5). Respondents have had more personal experiences with non-regulated nonpoint source pollution (18% to 34% of respondents) than with regulated nonpoint sources (15% to 20%) or point sources (3% to 20%). The nonpoint sources that respondents have experienced more often than others are livestock operations (34%), agricultural activities (32%), and recreational activities (31%)

**Table 5. Which Sources of water pollution have respondents experienced?**

Listed below are a number of potential types of water pollution. Respondents indicated whether they had heard about or experienced any of these types of pollution in Idaho.

	-----percentages (n=364)-----*		
	Have not heard about	Have heard about but not experienced	Have personally experienced
This part of the question relates to pollution from a single source.			
<b>Point Source Pollution from Regulated Sources:</b>			
Industrial/manufacturing plants	10	70	20
Landfills/dumps . . . . .	12	68	20
Hazardous/toxic wastes . . . . .	13	77	10
Sewage treatment plants . . . . .	14	66	20
Radioactive/nuclear wastes . . . . .	15	82	3
Food processing plants . . . . .	16	65	19
This part of the question relates to pollution, not from a point or pipe, but from a more general source. The first three from a regulated source, the rest from unregulated sources.			
<b>Nonpoint Source Pollution from Regulated Sources:</b>			
Mining . . . . .	11	74	15
Timber harvesting/forestry . . . . .	18	64	18
Logging roads . . . . .	21	59	20
<b>Nonpoint Source Pollution from Non-Regulated Sources:</b>			
Livestock operations . . . . .	12	54	34
Agricultural activities . . . . .	14	54	32
Urban areas . . . . .	21	58	21
Construction areas . . . . .	21	55	23
Recreational activities . . . . .	24	45	31
Recreational areas . . . . .	24	48	28
Road/highway construction (non-logging) . . . . .	29	53	18

\* Pollution sources are ranked by sum of "Have heard about but not experienced" and "Have personally experienced" response percentages.

#### **Chapter 4. Responsibility for Water Pollution Control Program Operations and Funding**

We asked two similarly structured questions to forge a linkage between public opinion of who should be responsible for the *operation* of nonpoint source programs and who should be responsible for *funding* those programs.

Respondents were asked to indicate which of three levels of government, or perhaps the private sector, should be most responsible for operating or overseeing programs for reducing pollution from nonpoint source activities not regulated by the state (Table 6). Then we asked about the sources of funding for these programs; that is, whether the costs of such programs should be born by private entities or federal, state, or local government (Table 7).

#### **Program Operation Responsibility**

Failure by the State of Idaho to fund and implement water quality programs would, because of a federal court order, shift control of water resources from the state to the federal level (O’Laughlin 1996). We asked for public opinion of which of three levels of government, or the private sector, should have “oversight” responsibility for programs to control pollution from nonpoint source activities (Table 6). The word “oversight” is somewhat tricky. The federal Clean Water Act allows states to operate nonpoint source pollution control programs, but gives ultimate authority for those programs to the federal Environmental Protection Agency. Rather than attempting to explain this “cooperative federalism” situation to survey respondents, we instead assumed they would associate the word “oversight” with the operational, rather than ultimate, responsibility for designing and implementing water pollution control programs. Although results seem to support this assumption, if we were to do the survey all over again, we would replace the word “oversight” (Q-6, Appendix A) with “operate” or some variation thereof.

**Table 6. Who should be most responsible for operating nonpoint source pollution control programs?**

Looking at the types of *nonpoint source pollution from non-regulated sources*, respondents indicated who should be **MOST** responsible for *oversight* (or operation) of control programs for each.

	Who should oversee operations?*			
	-----percentages (n=348)-----			
	Federal Gov.	State Gov.	Local Gov.	Private Sector
Road or highway construction (non-logging) . . . . .	20	61	15	4
Recreational areas . . . . .	8	56	30	6
Recreational activities . . . . .	6	51	32	11
Agricultural activities . . . . .	10	49	24	17
Livestock operations . . . . .	7	42	30	21
Construction areas . . . . .	6	35	42	17
Urban areas . . . . .	6	30	59	5

\* Listed items are ranked by "State Government" response percentages.

According to survey respondents, state government should have the "oversight" or operational responsibility for programs for nonpoint source pollution from most non-regulated sources, with the exception of construction areas or urban areas, where local government should have operational responsibility (Table 6). Respondents consistently felt that the federal government should have a relatively minor responsibility for program "oversight" or operations. Some respondents felt the private sector should have "oversight" or operational responsibility, especially in livestock, agriculture, and construction activities (Table 6).

### Program Funding Responsibility

We asked which of three levels of government, or the private sector, should be responsible for providing funds to control various nonpoint source activities (Table 7). This question links the idea of operational responsibility for programs (Table 6) with various state-level funding options (Table 8).

**Table 7. Who should be most responsible for funding nonpoint source pollution control programs?**

Looking again at the types of *nonpoint source pollution from non-regulated sources*, respondents indicated who should be **MOST** responsible for *providing funds* to control each.

	Who should provide funds?*			
	-----percentages (n=340)-----			
	Federal Gov.	State Gov.	Local Gov.	Private Sector
Recreational areas . . . . .	13	55	20	12
Road or highway construction (non-logging) . . . . .	28	54	10	8
Recreational activities . . . . .	6	51	20	23
Agricultural activities . . . . .	12	40	16	32
Livestock operations . . . . .	8	34	17	41
Construction areas . . . . .	9	33	23	35
Urban areas . . . . .	7	28	53	12

\* Listed items are ranked by "State Government" response percentages.

Respondents felt it falls upon state government to be most responsible for funding control of these nonpoint source activities (Table 7). One exception was urban areas, where more than half the respondents (53%) were of the opinion that local government should be most responsible for providing sources of funding. It is also noteworthy that at least 30% of the respondents identified the private sector as being primarily responsible for funding to control water pollution from livestock operations (41%), construction areas (35%), and agricultural activities (32%).

This identifies the private sector as responsible for most of the funding to control pollution from livestock operations and construction areas, and a considerable responsibility for agricultural activities.

Respondents now have some exposure to the idea that responsibilities for program operations and funding are linked. If, for example, a respondent indicated a belief that state government should be most responsible for programs and federal government should be most responsible for providing funds, there could be an inconsistency in the logic with which the respondent considered the issue. We hoped the order of the questions would reduce this inconsistency.

## **Chapter 5. Acceptable Funding Options for Nonpoint Source Pollution Control Programs**

The main purpose of this survey research was to measure public opinion about acceptable sources of funding for State of Idaho programs to reduce water pollution from nonpoint source activities that are not regulated by the state.

We identified 12 alternative sources of funding and asked people whether they would a) favor that option, b) accept it even if not favored, c) not accept it, or d) need more information (Table 8, see also Figure 1). Because some of these funding options are a form of tax, we asked what level of incremental increase in common household taxes people would be willing to pay for programs to reduce nonpoint source pollution (Table 9).

The willingness-to-pay question not only provides useful information for policy-makers, it also can be used to indicate the quality of public opinion regarding the acceptability of funding options because it explicitly asks people to accept the full consequences of the choice they made. If people believe water quality is a high priority societal concern and that pollution control programs should be funded, it would be consistent if people said they were willing to pay to reduce water pollution. Good quality public opinion may be thought of as public judgment (Yankelovich 1991). We explain why this survey research provides that in the **Public Judgment** section of this chapter.

Concluding this chapter is **Other Concerns About Water Issues**, a brief analysis of the open-ended question that concluded the survey instrument.

### **Acceptance Level of Funding Options**

Based on the interests of the legislator who suggested this project, if we could only have asked one question of Idaho citizens, it would have been this: Would you be willing to pay an additional amount of sales tax if the funds were used in programs to control water pollution, especially in the agricultural sector? Because survey research provides an opportunity to explore the question in much more depth, we developed a list of 12 potential funding sources and asked for the acceptance level response choices in Table 8. The willingness-to-pay concern is addressed with the next question, in Table 9.

Following the presentation of results (Table 8) and discussion of them, we explain the rationale for the design of this question. The explanation includes why we used the acceptance level scale response choices we did, and why we selected these particular funding options. Additional analysis of these funding options in Chapter 6 also helps explain why they were included.

**Table 8. Which funding options for reducing nonpoint source pollution are favored, acceptable, or not acceptable?**

The State of Idaho is required by law to reduce *nonpoint source water pollution from non-regulated sources* to acceptable levels throughout the state. This means that pollution programs will be implemented that will require additional funding. Listed below are a number of possible sources for this funding. Respondents indicated their opinion about each option (see also Figure 1).

	How favorable?*			
	-----percentages (n=369)-----			
	Do favor	Do not favor but accept it	Would not accept	Need more information
A charge to the people responsible . . . . .	80	7	5	8
User fees and licenses for water-based recreation . .	61	23	9	7
Lottery . . . . .	59	17	18	6
Tax credits for those implementing control programs . . . . .	58	21	7	14
Alcohol and tobacco tax . . . . .	57	13	23	7
Corporate income tax . . . . .	54	23	11	12
Other licenses and fees . . . . .	33	29	18	20
Motor fuel (gasoline) tax . . . . .	20	34	35	11
State sales tax . . . . .	20	33	34	13
State income tax . . . . .	13	32	43	12
Estate tax . . . . .	8	19	59	14
Local property tax . . . . .	6	21	59	14

\* Funding options are ranked by "Do favor" response percentages.

This question was designed so that responses would show the funding options that respondents favored or found acceptable or not acceptable (see also Figure 1). The "Need more information" choice reveals some additional information, discussed in the *Question Design* section to follow.

The option list in Table 8 is ranked by the "Do favor" percentage response (see also Figure 1). Six of the twelve options were favored by a majority (or >50%) of the respondents. The highest ranked option was a charge to the people responsible for nonpoint source water pollution, which

80% of the respondents “Do favor” and another 7% find acceptable. In addition, respondents “Do favor” user fees for water-based recreation (61%), a lottery (59%), tax credits (58%), alcohol and tobacco tax (57%), and corporate income tax (54%).

The other six options had “Do favor” response rates of less than 50%. With “Do not favor but accept it” responses added to “Do favor” responses, three options were acceptable to a majority of the respondents — other licenses and fees (62% acceptance), motor fuel tax (54%), and state sales tax (53%). (Recall the  $\pm 5\%$  sampling error.) The other three options were unacceptable sources of funding because the combined “Do favor” and “Do not favor but accept it” responses were less than 50% — state income tax, estate tax and local property tax (Table 8).

• **Question Design.**— Because this is the single most important question asked in the survey, some explanation of the methods used to determine the funding options is necessary for correct interpretation of the survey results. This includes a brief discussion of the choice of reply options, or response scale choices.

**Funding Options.**— The list of funding options was derived from a number of sources. Options include the current sources of funding for the Water Pollution Control Account, which are taxes on tobacco (the cigarette tax and tobacco products tax), state sales tax, and the estate tax. We wanted to provide a comprehensive and balanced list of options, but did not identify what the current funding sources are. On the initial March 1998 questionnaire several respondents indicated through written comments their opinion that persons or businesses exceeding pollution standards should be required to pay for pollution control programs. This idea was presented in this question as “A charge to the people responsible” option. Some additional options for the list of possible funding sources emerged from discussions with technical advisors when we were designing the questionnaire.

The use of a comprehensive list of potential funding sources provides information for policy-makers. The funding strategy ultimately chosen is likely to draw funds from several sources, as does the current approach. The formulation of this question provides “favored” and “acceptable” measures for a wide range of potential funding sources.

**Response Scale Choices.**— The scale response choices used to measure “favored” and “acceptable” in the question above were derived from work that examined hunter acceptance of changes in Idaho hunting seasons and regulations (McLaughlin et al. 1989a,b; Sanyal et al. 1989). This set of response choices was also used to study public acceptance of potential funding sources for a public Arts and Crafts Center in Lewiston, Idaho (Morten et al. 1995). McLaughlin et al. (1989) described the interpretation of this set of response scale choices as follows:



The original four-point response format — Favor, Do not favor but would accept, Would not accept, and Would need more information — was recorded so that the first two response categories denoted ACCEPT, the third denoted NOT ACCEPT, and the fourth represented a SWING vote . . . It is expected . . . changes will not involve all the undecided opinions going in the same direction (McLaughlin et al. 1989a, p.88).

This set of response scale choices is appropriate for measuring public opinion about funding options for water quality programs. Asking respondents to indicate whether they favor, accept, do not accept, or need more information (Q-8, Appendix A; results in Table 8) is a more direct way of approaching the question than other possible sets of responses such as “agree” or “disagree.” Additionally, the inclusion of the “Do not favor but accept it” option allows a respondent to indicate acceptance of the option, even though not favored. This is helpful as such a choice may reflect widely held attitudes toward things such as taxes. Without this “accept” choice in the set of scale items, the commonly used “agree/disagree” scale gives an oversimplified and false picture of the acceptability of a particular policy alternative.

The “Need more information” option provides a useful device for measuring opinion about policy options. Rather than forcing people into a false “agree/disagree” dichotomy that oversimplifies acceptability, this choice allows the respondent to abstain on the basis of needing more information. For the policy-maker, the inclusion of this need-more-information “swing” choice provides additional information about policy alternatives. For example, one policy alternative may attain widespread acceptance at current levels of information. Another alternative may be on the borderline of acceptability, and with more information, people may “swing” to either accept or not accept the alternative.

From the results of this survey, we can say that the relatively low levels of “Need more information” responses (Table 8) indicate that most people already know enough about these alternatives to provide an opinion. However, each policy option does have a “swing” group of from 6% to 20% of the respondents. This could be useful in the case of the sales tax option, which is on the borderline between being acceptable or not acceptable (“Do favor” plus “Accept it” is 53%,  $\pm 5\%$  sampling error). The 13% of the respondents who “Need more information” may “swing” one way or the other with additional information.

**Willingness to Pay a Tax Increase**

We asked respondents if, as individuals, they were willing to pay additional taxes specifically for reducing water pollution from nonpoint source activities. Attention to the willingness-to-pay question was prompted in part by two academic discussions. This type of question can aid in interpreting the limits of respondents' favorability or opposition toward an issue (Labaw 1980, p.122), and it can be used to assess the quality of public opinion (Yankelovich 1991, p.6). Such considerations are appropriate for the preceding opinions of the acceptance level of water quality program funding options (Table 8, summarized in Figure 1). Does public acceptance of a funding option translate into a willingness to pay additional taxes? If so, how much more tax will people support? That is what we wanted to know.

The willingness-to-pay question (Table 9) was designed to discover the level, if there was such a thing, at which Idaho citizens would support tax increases as a funding source for nonpoint source water pollution control programs. For the purposes of this question, only the taxes that could reasonably be thought of as having an effect on most individuals were drawn from the possible funding sources list (Table 8) and included here (Table 9). Recall that two of these alternatives — motor fuel tax and state sales tax — are low on the list of acceptable options, and the other two are unacceptable — state income tax and local property tax (Table 8 and Figure 1).

<b>Table 9. How much tax increase would people be willing to pay?</b>				
Most households in Idaho are affected by the following types of taxes. Respondents indicated how much increase in each they would be willing to pay to see <i>nonpoint source</i> pollution in the state reduced to acceptable levels.				
	-----percentages (n=360)-----			
	None	½%	1%	More than 1%
Motor fuel (gasoline) tax . . . . .	44	32	14	10
State sales tax . . . . .	48	30	17	5
State income tax . . . . .	63	24	10	3
Local property tax . . . . .	76	16	7	1

The responses to this question are consistent with those of the preceding question. Most people would not accept local property tax (59%, Table 8), and most people are not willing to pay an increase in local property tax (76%, Table 9) to have nonpoint source pollution reduced.

Similarly, 43% of the respondents do not accept state income tax as an option (Table 8); 63% of the respondents are unwilling to pay an increase in this tax for reducing nonpoint source pollution (Table 9).

A majority of the respondents are willing to pay increases of at least ½% in motor fuel (gasoline) taxes (56%) and state sales tax (52%) for programs to reduce water pollution from nonpoint source activities (Table 9). This information reinforces the acceptance level for motor fuel tax (54%) and state sales tax (53%), as determined in the preceding question (Table 8).

One should not overlook the ±5% sampling error, as a substantial proportion of respondents are not willing to pay an increase in state sales tax (48%) or motor fuel tax (44%).

We are 95% confident that 47% to 57% of Idaho citizens are willing to pay at least a ½% increase in sales tax for programs to reduce water pollution from nonpoint source activities, including agriculture and livestock operations.

## Public Judgment

Good quality public opinion is “public judgment” (Yankelovich 1991). The value of public opinion has long been viewed from two different vantage points:

In some contexts public opinion is equated with ignorance, with the uncontrolled mass, with wild beasts. In other contexts, public opinion is deemed almost sacred, the voice of God. In present-day America, both sides of the contradiction are alive and well. The public is feared as a beast to be managed and controlled with care. The public is also respected as the voice of the sovereign voter who always has the last word, the consumer who is always right (even when wrong), the responsible jobholder, and the respected citizen (Yankelovich 1991, p.52).

The value of public opinion depends on its quality. Policy-makers desiring to make decisions that reflect the interests of their constituents are likely aware that public opinion may be good, or it may not be. “Good” public opinion is what pollster Daniel Yankelovich (1991) calls “public judgment.” For the purposes of improving public decision-making through public judgment, he sorts out the difference between good and poor public opinion:

*I propose that the quality of public opinion be considered good when the public accepts responsibility for the consequences of its views and poor when the public, for whatever reason, is unprepared to do so (Yankelovich 1991, p.24, italics in original).*

Consider, for example, two national opinion polls in 1983 on a constitutional amendment requiring a balanced federal budget. At first a 63% majority said they approved. Soon afterwards, as people learned that such an amendment might result in higher taxes, the 63% majority shrank to a 39% minority (Yankelovich 1991). The first poll reflected poor public judgment, the second

did not.

Now consider the results of this survey. Respondents gave water quality issues a high priority (Tables 1 and 2). When asked to provide an opinion on twelve options for funding programs to reduce water pollution from nonpoint source activities, a majority of the respondents favored six of the options and found three others acceptable (Table 8 and Figure 1). Were the respondents willing to accept the consequences of their choices? That is, were they willing to pay to get it done? We asked this question about two common household taxes that were acceptable. The answer was yes, but a qualified yes because of the margin of sampling error (Table 9).

Two of the funding options a majority of the respondents would accept are gasoline tax (54%,  $\pm 5\%$  sampling error) and sales tax (53%,  $\pm 5\%$ ) (Table 8). Public judgment was evident as a majority of respondents indicated they would be willing to pay an incremental increase in gasoline tax (56%,  $\pm 5\%$ ) and sales tax (52%,  $\pm 5\%$ ) to fund programs to reduce nonpoint source pollution. Furthermore, they identified the amount of the increment they would be willing to pay (Table 9).

Respondents to this survey have demonstrated that this is “good quality” public opinion. By engaging the issues, considering it from all sides, understanding the choices it leads to, and accepting the full consequences of the choice they made, respondents to this survey have demonstrated their “public judgment” (Yankelovich 1991, p.6) on the issue of funding programs for reducing nonpoint source pollution.

### **Other Concerns About Water Issues**

At the end of the questionnaire we asked, “Is there anything else you would like to mention about water issues in Idaho?” We received 58 responses (see Appendix B). These comments in general reflected the high priority people in Idaho place on water resources issues. Comments varied greatly, ranging from “Good luck” to criticism of the survey instrument, from “Breach the dams” to “Don’t breach the dams,” and from “Polluters should pay 100%” to “I would be willing to sacrifice whatever it takes to have clean water.”

Because open-ended questions at the end of a survey provide respondents with an opportunity to comment on a limitless variety of topics, such questions can provide some insights on how individual respondents feel about the issues raised in the questionnaire. We placed the 58 sets of comments into different categories (Table 10). Some comments were short declarative sentences expressing a single idea, others were short essays expressing many ideas (see Appendix B).

**Table 10. Responses to concluding question, "Is there anything else you would like to mention about water issues in Idaho?"**

Response Categories*	Number of comments
Polluting industries or water users should pay . . . .	14
Comments on survey and/or methods . . . . .	12
Importance of clean water . . . . .	10
Miscellaneous comments . . . . .	10
Dams and fish conservation . . . . .	9
Agriculture's responsibility for water quality . . . . .	8
Livestock and grazing water quality problems . . . .	6
Balanced and/or efficient approach to water use . .	5
Federal role in water issues . . . . .	4
Water rights issues . . . . .	4
Everyone is responsible for clean water . . . . .	3

\* See Appendix C for list of respondents' comments in each category.

Although it may not be appropriate to highlight one comment from among so many, there is one that not only captures the feeling of many respondents succinctly, it also reflects the current situation in Idaho as the federal court sees it: "Something needs to get done now and not tomorrow." Perhaps this respondent was aware of the court order requiring implementation of TMDLs in Idaho (see O'Laughlin 1996), but perhaps not.

In the concluding chapter we provide analysis of alternatives for providing funding that would help "get done" what the federal court has ruled Idaho must do to meet the mandates of the Clean Water Act.

## Chapter 6. Analysis of Funding Alternatives

Idaho citizens face a dilemma: trying to preserve the state's environment and natural resources while attempting to reduce federal intervention and the spending tied to such efforts. *State environmental programs must compete for dollars* with programs for education, public safety, health, social issues, and other worthy programs.

— Idaho Division of Environmental Quality  
(IDEQ 1995, p.27, emphasis added)

Idaho citizens have spoken through these survey results about their public judgment of the competition for funding mentioned in the above quotation. Protecting natural resources is a high priority concern (Table 1) ranking consistently among the top three issues in the state. Education at the primary and secondary levels ranks first; protecting natural resources consistently vies with crime/delinquency prevention and control for second rank (see discussion at Table 1a). Among natural resources issues, protecting water quality ranks second to protecting air quality (Table 2). A super-majority of Idaho citizens (68%) identified protection of the full range of "designated beneficial uses" of water as a medium or high priority, with supplies for agriculture and human consumption identified as higher priorities than non-consumptive wildlife, fish habitat, scenic value, and recreational uses (Table 3).

Funding issues include the appropriate level and manner of support for water quality programs, and whether dedicated funding sources or the General Fund are to be used. These issues are likely to be discussed during the 1999 session of the Idaho Legislature (Ray Houston, personal communication).

### **The Problem: TMDLs and BMPs**

If Idaho nonpoint source control programs are judged by the federal court as insufficient to meet the mandates of the federal Clean Water Act, control over state water quality programs could be ceded to the federal government (O'Laughlin 1996). This is a concern because water quality is inextricably intertwined with water quantity (Turner and O'Laughlin 1991). Furthermore the citizens of Idaho have indicated a preference for state rather than federal responsibility for water pollution control programs for nonpoint source activities (Table 6). One of the mandates of the Clean Water Act has been interpreted by the federal court as an urgent requirement for Idaho to develop TMDLs (Total Maximum Daily Loads).

What is a TMDL? The federal Clean Water Act requires TMDL analysis of each water body that does not meet state water quality standards. There are hundreds of such water bodies in

Idaho. The TMDL establishes pollutant limits for water bodies, and provides the basis for the state to establish water quality controls (IDEQ 1995, p.30). A TMDL identifies the sources of pollution and distributes allowable pollution levels throughout the watershed. Operations that contribute more pollution than is allowed under the TMDL will be identified. The TMDL forms the basis for a watershed management plan to reduce pollution to levels that “fully support” state water quality standards and thus meet the requirements of the federal Clean Water Act. Analysis of Idaho’s nonpoint source pollution problem, including TMDLs and other policy processes required under the federal Clean Water Act, is available in Policy Analysis Group Report 14 (O’Laughlin 1996).

The Clean Water Act allows either regulatory or non-regulatory programs for controlling water pollution from nonpoint source activities. In Idaho, mining and forestry activities are regulated, and operators absorb the costs of water pollution prevention and abatement. Should other sectors that contribute nonpoint source pollution be regulated? If so, how? If not, what other options are available? Policy-makers will need to address these questions.

The technology for preventing nonpoint source pollution is well known, and generally referred to as Best Management Practices (BMPs). State policy is that forestry and mining operators must use BMPs or be fined for not doing so. Agriculture and grazing operators do not have mandatory requirements to use BMPs, but other than modifying current practices with BMPs, there is no way to reduce water pollution except to prohibit pollution-causing activities. It costs money to install BMPs and monitor water bodies to see if BMPs are effective or need to be modified. Current policy allows farmers and ranchers the flexibility to decide whether or not to use BMPs. To meet the mandates of the Clean Water Act, operators contributing excessive amounts of pollution will have to change their management practices. TMDLs will identify these operators.

### **Current Funding Sources**

This section reviews the current funding sources for water pollution control programs in Idaho, and provides a rationale for the selection of some of the funding options in the survey (see Table 8 and Figure 1). Both the federal government and State of Idaho have designed a variety of funding mechanisms for water quality programs.

• **Federal Funding Mechanisms.**— All working citizens of the nation pay federal income taxes. Some of these taxes come back to the states through federal programs. Some of these programs deal with water pollution and provide sources of funds for state programs. The two

major sources of funding for nonpoint source pollution control are grants to the states under Section 319 of the Clean Water Act, and the Clean Water State Revolving Fund.

❖ *Clean Water Act Section 319 Grant Funds.*— This section, except for the closing paragraph, is taken verbatim from the federal Environmental Protection Agency’s most recent report to Congress on the status of water quality in the nation (EPA 1998). It is presented as a block quote for those who may want to skip over these details:

Nonpoint source pollution generally results from land runoff, atmospheric deposition, drainage, or seepage of contaminants. Major sources of nonpoint source pollution include agricultural runoff, runoff from urban areas, and runoff from silvicultural operations. Siltation and nutrients are the pollutants responsible for most of the nonpoint source impacts to the Nation’s surface waters. These diffuse sources are often harder to identify, isolate, and control than traditional point sources. As a result from 1972 to 1987, EPA and the States placed primary focus on addressing the obvious problems due to municipal and industrial discharges: issuing permits for point source discharges, then inspecting, monitoring, and enforcing those permits to ensure that point sources met the Clean Water Act requirements (EPA 1998).

Sections 208 and 303(e) of the Clean Water Act of 1972 established the framework to address nonpoint sources of pollution. States and local planning agencies analyzed the extent of nonpoint source pollution and developed water quality management programs to control it with funds provided by EPA under Section 208. Best Management Practices (BMPs) were evaluated, assessment models and methods were developed, and other types of technical assistance were made available to state and local water quality managers (EPA 1998).

In 1987, however, Congress enacted Section 319 of the Clean Water Act, which established a more focused national program specifically to control nonpoint sources of water pollution. Section 319 created a three-stage national program to be implemented by the states with federal approval and assistance. States were to address nonpoint source pollution by (1) developing nonpoint source assessment reports, (2) adopting nonpoint source management programs, and (3) implementing the management programs over a multiyear time frame (EPA 1998).

Section 319 also authorizes EPA to issue annual grants to states, territories, and tribes to assist them in implementing their EPA-approved programs. From FY90 through FY97, Congress appropriated and EPA awarded approximately \$572 million for Section 319 assistance (EPA 1998).

Idaho has used Section 319 funds for development of educational materials, installation of bank stabilization mechanisms in grazing areas, development of sediment control structures, monitoring the effectiveness of Best Management Practices (BMPs), and development and implementation of watershed management plans (IDEQ 1995). If there were more such funding available to the states, the nation’s waters would no doubt be cleaner. The EPA has taken a new and different approach using a “revolving fund.”

❖ *Clean Water State Revolving Fund (SRF).*— This section is taken verbatim from the EPA’s (1998) most recent report to Congress on the status of the nation’s water quality. Again, it is



presented as a block quote:

Historically, under the Clean Water Act, EPA has been authorized to help municipalities solve their wastewater treatment problems by providing grants for the development of municipal wastewater treatment plants. Since 1972, EPA through the Construction Grants Program, has provided more than \$54 billion to municipalities to construct or improve their wastewater treatment systems (EPA 1998).

In the 1987 amendments to the Clean Water Act, Congress and the President agreed to phase out the Construction Grants Program. In its place, the Clean Water State Revolving Fund (SRF) program was created. This program has resulted in the establishment of independent and permanent sources of clean water funding in each state. Capitalization of these funds is provided by the federal (83%) and state (17%) governments. Through fiscal year 1998, Congress has appropriated \$14 billion for Clean Water State Revolving Funds; when combined with state matching funds, leverage bond proceeds, and other sources, the national program has more than \$24 billion in assets (EPA 1998).

The Clean Water SRF program is viewed by the EPA as a powerful partnership between EPA and the states. It allows states the flexibility to provide funding for projects that will address their highest priority water quality needs. Under the program, EPA provides grants or "seed money" to states to help capitalize the revolving loan funds. The states, in turn, make loans to communities, individuals, and others for high-priority water quality activities. As money is paid back into the fund, new loans are made to other recipients who need help in maintaining the quality of their water (hence the revolving nature of the funds). Because of the funds' revolving nature, the federal investment can result in the construction of up to four times as many projects over a 20-year period as a one-time grant (EPA 1998).

While traditionally used to build or improve wastewater treatment plants, SRF loans are also being used for agricultural, rural, and urban runoff control activities; estuary improvement projects; wet weather flow control, including storm water and sewer overflows; and alternative treatment technologies. Loans may also be used for the protection of ground water resources. To date throughout the nation, loans totaling approximately \$20 billion have been made to fund more than 5,600 clean water projects (EPA 1998).

Recently, state programs have begun to devote an increasing volume of loans to nonpoint source, estuary management, and other high-priority water quality projects. Eligible nonpoint source projects include virtually any activity that a state has identified in its nonpoint source management plan. Such activities include projects to control runoff from agricultural land; conservation tillage and other projects to address soil erosion; development of streambank buffer zones; and wetlands protection and restoration (EPA 1998).

Since the Clean Water SRF program is managed largely by the states, project eligibility varies according to each state's program and priorities. Eligible loan recipients include communities, individuals, citizens' groups, and nonprofits. Besides financial savings, loan recipients can realize significant environmental benefits, including protection of public health and conservation of local watersheds. EPA is committed to managing the Clean Water SRF program to provide financial assistance for the improvement of water quality throughout the United States (EPA 1998).

Many states have taken advantage of SRFs to provide loans to finance nonpoint source and other water pollution control programs. Twenty states are using SRF loans to fund a wide variety of nonpoint source projects. SRF loans are well suited to funding these types of projects because: the low-interest nature of the SRF program translates

into substantial savings—an SRF loan can provide up to a 50% savings or more compared with financing at market rates; SRF loans can be used to cover 100% of the project costs, including planning and design; SRF loans can be used to cover 100% of the project costs, including planning and design; SRF loans carry fewer federal requirements than most federal grants. These advantages can make an SRF loan a better deal than a grant, especially one with a high cost-share requirement (EPA 1998);

SRF loans can be used to fund agricultural BMPs such as manure storage facilities, no/low till farm equipment, erosion control, stream bank buffers; urban and forestry BMPs; wetlands restoration and preservation; ground water, source water, and wellhead protection measures; stormwater controls, and many others (EPA 1998, see EPA 1997 for more information).

Idaho is not among the list of 20 states that have used Clean Water SRF loans to fund non-point source projects (EPA 1998). According to one of Idaho's water quality program administrators, there is a catch to using SRF loans for point source projects that makes their use for nonpoint source projects problematic. Before project funds can be advanced under the SRF for wastewater or drinking water projects, there must be a plan and plans cost money. Engineers who can develop such plans are unwilling to bear the up-front costs of developing the plans upon which SRF loans can be based. Because of the upfront costs involved in developing acceptable plans, small communities have a particularly hard time with SRF loans. This problem extends to farms and ranches, where the problem of foreclosure in the event of default on SRF loans is also a factor worthy of some consideration (Larry Koenig, personal communication).

• **State Programs and Funding Mechanisms.**— In its strategic plan, the Idaho Division of Environmental Quality (DEQ) said,

*Future federal funding is uncertain* and there is a continuing need to strive for increased governmental effectiveness and efficiency in environmental initiatives. It is important for all DEQ managers to acquire a sound understanding of the costs of various programs and sources of funding (IDEQ 1995, p.59, italics added).

The Idaho Legislature has been responsive to environmental issues and has committed public funding to support a variety of environmental programs. ... *The Legislature will continue to review priorities on a case-by-case basis, and as warranted provide general fund revenues to support preventative or remedial actions* (IDEQ 1995, p.27, italics added).

The State of Idaho has a variety of funding sources for water quality programs, including the Water Pollution Control Fund (or Account), which is the source of funds for the State Agricultural Water Quality Program (SAWQP). Other sources of funding include the Resource Conservation and Rangeland Development Fund (RCRDF) and appropriations from the General Fund. Each of these is described below.

Furthermore, other federal, state, local, and user fee funding is provided to Public Health Districts, the Department of Fish and Game, and the Department of Water Resources for activities

related to water quality. In short, there are a myriad of water quality activities funded from various combinations of federal, state, local, and user fee sources (Ray Houston, personal communication).

◆ *Water Pollution Control Account (or Fund).*— In 1970 the Idaho Legislature created the Water Pollution Control Account (or Fund). The original purpose was to provide for the state's required matching share to obtain federal grants, and bonds were sold to set up the account. Over the years the account funds have been used for a variety of purposes, not all them related to water quality programs (Larry Koenig, personal communication).

Today, the purposes of the account are to prevent and control water pollution, support and aid technical research on the prevention and control of water pollution, and to provide financial assistance to municipalities and Soil Conservation Districts for the prevention and abatement of water pollution. The account has been used to provide for the operations of state water quality programs, to provide the state's matching share of federal grants, to capitalize the Wastewater Facility Loan Fund, to provide grants to municipalities for planning wastewater facility construction, to provide supplemental grants for municipal facilities when costs exceed the ability of the community to repay, to provide grants or contracts to train sewage treatment plant personnel, to capitalize the Drinking Water Loan Fund, to capitalize the Environmental Remediation Fund, and to provide assistance to farmers and ranchers through the State Agricultural Water Quality Program (Idaho Legislative Services 1997)

The sources of funding for the Water Pollution Control Account are \$4.8 million each year from the sales tax, 81% of the estate tax, 87.5% of the tobacco tax, and 4.3% percent of the cigarette tax. Annual revenues from all sources are currently in the \$12 million to \$15 million per year range (Ray Houston, personal communication). These revenues vary substantially from one year to the next, depending on the number of deaths and how well estates were planned. Because it relies to a large extent on estate tax, the funding for this account is not as stable as water quality program managers would like (Larry Koenig, personal communication).

The relevant sections of the Idaho Code pertaining to authorized sources and uses of Water Pollution Control Fund are as follows (Idaho Legislative Services 1996):

**Water Pollution Control Fund (0200)**

**Sources:** The following are paid into the Water Pollution Control Fund:

1. Eighty-one percent (81%) of the taxes collected under the Estate and Transfer Reform Act of 1988 are paid into the Water Pollution Control Fund (§14-413).
2. All donations and grants, and other funds which may be provided by law (§39-3628).
3. Taxes collected under the Tobacco Products Tax Act (§63-2564) amounting to

87.5% of the total tobacco tax.

4. A portion of cigarette taxes and licenses, permits, penalties, interest and deficiencies additions is distributed to the Water Pollution Control Fund (§63-2520)(b)(2)) amounting to 4.3% of total cigarette tax collections.
5. Annual sales tax distribution of \$4.8 million to the Water Pollution Control Fund (§63-3638).

**Uses:** Water Pollution Control Fund monies may be appropriated for the following purposes:

1. To provide the state's matching share of grants.
2. To provide revenue for the payment of general obligation bonds issued pursuant to §39-3633, Idaho Code, and general obligation refunding bonds issued pursuant to Chapter 115, Laws of 1973 of the State of Idaho.
3. To provide for the operations of the water quality programs.
4. To provide direct grants or contracts for the purpose of providing training for water and sewage treatment plant operating personnel.
5. To provide payments for contracts entered into pursuant to this chapter.
6. To provide funds to capitalize the Wastewater Facility Loan Fund established in §39-3629, Idaho Code, including the required matching share of federal capitalization funds.
7. To provide funds to capitalize the drinking water load fund established in SB 1036 by the First Regular Session of the Fifty-fourth Idaho Legislature, along with federal matching capitalization funds.
8. To capitalize the Environmental Remediation Fund for the purpose of environmental cleanup, remediation and restoration (§39-3605C).

**Environmental Remediation Fund (0201)**

**Sources:** Sources of the Environmental Remediation Fund include legislative appropriations and transfers from other funds, all donations and grants from any source, and other funds as provided by law (§39-3605C).

**Uses:** Moneys in the Environmental Remediation Fund may be used for the purpose of environmental cleanup and remediation and restoration in, but not limited to, the following areas: To provide the state's matching share of grants for remediation including superfund grants; and to provide for the operations of remediation activities.

❖ *State Agricultural Water Quality Program (SAWQP).*— The Division of Environmental Quality and the Soil Conservation Commission operate the State Agricultural Water Quality Program (SAWQP). Under this program the DEQ makes grants to local Soil Conservation Districts to conduct voluntary pollution control projects on waters impacted by runoff from farms. The grants provide funds to farmers who apply BMPs on their lands (IRU 1995). Farmers who use pesticides or fertilizer consistent with generally accepted agronomic practices, product instructions, the proper equipment, and in a non-negligent manner are not liable for groundwater contamination (Tarlock 1996). Idaho's Groundwater Quality Plan sets a up two-tiered process for the adoption of site-specific technologically and economically feasible and socially acceptable BMPs. If voluntary BMPs are ineffective, noted Tarlock (1996), mandatory ones may be imposed.

Local Soil Conservation Districts in Idaho administer the Idaho Agricultural Pollution Abatement Program to address agricultural nonpoint source pollution in identified watersheds. The Soil Conservation Districts enter into voluntary agreements with private landowners who agree to comply with BMPs to abate nonpoint source pollution. The state provides funding for local watershed programs through inheritance, tobacco, and sales taxes, which are the funding sources in the Water Pollution Control Fund. SAWQP relies on the feedback loop concept that is featured in the Idaho groundwater plan. Under this concept water quality resources are identified, a corresponding BMP is applied to address the protection of the resource, followed by evaluation and modification of the BMP if necessary to reach the desired benefit (Al Harkness, personal communication cited in Hildreth et al. 1993).

Since 1979, Idaho has invested \$35 to \$40 million in SAWQP, including funding for positions within the Idaho Soil Conservation Commission and the Idaho DEQ (IDEQ 1995). However, it is difficult to measure program results or to say with certainty whether or not the program has been cost effective (IDEQ 1995).

Funding for SAWQP is provided through DEQ's trustee/benefit budget. DEQ makes grants from the Water Pollution Control Fund to applicants approved by the Soil Conservation Commission. Funding for this program, emphasizing reduction in agricultural nonpoint source pollution, has averaged about \$2 million per year over the last ten years. Although Governor Batt's administration chose to phase-out SAWQP in FY 1999, a replacement is in the works for the 1999 legislative session that would go into effect for FY 2000 and beyond (Ray Houston, personal communication).

❖ *Resource Conservation and Rangeland Development Fund (RCRDF).*— The Resource Conservation and Rangeland Development Fund (RCRDF) receives 9 percent of the estate taxes amounting to \$400,000 to \$800,000 per year. The fund is administered by the Soil Conservation Commission and is used primarily for loans, grants, and TMDL development. The relevant sections of the Idaho Code are as follows (Idaho Legislative Services 1997):

**Resource Conservation and Rangeland Development Fund (0522)**

**Sources:** Inheritance tax (§14-413), fund interest, and loan interest (§22-2730).

**Uses:** The Soil Conservation Commission (SCC) may expend from the account such sums as it shall deem necessary for any of the conservation improvement provided for under this act (§§22-2731-33) under such terms and conditions provided for in its rules and regulations. In addition to conservation loans and grants, the fund is used to provide a loan officer, operating expenses, and Total Maximum Daily Load (TMDL) technical assistance through Idaho Association of Soil Conservation Districts (IASCD) agreements and the Idaho State Department of Agriculture.

❖ *General Funds.*— In FY 1998 the legislature provided \$1.8 million in General Fund operating support to DEQ. Also, in FY 1998 the Soil Conservation Commission received a \$1.8 million General Fund appropriation including nearly \$600,000 for support of local Soil Conservation Districts. The Commission is responsible for assistance to local districts and for implementing local agricultural water quality projects. It should be noted that the counties also provide support to the Soil Conservation Districts (Ray Houston, personal communication).

Another state agency, the Idaho Department of Lands, receives General Funds and user fees to administer programs related to water quality, including programs for the implementation of Best Management Practices (Ray Houston, personal communication).

The Idaho State Department of Agriculture has a \$3.2 million appropriation for its Agricultural Resources program, which was created to protect the public health and the environment. This program also protects livestock and wildlife from possible adverse effects resulting from the improper use of pesticides or fertilizers. Funding for this program includes \$1 million from the General Fund; \$1.8 million from feed, fertilizer, and pesticide fees; and \$.5 million in federal funds (Ray Houston, personal communication).

### **Potential New Sources of Funds**

The preceding section demonstrated that Idaho has a variety of established mechanisms to fund water quality programs, including control of water pollution from nonpoint source activities. What seems to be needed to develop TMDLs and implement BMPs are additional sources of funds for these programs. We discuss potential options based on survey research results in this section, then provide some ideas as to how water quality program funds could be used that would be consistent with the survey findings reported herein.

This section interprets the results of Idahoans' opinions on water quality program funding options (Table 8). To simplify explanations below, these "favored" and "acceptable" funding options are specifically for programs that target the reduction of water pollution from nonpoint source activities not currently regulated by the state (see list in Table 5 or footnote to Figure 1). Brief discussions of each option are presented in descending order of their favorability or acceptance, as presented in Figure 1 in the Executive Summary.

● *Options Favored by Idahoans.*— Survey results indicated that there are six potential funding sources Idahoans would favor. Each is briefly analyzed below.

❖ *Charge to the People Responsible for Pollution.*— With 80% of the survey respondents

favoring this approach and another 7% finding it acceptable (Table 8), Idahoans are in favor of the idea that those who are responsible for polluting water should be the people most responsible for paying the costs of pollution control (see also Table 10). Methods to implement this idea depend first of all on identifying the parties responsible for nonpoint source water pollution. The TMDL process required by the Clean Water Act is a method for identifying polluters in the hundreds of Idaho water bodies that do not meet water quality standards. One issue is how to pay the costs of programs for developing TMDLs. Idaho citizens have indicated a variety of funding options they favor or accept for nonpoint source pollution control programs. These are discussed in the remainder of this section.

TMDLs will identify parties contributing excessive pollution. They will have to cease operating or adopt Best Management Practices (BMPs), which will entail additional costs. Another issue is who should pay those costs. A large majority of Idaho citizens (80%) favor charging those responsible for pollution in order to reduce pollution. Other options could provide mechanisms to do that. Operators who refuse to adopt BMPs will be of special concern as watershed management plans based on TMDLs are designed and implemented. Incentives such as tax credits (see below) might help. However, effective pollution control may require back-up regulatory programs and enforcement mechanisms. We provide some ideas other states have considered as incentive and regulatory programs in the **Uses of Funds** section later in this chapter.

❖ *User Fees for Water-based Recreation.*— This option is favored by 62% of the respondents and another 22% find it acceptable (Table 8). One idea would be diverting a portion of motorboat license fees to water quality programs, because gasoline or diesel-fueled boat motors are a source of water pollution. Another idea is charging access fees that could be partly dedicated to water quality programs. The State of Idaho maintains many public access, recreation, and boat launch facilities that users do not pay for directly.

According to water quality program managers, there is a danger in reliance on user fees as a source of funding because fluctuations cause problems in program planning. This could be overcome with a fee base broad enough to maintain consistent levels of funding from year to year (Larry Koenig, personal communication).

❖ *Lottery.*— More than half of the survey respondents (59%) favor diverting some of the proceeds from the Idaho Lottery to water quality programs, and another 17% find it an acceptable option (Table 8). In effect, this would transfer funds from education to water quality programs, which based on the survey results citizens may not favor because survey results indicate that

people feel education at the primary and secondary levels (i.e., K-12) is the one public program area that clearly has a higher priority than air and water quality (see Tables 1 and 1a).

❖ *Tax Credits for People Implementing Control Programs.*— This approach is favored by 58% of the survey respondents and acceptable to another 21% (Table 8). This option is consistent with the idea that people responsible for pollution should be most responsible for paying for pollution control, but in recognition that everyone benefits from water quality, it would take some of the financial burden off individual operators to reduce pollution and spread the costs across all taxpayers.

This incentive approach is an indirect means of reducing water pollution, different from those that directly provide program funds. Tax credits would not raise revenues for expenditures on water quality programs, but would encourage some people to install BMPs by subsidizing some portion of their costs. Tax credits are an opportunity cost for the state, which in turn must draw funds for other programs from some other source to make up for tax revenues foregone.

❖ *Alcohol and Tobacco Tax.*— A majority of the respondents (57%) are in favor of using alcohol and tobacco taxes for water quality programs, and another 13% find this option acceptable (Table 8). Alcohol taxes are not currently designated for the Water Pollution Control Account. A large portion (87.5%) of the Tobacco Products Tax is currently dedicated to the Water Pollution Control Account, but only a small portion (4.3%) of the total cigarette tax collections is similarly dedicated. The recent settlement of the huge class action suit by the states against cigarette manufacturers will provide a substantial amount of funds to Idaho over a long term for cigarette-induced health problems, approximately \$30 million in the next year or two. This could perhaps free up some of the cigarette taxes for other uses, such as increasing the current contribution of cigarette taxes to the Water Pollution Control Account.

❖ *Corporate Income Tax.*— More than half of the respondents (54%) favor this option and another 23% find it acceptable (Table 8). This means we are 95% confident that between 49% and 59% of Idahoans favor this option as a source of funding to reduce nonpoint source pollution, and 72% to 82% find this option acceptable. Industrial corporations have a responsibility to reduce water pollution to acceptable levels, and if point source pollution is involved in their operations, they must adopt the Best Available Treatment technologies or face the loss of their operating permit from the federal Environmental Protection Agency. Because of this, there may be a fairness issue involved in levying additional water pollution taxes on industrial firms who must obtain point source permits. However, it would be difficult to make the same fairness argument for corporations contributing unacceptable levels of nonpoint source pollution. TMDLs



will identify such situations.

• *Options Acceptable to Idahoans.*— There are three funding options that a majority of Idahoans would not favor, but would accept. One is “other” licenses and fees, which is a flexible option for which survey respondents provided some creative ideas. Another is the motor fuel (gasoline) tax. We also analyze state sales tax, the least acceptable of these three options, and do so in some detail because each year \$4.8 million of sales tax receipts are placed into the Water Pollution Control Account.

❖ *Licenses and Fees (other than on water-based recreation).*— A solid majority (62%) of the survey respondents would accept the idea of proceeds from licenses and fees (other than water-based recreation) as a source of water quality program funding (Table 8). Some of the ideas provided by respondents are fines or surtax for polluters, visitor services tax, chemical products tax, fees for water use, utility bill surtax, and taxes on consumer items contributing to pollution, such as food, soap, etc. Another idea, offered by a technical reviewer of the report, is a specialty license plate featuring a slogan like “Clean, Pure Water” to replace the standard “Famous Potatoes” or, as on the senior author’s sport utility vehicle, “Forests Today and for Tomorrow.”

❖ *Motor Fuel (Gasoline) Tax.*— A majority of the survey respondents (54%) would accept dedication of a portion of the taxes they pay on gasoline and other motor fuels for programs to reduce nonpoint source pollution (Table 8). This option is somewhat of an anomaly, as a larger proportion of the respondents (56%) expressed a willingness-to-pay than did respondents who found this option acceptable (54%). Almost half of the respondents (46%) would pay an increase in the ½% to 1% range, and another 10% of the respondents were willing to pay more than a 1% increase (Table 9).

We offer two cautions regarding the motor fuel tax that also apply to the sales tax. First, additional public education efforts would likely be useful if these options were to be given serious consideration, because the majority of public opinion is on the borderline between being acceptable and not acceptable, especially when the  $\pm 5\%$  margin of sampling error is considered. Second, there are six other funding options analyzed in the preceding section that people favor more than these “acceptable” options.

❖ *State Sales Tax.*— A majority of the survey respondents (53%) would favor or accept sales tax as a possible funding source (Table 8). Given that there is a  $\pm 5\%$  sampling margin of error in these results, we are 95% confident that 48% to 58% of Idaho’s citizens would accept sales tax as a source of program funding. In this case the 13% of the respondents who “Need more informa-

tion” are worth consideration, as some of them might “swing” toward acceptance of the sales tax option. This consideration might also have some influence on willingness to pay.

A majority of the respondents (52%) are willing to pay an increase in sales tax (Table 9). This is a slim majority in light of the  $\pm 5\%$  sampling error. We are 95% confident that 47% to 57% of Idaho’s citizens would be willing to pay at least a  $\frac{1}{2}\%$  increase in sales tax for programs to reduce water pollution from nonpoint source activities, including agriculture and livestock operations.

Each one percent increment (or one cent) of sales tax is worth about \$125 million in revenues to the State of Idaho (Ray Houston, personal communication). This means a  $\frac{1}{2}\%$  increase in sales tax would provide more than \$60 million per year in funds for state programs. As stated above, a slim majority (52%,  $\pm 5\%$ ) of Idaho’s citizens are willing to pay this amount of sales tax increase to reduce nonpoint source pollution.

• **Options Not Acceptable to Idahoans.**— The survey results identify three sources of funding for programs to reduce nonpoint source pollution as not acceptable to Idaho citizens.

❖ **State Income Tax.**— Although 45% of the respondents would favor or accept state income tax as a funding source (Table 8), this is not an acceptable option because 63% of the respondents indicated they would not be willing to pay any increase in their income tax to reduce pollution from nonpoint source activities (Table 9). If majority rules, the potential “swing” to acceptance (12%) would not be large enough to offset the unwillingness to pay (63%).

❖ **Estate Tax.**— A majority (59%) of the respondents would not accept estate taxes as an additional source of water quality program funding (Table 8). This option was not included in the willingness-to-pay question. Respondents probably are not aware that 81% of the estate tax is dedicated to the Water Pollution Control Account. Based on these results, policy-makers may want to reconsider this as a source of water quality program funding if a public education campaign is mounted in support of increases in other taxes to reduce pollution from nonpoint source activities.

❖ **Local Property Tax.**— A majority (59%) of the respondents would not accept local property tax as a source of funding for water quality programs to reduce nonpoint source pollution (Table 8), and 76% of them were not willing to pay any increase in property taxes for this purpose (Table 9).

## Uses of Funds

To conclude this report, it may be worthwhile to briefly review some ideas about the uses to which water quality program funds might be put. First and foremost, Idaho must develop TMDLs for hundreds of water bodies that do not fully support state water quality standards or risk ceding water resources program authority to the federal government. It is widely recognized that sediment from agricultural sources is the nation's most widespread water pollution problem (EPA 1998), as well as Idaho's most extensive problem (IDEQ 1989). The technical analysis in the TMDL will form the basis for locally developed watershed management plans. The difficult part of implementing the plan will be reducing polluted runoff from existing nonpoint source activities. The difficulty arises from changing the behavior of operators currently contributing pollution, and getting them to install Best Management Practices (BMPs).

Some of the discussion in Policy Analysis Group Report 14 (O'Laughlin 1996), especially pages 37-42 on agricultural pollution control programs, is worth repeating here because it not only presents a range of policy and program options, it also reveals that other states are struggling with the same issues.

● *Analysis of Four Policy Options.*— Findings from a study in Iowa (Contant et al. 1993) suggested that agricultural nonpoint source pollution policies can improve water quality without significant cost to farmers or state residents. Impacts differed across the four policy options studied and by location. Taxation policy would produce the greatest water quality improvements but with the greatest decline in profitability to farmers and the highest likelihood of political opposition. Regulation policy would have positive water quality effects with small positive effects on profitability; however, the state would incur large implementation costs. Iowa's integrated crop management policy may be effective in particular targeted locations, but as a supplement to other policies. A policy of research and education would produce the most consistently positive water quality and profitability results at a relatively low cost to residents statewide (Contant et al. 1993). Because each farmer is essentially an independent business, communication and education will be required to implement agricultural BMPs (Griffin et al. 1991).

● *Regulation of "Bad Actors."*— Direct regulation of land-use and production activities is a policy option to consider because programs for agricultural nonpoint source abatement are mostly voluntary (Novotny and Olem 1994). One reason why is that American farmers are as close to immunity as can be attained in our political system (Houck 1994). This makes regulatory control programs difficult to authorize. For example, the Wisconsin legislature passed a "bad actor" bill in

1991 that was vetoed by the Governor in 1992 (Novotny and Olem 1994, Wolf 1995).

In spite of the large implementation costs for regulation (Contant et al. 1993), some states, including Wisconsin (Wolf 1995), have seriously considered regulatory approaches to polluted runoff from agriculture. A frequently mentioned approach is the “bad actors” legal doctrine under which polluters identified as critical nonparticipants in voluntary programs are mandated to participate, but at reduced subsidy rates or other punishment for failure to use state-approved BMPs (Novotny and Olem 1994, Kershner 1995). There is some interest in the development of broad regulatory mechanisms to catch “bad actors” and to ensure everyone is subject to the same standards of environmental stewardship, as there is a small but highly visible number of producers who “refuse to change environmentally destructive practices” and will not voluntarily implement necessary BMPs. Even though few in number, they reflect poorly on all agricultural operators and in some cases attain unfair advantages (Harris et al. 1995).

Such situations deserve special attention from governmental agencies, but regulations should be carefully targeted only to specific environments that are at risk and operators who refuse to cooperate voluntarily. This site-specific “tiered and targeted” approach should be based on clearly defined standards and adequate monitoring and analyses (Harris et al. 1995).

• **Incentives.**— Incentive programs can include many things, including education, technical assistance, tax advantages, price supports or subsidies, cost-share to individuals, cross-compliance legislation built into existing programs, direct purchase of lands contributing the greatest problem or of riparian corridors for mitigation, “oversight/site inspections” in a non-regulatory program, and peer pressure (Novotny and Olem 1994).

The incentives currently available are not sufficient to control the problem of agricultural nonpoint source pollution. A number of political, institutional, and financial hurdles exist that must be lowered or removed before existing incentives can work effectively, and in some cases new or additional incentives are needed. After some of the hurdles have been surmounted, the new incentives and the modification of existing incentives can be used more effectively to encourage individuals to adopt BMPs. Not all incentives are equally effective, and some may not be socially acceptable in certain locations. Nevertheless all forms of incentives should be considered as potential options (Novotny and Olem 1994).

Excessive reliance on subsidies or incentives may not produce effective results. Subsidies may be politically attractive to lawmakers; however, it is a well-established fact that in the absence of regulation and enforcement, polluters will do nothing until they receive a full subsidy for

abatement costs (Novotny and Olem 1994).

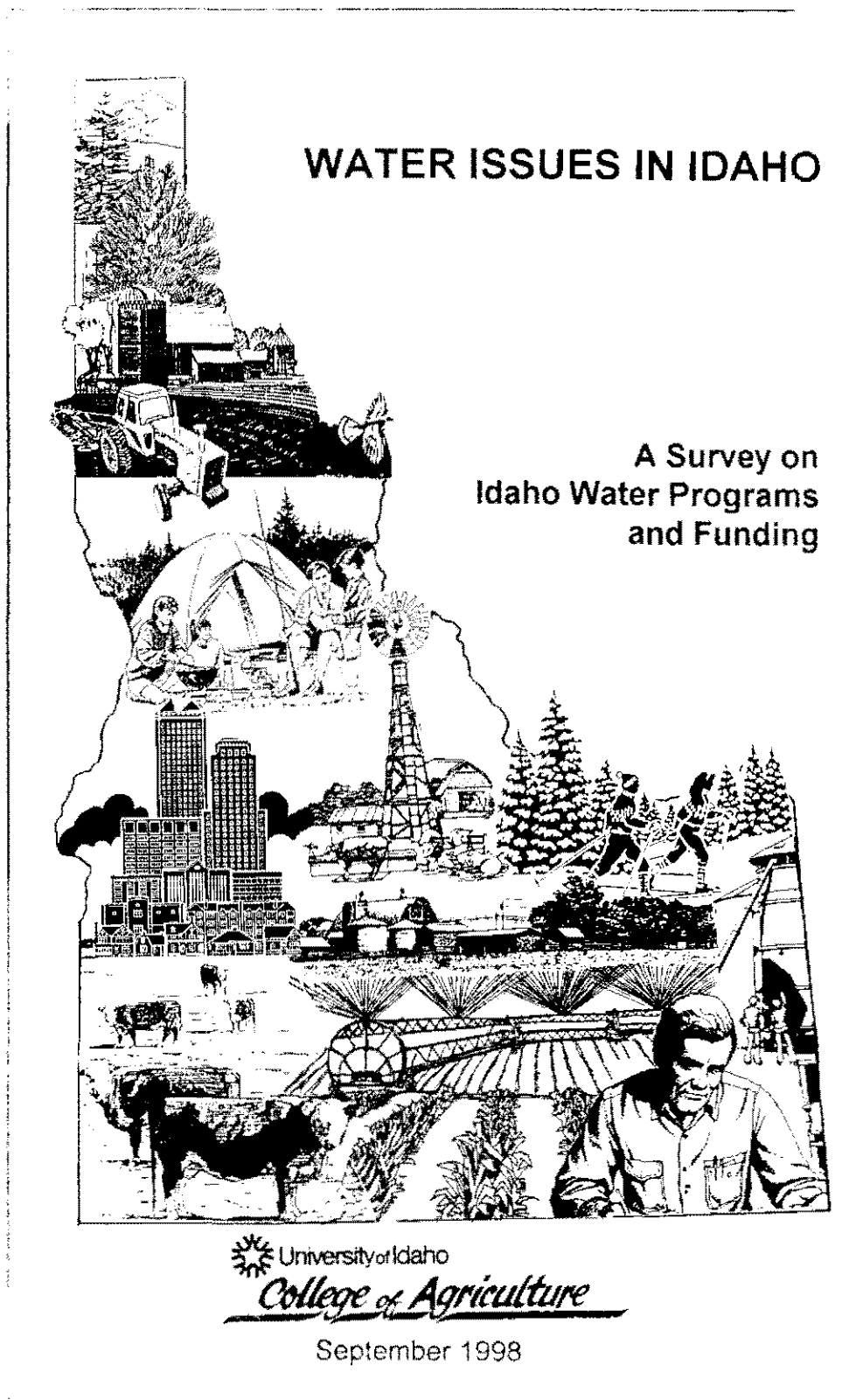
### **Conclusion**

Idaho citizens place a high priority on the quality of the state's water resources. Protection of the full range of "designated beneficial uses" of the state's water is supported by a super-majority (>68%) of Idahoans. TMDLs, required by the federal Clean Water Act, could provide the necessary analytical data for what Harris et al. (1995) called a "tiered and targeted" approach to control nonpoint source pollution. However, the clearly defined quantitative standards necessary to prepare a meaningful TMDL will remain elusive for sediment, which is Idaho's most widespread nonpoint source pollution problem (see discussion in O'Laughlin 1996, pp.81-84).

Nevertheless, the TMDL agenda is a requirement that Idaho must meet to retain control over the state's water quality programs. The water quality agenda does not end with the TMDL, but with water resources that support state water quality standards. In the end, if the "designated beneficial uses" for water bodies are fully supported and programs in place to prevent degradation of water quality, the mandates of the Clean Water Act have been satisfied.

Meeting the federal mandates will require more expenditures on water quality programs than in the past. The analysis in this report will help policy-makers identify some additional sources of funding to reduce water pollution from nonpoint source activities that would be acceptable to Idahoans.

**Appendix A. Survey Instrument (Mail Questionnaire):  
"Water Issues in Idaho: A Survey on Idaho Water Programs and Funding"**



University of Idaho  
*College of Agriculture*

September 1998

Q-1. Listed below are a number of areas that affect the people of Idaho. Please consider each category and indicate how much priority it should be given with regard to the welfare of the people of Idaho. (Circle the number of your response).

	How much priority?			
	No	Low	Medium	High
Health care programs .....	1	2	3	4
Industrial development .....	1	2	3	4
Maintaining our natural resource industries .....	1	2	3	4
Education (elementary, junior and senior high school) .....	1	2	3	4
Providing services/safety net for poor families .....	1	2	3	4
Education at college or university level .....	1	2	3	4
Crime/delinquency prevention and control .....	1	2	3	4
Protecting our natural resources .....	1	2	3	4
Transportation (highway, air, rail) ...	1	2	3	4
Other (specify)	1	2	3	4

Q-2. Listed below are a range of natural resource issues that affect the people of Idaho. Please consider each category and indicate how much priority it should be given with regard to managing our natural resources. (Circle the number of your response.)

How much priority?

	No	Low	Medium	High
Maintain sport fish and game populations . . . . .	1	2	3	4
Preserve some lands in a wild condition . . . . .	1	2	3	4
Maintain clean air . . . . .	1	2	3	4
Reduce the loss of topsoil . . . . .	1	2	3	4
Improve the condition of rangeland . . . . .	1	2	3	4
Restore and maintain native fish runs . . . . .	1	2	3	4
Maintain non-game fish and wildlife populations . . . . .	1	2	3	4
Protect rare plant and animal species . . . . .	1	2	3	4
Improve the quality of water resources . . . . .	1	2	3	4
Sustain harvestable forest resources . . . . .	1	2	3	4
Keep some rivers in a free flowing condition . . . . .	1	2	3	4
Other (specify) _____	1	2	3	4



Q-3. Listed below are a number of uses of water within the State of Idaho. Please consider each one and indicate how much priority you think it should be given with regard to protecting our water resources. (Circle the number of your response.)

	How much priority?			
	No	Low	Medium	High
Agricultural water supply . . . . .	1	2	3	4
Household water supply . . . . .	1	2	3	4
Industrial water supply . . . . .	1	2	3	4
Water related recreation . . . . .	1	2	3	4
Wildlife habitat . . . . .	1	2	3	4
Scenic value . . . . .	1	2	3	4
Fish Habitat . . . . .	1	2	3	4
Other (specify) _____	1	2	3	4

Q-4 Which of the following media provides you with your knowledge about water quality issues in Idaho? (Circle the number of your choice.)

	Never	Seldom	Sometimes	Often
Provides knowledge about water quality				
Television . . . . .	1	2	3	4
Radio . . . . .	1	2	3	4
Newspaper . . . . .	1	2	3	4
Library books . . . . .	1	2	3	4
Internet . . . . .	1	2	3	4
Magazines . . . . .	1	2	3	4
Other (specify) _____	1	2	3	4

**Q-5** Listed below are a number of potential types of water pollution. We would like to know if you have heard about or experienced any of these types of pollution in Idaho. (Circle the number of your response)

**Q-5a.** This part of the question relates to pollution from a single source:

	Not heard about	Have you..... Heard about but not experienced	Personally experienced this
<b>Point Source Pollution from:</b>			
Industrial/manufacturing plants	1	2	3
Radioactive/nuclear wastes . . .	1	2	3
Food processing plants . . . . .	1	2	3
Landfills/dumps . . . . .	1	2	3
Sewage treatment plants . . . . .	1	2	3
Hazardous/toxic wastes . . . . .	1	2	3
Other (specify)	1	2	3

**Q-5b.** This part of the question relates to pollution, not from a point or pipe, but from a more general source. The first three from a regulated source, the rest from unregulated sources:

<b>Non-Point Source Pollution from regulated sources:</b>			
Mining . . . . .	1	2	3
Timber harvesting/forestry . . .	1	2	3
Logging roads . . . . .	1	2	3

<b>Non-Point Source Pollution from non-regulated sources:</b>			
Recreational activities . . . . .	1	2	3
Construction areas . . . . .	1	2	3
Agricultural activities . . . . .	1	2	3
Recreational areas . . . . .	1	2	3
Road or highway construction (non-logging) . . . . .	1	2	3
Urban areas . . . . .	1	2	3
Livestock operations . . . . .	1	2	3
Other (specify)	1	2	3

Q-6. Looking at the types of non-point source pollution from non-regulated sources, please indicate who you feel should be MOST responsible for oversight of control programs for each. (Circle the number of your response)

Who should oversee?

	Federal Gov.	State Gov.	Local Gov.	Private Sector
Recreational activities . . . . .	1	2	3	4
Construction areas . . . . .	1	2	3	4
Agricultural activities . . . . .	1	2	3	4
Recreational areas . . . . .	1	2	3	4
Road or highway construction (non-logging) . . . . .	1	2	3	4
Urban areas . . . . .	1	2	3	4
Livestock operations . . . . .	1	2	3	4
Other (specify) _____	1	2	3	4

Q-7. Looking again at the types of non-point source pollution from non-regulated sources, please indicate who you feel should be MOST responsible for providing funds to control each. (Circle the number of your response)

Who should provide funds?

	Federal Gov.	State Gov.	Local Gov.	Private Sector
Recreational activities . . . . .	1	2	3	4
Construction areas . . . . .	1	2	3	4
Agricultural activities . . . . .	1	2	3	4
Recreational areas . . . . .	1	2	3	4
Road or highway construction (non-logging) . . . . .	1	2	3	4
Urban areas . . . . .	1	2	3	4
Livestock operations . . . . .	1	2	3	4
Other (specify) _____	1	2	3	4

Q-8. The State of Idaho is required by law to reduce **non-point source water pollution from non-regulated sources** to acceptable levels throughout the state. This means that pollution programs will be implemented that will require additional funding. Listed below are a number of possible sources for this funding. Please indicate your opinion about each option. (Circle the number of your response)

How favorable?

Possible funding sources:	Do Favor	Do not favor but accept it	Would not accept	Need more information
State sales tax . . . . .	1	2	3	4
Local property tax . . . . .	1	2	3	4
Motor fuel (gasoline) tax	1	2	3	4
State income tax . . . . .	1	2	3	4
Alcohol and tobacco tax	1	2	3	4
Corporate income tax . . .	1	2	3	4
Tax credits for those implementing control programs . . . . .	1	2	3	4
User fees and licenses for water-based recreation .	1	2	3	4
Estate tax . . . . .	1	2	3	4
Lottery . . . . .	1	2	3	4
Other licenses and fees	1	2	3	4
A charge to the people responsible . . . . .	1	2	3	4
Other (specify) _____	1	2	3	4

Q-9 Most households in Idaho are affected by the following types of taxes. Please indicate how much increase in each you would be willing to pay to see **non-point source** pollution in the state reduced to acceptable levels. (Circle the number of your response.)

	None	½%	1%	More than 1%
State sales tax .....	1	2	3	4
Local property tax .....	1	2	3	4
Motor fuel (gasoline) tax .....	1	2	3	4
State income tax .....	1	2	3	4
Other (specify) _____	1	2	3	4

Finally, we need to ask for some background information that will help with statistical analysis.

Q-10. How long have you lived in Idaho?

NUMBER OF YEARS \_\_\_\_\_

Q-11 How long have you lived in your current County?

NUMBER OF YEARS \_\_\_\_\_

Q-12 What is your current occupation? (In a sentence, please describe what you do.)

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Q-13 How many dependents (including youth and elderly) are living in your household?

NUMBER OF DEPENDENTS \_\_\_\_\_

Q-14. What is your age?

AGE IN YEARS \_\_\_\_\_

Q-15. What is your sex?

- 1 Male
- 2 Female

Q-16 Are you a registered voter in Idaho?

- 1 Yes
- 2 No
- 3 Don't know

Q-17 What is the highest level of education you and your spouse/partner have completed? (Circle the number of your response for each.)

	You	Spouse/Partner
Less than high school . . . . .	1	1
High school graduate . . . . .	2	2
Some college or vocational training . . . . .	3	3
College graduate . . . . .	4	4
Advanced degree . . . . .	5	5
No spouse/partner . . . . .	6	6

Q-18 In what size of community did you spend most of your life up to age 18? In what size of community do you currently live? (Circle the number of your response.)

Community Size:	Up to age 18	At present
Rural farm . . . . .	1	1
Rural nonfarm . . . . .	2	2
100 - 2,499 population . . . . .	3	3
2,500 - 9,999 population . . . . .	4	4
10,000 to 49,999 population . . . . .	5	5
50,000 to 99,999 population . . . . .	6	6
100,000 or more population . . . . .	7	7

Q-19 Which of the following categories describes your total household income before taxes in 1997? (Circle the number of your response.)

- |   |                      |
|---|----------------------|
| 1 | Less than \$10,000   |
| 2 | \$10,000 to \$14,999 |
| 3 | \$15,000 to \$19,999 |
| 4 | \$20,000 to \$29,999 |
| 5 | \$30,000 to \$39,999 |
| 6 | \$40,000 to \$49,999 |
| 7 | \$50,000 to \$74,999 |
| 8 | \$75,000 to \$99,999 |
| 9 | \$100,000 or more    |

Is there anything else you would like to mention about water issues in Idaho?

**Thank you for your participation!**





**Appendix B. Responses to Concluding Question,  
"Is there anything else you would like to mention about water issues in Idaho?"**

The comments in this appendix are taken verbatim from the responses to the last question in the survey, "Is there anything else you would like to mention about water issues in Idaho?" The comments have been grouped together into categories with titles corresponding to the main idea. Some respondents provided lengthy comments that expressed several different ideas. Such responses have been placed in several categories. The categories below are ranked according to the number of responses.

**1. Polluting industries or water users should pay.**

- ▶ Taxes should be levied to those who cause problems. Business and industry are major contributors to water quality problems. They should be responsible.
- ▶ The polluters should pay 100%.
- ▶ I've lived both rural and city. I've worked farming, mining, industrial and water pollution control. I hunt and fish. I like our state. Let's make the Industrial polluters quit dragging their feet with lawyers and clean up or get out.
- ▶ Industry, FMC, Simplot, loggers, mining, big money raping our land, jobs for a while pollution forever. Stop the rape.
- ▶ I am a believer of strong controls over air, water and the disposal of man and animal made waste. Under man I include such sources as INEEL and MICRON (among many other smaller, poorly controlled sources).
- ▶ Our government has not done a good job at all in watching over our water, also they just slap the violators on the hand so to speak. If we are going to get serious about water pollution problems there needs to be great consequences when rules and ignorance are ignored, even closing down businesses when necessary.
- ▶ On the subject of revenues, I, like any other citizen, am now paying numerous taxes; income, property, city, school, sales, gasoline, etc., plus who knows how many or how much in hidden taxes. Consequently I am in favor of user fees, you use it or you break it you fix it. Enough babble, have a good day.
- ▶ Industrial Manufacturing Plants: The FMC Corporation has been a major source of air and water pollution over Southern Idaho for many years. The pollutants that escape from their smoke stacks during the manufacturing of phosphate has been a known source and just recently the Federal Government imposed upon them (FMC) the largest fine ever assessed against a company for pollution. It has made the air foul smelling, unfit to breath and the toxins have fell from the air over large segments of land and water. Merely, which ever way the wind blows. They have now promised to take measures that should have been taken all along to be the kind of industrial neighbor that people of our area are entitled to. I live in an area that has been highly impacted by this industrial pollution and believe that it is a primary cause for many of our neighbors to have suffered the consequences of cancer and other diseases from these toxins.
- ▶ Q8. It is my opinion that the property owners in this state are already paying for everything that is possible. I fear that if we continue to raise property taxes and sales taxes, we will no longer be able to attract industry. I believe that the industries that have caused so much of this problem and continue to do so should be held responsible for their damage. We are so over taxed as it is that people are having to move out of my neighborhood because they cannot afford the high taxes. When are we going to get out of the tax more, tax more mode? We must start making those who are responsible pay their share. Why should my family and I pay more and more to fix the problems that the

industries and the farmers are causing? It seems to me that as long as they don't have to pay they have no reason to clean up their acts.

- ▶ I'm not real knowledgeable in the water issue in Idaho. I do know that the Coeur D'Alene River and the Coeur D'Alene Lake has been greatly polluted by the mining in Kellogg, Wallace area. I feel they should be held accountable for the damage to the environment and people. I don't feel taxing the people more will work, but find and fine big company mining and big company that do the pollution. See no problem. I feel that crime at the top will cause the problem at the bottom.
- ▶ Clean up business pollution and charge the business. INEL must be cleaned up and no more nuclear waste stored there.
- ▶ Heavy fines for polluters make corporations pay their fair share to clean up the mess they make and not raise taxes on common people who do not cause this pollution. Where we live, we hear more about Utah than Idaho.
- ▶ Use common sense. Keep it clean. Education is more effective than corrosion, but blatant industrial polluters including agriculture and logging and mining should be fined consistent with the degree of abuse and jailed when dumping is traced back to the source.

## 2. Comments on survey and/or methods.

- ▶ I question the usefulness of this survey. You should have explained the terms "nonpoint pollution" and "non-regulated sources".
- ▶ Thank you for asking me. Also sorry for the delay.
- ▶ For introductory purposes; I was born in 1929 and grew-up on an Idaho farm during the depression years. I am a retired Corps of Engineers Colonel and also a retired Plant Services Manager for Argonne National Laboratory - West. My residence/home of record has essentially been in Bonneville County. I have never owned or leased a cabin by the lake/river. I have never owned or leased a land, water or snow recreational vehicle. The problem I have with surveys is; they are prepared based on the authors knowledge and experiences (A&B), they are answered based on the respondents knowledge and experiences (X&Y), a total mismatch. A question posed by the A&B factor is totally confusing or irrelevant when the X&Y factor is applied. Some examples of this conflict are: 1. For the most part, what does Q-1 have to do with the title of this survey? 2. Q-2, what topsoil; desert, farm, mountain and or forest? 3. Q-4, I find the news media is a very poor source for accurate and detailed information. 4. Q-5a, what radioactive/nuclear waste; mining, munitions, power, medical or discarded home smoke/fire alarms? 5. Q-5b, Q-6, Q-7, which road/highway; recreational, access, farm to market, state or interstate? After reviewing the survey several times, it is my conclusion that it has essentially two main parts; who pays and who controls. These two parts have to go hand-in-hand.
- ▶ I strenuously object to the design of this questionnaire. The results of this survey do not reflect the attitudes of the people of Idaho.
- ▶ Thank you once again for asking me to participate in this very important survey. I would be happy to help again.
- ▶ I'm not a very good writer or I could go on about water. Thanks.
- ▶ I'm sorry I didn't complete the first survey. I really don't feel knowledgeable enough to feel comfortable with my answers.
- ▶ I have enjoyed this research as I'm very interested in State projects. I taught 26 years in Boise and my state income is only 649 a month (during the depression). I had a horrible back surgery and in 1970 was disabled. My 647 monthly check does help, but I could surely use the \$100. Thank you
- ▶ I don't think your survey has good questions or responses.

- ▶ I do not feel logging, timber harvesting pollutes the water as you have indicated.
- ▶ How come I can't be this lucky in the lottery?
- ▶ Since I am of the "older" generation (nearly 80), I have taken the privilege of consulting my son-in-law Kenneth in filling out the questionnaire on water issues in Idaho. I live on the ranch, next to him and my daughter, but have not kept current with such things, I'm sorry to say. Hoping this will meet with your approval.

### **3. Importance of clean water.**

- ▶ Clean it up.
- ▶ The longer we wait to take action. The greater the cost to correct mistakes.
- ▶ I would be willing to sacrifice whatever it takes to have clean water.
- ▶ Idaho has the most water per capita than any state in the lower 48; there is no reason that it can't be the cleanest. I think we should be able to drink from any free running creek without worry of disease or contamination.
- ▶ Water is the most important natural resource we have in the state of Idaho.
- ▶ At the present time, my water supply is adequate. But the quality is really poor. However, please note, this is not necessarily a state problem. It is more local. However, I feel that something could be done at the state level to help correct this.
- ▶ Clean water good, bigger government and higher taxes bad. Go Broncos.
- ▶ It is the life blood of the state and must be protected.
- ▶ Water is the one thing we cannot live without, so it should be our first priority. Each county should be very concerned about the chemicals in their certain state. Today, as I washed dishes by hand, there was a small foam and I wondered what would cause this and I am reporting it to the Boise water office here.
- ▶ Something needs to get done now not tomorrow.

### **4. Miscellaneous Comments.**

- ▶ Prevent installation of train refueling station on Rathdrum prairie. It could contaminate water for entire Kootenai County and Spokane County. Not worth the risk.
- ▶ We should not have to pay higher rate for summer water use. Domestic water is a municipal function not private. There should not be profit made on basic public needs: water, electricity, and gas.
- ▶ Note: Private land owners should not be able to close roads that were build as access roads to public land.
- ▶ Allow people to use, but not abuse, all of Idaho's natural resources. Stop trying to lock us out of some of Idaho's most beautiful and enjoyable areas, saving it for only those who can afford to hire guides of own and transport horses.
- ▶ I also feel the lottery, cigarettes and alcohol should be a source of generating income to support, efforts to make Idaho's water clean [in addition to fining big companies].
- ▶ Leave it alone.
- ▶ Whoever has control are giving permits for Durgheards East of Hagerman Valley and all of its springs, which you and I know should be a no, no.
- ▶ Good luck.
- ▶ River banks should be protected from development, if the river has scenic or recreational status. This protection should be accomplished by buying the property before it is developed.
- ▶ I often wonder about the amount of radio active pollution in the ground water west-southwest of the INEL. Is any testing done, if so are the results published? I also believe that as a nation we must do more at the Federal, State, and local levels to educate people

about water. We need to encourage people about water. We need to encourage people to conserve water, how not to pollute water and encourage industry to be more responsive. Industry should also be looking at a researching alternative to chlorine in water. I believe that Flurohydrocarbons from water are large contributors to cancer in this country. I personally filter all drinking water in my home through a large carbon block filter that removes priority pollutants and chlorine. We can do more. As a whole, I feel people in general are uninformed. The people who know what is going on are the people it directly effects. I think people of Idaho do care about our resources, but either don't know how to have an impact or think their opinion doesn't really matter.

#### **5. Dams and fish conservation.**

- ▶ I believe in preserving and protecting our water quality and protecting native fish. But I am opposed to breaching existing dams to restore the salmon runs. I think we can find a better solution.
- ▶ I believe big business money from the east is trying to destroy our dams to bring our power rates into line with theirs. Don't take out our dams. Has anyone tried making an opening with gate to control on it to allow free flowing water thru the dams so anadromous fish can come and go unimpeded? I can't believe anyone sane would even consider removing our dams!
- ▶ Remove dams to restore fish runs.
- ▶ Q2. Protect rare plant and animal species. I feel that this is very important to some extent. I believe that it is important to protect those plants and animals that are extinct or close to being extinct. I do think however, that we do need to be careful that we don't get so carried away that we don't take into consideration the needs of people and industry. Restore and maintain native fish runs. I feel that we should take whatever means and do whatever is necessary to maintain the native fish runs. Even if this means doing away with the power dams on the lower Snake and Columbia Rivers. But of equal importance I believe that we must address the problems of fish migrations at the source which is the ocean. Commercial fishing must be moved a greater distance out into the ocean and limited commercial fishing in the mouths of such rivers as the Columbia. The only problem is not the dams but the dissemination of the salmon runs themselves by commercial fishing industries including many foreign. Having fished the Kenai River in Alaska I find they also have the same problem of getting salmon back from the ocean. They have gone to a catch and release and every fish that is caught has marks of the nets of the commercial fisherman. They completely through net after net, after net, after net, block the access up stream to salmon. I feel this problem must be addressed for if there is no salmon that are allowed to come up river taking out dams or any other process will be done in vain.
- ▶ Draw downs to flush salmon to sea. Before dams who flushed these fish to sea. Normally the water would have gone down and warmed up. Trout don't like warm water. Bass no longer spawn in the Clearwater because the water needs to be 60° before they do this. Some dummies got everything backwards.
- ▶ Breach the dams.
- ▶ Yes. Do not breach the dams on the Snake or Columbia. Electricity and irrigation for farmers is much more to us than have the Salmon. I heat my home with electric cable heat and we could have one rate raised, where we would be bankrupt. We need the harvest of hay and not commercial salmon fishing trips by rafters etc. I don't want to go back to the dark ages. Candles, Kerosene lamps, out side toilet, horses, and a fireplace to keep warm.
- ▶ I do not believe in the destruction of power dams or storage facilities to save endangered species, or the reintroduction of wolves, bears, etc. It's ironic that in Colorado the

squawfish is endangered and on the Columbia River they pay 3 dollars a piece to get rid of the same fish. I believe in saving all the water we can because we will need it in future years.

- ▶ Leave the dams in Idaho for low rates on our power bills and taxes.

#### **6. Agriculture's responsibility for water quality.**

- ▶ The farmers in Idaho need to help maintain the water especially in Southern Idaho they waste an awful lot by not putting reflectors on their end pipes and they water our roads too much. Maybe the state and county governments need to put stiffer fines on farmers who don't help conserve water and that could be used to fund some water resource programs.
- ▶ Bring agriculture and county government under same of control and rule that the forest industry has to work under.
- ▶ Certify those who apply farm chemicals and inspect or test to know a competent person is responsible . Fine those who are responsible.
- ▶ We would hate to see the money amount to meet regulations become an increase burden on small mom/pop farming operations.
- ▶ Q5. The drinking water all over the South Eastern Idaho is becoming unfit to drink from pesticides and fertilizers from agriculture. The reservoirs are clogged with algae. Fish, wildlife, ducks, and other birds are dying by the hundred. We have serious water problems and the cost of trying to solve these is becoming a prohibitive cost for many households. For instance our town is trying water towers to evaporate the \_\_\_?\_\_\_ from our city water supply. No one knows for sure if this process will even work, but the costs continue to escalate. In tonight's Idaho State Journal, I read that a study, being now nearly concluded on the water purity of the Portneuf River below the City Sewage Treatment Plant may well-cost us \$8-\$10 million to further improve the Treatment Plant that was supposed to have been "state of the art." I always knew something was wrong because the river has such a stench you can hardly stand to be near it. This makes me very angry, and saddened, by such neglectful practices that could have so easily been taken care of years before.
- ▶ I also believe that our agriculture in this state plays a very important role in the damage that is being done to our water. How can they continue to spray their thousands of gallons of pesticides, weed killers etc. to the extent that they do and not think they are causing damage to our water supply? We are told not to throw out our household weed killers, bug killers etc. for what it will do to our water. Yet the farmer can continue this practice unregulated. They are pouring more and more serious pollutants onto our grounds, as you know what we pour out on our grounds today will most certainly end up in our grounds water tomorrow. I feel that at some point they too should have to be held responsible for the damages that they are doing, as well as being regulated.
- ▶ With respect to the practices of some irrigation districts: 1. The practice of charging for water rights that cannot be used should be discontinued. 2. The practice of charging landowners to have these charges discontinued must be stopped. The idea of making people pay to stop paying money that they shouldn't have to pay smacks of organized crime. This is a public relations disaster for Idaho's vital irrigation districts.

#### **7. Livestock and grazing water quality problems.**

- ▶ Strict and monitored regulations on mega hog and dairy farms.
- ▶ Develop a plan to get private landowners to get their cattle away from riparian areas.
- ▶ Cattle cause more pollution than most people realize.
- ▶ Ranchers should be required to keep livestock away from water sources such as creeks

and rivers. They should pay to fund control and clean up for these water ways.

- ▶ Livestock Operations: the cattle operations on public land are a serious threat to our water. The stream banks are being trampled down and it's nearly impossible to find a place to take my grandchildren to play and picnic, outside a city park, for the cattle are all over camping areas or have been, leaving their evidence everywhere they have been. The flies and wasps etc. Make the outings a miserable experience. I don't know why government land should be taken over by the livestock operations.
- ▶ I'm a fisherman and I fish where the water is clean. I've done papers in college about riparian habitat. Cattle are bad for streams all over the state. I like programs where cattle are fenced off of streams. This improves water quality and fishing a whole lot better.

#### **8. Balanced and/or efficient approach to water use.**

- ▶ Look for the best balance of uses.
- ▶ The issue of water must be dealt with in a balanced manor so that not only do we protect it as a resource but we provide for human needs that means keep the dams for hydro-electric power, continue to provide for irrigation and not focus entirely on bringing back various fish that are affected by many sources of impact. Clearly water is probably of utmost importance and I feel we can take care of mans needs including recreation and keep the water resource clean.
- ▶ Before Idaho starts putting new water laws on the books in response to mandates by either the people or the federal government, it needs to review whether the laws currently on the books, with the current funding, would cover these activities.
- ▶ Perhaps there is an issue of mismanagement. We seem to see dramatic increases without increase or improvement in services. Many government jobs are subbed out. These people overcharge and make a fortune while we pay their way.
- ▶ If this precious resource is managed and cared for wisely - there should be plenty for all uses. I object to waste whether it be agricultural, industrial, household, or recreational.

#### **9. Federal role in water issues.**

- ▶ What will we do without it? Keep it here and keep it clean. Keep federal control away.
- ▶ Protecting and conserving water and not waste it and pollute it like some people do. I wish the attorney general and the governor would tell the US Fish and Wildlife Secretary Babbitt, federal government to take a hike, and leave Idaho alone. We would do fine working together in our state if the federal government would get their nose out! Our water is Idaho's water period.
- ▶ The control is retained by who provides the dollars. It has been my observation that for every federal dollar received, expect ten dollars worth of strings attached, translating into not more "BANG FOR THE BUCKS" but more "BUCKS FOR THE BANG". It is my opinion that the control of any undertaking should be at the lowest level possible consistent with it's magnitude and extent. Input should be solicited from both higher and lower agencies.
- ▶ Who will decide the meaning of "water pollution"? The federal government controls much of the property in some counties. Much pollution is caused by their burning, logging, etc. Will they be willing to increase their PILT monies if state property taxes are used to pay for control of pollution? What is a "Pristine" waterway? There have always been landslides, fires, and animal matter in natural rivers and lakes.

#### **10. Water rights issues.**

- ▶ Don't let it go to other states.

- ▶ Water rights should be left up to the people of Idaho and not the federal government.
- ▶ We need to keep Idaho water in Idaho and preserve the quality and quantity for our use and for the generations to follow. This is a must!
- ▶ Do not believe we should sell any water to other states.

**11 Everyone is responsible for clean water.**

- ▶ Everyone is responsible for taking care of our water!
- ▶ Final note: Since water issues are on, or over Federal, State and Private Lands most of the issues that we have discussed here must be shared by all entities. I appreciate the opportunity to have been chosen to express my concerns regarding this Great State's water problems. I do not know how to solve all of the many problems that we are faced with regarding these very sensitive issues. However, I do feel that if we all work together, perhaps there is still some hope that we will be able to leave our children and grandchildren clean water and a better environment that they are certainly entitled too.
- ▶ I am not opposed to user fees for water recreation as a source of revenue raising, nor do I find minimally raising state income and sales tax a bad way to raise revenue. I do, however, do not like the idea of raising property taxes. I feel everyone should contribute, not just those who own their homes.

### Appendix C: Background Information on Survey Respondents

The questionnaire concluded with a battery of demographic questions used in the past on survey instruments by the Social Survey Research Unit of the University of Idaho's College of Agriculture. We also asked respondents whether or not they are registered voters in Idaho, as it may be relevant to have some measure of political activity or involvement of the respondents. The set of demographic questions and responses follows.

How long have you lived in Idaho? (n=369)

Mean number of years ..... 34.6  
 Median number of years ..... 35.0  
 Range = 1-88 years

How long have you lived in your current County? (n=368)

Mean number of years ..... 25.2  
 Median number of years ..... 20.0  
 Range = 0-88 years

How many dependents (including youth and elderly) are living in your household? (n=360)

Mean number of dependents ..... 1.93  
 Median number of dependents ..... 1.00  
 Range = 0 to 12

What is your age? (n=362)

Mean age in years ..... 52.7  
 Median age in years ..... 51.0  
 Modal response ..... 45.0  
 Range = 22 to 95

What is your sex? (n=367)

Gender	Percentages (n=367)
Male	74
Female	26



Are you a registered voter in Idaho?

Registered voter	Percentages (n=369)
Yes	91
No	7
Don't know	2

What is the highest level of education you and your spouse/partner have completed? (Circle the number of your response for each.)

	You -----percentages----- (n=358)	Spouse/Partner (n=329)
Less than high school	4	3
High school graduate	18	20
Some college or vocational training	40	31
College graduate	24	22
Advanced degree	14	8
No spouse/partner	16	0

What size of community did you spend most of your life up to age 18? In what size of community do you currently live? (Circle the number of your response for each.)

Community Size:	Up to age 18 -----percentages----- (n=337)	At present (n=336)
Rural farm	28	9
Rural nonfarm	5	4
100 - 2,499 population	15	8
2,500 - 9,999 population	12	15
10,000 to 49,999 population	20	26
50,000 to 99,999 population	7	11
100,000 or more population	13	27

Which of the following categories describes your total household income before taxes in 1997? (Circle the number of your response).

Income	Percentages (n=339)
Less than \$10,000	5
\$10,000 to \$14,999	8
\$15,000 to \$19,999	8
\$20,000 to \$29,999	18
\$30,000 to \$39,999	13
\$40,000 to \$49,999	13
\$50,000 to \$74,999	21
\$75,000 to \$99,999	9
\$100,000 or more	5

What is your current occupation? (In a sentence, please describe what you do).

Occupation*	Number of respondents	Percentage of respondents (n=365)
Executive, Administrative, Managerial	47	13
Professional, Speciality, Technician	105	29
Sales, Administrative Support	20	6
Service	26	7
Precision Production, Craft, Repair	10	3
Operators, Fabricators, Laborers	20	6
Farm Operators, Managers	12	3
Other Agricultural & Natural Resource	11	3
Retired	100	27
Unemployed	14	4

\* These occupations were assigned to the above categories by the Social Science Research Unit. Occupations of respondents on the survey instrument are listed below by category:

**Executive, Administrative, Managerial**

- Human resource director.
- Administrative assistant. Supervise and help manager. I do A/P, A/R payroll, and schedule.
- Executive.
- Food packaging machinery parts inventory controller, parts buyer.
- Operations manager for soil sampling equipment manufacturer.
- Building contractor.
- Retail management.
- School administrator.
- Roofing contractor.
- General manager—specialty and novelty food production plant.
- Hotel general manager—oversee daily operations at a National brand hotel.
- Assistant Supt. K-12. Public Schools.
- Office manager, maintain all administrative support for a CPA firm.
- Manager, heating and air.

Manager of mining company.  
Accountant for a corporation.  
Plant manager for a food processing company.  
I'm part owner of an electric prepress company.  
Administrator, University of Idaho at Idaho Falls.  
Operations manager for Peasley transfer and storage.  
Elementary principal.  
Manager  
I manage \$18 M program for mixed waste for DOE, including the WERF incinerator at the INEEL.  
Managing commercial construction.  
Bakery owner and manager.  
Owner/operator brewery.  
Business manager.  
Owner and manager of barber and beauty salon.  
Business owner.  
General manager construction equipment sales.  
Manage a wholesale distribution warehouse.  
Self-employed.  
Manager for semiconductor firm.  
District manager for local newspaper.  
Self-employed.  
Vice President and manages banking, branch manager.  
Manager of construction.  
University department administration.  
Warehouse manager for wholesale produce company.  
Natural resource manager.  
Human resource management.  
I own and operate a restaurant.  
General manager—wholesale floral.  
I'm a mechanic with my own business.  
County government—deputy assessor.  
Senior vice president, environmental remediation firm.  
Self employed.  
Project manager for construction company.  
Engineer manager, small electronic manufacturing company.  
USFS, Wilderness manager.  
Construction management and farmer/livestock.

**Professional, Specialty, Technical**

I'm a supervisor for Potlatch in St. Maries, manufacturing plywood.  
Civil engineer for local government.  
I teach college history.  
Teacher at state juvenile corrections center.  
Dental assistant/part-time. Taxidermist/full-time.  
Architect.  
Teacher, math, senior high.  
County road department.  
Contractor for building and remodeling buildings, presently semi-retired.  
Architect.  
Operation technologist for natural gas transmission company.  
Onion inspector.  
Purchasing agent in the medical field.

Computer technology.  
Work in a family owned electrical contracting business.  
MCMS, computer board company.  
Records clerk at Department of Correction.  
USAF radar technician—operate/maintain threat simulators.  
Contractor.  
CNA Home care.  
Dental receptionist for low income patients.  
Pastor.  
State employee. Provide internet working of computer networks.  
Work in the security field.  
Security services (guards, CCTV, fire and burglar alarm sales and service).  
Doctor.  
Attorney.  
Control room operator at a hydro power station.  
Senior electronic technician.  
Professional counselor and administrator.  
Supervise a software development group for Lockheed Martin.  
Outfitter and educator.  
I teach in a private pre-school.  
Federal government.  
US West communications, technology clerk, purchase telephone cable, track cable job progression from start to finish.  
Educator.  
Dispatcher, dispatch trucks for bringing loads in and taking material out.  
Customer service about for Allstate Motor club.  
Engineer at Argonne National Lab (on INEEL).  
I teach at the elementary level.  
Dispatcher at National Interagency Fire Center.  
School teacher.  
Journeyman lineman for an electrician power utility.  
Electronic engineer (software).  
I am a forester for the state of Idaho.  
Mental health counselor.  
Information technology specialist.  
Foreman, local city road department.  
Professional.  
I am a nurse.  
Electronics technician.  
ESL tutor, non-english speaking students, local school district.  
I am an AMI Montessori certified directress. I work with and educate young children, ages 2 ½ - 6 yrs.  
Seed analyst for Clark Seed Co. in Nampa, ID. Test seed for purity and germination for labeling and sale of seed.  
Attorney, worker's compensation.  
Lawyer, uphold truth, justice, and the American way.  
Airline pilot who has a degree in agriculture with agricultural background. We plan to return to a rural agricultural area.  
Software specialist and content manager.  
Radio DJ.  
Teach.  
Research geneticist with USDA.  
Physician.

Agriculture science and technology instructor for an area high school.  
Fire marshall.  
Software engineer.  
Electrician.  
I am a pilot.  
Hospital, birth registrar.  
Plumber.  
INEEL—environmental programs.  
Registered nurse.  
Pastor a church.  
Government employee.  
Supervisor trout processing plant.  
Quality control—BMC West Truss Plant.  
Bookkeeper.  
Work as a technician in a semiconductor industry.  
Shop foreman trailer repair shop.  
CNA, truck driver, drive 12 Western states, flat bed.  
Mortgage broker.  
Electrician.  
Post office  
Do the bookkeeping for our computer programming business.  
Medical technologist, work in a hospital laboratory.  
Secretary/Insurance agent.  
Engineer—design computer hardware.  
State corrections.  
Painting contractor painting new and older houses.  
University professor.  
Supervise manufacturing of computers.  
Water rights specialist, USDOI, Bureau of Reclamation, and small equine business, custom  
hay 14 acres.  
Computer operator/data entry for linen supply company.  
Construction electrician.  
Accountancy clerk, accounts receivable for corporation.  
HR specialist.  
Financial consultant at Merrill Lynch. I manage portfolios for affluent people.  
I am a supervisor of a crew of 9 Par a local company.  
Civil engineer.  
Fire fighter/EMT.  
Electrical contractor.  
Install and train computers and technology for grocery retail operations.  
Businessman—Designer

### **Sales, Administrative Support**

Customer service manager in sporting good industry.  
Customer service representative for a major satellite company.  
Auto dealership. I work in parts department and sell auto parts.  
Sales manager for food service sales.  
Real estate sales.  
Independent sales representative.  
Sales executive.  
Insurance agent.  
Salesman for a wine and beer distributor.  
Distribution and student.

Sales representative.  
Local RV and Marine Inc.  
Sales.  
Sales associate in retail.  
Real estate agent residential sales.  
General merchandise buyer.  
Realtor.  
Insure long haul truckers.  
Salesman.  
Real estate sales and appraisal.  
Computer sales and services.

### **Service**

Home health and house cleaning. Work with senior citizens to keep them in their homes and house cleaning whoever needs the service.  
I tailor clothes.  
Bank teller.  
Rural mail carrier.  
Radio.  
Shift manager at McDonalds.  
Custodian and small farm to operate when I retire.  
Sell auto parts in store.  
Black Jack dealer.  
I'm a chicken helper at a Senior citizen place.  
Postal worker.  
Grocer/cashier.  
Chef, saute cook.  
I'm a meat-cutter for Safeway.  
Retread large truck tires.  
Health care.  
Semi retired part time auto parts sales.  
Seamstress.  
Janitor.  
Custodian—I clean a local school full-time.  
USPO—rural carrier.  
Postal clerk for USPS.  
Telephone work.  
PCS provider, homecare for handicapped.  
Retire airline employee.  
Make candy bars.

### **Precision Production, Craft, Repair**

Computer assembly maintenance.  
Install & service home appliances.  
Machinist/farmer.  
I am a machinist. I work at the INEEL fabricating parts in support of a nuclear facility.  
Millwright—repair equipment.  
A mechanic.  
Welder.  
Diesel mechanic.  
Maintenance in the private sector.

### **Operators, Fabricators, Laborers**

I am a machinist. I make precision parts.

I drive fuel truck.  
UPS driver.  
Long haul truck driver.  
Heavy construction.  
Transfer station attendant at landfill take care of garbage.  
I drive logging truck.  
Equipment operator for construction company building roads and parking lots.  
Truck driver.  
Drive school bus and fight forest fires in summer.  
Paper maker for mill.  
Labor at the INEEL.  
Disabled truck driver.  
Bus driver for school and bus maintenance.  
Long haul trucker—previously farmed.  
Equipment operator/supervisor.  
Heavy equipment operator construction.  
House painter and property management.  
Ditch rider, distributes irrigation water to farmers.  
Excavation, back-hoe, dump-truck dozer, dig and repairs sewer and water lines. Do all other dirt work.  
Drive logging truck.  
Construction, framer.

#### **Farm Operators, Managers**

Farmer.  
Rancher, raise hay, wheat and cattle.  
Self-employed farmer.  
Rancher.  
Farmer and rancher.  
I am a farmer of potatoes, wheat and alfalfa.  
Farm.  
I farm and drive truck.  
Farmer, trucker.  
Farm.

#### **Other Agricultural & Natural Resource**

Trained horses, own small house ranch. Network marketing Nikkea.  
Mostly retired, work part-time in agriculture, seed industry—corn and alfalfa seed.  
Water well drilling and farming.  
Forester, forest planning on a national forest.  
I am a firefighter.  
Cow-calf cattle ranch.  
Reforestation (logging, tree planting, trails, slash and burn, thinning, fire fighting) and construction - mostly painting and finishing work and carpentry.  
Farming. Retired (partially). Sold farm. Work part-time on farm.  
I work for a plywood mill.  
Agricultural inputs.  
Farm worker.

#### **Retired**

Retired—self employed.  
Retired school teacher.  
Retired lumber dealer.

Retired truck driver and farmer.  
Retired but do remodeling homes periodically.  
As I am 95 years old, I am retired and live in a rest home.  
Retired, farm work part time.  
I am a retired school teacher.  
Retired, play golf for exercise.  
Retired secretary—currently housewife.  
Retired, previously a building contractor.  
Retired teacher.  
Retired local telephone company and railroad.  
Retired wildlife biologist.  
Retired school psychologist, currently in private practice.  
Retired railroad engineer.  
Retired USAF and state employee.  
Retired, have part-time job as a courier.  
Retired metallurgical, engineer/manager, nuclear energy industry.  
I'm on Social Security Disability and SSI.  
Retired US air force military cont. Self employed.  
Retired school teacher.  
Retired aerospace engineer.  
Retired from Western Area Power administration, Montrose, CO.  
Retired Sandpoint highway district superintendent. Own a home, interested in all that effects water and highways and quality of life.  
Retired school teacher.  
Retired aero space engineer.  
Retired AT&T Co.  
Retired teacher.  
Retired woods worker and farmer.  
Retired iron worker.  
Retired teacher.  
66 respondents wrote "Retired".  
Retired but work part-time as truck driver and irrigator.  
Now retired, but farm. Previously was forest pathology.

### **Unemployed**

Anything to try and support and increase living conditions.  
Homemaker.  
Homemaker.  
Housewife for now!  
Disabled, use to farm, now subdividing farm.  
I am a student at Boise State University and will graduate this May.  
I am a housewife and mother, recreational person and gardener.  
Unemployed machinist.  
Unemployed.  
I am a housewife.  
Housewife.  
Homemaker.  
No occupation—A widow living alone.  
Disabled. Do not work.



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## Glossary

**NOTE:** In almost all cases, definitions have been taken verbatim from the source document indicated in parentheses following the definition. Terms appearing in boldface within the definitions are defined elsewhere in this **Glossary**. Some terms have more than one definition or slightly different meanings depending on the source.

**Agriculture:** A category of **nonpoint source pollution** including but not limited to activities of irrigated or non-irrigated crop production, specialty crop production (truck farming, orchards, etc.), pasture land, rangeland, feedlots, aquaculture, and animal holding areas (IDEQ 1995b).

**Bad actor law:** State bad actor laws authorize the state to take increasingly stringent steps where voluntary measures fail (EPA 1996).

**Beneficial use:** [1] The reasonable use of water for a purpose consistent with the laws and interests of the people of the state (Dunster and Dunster 1996). [2] Any of the various uses that may be made of water, including, but limited to, aquatic biota, recreation in or on the water, water supply, wildlife habitat, and aesthetics (IDEQ 1996). [3] Protected uses of water as described in the *Water Quality Standards and Waste Water Treatment Requirements* (IDAPA 16.01.2003) (IDL 1995). (See **designated use**.)

**Best management practice (BMP):** [1] Methods, measures, or practices designed to reduce or prevent **water pollution**, usually applied as a system of practices rather than a single practice (Dunster and Dunster 1996). [2] Practices, techniques or measures developed, or identified, by the designated agency and identified in the state water quality management plan which are determined to be the cost-effective, practicable means of preventing or reducing **pollutants** generated from **nonpoint sources** to a level compatible with **water quality** goals (Idaho Code § 39-3602). [3] Procedures or controls other than effluent limitations to prevent or reduce **pollution** of surface water (includes **runoff** control, spill prevention, and operating procedures) (IDEQ 1995).

**Designated use or designated beneficial use:** [1] A use specified in **water quality standards** for each **water body** or segment whether or not the use is being attained (EPA 1995a; 40 CFR 131.3). [2] Those uses assigned to waters as identified in the rules of the Department whether or not the uses are being attained; designated uses may include subcategories of existing uses that the Director determines are not fully attainable (Idaho Code § 39-3602). [3] A **beneficial use** assigned to identified waters in the Idaho Department of Health and Welfare Rules, Title 1, Chapter 2, *Water Quality Standards and Wastewater Treatment Requirements* (IDEQ 1996).

**Fully supporting:** A federal category of water quality status. **Water quality** condition is good, meaning it meets criteria for **designated uses** (EPA 1995).

**Nonpoint source:** **Pollution** that is not released through pipes but rather originates from multiple sources over a relatively large area. Nonpoint source can be divided into **nonpoint source activities** related to either land or water use including failing septic tanks, improper animal-keeping practices, forest practices, and urban and rural **runoff** (EPA 1996). Contrast with **point source**.

**Nonpoint source activities:** Includes grazing, crop production, **silviculture**, log storage or rafting, construction, mining, recreation, septic systems, **runoff** from storms and other weather-related events and other activities not subject to regulation under a federal NPDES [**point source**] permit (Idaho Code § 39-3602).

**Nonpoint source pollution:** [1] polluted surface **runoff** (Tarlock 1996); [2] **Pollution** that is discharged over a wide land area, not from one specific location (IDEQ 1996); [3] any source of **pollution** not associated with a distinct discharge point, including sources such as rainwater, **runoff** from **agricultural** lands, industrial sites, parking lots, and **silvicultural** operations, as well as escaping gases from pipes and fittings (IDEQ 1995). See **nonpoint source activities**.

**Non-regulated nonpoint source activities:** Idaho state laws have specific requirements and regulations for **silvicultural** (forestry) and mining activities to ensure **nonpoint source pollution** is reduced to acceptable levels. Other land-use activities are not regulated by state law, including **agricultural** activities, livestock operations, highway and road construction (except logging roads, which are regulated), urban areas, construction areas, and recreational areas and activities.

**Point source:** [1] **Pollution** that is discharged from any identifiable point, including pipes, ditches, channels, sewers, tunnels, and containers of various types (IDEQ 1996). [2] Any discernible, confined, and discrete conveyance including, but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel, or other floating craft, from which **pollutants** are, or may be, discharged. This term does not include return flows from irrigated **agriculture** (CWA § 502; Idaho Code § 39-3602), discharges from dams and hydroelectric generating facilities or any source or activity considered a **nonpoint source** by definition (Idaho Code § 39-3602).

**Pollutant:** [1] Any substance introduced into the environment that adversely affects the usefulness of a resource (IDEQ 1995b). [2] Materials which, when discharged or released to water in excessive quantities cause or contribute to **water pollution**. Examples include dredged spoil, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical waste, biological materials, radioactive materials, heat, wrecked or discarded, equipment, rock, sand, silt, cellar dirt; and industrial, municipal and **agricultural** waste, gases entrained in water, or other materials. Provided however, biological materials shall not include live or occasional dead fish that may accidentally escape into the waters of the state from aquaculture facilities (Idaho Code § 39-3602).

**Pollution:** [1] The man-made or man-induced alteration of the chemical, physical, biological, and radiological integrity of water (CWA § 502). [2] Any alteration in the character or quality of the environment that renders it unfit or less suited for **beneficial uses** (IDEQ 1996).

**Runoff:** The part of precipitation and snowmelt that reaches streams by flowing over or through the ground; surface runoff flows away without penetrating the soils (Dunster and Dunster 1996). See **nonpoint source pollution**.

**Sediment:** [1] Soil particles that enter the water from erosion of land. Sediment consists of particles of all sizes, including fine clay particles, silt, sand, and gravel (EPA 1995). [2] Fragmented material that originates from the weathering of rocks and decomposition of organic material that is transported in suspension by water, air, or ice, to be subsequently deposited at a new location (Dunster and Dunster 1996).

**Silviculture:** Activities associated with the regeneration, growing and harvesting of trees and timber including, but not limited to, disposal of logging slash, preparing sites for new stands of trees to be either planted or allowed to regenerate through natural means, road construction and road maintenance, drainage of surface water which inhibits tree growth or logging operations, fertilization, application of herbicides or pesticides, all logging operations, and all forest management techniques employed to enhance the growth of stands of trees or timber (Idaho Code § 39-3602).

- Total maximum daily load (TMDL):** [1] the total amounts of a particular **pollutant** that sources can discharge into a **water body** without violating **water quality standards**. [2] A TMDL allocates **pollution** control responsibilities among pollution sources in a watershed, and is the basis for taking actions needed to restore a **water body** (EPA 1996). [3] The sum of the individual wasteload allocations for **point sources**, load allocations for **nonpoint sources**, and natural background levels of all **pollutants**. Acceptable pollutant levels, established through TMDLs shall be at a level necessary to implement the applicable **water quality standards** for the identified pollutants with seasonal variations (Idaho Code § 39-3602). [4] The sum of the individual wasteload allocations (WLAs) for **point sources**, load allocations (LAs) for **nonpoint sources** and natural background, and a margin of safety (MOS). TMDLs can be expressed in terms of mass per time, toxicity, or other appropriate measure that relates to a state's **water quality standards** (EPA 1996).
- Total maximum daily load (TMDL) protocols:** TMDL protocols are under development and will provide a process and selected procedures for developing TMDLs for impaired waters. They will include the following six elements: (1) problem statement, (2) endpoints, (3) source assessment, (4) endpoint and source linkage, (5) allocation, and (6) monitoring (EPA 1996).
- Water body:** [1] A homogeneous classification that can be assigned to rivers, lakes, estuaries, coastlines, or other water features (IDEQ 1996). [2] The EPA recognizes 5 types of bodies of water for the purposes of the Clean Water Act: streams, lakes, estuaries, coastal waters, and wetlands (Novotny and Olem 1994).
- Water pollution:** [1] The man-made or human-induced alteration of the chemical, physical, biological, and radiological integrity of water (EPA 1995; 33 USC 1362). [2] Such alteration of the thermal, chemical, biological or radioactive properties of any waters of the state, or such discharge or release of any contaminant into the waters of the state as will or is likely to create a nuisance or render such waters harmful or detrimental or injurious to public health, safety or welfare or to domestic, commercial, industrial, recreational, aesthetic or other legitimate uses or to livestock, wild animals, birds, fish or other aquatic life (Idaho Code § 39-3602).
- Water quality:** [1] The chemical, physical, and biological characteristics of water (Dunster and Dunster 1996). [2] A term used to describe the biological, chemical, and physical characteristics of water with respect to its suitability for a **beneficial use** (IDEQ 1996).
- Water quality standards:** [1] State-adopted and EPA-approved ambient standards for **water bodies**. The standards cover the use of the water body and the water quality criteria that must be met to protect the **designated use** or uses (EPA 1996). [2] Provisions of state or federal law which consist of a **designated use** or uses for the waters of the United States and water quality criteria for such waters based upon such uses (EPA 1995a, 40 CFR 131.3). Minimum standards include an antidegradation policy consistent with 40 CFR 131.12 (40 CFR 131.6). [3] The combination of a **designated use** and the maximum concentration of a **pollutant** which will protect the use for any given **water body** (IDEQ 1995).