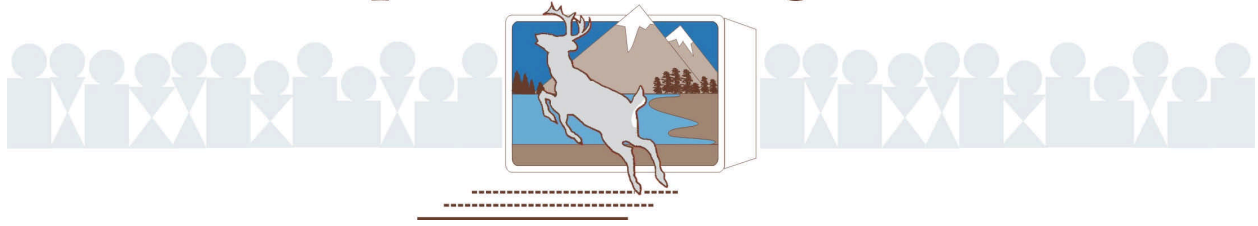


Responsive Management



MEASURING PERCEPTIONS AND ATTITUDES TOWARD LITTER IN GEORGIA'S LOCAL COMMUNITIES

**Prepared for Keep America Beautiful, Inc., and
The Georgia Department of Community Affairs**

by Responsive Management

2007

MEASURING PERCEPTIONS AND ATTITUDES TOWARD LITTER IN GEORGIA'S LOCAL COMMUNITIES

2007

Responsive Management National Office

Mark Damian Duda, Executive Director
Peter E. De Michele, Ph.D., Director of Research
Martin Jones, Research Associate
Andrea Criscione, Research Associate
Chad Craun, Research Associate
Tom Beppler, Research Associate
Tim Winegord, Survey Center Manager
Jared Martin-Basye, Survey Center Assistant Manager
Alison Lanier, Business Manager
Steven J. Bissell, Ph.D., Qualitative Research Associate
James B. Herrick, Ph.D., Research Associate

130 Franklin Street
Harrisonburg, VA 22801
Phone: 540/432-1888 Fax: 540/432-1892
E-mail: mark@responsivemanagement.com
www.responsivemanagement.com

Acknowledgements

Responsive Management would like to thank Randy Hartmann, Director, Office of Environmental Management, Georgia Department of Community Affairs, and Beth Brown, Communications Director, Georgia Department of Natural Resources for their input, support, and guidance on this project.

THE BASIC STEPS FOR CONDUCTING A SURVEY

In order to assist communities in Georgia with measuring perceptions and attitudes toward litter, Responsive Management has worked in cooperation with Keep American Beautiful, Inc. (KAB) and the Georgia Department of Community Affairs (DCA) to develop a guide for implementing a survey at the community level. This handbook provides thorough guidelines for implementing a scientifically defensible public opinion survey. Although survey research is a science, there are basic steps to follow to easily and successfully conduct a survey in your community. The current section provides a quick overview of the nine basic steps for conducting a survey in your community while maintaining the quality of the data and the validity of the research. More specific and detailed information on survey research methodology is contained within the body of this handbook.

1. Clearly Define the Objectives of the Survey

Defining the objectives of the survey will help you write or select appropriate survey questions and maintain the focus of the study throughout the survey process. For example, the primary objective of your survey may be to determine awareness of your KAB affiliate's efforts at cleaning up and preventing litter. Therefore, you would ask questions about whether respondents have heard any of your anti-litter messages and how effective they think the message(s) is(are), such as questions m-r provided in the subsection of this handbook titled, "Education Questions" on pages 33-34. It may be useful to write out these objectives and share them with all of those involved in the survey process.

2. Select Data Collection Method

There are four general data collection methods. While each method comes with its own unique advantages and disadvantages, administering the survey by telephone will be the most efficient and cost effective method for surveying the public. Although conducting a survey by telephone can be intimidating to those who have never conducted a survey, the task can be quite simple when following the next seven steps. When you need more information on one of these steps, please refer to the more in-depth discussion in the section of this handbook titled, "Survey Research Methodology."

3. Identify the Population To Be Studied

To begin the survey process, you must first identify the population you want to study. For example, if you are interested in public awareness of and opinions on your anti-litter efforts, the population you want to study is the public in general. In survey research, the public is often referred to as the general population. For your survey, you can obtain a reliable indication of what the your audience thinks by surveying a small sample of people and not necessarily the entire population. The sample is the group of people you are going to survey within the population you are studying. This small sample can provide responses that will accurately represent the opinions of the entire population if the sample size is appropriate (please see step 4 below) and if the sample is obtained correctly (please see step 5).

4. Determine Sample Size

Next, you will need to determine your sample size. The size of the sample affects the accuracy and reliability of the data you collect. In general, the larger the sample size, the more reliable the data you collect will be and the more accurately it will represent the opinions of the entire population. To determine an appropriate sample size for the population in your area, follow these three steps:

- i. Identify the geographic boundaries of your population.

It is best to determine the geographic study area by counties or zipcodes (e.g., all of Cobb County or all of the zipcodes that are used within the city borders of the City of Marietta).

- ii. Determine the actual population estimate of this geographic area.

The U.S. Census Bureau Web site shows that the 2005 population estimate for Cobb County, Georgia, is 653,715 people or that the 2005 population estimate for the City of Marietta is 58,748. This information can be accessed for all counties, zipcodes, and cities and towns in Georgia at the U.S. Census Bureau's FactFinder Web site (<http://factfinder.census.gov>).

- iii. Visit the following two Web sites to use calculators to help determine sample sizes and sampling errors using the population size of your study area:

<http://www.surveysystem.com/sscalc.htm#cineeded> or

<http://www.dssresearch.com/toolkit/secalc/error.asp>.

A good basic rule for survey sampling, however, is to keep the sampling error within plus or minus 5 percentage points, which can often be accomplished by using a sample size of 400. For more information on the sampling error, please see the subsection of this handbook titled, "Define and Select Sample."

5. Obtain the Sample

To correctly obtain a sample that will be representative of the general population, it is easiest to purchase a Random Digit Dial (RDD) list from a sample provider, such as Survey Sampling International (SSI) (www.surveysampling.com). It is necessary to purchase more phone records than the sample size you have selected. This is necessary because some of the records you purchase will be disconnected numbers or businesses or the individual will not want to participate in the survey. In general, purchasing about 10 times as many records as your sample size is necessary. Therefore, if your sample size is 400, you will want to purchase 4,000 phone records from a sample provider. Although this sounds as if it would be an expensive task, RDD phone records for the general population will cost approximately \$0.06 per record. Therefore, purchasing 4,000 records at \$0.06 per record will only cost \$240. The cost of the sample will be worth the time and manpower it saves in attempting to create your own sample and will also ensure a scientifically selected sample to provide you with accurate and reliable survey results.

To purchase the sample, follow these steps:

- i. Contact the sample provider (e.g., www.surveysampling.com).
- ii. Tell the sample provider the exact county(ies) or zipcode(s) for which you would like to purchase an RDD list.
- iii. Ask the sample provider for assistance with determining how to receive and open the list of phone records on your computer.

6. Write the Survey

Please see the section of this handbook titled, "Litter Perceptions and Attitudes Survey Instrument" for questions and question templates to use when writing your survey; you may not need to write any questions if you simply use the questions provided in this section. However, there are several key guidelines for constructing a survey instrument. The most important rules for writing survey questions are:

- i. Write neutral questions that do not lead or coerce a respondent into giving a particular answer.
- ii. Provide all possible responses as answer choices when a question is not open-ended.
- iii. Keep wording short and simple.
- iv. Do not assume prior knowledge on a topic.
- v. Limit the number of questions to keep the time it takes to answer the survey at 10 minutes or less.

Please see the discussion in the subsection of this handbook titled, “Construct Survey Instrument” for more detailed guidelines.

7. Prepare to Collect Data

The next step in the survey process is to prepare for making survey calls and collecting data.

You will need:

- i. Staff and/or volunteers to make telephone calls to administer the survey.
- ii. A project leader or coordinator to instruct and manage staff and/or volunteers making calls.
- iii. Computers for entering and storing data.
- iv. Appropriate computer software for collecting and/or storing data.
- v. A central area to use as survey headquarters where calls are made and data is collected (if available).

The following discussion provides further details on each necessity listed above.

- i. Recruit the staff and/or volunteers who will be making the survey calls. Although it is important to have plenty of help, it is also important to have callers who have good telephone skills. When assigning staff and volunteers to tasks for this project, it may be useful to note individual skills and assign those who are experienced in handling telephone calls or who have good verbal communication skills to making survey calls while utilizing others for different project tasks, such as data entry (if necessary).
- ii. Train and manage survey callers. Although you may have staff and/or volunteers with excellent telephone skills assigned to making survey calls, it is still important to

- instruct them on appropriate survey administration standards because such standards are essential to a successful and scientifically defensible survey. Standards for trained survey interviewers can be obtained from the Council of American Survey Research Organizations (CASRO) (www.casro.org). Most importantly, callers should not let their personal feelings or opinions influence survey respondents' answers.
- iii. You will need computers for entering the survey data (i.e., the responses to each question on each survey). Ideally, you would have a computer for each caller.
 - iv. You will need appropriate computer software for collection and/or storing data. At the most basic level, you will need Microsoft Excel, a spreadsheet program, for storing data and tracking results. Ideally, you will have computer-assisted telephone interviewing (CATI) software, such as Questionnaire Programming Language (QPL), and a data analysis software package, such as SPSS (formerly Statistical Package for the Social Sciences) or SAS (formerly Statistical Analysis Software). CATI software will display each survey question on the screen and allow the caller to enter the responses. Data analysis software is compatible with CATI software and will allow easy access to and analysis of survey data. If you do not have the budget for the software, a local college or university may be able to assist you with access to software and individuals experienced in using such software.
 - v. Although it is not absolutely necessary, it may be helpful to set up a central location for survey calls and data collection to occur so that calling can be coordinated and more closely managed to increase efficiency and accuracy. Ideally, this central calling area would have a telephone and a computer for each caller. If not, staff and/or volunteers could make survey calls from their offices and/or homes and either record responses on paper for data entry later or enter responses into their personal computers for electronic transfer to a main data storage computer later.

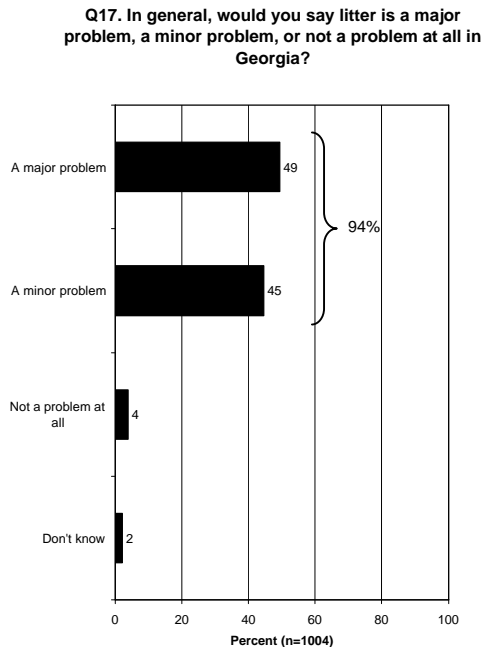
8. Collect Data

Once you have obtained your sample, written your survey, and set up an area to call and administer the survey, you are ready to collect your data using the following guidelines.

- i. Calls using the RDD sample telephone records should be made each day of the week and at different times of the day so that you include both people who work and those who do not. For example, be sure to make calls Monday through Friday from 9:00 a.m. to 9:00 p.m., Saturday from 10:00 a.m. to 4:00 p.m., and Sunday 3:00 p.m. to 9:00 p.m., local time.
- ii. Several calls should be made to the same number until an individual answers the phone and agrees or declines to participate. It is important to keep a record of each date and time the phone number is called. Typically, you may make as many as five calls at different times of the day and week in an attempt to reach a live person. Making multiple calls at different times helps maintain the representativeness of the sample, avoid bias toward people easy-to-reach by telephone, and provide an equal opportunity for all to participate.
- iii. Start the telephone call with an introduction of who you are and exactly why you are calling.
- iv. Read each survey question and give the respondent time to answer. If using CATI software, data entry can be done as the survey is administered. If CATI software is not available for your use, it is necessary for the interviewer to have a fresh paper copy of the survey for each new call and to mark the responses on the survey for data entry at a later time.
- v. If using paper surveys, number each survey with a unique number. When entering the responses into the computer later, also have a field to enter this unique number so that if there is any need to double check data entry later, it can be done easily by matching the unique identifying number on the paper survey to the one entered into the computer.
- vi. Keep calling until you reach your sample size goal (e.g., 400 completed surveys).
- vii. To calculate your response rate, divide your number of completed surveys by the number of telephone numbers attempted. For example, if you completed 400 surveys and used 1,000 of the 4,000 records you purchased, your response rate is 40% (i.e., 400 divided by 1,000 equals 40%).

9. Compile Survey Results

The final step in the survey research process is to compile and analyze your results. The very basic analysis will simply demonstrate the percentages of respondents who gave each answer for each question. If you compiled your data in Microsoft Excel, SPSS, or SAS, you can use your software to produce a graph that shows these results for each question similar to the one below.



The overwhelming majority (94%) of Georgians who were surveyed indicated that they consider litter to be a problem in Georgia. Slightly more than half of those who consider litter a problem consider it a *major* problem.

Note that because this sample was scientifically and systematically designed using RDD methodology, it is a representative sample of Georgians and the results accurately reflect the likely distribution of responses if *all* Georgia residents in the population were surveyed.

Source: *Georgia Residents' Opinions on Litter and Anti-Littering Programs in Georgia* conducted by Responsive Management for the Georgia Governor's Office and the State of Georgia's Litter Abatement and Prevention Initiative

Again, if you lack a budget or expertise for using such software, a local college or university may be able to assist you, especially through a social science or statistics class that will perform the work pro bono in exchange for educational experience.

For recommendations for conducting the basic steps of the survey process on an extremely limited budget, please see the section of this handbook titled, "Tips for Conducting a Survey on a Limited Budget."

TABLE OF CONTENTS

Introduction	1
Survey Research Methodology.....	2
Overview of Attitude, Opinion, and Participation Surveys	2
Basic Steps for Implementing and Conducting Survey Research.....	4
Define Research Objectives	5
Select Data Collection Methodology.....	5
Define and Select Sample	10
Identifying the Correct Population to Survey	11
Specifying the Unit of Analysis	11
Determining the Size of the Sample	11
Selecting the Source of the Sample	12
Construct Survey Instrument.....	16
Questioning and Question Formats	17
Data Collection.....	19
Potential Sources of Error and Solutions	21
Data Analysis	22
Long-Term Data Storage	23
Litter Perceptions and Attitudes Survey Instrument.....	26
Education Questions	27
Enforcement Questions	36
Eradication Questions	39
Demographic Questions.....	46
Literature Review of Litter Survey Instruments.....	50
Statewide Attitude Surveys	51
Washington	51
Texas	52
Iowa	53
Florida.....	54
Statewide Visual Litter Survey.....	55
New Jersey	55
Community and Local Surveys	56
Keep Arkansas Beautiful Community Awareness Inventory	56
Kirklees Education Service	56
ACT NOWaste	56
Rhode Island Task Force Enforcement.....	56
University of South Florida’s Beach Buddies.....	57
Recycle-More.co.uk.....	57
Keep Truckee Meadows Beautiful	57
Friendship Development Associates.....	57
Wake Up to Waste.....	58
Limerick City Council Litter Management Plan.....	58
Tips for Conducting a Survey on a Limited Budget.....	59
About Responsive Management	62

LIST OF TABLES

1. Survey Methods and Advantages and Disadvantages.....	6
2. Survey Methods by Various Situations and Target Audiences	8
3. Survey Method Recommendations	8
4. Survey Methods and Cost Effectiveness	10
5. Sampling Error for Common Simple Random Samples With 95% Confidence Intervals	12
6. Survey Methods and Sampling Options	14
7. Sampling Options and Steps for Obtaining Sample	15
8. Web Sites With Additional Information or Resources	25

INTRODUCTION

In order to assist communities in Georgia with measuring perceptions and attitudes toward litter, Responsive Management has worked in cooperation with Keep America Beautiful, Inc. (KAB) and the Georgia Department of Community Affairs (DCA) to develop an attitude survey instrument on littering for use at the local level in obtaining data on and determining general public perceptions regarding littering and illegal dumping.

In addition to the survey instrument components for gathering local, community-level data that parallels the statewide litter study Responsive Management completed for the Georgia Department of Natural Resources in 2006, this report contains training guidelines with methods for statistical sampling, survey administration, and data interpretation at the local level to assist the DCA in conducting the survey research necessary for measuring community public opinions and attitudes regarding litter. A literature review of additional litter attitude survey instruments used by states and communities that may be useful or informative in assessing public opinion and attitudes towards litter is also included.

A discussion of basic survey research methodology is provided, including comparative tables to illustrate the various modes of collection with Responsive Management recommendations. The attitude survey instrument components are organized into the following *Litter. It Costs You.* campaign topic areas: Education questions, Enforcement questions, Eradication questions, and Demographic questions. The literature review is separated into overviews of statewide litter attitude survey instruments, a discussion on a representative statewide visual litter survey, and summaries of community and local litter attitude survey instruments. For an additional litter survey resource, the full report of the results of the Georgia statewide litter survey conducted by Responsive Management is available at

http://www.responsivemanagement.com/download/reports/GA_Litter_Report.pdf

SURVEY RESEARCH METHODOLOGY

OVERVIEW OF ATTITUDE, OPINION, AND PARTICIPATION SURVEYS

The questionnaire sample survey is a systematic collection of data from a sample population using a standardized questionnaire. Questionnaire surveys can be conducted through telephone interviews, mail questionnaires, personal interviews, or Web questionnaires. The point of a survey is to quantify opinions and attitudes in a scientific and deliberate manner. Results should reflect reality.

Survey research is a science, and well-conducted surveys will reflect reality. There are a few fundamentals of a well-designed survey project:

1. The survey's goal and objectives should be clearly defined and committed to paper.
2. Everyone in the population under study must have an equal likelihood of being interviewed. This is why in general population telephone surveys, high quality research does not utilize lists from sources such as telephone books, since telephone books do not include everyone and the survey would systematically eliminate anyone who has recently moved to the area or anyone with an unlisted number.
3. A survey should be designed without leading questions. For example, the following question would be considered a leading question: "You would agree that litter is a problem in the community, wouldn't you?" Survey questions must not influence respondent answers. The question should be rewritten in a neutral manner, such as "Do you agree or disagree that litter is a problem in the community?"
4. All interviews must be conducted in the exact same manner. Interviewers should not have any influence over the respondent's answers—interviewers must interview without influence.
5. The sample size must be large enough to minimize sampling error. If 100 interviews are completed and the distribution of the opinion on the question is 50% / 50% (e.g., 50% of respondents agree and 50% disagree), at a 95% confidence interval, "reality" is actually between 40% and 60% because the sampling error is plus or minus 10 percentage points. To determine an appropriate sample size for the population in your study area, please visit <http://www.surveysystem.com/sscalc.htm#cineeded> or

<http://www.dssresearch.com/toolkit/secalc/error.asp> to use calculators to help determine sample sizes and sampling errors.

6. The response rate must be high enough to minimize nonresponse bias. The reality is that not everyone will respond to a survey. Many people screen their calls using answering machines. Others hang up when they hear, "Hello my name is...." In a mail survey, many people throw away surveys because it looks like junk mail or, to them, it is junk mail. The key is to get as many people in the sample as possible to answer the survey. For telephone surveys the key is to call at different times of the day and at different times of the week, making 5 to 8 call-backs before replacing the number. Appointments should be set and interviews scheduled at a time when it is convenient for the respondent to take the survey. For mail surveys, multiple mailings are a necessity and reminder postcards help boost response rates. Generally, it is best to send the original mail survey, a follow-up postcard a week after the first mailing, and then a second and third wave of surveys to those who have not replied to the previous mailings.
7. Finally, once data is collected, the demographics of the survey respondents should match the known demographics of the population under study. For example, if a statewide study of Georgia residents is conducted and 80% of the respondents in the survey are men, then it must be concluded that women have somehow been systematically excluded from the survey because about 50% of Georgia residents are women. The survey would therefore be suspect.

BASIC STEPS FOR IMPLEMENTING AND CONDUCTING SURVEY RESEARCH

The following is a step-by-step guide to the survey research process. Detailed information and discussion on each step follows the outline of the steps below.

- **DEFINE RESEARCH OBJECTIVES**
- **SELECT DATA COLLECTION METHODOLOGY**
 - **Mode of Collection (Advantages and Disadvantages)**
 - **In-House vs. Contract Research**
 - **Costs, Personnel, and Equipment**
- **DEFINE AND SELECT SAMPLE**
 - **Population To Be Surveyed**
 - **Unit of Analysis**
 - **Sample Size**
 - **Sampling Error**
 - **Sampling Options**
- **CONSTRUCT SURVEY INSTRUMENT**
 - **Neutral Wording**
 - **Shorter and Simpler Questions Are Better**
 - **Basic Question Formats**
- **DATA COLLECTION**
 - **Training Interviewers**
 - **Pretest**
- **POTENTIAL SOURCES OF ERROR AND SOLUTIONS**
 - **Avoiding Sampling Errors**
 - **Avoiding Nonsampling Errors**
- **DATA ANALYSIS**
 - **Analyzing Results With Statistical Software**
- **LONG-TERM DATA STORAGE**
 - **Considerations for Future Use of Data**

DEFINE RESEARCH OBJECTIVES

It is important to clearly define the objectives of the research before developing a survey instrument. A common flaw in survey research is to hastily develop a survey that covers every conceivable issue that may be remotely interesting to an organization. The result is often an overwhelming quantity of data and superficial analysis. Furthermore, each additional question is an added burden to the respondent and to the researchers. Include only those questions that address the specific objectives of the research. Research objectives should be streamlined, with a clear sense of direction and focus. Concise objectives will make the process of choosing a method for data collection more manageable.

SELECT DATA COLLECTION METHODOLOGY

A successful research study depends largely on the selection of an appropriate data collection method before the survey is drafted. Selection of the data collection methodology is influenced by budget, human resources available, computer resources available, and time available before the answers are needed. There are four general data collection methods: telephone interviews, mail questionnaires, personal interviews, and Web questionnaires. Each method comes with its own unique advantages and disadvantages, including considerations of response rates, costs, and training and/or expertise necessary for survey implementation. Please see the tables on the following pages for an overview of the various advantages and disadvantages of each data collection method, a review of which methods are most appropriate in various situations, and Responsive Management's recommendations for choosing a data collection method.

TABLE 1. SURVEY METHODS AND ADVANTAGES AND DISADVANTAGES

Survey Method	Advantages	Disadvantages
Telephone Interviews	<ul style="list-style-type: none"> • Fastest data collection method • Costs are moderate • Very little effort required of the respondent • Typically achieves the best response rate • Typically achieves most representative sample of the general population (using random digit dialing) • Data can be entered into computer as interview is conducted • Skip-out patterns based on previous responses can be computerized to eliminate error 	<ul style="list-style-type: none"> • Can be intrusive due to the timing of the call • More complicated or long survey questions may be difficult to administer by telephone • Telephone books are not an ideal source of numbers because unlisted numbers can range from 10 to 30 percent, sometimes more • Interviewers must be hired or volunteers trained • Some technical expertise may be required to use the computers for data collection
Mail Questionnaires	<ul style="list-style-type: none"> • Does not require large staff for implementation • Costs are moderate • More complicated or long survey questions difficult to administer by telephone can be administered by mail • Respondent can choose time and place to answer questionnaire • Computers can be used to print questionnaire, cover letters, and mailing labels and to track responses 	<ul style="list-style-type: none"> • Multiple mailings or distributions are required to obtain a good response rate • Obtaining a good response rate through multiple mailings can take 6 weeks or longer • Skip-out patterns based on previous responses must be limited to avoid respondent confusion • Data entry and survey administration do not take as much advantage of computers as the telephone method

Survey Method	Advantages	Disadvantages
<p>Personal Interviews (e.g., in-person interviews at a mall)</p>	<ul style="list-style-type: none"> • Almost any type of question can be asked of the respondent • Interviews can generally be longer • Housing units or location intercepts can be used to obtain sample (no list needs to be purchased; housing units preferable) • If a laptop computer is used during interviews, data can be entered as interview is conducted and skip-out patterns based on previous responses can be computerized to eliminate error 	<ul style="list-style-type: none"> • Very costly • Data collection can take a very long time • Location intercepts may not be a representative sample (e.g., mall intercept interviews) • May get more hard refusals in door-to-door/house-to-house sampling • May be difficult to hire interviewers to work in some parts of large cities
<p>Web Questionnaire</p>	<ul style="list-style-type: none"> • Costs are low • Data is collected quickly • Skip-out patterns based on previous responses are computerized to eliminate error 	<ul style="list-style-type: none"> • Sample will not be representative of the general population • Difficult to obtain good response rate • Difficult to calculate response rate (unless the population is closed) • Some respondents may attempt to fill out the survey more than once • May receive responses from respondents not included in your target population

TABLE 2. SURVEY METHODS BY VARIOUS SITUATIONS AND TARGET AUDIENCES

Survey Method	Useful for the Following Situations and/or Target Audiences
Telephone Interviews	Works well for surveys of the general population or any specific target population (e.g., young males)
Mail Questionnaires	Works well for surveys of the general population or any specific geographic target population that have addresses
Personal Interviews	Works best for a very specific population that can be geographically identified and has an interest in a particular area, service, or product (e.g., interviewing park users specifically about litter in the park they use)
Web Questionnaire	Works best for a closed population or a target population that consists mainly of computer/Internet users (e.g., a survey of company employees who all have e-mail addresses)

TABLE 3. SURVEY METHOD RECOMMENDATIONS

Survey Method	Responsive Management Recommendation
Telephone Interviews	<ul style="list-style-type: none"> • Most preferred method • Most time and cost efficient method with best sampling procedures for representative sample
Mail Questionnaires	<ul style="list-style-type: none"> • Acceptable method for obtaining representative sample • More time-consuming than telephone interviews
Personal Interviews	<ul style="list-style-type: none"> • Acceptable method if appropriate for target audience • Difficult to get representative sample of population, especially general population • Very costly • Most time-consuming and labor-intensive method
Web Questionnaire	<ul style="list-style-type: none"> • Least acceptable method unless people with computer access and preference is target population, target population is closed, and steps are taken to prevent one respondent from responding multiple times

Another methodological question concerns who should conduct the survey. An organization can conduct its own survey if organizational members follow the guidelines contained within this report; however, it would be advantageous if the organization has members with previous survey research experience and expertise to ensure that data collection and analysis are appropriately conducted. An organization that wishes to conduct surveys on an infrequent basis may wish to avoid the logistics of setting up data collection facilities and training interviewers by contracting with an outside firm or university. Private survey research firms exist in every state and can greatly facilitate the research process for a fee. Similarly, many universities have survey research institutes that can be hired to conduct studies.

Although costs are always an issue, a private research firm or a university can be contracted to conduct the study in a manner that may actually save the organization time and money while also offering expertise. It may also be possible to apply for and obtain grant monies for contracting survey research work for your organization. Additionally, some colleges and universities offer survey research courses in which students may earn credit by partnering or working with community and non-profit "clients." With community clients being afforded relatively inexpensive survey expertise and assistance and with students furthering their own academic pursuits in survey research by working with community clients, university-assisted survey research can be a particularly beneficial opportunity for both parties.

There are specific situations when a research project should be conducted outside the agency or organization. For example, it would be important to contract a third party to conduct the survey when the results of the study will be used in lobbying for a political decision to further the agency or organization's interests. In a legal or political debate, the survey data may be scrutinized for weaknesses and would be criticized as leading or partial (whether this is an accurate portrayal or not) if it was not conducted by a neutral third party. Information bearing on such a decision is likely to be suspect if the research data is collected by the agency. When an objective assessment is needed, it is best to contract the research with an organization that is highly reputable and neutral to the issue, such as a university or a local or national survey firm with a good reputation. At other times it may be best to conduct the work in-house, especially if the time is short and the results are needed to advise agency decisions or gauge public reaction to

a recent event. When considering data collection options, it is important to note that *gratis* or *pro bono* work can often progress slowly. There are no strict rules that dictate where the data collection should occur. Common sense and an understanding of the variety of options, their capabilities, and respective costs are the important factors.

There is no simple way to anticipate how much the use of any particular one of the data collection modes will cost. It is generally true that house-to-house in-person interviews are quite expensive, with per-interview costs ranging anywhere from \$25 to \$200. If a private survey company is employed, interview costs for telephone surveys will likely be \$2 to \$3 per minute of actual interview time (for full-service telephone survey research). For mail surveys, conducted in-house and with computer assistance, the cost averages \$10 to \$30 per completed questionnaire. The following table reviews the cost effectiveness of the different data collection methods.

TABLE 4. SURVEY METHODS AND COST EFFECTIVENESS

Survey Method	Cost Effectiveness
Telephone Interviews	Costs are moderate
Mail Questionnaires	Costs are moderate
Personal Interviews	Very costly
Web Questionnaire	Cost dependent upon resources (i.e., less costly if a Web site is already established and well-known among target population)

DEFINE AND SELECT SAMPLE

Identifying the population from which a sample of respondents will be selected for surveying is the next step before drafting the survey instrument. There are, however, several considerations that must be addressed before the task is completed successfully:

1. Identifying the correct population to survey;
2. Specifying the unit of analysis;
3. Determining the size of the sample; and
4. Selecting the source of the sample.

Identifying the Correct Population to Survey

Once the objectives of the study are delineated and the questions to be asked are formulated, the people that the objectives and questions concern form the pool of people that can be called the population. Defining the population can be thought of as determining who the people are that are potential sample points for the study. Any definable group of individuals can be surveyed, depending on the study focus. The sample should be chosen for its relevance to the survey goal and objectives and should be representative of the population being sampled. For example, the entire population of Marietta, Georgia, would constitute the population if the survey objective is to determine how Marietta residents think litter should be addressed in the city of Marietta. *In choosing the sample, everyone in the group must have an equal likelihood of being sampled.* The definition of sample bias is the systematic exclusion of a particular group. If the survey objective seeks to assess perceptions of litter problems in Marietta as well as surrounding counties, then the population and sample must include the residents of Marietta *and* those surrounding counties.

Specifying the Unit of Analysis

The unit of analysis in most social science surveys is either an individual or a household. While obtaining the responses of individuals only for the survey typically results in more accurate and representative data, it is sometimes recommended that households be identified and used as the unit of analysis when house-to-house interviews are conducted. Using households as the unit of analysis in house-to-house interviews is advisable because it is reasonable to expect that if more than one household member is home, the primary interviewee will often consult or receive input from other household members and that if each member was interviewed separately, subsequent interviewees may be inclined to repeat or refer to the initial interviewee's responses.

Determining the Size of the Sample

There are some simple guidelines to help decide how many individuals to sample, often referred to as the survey "n" value. An important factor is the degree of accuracy of various sample sizes versus the cost of achieving that accuracy. The sampling error for a sample size of 1,000, with a 50% / 50% distribution of opinion on a question (e.g., 50% agree and 50% disagree) is plus or minus 3 percentage points. However, in a sample size of 100, everything else remaining the

same, the sampling error is plus or minus 10 percentage points. The more accurate you want to be in the results, the larger the sample size must be. Sample size will also depend on the desired subgroup analysis because the number in each subgroup must be large enough to obtain the desired level of accuracy. For example, in general population studies, if the researcher is interested in detecting differences between men and women, an initial sample size of 100 becomes a sample size of 50 for men and 50 for women since about half the population is male and half is female. A sample size of 50 is usually too small to identify any meaningful differences. Sampling error also depends on the distribution of opinion on the question. With a sample size of 100 and a 50% / 50% distribution of opinion on the question, the sampling error for a common simple random sample is plus or minus 10 percentage points. However, with a sample size of 100 and a 90% / 10% distribution of opinion on the question, the sampling error for a common simple random sample is plus or minus 6 percentage points. Please see the following table for the sampling error for common simple random samples. (Please see Table 8 at the end of this section for sample size and sampling error calculation Web sites.)

TABLE 5. SAMPLING ERROR FOR COMMON SIMPLE RANDOM SAMPLES WITH 95% CONFIDENCE INTERVALS

Distribution of Opinion on Question			
Sample Size	50% / 50%	70% / 30%	90% / 10%
100	10%	9%	6%
200	7%	6%	4%
300	6%	5%	3%
400	5%	4%	3%
500	4.5%	4%	2.5%
700	4%	3%	2%
1000	3%	3%	2%

Selecting the Source of the Sample

There are two general approaches for drawing a sample for the preferred telephone survey administration method: 1) use telephone directories or other lists, or 2) use random digit dialing.

Directories and lists have several drawbacks. One problem is getting access to good lists. Some lists contain names of people who do not suit the purpose at hand, or the same people may be on the list more than once. Other problems concern whether the list truly represents the population

of interest and whether the information on lists is up-to-date and accurate. For example, a telephone book is an incomplete and out-of-date list because it does not include those with unlisted numbers (making it incomplete) or those who have recently moved to the area (making it out-of-date), resulting in a systematic elimination of these portions of the population for having an equal chance for being included in the survey.

Random digit dialing (RDD) has the advantage that unlisted and new numbers are given an equal chance of being selected and that a list of numbers is not required prior to generation of the numbers. Basically, RDD lists are generated by using the appropriate telephone area code(s) and prefixes with a computer program to randomly generate the last four digits of the telephone number. Professionally produced RDD lists are also generated using the U.S. Census Bureau data to produce a sample that is geographically representative of the area being sampled. For example, if a large city and its surrounding counties are being surveyed and the population within the city limits constitutes two-thirds of the total population of the area being surveyed while the counties constitute one-third of the population, then the sample would accurately reflect that geographic distribution of the population.

There are two primary disadvantages in generating an RDD list in-house. First, ensuring that the sample is proportionate to the distribution of the population is extremely difficult. Second, many of the numbers are likely to be businesses or not working telephone numbers, which cannot be known in advance. Consequently, only a portion of the generated numbers will be actual residential phone numbers. A higher success rate is accomplished by using commercially available RDD lists, such as those available for purchase from Survey Sampling International (SSI). While such lists can seem costly, the advantages far outweigh the expense and pay for the costs. The advantages include expertise and reliability in randomly generating numbers, time saved by encountering considerably fewer business or non-working numbers, an accurate geographically proportionate representation of the population, and increased chances of obtaining a representative sample. The following table reviews the various sampling options for the different data collection methods.

TABLE 6. SURVEY METHODS AND SAMPLING OPTIONS

Survey Method	Sampling Options
Telephone Interviews	Obtain random digit dialing list (preferred); phone book; registered voter list; organizational membership list
Mail Questionnaires	Obtain complete address list (preferred); phone book; registered voter list; organizational membership list
Personal Interviews	Door-to-door housing units (preferred); location intercepts
Web Questionnaire	E-mail distribution or membership list; post or advertise URL address for survey

The following provides brief instructions on how to use the U.S. Census Bureau's Web site (<http://www.census.gov>) to obtain city/county demographic information for statistical and comparative purposes:

1. Go to <http://www.census.gov>.
2. Under the heading, "Find An Area Profile with QuickFacts" (on the right side of the displayed page), select Georgia from the state toolbar.
3. You will be re-directed to the QuickFacts state page for Georgia.
4. You will see demographic data (e.g., population, age, gender, race) for the state of Georgia.
5. There is a county toolbar and a city toolbar near the top of the page.
6. Select the county or city from the appropriate toolbar (cities include incorporated places with a population of 25,000 or more).
7. Click the "Go" button after choosing the city or county.
8. You will be re-directed to demographic data (e.g., population, age, gender, race) on the selected city or county.
9. The Web sites include the years from which the demographic data were assessed.
10. For information not included in QuickFacts, you can click on "Browse data sets" and navigate through the U.S. Census Bureau Web site for the appropriate data.

It is important to note that the sample size (e.g., 400) refers to the number of *completed* surveys required to obtain a representative sample of the general population. For an RDD list of the general population, it is typical to need a list that is eight to ten times larger than your target sample size to ensure that 400 completed interviews are achieved (due to telephone numbers that

are no longer working, deaf or language barriers, business or government and fax machine numbers, refusals, and individuals not eligible for participation in the survey). Therefore, it is recommended that an RDD list of 3,200 numbers be purchased to obtain a sample size of 400 respondents (i.e., 400 multiplied by eight is 3,200). It is reasonable to expect an RDD list to cost between \$0.05 and \$0.10 per phone number, and exact costs depend upon set-up fees and whether business and non-working numbers are removed or if addresses are also provided. Many sampling companies, including SSI (www.surveysampling.com) provide price quotes for RDD lists.

TABLE 7. SAMPLING OPTIONS AND STEPS FOR OBTAINING SAMPLE

Sampling Options	Obtaining Sample
Random Digit Dialing	Survey Sampling International (http://www.surveysampling.com) and ASDE Survey Sampler Inc. (http://www.surveysampler.com) are recommended firms for purchasing telephone sample
Phone Book	For a detailed discussion on phone book sampling, please see http://www.audienccialogue.org/kya7.html
Registered Voter List or Organizational Membership List	For a detailed discussion on sampling from lists, please see http://www.audienccialogue.org/kya2b.html
Door-to-door Housing Units	For a detailed discussion on door-to-door housing unit sampling, please see http://www.audienccialogue.org/kya2b.html
Location Intercepts	For a detailed discussion on location intercept sampling, please see http://www.audienccialogue.org/kya9.html

Ideally, a sample of the general population would be selected using random digit dialing. However, from a population list, such as a telephone book (albeit incomplete), the procedure for accomplishing a simple random sample in an ideal situation is relatively easy. For example, using a hypothetical community in Georgia with a telephone book featuring 50,000 listings, assign each of the 50,000 listings in the telephone book a number from one to 50,000. Next, select 400 numbers in a random yet systematic way. Systematic random selection can be accomplished by selecting every “nth” numbered person from the population: if the population is 50,000 and the sample size is 400, every 125th person would be selected to participate in the survey (i.e., 50,000 divided by 400 equals 125). If a selected person declines to take the survey or cannot be reached, such as person #625, simply select the next person on the list, #626, to

replace him or her. Likewise, if a selected listing is a business listing rather than a residential listing, simply select the next listing.

Also important to obtaining correct information is having a high response rate. The sample can be perfectly random but if only a few people answer the questions, then there can be a large nonresponse bias in the results. This makes it imperative that at least 50 to 70 percent of the people that are selected in the random sample actually be interviewed.

There is no set rule concerning how many times a telephone number should be called, a residence or site revisited, or a mailing address retried. What is of utmost importance is that every reasonable attempt is made to obtain an interview so that response rates are as high as possible. Generally, 4 or 5 telephone attempts are appropriate at different times of the day and on different days of the week. Four mailing retries are recommended for mail surveys. For further discussion on the mail survey research process, please see Mail and Internet Surveys: The Tailored Design Method by Don A. Dillman (1999).

After the data are collected there are instances when weighting responses may be considered as an option. One example would be when people in a geographic location, certain age group, or ethnic group had a low response rate. Weighting responses is a technique for adding more artificially constructed respondent answer sets. Such a technique has both benefits and risks. If it is to be used, a trained statistician should be consulted.

CONSTRUCT SURVEY INSTRUMENT

There are several key guidelines for constructing a survey instrument. First, survey instruments should be written with a neutral perspective and without any preconceived ideas regarding expected or desired outcomes. Second, keep research objectives in the foreground of survey instrument development: use the minimum number of questions that will simply and directly fulfill the research objectives.

Third, remember that the survey is being written for the target population, i.e. those responding to the questions being written. Avoid confusing language or content demanding prior, outside

knowledge of a subject. Plan for the use of open-ended questions and questions with answer sets accordingly; note that open-ended questions primarily collect qualitative data, while closed-ended questions are usually concerned with quantitative data. Accommodate survey length to include a place at the end for collecting appropriate demographic information. After a suitable survey instrument has been drafted and pretested, data is ready to be collected.

Finally, it may also be helpful to be aware of any negative or hostile attitudes the target population may have regarding the survey, the survey topic(s), or your organization. Although it is critical that survey questions are *not* formulated based on preconceived outcomes, it is important to be aware of any factors that may hinder the ability to obtain completed surveys. Crafting an effective introduction to the survey will help increase respondents' receptiveness to the interview. For example, many people resent telephone solicitation calls and quickly hang up. Thus, when conducting a survey by telephone, it may be helpful to introduce the survey by immediately clarifying that you are not selling anything and are calling on behalf of a non-profit or local organization: "Hello, my name is -----, and I'm calling on behalf of the State of Georgia. The survey will only take a few minutes and your input is very helpful. We are not selling anything." This type of introduction will likely increase the chances of completing a telephone survey interview.

In general, easily-answered questions should be asked first, with the more difficult questions posed later in the survey. Potentially sensitive questions (such as income) should be asked at the end of the survey. Demographic questions are best saved for last.

Questioning and Question Formats

There are many different types of questions:

1. Opinion questions measure beliefs for ideas held with confidence but not substantiated by direct proof or knowledge. Examples include, "In general, how effective would you say litter prevention messages and educational campaigns are in preventing people from littering? Would you say they are very effective, somewhat effective, or not at all effective?" and "In the past five years, would you say the level of litter in your community has improved, stayed the same, or gotten worse?"

2. Attitude questions measure states of mind or feelings. It is important to note that true attitudes cannot be measured with just one question. An example is, "Please tell me if you strongly agree, moderately agree, neither agree nor disagree, moderately disagree, or strongly disagree with the following statement: Litter affects your quality of life in Georgia." Generally, a battery of questions is developed to assess and identify attitudes.
3. Awareness questions measure consciousness of particular issues. Asking how familiar people are or how much people think they know is acceptable when measuring public awareness. An example is, "Before this survey, were you very, somewhat, or not at all familiar with the Litter. It Costs You. campaign?"
4. Knowledge questions test factual knowledge about a particular issue. An example is, "Do you know about how much Georgia taxpayers spend on litter clean-up every year? Is it about \$500,000, about \$1 million, about \$15 million, or do you not know?" Knowledge questions can also be administered as open-ended questions.
5. Behavior and activity questions inquire about what people actually do. Examples include, "Have you ever littered?" and "Have you participated in an organized litter clean-up effort in the past 2 years, such as Adopt-a-Highway, the Great American Clean-up, Rivers Alive, or a similar program?"

One important consideration in question design pertains to choosing between open-ended and closed questions. An open-ended question has no prerecorded response and requires respondents to answer the question in their own words. For example, "In your opinion, what are the most important quality of life issues facing Georgia today?" In contrast, a closed or structured question presents a list of alternatives to the respondent. For example, "Do you know about how much Georgia taxpayers spend on litter clean-up every year? Is it about \$500,000, about \$1 million, about \$15 million, or do you not know?" Many questionnaires contain both types of questions.

Other considerations are the length of questions and questionnaires, reading level of questionnaires, and question clarity. Shorter is better, and simple is always better. Each question should pertain to a single concept. Consider the question, "Do you support or oppose requiring community service and publishing names in the newspaper of those caught or fined for

littering?” A “support” would not tell the researcher which deterrent method the respondent supports—whether he/she supports requiring community service or publishing names in the newspaper when people are caught littering. To collect accurate data on attitudes toward these deterrence methods, ask two separate questions—one question for each method. Be sure questions are neutral and do not lead the respondent to a particular answer.

Questionnaires can include questions about demographic characteristics, such as age, gender, race, level of formal education, place of residence, political party affiliation, and organization membership. Again, this information is important: the demographics of the survey respondents can be compared to the known demographics of the group surveyed to make sure the respondents are representative of the population. Another reason demographic information is important is that when the results are analyzed through cross-tabulations, the relationship between responses and demographic variables can be identified. For example, identifying whether support for increased funding for litter prevention increases or decreases with age or if no relationship exists between the two variables.

DATA COLLECTION

The data collection phase constitutes the actual survey administration. The development of computer-assisted telephone interviewing (CATI) has allowed organizations to administer telephone surveys quickly and less expensively than the obsolete methods of data collection by paper and pencil. A CATI is a computer software program that guides interviewers through the survey administration, providing the survey script and displaying questions one at a time on the computer screen, customizing the survey based on previous responses, and allowing data entry to be performed as the survey is administered, greatly reducing data entry errors and eliminating the need for paper and pencil methods of recording and transferring survey data. CATI software, however, is *not* a computer program with automated dialing or an automated voice to perform the actual telephone interview. Using the CATI software, live interviewers still make the telephone calls and administer the survey; the CATI software simply makes the process more efficient.

CATIs have been rapidly adopted for several reasons, including speed of data collection, increased accuracy, reduced interviewer and respondent burden, instantaneous data analysis capability, and enhanced ability of the researcher to elicit appropriate information. With a CATI system, interviewers can input data while interviewing respondents. The data can then be automatically transferred to a statistical package. Once analysis has been completed, findings can then be transferred to a graphics package. Within hours of the completion of interviews, a researcher can have analyzed and printed graphs of the results.

The survey administration needs to be conducted by trained interviewers. Standards for trained survey interviewers can be obtained from the Council of American Survey Research Organizations (CASRO) (www.casro.org). Good interviewer selection and training is essential to a successful and scientifically defensible survey research project. Good interviewers quickly and easily establish a rapport and a sense of trust with the respondent to reassure the respondent that it is worth their time to answer a few questions and to ensure honest responses. At the same time, however, good interviewers do not let their personal feelings or personality intentionally or unintentionally influence the respondent's answers.

There are two extremes regarding the help interviewers are allowed to give respondents. At the one extreme is essentially no assistance, while at the other extreme the interviewer has the liberty to rephrase questions. In the no-help situation, the interviewer simply says to the respondent that has a question, "I'm sorry, I cannot give you any further information. Please respond based on whatever it means to you." At the other extreme, the interviewer is allowed to reword or rephrase a question. A more moderate approach is commonly used in which the interviewer cannot reword the question but can provide clarifying information if asked. In such cases, the clarifying information is actually provided to the interviewer prior to the administration of the survey in anticipation of questions for which respondents may request or desire more information. For example, the following question was asked in the 2006 Georgia statewide litter survey conducted by Responsive Management: "In your opinion, what are the most important quality of life issues facing Georgia today?" Interviewers were instructed to respond with the following clarifying information if asked what was meant by "quality of life issues": "Quality of life' issues refer to issues affecting society."

As part of the interviewer training and as a way of checking that mistakes in constructing the questionnaire have not been made, it is important to conduct interviews to test the system; this is commonly called a pretest. For the pretest, the interviews should be carefully monitored and evaluated. Experienced interviewers can offer insight regarding any changes that may improve the flow of the survey while beginning interviewers may have questions about procedural matters. The pretest phase allows for final edits and corrections to be applied to the entire survey administration process. If necessary, several pretests should be implemented. When pretests have been conducted and all errors have been corrected or potential problems prevented, data collection from the sample of respondents can begin.

POTENTIAL SOURCES OF ERROR AND SOLUTIONS

There are two main types of potential sources of error: errors related to sampling and errors related to nonsampling. Errors related to sampling result from samples that are not representative of the population under study (for example, general population telephone surveys using telephone books or other lists) and the sampling error, intrinsic in all sample surveys. Nonsampling errors include poorly-worded questions, poor interviewer techniques, and mistakes in data compilation and analysis. Nonresponse bias can be an important source of error. Nonresponse bias results when the people who do not respond to a survey hold different attitudes or opinions. A blatant nonresponse bias occurs when a general population telephone survey is conducted during the daytime hours only, between 9 a.m. and 5 p.m. Since older people are most likely to be home during the day, older individuals are likely to be oversampled and thus overrepresented in the results. This is why it is important to survey at all times of the day (9 a.m. to 9 p.m.), as well as on different days of the week. This also illustrates why the demographics of the survey respondents should be compared to the demographics of the population under study once the study has been completed.

Nonresponse bias can be minimized using techniques to maximize response to the survey. For telephone surveys, such techniques include multiple call-backs and trained, confident interviewers with clear voices. For mail surveys, use preparatory and follow-up letters, effective and motivating cover letters, and conveniences such as self-addressed, postage-paid return envelopes.

Bias in results also can occur from respondent fatigue. As the length of the interview or questionnaire increases, an individual is likely to tire more, and the chance of making mistakes increases. Surveys that are too long or ask many similar questions can result in a respondent either hanging up or simply giving erroneous answers to finish the interview as quickly as possible. This is another important reason to keep surveys short.

Effective pretesting can alleviate many problems associated with response bias. Before a survey is conducted it must be pretested. The designers of the survey should listen in on the pretest if it is a telephone survey and listen for respondent reaction to each question. If respondents have difficulty with questions, do not understand questions, or are clearly misinterpreting questions, the question must be reworded. The interviewers administering the survey should be queried on respondents' reactions to the survey as a whole as well as each individual question. Were the questions simple and easy to understand? Did the survey logic work? Involving interviewers in the analysis of a pretest is an important part of the pretest. If the survey is a mail survey it should be pretested via mail, although focus groups can sometimes be used to pretest survey instruments. The researchers should carefully inspect the returned surveys. Are answers missing? Why? Is there a pattern to missing answers? Are there inappropriate answers? Such evaluations can identify any potential response bias.

DATA ANALYSIS

After data has been collected, it is ready to be analyzed, interpreted, and utilized. Survey results will need to be statistically analyzed to identify the distribution of responses to each question, as well as other important relationships among variables in the study. SPSS (formerly Statistical Package for the Social Sciences) is the recommended software package for data analysis in survey research. SAS (formerly Statistical Analysis Software) is another widely accepted and used data analysis software package. Data analysis with statistical software requires converting data files (e.g., Microsoft Excel data files) into a software system file or directly entering survey data into a file using the statistical software. The software provides tools to perform statistical tests and analyses for summarizing and interpreting the survey data. The SPSS and SAS Web sites provide information on how to purchase the software, as well as general usage information and a demonstration: www.spss.com and www.sas.com. It is highly recommended that an

individual with statistical data analysis and software experience oversee this aspect of the survey process. Alternatively, instructions for analyzing survey results without computer software are available here: <http://www.audienceialogue.org/manual.html>.

Most questionnaire results are summarized in percentages. Trends, useful in measuring changes in public opinion, can be established only when the same survey is repeated at regular intervals, such as every year or every other year. Trend data can also indicate whether information, education, or outreach programs have been effective by comparing results before and after the implementation of efforts and programs.

Tests for statistical significance distinguish between relationships that may actually exist and those that show up in the data merely by chance. Generally, the null hypothesis is that there is no relationship between the variables of interest, and the alternate hypothesis is that there is a relationship. A statistical test determines the probability that the observed difference between the variables would occur by random chance, if, in fact, the null hypothesis was true. If that probability is less than a specified critical value, one may reasonably conclude that the observed difference between the variables of interest is so unlikely due to random chance alone that the null hypothesis cannot be accepted; it is concluded that a statistically significant relationship between the variables exists. Most frequently, 0.05 (5%) and 0.01 (1%) significance levels are used.

The most common method of analyzing survey results is to search for relationships through cross-tabulation, as described above. Do men think differently than women? Do young people think differently about litter than older people? Not only do cross-tabulations often yield important differences, they can also reveal important similarities.

LONG-TERM DATA STORAGE

All organizations using survey research to assess awareness of and attitudes toward litter in the community should consider establishing or following an established standard format for survey questions, data entry, and survey results for long-term storage and future use. Standard archival storage of survey data from Georgia's cities, towns, and communities serves two important

purposes: 1) basic accessibility for future use and posterity (i.e., avoiding problems associated with circumstances in which employees leave positions and the knowledge of how or where to access and use the database is not passed on to appropriate individuals), and 2) to ensure availability and accessibility of such data for later use in comparative studies. Future measurements of litter levels and/or attitudes toward litter can only be analyzed for trends if the previous data has been accurately and uniformly stored so that it can be retrieved for comparison and so that the future study may be structured and stored in the same standard manner for ease and reliability of comparison. Furthermore, survey results across towns, cities, and counties in Georgia can also be compared if data is stored in a standard manner, thus maximizing the usefulness of the data collected in each locale. A standardized state database maintained in a uniform manner is preferable for storage of such valuable information to ensure future access and use.

TABLE 8. WEB SITES WITH ADDITIONAL INFORMATION OR RESOURCES

http://www.merrimack.edu/polling/links.html
An extensive listing of resources related to survey research, including associations and societies, academic survey research centers (including several universities in Georgia), private and commercial firms, and additional resources including suppliers of survey software and sampling firms.
http://knowledge-base.supersurvey.com/in-person-vs-web-surveys.htm
Online guide with tutorials illustrating the basics of survey research and conducting and implementing surveys. Menu tabs on the left-hand side of the page offer instructions and advice on survey audiences and goals, questions and response bias, comparisons among different survey formats, and other topics of interest.
http://www.ryerson.ca/~mjoppe/ResearchProcess/Interview.htm
A short write-up on the in-person interview, with tips and techniques on personal interviews as well as a brief discussion on response rates and bias. Recommended for an introduction to personal interviewing.
http://www.audiencedialogue.org/techniques.html
Overview of research methods outlined by Audience Dialogue, including survey research, qualitative research, monitoring and evaluation, and participative marketing. Features helpful instructional links on designing a sample, designing a questionnaire, and analyzing survey data, as well as tips for research involving fieldwork. Adapted in part from the book <i>Know Your Audience</i> , by Dennis List.
http://www.spss.com/dimensions/index.htm?source=homepage&hpzone=tech
SPSS is a recommended software for analysis of survey data. The SPSS Web site offers a software platform designed specifically for survey research needs and contains information on the software and how to purchase it, as well as general usage information and a demonstration.
http://www.census.gov
The U.S. Census Bureau Web site has a "QuickFacts" feature that includes demographic data for states, counties, and incorporated areas with a population of 25,000 or more. For instructions on how to use this site to obtain city and/or county demographic information for statistical and comparative purposes, see the discussion on demographic information under the subheading "Questioning and Question Formats."
http://www.surveysystem.com/sscalc.htm#cineeded http://www.dssresearch.com/toolkit/secalc/error.asp
Calculators for determining appropriate sample sizes, sampling errors, and confidence intervals. Variations in the use of statistical terminology makes reading the provided definitions necessary.
http://www.responsivemanagement.com
Conducted this study and the Georgia statewide litter attitudes survey. Responsive Management specializes in public opinion and attitude survey research on natural resource and outdoor recreation issues. Over 200 studies on public opinion, attitudes, participation, behaviors, and preferences related to natural resources and outdoor recreation, as well as survey methodology, are available by clicking on "Natural Resources & Outdoor Recreation Research" on the menu on the left and then clicking on any of the topic areas listed on the pop-up menu.

LITTER PERCEPTIONS AND ATTITUDES SURVEY INSTRUMENT

The success of any research endeavor should be evaluated in terms of how well the investigation accomplishes the research objectives. Survey research is a powerful methodology for generating data about attitudes, beliefs, and behavior, but it is only useful to the extent that it addresses relevant questions and has adequate focus to allow a meaningful analysis.

The following sections offer directional focus and suggested content for a survey designed to assess attitudes and awareness toward litter and related issues with additional consideration given to the respondent's perception of litter at the local community level. Effective attitude surveys entail a combination of opinion, attitude, awareness, knowledge, perception, behavior, and participation or activity questions.

Potential survey questions crafted by Georgia's Community Tools Group and Responsive Management have been incorporated below, as have concepts from litter studies conducted by agencies in Washington, Texas, Iowa, and more. For the purposes of Keep America Beautiful local community affiliates, proposed survey content is categorized into the following *Litter. It Costs You.* campaign sections: Education questions, Enforcement questions, and Eradication questions. Finally, general demographic information questions make up the remaining survey content.

EDUCATION QUESTIONS

A common community litter prevention campaign objective is to educate local leaders and the public about the litter issue. Thus, it is often an objective of litter attitudes surveys to determine the general population's knowledge levels regarding litter. The following questions are designed to assess education needs and evaluate campaign effectiveness by measuring levels of awareness and knowledge on the litter issue.

General questions should be used initially to assess the respondent's awareness of and opinions on litter without specifically mentioning the word. The function of the opening questions is to determine whether or not the respondent considers litter to be a priority, but without the interviewer leading the respondent into thinking specifically about litter.

The respondent begins with the opportunity to isolate litter as a major problem (perhaps naming *only* litter as an answer), identifying litter as one of several problems (multiple answers given), or not mentioning litter at all, thereby demonstrating a clear lack of concern about litter.

The "IF ASKED" notation is used only during telephone or in-person interviews, in the event that the respondent requests clarification on question meaning.

Parenthetical instructions indicate to the interviewer whether or not an answer set should be read item by item or not read at all to the respondent. A list that is not read is essentially an open-ended question and the set of response options seen only by the interviewer exists simply as a framework for quickly, consistently, and efficiently categorizing answers that could potentially be given by the respondent. The potential response options are also ordered alphabetically to further simplify quick categorization of responses for the interviewer, although occasionally more common or generic responses are included at the top or bottom of the list. The open-ended question is demonstrated numerous times in the following set of questions for which answer sets have been predetermined based on typical or likely responses. (Respondent answers that do not fit into the potential answer categories are recorded verbatim in the "other" category and are later evaluated for commonalities and new categories are identified for inclusion in the results of the survey.)

a. In your opinion, what are the most important quality of life issues facing Georgia today? (IF ASKED: “Quality of life issues” refer to issues affecting society.)

(Open-ended; do not read list. Check all that apply.)

1. There are no important issues
2. Air quality-related issues (pollution, smog, etc.)
3. Crime
4. The economy
5. Education
6. The environment (non-specific) / pollution
7. Habitat loss / fragmentation
8. Health care
9. Immigration issues
10. Littering
11. Population growth
12. Recycling / waste management
13. Religious issues / lack of values
14. Transportation / roads
15. Urban sprawl / over-development / loss of greenspace
16. Water-related issues (quality, quantity, pollution, etc.)
17. Other (Enter other response.)
18. Don't know

In a second question, the respondent is asked to identify issues of concern related to natural resources and the environment. Though the topic “litter” remains unidentified, this question is more specific in topic and focus in that it has narrowed the topic specifically to natural resources and the environment, with which litter may be more directly associated. The respondent is given another more direct opportunity to identify litter as an important issue facing the state, city, or local community (depending on how the question is phrased):

b. In your opinion, what are the most important natural resource or environmental issues facing Georgia today?

(Open-ended; do not read list. Check all that apply.)

1. There are no important issues
2. Air quality-related issues (pollution, smog, etc.)
3. Coastal waters / shellfish
4. Endangered species protection
5. Habitat loss / fragmentation
6. Law enforcement issues
7. Littering
8. Loss of public areas in which to hunt or fish
9. Pollution (unspecified)
10. Population growth

11. Recycling
12. Urban sprawl / over-development / lack of greenspace
13. Waste management
14. Water-related issues (quality, quantity, pollution, etc.)
15. Other (Enter other response.)
16. Don't know

Next, a transition statement informs the respondent of the survey topic or subject. Once the survey topic has been introduced, specific litter awareness and attitude assessment questions follow.

c. Now I have some questions about litter.

d. In general, would you say litter is a major problem, a minor problem, or not a problem at all in Georgia?

1. Major problem
2. Minor problem
3. Not a problem at all
4. Don't know

e. In general, would you say litter is a major problem, a minor problem, or not a problem at all in your community?

1. Major problem
2. Minor problem
3. Not a problem at all
4. Don't know

Note the distinction between the two questions above: in the first question the respondent is asked about the issue of litter in Georgia, and in the second question the area of concern is narrowed specifically to the respondent's community. By asking about the respondent's community in the follow-up question, the interviewer is directing the respondent to consider litter levels in the community only. The data on perceptions of litter at the state level and at the local community level can be compared in the analysis. Because the respondent is asked about litter at the state level first it will have an influence on the following question, but question order can reveal how the respondent compares litter as a problem at the community level to litter as a problem at the state level (i.e., once the respondent has thought about how much of a

problem litter is at the state level and is then asked about it at the community level, he/she will inevitably think about how the local community compares to the state when responding.)

It is useful to note that above distinction between “in Georgia” and “in your community” is not limited to the questions above. The provided survey questions throughout this guide may be altered to address litter in a variety of places, such as the state, cities, towns, specific neighborhoods, parks, communities, etc., to serve the survey objectives in your community. In the following questions, different wording options are presented in brackets, such as “[in Georgia / in your community].” Additionally, the word “litter” is interchangeable with any other specific aspect or type of litter, such as cigarette butts, roadside litter, bottles/cans, graffiti, etc.

f. What do you think of when you think of litter?

(Open-ended; do not read list. Check all that apply.)

1. Trash (general; non-specific)
2. Anything wrong or bad for the environment that is not properly disposed of
3. Cigarette butts
4. Debris in the roadway (ladders, mattresses, car parts, etc.)
5. Illegal signs
6. Paper, bottles, and / or food packaging on the ground
7. Something disposed of in an inappropriate or wrong place
8. Something harmful or dangerous that could spread illness or disease, such as food, animal waste, used tissues, syringes, etc.
9. Something that falls out of the back of a truck
10. Trash disposed of along roadways
11. Ugly
12. Wasted materials or resources
13. Other (Enter other response.)
14. Don't know

g. In your opinion, why do people litter?

(Open-ended; do not read list. Check all that apply.)

1. Don't want to have alcohol bottles / cans in car
2. Littering is more convenient / easier than properly disposing of waste
3. Not enough / inconvenient location of dumps
4. Not enough public trash receptacles provided
5. People are lazy
6. People are not raised / brought up the right way
7. People don't CARE about the effects of litter
8. People don't KNOW about the effects of litter

9. People litter to keep their personal space clean and healthy (e.g., their car, home, etc.)
10. People think someone else will clean it up
11. People think the litter is biodegradable
12. Public trash receptacles are overflowing
13. There is already litter in the area
14. Other (Enter other response.)
15. Don't know

h. In your opinion, what are the main sources of litter in your community?

(Open-ended; do not read list. Check all that apply.)

1. Cigarette smokers
2. Construction sites
3. Garbage collection
4. Outdoor recreation
5. People driving
6. People walking
7. Teenagers
8. Uncovered loads from trucks
9. Other (Enter other response.)
10. Don't know

The following question is an example of a question designed to measure attitudes and opinions toward litter. Respondents are asked to what degree they agree or disagree with a series of statements such as the following:

i. Litter affects your quality of life [in Georgia / in your community]. Do you agree or disagree with this statement?

1. Strongly agree
2. Moderately agree
3. Neither agree nor disagree
4. Moderately disagree
5. Strongly disagree
6. Don't know

The following is a series of statements similar to the example above. The series is designed to measure attitudes and opinions by asking respondents to indicate their level of agreement or disagreement to each statement. Attitudes are often measured using a battery of questions, including measures of the level of agreement with a series of attitude statements such as the series that follows. The respondent is instructed or, in telephone and personal interviews,

“prompted” to state whether he or she *moderately* or *strongly* agrees or disagrees with each statement. However, it is important to include the neutral “neither agree nor disagree” response option for all questions or statements measuring agreement.

The suggested statements below cover a variety of different aspects related to litter and its consequences. Note that there should be no discernible order to the statements or the pattern in which they are read or appear to the respondent; the statements should be systematically randomized, whether the survey is administered via telephone, mail, in person, or on the Web.

- j. Please tell me if you agree or disagree with the following statements.**
- 1. Litter affects your quality of life [in Georgia / in your community].**
 - 2. Littering is okay every once in a while.**
 - 3. Seeing litter [in Georgia / in your community] does NOT upset most people.**
 - 4. Seeing litter [in Georgia / in your community] DOES upset you personally.**
 - 5. Litter costs taxpayers money.**
 - 6. Litter is expensive to clean up.**
 - 7. Litter hurts [Georgia’s / your community’s] tourism industry.**
 - 8. Litter hurts [Georgia’s / your community’s] environment.**
 - 9. Litter can be a health hazard.**
 - 10. Litter can harm your family’s health.**
 - 11. Litter can be a safety hazard.**
 - 12. Litter can cause bodily harm or injury to your family.**
 - 13. Litter is a crime.**

The following questions measure opinions specifically on litter education. Although the two questions appear very similar, note that the first question assesses who the respondent thinks is most responsible for education while the second question assesses who the respondent thinks *should* be responsible, which may not be the same parties or organizations.

- k. Who would you say is most responsible for educating the public about litter issues and litter prevention [in Georgia / in your community]?**

(Open-ended; do not read list. Check all that apply.)

1. Community service and non-profit organizations
2. Local businesses and companies
3. Local government
4. Schools
5. The State Keep America / Georgia Beautiful Foundation
6. State government (non-specific)
7. Georgia Department of Community Affairs

8. Georgia Department of Natural Resources
9. Georgia Department of Transportation
10. Other (Enter other response.)
11. Don't know

l. Who do you think should be responsible for educating the public about litter issues and litter prevention [in Georgia / in your community]?

(Open-ended; do not read list. Check all that apply.)

1. Community service and non-profit organizations
2. Local businesses and companies
3. Local government
4. Schools
5. The State Keep America / Georgia Beautiful Foundation
6. State government (non-specific)
7. Georgia Department of Community Affairs
8. Georgia Department of Natural Resources
9. Georgia Department of Transportation
10. Other (Enter other response.)
11. Don't know

The following questions measure awareness of anti-litter messages, such as the *Litter. It Costs You.* campaign, as well as opinions on the effectiveness of those messages and educational efforts. Again, the questions can be asked so that respondents consider their responses at the state level or at the local community level. Questions could also be altered to ask specifically about the *Litter. It Costs You.* message rather than litter prevention messages in general.

m. In general, how effective would you say litter prevention messages and educational campaigns are in preventing people from littering? Would you say they are very effective, somewhat effective, or not at all effective?

1. Very effective
2. Somewhat effective
3. Not at all effective
4. Don't know

n. Have you seen or heard any litter prevention messages [in Georgia / in your community]?

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

- o. (If answered “yes” to previous question)
Please tell me which of the following litter prevention messages you have seen or heard [in Georgia / in your community] if you can.
(The following is a list of potential responses compiled from those used in Georgia in the past 2 years.)
1. **Keep Georgia Beautiful**
 2. **Keep Georgia Peachy Clean**
 3. **Litter. It Costs You**
 4. **Don’t Be a Litter Bug**
 5. **Give a Hoot, Don’t Pollute**
 6. **Keep Georgia Clean and Green**
 7. **Only Losers Litter**
- p. **In general, how effective would you say the [litter prevention / Litter. It Costs You.] messages you have seen [in Georgia / in your community] are in preventing people from littering? Would you say they are very effective, somewhat effective, or not at all effective?**
1. Very effective
 2. Somewhat effective
 3. Not at all effective
 4. Don’t know
- q. **How frequently would you say you see or hear [litter prevention / Litter. It Costs You.] messages [in Georgia / in your community]? Would you say often, sometimes, rarely, or never?**
1. Often
 2. Sometimes
 3. Rarely
 4. Never
 5. Don’t know
- r. **Where have you seen or heard [litter prevention / Litter. It Costs You.] messages [in Georgia / in your community]?**
(Open-ended; do not read list. Check all that apply.)
1. Billboards
 2. Books
 3. Friends and family
 4. Pamphlets / brochures
 5. At a park, recreation, or other activity area, etc.
 6. Public schools
 7. Posters in private areas
 8. Posters in public areas
 9. Internet / Web
 10. Library
 11. Magazines

12. Newspaper
13. Radio
14. Roadside signs
15. Television
16. Other (Enter other response.)
17. I have not heard or seen any litter prevention messages
18. Don't know

s. Do you agree or disagree that having well-known spokespersons, such as politicians or celebrities, would make litter prevention messages more effective?

1. Strongly agree
2. Moderately agree
3. Neither agree nor disagree
4. Moderately disagree
5. Strongly disagree
6. Don't know

The following question can be used as a follow-up to the previous question to assess attitudes toward authority or credibility on litter issues.

t. Who would you listen to as an authority on litter? (Open-ended.)

ENFORCEMENT QUESTIONS

Past research has indicated that the public does not perceive anti-litter enforcement efforts as highly visible or very effective; the general perception is that prosecutors and judges do not consider littering a serious crime and will not prosecute or enforce a littering citation. Yet, enforcement of anti-littering laws and statutes are considered crucial to a successful deterrence campaign. The following questions are designed to assess attitudes and opinions on various enforcement and deterrence strategies.

The following questions measure opinions on the effectiveness of potential methods of enforcing deterrence methods and the likelihood that enforcement will occur. These questions are important for obtaining feedback regarding community opinions on deterrence and for incorporating community members' opinions into the decision-making process regarding law enforcement issues pertaining to litter that will directly affect their community.

- a. In your opinion, how effective would enforcing the covering of open trucks be in reducing the level of litter [in Georgia / in your community]? Do you think it would be very effective, somewhat effective, or not at all effective?**
 1. Very effective
 2. Somewhat effective
 3. Not at all effective
 4. Don't know

- b. Would you support or oppose publishing in the newspaper the names of those who are caught or fined for littering [in Georgia / in your community]?**
 1. Strongly support
 2. Moderately support
 3. Neither support nor oppose
 4. Moderately oppose
 5. Strongly oppose
 6. Don't know

- c. In your opinion, how effective would publishing the names of those who are convicted of littering be in preventing people from littering [in Georgia / in your community]? Do you think it would be very effective, somewhat effective, or not at all effective?**
 1. Very effective
 2. Somewhat effective
 3. Not at all effective
 4. Don't know

- d. Have you or someone you know ever been caught or fined for littering?**
 - 1. Yes
 - 2. No
 - 3. Don't know

- e. In your opinion, how likely are people who litter to get caught or fined for littering [in Georgia / in your community]? Would you say very likely, somewhat likely, or not at all likely?**
 - 1. Very likely
 - 2. Somewhat likely
 - 3. Not at all likely
 - 4. Don't know

Please note that the following four questions could also be used in the analysis with the eradication questions discussed in the following section.

- f. If you saw someone litter, would you be very likely, somewhat likely, or not at all likely to report it?**
 - 1. Very likely
 - 2. Somewhat likely
 - 3. Not at all likely
 - 4. Don't know

- g. To whom would you report it?**
(Open-ended; do not read list. Check all that apply.)
 - 1. Georgia Department of Natural Resources
 - 2. Georgia Department of Transportation
 - 3. Georgia's Litter Abatement and Prevention Initiative / Team
 - 4. Police
 - 5. Other (Enter other response.)
 - 6. Don't know

- h. Would you be very likely, somewhat likely, or not at all likely to use a 1-800 hotline to report someone littering?**
 - 1. Very likely
 - 2. Somewhat likely
 - 3. Not at all likely
 - 4. Don't know

- i. Would you be very likely, somewhat likely, or not at all likely to use a Web site to report someone littering?**
1. Very likely
 2. Somewhat likely
 3. Not at all likely
 4. Don't know

ERADICATION QUESTIONS

Litter eradication includes efforts made through clean-ups and control devices, such as street sweepers and vacuums, pick-up activities, pick-up tools, trash and recycling receptacles, and litter bags. Research shows that people are more likely to litter in areas that are already littered. Therefore, keeping communities clean through clean-up efforts and activities is an important deterrent to future littering. The following questions are designed to assess awareness of and participation in litter eradication efforts.

The first eradication question assesses opinions on who should be responsible for litter clean-up efforts. The second question asks respondents to evaluate the performance of the party that is responsible for litter clean-up.

a. In your opinion, who should be most responsible for cleaning up litter [in Georgia / in your community]?

(Open-ended; do not read list. Check all that apply.)

1. Community service and non-profit organizations
2. Criminals / law violators sentenced to do community service
3. Georgia Department of Community Affairs
4. Georgia Department of Natural Resources
5. Georgia Department of Transportation
6. Local businesses and companies
7. Local government
8. [Add community / city / area office or organization here]
9. The people who litter
10. Residents of Georgia
11. Residents of the community or area where the litter is
12. State government (state-specific)
13. Other (Enter other response.)
14. Don't know

b. Would you say the [community / city / area] sanitation service does an excellent, good, fair, or poor job handling and disposing of trash in your [community / city / area]?

1. Excellent
2. Good
3. Fair
4. Poor
5. Don't know

The next two questions measure knowledge and perceptions of funding of litter clean-up. The first question is open-ended with no answer set from which to choose from; the respondent simply gives his or her perception or best estimate of figure without any frame of reference. Conversely, the second question provides a reasonable range of figures from which the respondent is able to choose. Note, however, that savvy test-takers will sometimes automatically defer to the high-end figure on this type of question or a respondent may assume that the point of the question is to illustrate that either too much or not enough money is spent on litter clean-up each year. With this in mind, he or she may choose a response based on whether they would like to see more or less money spent. Therefore, it is preferable to use *only* the open-ended question or to ask the open-ended question prior to asking the multiple-choice question.

c. Do you know about how much [Georgia / community] taxpayers spend on litter clean-up every year? (Open-ended.)

d. Do you know about how much [Georgia / community] taxpayers spend on litter clean-up every year?

(Read list; check only one.)

[Adjust response options for community / locality.]

1. About \$500,000
2. About \$1 million
3. About \$15 million
4. Don't know

The following question measures tolerance to litter and litter behavior and will assist in developing an education campaign and in choosing eradication and deterrence methods.

e. In your opinion, is it acceptable to litter often, sometimes, rarely, or never?

1. Often
2. Sometimes
3. Rarely
4. Never
5. Don't know

For the next question, various hypothetical situations and circumstances are read to the respondent, who is then prompted to indicate whether it is acceptable to litter in this situation. Again, measuring tolerance for and attitudes toward litter and litter behavior is measured to assess on which areas a litter prevention campaign should focus.

f. When is it acceptable to litter?

(Read list; check all that apply.)

1. When what you throw out is biodegradable
2. When there is no trash receptacle provided or nearby
3. When you know that someone else is responsible for cleaning the area (e.g., after a movie or concert someone cleans the seating area)
4. When it would be unclean or unhealthy to hold onto the trash (e.g., food or food packaging in the car)
5. When no one is looking
6. When there is litter already in the area
7. When the provided trash receptacle is overflowing
8. When it is on your own property
9. When you can't leave empty alcohol bottles / cans in car
10. Other (Enter other response.)
11. Don't know

The following questions measure perceptions of litter behavior and obtain data on actual litter behavior.

g. What proportion of the population in your community do you think litters? Would you say all, most, some, few, or none?

1. All
2. Most
3. Some
4. Few
5. None
6. Don't know

h. What age group do you think is most responsible for creating litter [in Georgia / in your community]?

(Open-ended; do not read list. Check all that apply.)

1. Less than 12 years of age
2. 13-17 years old
3. 18-24 years old
4. 25-34 years old
5. 35-44 years old

6. 45-54 years old
 7. 55 and older
 8. No specific age group
 9. Other
 10. Don't know
- i. Do you know someone who has littered in the past two years?**
1. Yes
 2. No
 3. Don't know
- j. Have you ever littered?**
1. Yes
 2. No
 3. Don't know

The following three questions are follow-up questions for those who answer yes to "Have you ever littered?"

- k. Why did you litter?**
(Open-ended; do not read list. Check all that apply.)
1. Convenience
 2. Didn't care
 3. Get rid of empty alcohol bottles / cans
 4. I knew someone would be cleaning it up soon
 5. It was on my own property
 6. It was unhealthy to keep until I found a proper trash receptacle
 7. Lazy
 8. The nearest trash receptacle was overflowing
 9. No one was looking
 10. No trash receptacles nearby
 11. There was already litter in the area, and I didn't think it would matter
 12. The waste was biodegradable
 13. Other (Enter other response.)
 14. Don't know

l. How frequently do you litter? Would you say you litter often, sometimes, rarely, or never?

1. Often
2. Sometimes
3. Rarely
4. Never
5. Don't know

m. How do you feel when you litter? (Open-ended.)

The remaining questions in this section measure opinions on changes in the level of litter in the community (to assess whether eradication has been effective), awareness of litter prevention programs, and involvement in litter clean-up activities.

n. In the past [two / five] years, would you say the level of litter [in Georgia / in your community] has improved, stayed the same, or gotten worse?

1. Improved
2. Stayed the same
3. Gotten worse
4. Don't know

o. In the past [two / five] years, would you say the level of litter on [neighborhood sidewalks / downtown sidewalks / streets / highways / parks / etc.] has improved, stayed the same, or gotten worse?

1. Improved
2. Stayed the same
3. Gotten worse
4. Don't know

p. Are you aware of any programs in your community that deal with litter prevention and abatement?

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

q. (If answered "yes" to previous question)

What programs are you aware of in your community that deal with litter prevention and abatement?

(Open-ended; do not read list. Check all that apply.)

[Change response options to reflect local / community programs.]

1. Adopt-a-Highway
2. The Great American Clean-up

3. Litter. It Costs You.
 4. Rivers Alive
 5. Other (Enter other response.)
 6. Don't know
- r. Have you participated in an organized litter clean-up effort in the past 2 years, such as [Adopt-a-Highway, the Great American Clean-up, Rivers Alive / use local organized litter clean-up efforts here], or a similar program?**
(Check all that apply.)
[Change response options to reflect local organization litter clean-up efforts.]
1. No, have not participated
 2. Adopt-a-Highway
 3. The Great American Clean-up
 4. Rivers Alive
 5. Other (Enter other response.)
 6. Don't know
- s. Before this survey, were you very, somewhat, or not at all familiar with [community / local Keep America Beautiful affiliate]?**
1. Very familiar
 2. Somewhat familiar
 3. Not at all familiar
 4. Don't know
- t. Before this survey, were you very, somewhat, or not at all familiar with [other community / local anti-litter effort or campaign]?**
1. Very familiar
 2. Somewhat familiar
 3. Not at all familiar
 4. Don't know

Please note that either one or both of the following first two questions can be used to measure opinions on the provision of trashcans. The third question is a measure of anti-litter behavior.

- u. Do you agree or disagree that there are enough trashcans in public places in your community?**
1. Strongly agree
 2. Moderately agree
 3. Neither agree nor disagree
 4. Moderately disagree
 5. Strongly disagree
 6. Don't know

v. Do you think there should be more trashcans in public places in your community, about the same amount of trashcans in public places, or fewer trashcans in public places?

1. More trashcans
2. About the same amount of trashcans
3. Fewer trashcans
4. Don't know

w. Do you keep a litter bag in your vehicle?

1. Yes
2. No
3. Don't know
4. Don't have a vehicle

DEMOGRAPHIC QUESTIONS

Demographic information can include questions about respondent characteristics such as age, gender, race, level of formal education, place of residence, political party affiliation, and organization membership. This information is important for two reasons. First, the demographics of the survey respondents can be compared to the known demographics of the group surveyed to ensure that the respondents are representative of the population; if the demographics match, it is likely that a representative sample has been obtained. Second, when the results are analyzed through cross-tabulations, the relationship between responses and demographic variables can be identified. For example, it may be found that support for increased funding for litter prevention programs decreases as respondent age increases.

Please note that when planning to ask political party affiliation questions, it is important to confirm the legality of doing so as some state government regulations do not permit such questions.

The following questions offer suggested demographic information for collection among respondents to a litter attitude and awareness survey. An introduction to the final section informs the respondent that the concluding questions will be related to demographic information, preparing the respondent for questions of a more personal nature. Accordingly, the “refused” choice should always remain an option in relevant demographic answer sets.

- a. **Great, we’re just about through. The final questions are for background information and help us analyze the results.**

- b. **Do you consider your place of residence to be a large city or urban area, a suburban area, a small city or town, a rural area on a farm or ranch, or a rural area NOT on a farm or ranch?**
 1. Large city or urban area
 2. Suburban area
 3. Small city or town
 4. Rural area on a farm or ranch
 5. Rural area NOT on a farm or ranch
 6. Don’t know
 7. Refused

- c. Including yourself, how many people do you have living in your household?**
(Open-ended.)
- d. How many children, age 17 or younger, do you have living in your household?**
(Open-ended.)
- e. Are you a licensed driver?**
1. Yes
 2. No
 3. Don't know
- f. Are you a commercial driver?**
1. Yes
 2. No
 3. Don't know
- g. What is the highest level of education you have completed?**
(Read list as necessary.)
1. Not a high school graduate
 2. High school graduate or equivalent
 3. Some college or trade school, no degree
 4. Associate's degree or trade school degree
 5. Bachelor's degree
 6. Master's degree
 7. Professional or doctorate degree (e.g., M.D. or Ph.D.)
 8. Don't know
 9. Refused
- h. Are you presently employed (including self-employed), or are you a homemaker, full-time student, unemployed, disabled, or retired?**
1. Employed
 2. Homemaker
 3. Full-time student
 4. Unemployed
 5. Disabled
 6. Retired
 7. Don't know / cannot be categorized
 8. Refused
- i. What's your current occupation?**
(Read list as necessary.)
1. Agriculture / farming
 2. Construction / carpentry / plumbing / electrical / craftsman
 3. Landscaping
 4. Manufacturing / factory / industry

5. Education
 6. Government services (police, fire, trash, postal worker, etc.)
 7. Mechanical / machine servicing (e.g., automobile mechanic)
 8. Computer / technical / electronics
 9. Restaurant / hotel / tourism / entertainment
 10. Transportation / shipping
 11. Retail / wholesale sales
 12. Finance / insurance / real estate
 13. Office / consulting / data analysis
 14. Medical / wellness
 15. Military
 16. Other (Enter other response.)
 17. Don't know / refused
- j. Which of these categories best describes your total household income before taxes last year?**
(Read list; choose only one.)
1. Under \$20,000
 2. \$20,000-\$39,999
 3. \$40,000-\$59,999
 4. \$60,000-\$79,999
 5. \$80,000-\$99,999
 6. \$100,000-\$119,999
 7. \$120,000 or more
 8. Don't know
 9. Refused
- k. What races or ethnic background do you consider yourself?**
(Read list as necessary; check all that apply.)
2. White or Caucasian
 3. Black or African-American
 4. Hispanic or Latino (includes Mexican, Central American, etc.)
 5. Native American or Alaskan native or Aleutian
 6. Korean
 7. Japanese
 8. Chinese
 9. Filipino
 10. Native Hawaiian or other Pacific Islander
 11. Vietnamese
 12. Middle Eastern
 13. African (NOT African-American)
 14. South Asian (from India, Pakistan, Bangladesh, etc.)
 15. Other (Enter other response.)
 16. Don't know
 17. Refused

l. May I ask your age? (Open-ended.)

m. That's the end of the survey. Thanks for your time and cooperation. If you have any additional comments, I can record them here. (Open-ended space for any additional respondent comments or any important notes about the survey.)

Although gender information will need to be collected from respondents to mail and Web surveys, gender can be observed and recorded by an interviewer in telephone surveys, eliminating the need for a separate question.

n. (Observe and record respondent's gender.)

1. Male
2. Female

LITERATURE REVIEW OF LITTER SURVEY INSTRUMENTS

The following review provides summaries of the various survey instruments used within the past decade by states, communities, and local organizations in order to assess attitudes toward and awareness of litter issues. In addition to the discussion on attitude and awareness survey instruments, this review provides a brief description of the generic visual litter analysis utilized by various states, through which actual levels and types of litter on and along streets, highways, and other locations are assessed by surveyors (for the purpose of discussion in this review, New Jersey's survey instrument has been selected as representative of many visual litter surveys).

In each case, the most recent study or survey instrument from a state agency has been selected for inclusion, despite that some of the survey instruments discussed were administered up to 10 years ago. The purpose of this literature review is to provide Keep America Beautiful affiliates and other interested parties in Georgia with an understanding of some of the different types of survey instruments and associated methodologies that have been used to gauge attitudes toward litter among state residents and constituents.

STATEWIDE ATTITUDE SURVEYS

Washington

<http://www.ecy.wa.gov/pubs/0007025.pdf>

The Washington State Department of Ecology conducted a 1999 statewide telephone survey of Washington residents with the goal of obtaining information about litter in Washington and the people who are littering. The survey was designed and conducted by the Department of Ecology in association with Cascadia Consulting Group, Inc. The telephone survey entailed a random sample of 300 Washington state residents at least 15 years of age.

Objectives:

- To quantitatively test the focus group findings of qualitative data regarding why Washington residents litter and attitudes toward prevention strategies.
- To further identify the public's perceptions of litter and littering and the characteristics of people and situations that contribute to litter behavior.
- To test litter prevention strategies and messages.

Findings and Conclusions:

- Although Washington residents see litter as a significant problem facing the state, it may not be at the top of their list of concerns.
- Most respondents think the act of littering is deliberate as opposed to accidental.
- Driving was the most commonly cited source of litter among potential sources of litter that also included outdoor recreation, uncovered loads, walking, and garbage collection.
- Males and young adults were more likely to litter than their counterparts.
- Placing more trashcans in public places, having educational programs in schools, and enforcing fines for littering were considered potentially effective deterrence strategies.
- The first step to combating litter and litter behavior should be a public awareness program concentrating on creating awareness of littering as a problem. The program's primary target audiences should be teens and males.

Texas

<http://www.dontmesswithtexas.org/files/reports/2005AttitudesAndBehavior.pdf>

The *Don't Mess With Texas* campaign is a well-known anti-litter campaign. In association with this campaign, the Texas Department of Transportation sponsored a 2005 attitudes and behaviors study of Texas residents to determine litter behaviors, recall rates of statewide litter prevention advertising, and likelihood among respondents of littering and/or disposing of trash properly. The survey was conducted for the Texas Department of Transportation by Baselice and Associates (following a similar study in 2003). The telephone survey entailed a random sample of 1,259 Texas residents.

Objectives:

- To measure awareness of the *Don't Mess With Texas* advertising campaign.
- To assess litter behavior levels.
- To measure attitudes toward and the persuasiveness of messages on likelihood to litter or dispose of litter properly.

Findings and Conclusions:

- 55% of respondents admitted to littering, including accident or inadvertent littering.
- 72% of respondents reported either littering themselves or being with someone who littered.
- 18- to 24-year-olds (77%) were significantly more likely to litter than were senior citizens (36%).
- The survey data analysis found that there were distinct messages that correlated with respondents' reduced likelihood of littering. Interestingly, these messages differed from the messages that correlated with respondents' increased likelihood of properly disposing of litter.

Iowa

<http://www.KeepIowaBeautiful.com/IowaDOT2001LitterSurvey.pdf>

The Iowa Department of Transportation conducted a mail survey of Iowa residents in 2001 to assess litter behavior. The survey was conducted in association with Keep America Beautiful, Inc. The questionnaire was mailed to a representative sample of Iowa households.

Objectives:

- To assess litter and littering along Iowa roadsides.
- To identify and measure littering behavior.
- To measure litter and dumping in local communities.
- To use the survey findings to help the Iowa Department of Transportation, Keep America Beautiful, and other organizations create and support programs, policies, and activities designed to reduce litter across the state.

Findings and Conclusions:

- A minority of respondents reported having engaged in or seen littering acts or behaviors.
- Iowans believe that younger adults, males, pick-up truck drivers, and visitors to Iowa were more likely to litter.
- Deterrence methods that carried a “consequence” (such as increasing penalties for littering, increasing enforcement of anti-litter laws, and reminding people there is a fine for littering) were rated as having a greater impact than telling people not littering was the right thing to do and having celebrities speaking out against litter.
- Motorists littering from vehicles was the most commonly cited source of litter.
- 57% of respondents agreed that litter was a problem in their *community*; however, 65% of respondents disagreed that litter was a problem in their *neighborhood*.
- Respondents’ ratings indicated that they thought increasing enforcement of rules and regulations, followed closely by providing better access to disposal sites, would have the most impact on littering and dumping in their communities.

Florida

http://www.hinkleycenter.com/publications/98_florida_litter_study.pdf

The Florida Center for Solid and Hazardous Waste Management conducted a 1998 mail survey of county officials who had previously been identified as individuals knowledgeable about the county's litter management programs. The survey was an inventory of litter programs and expenditures. The survey was distributed to the identified officials in all Florida counties via fax or overnight delivery.

Objectives:

- To obtain data on programs for managing litter at the county level.
- To obtain data on the costs for these litter management programs.

Inventoried Data:

- Amount spent by counties in 1996-97 on litter programs and education activities.
- Amount given to local Keep America Beautiful affiliates and amount reimbursed by litter grant funds.
- Details on volunteer clean-ups sponsored or supported by county businesses.
- Methods used by counties for measuring the effectiveness of litter education and prevention programs.
- Departmental responsibilities and costs associated with litter pick-up in various counties.
- Costs and benefits associated with community service clean-ups and jail inmate clean-ups.
- Details on county litter ordinances.

STATEWIDE VISUAL LITTER SURVEY

New Jersey

<http://www.njclean.org/pdf/New%20Jersey%20Litter%20Report.pdf>

The Institute for Applied Research and Gershman, Brickner, & Bratton, Inc. developed and performed a visible litter count survey for the New Jersey Clean Communities Council in 2004. The survey is very similar in scope and methodology to visible litter surveys conducted in various other states and is, therefore, considered representative of other similar surveys for the purpose of this discussion regarding the objectives of visible litter surveys. In the New Jersey study, litter throughout the state was observed, identified, and documented; some of the variables recorded were the composition of litter, litter rates, littering trends, litter quantities, and quantities of recyclable materials littered. The study was used to identify problem areas and to compare the data with surveys from other states and previous litter survey studies conducted in New Jersey.

Objectives:

- To produce accurate, comprehensive data that accurately reflects the overall quantification, distribution, and composition of litter in New Jersey.
- To examine litter composition and litter generation rates statewide.
- To determine the sources of litter.
- To identify and gain understanding of geographic trends in litter generation.
- To gain information to develop effective litter prevention programs.
- To establish a baseline to develop a statewide litter reduction goal.

Findings and Conclusions:

- New Jersey's 2004 visual litter study produced detailed information on composition of litter, litter rates, littering trends, litter quantities, and quantities of recyclable materials littered.
- Litter problem areas were identified.

COMMUNITY AND LOCAL SURVEYS

Keep Arkansas Beautiful Community Awareness Inventory

<http://www.keeparkansasbeautiful.com/pdfs/CAI.pdf>

Developed by Keep Arkansas Beautiful, this community survey is designed to help communities and organizations consider and identify local needs and resources related to Litter Prevention, Waste Reduction/Recycling, and Beautification/Community Improvement.

Kirklees Education Service

<http://www.kirklees-ednet.org.uk/subjects/geog/resources/littersurvey.doc>

Produced by Kirklees Education Service, a resource center for a school district in West Yorkshire, England, this survey asks a series of questions to obtain data on attitudes toward litter, basic litter education information, participation in eradication efforts, and awareness of fines as an enforcement strategy.

ACT NOWaste

http://www.nowaste.act.gov.au/__data/assets/word_doc/12597/littersurvey.doc

Produced by ACT NOWaste, a business unit of the Department of Urban Services for Canberra, Australia, this survey is designed for children ages 4 to 13 and asks about litter levels on school grounds, whether or not students litter personally, opinions on responsibility for litter clean-up, and whether students agree that making people pick up litter fosters good anti-litter behavior.

Rhode Island Task Force Enforcement

<http://www.dem.ri.gov/programs/ombuds/litter/pdf/survey.pdf>

Produced by the Rhode Island Litter Task Force and distributed to police and public works departments in Rhode Island, this survey primarily focuses on enforcement and associated efficacy ratings. The community survey measures respondents' perceptions of litter as a problem in their community, how often citations for litter are issued, penalty ranges, familiarity with litter laws and ordinances, and various levels of community service contributing to eradication efforts. Additionally, the Rhode Island survey addresses opinions on barriers to enforcing litter laws and solicits suggestions for improving rates of litter enforcement.

University Of South Florida's Beach Buddies

<http://www.marine.usf.edu/beachbuddies/littersurvey.htm>

Produced by the University of South Florida's College of Marine Science, this survey is directed at students (grades 4 through 12) and asks a series of basic education and eradication questions, including participation in litter behavior, reasons for littering, observations of littering behavior, and opinions on appropriate action in response to littering.

Recycle-More.co.uk

http://www.recycle-more.co.uk/images/static/schools/pdf/sp_lit_survey.pdf

Produced by a recycling information center based in the United Kingdom, this survey is directed at students (ages 5 to 11) and identifies levels of personal participation in littering, reasons for littering, observations of peer littering, and opinions on litter levels on school grounds, as well as reasons to pick up litter, what materials constitute litter, and opinions on litter clean-up responsibilities.

Keep Truckee Meadows Beautiful

<http://ktmb.org/cigsurvey.php>

Produced by Keep Truckee Meadows Beautiful, this survey specifically measures levels of cigarette butts as litter in and around the Truckee area. The survey identifies whether the respondent is a cigarette smoker and assesses attitudes toward cigarette butts, including opinions on how they affect aesthetic qualities of the landscape. Use of and opinions toward "pocket ashtrays" and general suggestions for landscape improvement are also evaluated.

Friendship Development Associates

<http://www.friendship-pgh.org/news/view/id/156>

Adapted from the Keep America Beautiful organization's Community Attitude Survey, this survey by Friendship Development Associates, a community group based in Pittsburgh, Pennsylvania, assesses opinions on whether litter is a problem in the community and identifies attitudes toward potential litter levels in the Friendship community, including characterizations of respondents' general feelings toward the area as "proud" or "guilty." Other topics include opinions on sidewalks and streets and ways to personally reduce litter in the community.

Wake Up to Waste

http://www.wakeuptowaste.org/general_waste_survey.doc

Provided as an educational resource from the Environment and Heritage Service, an agency within the Northern Ireland Government's Department of the Environment, this survey is directed at students (ages not specified) and identifies levels of personal participation in littering, reasons for littering, observations of peer littering, and opinions on litter levels on school grounds, as well as reasons to pick up litter, what materials constitute litter, and opinions on litter clean-up responsibilities. The survey appears to be very similar to the Recycle-More survey discussed previously.

Limerick City Council Litter Management Plan

<http://www.limerickcity.ie/services/environment/documents/Litter%20Survey%2005.pdf>

Produced by the Environment Department of the Limerick City Council, City of Limerick, Ireland, this survey begins with informing the respondent of national survey findings that litter is the number one environmental problem in Ireland and measures respondents' agreement with this same assertion with regard to Limerick City. The survey assesses respondents' perceptions of litter, including when and where litter is noticed, awareness levels of fines for littering, opinions on publishing the names of those convicted of littering in the press, and awareness of a litter hotline for reporting offenders. Additionally, the survey solicits suggestions for community litter improvement and assesses interest levels in organized clean-up activities.

TIPS FOR CONDUCTING A SURVEY ON A LIMITED BUDGET

Survey research is a science, and there are basic steps and scientific standards to follow to successfully conduct a survey that will produce valid and reliable results. However, sometimes budget constraints can make the research process more challenging. The following tips will assist in conducting a survey on a very small budget

1. Design Your Own Sample

Ideally, a sample of the general population would be selected using random digit dialing (RDD). However, if you simply do not have approximately \$250 – \$300 to purchase an RDD list from a sample provider and cannot find a donor for such a purpose, it is possible to select a sample using as complete a population list as possible, such as a telephone book. Your sample size would still be same as you determined in step 4 of the survey process (please see the section of this handbook titled, “The Basic Steps for Conducting a Survey”).

The procedure for selecting a simple random sample from a telephone book is relatively easy. For example, using a hypothetical community in Georgia with a telephone book featuring 50,000 listings, assign each of the 50,000 listings in the telephone book a number from one to 50,000. Next, select 400 numbers in a random yet systematic way. Systematic random selection can be accomplished by selecting every “nth” numbered person from the population: if the population list is 50,000 and the sample size is 400, every 125th person would be selected to participate in the survey (i.e., 50,000 divided by 400 equals 125). If a selected person declines to take the survey or cannot be reached, such as person #625, simply select the next person on the list, #626, to replace him or her. Likewise, if a selected listing is a business listing rather than a residential listing or the number has been disconnected since the list was published, simply select the next listing.

Note, however, that it will be extremely important to describe the exact procedure used for selecting the sample when reporting the results of the survey.

2. Obtain the Assistance of a Local College or University

If you do not have enough computers or do not have the budget to purchase CATI or data analysis software, we strongly recommend that you first try contacting a local college or university that may be able to assist you through a social science or statistics class that will perform the work pro bono in exchange for educational experience. The class will be able to provide computers for data entry, appropriate computer software for data analysis, and possibly even callers to administer the survey and enter data.

If you are unable to establish a relationship with a local college or university research class to assist in the survey process, you can still successfully complete the survey process by using volunteer callers and a primary computer with Microsoft Excel software. Please see the following limited budget tips.

3. Record Survey Responses on Paper and Enter Data Later

Have the callers record respondents' answers on a paper version of the survey and enter the data into one main computer later. It will be necessary to have a fresh paper copy of the survey for each new call and to mark the responses on the survey for data entry at a later time. Number each survey with a unique number. When entering the responses into the computer later, also have a field to enter this unique number so that if there is any need to double check data entry later, it can be done easily by matching the unique identifying number on the paper survey to the one entered into the computer.

4. Use All Volunteers for Calling and Data Entry

If you do not have enough staff or regular volunteers for calling and data entry, tap all available avenues for acquiring volunteers with communication and computer skills, such as local college classes, organizations, or sororities/fraternities; local high school organizations or clubs; local junior women's leagues; Ruritan clubs; etc. You may also check with regular or newly recruited volunteers for access to and experience with data analysis software.

5. Use Microsoft Excel for Data Storage and Analysis

If you do not have the budget or expertise for data analysis software, data can be simply be entered into Microsoft Excel, which is a spreadsheet software that is a standard program included in the Microsoft Office Suite. If you are not sure, check your computer to confirm that Microsoft Excel is already installed and available for use. If your computer does not have Microsoft Excel, you may still have another basic spreadsheet software program that will suffice for entering and storing data. If proficiency in using Microsoft Excel is not available among your staff or regular volunteers, you will likely be able to recruit a volunteer with expertise in using Microsoft Excel as it is a very widely used spreadsheet program.

Finally, for compiling data and reporting survey results, Microsoft Excel has graphing capabilities and will be able to easily produce graphs of the survey results once data is compiled and saved in a single spreadsheet. Please see the example graph of a survey question results on page vii in the section of this handbook titled, “The Basic Steps for Conducting a Survey.”

ABOUT RESPONSIVE MANAGEMENT

Responsive Management is a nationally recognized public opinion and attitude survey research firm specializing in natural resource, environmental, and outdoor recreation issues. Its mission is to help natural resource, environmental, and outdoor recreation agencies and organizations better understand and work with their constituents, customers, and the public.

Utilizing its in-house, full-service, computer-assisted telephone and mail survey center with 45 professional interviewers, Responsive Management has conducted more than 1,000 telephone surveys, mail surveys, personal interviews, and focus groups, as well as numerous marketing and communications plans, needs assessments, and program evaluations on natural resource and outdoor recreation issues.

Clients include most of the federal and state natural resource, outdoor recreation, and environmental agencies, and most of the top conservation organizations. Responsive Management also collects attitude and opinion data for many of the nation's top universities, including the University of Southern California, Virginia Tech, Colorado State University, Auburn, Texas Tech, the University of California—Davis, Michigan State University, the University of Florida, North Carolina State University, Penn State, West Virginia University, and others.

Among the wide range of work Responsive Management has completed during the past 20 years are studies on how the general population values natural resources and outdoor recreation, and their opinions on and attitudes toward an array of environmental and natural resource-related issues. Responsive Management has conducted dozens of studies of selected groups of outdoor recreationists, including anglers, boaters, hunters, wildlife watchers, birdwatchers, park visitors, historic site visitors, hikers, and campers, as well as selected groups within the general population, such as landowners, farmers, urban and rural residents, women, senior citizens, children, Hispanics, Asians, and African-Americans. Responsive Management has conducted studies on environmental education, endangered species, waterfowl, wetlands, water quality, and the reintroduction of numerous species such as wolves, grizzly bears, the California condor, and the Florida panther.

Responsive Management has conducted research on numerous natural resource ballot initiatives and referenda and helped agencies and organizations find alternative funding and increase their memberships and donations. Responsive Management has conducted major agency and organizational program needs assessments and helped develop more effective programs based upon a solid foundation of fact. Responsive Management has developed Web sites for natural resource organizations, conducted training workshops on the human dimensions of natural resources, and presented numerous studies each year in presentations and as keynote speakers at major natural resource, outdoor recreation, conservation, and environmental conferences and meetings.

Responsive Management has conducted research on public attitudes toward natural resources and outdoor recreation in almost every state in the United States, as well as in Canada, Australia, the United Kingdom, France, Germany, and Japan. Responsive Management routinely conducts surveys in Spanish and has also conducted surveys and focus groups in Chinese, Korean, Japanese, and Vietnamese.

Responsive Management's research has been featured in most of the nation's major media, including CNN's *Crossfire*, ESPN, *The Washington Times*, *The New York Times*, *Newsweek*, *The Wall Street Journal*, and on the front pages of *USA Today* and *The Washington Post*.

Visit the Responsive Management Web site at:
www.responsivemanagement.com