

VISITOR EVALUATION TOOLBOX

A Component of the Multi-Institutional Research Program
and Companion to the Report **Why Zoos and Aquariums
Matter: Assessing the Impact of a Visit to a Zoo or
Aquarium**

The full report of the study and findings is available as PDF on the AZA website:
http://www.aza.org/ConEd/Documents/Why_Zoos_Matter.pdf

ACKNOWLEDGEMENT

The Assessing the Impact of a Visit to a Zoo or Aquarium project team would like to express our appreciation to the following individuals and organizations for their support and assistance with this project:

Bruce Carr and Eric Reinhard, formerly of the Association of Zoos and Aquariums, whose enthusiasm and dedicated efforts encouraged our investigation of the educational impact of zoos and aquariums and laid the foundation for the ongoing capacity to do so within the AZA.

Staff and volunteers at the following AZA-accredited zoos and aquariums that served as host sites for this research: Binder Park Zoo, Brandywine Zoo, The Florida Aquarium, Monterey Bay Aquarium, National Aquarium in Baltimore, North Carolina Aquarium at Roanoke Island, Oregon Coast Aquarium, Philadelphia Zoo, Salisbury Zoo, Sonoran Desert Museum, Wildlife Conservation Society: Bronx Zoo and New York Aquarium.

Members of the AZA Conservation Education Committee for lending their continued support, guidance, and expertise to the project. This study was funded by a grant from the National Science Foundation, for which we are extremely grateful.

John Falk
Kerry Bronnenkant
Cynthia Vernon
Joseph Heimlich

Copyright information

This toolkit was developed through a collaborative research project conducted by the Institute for Learning Innovation, the Monterey Bay Aquarium, and the Association of Zoos and Aquariums with funding from the National Science Foundation (Grant # ESI-0205843). It was prepared to enable zoos and aquariums to continue their understanding and support of their audience needs. The tools and methodologies are adapted from materials copyrighted by the Institute for Learning Innovation.

First printing 2007. Second printing 2009, with support from the Institute for Museum and Library Services (Grant # LG-25-05-0102-0).

Personal Meaning Mapping is a methodology developed and copyrighted by the Institute for Learning Innovation.

TABLE OF CONTENTS

04	Forward
05	Chapter 1: Introduction
09	Chapter 2: Basic Instructions
13	Chapter 3: The Four Tools
	Tool #1: Motivational Categories of Visitors
	Tool #2: Personal Meaning Mapping
	Tool #3: Reflective Tracking
	Tool #4: Conservation Attitudes
27	Chapter 4: Building on the Findings
29	Bibliography
30	Contact Information

FORWARD

For the first time we have reliable data validating the positive impact zoos and aquariums have in changing visitors' feelings and attitudes about conservation. This study clearly shows that visitors believe that accredited zoos and aquariums are deeply committed to animal care and education, and that we play an important role in species conservation. These findings enhance our goal to build America's largest wildlife conservation movement.

Jim Maddy, President and CEO
Association of Zoos and Aquariums

Chapter 1

INTRODUCTION

Going to accredited zoos and aquariums does have a significant impact on what adult visitors know and understand about conservation.

Limited studies and anecdotal evidence have supported this conclusion for some time. However, much of the research was limited in scope, could not be applied to zoos and aquariums in general, and did not demonstrate actual changes in conservation understanding. Now—as the result of a three-year, nationwide study funded by the National Science Foundation (NSF) and implemented through a strategic partnership between the Association of Zoos and Aquariums (AZA), the Institute for Learning Innovation (ILI), and the Monterey Bay Aquarium—we have reliable evidence that zoos and aquariums do make a difference.

This landmark study has produced several other significant results.

- It has added to our knowledge about why people go to zoos and aquariums and what they do there.
- It has helped us analyze how seeing wildlife affects the way people think about conservation and about their own role in protecting the environment.
- It enabled us to develop this toolbox for member institutions to use in learning more about their visitors and assessing their impact on those visitors.

The Study: Assessing the Impact of a Visit to a Zoo or Aquarium

Completed in 2006, *Assessing the Impact of a Visit to a Zoo or Aquarium* was a major, multi-year research initiative designed to assess the conservation impact of a zoo or aquarium visit on adults. Initially called the Multi-Institutional Research Project (MIRP), it began with a thorough literature search to review and summarize what was already known about the impact of zoo and aquarium visits (see Bibliography, Dierking et al., 2002).

This search was followed by a series of public forums in which zoo and aquarium professionals across the country discussed how people learn in free-choice settings and how aquariums and zoos contribute to visitors' knowledge of, feelings for, and behavior toward animals and conservation. Drawing on feedback from these meetings, researchers from the Institute for Learning Innovation developed a groundbreaking series of studies to:

- better understand visitors' in-coming motivations, interests, and knowledge;
- directly measure changes in visitor learning and attitudes toward wildlife and conservation; and
- analyze how the findings can be used to enhance zoo and aquarium effectiveness.

More than 5,500 visitors and twelve AZA institutions varying in size and geographic location participated in the study. We tested and refined a variety of methods—including written questionnaires, interviews, tracking studies, and concept mapping activities—to measure and assess:

- why visitors choose to come to zoos and aquariums;
- what visitors already know about animals and conservation and about the role zoos and aquariums play in conservation;
- where visitors go, what they do, and how they make these decisions; and
- how visitors' understanding of and attitudes about conservation change as a result of their visit.

The four research tools described in Chapter 3 are among the important outcomes of this study. Besides communicating the study results to the zoo and aquarium profession as a whole, our intent is to build the capacity of AZA member institutions to conduct their own visitor research.

We also conducted long-term research to assess what visitors recalled about their zoo or aquarium visit seven to eleven months later. More than half of the visitors were able to talk about what they learned from their visit. About a third reported that their visit reinforced their beliefs about conservation and wildlife.

You can learn more about this study and its results in the AZA publication *Why Zoos and Aquariums Matter: Assessing the Impact of a Visit to a Zoo or Aquarium*.

We are now using the study results to better understand and predict how member institutions can enhance the public's understanding of animals and of the need to conserve the places where animals live. With more than 143 million visitors a year, AZA-accredited zoos and aquariums have the opportunity to make a profound difference for wildlife and wild places.

We encourage you to use the tools in this toolbox to better understand your own institution's visitors and to develop exhibits and educational programs that are even more effective in connecting people with nature and promoting conservation.

Why does understanding visitors' motivations, interests and knowledge matter?

Zoo and aquarium visitors are highly diverse. They are young and old, highly educated and less educated. Some know a lot about animals; others know relatively little. Zoos and aquariums are proud of this diversity—and rightly so. However, this admirable diversity can cause problems when it comes to planning educational programs and exhibits and finding out what visitors learn from their zoo or aquarium experience. Giving every visitor the same experience and information, and assessing all visitors as if they were alike, doesn't work well with such a wide diversity of prior knowledge, experiences, and interests. This we knew. The challenge was figuring out how to simply "segment" visitors into meaningful groups. Meeting the challenge was one of the major breakthroughs of this research study.

Key Study Findings:

- Visitors arrive with specific identity-related motivations that directly impact what they do during their visit and what meaning they get from it.
- Visitors to zoos and aquariums bring with them a knowledge level of basic ecological concepts higher than was expected. Some groups of visitors showed significant changes in conservation-related knowledge. Many, because of their prior knowledge, did not.
- Most visitors felt they experienced a stronger connection to nature as a result of their visit.
- Most visitors found that their zoo or aquarium experience reinforced their values and attitudes toward conservation.
- Many visitors reconsidered their role in environmental problems and conservation action and began to see themselves as part of the solution.
- About half of all visitors believed zoos and aquariums play an important role in conservation education and animal care.

Participating AZA Institutions:

Arizona-Sonora Desert Museum
Tucson, Arizona

Binder Park Zoo
Battle Creek, Michigan

Brandywine Zoo
Wilmington, Delaware

Bronx Zoo
Bronx, New York

The Florida Aquarium
Tampa, Florida

Monterey Bay Aquarium
Monterey, California

National Aquarium in Baltimore
Baltimore, Maryland

New York Aquarium
Brooklyn, New York

North Carolina Aquarium at Roanoke Island
Manteo, North Carolina

Oregon Coast Aquarium
Newport, Oregon

Philadelphia Zoo
Philadelphia, Pennsylvania

Salisbury Zoo
Salisbury, Maryland

Chapter 2

BASIC INSTRUCTIONS

Conducting visitor research can help you make informed decisions, provide important validation, secure funds, precipitate needed change, and offer exciting new insights. What's more, it can be highly satisfying for everyone involved—including visitors, as well as you and other zoo and aquarium staff.

Here are some suggestions to ensure that your experience with visitor research is as effective and enjoyable as possible.

1. Ethical and Practical Considerations

Respect study participants

- Honor the dignity and self-worth of all participants. The responses you receive may vary depending on participants' culture, religion, gender, age, sexual orientation, ethnicity, or possible disability. Be open to all responses.
- Try as much as possible to collect feedback from a representative sampling of all of your visitors, not just those who might be considered “good” visitors. As public institutions, zoos and aquariums attract a heterogeneous group of visitors. We are committed to serving and accommodating everyone who walks through our gates or doors.

Gain informed consent

- Inform visitors fully and accurately of the purpose of the study, answer any questions they may have, and assure them of their anonymity. Participants should be very clear about what they are being asked to do. Be prepared to articulate not only what is being done, but also why you are doing it and how the findings will be applied.
- Written consent is not required when using the four research tools described in this toolbox because they involve only adults (over the age of 18) and no photography or videotaping. Also, the anonymity of participants is preserved. However, make sure you feel positive that all potential participants have been fully informed of the purpose and nature of the study and that they willingly agree to participate.
- Visitors have, of course, the right to refuse to participate in a study. Make sure no visitors feel they must participate, and don't forget to thank visitors for their time and consideration—even if they decline to participate. Visitors should also know that they are free to withdraw from the study at any time, and for any reason.

Be realistic

- Set reasonable expectations for the scope of the project. Don't take on too much at once. Start small, with one tool and a small sample of visitors (e.g., 20-30) so that you don't become overwhelmed or discouraged. Proceeding slowly and thoughtfully will

help you and your staff gain confidence, begin to identify critical issues, and develop consensus.

- Remember that it takes time to develop evaluation skills. Don't expect to become a perfect audience researcher all at once. Think of these tools as an opportunity to develop new skills as you gather valuable information.

Be friendly and accommodating

- Smile. Be yourself, and let your personality drive how you ask visitors to participate.
- Do whatever it takes to make the study easy and enjoyable for visitors. Try to answer any questions visitors may have about their visit or about your institution. Provide an appropriate place for visitors to participate in your study—for example, near benches and away from crowded paths.
- Remember that most visitors hold your institution in high regard and will be more than happy to participate if they think they can be helpful. Always explain that the purpose of your investigations is to help make your institution even better.

Be encouraging

- Give visitors every chance to participate. If they hesitate because they don't have much time, tell them that's fine—they are free to leave whenever they need. Once visitors get started, they may end up staying longer than expected.
- Don't take it personally if a visitor chooses not to participate. There are many reasons why visitors decline.
- If you get a lot of refusals in a row, take a break. You may be tired. Even a five-minute break may change the way you approach visitors and increase the probability of a positive response.

Be accurate and honest

- The quality of your study depends on the quality of your data. Report it all—completely and accurately.
- Do not exclude data that you may consider negative or that may reflect unfavorably on your institution or its programs. All feedback is useful feedback.

Show your appreciation

- Thank visitors warmly and sincerely for their time and help. Assure them that their participation will provide positive and tangible benefits to future zoo or aquarium visitors.
- You may want to hand out tokens of appreciation. These can vary, depending on how much time and expertise visitors were asked to contribute, but rarely need to be expensive. Good “thank you” items include pencils, pins, posters, free passes, books, or gift certificates.

Analyze your data carefully

- Don’t rush the process of analyzing and interpreting your data. Beware of jumping to conclusions or using just one or two anecdotes to signify a trend. Look at the data again...and again. Wait until you’ve examined all the data and reflected on it before deciding what it means.
- Make data analysis a team effort. A group of people can look at the information from a variety of perspectives and identify different trends.
- Be open to whatever you learn, and don’t be disappointed if you don’t get the results you expected. Remember that the more experience you accumulate, the better information you will gather.

2. Getting Started

How can these tools help my institution?

Visitor research helps you keep your finger on the pulse of your visitors’ experiences. It enables you to see your zoo or aquarium from the viewpoint of your visitors and to increase your responsiveness to the community. The information you gather can help you:

- set or refine institutional, exhibition, and program goals;
- plan and implement programs and activities that are enjoyable, informative, accessible, and effective; and
- leverage funding and support for projects by providing convincing evidence and systematic documentation that your programs are having a positive impact on visitors.

Evaluation is also a way to involve staff and volunteers in valuing and connecting more deeply with the visitor experience. It can help establish a more intellectually stimulating environment within your institution. It may even challenge long-held beliefs about visitors or about programs that no longer meet visitors’ needs.

How do I decide what tool to use?

Think carefully about your institution’s goals and needs. Then select the tool or tools that match those goals.

Do you want to know more about why visitors come to your zoo or aquarium? Tool #1—Motivational Categories of Visitors—can help you find out. Or, do you want to find out what your visitors know about the subject of an exhibition or program you are planning? In that case, Tool #2—Personal Meaning Mapping—may be the appropriate one for you.

You may decide to use just one tool—or several. You may even want to try them all over a period of time. It all depends on your goals and resources.

What demographic data should I collect?

For all of the tools below, we have suggested collecting only the most basic of demographic data—i.e., the visitor’s age and visit frequency. If your institution regularly collects additional types of data or has collected data in previous studies, you may want to add some additional categories so that you can make comparisons. However, you should never collect more data than you will use. Visitors do not come to your zoo or aquarium to fill out forms and answer questions. This is definitely a case where the maxim “less is more” applies.

A final word...

Remember that visitor research will not make decisions for you. It will not provide a prescription for exactly what you should do and how. There is no “right” answer out there that will lead you directly to the “right” exhibitions and programs.

What visitor research will provide is a rich pool of information that you can interpret and use creatively to make thoughtful, informed decisions. We hope that these tools will help you discover how truly valuable, rewarding, and empowering visitor research can be.

Have fun!

Chapter 3

THE FOUR TOOLS

Learning is a highly personal process. Visitors are not blank slates when they arrive at your zoo or aquarium. They come with prior knowledge, experience, interests, and motivations related to wildlife and conservation. They also usually come with expectations about their visit—a personal context that has an important influence on what they learn. Visitors use this personal context, along with their experience at your zoo or aquarium, to make their own meaning out of the visit.

These tools will help you understand:

- what personal context visitors bring to your zoo or aquarium;
- how they spend their time and why; and
- what impact the visit has on their conservation-related attitudes.

Why Do Visitors Come?

Tool #1: Motivational Categories of Visitors

Motivation has a powerful impact on learning. Why people decide to visit a zoo, aquarium, or any other site has a direct effect on what they learn while they are there. For that reason, it makes sense to develop a better understanding of the motivations that drive visitors to your zoo or aquarium.

The motivational categories explored in this study are not how visitors have traditionally been categorized. Historically, zoos and aquariums have used demographic labels such as age, social group, ethnicity, educational level, and frequency of visitation to categorize visitors. Or, they have used marketing categories like educational versus leisure outings.

Our research has identified other, more powerful ways to understand and categorize zoo and aquarium visitors. We discovered that most visitors come to zoos and aquariums in order to satisfy one of the following five identity-related motivations. These motivations largely determine how visitors conduct their visit and strongly influence what they learn and how satisfied they are with their visit.

Explorers are motivated by curiosity and a general desire to discover more about the general subject matter. Although they may be part of a group, they come mainly to satisfy themselves and their personal interests.

Professionals/Hobbyists, like Explorers, are motivated by a desire to learn more about the subject matter. But unlike Explorers, their motivation is very specific and related to their profession or hobby. For example, professional and amateur nature photographers often come to zoos and aquariums to find animal images that would be extremely difficult to capture in the wild. Teachers seeking ideas for classroom activities also fall into this category.

Facilitators are motivated by a desire to satisfy the needs and desires of someone they care about. Many Facilitators at zoos and aquariums are parents who have come because of their children. Others want to please their spouses, boyfriends or girlfriends, or visiting friends or relatives.

Experience Seekers are motivated by a desire to visit a place because it's a well-known or even "must-see" destination. They are often tourists. Many Experience Seekers come to fulfill the expectations of others, or in response to the recommendations or opinions of others.

Spiritual Pilgrims are motivated by a desire for a contemplative or restorative experience. They often express awe or reverence for the subject matter or setting.

The majority of zoo and aquarium visitors arrive hoping to satisfy a single one of these motivations. Other visitors wish to satisfy two or occasionally three motivations.

This tool is a simple questionnaire that will help you assess the motivations that lead visitors to your zoo or aquarium. We suggest collecting data from approximately 500 adult visitors. Depending upon how many visitors you have, this could take anywhere from one to several weeks to complete. Because visitor profiles change seasonally, you might think seriously about collecting a sample of 250 visitors (if your zoo or aquarium is small) or 500 visitors (if your institution is large) in each of the major seasons. That way you would truly capture the profile of your institution's visiting population.

How to Administer the Motivational Categories Tool

1. Position yourself at the entrance of your zoo or aquarium and intercept the first group of visitors that crosses an imaginary line. This strategy will help you collect data from a random sampling of visitors. It is important not to select only individuals or groups you feel comfortable approaching or consider "good" groups with whom to talk.
2. Introduce yourself. Tell visitors that your zoo or aquarium is interested in learning more about why people are visiting the institution today. Ask the visitors if they would be willing to talk with you very briefly about why they came today. If visitors decline, thank them and wish them a good visit. Keep track of the number of refusals.
3. If they agree to participate, hand visitors the "Why are you here today?" tool. Ask them to place checkmarks in the left-hand column next to the five statements that best explain why they chose to visit your zoo or aquarium on this particular day. Emphasize that most

visitors have many of these reasons for coming, but what we'd like them to do is pick the five that are the most important reasons for their visit today. Adults may work together to fill out a single questionnaire, or they can each fill out their own.

4. Ask visitors to rate each of the five statements they selected by circling the appropriate numbers in the right-hand column, with 1 representing least important and 7 representing most important.

5. When you're done with this group, select the very next group that crosses your imaginary line and begin the process again.

How to Collate and Interpret the Findings

When you have collected all of your data, you can use the data entry software program on the CD in this package to enter your data. Just follow the directions provided. The program will automatically generate a summary of your results.

If you collect data at different seasons, be sure to enter each season's data in a separate database so that your seasonal results don't get mixed together.

You will end up with a profile, or series of profiles by season, of visitors' motivations for visiting your institution. We have provided some preliminary suggestions for how to interpret these results in Chapter 4. However, this is an on-going area of research and development, and new ideas continue to emerge about how to make use of this feedback about visitor motivations. So be sure to check the AZA website (www.aza.org) periodically for updates and additional strategies.

Motivational Categories Tool

ID#:

TIME:

DATE:

Why are you here today?

Check the **5** that best reflect why you are here today.

For those 5 statements only, indicate the importance of the reason.

- If a statement represents a **very important reason you are here today**, you would circle **7**.
- If a statement represents a **less important reason you are here today**, you would circle **1**.

Check 5

	Less Important				More Important		
	Reason	Reason	Reason	Reason	Reason	Reason	Reason
<input type="checkbox"/> ...I like the types of things I can learn here	1	2	3	4	5	6	7
<input type="checkbox"/> ...I came a long time ago and want to revisit it	1	2	3	4	5	6	7
<input type="checkbox"/> ...I actively support conservation and the protection of wildlife	1	2	3	4	5	6	7
<input type="checkbox"/> ...It is one of the best places to visit around here	1	2	3	4	5	6	7
<input type="checkbox"/> ...I support conservation	1	2	3	4	5	6	7
<input type="checkbox"/> ...the many different species fill me with wonder	1	2	3	4	5	6	7
<input type="checkbox"/> ...my wife/partner/husband made me come	1	2	3	4	5	6	7
<input type="checkbox"/> ...I discover things about myself when I come here	1	2	3	4	5	6	7
<input type="checkbox"/> ...I frequently visit zoos/aquariums when I go on trips	1	2	3	4	5	6	7
<input type="checkbox"/> ...I get more here than going to the mall or a movie	1	2	3	4	5	6	7
<input type="checkbox"/> ...It was my choice for how to spend the day	1	2	3	4	5	6	7
<input type="checkbox"/> ...I support the mission to study, celebrate and protect animals	1	2	3	4	5	6	7
<input type="checkbox"/> ...my family/friends have good experiences here	1	2	3	4	5	6	7
<input type="checkbox"/> ...this is a good way for my family/friends to share quality time	1	2	3	4	5	6	7
<input type="checkbox"/> ...I feel at peace in these surroundings	1	2	3	4	5	6	7
<input type="checkbox"/> ...my family/friends enjoy themselves here	1	2	3	4	5	6	7
<input type="checkbox"/> ...coming here helps me appreciate nature	1	2	3	4	5	6	7
<input type="checkbox"/> ...I like to watch the animals	1	2	3	4	5	6	7
<input type="checkbox"/> ...I like to study wildlife	1	2	3	4	5	6	7
<input type="checkbox"/> ...this is an important institution in this community	1	2	3	4	5	6	7

AGE ____ **Been here before?** No ____ Once or twice ____ Number of times ____ Come often ____

What Understandings Do Visitors Bring with Them?

Tool #2: Personal Meaning Mapping

Learning is a complex and highly individualized process, and every zoo and aquarium visitor has a unique educational experience. Since all visitors arrive with different prior experiences and knowledge, these entering characteristics directly affect what visitors see and do on their visit. Ultimately, these characteristics affect how visitors come to understand and make meaning of the subject matter they encounter.

Given the relative nature of learning, how can you assess what your visitors know before their visit so you can better design experiences that will enhance their learning? Personal Meaning Mapping (PMM) is a flexible tool with no right or wrong answers that is designed to allow you to answer that question. Described below is a way to use this tool to understand what visitors already know about a given topic, what misconceptions they might have about the topic, and what type of language may be appropriate for an exhibition or program on that topic. This information is fundamental for planning future exhibitions and programs.

The PMM tool involves asking individuals to write down on a blank piece of paper all the words, ideas, images, phrases, or thoughts that come to mind about a specific topic. The responses form the basis for an open-ended interview that encourages visitors to articulate their understandings about that topic in their own words and from their own frame of reference. You can use this technique with visitors of all ages—as long as they can write or draw. If you choose to use this tool with children, however, you will need the consent of their parents.

Personal Meaning Mapping does take some time and energy to conduct—on the part of zoo or aquarium staff as well as visitors. On the other hand, visitors particularly enjoy this method because it is about them, engages their interest, and enriches their experience. It also enables zoo and aquarium staff to crawl inside the heads and hearts of their visitors to a greater degree than they can with more traditional tools like questionnaires or directed interviews. As a result, the tool tends to engage the interest of zoo and aquarium staff, helping to break down assumptions and stereotypes about visitors and to understand them in new ways.

Although the number of visitors you choose to interview depends on your time and budget, we recommend aiming for a sample size of at least 30 visitors. Because of the richness of the data, even a sample size this small can yield wonderful insights about what your visitors know and how they think.

For this study we suggest you provide a table and chairs in a quiet, sheltered place out of the main flow of visitor traffic. Since the activity will likely take anywhere from 10 to 30 minutes to complete, depending on how involved visitors get, having a comfortable place to sit is essential.

To find out more about Personal Meaning Mapping...

Developed by the Institute for Learning Innovation, Personal Meaning Mapping is an extremely powerful tool that can be used in a variety of ways. If you would like to know more about the other uses of this tool, we encourage you to contact the Institute at www.ilinet.org.

How to Prepare the Personal Meaning Mapping Tool

Create a visitor prompt by placing a word, picture, or phrase in a circle at the center of a blank piece of paper (sample on p. 20). For the Assessing the Impact of a Visit to a Zoo or Aquarium project, we used the words “Conservation–Zoos” and “Conservation–Aquariums.” For your study, you can use a prompt related to whatever program or exhibition you are planning. It might be a concept like “adaptation” or “oceans” or “conservation.” Or it could be a specific animal group like “sharks” or “cheetahs.”

Selecting the appropriate prompt is an important decision. It is possible to be both too broad and too narrow in your choice. To avoid these two extremes, we suggest conducting a pre-test to make sure the prompt elicits the information and ideas you desire. Usually you can gain a pretty good idea about how your Personal Meaning Map prompt is working after conducting a trial test with four or five individuals. If you are not getting the results you hoped—in other words, if people are answering a different question than the one you thought you were asking—revise your prompt and pilot test again.

How to Administer the Personal Meaning Mapping Tool

1. Position yourself at the entrance of your zoo or aquarium and intercept the first group of visitors that crosses an imaginary line. This strategy will help you collect data from a random sampling of visitors. It is important not to select only individuals or groups you feel comfortable approaching or consider “good” groups with whom to talk.
2. Introduce yourself. Tell the visitors that your zoo or aquarium is planning a new exhibition or program and that you are interested in finding out what people already know about its subject. Ask the group if they would be willing to engage in an activity to share what they know about the topic. If visitors decline, thank them and wish them a good visit. Keep track of the number of refusals.
3. If visitors agree to participate, give either a single individual or all visitors in the group a Personal Meaning Map (with the prompt in a circle at the center) and a colored pen. Sometimes groups like to do this task cooperatively. Other times visitors prefer to do it individually. Ask visitors to look at the prompt and then write down or draw all the words, phrases, or images that come to mind when they think about that topic. If any visitors seem hesitant or unsure that they can really write down absolutely anything, assure them: “Yes, anything!”
4. When visitors are finished, encourage them to explain why they wrote down what they did, and to say more about what they wrote or drew. (If more than one map was done, do this step one map at a time.) You might ask visitors to start by picking the item that they feel is most important or that best captures their thoughts about the prompt. Or, you can pick an item that really interests you. Ask visitors to explain what they wrote by saying: “I see you wrote down [visitor item]. What does that have to do with [prompt]?” This way you will truly learn what visitors had in their minds when they wrote down the word(s).
5. The goal is to discover how people have conceptualized the prompt, in their own words. So you should not be satisfied with visitors’ initial responses. Once they’ve given an answer, ask: “Is there anything else this item means to you?” Use a pen of a different color to record what visitors say on the same piece of paper. This will distinguish the original responses (which

visitors wrote) from the follow-up responses (which you write). Make sure visitors can see what you are writing so that they know all you’re doing is writing down exactly what they’re saying. You can even reassure them verbally that this is what you are doing.

6. Repeat this process with at least three of the items visitors wrote down—more if you have the time and inclination. Follow the same protocol described in step #4 with each item. For example, after visitors tell you about the response they feel is most important or most relevant to the prompt, ask them which is the next most important...and so on.
7. When you’re done with this individual or group, select the very next group that crosses your imaginary line and begin the process again.

How to Collate and Interpret the Findings

When you have collected all of your data, you are now ready to analyze the data for trends and patterns. Here are two different ways to do this.

Method #1:

The easiest way to analyze your Personal Meaning Maps is to begin by listing all of the key words visitors used when describing the prompt. You will find that people sometimes use single words and sometimes phrases. For this task you will need to extract a key word or words from the phrases. Your list will probably be very long. But it should become apparent that some words occur in a majority of the maps, while lots of words appear only once or twice.

We suggest that you group similar words. For example, if your prompt was “whale” and if some people described whales as “large,” others as “big,” and still others as “gigantic,” lump those three terms together into a single category since they are likely being used as synonyms.

As you go through this process, you’ll begin to get a picture of how your public is currently thinking about this topic—as represented by the words and ideas that many if not most people use. You will also begin to get a sense of the range of ways people think about this topic—as represented by the words and ideas that only a few visitors use.

Method #2:

A second, more difficult, but extremely interesting way to analyze your data begins with the same process described in Method #1. But instead of just listing the exact words visitors generated, organize the words into clusters of conceptual categories. For example, using the “whale” example mentioned above, you could create a conceptual category for “size” that would include not only the words “large,” “big,” and “gigantic” but also statements like: “It’s the biggest animal on earth.” “I saw a beached whale once and it was huge.” Alternatively, you could create a category called “descriptions” that includes size as well as phrases like “fish-like,” “has big flukes,” and “has big eyes.”

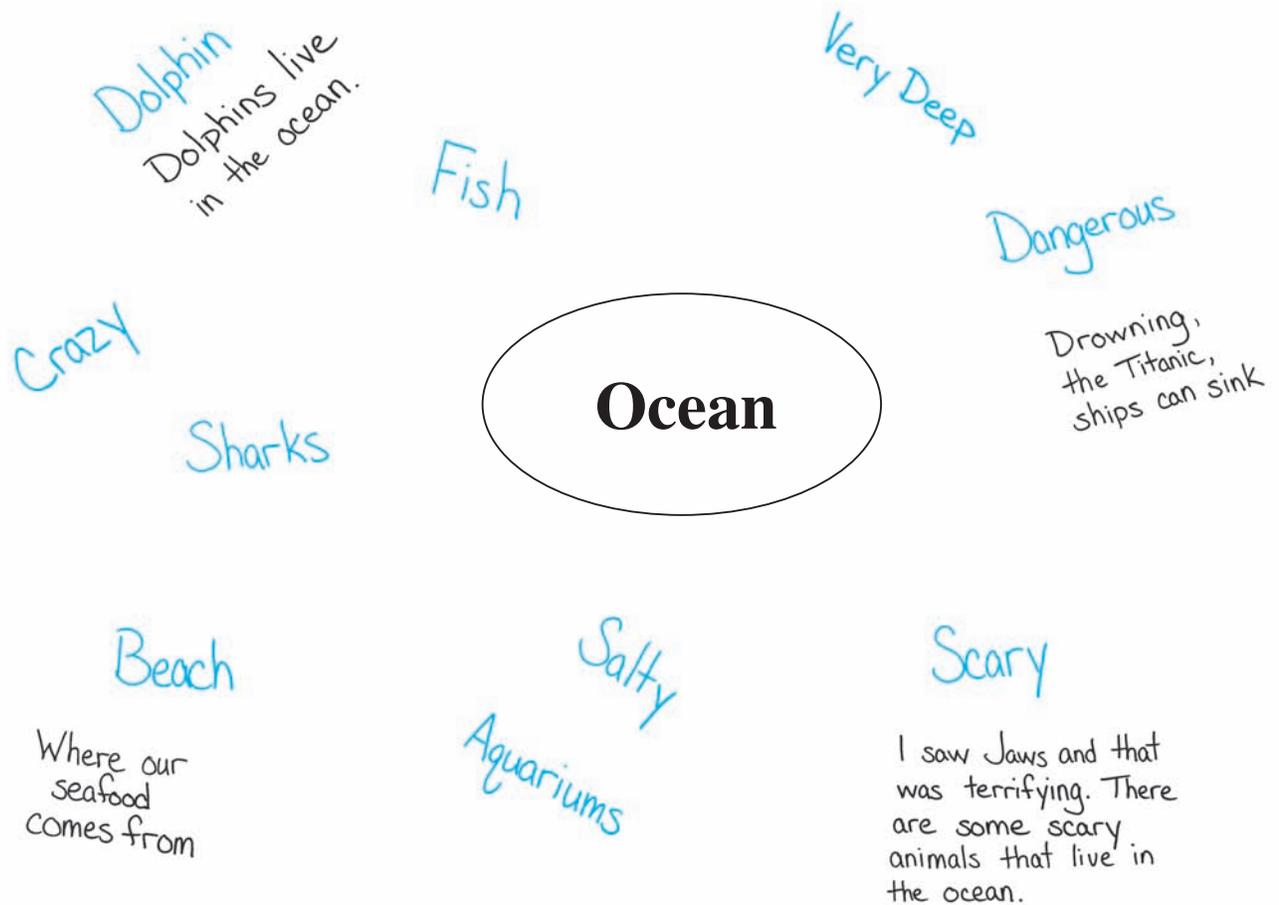
We’ve found the easiest way to do this second kind of analysis is as a follow-up to Method #1. Once you’ve gotten all the words arrayed, you can even write them down on index cards. Then it’s relatively easy to sort them into categories. We’ve also found that this task is best done by more than one person, since not everyone will agree about the conceptual categories. Ideally, there’s a team of people involved in developing your program or exhibit, all of whom participate in this activity. That way everyone directly experiences the conceptual categories that visitors bring to the topic.

You’ll discover that some categories are factual—e.g., descriptions such as “large mammal.” Some are abstract—e.g., descriptions such as “endangered species.” And some are aesthetic or emotional—e.g., descriptions such as “beautiful and mysterious.” All of these ways of thinking are equally valid, and all are extremely important to understand. You’ll be able to see whether most visitors have well-formed conceptual categories for this topic, or just sketchy ideas. You’ll also learn if there are common misconceptions—e.g., if lots of people wrote down “large fish” for the prompt “whale.”

At the end of this process you will have an extremely useful overview of visitors’ entering knowledge, attitudes, and beliefs relative to the topic you have selected for investigation. Since any successful program or exhibition needs to build from visitors’ existing base of knowledge, attitudes, and beliefs, this tool will help you to make an informed decision about where to start. The results may surprise you. Sometimes the public knows a lot less than you thought, and sometimes they know a lot more. Either way, you won’t know until you actually take the time to find out!

Personal Meaning Map Sample

Blue = visitor's responses
Black = interviewer's probes



What Do Visitors Do?

Tool #3: Reflective Tracking

Not only do visitors to zoos and aquariums come for a variety of reasons, they use the institution in many different ways. They are free to go wherever they want, in whatever sequence they want, and to spend as little or as much time as they want at each stop. Knowing something about how and why visitors use your institution is vital to making sense of their experience.

Tracking visitors by following them throughout the course of their visit to record where they go, what they do, and how much time they spend at different stops is a tried and true technique for understanding visitor behavior. If you want really accurate data, nothing totally replaces this method of actually tracking and timing large samples of people throughout their entire visit. But it is enormously challenging, costly, and time-consuming given the amount of time most visitors spend at zoos and aquariums.

The approach described here relies on visitors themselves to describe their own visits. This self-reported information is not as reliable as true tracking data, since you cannot compare what visitors say about their visit with what you observed while tracking them. However, we've found this method to be a relatively quick and easy way to get a big picture view of visitor movements and motivations. As a way of starting conversations about visitors' overall experience and where they went, it seems to work very well.

We recommend that you collect data from about 50 visitors for this study. This should take you several days to a week to collect.

How to Administer a Reflective Tracking Study

1. Position yourself at the entrance of your zoo or aquarium and intercept the first group of visitors that crosses an imaginary line. This strategy will help you collect data from a random sampling of visitors. It is important not to select only individuals or groups you feel comfortable approaching or consider "good" groups with whom to talk.
2. Introduce yourself. Tell the group that your zoo or aquarium is interested in finding out about their visit today. Ask if they would be willing to return to this

location at the end of their visit to talk briefly with you and share their visit. You might want to encourage participation by offering a small gift in return for participating. Having some kind of incentive for visitors to return—e.g., a pedometer to measure how many steps they take—can increase your rate of visitor return. If visitors decline to participate, thank them and wish them a good visit. Keep track of the number of refusals.

If you would like to collect data about how long visitors stay, provide participating visitors with a numbered pedometer, sticker, or wristband. You can then record their number and the time that they entered your zoo or aquarium. Tyvek (www.pdcorp.com/crowd-control/tyvek-expressions.html) makes numbered wristbands with zoo and aquarium themes.

Unless you are collecting data with a partner, at some point you'll want to stop inviting new individuals or groups to participate since individuals and groups you've already invited will start returning. You will need time to interview them. The length of the interval between visitors' arrival and return will depend upon the size of your institution and how much time visitors typically spend there.

Alternate approach:

Repeat step #1 above, but position yourself at an exit of your zoo or aquarium rather than an entrance. Introduce yourself, and tell the group that your zoo or aquarium is interested in finding out about their visit today. Ask if they would be willing to take five to ten extra minutes to talk with you about their visit. You might want to encourage participation by offering a small gift in return for filling out the form. Once most visitors have decided their visit is over, they are ready to leave! If visitors decline, thank them and say you hope they enjoyed their visit. Keep track of refusals.

3. Hand a map of your site to groups who agreed to participate upon entering and returned at the end of their visit—or, if you used the alternate approach, to groups who agreed to participate upon exiting. If you decided to time the visits of groups identified at the entrance, record their sticker or wristband number on a separate sheet along with the time they returned.

Invite visitors to show you on the map where they went today. As they trace their route and point out places they stopped, mark the stops on the map. Using a highlighter is often helpful and leaves a permanent "track" of their

visit. The interview is very free-form and evolves from the discussion with the visitors. Here are some questions to stimulate discussion:

- Where did you go?
- Why did you go there?
- Whose idea was it to go there?
- Where else did you go?
- What did you do there?

You might also want to ask visitors which areas of the zoo or aquarium were their favorite spots and why. If you handed out pedometers, collect them at this time and tell visitors their final tally. You may want to give the pedometers to visitors as a thank you gift.

How to Collate and Interpret the Findings

At a very basic level, the findings will provide an overall picture of where visitors went during their visits. You will see what parts of your institution are visited most and least often. You may also see trends in the order in which visitors explore your institution.

If you have decided to time the visits, we recommend starting an Excel spreadsheet with visitor numbers, entry times, and exit times. This will provide you with the average times visitors stay at your zoo or aquarium.

For the interview data, we recommend entering visitor comments into FileMaker Pro, HyperResearch, Survey Pro, Word, or Excel. Then look for common categories into which to group visitors' comments about where they went, what they did, and why. Listed below are samples of the kinds of categories visitors' comments may fall into:

- Are members
- Being together as a family
- Been here before
- Came as a child
- Came as a tourist
- Came for a child
- Came when I was younger
- Come here often
- Come to places like this often
- First time visit

- Talk about conservation
- Talk about crowds (positive or negative)
- Talk about the environment
- Education and learning
- Read signs or labels
- Interaction with staff
- Kids led way
- Named specific animals
- Named specific visit
- Place to bring out-of-town visitors
- Spiritual
- Would come alone
- Would not come alone

This methodology will also provide you with common language visitors use to describe your zoo or aquarium, the animals, the exhibitions, and their overall experience.

In case you're wondering...

In the trial studies, we gave visitors inexpensive pedometers as an incentive to participate in the study and return to the intercept location at the end of their visit. Virtually every group sought out the researchers at the end of their visit, returned the pedometers, and consented to a brief interview.

Reflective Tracking Map Sample



Do Your Visitors' Attitudes Toward Conservation Change?

Tool #4: Conservation Attitudes

A major goal of all AZA zoos and aquariums is communicating to the public:

- why conservation is important;
- how individuals can support conservation; and
- what zoos and aquariums are doing to promote conservation.

Is your zoo or aquarium successfully communicating these issues? This research tool will help you find out.

The Conservation Attitudes tool is a simple, one-page research instrument that visitors fill out at the end of their visit. It contains 13 statements related to conservation, zoos and aquariums, and individual action. Visitors rate how they felt about each statement before their visit and how they feel now, after their visit—letting you know if there has been a change.

Why not collect this data like a traditional pre- and post-test—asking visitors about their pre-visit feelings when they are entering your zoo or aquarium and their post-visit feelings as they exit? Research has shown that visitors tend to overstate their feelings when entering. Asking visitors to compare their pre- and post-visit feelings at the end of their visit has proved to be a more reliable way to collect this kind of data.

With this study you should be able to get a highly reliable sample if you collect responses from 200 visitors. This should take a week or less.

How to Administer the Conservation Affective Instrument

1. Position yourself at an exit of your zoo or aquarium and intercept the first group of visitors that crosses an imaginary line. This strategy will help you collect data from a random sampling of visitors. It is important not to select only individuals or groups you feel comfortable approaching or consider “good” groups with whom to talk.
2. Introduce yourself. Tell the group that your zoo or aquarium is interested in learning more about what people know and feel about conservation. Ask if they would be willing to take five extra minutes to fill out a short questionnaire. You might want to encourage participation by offering a small gift in return for filling out the form since most visitors are ready to leave once they’ve decided their visit is over! If visitors decline, thank them and say you hope they enjoyed their visit. Keep track of refusals.
3. If visitors agree to participate, hand out the one-page questionnaire entitled “How much do you agree with each statement?” Ask visitors to circle the number in the left column that best reflects how they felt about each statement before they visited the zoo or aquarium. Then have them circle the number in the right column that best reflects how they feel now. In both cases, a 1 means they strongly disagree with the statement, and a 7 means they agree completely.
4. When you’re done with this group, select the very next group that crosses your imaginary line and begin the process again.

How to Collate and Interpret the Findings

When you have collected all of your data, you can use the data entry software program on the CD in this package to enter your data. Just follow the directions provided. The program will automatically generate a summary of your results.

You will end up with a statistical analysis of your visitors’ change in attitudes. You will be able to determine to what extent your institution has or has not supported a significant change in your public’s attitudes toward conservation and toward the role that zoos and aquariums play in supporting animal conservation. If you look carefully at the results in each section of the instrument, you’ll be able to see the broad areas where your institution is doing a good job at communicating about conservation and where it might need to improve.

It is best not to rely too much on the results of any single question but rather to look at the trends indicated by the major sections of the instrument (e.g., the three subscales summarized at the bottom of the home page—individual responsibility, attitude toward zoos/aquariums, and human protection of nature). This tool will help you improve your educational efforts as well as provide you with hard data that you can show existing or potential donors and funders to demonstrate your impact.

Eventually, we hope to compile data from all the institutions that conduct this research to help us build a national database demonstrating the collective impact of zoos and aquariums on the public’s conservation attitudes. When we have this capability, we’ll let all AZA members know how to download their data on the AZA website (www.aza.org).

How Much Do You Agree With Each Statement?

Circle a number in each row think of how you felt **BEFORE** your visit and then rate each sentence as to how you feel **NOW**.

BEFORE VISIT

Not at all...Completely

NOW

Not at All...Completely

1 2 3 4 5 6 7	Being at the zoo/aquarium is fun	1 2 3 4 5 6 7
1 2 3 4 5 6 7	I am part of the problems with nature	1 2 3 4 5 6 7
1 2 3 4 5 6 7	I am part of the solutions to nature's problems	1 2 3 4 5 6 7
1 2 3 4 5 6 7	Zoos/aquariums care about animals	1 2 3 4 5 6 7
1 2 3 4 5 6 7	Zoos/aquariums are important for wildlife conservation	1 2 3 4 5 6 7
1 2 3 4 5 6 7	Animals are amazing	1 2 3 4 5 6 7
1 2 3 4 5 6 7	We need to help protect animals	1 2 3 4 5 6 7
1 2 3 4 5 6 7	We need to help protect plants	1 2 3 4 5 6 7
1 2 3 4 5 6 7	There is a lot I can do to conserve	1 2 3 4 5 6 7
1 2 3 4 5 6 7	There is not much I can do to help nature	1 2 3 4 5 6 7
1 2 3 4 5 6 7	Nature helps define America's national heritage and character	1 2 3 4 5 6 7
1 2 3 4 5 6 7	Nature is a place to renew the human spirit	1 2 3 4 5 6 7
1 2 3 4 5 6 7	We have the responsibility to leave healthy ecosystems for our families and future generations	1 2 3 4 5 6 7

AGE ____ Been here before? No ____ Once or twice ____ Number of times ____ Come often ____

THANK YOU!!

Chapter 4

BUILDING ON THE FINDINGS

Besides confirming that zoos and aquariums are making a positive difference, findings from the Assessing the Impact of a Visit to a Zoo or Aquarium study suggest some concrete ways that zoos and aquariums can enhance their conservation goals and visitor experience. In this chapter, you will find some preliminary ideas for how to apply selected findings from the visitor impact study. In the coming months and years, we will be developing and testing additional strategies. Look for updates and additional suggestions on the AZA website, www.aza.org.

Satisfying Visitors' Motivational Needs

The finding that visitors come to zoos and aquariums for a variety of reasons suggests that we should offer multiple layers of experiences to appeal to visitors' broad array of goals and motivations. In addition, since the majority of visitors come with a dominant identity-related motivation, we should design experiences that are tailored to the motivations of the five major groups of visitors.

Facilitators: Facilitators come primarily for a social experience that will satisfy the members of their group. We should offer them opportunities for social interaction within both exhibits and public programming. These opportunities might include dialogues with zoo and aquarium staff, places for regrouping and discussing their visit, and activities that enable them to work together. Parents, in particular, need tools to help them support their children's learning.

Explorers: Explorers are seeking to satisfy their own strong personal interests. Their satisfaction is closely tied to the quality of the learning experience. They need new and surprising offerings, such as temporary exhibits or in-depth programs, and more challenging experiences than currently exist in most zoos and aquariums. Explorers like to get "up close and personal" with animals. They are also the visitors most likely to be interested in more in-depth information than that typically included in zoo and aquarium signage.

Experience Seekers: Experience Seekers visit as tourists or as community members who value the zoo or aquarium highly. They will be attracted by unique programs and offerings that surpass those of other local attractions. They are not inhibited by crowds. In fact, they may actually find it reassuring that your institution is crowded since that affirms the site's importance as a destination.

Professionals/Hobbyists: These visitors are particularly appreciative and supportive of zoo and aquarium goals and activities. However, their needs are likely to be the most idiosyncratic. They are a target for premium programs such as photo tours, dive trips, workshops, and theme nights. They are also a rich source of volunteers, members, and donors.

Spiritual Pilgrims: This is the smallest group and the one with the most unique needs. These visitors appreciate areas for reflection and programs at quieter

times of the day or year. This is the group most averse to crowds. Spiritual Pilgrims are seeking an intimate, unobstructed, and ideally private experience. They also represent another valuable source of volunteers, members, and donors.

Meeting Visitors' Learning Needs

We now know that most visitors come to zoos and aquariums with a reasonable amount of knowledge about basic biological concepts, and that we are already conveying to visitors that we care about animals. Rather than thinking of the zoo or aquarium visit as Biology 101, therefore, we should concentrate our efforts on:

- specific conservation and natural history messages; and
- specific suggestions for how to further visitors' knowledge and interests after they leave the zoo or aquarium.

We should continue to explain our animal welfare standards and demonstrate in specific ways how we care for animals within our institutions as well as in the wild.

Emphasizing Conservation Action

Our findings confirmed that zoo and aquarium experiences increase visitors' feelings about the importance of wildlife conservation. Visitors leave with a stronger sense that they have a role to play in solving environmental problems and that they can do a lot for conservation. They want to be involved. Most are ready to be more engaged in advocacy efforts. They look to us to find out how. We should therefore continue to emphasize conservation action in both educational programming and exhibitions.

Most importantly, we should provide visitors with resources and tools for continuing their conservation-related learning and engagement beyond the zoo and aquarium.

- What upcoming television shows relate to conservation?
- What local conservation groups can visitors join?
- What websites will help them extend their knowledge or further pique their curiosity?

In order to make an even bigger difference, we need to see the zoo or aquarium as part of a larger conservation

community rather than as an isolated, stand-alone institution.

Now It's Your Turn

We hope that you find this toolbox useful and that it will enable you to discover new and exciting things about your visitors and about the impact of your zoo or aquarium on those visitors. All of us who worked on this project found the research to be not only informative but extremely enjoyable. We trust that you will share our enjoyment and find out how extremely satisfying it can be to learn about the needs, interests, and learnings of the people who walk through your doors and gates every day.

Please feel free to write to us directly or care of AZA if you have questions or want to share your results with us. Together, we can make a good thing even better!

Bibliography

Project Literature

Dierking, L.D., Burtnyk, K., Buchner, K.S., & Falk, J.H. (2002). **Visitor Learning in Zoos and Aquariums: A literature review**. Silver Spring, MD: Association of Zoos and Aquariums.

Falk, J.H. & Dierking, L.D. (2000). **Learning from Museums: Visitor Experiences and the Making of Meaning**. Walnut Creek, CA: AltaMira Press.

Falk, J.H., Heimlich, J.E. & Bronnenkant, K. (2008). Using identity-related visit motivations as a tool for understanding adult zoo and aquarium visitors' meaning-making. **Curator**, 51(1) 55-80

Falk, J.H.; Reinhard, E.M.; Vernon, C.L.; Bronnenkant, K.; Deans, N.L.; Heimlich, J.E. (2007). **Why Zoos and Aquariums Matter: Assessing the Impact of a Visit**. Silver Spring, MD: Association of Zoos and Aquariums.

Heimlich, J., Bronnenkant, K., Witgert, N. & Falk, J.H. (2004). **Measuring the Learning Outcomes of Adult Visitors to Zoos and Aquariums: Confirmatory Study**. Technical report. Silver Spring, MD: Association of Zoos and Aquariums.

Readings on Evaluation

Diamond, Judy (1999). **Practical Evaluation Guide: Tools for Museums & Other Informal Educational Settings**. Walnut Creek, CA: AltaMira Press.

Dierking, Lynn, D. & Wendy Pollock (1998). **Questioning Assumptions: An Introduction to Front-End Studies in Museums**. Washington, DC: Association of Science-Technology Centers.

Falk, J.H. & Dierking L.D. (2002). **Learning from Museums**. Walnut Creek, CA: AltaMira Press.

Kennedy, Jeff (1994). User-friendly exhibit design checklist. **User-Friendly: Hands-on Exhibits That Work**, pp.69-74. Washington, DC: Association of Science-Technology Centers.

Korn, Randi, & Laurie Sowd (1990). **Visitor Surveys: A User's Manual**. Washington, DC: American Association of Museums, Technical Information Service.

Krueger, Richard. (1988). **Focus Groups: A Practical Guide**. Newbury Park, CA: Sage Publications.

McLean, Kathleen (1996). **Planning for People in Museum Exhibitions**. Washington, DC: Association of Science-Technology Centers, second edition.

Munley, Mary Ellen (1986, February) Asking the Right Questions: Evaluation and the Museum Mission. **Museum News**. Washington, DC: American Association of Museums.

Stevens, Floraline, Frances Lawrenz, & Laurie Sharp (1993). **User-Friendly Handbook for Project Evaluation: Science, Mathematics, Engineering and Technology Education**. Arlington, VA: National Science Foundation, Division of Research, Evaluation and Dissemination, Directorate for Education and Human Resources.

Taylor, Sam editor (1992). **Try It! Improving Exhibits Through Formative Evaluation**. Washington, DC: Association of Science-Technology Centers.

Websites

UPCLOSE at the University of Pittsburgh hosts an annotated bibliography includes abstracts of recent research and evaluation studies:
<http://informalscience.org>

The American Educational Research Association (AERA) has a number of resources for researchers:
<http://AERA.NET/resource/resource.html>

The Visitor Studies Association (VSA) publishes a newsletter and proceedings from their conferences on-line: **<http://www.visitorstudies.org/>**

The Institute for Learning Innovation publishes abstracts from recent research and evaluation studies on their website: **<http://www.ilinet.org>**

The Institute of Museum and Library Services provides information and references on Outcomes Based Evaluation on their website:
<http://www.ims.gov/applicants/overview.shtm>

National Marine Sanctuaries Project Evaluation website provides links for conducting project evaluation.
<http://sanctuaries.noaa.gov/education/evaluation/evaluation.html>

MEERA, My Environmental Education Evaluation Resource Assistant, is a web-based tool for planning and learning about environmental education evaluation(s).
<http://meera.snre.umich.edu/>

Contact Information

Association of Zoos and Aquariums
8403 Colesville Road
Suite 710
Silver Spring, MD 20919-3314
www.aza.org
301-562-0777

John H. Falk
Department of Science & Mathematics Education
Oregon State University
237 Weniger Hall
Corvallis, OR 97331-6508
falkj@science.oregonstate.edu
541-737-1826

Joseph E. Heimlich
Institute for Learning Innovation
3168 Braverton Street
Suite 280
Edgewater, MD 21037
www.ilinet.org
410-956-5144
888-668-5149 (toll-free)

Cynthia Vernon
Monterey Bay Aquarium
886 Cannery Row
Monterey, CA 93940
www.mbayaq.org
831-648-4800

VISITOR EVALUATION TOOLBOX

