

assistant director of development, who used to work for the Field Museum. Linda Wilson reports on a summative evaluation that she and I worked on last year for their very popular exhibition *Frogs!*

Another long-time professional is heard from here, Frank Madsen. He worked at the Field Museum and now heads the design firm of Abrams Teller Madsen. Frank rarely blows his own horn, so I'll do it for him. He is an exhibit designer who can draw elevations, write labels, and pick colors all at the same time. His training at the Institute of Design in Chicago put him into an early mind-set of considering the user and making design functional as well as aesthetically pleasing. His article presents a tool for exhibit teams to use during the planning process to uncover everyone's points of view and expectations. The results can be amazing.

One of my favorite new exhibitions in Chicago is the *Swamp* at Brookfield Zoo, and Carol Saunders summarizes their evaluation efforts to date. The exhibit is one of the best integrations of living animals and interpretive, interactive experiences I've ever seen. Even though the summative evaluations revealed that it did not meet the "51% Solution" criteria (see *Visitor Behavior*, Volume X, Number 3, Fall 1995), the criteria helped the planning team stay focused and realistic in their expectations for visitor behavior. I believe that this may be a case where the evaluation should be repeated in two or three years, after visitors have become more used to the idea of looking at non-animal exhibits in a zoo. Brookfield is continuing their trend toward making use of extensive (but clear and concise) labels and other interpretive materials to promote their conservation goals.

Deborah Perry wears two hats—one as co-director of the Chapin Hall program with Mike Spock, and the other as director of her own consulting firm, Selinda Research Associates. She and Mike bring us up to date with their progress in researching peoples' early memories about museums. Deborah has also worked with Eric Gyllenhaal on several recent front-end research projects at Field Museum, and she provides a summary report on the "Exploration Zone." In her "spare" time, she, Lisa Roberts, and two other museum studies enthusiasts have been pursuing the dream of establishing a Ph.D.-level training program based in Chicago, a topic of interesting discussions in the recent *Curator* magazine "Forum" pieces.

Visiting a museum through its website has become a recent phenomena that bears watching. How do you evaluate your virtual visitors? The Museum of Surgical Sciences (one of those small museum gems in Chicago, with an annual attendance of 9,000) has a very exciting site that has received 15,000 visitors in one day! Mark Hayward explains the possibilities and limitations to evaluation in cyberspace. Barry Aprison, who works at one of Chicago's largest museums, the Museum of Science and Industry, reports on some updates of one of their oldest, most popular displays, the prenatal fetuses of the exhibition, "Prenatal Development."

Finally, I have included an answer to the question, "So, have you seen Screven lately?" No, I haven't. He's always

so busy; (too busy to write something for this issue). But I hear rumors about what he's been up to. A feature called "ChanSpotting" will bring you up to date.

All of the authors of this special Chicago issue of *Visitor Behavior* have interesting reports and points of view to share. We welcome your feedback. Call or visit the Windy City when you can, and be our guest for dinner at the next Evaluators Eat Out.

Summative Evaluation of *The Swamp*: A Conservation Exhibit with a Big Idea

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Brookfield Zoo

An increasing number of cultural institutions are searching for ways not only to share information, recreational opportunities, and powerful emotional experiences with visitors, but also to encourage them to become actively involved in the institution's missions. In the case of zoological parks, botanical gardens, nature centers, aquariums, and natural history museums, these missions involve the conservation of biodiversity. In all cases, there is a desire for better measures of how people are affected and what they do as a result of their visit experiences.

Brookfield Zoo is committed to measuring the impact of its exhibits and programs on our visiting public. We especially want to investigate whether our communication efforts can increase understanding and inspire conservation action. As a case study, we looked at the effect of one exhibit on visitor knowledge, attitudes, and behavior. Feedback from such a study should help improve the conservation communication strategies created by other organizations with similar goals and increase our ability to measure our successes.

Description of the Exhibit

The Swamp, a new wetlands exhibit at Brookfield Zoo, is designed to encourage people to appreciate the benefits of ecosystems. It is an immersion exhibit of nearly 6,000 square feet that features animals and plants of a cypress swamp and of an Illinois riverine wetland. Interpretation consists of a variety of graphics, docent demonstrations, a teacher guidebook, a computer game, and many other interactive experiences.

The concept of a "Big Idea" was introduced by Serrell (1994); this is a single statement of what an exhibit is about. The Big Idea of the Swamp exhibit is that "Healthy cypress swamps and Illinois wetlands — examples of threatened ecosystems — provide many surprising benefits to humans."

The idea of emphasizing ecosystems and benefits to humans was supported by the results of a national series of focus groups and surveys (Belden and Russonello, 1995; 1996). These studies identified several key elements to include in efforts to increase awareness and to demonstrate the importance of saving biodiversity:

- focus on preservation of habitat or ecosystems as a

way to illustrate that biodiversity matters;

- stress human intervention as a cause of habitat and species extinction;
- demonstrate clearly the benefits of saving biological diversity and the negative consequences of not saving it on human well-being;
- create an appreciation for special places in nature like old forests, wetlands, and recreational areas.

At Brookfield Zoo, we wanted to investigate whether an exhibit like the *Swamp* that emphasizes the benefits of local ecosystems can inspire visitors to leave with a greater understanding of and desire to protect such threatened ecosystems. Maps in the *Swamp* exhibit help visitors learn where cypress swamps are located. To bring the conservation messages closer to home, the Illinois river scene helps visitors recognize the many benefits of local wetlands. Visiting local wetlands is one of the many actions supported by the exhibit.

Measuring Success

Front-end evaluation (Carlin and Foster, 1994) revealed that the majority of 115 visitors surveyed had a naive understanding of what wetlands and swamps are, and the terms "swamp," "marsh," and "wetland" were often confused. A number of the visitors had a negative perception of swamps, describing them as dangerous, scary, or dreary places. Almost all of the respondents were aware of the decrease of wetland area in Illinois, but the severity of the decrease was underestimated. Most were able to provide an example of how a swamp is beneficial to humans. Such information was used to help guide the creation of the interpretive materials, and formative evaluation of certain prototypes during the summer and winter of 1995 helped to improve their effectiveness.

The *Swamp* exhibit opened in March 1996, and summative evaluation was carried out during the summer to measure the overall impact of the exhibit. The summative evaluation consists of three parts: (1) a tracking study to determine how visitors use the exhibit, (2) pre- and post-exhibit interviews to look at the immediate impact of the exhibit on visitor knowledge, attitudes, and behavioral intentions, and (3) card sorts and follow-up phone calls, to be completed during the summer of 1997, to explore the exhibit's potential for encouraging conservation actions by visitors.

Methods

A sample of 120 visitors of various ages and group compositions representative of the zoo audience were tracked as they visited the exhibit between June 7 and September 1, 1996. Measurements included the attracting and holding power of exhibit elements and the frequency and quality of several social behaviors observed in the exhibit. Tracking was done over a variety of days of the week and different crowding conditions. Visitors were timed for overall length of stay and the time spent in each exhibit area.

The concepts, attitudes, and intentions visitors brought

to the exhibit were compared with those they expressed upon leaving. A sample of 140 visitors were interviewed, 70 before they entered the *Swamp* and 70 after they exited the building. As a control, we asked people why they came to the *Swamp* and then distinguished between those who sought out the exhibit versus those who just stumbled upon it. If these groups are different, it can influence how they experience an exhibit (Doering, 1995). Both reasons were equally represented within the pre- and post-exhibit groups.

A card-sorting technique will be used during the summer of 1997 to explore whether the *Swamp* exhibit is influencing people's behaviors related to wetland conservation. This technique is an attempt to identify behavioral intentions. We tested the methodology during the summer of 1996. Visitors were given twenty behaviors written on cards and were asked to stack them in three piles: behaviors they have done recently, behaviors they are interested in doing, and behaviors they are not interested in doing. Follow-up questions were asked about each behavior to explore level of commitment and types of barriers to action.

Results

During the summer, the average amount of time a visitor spent in the entire exhibit was sixteen minutes (with a range of three to forty-nine minutes). In terms of the attracting and holding power of each interpretive element, visitors stopped at 20% of the 105 interpretive elements. The range was one to forty-nine. Not surprisingly, animals were the biggest draw and had the most holding power, especially alligators and otters. In addition, nearly 40% of the visitors stopped at the docent station when it was open.

A number of interpretive elements encouraged conservation action. For example, six conservation boxes consisted of clay characters illustrating different conservation behaviors. Each of these boxes attracted 15 to 21% of the 125 visitors who were observed, and usually these visitors interacted with more than one box. In addition, 11% of the observed visitors stopped at a bulletin board that features current issues and "what you can do to help," 7% stopped at a "Visit an Illinois Wetland" fact sign, and 6% stopped at a display of Illinois wetlands maps and photos showing where local wetlands are found. Because these elements contain important information for our goal of inspiring action, we would like them to attract a higher percentage of visitors.

Results from the pre- and post-exhibit interviews hint at affective shifts, but the differences were not statistically significant. For example, after seeing the exhibit, 55% of the visitors said they would enjoy being at a swamp, compared to 41% who felt this way before the exhibit, and 64% said they would be likely to visit a swamp compared to 58% who started out feeling this way. There were no differences in the responses given by people who sought out the exhibit as compared to those who stumbled upon it, so we could be assured that the *Swamp* visitors were not a specialized audience compared to regular zoo visitors.

The concept of ecosystem benefits was an important part

of the Big Idea. When visitors were asked "How are swamps beneficial to humans?," fewer people answered "I don't know" after visiting the *Swamp*. A large number of people leaving the *Swamp* (41%) cited the "cleans water/prevents flooding" benefit, as compared to 25% who cited this benefit before seeing the exhibit. Also, visitors were asked how comfortable they would be explaining certain concepts to a friend. The mean comfort level explaining "the benefits of wetlands to humans" increased when comparing the pre-exhibit and post-exhibit groups. This was the one concept where the increase approached significance between the two groups.

Most people left the *Swamp* with some idea that was relevant to the conservation themes. For example, when exiting, visitors were asked to complete the statement "I never realized that..." In response, 32% had no answer, but 27% mentioned something about wildlife or plants, 14% mentioned the value of swamps, 12% mentioned loss or destruction of wetlands, and 6% mentioned the location of swamps, referring to their surprise that Illinois had so many wetlands.

The card-sorting pilot suggested some behaviors people would be interested in doing. Visitors indicated increased interest in certain behaviors after exiting the exhibit. Next year, we will conduct one hundred card sorts with visitors before they see the *Swamp* and another one hundred card sorts with different visitors as they leave the exhibit. Two months after the card sorts, fifty visitors will be telephoned to see if they report doing any of the behaviors they intended to do by that time. Another group of fifty *Swamp* visitors who did not participate in a card sort will be called as a control.

Overall, the exhibit was favorably received by the majority of the respondents. Of the seventy people interviewed as they exited the *Swamp*, 84% said that it met or exceeded their expectations and 97% said they would recommend it to a friend.

Complementary Studies

To consider the *Swamp* exhibit in a broader context, we also evaluated (a) the effectiveness of *Swamp* advertisements, and (b) the role of food packaging in delivering *Swamp*-related messages and encouraging visitation to the exhibit.

Advertising Effectiveness

Brookfield Zoo's 1996 *Swamp* advertising included radio, print, and billboard components. During the summer of 1996, representations of all individual advertisements were collected and presented to four hundred visitors during an intercept interview at the north and south gates and at the exit to the *Swamp* exhibit. The interview instrument targeted the person identified by the group as having suggested the zoo visit. It tested recall and recognition of Brookfield Zoo advertising, as distinguishable from other promotional or media coverage. We also asked why groups decided to visit that day and whether advertising or other communications

about the *Swamp* played any role. Respondents also selected adjectives describing their impressions of the ads and indicated how the exhibit met their expectations.

Food Packaging

We interviewed 400 visitors at zoo restaurants, some of whom were exposed and some not exposed to *Swamp*-themed messages printed on cups, napkins, sandwich wrappers, and children's meal buckets. We investigated the relationship between food packaging exposure, *Swamp* exhibit visitation, and increased knowledge about swamps. Of 84 visitors who had not yet been to the *Swamp* on the day they were interviewed, 72 (86%) planned to go to the exhibit by the end of their visit, and when asked directly, 11% of these 72 visitors stated that the food packaging they encountered had influenced their decision to visit. Of the people who had been to the *Swamp* earlier in their visit, 78% recognized that the food packaging messages were related to the exhibit themes, and 47% said that the messages were more interesting because they had visited the *Swamp*.

To measure knowledge gains, respondents were asked to name one or more ways that swamps benefit people. The percentage of visitors who could do this after seeing only the packaging messages was 55%; after seeing only the exhibit, the percentage was 80%; and after seeing both the packaging messages and the exhibit, the percentage was 86%.

Discussion

There are so many ways to measure the impact of an exhibit. For this particular exhibit, there were many indications of its popularity and positive affect with visitors. Our top priorities, however, were to determine whether the Big Idea was being communicated successfully and to explore the exhibit's potential for encouraging conservation actions by visitors.

Given a relatively high awareness of the benefits of swamps among zoo visitors, it was difficult to detect significant shifts due to the exhibit. However, all of the trends consistently supported an underlying appreciation of the Big Idea. In addition, as visitors left the exhibit, their comments were very connected to the conservation themes of the exhibit.

Results from the advertising effectiveness and food packaging studies show how the exhibit fits within a larger communication framework, and we were encouraged to see those messages reinforced each other.

In terms of behavioral outcomes, we know that a single exhibit or one institution is unlikely to have a dramatic and immediate effect on a visitor's behavior. However, if we ask visitors appropriate questions, we can improve the ability of exhibits to inspire certain conservation behaviors. We believe we have taken some of the first steps with this exhibit. In addition, we are fortunate that the Chicago area offers many opportunities for collaboration among informal learning institutions and also with local natural areas so that we can optimize our efforts and our results.

We have used our results to make modifications within the exhibit that increase the attractiveness of certain conservation action elements. Once we analyze the results of the card sorts next summer, we will continue to search for ways to reduce behavioral barriers and help visitors join us in our conservation mission

Acknowledgments

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April Award Luncheon

The gala event of the year for members of the Visitor Studies Association will be the April Award luncheon on Friday noon, July 18, at the Visitor Studies Conference. Be sure to reserve your place for it when you return your conference registration form and fee.

The \$20 luncheon at the Birmingham Botanical Garden will be an entertaining as well as a fund-raising event. VSA member, museum administrator, and professional comedian, D. Neil Bremer from Chicago, will provide an irreverent look at museums, poking lighthearted fun at the culture of museums, of evaluators, and of researchers. Through humor he challenges the way that audiences perceive museums and the way that museums view their audiences.

While performing as a professional comic in Chicago, Neil has received critical acclaim, including these reviews: "Check out Bremer closely; the man really has a flair," and "Bremer is a well-rounded performer, and both shows allow him to demonstrate his considerable comedic gifts, his talent at improvisation, his skills as a musician, and an impressive singing voice." No VSA member will want to miss this entertaining performance, plus have the opportunity to raise funds for the April Award travelship. The first presentation of the travelship will be made at the luncheon. The recipient will be the guest of VSA at the Conference and at the luncheon.

Let Neil Bremer lighten your spirits while you enjoy the opportunity to assist a junior member of VSA to attend the 1997 Conference.

From Knowledge to Narrative: Educators and the Changing Museum

Author's Synopsis

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In 1988 the development of an exhibit at the Chicago Botanic Garden provided an occasion for an extensive, multidisciplinary study about the history of museum educators and the impact they have had on the museum institution. The result is *From Knowledge to Narrative: Educators and the Changing Museum*, published by the Smithsonian Institution Press this year.

From Knowledge to Narrative does three main things: 1) it documents the rise of the museum education profession in America over the last 200 years; 2) it argues that the emergence of this profession has raised questions about the nature of knowledge and authority that have rocked the very core of the institution; and 3) it suggests that these questions in turn hold serious implications for what it now means to educate.

The study is simultaneously a history, an ethnography, and a critique. It uses a real-life example of exhibit making to reflect on the current situation in museums and it analyzes that situation within a wider historical and philosophical context. This approach anchors the analysis in the everyday realities of practice while recognizing that those realities stand on deeper, often unexamined, assumptions and traditions.

This study draws on three different methods of analysis. First, it uses ethnography, in that the data include the voices and actions of the exhibit team (or "culture," if you will). Second, it uses literary criticism, in that it treats the physical exhibition as a "text" with messages, both overt and covert, that bear interpretation. Third, it uses historical analysis, in that it refers to the circumstances of the past in order to distinguish and to characterize those of the present.

The work of detecting and interpreting this evidence follows a particular format, which is less a chronicle than it is a series of snapshots. Each chapter begins with a close look at one exhibit component, presenting an account of its preliminary versions along with the institution's debates surrounding its development. These debates dramatize some key issues in the field, which is itself then situated in a larger historical and critical tradition. Four exhibit components illuminate four issues, each of which penetrates at successively deeper levels the central question of the book—how the establishment of the museum education profession has changed the institution.

A Paradigm Shift

Basically, this book tells the story of education in museums. It is a story about the emergence of a new profession, and it is the story of a revolution—in values, knowledge, and power. Museum educators have brought visitors' perspectives to bear on the treatment of collections: how they are displayed, what is said about them, who does the saying. As