

**The Evolving Role of American Zoos in Bat Conservation**

Zoo personnel across the country are adopting a new perspective, and the results are benefitting bats: improved exhibits, creative educational programs, and ambitious conservation initiatives . . .

Fascione, Nina

**Zoo personnel across the country are adopting a new perspective, and the results are benefitting bats: improved exhibits, creative educational programs, and ambitious conservation initiatives . . .**

By Nina Fascione

For centuries, entertainment was the primary purpose of zoos, though some might say they also served to demonstrate human domination over nature. The origin of zoos can be traced back to Egypt circa 2500 B.C., where they began as private menageries assembled for royalty. The concept of exhibiting animals in captivity eventually spread throughout the world, with the first zoological parks in the United States being established in the mid-1800s.

As for most captive animals, the choice of bat species exhibited in zoos was historically based on an individual curator's or director's preference and the species' availability from the wild. Despite some interest on the part of zoo personnel, bats were never a high priority, with the possible exception of vampire bats, which many zoos maintained to fulfill public curiosity. In addition, there was relatively little outreach to educate the public about the natural history and ecological importance of bats.

Fortunately, the past few decades have witnessed significant changes in the philosophy and objectives of professionally managed zoos in North America. It is no longer acceptable for zoos to house animals in captivity merely for human amusement. The small roadside menageries that once existed strictly for recreation are rapidly becoming obsolete. They are being replaced by cultural organizations committed to more far-reaching goals, such as public education, research, and conservation, in addition to recreation. Bat programs in zoos are likewise improving, through the efforts of individual zoos and the collaboration of zoo personnel across the continent.

The Metro Washington Park Zoo in Portland, Oregon, offers one example of the new focus at zoos, as well as the public's changing attitudes towards bats. In 1991, the zoo built a bat display as part of an African rain forest exhibit, specifically to promote bat education, research, and conservation. The 60-foot-long, 10-foot-tall enclosure houses approximately 100 fruit bats of four different species. It was designed to let visitors view the bats at eye level and to encourage the bats to remain active. For example, the ends of the enclosure are wider than the center to allow more space for flying bats to turn around.

Dennis Pate, the Washington Park Zoo's general curator, designed the exhibit based on his experience with captive bats. It is the first exhibit of its kind, however, and Pate says, "I was very apprehensive about doing something so different because we couldn't predict the behavior of the bats." Pate and other zoo officials were pleasantly surprised by the bats' activity level and by how much visitors enjoy the exhibit. An exit survey of zoo visitor preferences showed that the bat exhibit was by far the public's favorite feature of the rain forest section, despite tough competition by popular animals such as monkeys, otters, numerous birds, and crocodiles (housed in an impressive underwater viewing enclosure). In fact, many people even stated that the primary reason they visited the zoo was to see the bats.

Several zoos are now housing bats with other animals in large, free-flight, aviary-style exhibits that visitors can walk through. "Jungleworld" at the Wildlife Conservation Park/Bronx Zoo in New York City features several large

Indian fruit bats (*Pteropus giganteus*), along with monkeys, Malayan tapirs, reptiles, and at least 50 species of birds. This Asian exhibit, built in 1985, covers approximately one million square feet and is heavily planted with tropical vegetation. According to Peter Riger, a zookeeper who has been caring for Jungleworld's animals for over two years, "People are taken aback when they see the bats hanging there, not separated from the visitors by anything. But I've never heard negative comments about the bats; people think they're pretty neat." The Henry Doorly Zoo in Omaha, Nebraska, also houses bats in a free-flight setting in their new Lied Jungle Building. Built in 1993, the Lied Jungle covers 60,000 square feet of display area and houses both Indian fruit bats and Egyptian fruit bats (*Rousettus aegyptiacus*), along with other tropical animals. The bats are visible during the day; however, it is in the evening when they become active that zoo visitors can experience nightlife in the jungle, complete with bats swooping overhead. The building houses a restaurant from which visitors can view the exhibit while they dine. Last year alone, 1.6 million people visited the Lied Jungle, and zoo personnel report that the public response has been overwhelmingly positive.

Bat education programs in zoos are receiving the same positive response as the new bat exhibits, and many zoo educators are now placing a greater emphasis on bats. Last year, Terry O'Connor, curator of education at the Woodland Park Zoo in Seattle, Washington, conducted a survey of bat education programs in North American zoos. Out of 113 institutions that responded to O'Connor's survey, 61 percent indicated that they offer education programs and/or provide other interpretive information about bats to the public. This figure was particularly impressive because not all of those zoos actually maintain bats in their exhibits.

The survey also revealed that most of the zoos provide educational programs for the general public and for school groups, both at the zoo and in classrooms. Many present information about bats as part of larger programs on such topics as tropical rain forests, native wildlife, nocturnal animals, flight, and the role of animals in ecosystems. Some also offer instruction specifically about bat biology, bat houses, and bat conservation. Furthermore, the survey showed that many zoos are relying on slides and other materials purchased from Bat Conservation International.

The Fort Wayne Children's Zoo in Indiana offers several bat-oriented programs, one of the most successful being their autumn bat house building workshop for families. With pre-cut boards supplied by the zoo, family members assemble bat houses for their own yards while learning about bats from zookeepers. Cheryl Piropato, the zoo's curator of education, comments, "As an educator, it's tough to develop programs that appeal to whole families. This program is so popular that the workshops always fill up. And the best part is that once or twice a year we receive phone calls from workshop participants telling us they now have bats in their bat houses."

Fifth-grade students come to the Fort Wayne Zoo to learn about bats in an interactive program called "How About That Bat?" The class focuses on unique features of bats by using props such as a bat costume. As a volunteer student puts on the costume piece by piece, educators discuss the importance of bat attributes, such as wings for flight and noseleaf and ears for echolocation. Afterwards, the fifth-grade teachers are given bat house instructions so that they may continue bat education when they return to their own schools.

Some zoos are including bat lessons in broader educational programs. The Birmingham Zoo in Alabama recently sponsored a weekend trip to Dauphin Island (in the Gulf of Mexico) for 30 middle-school students to experience marine biology up close. While they were there, zoo education curator Norma Lewis gave a slide presentation on bats. Despite a busy and exciting weekend of marine activities such as seining, trolling, and dissecting a squid, a post-weekend survey demonstrated that the bat lecture was the most popular activity.

In addition to new exhibits and increased education, zoos are also establishing conservation action programs for bats, both in captivity and in the wild. One of these programs is the Species Survival Plan, or SSP, developed by the American Zoo and Aquarium Association (AZA), a professional association representing 171 of North America's zoological institutions. An SSP is a cooperative program for the preservation of an individual species that is considered threatened or endangered in the wild. While the primary responsibility is to manage the breeding of a species in order to maintain a healthy and self-sustaining captive population, SSPs tend to take on numerous additional conservation projects for the targeted species, including relevant research and field conservation

initiatives.

One beneficiary of a successful SSP program is the Rodriguez fruit bat (*Pteropus rodricensis*), a highly endangered species from the Mascarene Islands in the Indian Ocean. In 1974, the wild population of Rodriguez fruit bats reached an all-time low of 70 individuals. Captive breeding efforts were undertaken in 1976 to ensure the survival of the species. In 1992, the SSP was established, and today there are close to 200 Rodriguez fruit bats in six AZA institutions. According to Steve Wing, curator of mammals at the Jacksonville Zoo and Rodriguez fruit bat SSP coordinator, "Rodriguez fruit bat numbers have been increasing in the wild. However, with the entire population residing on one island, it would take just one cyclone to put the species in serious jeopardy. Not only is the captive population of Rodriguez fruit bats a safety net for the species, it will serve as a model for conservation programs for other bat species."

Rodriguez fruit bats can be seen on display at five zoos: the Folsom Children's Zoo in Lincoln, Nebraska; the Brookfield Zoo in Chicago; the Philadelphia Zoo; the Metro Washington Park Zoo; and the Wildlife Conservation Park/Bronx Zoo. At the Brookfield Zoo, the Rodriguez fruit bats are housed in a 50-foot-long walk-through exhibit that has no barriers between the bats and the visiting public. According to Bruce Brewer, the zoo's general curator (who says this is his favorite exhibit in the entire zoo), over 90 percent of zoo visitors choose to walk through the exhibit even after learning that there are no barriers between them and the bats.

Another type of conservation program established by the AZA is the Taxon Advisory Group, or TAG. A TAG is a specialized committee that serves as an extension of the SSP by facilitating conservation and education programs for a particular group of animals. Bats were one of the first taxonomic groups for which a TAG was established. The Bat TAG began in 1991 and is composed of approximately 25 curators, biologists, and educators, along with numerous academic advisors.

One of the first tasks of the Bat TAG was to determine how many bats of which species were residing in North American zoos. As co-chair of the TAG, I conducted a survey of 128 zoos in North America in 1991. The survey indicated that 56 institutions housed 22 species of bats. Of these, only one, the Rodriguez fruit bat, was listed as an endangered species. (Since the survey was completed, a captive breeding program has been established for the endangered Pemba Island fruit bat [*Pteropus voeltzkowi*] at the Phoenix Zoo.) The survey also clearly demonstrated zoo personnel's growing interest in bats and bat conservation.

The next step for the TAG was to create a North American Regional Collection Plan to recommend which bat species to exhibit and why. The goal is to make the best use of zoo collections in the service of science and wildlife conservation by creating regional cooperative breeding programs. Different species might be recommended for different reasons. For example, straw-colored fruit bats (*Eidolon helvum*), a common African species, are a favorite of zoo curators because they are colorful, active, and social--all desirable characteristics for education and general animal management. The TAG does not maintain that all bats in zoos need to be, or should be, endangered species. On the contrary, unless captive breeding is deemed necessary for the species' survival, such as the case with the Pemba Island fruit bat, the TAG does not generally recommend zoo programs for endangered species. The basic philosophy of the TAG is that captive breeding efforts should support species' conservation in nature, not replace them.

To further aid animal managers, the TAG recently produced the Fruit Bat Husbandry Manual, which was distributed to all North American zoos housing bats. The manual is intended to provide general husbandry guidelines for managers of frugivorous bat species, which are by far the most common group of bats found in zoos. The volume contains chapters on housing, management, behavior and social organization, reproduction, nutrition, and health.

TAG members with expertise in specific areas share their talents and ideas through subcommittees, such as the Nutrition Subcommittee, which is working to develop nutritional guidelines for captive fruit bats. Last year, the Reproduction Subcommittee conducted a survey of bat reproduction in AZA-member institutions. The results of

this survey are helping to identify various husbandry challenges. The Zookeeper Subcommittee has been putting its efforts towards fundraising. Members raised over \$1,200 last year through projects such as recycling aluminum cans and selling Rainforest Crunch<sup>®</sup> candy. This money was used to purchase T-shirts for distribution on Tanzania's Pemba Island to increase interest in conservation of the Pemba Island fruit bat.

The AZA has requested that each SSP and TAG develop a five-year action plan of its conservation projects. In some cases, the TAG or SSP will support academic collaborators to complete projects of mutual interest; in others, committee members will conduct the actual projects themselves. The initial action plans of both the Bat TAG and the Rodriguez fruit bat SSP are still being developed, but will most likely include such projects as field conservation support, nutritional studies, reproduction studies, and education projects.

One of the Bat TAG's action-plan projects has already gotten off to a successful start. With a \$5,000 grant from the Walt Disney Company last year, the Education Subcommittee developed the "Bat Trunk" initiative. This program provides educational trunks filled with teaching materials for bat conservation programs in developing countries with threatened or endangered native species. The kits are being developed for three regions initially, and more will be produced as additional funds are raised.

The first three areas targeted to receive trunks are the Indian Ocean island of Rodriguez, home to the endangered Rodriguez fruit bat; Pemba Island, Tanzania, home to the endangered Pemba fruit bat; and peninsular Malaysia, where the TAG has arranged to work on bat conservation education in cooperation with the Malacca Zoo. Each trunk will contain a series of translated, culturally appropriate lesson plans and a variety of interactive components to educate elementary school children about endangered bats and their important role in the local ecology. Participation in this program will help students understand that certain species are unique to their country and will encourage them to help in local bat conservation efforts.

Less than two decades ago, programs such as these were no more than ideas. As zoo personnel continue to focus on education and species preservation, the transformation of zoos into active conservation centers should have a strong influence on the way the world thinks about bats and other wildlife.

Nina Fascione has been co-chair of the AZA Bat Taxon Advisory Group since 1991, and is currently a program associate in the Species Conservation Division of Defenders of Wildlife, where she works on wolf recovery issues. She was a participant in one of BCI's first Bat Conservation and Management Workshops, and we greatly appreciate her leadership in the zoo community.



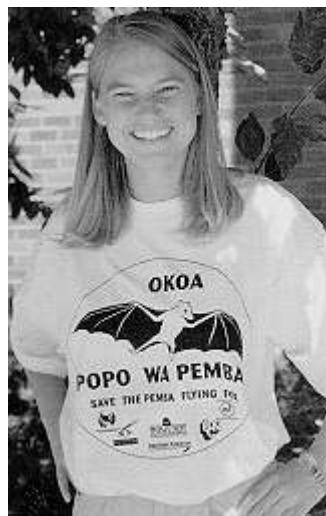
*Indian fruit bat*



*The Jungleworld exhibit at the Wildlife Conservation Park/Bronx Zoo exemplifies the new generation of bat exhibits. Indian fruit bats hang overhead amidst natural vegetation, with no barriers to separate them from visitors.*



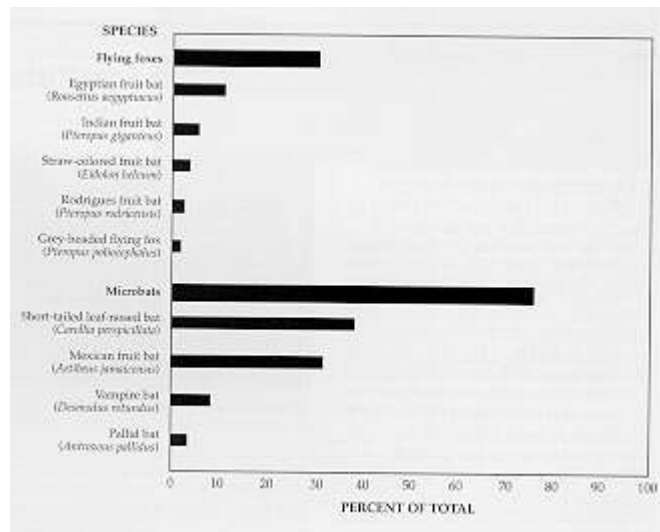
*Bats swoosh by on all sides as visitors watch at the Metro Washington Park Zoo's bat exhibit. A flip chart display helps visitors identify the four resident bat species and learn more about their natural history.*



*Randy Sargent models one of the T-shirts that the Bat TAG distributed on Tanzania's Pemba Island to increase interest in conservation of the Pemba Island fruit bat.*



*The short-tailed leaf-nosed bat, top left, and the Egyptian fruit bat, top right, are the most common micro and megabats found in North American zoos.*



*In 1991 the Bat TAG conducted a survey of 128 zoos, 56 of which housed bats. The survey showed that 22 species were represented in zoos nationwide. Excerpts of the survey are shown in the graph above, which indicates the percentage that certain species represent in the total number of captive bats, n=3,261.*

All articles in this issue:

- ▶ [On the Cover](#)
- ▶ [Bat Workers of the British Isles: A Report from Wales](#)
- ▶ [Learning about Bats, London-Style](#)
- ▶ [The Evolving Role of American Zoos in Bat Conservation](#)
- ▶ [Behind the Scenes of the Metro Washington Park Zoo's Bat Exhibit](#)
- ▶ [Zuri Retires at the San Antonio Zoo](#)
- ▶ [GUANO: BATS' GIFT to GARDENERS](#)
- ▶ [Members in Action: Randall Foy](#)
- ▶ [Conservation Dollars, the Easy Way!](#)
- ▶ [Volunteer Opportunity](#)
- ▶ [Wish List](#)
- ▶ [Members-Only Nights at Bracken Cave this Summer](#)

