

Elephant Management Protocol: Memphis Zoo

The purpose of this policy is to make known the mission of the Memphis Zoo as it relates to the management of elephants in captivity. The guidelines in this policy are intended to give emphasis to:

1. Personnel safety.
 - Safe working environment.
 - Appropriate direction , and supervision.
 - Appropriate safety procedures.
2. Optimal animal health and welfare.
 - Veterinary care.
 - Husbandry Standards.
 - Diet and Nutrition.
 - Enrichment.
3. Effective positive public image.
 - Education , keeper chats.
 - Elephant demonstrations.
 - Cultivation tours.

The Memphis Zoo has exhibited elephants since 1909. Elephants are very popular with zoo visitors. Elephants in the wild are still a keen conservation interest. Captive elephants serve as ambassadors for their wild counterparts. It is assured that the Memphis Zoo will exhibit elephants through the new millenium. The Memphis Zoo has managed the elephant collection utilizing a free contact method from 1909 to 1996. In the fall of 1996 the Zoo opted to pursue a protected contact style of elephant management. The necessary renovations to the facilities were completed. January through February , 1997 , the staff made the transition from free to protected contact. Protected contact is the current style of elephant management.

We currently house two African female elephants. Ty is 38 years old, Asali is 16 years old.

Our elephant Mission; " preserve wildlife through education, conservation, and research."

Goals: Maintain captive elephants in a safe way which is also conducive to their good mental and physical wellbeing. Highlight the elephants we maintain utilizing keeper-chats and other educational programs which spotlight elephant conservation issues.

Some of our contributions to research and conservation have been a carbon monoxide study, in conjuntion with Busch Gardens. A project by Woodland Park in the development of isolating and analysing elephant microsatellite DNA. A study by the University of Tennessee, Knoxville, was done with elephant waste. Specifically searching for "bugs" in elephant excrement. A study by Trinity University to ascertain the genetic variability of African elephants by assessing the heterozygosity of microsatellite alleles. Also, Dr. Dennis Schmitt was invited to perform transrectal ultrasound with our then fifteen year old, Asali, to determine reproductive status. Dr. Schmitt stated that Asali is a healthy candidate for reproduction. We are collecting and saving weekly and daily blood samples for research and reproductive assessment. We are awaiting participating in an encephalomyocarditis virus study in conjunction with the Tulsa zoo.

Personnel Safety

1. Two approved elephant staff are to be present whenever an animal is being trained or shifted. Both trainers will carry a radio for optimum communication.
2. Elephant shifting, training and handling must be done by trained Elephant Keepers. Approved Elephant Keepers must have a minimum of 6 months supervised elephant handling with experienced elephant handlers and at least 2 years experience as a Zoo Keeper. All elephant keepers are required to stay current with Elephant issues and the AZA requirements for Elephant Management. Unsatisfactory performance will lead to the removal of the keeper from the elephant training staff by the Curator of Mammals.
3. Faulty tools or equipment must be reported to the team leader or assistant curator.
4. Daily reports and animal journals must be completed.
5. The elephant enclosure, inside and outside, must be inspected daily. The safety fence between the elephant exhibit and the service area must be secure.
6. Pachyderm meetings will be scheduled regularly to promote staff communication of in-house elephant management policies. Also to address current AZA elephant issues.
7. All pachyderm staff must be aware of the Memphis Zoo's emergency handbook and policies. Simulated emergencies conducted by staff and management will prepare individuals to respond to emergencies.
8. A safety assessment team consisting of pachyderm team leader, assistant curator-hoofstock, curator of mammals, loss prevention manager and veterinarian shall conduct semi-annual elephant facility and program safety reviews. Records of each review will be kept on file and recommendations acted upon.

Animal Welfare and Emergencies

1. During the morning bath routine, a physical and psychological evaluation is conducted of each animal.
2. All abnormal elephant behaviors will be reported to the mammal curator and/or assistant curator, team leader and veterinary staff.
3. Footwork will be performed on a daily basis, consisting of nail work and pad trimming. The elephants will also remain familiar with foot soaking procedures and placing of their feet on x-ray cassettes for radiographs. Staff will receive on the job training to familiarize themselves with the tools necessary for footcare.
 - a. Daily footcare is performed as it keeps the elephants accustomed to having footcare done and allows staff to monitor any abnormalities, insuring that minor problems do not turn into major problems.
 - b. During the morning bath, the feet are soap scrubbed. This is especially crucial in the winter months when the elephants spend evenings indoors, as they tend to get urine burns around the edges of the pads. Scrubbing is as needed in the summer months as the 23 hours of movement outside provide enough abrasiveness to

naturally clean the feet and not warrant an actual scrubbing.

- c. Footcare consists of pad trimming. Keeping the bottoms of the feet as smooth as possible to de-nature foreign objects from lodging in the pad of the foot resulting in aggravations or possible infections. While trimming the pads it is necessary to keep the brown pigmentation in sight. If signs of white start to show it means that the pad is being trimmed to thin. Blackened edges of pads in the winter months generally indicate necrotic tissue, trimming of this tissue will promote healthy growth. Nail filing is done to prevent ingrown toenails and cracking. If a nail is splitting, a horizontal line may be scribed in the nail, above the crack, to insure that the nail does not split up to the cuticle. Koppertox, a nail hardener, may be applied to problematic nails. Necrotic tissue in the crack itself may be trimmed to promote new growth.
- d. Cuticle trimming helps clear the nail of debris collecting on the toenail possibly resulting in a weakened nail and to help keep the nail fungistatic.
- e. By daily care, the elephants also benefit by not getting bored with a long footcare session.
- f. Footcare time is allotted in the daily schedule. Generally this takes place in the elephants second training routine of the day.
- g. Daily footcare also allows newer staff to familiarize themselves with elephant foot procedures and allows staff to strengthen their bond with the elephants.

4. Pachyderm staff will work closely with veterinary and nutrition staff. The appropriate records will be kept for these departments.

5. Emergency Plans.

Elephant in the moat.

- a. Stay out of the moat and keep a safe distance from the animal while assessing the situation.
- b. Clear public and non-invited personnel. Close off the road in front of the exhibits to all traffic.
- c. If the elephant is not cast, secure the other elephant in the small lot and open the ramp door to the moat. Form a plan with staff.
- d. If an elephant appears cast in the moat, notify the zoo office to call General Services @ 272-1360 or Emergency Management Agency {Saturday/Sunday} @ 528-2780 for emergency crane service. Request the largest crane available and fabric chokers. If the crane is not available have the office notify Oldham @ 358-5000 or Barnhart @ 942-5438 for emergency crane service.

Elephant out of the exhibit.

- a. Clear public/personnel. Make a general announcement on the radio for safety reasons.
- b. Make the arrangements to close off the service road. Gates by the bridge closed and as many zoo vehicles/equipment as it takes to close off the East end of the service road.
- c. Assess whether or not Ty's present disposition is one that would let former free contact staff approach. If retrieving elephants manually, keep Ty between yourself and Asali.
- d. If the elephants are beyond the familiarity of the service area security fence, they may have to be tranquilized.

Elephant and human.

- a. Form an immediate plan with partner to get the animals away from the victim.
- b. Call for assistance with clearing the public. This call also serves to alert staff of a problem.
- c. If there is a human under attack, start the ERC motor as the elephants usually respond to ERC motor noise. Also buckets to simulate grain feeding may get their attention. If the animals do respond to these factors, try to shift them to the side that the victim is not. Once the area is

secure, get the elephants inside and notify security that it is safe to enter the exhibit where the victim is. If the elephants do not respond to keepers or the stimulants described, pepper spray may be the next alternative until the shoot team/Vet. staff arrive. Spray should be aimed towards the ground as it is the closest point to olfactory senses.

d. Depending on the situation/plan, it may be necessary to enter the exhibit utilizing Ty as a shield. No staff member will be required to do this.

Training and Exercise

Under the protected contact style of management the keeper staff and the elephants do not share the same unrestricted space. All training, shifting and interaction with the elephants is accomplished with two pachyderm personnel present.

The elephants are trained through three routines daily. Training consists of :
Separating the animals three times daily.

Plan for Separation: Outside

- a. In the come in line, one elephant is asked to shift to the adjacent exhibit.
- b. If Asali will not leave Ty, we have them come in line on Asali's routine station position. *If a fails, b is the next step. If b fails, we go to a time out.*
- c. Next attempt, a or b is repeated. *The length of a time out usually will calm the elephants, and give the staff the opportunity to alleviate the problem if it is an environmental one.*
- d. If the elephants{Asali} will not separate, we shift them inside.

Plan for Separation: Inside

- a. Have the elephants line up in Ty's stall and ask Asali to shift.
- b. If Asali will not shift, we can allow Ty to push her out of the stall. *Asali came untrained and we came across this effective tool by accident, while trying to train Asali to separate. We have never not been able to separate our elephants.*

Shifting the animals through the restraint chute daily.

Daily baths, skin care and foot care routines.

Veterinary procedure behaviors and desensitization's.

Training three times a day encourages movement/exercise of the animals. The elephant habitat includes 9,106 sq. ft. of outdoor exhibit. The indoor total enclosure has 1,791 total sq. ft..

Exercise requirements:

- a. The elephants are required to stretch or go in a down position during the daily bath.
- b. Put four feet on stools and keep them there for required foot care.
- c. Be able to physically complete all of the behavioral components, which are graded in the daily log after each training session.

Other stimulants:

- a. The mud hole that they utilize is at one end of the exhibit, at the lowest elevation.
- b. Hay is distributed around the exhibit, encouraging the elephants to retrieve the hay and take it to their favorite places.
- c. Daily browse stimulates natural behaviors and is generally offered at the lowest point of the exhibit so on return they have an uphill walk.
- d. The elephants have access to the outside enclosure 23 hrs. out of the day for approximately 7 months out of the year, with the other 5 months having daily access.

Training is geared towards the suggested AZA behavioral components. We also train non-essential behaviors for variety and mental stimulation. We strive for 100% compliance with all of our behaviors. Behaviors are graded in the daily training logs.

Discipline

The form of discipline utilized is the withholding of a positive reinforcer, generally a small piece of fruit or vegetable. The animals are then shaped, with positive reinforcement, to give compliance with the desired behavior. Giving the elephant a "time out" is another form of discipline. During the brief time out period, the positive reinforcer is withheld. This could be food or tactile depending upon the animals personality profile. After the brief time out period the animal is given another opportunity to perform the desired behavior for the specified reinforcement.

Veterinary Procedures

Most veterinary procedures can be performed with the elephant trained for and willingly cooperating such as blood collections, skin/foot care, eye, ear, mouth and dental exams. However there may be a medical procedure requiring the animal to be restrained in the elephant restraint chute. This would be for safety of personnel and the animal alike. Evacuations, ultrasound and endoscope/biopsy procedures have been performed in the restraint.

Enrichment

The elephants are required to have browse as often as possible. Our daily log has a designated daily entry for browse and enrichment. The browse and enrichment are often interchangeable. The amount of browse that we have been able to supply the elephants with offers them hours of stimulation. Browse is varied as much as possible and the amount depends upon the seasons. In addition to daily browse, the elephants training routine is varied at certain times such as the place that they are trained. Also they receive tires tied and suspended. A spray mister was installed above the exhibit. Sand is periodically hauled into the exhibit. Barrels with ropes tied to them have been offered. A mud hole is kept with water in it. In the heat of the summer, spraying off with a water hose is offered. Boomer balls, logs and back scratching devices are periodically offered. Enrichment is labor intensive, and time can sometimes be a competitor. Realizing this issue, elephant staff has voted not adhere to an enrichment calendar. Our choice is to continue our system of ad-libbing every day, which has proven to be what works for our institution. Our enrichment logs can back this statement.

Weather

In the event of serious windstorms, heavy rains, or lightning storms, the elephants should be brought inside the building. All staff must be aware of the weather forecast. During the winter months we will try to give our elephants the benefits of outside exercise as much as possible. Forty degrees and dry should be the cold weather cut-off point, where the animals will be brought inside. However if the sun is shining, no wind and above 33 degrees F., and the elephants can be physically monitored, they may be able to go outside for approximately one hour intervals. Humidity will also be a determining factor.

Public Education

The pachyderm staff participates in educational keeper chats in front of the exhibits daily, scheduled at 2:30. Since the TWRA has classified elephants as class 1, we

are no longer extending interactive tours with the public. We do certain cultivation tours of the elephant barn and facility. These talks and certain behind the scenes tours can be a powerfully effective means of teaching zoo enthusiasts about elephants and elephant conservation. Staff also works with the education department and in addition to the daily chat, staff delivers elephant talks to education classes. We have also supplied the education department with classroom material from the Elephant Managers Association.