

1/9/2007

Dallas Zoo Elephant Program Assessment
Reviewer: Sharon Joseph, Houston Zoo, Inc.
July 27-28, 2006

EXECUTIVE SUMMARY

The zoo requested an outside review of their elephant facilities and program. This review was conducted over a two-day period and consisted of direct observations made while spending time in the barn and working with the keepers, an examination of the elephant management policies and procedures, as well as personal interviews with the curatorial, veterinary, supervisory, and keeper staffs. During my time at the Dallas Zoo, I was given full access to any and all documentation requested.

The program overall is sound. The keeper staff is dedicated and enthusiastic about what they do. The veterinary staff is interested in and knowledgeable about elephant husbandry and medicine. As is the case with most captive animal management programs, there is always room for improvement. The staffs are very earnest in the desire to make facility and program improvements in order to provide the highest level of quality in care for the elephants.

I thank the staff members for their hospitality and their openness and respectfully offer the suggestions contained in the body of this document below.

Program

The elephant management system at the Dallas Zoo is a well-defined protected contact program consisting of a herd of 0.2 African elephants and a staff of one supervisor and seven keepers. The zoo has indicated to AZA that it wants to continue as a cow holding institution but may be able to serve as a bull holding facility in the future if expansion is approved. At this time, the zoo is only holding two cows, but they are compatible.

The staff is fairly familiar with the AZA Standards for Elephant Management and Care but most expressed that they could benefit from further review. A review of the zoo's compliance with AZA Standards appears as an appendix at the end of this document.

Recommendations:

- Review the AZA Standards for Elephant Management and Care with all staff members, including the vets, making sure that everyone knows where the program and facility do and do not meet standards.

Staff/Safety/Communication

The keeper staff, while young and inexperienced, is very passionate about providing uncompromising excellence in animal care. They appear to work together quite well. Staffing levels are adequate to the needs of the elephants and other section species. The team sees their ability to "work with what they have" as one of their biggest strengths.

The vet and keeper teams are working well together, although opportunities for more dialogue were identified in this visit. The vets reported that communication with the curator and the keepers is good.

1/9/2007

There is a good plan in place for integrating new keepers into the elephant program, but the execution of that plan is not always timely or complete. There is some frustration on the part of the staff as regards getting checked off to advance through the trainee levels. Check-in's are sporadic and opportunistic as opposed to structured. This process has been hampered, in part, by the supervisor's absences this year. Performance plans are supposed to be done for each keeper every six months but aren't happening on a regular basis. In some cases, the delay in "qualifying" keepers has resulted in a hardship on the team in terms of daily staffing.

The current supervisor will be transferring to another zoo section in the near future and a new supervisor will be hired. While there is some anxiety about what these changes will bring, the overriding sentiment is one of excitement about the prospects of moving the program forward and taking it to the next level. Both the vet and keeper staffs would like to be involved somehow in the interview and selection process.

Right now, due to personal scheduling issues, the supervisor is not present for the most critical portions of the day – during shifting in and out for cleaning and for morning training sessions.

Safety protocols and measures in place are impeccable. Regular safety assessments are occurring and written inspection reports are produced. Re-stripping of the red safety line in the barn needs to be done.

Everyone I spoke with mentioned the need to re-establish regular Elephant Management Team meetings. There are weekly supervisor/keeper meetings that are typically occurring. These are always scheduled on the same day, so at least one keeper has not been involved in any of the meetings.

Of concern was the fact that the vets and the keepers were unable to articulate the overall goals for the elephant program at the Dallas Zoo. Most felt comfortable about what their own short-term goals were but were not clear on the long-range plan or goals.

Recommendations:

- Curator should assume responsibility for holding supervisor accountable for meeting milestones and deadlines for staff training.
- Consider ways to include the keepers and the vets in the interview/selection process for the new large mammal supervisor.
- Re-stripe the red safety line in the barn.
- Conduct monthly Elephant Management Team meetings; include the curator, supervisor, all the vets and all the keepers, and at least one member of the senior leadership team.
- Alternate the days for weekly supervisor/keeper meetings to maximize attendance by all keepers; make clear that catching up on meetings missed by reading the meeting minutes is the responsibility of each individual.
- Suggest conducting goal-setting sessions as a team, including the vets in the process.
- Find ways to support more developmental opportunities for the keepers (PEM attendance, EMA Conferences, visits to other programs, keeper exchanges, etc.) – the learning and networking they experience will accelerate their growth as elephant keepers.

1/9/2007

Facilities

The elephant facilities at the Dallas Zoo are deficient in two areas according to AZA Standards.

Stall space falls short of the 800 ft² required for two elephants by about 70 ft². The work-around for the deficiency in stall space is that cows are only locked in the barn for ~ 10 nights a year since the climate is so mild. The AZA Accreditation Commission has granted a variance for this condition until March 26, 2007.

The second area of deficiency relates to the stall floors and the fact that they are not impervious to water, quick to dry, or in good repair. Re-surfacing of the stall floors is scheduled within the next month.

Staff expressed frustration in the response time for necessary facility repairs and modifications (e.g., substrate replacement, installation of new shade structure, etc.). Keepers are anxious to improve the living conditions of their elephants.

Recommendations:

- Ensure that the floor re-surfacing and shade projects are completed as planned.
- Develop and implement a strategy to address the stall size deficiency before March 26, 2007.
- With the keepers, establish a system for identifying maintenance needs and work with your maintenance department to mutually agree on timelines and strategies for work completion.

Husbandry/Medical

Overall, the elephants are well cared for. Most, but not all, of the PEM-recommended husbandry behaviors/procedures can be accomplished. That list of behaviors appears as an appendix at the end of this document. The relative importance of the behaviors not yet trained must be determined by the animal care and veterinary teams in concert with prioritized plans and timelines produced for those deemed necessary.

Elephants are visually inspected each day and staff has the experience level necessary to evaluate the routine health and welfare (body condition, feet, skin, behavior, abnormal physical changes, etc.) of the cows. Both cows are receiving annual physical exams that include trunk washes and vaccinations. However, the vets would like to see more thorough exams and feel that the inability on the staff's part to obtain regular blood samples from the cows hampers that effort. There has been incrementally very little progress on training the cows for radiographs, although x-rays were recently successfully taken on "Keke's" feet.

Also of concern to the vets is the fact that cows are not trained to accept oral and injectable medications, abdominal palpation, rectal temperatures, rectal palpation, and thorough oral cavity exams including swabs. Although the cows are not in a breeding situation, the vets feel that it would still be important to complete reproductive tract assessments via transrectal ultrasound from a health assessment standpoint.

Both vets and keepers expressed the feeling that the chaining behavior should be re-established with the cows as this could be a valuable tool to have in the "tool box" in the event it is needed for treatment of serious illness or injury. There has been very little progress in this regard during the tenure of the three primary keepers I spoke with and it is not apparent where this project falls within the training priorities.

1/9/2007

The associate vets make regular visits to the barn to look at the elephants and/or check-in with the staff; the animal care team would like to see more of this. The solution to everyone's busy schedules may be to book time together in advance.

Foot care protocols, practices, and documentation are excellent, among the best that I have reviewed. The cows spend up to six hours during the day on the concrete "patio" as well as an indeterminate amount of time at night. This may be contributing to foot problems that are now being seen in "Jenny." The addition of a new shade structure is expected to encourage the elephants to move off of this surface onto natural substrate and should concurrently enhance public viewing of the animals.

Body weights on the cows have not been obtained for approximately two years, and there is no other objective system in place to evaluate body condition. A well-written daily exercise program for the cows is included in the policy manual but the keepers were not aware of it and it does not reflect current management practices. Although the size of the yards is small, creative solutions could be found to provide more exercise opportunities for the elephants, given additional focus and effort on the part of the staff.

Nutrition

The Dallas Zoo is fortunate enough to have a full-time, dedicated Nutritionist. Some observations on the diet currently being provided to the cows:

Pellets: The cows are receiving Mazuri ADF-25 Herbivore Pellets and Mazuri Elephant Supplement Pellets. The Mazuri ADF-25 Herbivore Pellets are high in starch and the Mazuri Elephant Pellets contain very little fiber (9.4%).

The Nutrition Advisor to the AZA Elephant TAG/SSP is now recommending the use of Mazuri Wild Herbivore Hi-Fiber Pellets, which contain 27.7% fiber and only ~ 4% starch. The additional fiber in this pellet might also assist with the colic issues being exhibited by "Keke." As both cows are significantly overweight (> 500 pounds per visual assessment), the reduction in starch would be beneficial.

Supplements: Cows are receiving Emcelle Tocopherol daily to supplement Vitamin E levels. However, circulating Vitamin E levels are not monitored because regular blood sampling is not occurring. Recommend monitoring Vitamin E levels quarterly once regular blood samples are being obtained.

Although no scientific support exists, anecdotal reports suggest that Nutritone or Biotin can promote nail, pad, and cuticle health. Beet pulp is considered by the Nutrition Advisor to the TAG to be a better alternative for the treatment and prevention of colic than bran.

Produce: Produce amounts, particularly those items with high sugar content, appear to be excessive and more greens could be provided.

1/9/2007

A sample weight loss diet is provided below for an animal at 3332 kg with a target weight of 3160 kg.

M = maintenance T = training E = enrichment S = supplement

Food Type	Diet Type	Individual		Group		Schedule
		Measure	Weight	Measure	Weight	
Pellets, Mazuri Wild Herbivore Hi-Fiber	M		1.8 kg			Daily
Hay, coastal bermuda	M		30.45 kg			Daily
Hay, alfalfa	M	1 flake	2 kg			Daily
Browse	E		free choice			ad libitum
Peanut butter	T		20 g			Daily for meds
Honey	T		20 g			Daily for meds
Bread	T		200 g			Daily for meds
Emcelle Tocopherol	S	42 ml				Daily
Daily: select only 4 items from the list below						
Kale	T/E		3 kg			
Carrot	T/E		1 kg			
Apple	T/E		2 kg			
Corn	T/E		200 g			
Celery	T/E		2 kg			
Broccoli	T/E		1 kg			
Orange	T/E		50 g			
Banana	T/E		170 g			
Yam	T/E		2 kg			
Beets	T/E		2.4 kg			
Pear	T/E		200 g			
Mango	T/E		100 g			
Raisins	T/E		50 g			
Cantaloupe	T/E		270 g			
Biscuits, primate	T/E		200 g			

Recommendations:

- Some discussion needs to occur with the vets to ensure consensus on what constitutes a "complete" body exam.
- Animal care and vet staffs to work together to set training priorities for the animals as well as timelines and milestones that are practical; mutually discussing obstacles and strategies to overcome them.
- Obtain body weights on both cows as soon as possible and regularly thereafter (at least annually).
- Investigate other methods of assessing body condition in the interim such as body scoring charts.
- Review and implement the daily exercise program; solicit input from the keepers on other exercise initiatives that could be employed. One idea would be to get elevated hay nets that would encourage the cows to extend their trunks in order to obtain hay. This would also be good occupational enrichment as it would stretch their meals out over longer periods of time.
- Initiate discussions with the Nutritionist and vet staff about diet changes to potentially improve nutrition and effect weight loss in the cows.

1/9/2007

- Begin monitoring circulating Vitamin E levels in the cows quarterly once regular blood samples are being obtained.

Training/Enrichment

Staff appears to be knowledgeable about training terminology, theory, and techniques. The Dallas Zoo regularly utilizes the services of an outside animal training consultant. There is a comprehensive catalog of the repertoire of behavioral commands in the policy manual. During the training sessions that I observed, the elephants were generally responsive to behavioral commands. There is room for improvement in terms of ensuring consistency between trainers so that expectations for the elephants are clear to both staff and animals. The use of training plans is sporadic.

Keepers seemed to understand the intent of the "two-person rule" utilized at their zoo but had difficulty articulating it clearly and concisely. I would suggest something along the lines of "two handlers must be in immediate proximity (both visual and auditory contact) when a handler is within trunk's reach of an elephant. During shifting or working with an elephant when the handler is not within trunk's reach, the back-up handler must be in auditory contact."

The written enrichment protocols included in the policy manual are very thorough in outlining the essential elements of a good enrichment program. However, the keepers appeared to be unfamiliar with these documents. Enrichment is occurring on a daily basis and is being documented on the keeper reports. Keepers reported that they have begun work on more structured planning and scheduling of enrichment initiatives.

Recommendations:

- Ensure that training plans are in place and utilized for trained behaviors.
- Complete the development of cues and criteria for all trained behaviors.
- Include the vets in setting training priorities for husbandry behaviors.
- Implement a system for providing peer feedback following training sessions.
- Consider videotaping training sessions for discussion by the group.
- Review and consider revising the "two-person" rule so that it is more clear and concise.
- Consider investing in some inexpensive (~ \$30.00/ea) Motorola walkie-talkies for use during shifting when keepers do not have visual contact with one another to ensure that elephants are clear of all moving door/gate parts
- Complete enrichment planning and scheduling strategy; once complete, consider implementing a method of evaluating the efficacy of enrichment initiatives.

Documentation

All elephant management policies and procedures were recently revised and a copy was distributed to the keepers. The notebook produced is one of the best that I have reviewed. However, the policy manual did not reflect current management practices in all cases (e.g., enrichment protocols, daily exercise program, integration of new keepers into the program, etc.). Keepers and vets did not appear to be familiar with all of the documents contained in the manual.

The safety policies and procedures are very comprehensive as are the protocols for routine foot care.

1/9/2007

As mentioned, there is room for improvement in the documentation of training and enrichment.

Recommendations:

- Review the policy manual section-by-section with the keeper and staffs to ensure that the policies reflect current management practices.

Education / Research / Conservation

There was no content in the Education section of the policy manual. Keepers thought that educational programs about elephants and elephant conservation existed but did not describe them. Educational graphics about the elephants are in place.

The cows are routinely (about 5X/week) trained in front of the public, affording the keepers opportunities to interact with guests. There are very few structured "keeper chat" opportunities. The keepers expressed that they would like to do more guest interaction.

While the Dallas Zoo has participated in captive elephant research in the past, they are not currently involved in any research. The zoo contributes funds to the International Elephant Foundation towards its conservation efforts and has indicated that they would like to increase the level of its support.

Recommendations:

- Determine if the zoo has programs in place to educate guests about elephants and elephant conservation. If not, the education and animal care teams can work together to develop programs. The key educational message points about elephants that were developed by the Elephant TAG/SSP can be incorporated into this process.
- Develop a more structured format for keeper interaction with guests and increase the frequency.
- Seek out opportunities to participate in captive elephant management research; the TAG or IEF can assist you in identifying appropriate projects.
- As funding allows, consider increasing level of support for *in situ* conservation efforts.

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PROGRAM			
Yes	No	Other	Element
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Is the management system well-defined?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Has the institution designated to the AZA what its elephant program commitment level is? (What is the institution's stated level of commitment to its elephant program?)
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Is everyone on the staff familiar with the AZA Standards for Elephant Management and Care? Does everyone know where the institution does and does not meet these standards?
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Holding three or more cows? If not, why not?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Does the institution avoid mixing African and Asian elephants together?
FACILITIES			
Yes	No	Other	Element
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Are elephants kept outside on natural substrates as much as possible?
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Are there outside heat sources for temperatures below 40° F.?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Do elephants have access to adequate shade when temperatures are above 80° F.?

Comments

Program is a well-defined protected contact system; only deviation is that staff is willing to chain their elephants for necessary husbandry or medical procedures

Institution has indicated to AZA that it is interested in serving as a cow holding institution and that they may be able to serve as a bull holding facility in the future

Staff, including the vets, reported that they were familiar with the standards and that they knew where their facility and program were and were not meeting standards; all felt that they could benefit from further review of the standards as a team

Holding only two cows at this time due to space issues; however, the two cows are very compatible

Holding only African cows at this time

Comments

The outside yard is primarily natural substrate but cows spend an excessive amount of time on concrete while on "patio" area; this may be contributing to foot issues with one of the cows

There is no outside heat provided; however, cows are given access to a heated barn during cold weather and are only occasionally locked into the barn (~ 10 or so nights a year when temperatures fall below freezing)

There are plans to install more shade in the near future that would get the cows off of concrete "patio" and move them closer to the public for better viewing opportunities

Yes	No	Other	Element	Comments
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Are indoor spaces ventilated and heated to maintain 55° F.?	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Is there at least one room capable of maintaining at least 70° F.?	
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Is there a minimum stall space of 400 ft ² per individual animal?	Current stall space falls short of AZA Standards by approximately 70 ft ² ; a variance has been granted by the AZA and will be in place until March 26, 2007
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Is there a minimum outdoor space of at least 1,800 ft ² per animal? Additional 900 ft ² per additional animal?	In the planning stages for a new ~ 3 acre facility
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Does the institution have the ability to separate or isolate animals for behavioral or medical purposes?	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Are outdoor yard surfaces primarily natural substrate?	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Are there rocks, tree stumps, or other furniture items available in the enclosure(s) for rubbing and scratching?	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Is animal containment of sufficient height/strength and in good condition?	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Are dry moats absent from the enclosure design?	
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Are stall floor surfaces impervious to water, quick to dry, and sloped to a drain? Floor surfaces appropriate?	Existing floors do not meet these criteria (per keepers) but there is a plan to install new flooring within the next month
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Is the door and gate design/condition appropriate? Is back-up power provided for hydraulic or electric gates?	A manual override system is in place in the event of power failure
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Is the response time for solving facility maintenance issues acceptable?	Staff expressed some frustration with necessary repairs and modifications not occurring in a timely manner (i.e., substrate work, installation of shade, etc.)
HUSBANDRY				
Yes	No	Other	Element	Comments
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Are enclosures cleaned of excrement daily?	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Is there regular access to water sources for drinking and bathing?	Drinking water in the exhibit is from the pool only; however, elephants have access to a continuous flow of fresh water that feeds the pool

Yes	No	Other	Element	Comments
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Is an appropriate diet provided for the elephants?	There is opportunity for more discussion on the diet relative to the need for the elephants to lose significant weight
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Are fresh browse and produce used in the diet and for enrichment?	Produce is offered daily and browse is offered 3-4 times per week
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Are the elephants visually inspected every day? (Where are observations recorded?)	Elephants are inspected by the animal care team daily but there is an opportunity to discuss more in depth what the vets would like to see in this inspection
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Is the skin of every elephant thoroughly inspected daily and cared for as needed?	Elephants are bathed almost daily and skin is inspected at this time
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Do the foot care protocols include daily cleaning and inspection of each elephants' feet?	Foot care protocols, practices, and documentation are excellent
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Is there an ability to manage aggression within group?	
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Is body weight recorded at least twice a year (actual weights, standardized body measurement tables, photographs)? If not, how is body condition assessed?	Body weight has not been recorded for approximately two years and there is no other system in place to objectively assess the weight of the elephants; recommend obtaining weights as soon as possible and investigating the use of a body scoring system
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Is there an ability to manage introductions and separations?	Social interaction -- yes; exercise -- limited
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Are opportunities provided for each elephant to exercise and interact socially with other elephants?	
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Are weekly or bi-weekly blood samples being submitted for hormone analysis?	Blood collection is fairly reliable with one of the cows but the behavior has broken down with the other cow and is in the process of being reshaped; this is a source of concern for the vets who feel they are not effectively able to monitor the health of the animals; when blood was being regularly collected, staff did not seem to know if hormones were being monitored in the cows
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Has each cow been reproductively assessed by transrectal ultrasound?	Cows have not been reproductively assessed, at least not while at the Dallas Zoo; this is a source of concern for the vets because even though the cows are not in a breeding situation, it would be important to assess the reproductive tracts of these cows from an animal health standpoint

DOCUMENTATION			
Yes	No	Other	Element
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<p>Does the institution have a written elephant management policy?</p> <ul style="list-style-type: none"> ▪ Mission and goals ▪ Guidelines for handling, training, and translocation ▪ Plan to separate animals from one another, safety manage aggressive elephants ▪ Staff management policies, including safety protocols ▪ Individual elephant profiles ▪ Incident reports (all cases in which elephants are aggressive towards keepers or the public) ▪ Emergency response protocols
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<p>Have behavioral profiles been developed for each elephant? Are these profiles updated annually?</p>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<p>Is there a written environmental enrichment plan and evidence of its implementation?</p>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<p>Is there a written protocol for routine foot care and evidence of its implementation?</p>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<p>Is there a written daily exercise program?</p>
			Comments
			<p>The elephant management policies and procedures have recently been revised and appear to be very well done; this work was done primarily by the curator and the supervisor with limited input from the keeper and vet staffs; policy manual does not reflect current management practices in all cases</p>
			<p>Keepers were actively involved in the development of these documents</p>
			<p>Well-written enrichment plans and protocols exist in the policy manual, but keepers did not appear to be aware of them; enrichment is occurring on a daily basis but documentation could be improved and there is currently no method of assessing the efficacy of enrichment measures; staff is working on developing a plan and documentation system</p>
			<p>Excellent protocols, practices, and documentation of foot care</p>
			<p>There is a written daily exercise program but keepers appeared unaware of the plan; the yard is small so there are some limitations to what can be done but more exercise could be encouraged for the cows with more effort and focus on the part of the staff</p>

MEDICAL				
Yes	No	Other	Element	Comments
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Is there an on-staff veterinarian(s)?	Three full-time vets, two primarily involved in clinical work and one department head who spends much of his time on administrative duties
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Are all elephants receiving thorough annual physical examinations? What do exams consist of?	Routine physical exams occur annually along with trunk washes and vaccinations; the vets are not satisfied with the thoroughness of these exams primarily because regular blood samples cannot be obtained
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Are fecal exams done at least twice a year to check for parasites or other health problems?	Fecal cultures are obtained in conjunction with routine parasite screening
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Is the institution adhering to USDA APHIS requirements for testing and treatment of tuberculosis?	
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Have baseline foot radiographs or thermographs of all adult elephants been done?	Radiographs have been successfully taken with one of the cows but not the other; this behavior is being actively trained by staff
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Is a restraint device present? If not, does the institution have the ability to demonstrate a method of restraint that allows all necessary husbandry, veterinary, or reproductive procedures to be completed safely?	
TRAINING AND ENRICHMENT				
Yes	No	Other	Element	Comments
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Are consistent cues and criteria been set for each trained behavior?	The development of cues and criteria for all behaviors has been started
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Are there measures in place to ensure consistency between trainers?	Recommend more structured feedback sessions after training sets; could consider videotaping training sessions for discussion by the group
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Are elephants trained for complete daily body exams (feet, eyes, ears, open mouth, tongue, teeth, tusks)?	Some discussion needs to occur with the vets to ensure consensus on what constitutes a "complete" body exam
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Are elephants trained to accept injections, oral medications, ear or leg vein catheters, treatment of wounds, enemas, urogenital examinations?	Training of cows to accept oral and injectable medications is a priority for the vets

Yes	No	Other	Element	Comments
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Are elephants trained for regular collection of blood, urine, feces, saliva, semen, skin biopsy, temporal gland secretions?	Blood – no, urine, feces, saliva, temporal gland secretions can be collected opportunistically; semen – n/a
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Are training tools and techniques appropriate?	Staff appears to have a good grasp of training theory and techniques and the zoo is utilizing the services of an outside training consultant; training plans are not regularly used
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Are chaining procedures and durations appropriate?	Chaining of cows in order to maintain this behavior has been identified by both animal care and vet staffs as a priority
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Is there an approval process for enrichment items?	By supervisor and chief veterinarian
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Is there a process for documenting enrichment and evaluating its effectiveness?	A method will be developed; could be a simple three-point scale (e.g., strong interaction, interaction, no interest, etc.)
STAFF/SAFETY				
Yes	No	Other	Element	Comments
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Is one person designated as elephant manager?	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Has the elephant manager attended PEM?	
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Have other staff members (curators, keepers) attended PEM?	The curator has attended PEM but keepers have not
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Is the number of staff adequate to properly care for the elephants?	When all positions are filled, the staffing level is appropriate to care for the elephants and other section species
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Is there a structured training program in place for integrating new staff into the program?	Structured training outline and checklists are in place but the execution of these plans is sometimes slow or incomplete
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Are regular elephant management team meetings conducted? (Are notes from these meetings published?)	Recommend monthly meetings with curator, vets, elephant manager, keepers, and at least one member of the senior leadership team (meeting minutes to be produced)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Is indoor lighting ample to maintain staff safety?	
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Is there a "two-person" rule and can staff articulate what that rule is?	Keepers seemed to understand this rule but had difficulty articulating it clearly and concisely
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Is the institution conducting regular safety assessments (at least 2X/year)? Are written records for these inspections produced and kept on file?	Focus on animal, staff, and facility safety is excellent

1/9/2007

EDUCATION/RESEARCH/CONSERVATION			Comments
Yes	No	Other	Element
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Does the institution have programs to educate zoo guests about elephants/elephant conservation?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Are elephant graphics informative and up-to-date?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Does the institution conduct any public training demonstrations, keeper chats, "meet the keeper," etc.?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Does the institution contribute resources to elephant research?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Does the institution contribute to <i>in situ</i> conservation of elephants and/or their habitats?

Did not determine (nothing in manual but keepers thought this was affirmative)
 Adequate, but could be improved
 Interaction with the public is typically informal as opposed to structured keeper chats; keepers expressed that they would like to do more visitor interactions
 Contributes funding to the International Elephant Foundation and has participated in research in the past but is not currently doing so
 Contributes funding to the International Elephant Foundation; expressed a desire to increase the level of support

Elephant Husbandry Behaviors
Dallas Zoo Checklist

Elephant: "Jenny"

Husbandry Behaviors -- "Jenny"	Not Trained	In Training	Complete & Reliable	N/A	Comments
Daily body exam	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Bathe/scrub/treat skin	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Daily foot inspection	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Trim all feet	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Foot x-rays/thermographs	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Eye exam	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Ear exam	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Oral exam (mouth, tongue)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Teeth/tusk exam	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Tusk trim	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Blood collection from ear	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Blood collection from leg	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Urine collection	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Can be done opportunistically
Fecal collection	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Can be done opportunistically
Saliva collection	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Can be done opportunistically
Temporal gland secretion collection	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Can be done opportunistically

Husbandry Behaviors – "Jenny"	Not Trained	In Training	Complete & Reliable	N/A	Comments
Trunk wash for TB testing	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Skin biopsy	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Collection of milk from lactating females	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Urogenital exam	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Rectal palpation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Enema	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Transrectal ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Transabdominal ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Reproductive assessment	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Semen collection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Accepts injections	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Is currently opportunistic, would like to train
Accepts oral medications	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Enters ERD/chute (remains inside with doors closed)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Allows chute walls to move	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Allows husbandry procedures while in chute	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Allows veterinary procedures while in chute	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Leg restraints	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Separation training	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Can separate when/if necessary

Elephant Husbandry Behaviors
Dallas Zoo Checklist

Elephant: "Keke"

Husbandry Behaviors – "Keke"	Not Trained	In Training	Complete & Reliable	N/A	Comments
Daily body exam	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Bathe/scrub/treat skin	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Daily foot inspection	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Trim all feet	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Foot x-rays/thermographs	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Radiographs have been obtained from "Keke"
Eye exam	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Ear exam	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Oral exam (mouth, tongue)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Teeth/tusk exam	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Tusk trim	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Blood collection from ear	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Blood collection from leg	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Urine collection	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Can be done opportunistically
Fecal collection	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Can be done opportunistically
Saliva collection	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Can be done opportunistically
Temporal gland secretion collection	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Can be done opportunistically

Husbandry Behaviors – "Keke"	Not Trained	In Training	Complete & Reliable	N/A	Comments
Trunk wash for TB testing	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Skin biopsy	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Collection of milk from lactating females	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Urogenital exam	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Rectal palpation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Enema	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Transrectal ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Transabdominal ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Reproductive assessment	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Semen collection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Accepts injections	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Is currently opportunistic, would like to train
Accepts oral medications	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Enters ERD/chute (remains inside with doors closed)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Allows chute walls to move	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Has not been totally squeezed down in chute
Allows husbandry procedures while in chute	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Allows veterinary procedures while in chute	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Leg restraints	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Separation training	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Can separate when/if necessary