

CAZA Elephant Care Manual

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The material in this document applies to the husbandry and management of both African (*Loxodonta africana*) and Asian (*Elephas maximus*) elephants. This document reflects present day practices, which are based on current scientific data and the cumulative experience of our membership. It was developed to optimize the animals' physical and psychological health, environmental conditions, and to maximize the educational and scientific value of elephants in human care. These standards and guidelines have been developed to help assist facilities that currently manage or are planning to maintain elephants.

These standards and guidelines recognize and reflect a broad range of elephant management styles, however, CAZA believes an elephant management facility that does not operate in a manner consistent with this documents directions should be prepared to fully explain and if necessary, defend their practices. Like any living document, this manual will be reviewed periodically under the direction of CAZA board of directors. It will be updated as the knowledge base expands to incorporate new techniques and practices.

The specific standards of care in this document must be followed by CAZA institutions housing elephants. Standards of care are designated by the use of the term "must" within any of the sentences stated below. Other material in this document may be viewed as guidelines or illustrative information in the application of a standard. For ease of use, each standard is highlighted in a text box.

Elephant management

1. Each institution must have one person designated as the elephant manager.

1.1. This person oversees the day-to-day management of the elephants. This individual is responsible for staff training, developing and maintaining the program and communicating with others about the elephant program.

2. The elephant manager must demonstrate knowledge about all emergency protocols and continually improve elephant management techniques as the industry guidelines evolve.

2.1. All elephant managers are expected to develop and maintain their team's skills through methods including, but not limited to, visiting other facilities, attending the Elephant Managers Association annual conference, and courses such as Riddle's Elephant Management School and AZA Principles of Elephant Management Course.

3. Each facility must develop and implement a personnel-training protocol to document new employee training and endorsement as a qualified elephant handler.

3.1. It is recommended that a minimum of two qualified elephant staff should be present during any contact with elephants. A qualified keeper is a person the facility acknowledges as a trained, responsible individual, capable of and specifically experienced in the training and care of elephants,

4. Each facility must maintain a current written elephant management instruction manual. The instruction manual must include, but is not limited to, the following:

- 4.1. Elephant management program's missions and goals,
- 4.2. Elephant management policies, including directions for handling, husbandry, enrichment and training,
- 4.3. Plan to separate animals from each other, safely manage elephants that are aggressive toward other elephants, safely move elephants from one location to another, and safely manage elephants that are aggressive toward humans,
- 4.4. Incident reports for all cases in which elephants show aggression toward keepers or to the public,
- 4.5. Emergency response protocol (Facilities must be able to demonstrate readiness to respond to an elephant emergency situation, such as an elephant escape or keeper injury),
- 4.6. Safety protocols for visitor-elephant interactions and elephant rides,
- 4.7. Current behavioural profile of each individual elephant, updated regularly.
- 4.8. A comprehensive, documented elephant health care program under the direction of a veterinarian.

5. All elephant facilities must undertake a regular elephant facility and program safety assessment.

- 5.1. The safety assessments should be conducted semi-annually, identify safety needs and fully implement any corrective measures.
- 5.2. It is recommended that each facility establish a safety assessment team. The team may include elephant care staff, management staff, animal health care staff, and experts in the area of risk management and safety.
- 5.3. Each facility should establish the make-up of the team based on its own needs and resources. A written record should be kept for each inspection. The record should be reviewed by the appropriate staff members and its recommendations acted upon accordingly.

Training

6. Each facility must have a training program for their elephants.

7. Trained behaviours must allow the elephant care staff access to the animal in order to accomplish all necessary animal care and management procedures.

7.1. (Appendix A - Behavioural Components of an Elephant Management Program).

- 7.2. The recommended list of commands (Appendix B) and their corresponding behaviours are ones that every elephant and elephant keeper should know so that basic husbandry and veterinary practices can be accomplished.
- 7.3. Behaviours should be reinforced so that all elephants attain close to 100% compliance upon request of the elephant staff.
- 7.4. Training is an important component of any elephant management program. Each institution will adopt and implement an institutional training methodology that promotes the care and management of the elephants for routine husbandry, medical management, physical well-being, and overall animal welfare, while also emphasizing keeper and visitor safety.
- 7.5. If properly executed training procedures are ineffective in eliminating aggressive or inappropriate behaviour in any given elephant, facilities should consider other alternatives, including transfer of the elephant to a facility with staff that are more experienced or a different management system.
- 7.6. All elephant management systems have both advantages and disadvantages. The CAZA Elephant Care Manual recognizes that a diversity of approaches exist along the continuum of elephant management.
- 7.7. CAZA also recognizes that the best elephant management system may be a combination of systems.
- 7.8. CAZA encourages facilities to continue to evaluate their management practices with the goal of maximizing elephant health, welfare and reproduction and minimizing risk of injury to keeper staff or to the elephants.

Tools

8. Every keeper must be taught the proper application of each tool in use at their institution as part of their training program.

8.1. Below is a list of some tools commonly used:

8.1.1. Management Tools

8.1.1.1. Guide: A 'guide', 'ankus' or 'elephant hook' is a traditional tool used for directing elephant's behaviour. It is used on specific points on the elephant's body to cue a desired behaviour.

8.1.1.2. Target: A tool the elephant is conditioned to touch or move towards. Targets have been made out of different materials such as a rubber disk or a pole and a ball on the end. Application of this tool is not limited to a man made tool. An example would be the use of a finger being the target to move the elephants tongue aside for a mouth exam.

- 8.1.1.3. Bridge (whistle/clicker/voice): A cue that tells the elephant that they have achieved the desired behaviour.
- 8.1.1.4. Ropes, Block & Tackle: These may be used to direct an elephant through a new desired behaviour. They also can be used to assist to raise debilitated or partially anesthetized animals to their feet to ensure their recovery. Ropes may also be used to aid in training a new behaviour.
- 8.1.1.5. Tub, Balance Beam, Barrel, Spindle: Tools that have been used for daily exercise programs during demonstrations or exercise. Some of these have also been used or modified to enable foot care on elephants

9. Restraint

9.1. All chains and attachment devices must be inspected daily, and staff must be trained in their proper use.

- 9.1.1. Chaining is an acceptable method of temporary restraint. However, facilities should limit the time elephants spend tethered unless necessary for veterinary treatment or transport. Leg chains are used to limit animal's movements, for example during husbandry and medical procedures and to separate animals. Leg chains should be alternated from left front/right rear to the opposite front and rear legs every other day. The chains should be long enough to allow the elephants to easily lie down.

9.2. If a facility does not have an Elephant Restraint Device, (ERD, a device to keep an elephant in a designated space in order to facilitate husbandry and medical procedures), staff must demonstrate a method of restraint or training that allows necessary husbandry, veterinary, and reproductive procedures to occur in a safe and efficient manner.

- 9.2.1. There are many different designs of ERDs, from stationary to hydraulically operated, capable of turning an elephant on its side.
- 9.2.2. All elephant facilities should install an Elephant Restraint Device (ERD). However, it is strongly recommended that all facilities managing bulls or elephants in protected contact have an ERD.
- 9.2.3. Use of the ERD should not be weather dependent.
- 9.2.4. Each elephant should be trained to regularly enter and stay in the ERD for husbandry, veterinary procedures, reproductive assessments, and other procedures, to allow these to occur in a safe and efficient manner.

10. Emergency Safety Tools

- 10.1. Tools such as those listed below may be used in life threatening circumstances.
 - 10.1.1. Pepper Spray
 - 10.1.2. CO2 Fire extinguisher

- 10.1.3. Electrical devices designed for use on livestock, such as commercially manufactured electric prods used to fend off an elephant attack.
- 10.1.4. Tranquilizer Gun: To tranquilize an escaped or highly agitated elephant.
- 10.1.5. Elephant Gun: Of sufficient caliber to dispatch an escaped elephant when there is immediate danger to human life.

Husbandry

11. Each facility must have documented husbandry guidelines including, but not limited to, the following:

- 11.1. All elephants must be visually inspected on a daily basis. A general assessment must be made and any unusual activities must be promptly dealt with and recorded in the daily log. Specifically, reports should include observations of the individual elephants such as condition of urine and feces, eating and drinking patterns, administration of medications (if any), and general condition and behaviour.
- 11.2. All elephants must be trained to permit a daily body exam (including feet, skin, eyes, ears, open mouth and tongue, teeth, and tusks) for any sign of abnormalities. Results should be documented in the elephants' health records.
- 11.3. Comprehensive environmental enrichment plan for elephants with documented evidence of implementation,
- 11.4. Protocol for routine foot care including daily cleaning and inspection of each elephant's feet and evidence of its implementation,
- 11.5. Daily exercise and training program for each individual animal.

Facilities

Providing for the welfare of the animal means that the size of the enclosure is adequate, compatible social groups can be housed as appropriate, and the environment provides diversity through enrichment programs and the overall enclosure design. In addition to affecting the well-being of the animals, the adequacy of enclosures will also influence the quality of any scientific studies on the animals and pedagogical value of any educational programs.

In the development of these guidelines, CAZA recognizes that it is impossible to prescribe the appropriate size of enclosure for a given number or animals as a single, isolated factor. The relationship between spatial, behavioural and enrichment requirements and animal well-being has been interpreted differently by various organizations involved in standard setting and it is clear that all of

these factors must be taken into account in determining the design of appropriate enclosures.

There is currently little consensus on appropriate minimum sizes internationally. CAZA has chosen not to include additional quantitative standards, as there is no sound scientific evidence on which to base biologically relevant accommodation. Each facility must take into consideration its climate, herd composition and compatibility, and its elephant management program when determining the stall sizes most appropriate for their elephants. It is strongly recommended that institutions contemplating building new facilities or renovating existing facilities contact experts in the field for their support in designing facilities for the maintenance of Elephants.

Since the size of the holding area is just one aspect of a complete elephant management program, there is a large range of stall sizes currently used successfully in North America. No scientific studies have been conducted to help determine the best stall sizes for elephants, and a study of this type would be difficult to undertake due to the differences in elephant management programs. Each facility must take into consideration its climate, herd composition and compatibility, and its elephant management program when determining the stall sizes most appropriate for their elephants.

All elephant holding institutions are required to take into consideration the following:

12. Holding space for males must be designed to best care for the male elephant in musth, allowing him space to move and exercise safely unrestrained.

12.1. If the captive elephant population is to become sustainable, it is necessary to create housing for many more adult males. All facilities should consider including holding space for adult males.

13. Facilities must have the ability to manage social compatibility as well as dominance and aggression as they arise within an elephant group.

14. Facilities must have the ability to manage various introductions and separations such as a new female to a herd, females to males for breeding, a newborn calf to its mother, and a calf and mother to the herd.

15. Facilities must provide an opportunity for each elephant to exercise and to interact socially with other elephants unless under extenuating circumstances (evaluated by veterinarian and elephant manager).

16. All facilities must have the ability to separate and isolate animals to address behavioural concerns or allow veterinary procedures to occur.

17. All enclosures must be cleaned of excrement daily.

17.1. Frequent manure removal during the day is required and may be necessary for both sanitary and aesthetic conditions.

Indoors

18. Indoor space must provide adequate room for elephants to move about and lie down without restriction.

- 18.1. Mature elephants can reach items with their trunks at a vertical height of 6 m and potentially higher. Consideration of this should be given with regard to ceiling heights and fixtures (e.g., lights, heating units, plumbing, etc.) so that elephants do not harm themselves or the facility.
- 18.2. Environmental enrichment programs and the physical condition of the elephants should also be taken into consideration when evaluating space.

19. Indoor holding areas must be well ventilated, and be able to be heated to a minimum temperature of at least 12.8 degrees C (Olson, 2004 - Elephant Husbandry Resource Guide, pg 76) at all times of the year.

20. Natural daylight cycles are adequate for elephants. Indoor areas should be well illuminated during daylight hours, followed by a period of darkness. The use of natural light utilizing skylights and/or windows is suggested.

21. Concrete floors must be impervious to water, quick to dry, and sloped to a drain.

- 21.1. Standing water in indoor floor areas can cause foot problems and become a breeding ground for contaminants.
- 21.2. Floor surfaces should be relatively smooth, but not smooth enough so that they become slippery when wet. Conversely, very rough surfaces may cause excessive wear or irritate footpads.
- 21.3. Alternative flooring/bedding/substrate such as heated floors, rubber or natural (sand) should be considered as research and technology dictates.

Outdoors

22. Outdoor areas must have enough space for animals to get away from each other if they wish and be large enough for adequate exercise opportunities.

- 22.1. Environmental enrichment programs and the physical condition of the elephants should also be taken into consideration when evaluating space.

23. Provisions must be made to protect elephants from adverse weather, including cold winds, chilling rain, sleet, sun, heat, etc.

- 23.1. Healthy elephants kept outdoors can tolerate a wide range of temperature extremes.
- 23.2. Elephants kept outdoors without access to heated facilities should be monitored frequently at temperatures below freezing.
- 23.3. While outdoors, all elephants should have the ability to access features which allow them to thermoregulate (such as shade, water, sand/mud etc).

- 23.4. Outdoor yard surfaces should consist primarily of natural substrates (e.g., soil, sand, grass) that provide good drainage and have a cleanable, dry area for feeding.
- 23.5. Elephants should be kept outdoors on natural substrates as much as possible. Facilities should consider designing elephant areas that allow elephants outdoor access twenty-four hours a day - weather, health, and safety issues permitting.

Barriers

24. Elephant containment barriers must be in good condition and able to prevent elephant escapes.

- 24.1. A wide variety of building materials can be used as long as they are able to withstand the elephant's strength, contain the elephant in a specific space, and allow adequate space between the elephant and the public.

25. Doors and gates must be engineered to withstand extreme force.

- 25.1. Door and gate design is extremely important to ensure the safety of both elephants and keeper staff.
- 25.2. If mechanical opening devices, such as hydraulic or electrically powered drives are used, they should be able to be operated manually or with a backup generator in the case of a power failure.
- 25.3. Doors should be designed so that persons operating the doors are able to see the doorway, either directly or via indirect means such as closed circuit cameras, while operating the door.
- 25.4. All doors should be designed so that they can be stopped immediately in the event an elephant steps in the path of an operating door.

26. A written elephant extraction protocol must be in place in any facility using moats directly around elephant areas.

- 26.1. The use of poorly designed dry moats (moats that are steep, deep, narrow-sided, and hard-bottomed) as primary containment can be particularly dangerous for elephants and their use should be carefully considered.
27. Electric wires have been used successfully to protect trees and like items from elephants. If used as a temporary containment barrier, elephants should be monitored constantly.

Behaviour

- 28. Elephant management facilities should make every effort to maintain elephants in social groupings. It is inappropriate to keep highly social female elephant's singly long term. It is recognized that some socially aberrant adult females currently exist and these elephants can be managed singly if the

institution has made every effort to introduce them to a social group and CAZA agrees that the anti-social behavior is not correctable.

- 28.1. Elephant care staff should be aware of each animal's social compatibility and the dominance hierarchies of the herd.
- 28.2. The minimum age offspring should remain with their mothers is two years. Some flexibility is necessary in cases of maternal rejection and when infants cannot be reestablished in their social group.
- 28.3. Adult males may be housed alone, but not in complete isolation. Opportunities for tactile, olfactory, visual, and/or auditory interaction with other elephants should be provided.

Reproduction

29. Each male and female elephant of reproductive age (approximately 8 to 35 years) should have hormone (progesterone or testosterone) values assessed through weekly (or bi-weekly) collection of blood, urine or fecal samples
 - 29.1. Exceptions are elephants with known reproductive problems, nulliparous females over 25 or those with documented medical/behavioural conditions that preclude them from breeding.
30. Each male and female elephant of reproductive age (approximately 8 to 35 years) should have an initial reproductive assessment and follow-up assessments every 2-3 years by transrectal ultrasound to verify reproductive status and assess overall reproductive health.
 - 30.1. Exceptions include elephants with known reproductive problems, nulliparous females over 25, actively breeding animals, or those with documented medical/behavioural conditions that preclude them from breeding.

Veterinary Care

- | |
|---|
| <ol style="list-style-type: none">31. A veterinarian with experience in large mammal medicine must be on call at all times to perform elephant health evaluations, oversee treatment and medical emergencies.32. Facilities must have a comprehensive, documented elephant health program under the direction of a veterinarian.<ol style="list-style-type: none">32.1. For management purposes, all elephants should be trained to accept injections, oral medications, insertion of ear or leg vein catheters, treatment of wounds, trunk washes, biological sample collection, enemas, and urogenital examinations. |
| <ol style="list-style-type: none">33. Facilities must have a necropsy performed, preferably following the Association of Zoos and Aquariums (AZA) Elephant Species Survival Plan (SSP) Necropsy Protocol (Appendix C – AZA SSP Elephant Necropsy Protocol Gross Examination Worksheet). |

Nutrition

34. Appropriate and nutritionally correct food must be provided daily in sufficient quantities to maintain elephant health, appropriate weight and formulated to provide a complete elephant diet.

34.1. Fresh browse and produce should be used often as dietary supplements and enrichment for the animals

35. Elephants must have daily access to clean, fresh drinking water.

35.1. When water containers are used, drinking water containers should be cleaned and refreshed daily.

36. All elephants' body weight should be assessed and recorded a minimum of twice a year through actual weighing, or through the use of a body measurement process, photographs, or similar techniques

Conservation, Education and Research

The goal of Education, Conservation and Research Activities is to enhance the appreciation and understanding of elephants and their ecosystems and support elephants and habitat in range countries. An informed visitor is more likely to support research and conservation of elephants and of their habitat (refer to CAZA Education Guidelines).

37. Every elephant facility must institute a program to educate visitors and promote an improved understanding about elephants and elephant conservation issues.

38. Facilities that manage elephants must contribute to conservation through public education, scientific research, and/or support of field conservation projects.

38.1. It is the responsibility of every elephant facility to contribute in some manner to in situ and ex situ research and conservation of elephants.

References:

Olson D. 2004. Elephant Husbandry Resource Guide. Fort Worth, TX: International Elephant Foundation.

Standardized Animal Care Guidelines for Elephants, 2005. Association of Zoos and Aquariums, Elephant Species Survival Plan.

APPENDIX A

Checklist of AZA Standard Elephant Program Behavioral Components

Behavior	Not trained*	In training*	Complete & reliable*
Bathe / scrub skin			
Treat skin			
Trim all feet			
Eye exam			
Ear exam			
Mouth exam			
Tooth exam			
Tusk exam			
Tusk trim			
Blood collection (note frequency of collections)			
Urine collection			
Vaginal exam			
Rectal palpation			
Enema			
Transrectal ultrasound			
Accepts injections			
Accepts oral medications			
Enters chute (remains inside with doors closed)			
Allows chute walls to move			
Allows staff to perform husbandry procedures			
Allows vet to perform veterinary procedures			
Trunk wash for TB testing			
Foot x-ray			
Separation			
Leg restraint			
Reproductive assessment completed			

* If individual elephants vary, please note the number of elephants that fall into each category

APPENDIX B

Frequently Used Commands in Elephant Management (Olson, 2004):

Back up	- move back in straight line
Steady	- freeze
Come here	- move to handler
Move up	- move forward in straight line
Lean in	- position body parallel to, and in contact with, barrier
Turn	- pivot in circle (right and left)
Trunk (up)	- curl trunk up to touch forehead
Trunk down	- drop trunk straight down to ground
Foot	- front leg/wrist to elbow parallel to ground; rear leg/foot to knee parallel to ground or move foot into foot hole, tub or present foot for chaining
Target	- move toward target; respond to target by touching appropriate body part to it
Stretch	- sternal recumbency
Lie down	- lateral recumbency
Open	- open mouth wide for visual and tactile inspection
Go	- leave handler and move to desired place
Ear	- present ear(s) forward or through ear hole
Give	- hand object to handler
Line	- stand facing handler; elephants stand in order of hierarchy
Come in	- laterally move toward handler
Get over	- laterally move away from handler
All right	- release from previous command
No (quit)	- stop unwanted behaviour
Leave it	- drop whatever is in trunk
Tail	- grab and hold tail of another elephant
Pick it up	- lift object with trunk
Push	- push object with head
Salute	- raise trunk and foot simultaneously

APPENDIX C

ELEPHANT NECROPSY PROTOCOL GROSS EXAMINATION WORKSHEET (AZA Elephant SSP)

Institution/Owner _____

—

Address _____

—

Species _____ ISIS# _____ Studbook# _____

Name _____

Birth date/Age _____ Sex _____ Weight (Kg)

Actual Estimate

Death date _____ Death
location _____

Necropsy date _____ Necropsy
location _____

Post mortem interval _____

Captive Born Wild Caught

History (clinical signs, circumstances of death, clinical lab work, diet & housing)

GROSS EXAMINATION

(If no abnormalities are noted, mark as normal or not examined (NE); use additional sheets if needed)

General Exam (physical and nutritional condition, skin, body orifices, superficial lymph nodes)

Musculoskeletal System (bones, marrow, joints, muscles)

Body Cavities (fat stores, pleura, thymus, lymph nodes)

Spleen

Respiratory System (trunk passages, pharynx, larynx, trachea, bronchi, lungs, regional lymph nodes; submit lung lesions for TB culture; **bronchial lymph nodes should be cultured for TB even if normal in appearance**)

Cardiovascular System (heart, pericardial sac, great vessels, myocardium, valves, chambers, **be sure to closely examine abdominal aorta for subtle or obvious aneurysms**)

Digestive System (mouth, teeth, tongue, esophagus, stomach, small intestine, cecum, large intestine, rectum, liver, pancreas, mesenteric lymph nodes)

Urinary System (kidneys, ureters, bladder, urethra)

Reproductive System (testes/ovaries, uterus & cervix, penis/vagina, urogenital canal, prostate, seminal vesicles, bulbo-urethral gland, mammary gland, placenta). **Uterine masses/tumors are extremely common in Asian elephants and multiple tumor types may be present.**

Endocrine System (thyroids, parathyroids, adrenals, pituitary)

Central Nervous System (brain, meninges, spinal cord)

Sensory Organs (eyes, ears)

Additional Comments or Observations:

Prosector: _____ Date: _____

—

Summarize Preliminary Diagnoses:

Laboratory Studies: Please attach results of cytology, fluid analysis, urinalysis, serum chemistries, bacteriology, mycology, virology, parasitology, x-ray, photographs, or other data collected.

TISSUE CHECK LIST

Freeze 3-5 cm blocks of tissue from lesions and major organs (e.g., lung, liver, kidney, spleen) in small plastic bags. Freezing at -70 degrees Celsius in an ultra-low freezer is preferred. If this is unavailable, freezing at conventional temperatures is acceptable (use a freezer without an automatic defrost cycle if possible).

Any lesions noted in the lungs should be submitted to NVSL or other qualified mycobacterial laboratory for mycobacterial culture (ie. National Jewish Diagnostic Lab, Colorado). Bronchial lymph nodes should be cultured for TB even if normal in appearance. Preserve as many of the tissues listed below as possible in 10% buffered formalin at a ratio of approximately 1 part tissue to 10 parts solution. Tissues should be no thicker than 0.5 to 1.0 cm. Fix diced (1x1 mm) pieces of kidney, liver, spleen and lung in a suitable EM fixative if possible - glutaraldehyde base e.g., Trump-McDowell fixative. NOTE: There is generally no need to fix and label each tissue separately. Take two sets of fixed tissue. Bank one set. Send tissues required for diagnosis to primary pathologist and request a duplicate set of slides for the SSP pathologist, Dr. Scott Terrell who should be contacted for further instructions. Also, freeze post mortem serum (from heart), urine and any abnormal fluid accumulations. Consult **Elephant Research and Tissue Request Protocol** for specific project sample requests.

- | | | | |
|--|---|--|--------------------------------------|
| <input type="checkbox"/> Adrenal | <input type="checkbox"/> Kidney | <input type="checkbox"/> Penis | <input type="checkbox"/> Thymus |
| <input type="checkbox"/> Blood * | <input type="checkbox"/> Large intestine | <input type="checkbox"/> Pituitary | <input type="checkbox"/> Tongue |
| <input type="checkbox"/> Bone with marrow | <input type="checkbox"/> Liver | <input type="checkbox"/> Prostate | <input type="checkbox"/> Trachea |
| <input type="checkbox"/> Bulbo-urethral gland
section | <input type="checkbox"/> Lung | <input type="checkbox"/> Salivary gland | <input type="checkbox"/> Trunk cross |
| <input type="checkbox"/> Brain
vesicles | <input type="checkbox"/> Parathyroid | <input type="checkbox"/> Temporal gland | <input type="checkbox"/> Seminal |
| <input type="checkbox"/> Cecum | <input type="checkbox"/> Mammary gland | <input type="checkbox"/> Skin | <input type="checkbox"/> Ureter |
| <input type="checkbox"/> Diaphragm
bladder | <input type="checkbox"/> Muscle | <input type="checkbox"/> Small intestine | <input type="checkbox"/> Urinary |
| <input type="checkbox"/> Esophagus | <input type="checkbox"/> Nerve (sciatic) | <input type="checkbox"/> Spinal cord | |
| <input type="checkbox"/> Vaginal/urogenital canal | | | |
| <input type="checkbox"/> Eye | <input type="checkbox"/> Ovary/testis | <input type="checkbox"/> Spleen | |
| <input type="checkbox"/> Uterus/cervix | | | |
| <input type="checkbox"/> Hepatic bile duct | <input type="checkbox"/> Epididymus | <input type="checkbox"/> Tonsillar lymphoid tissue | |
| <input type="checkbox"/> Heart/aorta
gland | <input type="checkbox"/> Pancreas | <input type="checkbox"/> Stomach | <input type="checkbox"/> Thyroid |
| <input type="checkbox"/> Hemal node
mesenteric) | <input type="checkbox"/> Lymph nodes (tracheobronchial, submandibular, tonsillar, | | |

* Collect post mortem blood, separate serum and freeze for retrospective studies.

Primary Pathologist (Name):

Lab

Address

Phone

(Please send a copy of this protocol with gross descriptions and preliminary diagnoses to SSP pathologist. Send final report with histopathologic findings and any pertinent digital or color slides to):

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