OMB Control No. 1018-0093
Expires 08/31/2023

E. IMPORT/EXPORT/RE-EXPORT OF LIVE ANIMALS (CITES/ESA)

General Information

This application covers activities involving LIVE CITES and ESA listed animals.

Review this application carefully and **provide complete answers to all of the questions**. If you are applying for multiple species, be sure to indicate which species you are addressing in each response. **If more space is needed, attach a separate sheet with your responses, numbered according to the questions.**

Please allow at least 90 days for the application to be processed.

How do I determine whether the species is protected under CITES and/or the ESA?

CITES	ESA
To determine whether an animal species is protected under CITES, when the species was listed, or whether exemptions apply to your requested activity, see the list of CITES species	To determine whether an animal species is protected under the ESA, please review the list of ESA-listed species in the Code of Federal Regulations. Please be aware that any permit request involving an **ESA endangered species** must be published in the Federal Register for

Questions

If you have any questions regarding an action you are requesting authorization for please contact the Division of Management Authority at managementauthority@fws.gov.

Please note: for renewal or amendment of a multi-use permit being requested **within the 5-year** Federal Register public notice period, use application 3-200-52

This form should NOT be used for:

- Pre-Convention, Pre-Act, or antique (antique exemption criteria) specimens (use application 3-200-23)
- Captive Bred Wildlife Registration (use application form 3-200-41)
- ESA Plants (use application form 3-200-36)
- Import of LIVE African Elephants from Botswana, Namibia, South Africa, and Zimbabwe and Southern White Rhinoceros from eSwatini and South Africa (use application form 3-200-37f)

Electronic Information Submission

Electronic submission of inventories, photographs, and receipts: For hard copy applications, if you wish to provide information electronically, please include a flash drive containing this information with your physical application.

1. Name and address where you wish the permit to be mailed, **if different from physical address**. If you would like expedited shipping, please enclose a self-addressed, pre-paid, computer-generated, courier service airway bill. If unspecified, all documents will be mailed via regular mail through the U.S. Postal Service.

   A Fedex airwaybill will be included in the documents uploaded for this application.

2. Point of contact if we have questions about the application (name, phone number, and email).

   Mary Noell, Curator of Animal Data and Logistics
   Ph: 513-569-8225
   Email: mary.noell@cincinnatizoo.org

3. Have you or any of the owners of the business (if applying as a business, corporation, or institution), been assessed a civil penalty or convicted of any criminal provision of any statute or regulation relating to the activity for which the application is filed; been convicted, or entered a plea of guilty or nolo contendere, for a felony violation of the Lacey Act, the Migratory Bird Treaty Act, or the Bald and Golden Eagle Protection Act; forfeited collateral; OR are currently under charges for any violation of the laws mentioned above?

   ☒ No ☐ Yes

   If you answered "Yes" to Question 3, provide: a) the individual's name; b) date of charge; c) charge(s); d) location of incident; e) court, and f) action taken for each violation. Please be aware that a "Yes" response does not automatically disqualify you from getting a permit.

4. Type of Activity:
   ☒ Import
   ☐ Export
   ☐ Re-export

5. The current location of the **animal(s) (if different from the physical address**):

   Name: Dublin Zoo
   Address: Phoenix Park, North Road
   City: Dublin D08 WF88
   State/Province: Ireland
   Postal Code: Contact: Miguel Bueno, General Curator
   Country: Email: miguel.bueno@dublinzoo.ie

6. Recipient/Sender:

   - If **export/re-export**, provide name and **physical address** of the recipient in the foreign country.
   - If **import**, provide name and **physical address** of the exporter/re-exporter in the foreign country.

   Name: Dublin Zoo
   Address: Phoenix Park, North Road
   City: Dublin D08 WF88
   State/Province: Ireland
   Postal Code: Contact: Miguel Bueno, General Curator
   Country: Email: miguel.bueno@dublinzoo.ie

7. For **each animal** involved in the import/export/re-export, provide (you may use the table below):
   a) Scientific name (genus, species, and *if applicable*, subspecies)
   b) Common name
   c) Approximate or actual birth/hatch date (mm/dd/yyyy)
   d) Wild or captive-born
   e) Quantity

f) Sex (males.females.unknown sex, 10.2.3)
g) Permanent markings and/or identification information (microchip #, leg band #, tattoos, studbook #).

a. Scientific name (genus, species, and *if applicable*, subspecies)	b.Common Name	c. Approximate or Actual Birth / Hatch Date (mm/dd/yyyy)	d. Wild (W) or Captive-born (C)	e. Quantity	f. Sex (male. female. Unknown sex, ex: 1.0.0)	g. Permanent markings / ID information (e.g., microchip #, leg band #, tattoo, studbook #,etc.)
Elephas maximus	Asian Elephant	11/25/1990	C	1	Female	Yasmin; EAZA studbook# 9008; Transponder# 988004000017510
Elephas maximus	Asian Elephant	7/26/2003	C	1	Female	Anak; EAZA studbook# 200305; Transponder# 987.00.00009.07087
Elephas maximus	Asian Elephant	5/15/2017	C	1	Male	Kabir; EAZA studbook# 201711 Transponder# 988004000017531
Elephas maximus	Asian Elephant	10/2/2018	C	1	Male	Sanjay; EAZA studbook# 201802 Transponder# 988004000017532

Please see uploaded ZIMS specimen reports – all labelled 7a-j.

Source of Specimen

8. For **each captive-born/captive-hatched animal(s),** provide a signed and dated statement from the breeder or other appropriate documentation (e.g. Species 360 report) that includes the following:
   a) Scientific name (genus, species, and *if applicable*, subspecies),
   b) Common name,
   c) Name and address of the facility where the animal was bred and born,
   d) Birth/hatch date (mm/dd/yyyy),
   e) Identification information (studbook, microchip, leg band, etc.),
   f) Name and address of the facility where the parental stock is located,
   g) A statement from the breeder that the animal was bred and born at the breeder's facility (including the facility's name and address), and
   h) If you are not the breeder, provide documentation demonstrating the history of transactions (e.g., chain of custody or ownership of the animal).

Please see uploaded breeder's statements – all labelled 8.

9. For **each animal(s) taken from the wild**, provide:
   a) Scientific name (genus, species, and *if applicable*, subspecies),
   b) Common name,
   c) Specific location (e.g. county, state, province, country) where the animal was removed from the wild;
   d) The name of the individual(s) who collected the animal(s) and their authorization to do so, including copies of foreign and domestic (Federal, State, and/or Tribal) government collecting permits, licenses, contracts and/or agreements;
   e) Method of collection, including capture protocol and any injury and mortality experienced duringcollection, transport, and holding;
   f) Information related to any remuneration, either financial or in-kind, provided for acquiring the animal(s);
   g) Efforts to use captive specimens (e.g., captive-born, captive-held) in lieu of taking animals from the wild.

n/a, the animals being imported were captive-born.

10. For **each animal being re-exported** (e.g., exporting animal(s) previously imported into the United States), provide:
    a) A copy of the CITES export or re-export document issued by the appropriate CITES office in the country from which the wildlife was imported (this document is **stamped cancelled** by USFWS Office of Law Enforcement upon import inspection); and
    b) A copy of your Declaration for Importation or Exportation of Fish or Wildlife (Form 3-177) **cleared** by USFWS Office of Law Enforcement.
    c) A copy of the ESA permit that authorized the original import.
    d) If you did not make the original import, provide documentation outlining chain-of-ownership since import, including:
        i) A copy of the importer's clearance documents (a, b & c above) and,
        ii) Subsequent invoices (or other documentation) showing the history of transactions leading to your ownership of the animals after import (chain of custody).

n/a, the animals are being imported into the United States.

Description and Justification For Requested Activity

Describe the purpose of your proposed activity.

11. If **scientific research**, provide:
    a) A copy of the research proposal (outlining the purpose, objectives, and methods),
    b) Detailed information on capture methods including:
        i) who will be capturing the animals
        ii) equipment used
        iii) measures taken to prevent injury and mortality
    c) An explanation of whether other similar work has already been conducted or is currently being conducted,
    d) A copy of the study's Institutional Animal Care and Use Committee (IACUC) form (*if applicable*),
    e) Peer-reviewed scientific papers published from this research (*if applicable*).

n/a, the animals are being imported conservation education, zoological display and propagation for the conservation and survival of the species.

12. If **conservation education and/or zoological display**, provide:
    a) Objectives of proposed activity in support of an education program,

The Cincinnati Zoo & Botanical Garden's (CZBG) Asian elephant education program offers multi-platform learning experiences that focus on the importance of the vital role of elephants in their range countries. Elephants are a great example of a keystone species because of their ability to "bioengineer" their habitat in ways that other plants and animals rely on to survive and thrive. Because of this, conserving elephants and their natural habitat is vital. The Cincinnati Zoo plays an important role in elephant conservation and strives to educate our public on how Asian elephants are doing in their home ranges, how human activities impact these areas, and how CZBG staff are helping to ensure elephants survive in their home ranges. These experiences include in-person education chats, zoo camps, elephant care demonstrations, interpretive graphics, and social media messaging.

CZBG's interpretive graphics also address concerns the public may have about the welfare of elephants in human care and explain the actions and care the staff provide to ensure the physical and psychological health of elephants in zoos. These graphics outline the 6 pillars of CZBG's elephant program: socializing, complex habitats, feeding, monitoring, enrichment, and research.

CZBG's Asian elephants are animal ambassadors who annually allow over 1.8 million zoo visitors to engage with this charismatic species in person and to hear firsthand of the challenges they face in the wild and all the attributes that make them a uniquely important species.

Asian elephants are social animals who live in sizable, related herds and engage in a variety of social interactions with their herd mates. This rich social interaction will be on display for visitors to observe along with the ability to ask questions of both keeper staff during keeper talks and Wild Adventure volunteers with special training in Asian elephants. Furthermore, this increased herd size will open greater opportunities to conduct behavioral studies on herd dynamics, social engagements and use of elephant enclosures. CZBG volunteers trained in animal behavior observations record the various types of interactions. This information is then used to improve enrichment activities, to expand display signage, and to update education and docent materials.

b) Copies of educational materials (e.g., handouts, text of signage or public presentations), incorporating the following information:
   i) Status in the wild
   ii) Current threats
   iii) Conservation efforts

   Please see uploaded documents, including lecture slides, signage for the current exhibit and proposed signage for the new “Elephant Trek” exhibit – all labeled “12b”

13. If **captive propagation for the conservation and survival of the species**, provide:

a) A description of how the species will be propagated (e.g. artificial insemination, breeding pairs/groups),

The Cincinnati Zoo & Botanical Garden participates in the Association of Zoos and Aquariums (AZA) Asian Elephant Species Survival Plan® (SSP) Program. The mission of an AZA cooperatively managed SSP is to manage an ex *situ* species population with the interest and cooperation of AZA-accredited zoos and aquariums, Certified Related Facilities, and Sustainability Partners. An AZA SSP Program is identified through documented demand and potential sustainability within the AZA community; and develops a Breeding and Transfer Plan (BTP) that identifies population goals and recommendations to manage a genetically diverse, demographically varied, and biologically sound population. Success is achieved when SSP animals are available to meet program goals and come from biologically sound populations as a result of a shared commitment to cooperative populations and program management.

This BTP outlines the current demographic state of the AZA population, summarizes founder history and gene diversity, and recommends specific animals for natural breeding, artificial insemination, and semen collection (see uploaded excerpts from the 2020 Asian Elephant AZA SSP Breeding Analysis and Transfer Plan, labelled 13abc.*)*. CZBG’S current female elephant herd is considered post-reproductive; according to the SSP, for the purposes of genetic and demographic planning, females over age 24 that have never bred and most females over age 40 were assumed to be ineligible for breeding. Males have sired offspring at ages as young as seven years (at the time of conception) and as old as 55 years of age. As this population ages in zoos, it continually sets new records for maximum age of reproduction and longevity.

Additionally, a Population Viability Analysis (PVA) was conducted in 2020 for the AZA Asian elephant population. This analysis provides large scale recommendations for the overall success and sustainability of a population. CZBG’s import of multiple, related breeding age females directly supports these recommendations.

Excerpt from Asian Elephant 2020 PVA Report:

Given the current challenges for the Asian Elephant SSP population, PVA results indicate that the following changes in management should be considered in an effort to improve this population’s sustainability. Note that the PVA allows us to compare between these hypothetical changes, but cannot evaluate whether achieving these changes is feasible, practical, or desirable given the Program’s constraints.

- Increasing reproduction: New births are extremely important to the Asian elephant population, and holding facilities and the TAG/SSP should continue to prioritize efforts to breed every reproductively viable female. If an average of ~3 births are produced each year, the population would still experience a demographic bottleneck but could then become stable in the long term.
- Importing reproductively viable individuals: Importing individuals from other populations (in accordance with federal and international regulations), if possible, could help to offset the expected loss of older animals and increase the population's capacity to produce new births. The population may also benefit from including key facilities as Sustainability Partners in the future.
- Thinking carefully about strategies for managing exhibits: Expansion of existing herds is likely to happen slowly. Holding facilities should phase in new exhibits gradually to avoid being left with empty exhibits, and should actively build male holding space to reflect the increasingly even sex ratio going forward.

Please see uploaded Asian Elephant Population Viability Analysis Summary Report, labelled 13a.

b) Documentation showing your participation in an established breeding program (example: current breeding plan outlining your role in the program AND letter from the breeding coordinator confirming your participation in this breeding program.)

Please see uploaded excerpts from the 2020 Asian Elephant AZA SSP Breeding Analysis and Transfer Plan (BTP), labelled 13abc. and the uploaded CZBG TAG SSP Recommendation, labelled 13b.

c) How your breeding stock is managed to maintain genetic vitality, including:
   i) avoidance of inbreeding,
   ii) considerations of average kinship,
   iii) differences in paternal and maternal average blood relationships/relatedness,
   iv) carrying capacity of your facility,
   v) disposition of progeny.

As stated in 13a), CZBG is an active participant in AZA's Asian Elephant SSP. The SSP is cooperatively managed with population biologists, program leaders, and member institutions to ensure genetic vitality and sustainability for the population on all levels including facility design, husbandry recommendations, and lifelong planning for progeny. Population biologist and animal managers utilize a software called MateRx that in conjunction with studbook data and DNA analysis ensure genetically and demographically sustainable populations.

Excerpt from *Asian Elephant 2020 AZA SSP BTP:*

Explanation of Recommendations Using MateRx

Recommendations Using MateRx: MateRx is analytical software developed jointly by the Smithsonian's National Zoo and Lincoln Park Zoo. The primary output is a matrix of genetic ratings (Mate Suitability Indices = MSI) for possible breeding pairs. Each MSI represents the genetic consequences for the population if a given pair was to produce offspring. There are seven values for MSIs varying in degree of genetic benefit or detriment to the genetic health of the population.

These MSI values are defined as:

MSI Value	*Genetic consequences*	*Demographic consequences*
1	very beneficial	ok to breed
2	moderately beneficial	ok to breed
3	slightly beneficial	ok to breed
3.5	slightly beneficial	ok to breed
4	slightly detrimental/beneficial	ok to breed
5	moderately detrimental	may be necessary to breed to maintain or increase population size
6	very detrimental	may be necessary to breed in declining populations
X	extremely detrimental	not to be bred without a consultation with a population biologist

MateRx integrates four genetic factors to produce the Mate Suitability Index: 1. the expected change in genetic diversity (increase, decrease) that would result if an offspring of a pair is added to the population 2. the relative rareness or commonness of the parent's genome (i.e., the difference between the male and female mean kinships) 3. the inbreeding coefficient of offspring that would be produced by a pair 4. the proportion, if any, of the dam and sire's pedigree that is of unknown origin.

Please see uploaded excerpts from the 2020 Asian Elephant AZA SSP Breeding Analysis and Transfer Plan (BTP), labelled 13abc.

d) Plans and agreements for future re-introduction (*if applicable*).

n/a, at this time there are no plans for future re-introduction

14. Please provide a detailed description on how the proposed activities will **enhance or benefit the wild population within its native range** (e.g., direct or indirect conservation efforts) and provide documentation (e.g., **signed** memorandums of understanding) demonstrating your commitment to supporting the program and how the program contributes directly to the species identified in your application.

The Cincinnati Zoo & Botanical Garden (CZBG) has provided support for conservation efforts with wild elephants for many years. Since 2004, the CZBG has made an annual contribution to the ***International Elephant Foundation*** (IEF) in support of the Elephant Conservation Response Units program on the island of Sumatra. In total, the CZBG's support of this program has exceeded $91,000 with $40,000 of that provided over the past five years. These CRUs consist of trained mahouts and their elephants that work together in local communities surrounding the forests to mitigate elephant-human conflict. The CRUs monitor elephant numbers in the national parks, educate local people about elephants, provide advice on how to avoid conflict with wild elephants, encourage safety measures to keep communities out of harms way when elephants are in the area, and patrol for poachers or other illegal activity in the forests.

Utilizing a percentage of funds from our Elephant Extravaganza Behind The Scenes tours, we have raised an additional $59,650 for the support of keeper identified elephant conservation projects. For the last five years, ***Asian Elephant Support*** (AES), ***Baylor College of Medicine's EEHV project***, and the IEF have received these funds. In addition to the IEF support listed above, the elephant department has contributed $39,900 to their important work. AES has received $9,200 from the CZBG's elephant department and been recognized as a valued supporter. They identify and support collaborative projects *in situ* that seek to resolve issues of human-elephant conflict where both human and elephants can benefit from the solution. Baylor's EEHV project has made a huge impact on the elephant community by creating a test for the early diagnoses and tracking of EEHV, identifying different strains of the virus, and currently working on creating a vaccine that could help saves hundreds of young elephants. CZBG has proudly contributed $32,150 to this project over the years.

CZBG continues to be a leader across zoos and aquariums as a Steering Committee member of the AZA SAFE Asian Elephant Program. Our staff are partnering in innovative efforts to document all Asian elephants across Sumatra to enable the monitoring of their movements. The zoo is also a supporter and active partner of ***Asian Nature Conservation Foundation*** (ANCF) in India, giving $20,000 for GPS collars in 2019 and 2020. CZBG partners with this leading conservation foundation in India where scientists are researching and protecting 60% of the world's remaining Asian elephants. As our state-of-the-art Elephant Trek habitat is being built here in Cincinnati, CZBG staff are developing innovative projects with ANCF to get more of our audiences involved in Asian elephant conservation. CZBG is partnering with ANCF to track the movement of Asian elephants with new GPS collars to discover where these secretive herds trek when they leave the national park boundaries during the rainy season when the parks flood. Mapping the elephants' paths and the essential forested corridors through community lands and tea farms will help our partners to guide the communities to maintain land use that is elephant-friendly.

In addition to the direct support of elephant conservation discussed above, the Zoo also supports Rhino Protection Units (RPUs) and the Sumatran Rhino Sanctuary on the island of Sumatra. Although the focus of these programs is to protect and breed the rhinos, because there are elephants in the same national park, the RPUs are protecting wild elephants, tigers, etc., as well during their patrols. Over the past five years, the CZBG has provided over $100,000 through the International Rhino Foundation in support of Indonesia's rhino conservation efforts.

The Cincinnati Zoo & Botanical Garden has also contributed to elephant research and conservation efforts for many years. We do our best to accommodate as many research requests as possible. In the past, we participated in the AZA Elephant Welfare Project and long-term, ongoing studies of TB and EEHV in elephants. In addition, CREW served as the U.S. base for an elephant semen cryopreservation study led by our Canadian colleagues that recently resulted in a scientific paper describing a field-friendly technique for processing and cryopreserving Asian elephant semen. More recently we participated in a study led by scientists at the University of Alabama and the Smithsonian's Conservation Biology Institute in which elephant body condition, metabolic state and fat deposits were assessed. Additionally, we provided samples to a scientist at the University of Missouri who is studying the genetic and genomic diversity of Asian elephants in an attempt to develop assays for better monitoring wild elephants and identifying poaching victims.

Please see uploaded AZA Elephant SAFE Action Plan, labelled 14, and follow the embedded links for International Elephant Foundation, Asian Elephant Support, Baylor College of Medicine's EEHV project and Asian Nature Conservation Foundation for further information.

Technical Expertise & Facilities

- For **export/re-export**, provide information for the **receiving institution.**
- For **import**, provide information for **your institution**.
- For **import to multiple facilities**, provide information for **all receiving institutions.**

15. CV or resume outlining the technical experience of each caretaker working with, maintaining, and/or propagating **each** species, as it relates to the proposed activities, including experience with similar species.

    Please see uploaded resumes for the elephant care staff, labelled 15.

16. Current inventory of the species at the facility (males.females.unknown sex, e.g., 10.2.3)

    Please see uploaded taxon report for the elephants currently held at the Cincinnati Zoo & Botanical Garden, labelled 16.

17. Number of years the species has been maintained at the facility,

    The Cincinnati Zoo & Botanical Garden has held Asian Elephants on and off since 1875. Please see uploaded Historical Studbook Report, labelled 17.

18. Number of births per species per year over the last 5 years,

    Due to the age of the females currently residing at the Cincinnati Zoo & Botanical Garden, no elephants were born at the zoo in the last five years.

19. Number of mortalities per species (or similar species) per year over the last 5 years and steps taken to avoid or decrease such mortalities,

    No elephants have died at the Cincinnati Zoo & Botanical Garden since 1978.

20. A detailed description, diagrams, and photos clearly depicting the existing facilities **where the wildlife will be maintained** including: dimensions, construction materials, and protection from the elements. Do not provide blueprints;

    The elephants to be imported will be held and exhibited in the new facility named "Elephant Trek" that is currently under construction. Elephant Trek will increase the usable area for Elephants from ¾ of an acre to a little over 4 acres. That's five times the available space they currently have. The new outdoor space will be divided into the three (3) yards. Yard #1 is an Off-Habitat yard and will be approximately 8250 sf. Yards 2 & 3 will be visible to the public and will be 72,800 sf and 50,400 sf, respectfully. All yards will have natural substrate and have multiple opportunities for Elephant enrichment. All yards will have a natural water element, mud wallows, and sand pits. Containment barriers will be either water moat, gunite rockwork, or post and cable.

    The Elephant Barn will have direct access to Yards #1 and #2 mentioned above. The main component of the Elephant Barn will be an 8,750 sf Communal Room with a sand floor where all Elephants can gather for socialization. Adjacent and accessible to the Communal Room will be two (2) Sand Stalls (one measuring 22' x 37' and the other measuring approximately 30' x 35'). There are also five (5) Stalls with concrete floors (three measuring 22' x 25' and the other two measuring 22' x 30'). This makes (7) Stalls total. There is also a separate ERD (Elephant Restraining Device) within this area for training and proper medical treatments. Elephant containment within the barn is accomplished with steel tube barriers or concrete walls. All spaces will have the opportunity for enrichment devices.

    Please see uploaded diagrams and architect's renderings of the exhibit and holding areas that are currently under construction, labelled 20. Plans and renderings.

21. Approximate carrying capacity for the species at the facility.

    The new Elephant Trek facility will be able to hold 12-15 adult Asian elephants.

Transport/Shipment of Live Animals

22.

    a. The type, size, and construction of any shipping container and,

    Aluminum and steel fabricated crates that meet and/or exceed IATA Live Animal Regulations Requirement #71 will be used for this shipment.

    Please see uploaded plans for crates that are going to be fabricated for the two females as well as photos of the crates that will be used for the two bulls, labelled 22a. Crates.

    b. The arrangements for watering or otherwise caring for the wildlife during transport.

    Transport will be arranged through reputable animal transport companies in Europe and in the United States. The Asian elephants will be crate trained by zoo staff prior to transport and will travel on ground in a dedicated truck to/from the international airports and by air cargo, accompanied at all times by a veterinarian and zoo staff that specializes in elephant care. Food and water will be provided by animal care staff during transport and through separate built-in containers in the elephant crates. Temperatures will be monitored throughout the trip, and tarps and propane heaters will be used as needed during ground transport. Stops will be coordinated during transport based on human and animal welfare needs. In the event any elephant shows signs of distress, the transport team will determine what is in the best interest of the animal(s) and will notify any necessary parties of the situation if further assistance is needed. In emergency situations, staff will defer to shipper and airline instructions.

CITES Appendix I & Marine Mammal Species

- For **export** of a **CITES Appendix I-listed species**, provide a copy of the CITES import permit, or evidence one will be issued by the Management Authority of the country to which you plan to export the specimen(s). In accordance with Article III of the CITES treaty, it is required that import permits are issued before the corresponding export permit.

  n/a, this application is for an animal import.

- For import of CITES Appendix-I listed species, provide information to show the import is not primarily for commercial purposes as outlined in Resolution Conf. 5.10 (Rev. CoP 15).

  As described in 13a, the proposed import of captive bred Asian Elephants by the Cincinnati Zoo & Botanical Garden is to enhance the captive propagation of genetically-valuable elephants by importing reproductively viable related individuals in order to increase reproduction. New births are extremely important to the Asian elephant population and the TAG/SSP wants holding facilities to continue to prioritize efforts to breed every reproductively viable female.

  The Cincinnati Zoo & Botanical Garden (CZBG) is a 501.c.3 not for profit corporation with the mission to "Conserve Nature, Convey Knowledge, Create Adventure." As described in 14, CZBG has donated over $100,000 over the past 5 years for direct support of Asian elephant conservation. This financial commitment to conservation and research projects is in addition to even larger allocations for conservation education and maintenance and breeding of endangered species at the Zoo - many of which are in managed breeding programs including SSPs and PMPs.

  The shipping and broker costs for the proposed import of the elephant will be coming from the Cincinnati Zoo's operating budget and More Home to Roam Capital Campaign. The estimated cost of this import, including crate construction and transport, is estimated to be $750,000. Further, the Zoo spends approximately $100,000 per elephant per year on zookeeper time, food, veterinary care and other miscellaneous overhead. The imported elephants will be added to a new 5-acre elephant facility that is currently under construction for an estimated overall cost of $40 million. Any increase in attendance or revenue as a result of these elephants and this new habitat will only offset this significant financial investment in the sustainability and conservation of this species. Any transfer to another zoo will be done as a breeding loan transfer, so CZBG will not financially benefit from the breeding or movement of these animals.

- For import of live CITES Appendix-I marine mammals, provide a copy of your FWS or NMFS Marine Mammal Protection Act (MMPA) permit or authorization.

  n/a, this application is for Asian elephants and not for marine mammals.

Specimen Report

Species360 17742981 **Local ID**: DUBLIN / A6M036
GAN
Elephas maximus Asian elephant
Studbooks EAZA, AZA, ZAA, JAZA
Order Proboscidea **Family** Elephantidae
IUCN Endangered (EN) **CITES** I
Start Date 01/01/2006 **End Date** 01/02/2022

Basic Animal Information

No Local Data Differences Found

Sex - Contraception	Female -	**Status**	Alive
Birthdate - Age	26/07/2003 - 18Y,6M,6D	**Preferred ID**	DUBLIN / A6M036
Origin	Rotterdam Zoo	**Rearing**	Parent
Birth Type	Captive Birth/Hatch	**Hybrid Status**	Not Hybrid
Sire	MIG12-29966045 (ROTTERDAM / 105843)	**Dam**	17742980 (ROTTERDAM / 104099)
Current Collection	Main Institution Animal Collection	**Collection Trip**	
Clutch / Litter		**Enclosure**	3010 - Kaziranga Forest Trail - Elephant

Visit History

Date in	Acquisition - Vendor/Local ID	Phy	Own	Reported By	Disposition - Recipient/Local ID	Phy	Own	Date Out
26/07/2003	Birth/Hatch	In	In	ROTTERDAM / 106691	Donation To DUBLIN/106691	Out	Out	17/10/2006
18/10/2006	Loan In From Sender: ROTTERDAM/106691 Vendor: ROTTERDAM/106691	In	-	DUBLIN / A6M036		-	-	

Identifiers

Reported By	Effective Date	Type	Identifier	Location	Status	Comments
DUBLIN	18/10/2006	Local ID	A6M036		Active	
DUBLIN	16/10/2006	Tag	3 Red		Active	Legacy SLocation: Legacy Comment: (Rotterdam) Red marker for transport to Dublin
ROTTERDAM	16/10/2006	Tag	3 Red		Active	Legacy SLocation: Bump Legacy Comment: Red Marker for Transport
DUBLIN	02/10/2006	Transponder	967000000907087		In-Use	Legacy SLocation: Legacy Comment: Left tail fold
ROTTERDAM	02/10/2006	Transponder	967.00.00009.070 87		In-Use	Legacy SLocation: Left tail fold Legacy Comment:
DUBLIN	26/07/2006	House Name	Anak		Active	

Sex Information

Reported By	Date	Sex	Comments
DUBLIN	18/10/2006	Female	

Parent Info

Reported By	In ZIMS	Parent Info	Type / Probability	Birth Date	Comments
DUBLIN	Yes	17742980 [ROTTERDAM / 104099]	Dam/100%	25/11/1990	
DUBLIN	Yes	MIG12-29966045 [ROTTERDAM / 105843]	Sire/100%	01/01/1978	
ROTTERDAM	Yes	17742980 [ROTTERDAM / 104099]	Dam/100%	25/11/1990	
ROTTERDAM	Yes	MIG12-29966045 [ROTTERDAM / 105843]	Sire/100%	01/01/1978	

Ancestry Information (calculated by Species360 from shared data)

% Pedigree Known	% Pedigree Certain	Taxonomic Inconsistencies	No. Identified Ancestors
87.50%	87.50%	Yes-Subspecies level	10

Rearing Information

Reported By	Start Date	End Date	Rearing	Comments
DUBLIN	18/10/2006		Parent	

Weights

Reported By	Date	Type	Value	Units	Comments
DUBLIN	14/12/2021	Live weight	2890	kilogram	
DUBLIN	30/11/2021	Live weight	2915	kilogram	
DUBLIN	16/11/2021	Live weight	2915	kilogram	
DUBLIN	14/10/2021	Live weight	2900	kilogram	
DUBLIN	24/08/2021	Live weight	2795	kilogram	
DUBLIN	17/08/2021	Live weight	2770	kilogram	+ 60 kg on previous weight
DUBLIN	07/07/2021	Live weight	2710	kilogram	

Reported By	Date	Type	Value	Units	Comments
DUBLIN	25/06/2021	Live weight	2680	kilogram	
DUBLIN	21/06/2021	Live weight	2710	kilogram	
DUBLIN	15/06/2021	Live weight	2680	kilogram	
DUBLIN	03/06/2021	Live weight	2730	kilogram	
DUBLIN	05/05/2021	Live weight	2745	kilogram	
DUBLIN	22/04/2021	Live weight	2640	kilogram	
DUBLIN	20/04/2021	Live weight	2625	kilogram	
DUBLIN	15/04/2021	Live weight	2555	kilogram	
DUBLIN	07/04/2020	Live weight	2805	kilogram	
DUBLIN	29/10/2019	Live weight	2845	kilogram	
DUBLIN	11/09/2019	Live weight	2825	kilogram	
DUBLIN	20/12/2017	Live weight	2845	kilogram	
DUBLIN	21/06/2017	Live weight	2720	kilogram	
DUBLIN	16/02/2017	Live weight	2725	kilogram	
DUBLIN	12/08/2016	Live weight	2710	kilogram	
DUBLIN	26/07/2016	Live weight	2685	kilogram	
DUBLIN	06/05/2016	Live weight	2690	kilogram	
DUBLIN	28/04/2016	Live weight	2685	kilogram	
DUBLIN	07/03/2016	Live weight	2695	kilogram	
DUBLIN	29/04/2015	Live weight	2635	kilogram	
DUBLIN	25/03/2015	Live weight	2680	kilogram	(LM) Approximate weight < 5kg.
DUBLIN	18/03/2014	Live weight	2810	kilogram	
DUBLIN	18/02/2014	Live weight	2780	kilogram	
DUBLIN	10/02/2014	Live weight	2730	kilogram	
DUBLIN	04/02/2014	Live weight	2716	kilogram	
DUBLIN	27/01/2014	Live weight	2692	kilogram	
DUBLIN	07/01/2014	Live weight	2690	kilogram	
DUBLIN	30/12/2013	Live weight	2654	kilogram	
DUBLIN	09/12/2013	Live weight	2600	kilogram	
DUBLIN	26/11/2013	Live weight	2618	kilogram	
DUBLIN	21/11/2013	Live weight	2606	kilogram	
DUBLIN	01/11/2013	Live weight	2586	kilogram	
DUBLIN	22/10/2013	Live weight	2522	kilogram	
DUBLIN	04/10/2013	Live weight	2498	kilogram	
DUBLIN	27/09/2013	Live weight	2492	kilogram	
DUBLIN	13/09/2013	Live weight	2354	kilogram	
DUBLIN	10/09/2013	Live weight	2530	kilogram	
DUBLIN	15/08/2013	Live weight	2480	kilogram	
DUBLIN	01/07/2013	Live weight	2412	kilogram	
DUBLIN	25/06/2013	Live weight	2404	kilogram	
DUBLIN	19/06/2013	Live weight	2340	kilogram	
DUBLIN	31/05/2013	Live weight	2312	kilogram	
DUBLIN	22/05/2013	Live weight	2316	kilogram	
DUBLIN	17/05/2013	Live weight	2354	kilogram	
DUBLIN	30/04/2013	Live weight	2300	kilogram	
DUBLIN	25/04/2013	Live weight	2280	kilogram	
DUBLIN	29/03/2013	Live weight	2276	kilogram	
DUBLIN	21/02/2013	Live weight	2234	kilogram	
DUBLIN	22/01/2013	Live weight	2200	kilogram	
DUBLIN	14/01/2013	Live weight	2220	kilogram	
DUBLIN	09/01/2013	Live weight	2212	kilogram	
DUBLIN	17/01/2012	Live weight	2300	kilogram	
DUBLIN	12/12/2011	Live weight	2251	kilogram	
DUBLIN	12/07/2011	Live weight	2216	kilogram	
DUBLIN	09/06/2011	Live weight	2158	kilogram	
DUBLIN	25/05/2011	Live weight	2158	kilogram	
DUBLIN	04/05/2011	Live weight	2158	kilogram	
DUBLIN	27/04/2011	Live weight	2156	kilogram	
DUBLIN	26/04/2011	Live weight	2140	kilogram	
DUBLIN	06/04/2011	Live weight	2182	kilogram	
DUBLIN	11/02/2011	Live weight	2120	kilogram	
DUBLIN	14/01/2011	Live weight	2122	kilogram	
DUBLIN	24/11/2010	Live weight	2122	kilogram	
DUBLIN	22/09/2010	Live weight	2062	kilogram	
DUBLIN	04/08/2010	Live weight	2030	kilogram	
DUBLIN	28/07/2010	Live weight	2050	kilogram	
DUBLIN	14/07/2010	Live weight	2034	kilogram	
DUBLIN	07/07/2010	Live weight	2026	kilogram	
DUBLIN	02/06/2010	Live weight	2040	kilogram	
DUBLIN	26/05/2010	Live weight	2034	kilogram	

Reported By	Date	Type	Value	Units	Comments
DUBLIN	05/05/2010	Live weight	2008	kilogram	
DUBLIN	29/04/2010	Live weight	2014	kilogram	
DUBLIN	21/04/2010	Live weight	2012	kilogram	
DUBLIN	31/03/2010	Live weight	2016	kilogram	
DUBLIN	14/01/2010	Live weight	1998	kilogram	
DUBLIN	07/12/2009	Live weight	1926	kilogram	
DUBLIN	13/08/2009	Live weight	1948	kilogram	
DUBLIN	17/07/2009	Live weight	1900	kilogram	
DUBLIN	28/04/2009	Live weight	1838	kilogram	
DUBLIN	23/04/2009	Live weight	1850	kilogram	
DUBLIN	25/03/2009	Live weight	1838	kilogram	
DUBLIN	18/02/2009	Live weight	1820	kilogram	
DUBLIN	24/11/2008	Live weight	1740	kilogram	
DUBLIN	18/11/2008	Live weight	1750	kilogram	
DUBLIN	15/11/2008	Live weight	1742	kilogram	
DUBLIN	20/10/2008	Live weight	1710	kilogram	
DUBLIN	14/10/2008	Live weight	1694	kilogram	
DUBLIN	15/09/2008	Live weight	1646	kilogram	
DUBLIN	01/09/2008	Live weight	1664	kilogram	
DUBLIN	12/08/2008	Live weight	1664	kilogram	
DUBLIN	01/08/2008	Live weight	1968	kilogram	
DUBLIN	24/07/2008	Live weight	1660	kilogram	
DUBLIN	23/07/2008	Live weight	1674	kilogram	
DUBLIN	08/07/2008	Live weight	1596	kilogram	
DUBLIN	01/05/2008	Live weight	1644.0	kilogram	
DUBLIN	31/03/2008	Live weight	1624	kilogram	
DUBLIN	13/02/2008	Live weight	1586	kilogram	
DUBLIN	29/01/2008	Live weight	1565	kilogram	
DUBLIN	02/11/2007	Live weight	1572	kilogram	
DUBLIN	23/10/2007	Live weight	1570	kilogram	
DUBLIN	12/09/2007	Live weight	1552	kilogram	
DUBLIN	21/08/2007	Live weight	1520	kilogram	
DUBLIN	23/07/2007	Live weight	1488.0	kilogram	
DUBLIN	19/07/2007	Live weight	1486.0	kilogram	
DUBLIN	24/04/2007	Live weight	1456	kilogram	
DUBLIN	28/03/2007	Live weight	1402	kilogram	
DUBLIN	04/02/2007	Live weight	1320.0	kilogram	
ROTTERDAM	01/08/2006	Live weight	1100	kilogram	Migrated from MedARKS Clinical Notes module.

Specimen Report

Species360 ZLG17-03907 Local ID: DUBLIN / A17M27
GAN
Elephas maximus Asian elephant
Studbooks EAZA, AZA, ZAA, JAZA
Order Proboscidea **Family** Elephantidae
IUCN Endangered (EN) **CITES** I
Start Date 01/01/2017 **End Date** 31/01/2022

Basic Animal Information

Sex - Contraception	Male -	**Status**	Alive
Birthdate - Age	15/05/2017 - 4Y,8M,16D	**Preferred ID**	DUBLIN / A17M27
Origin	Dublin Zoo - Zoological Society of Ireland	**Rearing**	Parent
Birth Type	Captive Birth/Hatch	**Hybrid Status**	Not Hybrid
Sire	6297841 (DUBLIN / A12M47)	**Dam**	17742980 (DUBLIN / A6M035)
Current Collection	Main Institution Animal Collection	**Collection Trip**	
Clutch / Litter		**Enclosure**	3010 - Kaziranga Forest Trail - Elephant

No Local Data Differences Found

Visit History

Date in	Acquisition - Vendor/Local ID	Phy	Ow	Reported By	Disposition - Recipient/Local ID	Phy	Ow	Date Out
15/05/2017	Birth/Hatch	In	In	DUBLIN / A17M27		-	-	

Identifiers

Reported By	Effective Date	Type	Identifier	Location	Status	Comments
DUBLIN	09/09/2021	Transponder	988004000017531	Assigned	Assigned	
DUBLIN	15/01/2019	Regional Studbook Number	EAZA/201711		Active	
DUBLIN	25/05/2017	House Name	KABIR		Active	Note: Arabic name meaning "The Great". Kabir was a 15th-century Indian mystic poet and saint. It's also a popular Indian name.
DUBLIN	15/05/2017	Local ID	A17M27		Active	
EAZA	15/05/2017	Regional Studbook Number	EAZA/201711		Active	Studbook: Elephas maximus

Sex Information

Reported By	Date	Sex	Comments
DUBLIN	15/05/2017	Male	

Parent Info

Reported By	In ZIMS	Parent Info	Type / Probability	Birth Date	Comments
DUBLIN	Yes	17742980 [DUBLIN / A6M035]	Dam/100%	25/11/1990	
DUBLIN	Yes	6297841 [DUBLIN / A12M47]	Sire/100%	14/11/1994	

Ancestry Information (calculated by Species360 from shared data)

% Pedigree Known	% Pedigree Certain	Taxonomic Inconsistencies	No. Identified Ancestors
		No	

Rearing Information

Reported By	Start Date	End Date	Rearing	Comments
DUBLIN	15/05/2017		Parent	

Weights

Reported By	Date	Type	Value	Units	Comments
DUBLIN	14/12/2021	Live weight	1494	kilogram	
DUBLIN	10/12/2021	Live weight	1499	kilogram	
DUBLIN	30/11/2021	Live weight	1483	kilogram	
DUBLIN	16/11/2021	Live weight	1488	kilogram	
DUBLIN	10/11/2021	Live weight	1505	kilogram	
DUBLIN	31/10/2021	Live weight	1465	kilogram	
DUBLIN	15/10/2021	Live weight	1439	kilogram	
DUBLIN	14/10/2021	Live weight	1453	kilogram	
DUBLIN	24/08/2021	Live weight	1378	kilogram	
DUBLIN	08/07/2021	Live weight	1334	kilogram	
DUBLIN	07/07/2021	Live weight	1336	kilogram	
DUBLIN	16/06/2021	Live weight	1340	kilogram	
DUBLIN	15/06/2021	Live weight	1339	kilogram	
DUBLIN	03/06/2021	Live weight	1314	kilogram	
DUBLIN	24/05/2021	Live weight	1279	kilogram	
DUBLIN	21/05/2021	Live weight	1306	kilogram	
DUBLIN	29/04/2021	Live weight	1294	kilogram	
DUBLIN	23/04/2021	Live weight	1295	kilogram	
DUBLIN	22/04/2021	Live weight	1294	kilogram	
DUBLIN	20/04/2021	Live weight	1287	kilogram	

DUBLIN	15/04/2021	Live weight	1276	kilogram
DUBLIN	25/02/2021	Live weight	1272	kilogram
DUBLIN	09/11/2020	Live weight	1158	kilogram
DUBLIN	21/10/2020	Live weight	1149	kilogram
DUBLIN	15/10/2020	Live weight	1135	kilogram
DUBLIN	13/10/2020	Live weight	1129	kilogram
DUBLIN	12/10/2020	Live weight	1127	kilogram
DUBLIN	05/10/2020	Live weight	1129	kilogram
DUBLIN	22/09/2020	Live weight	1123	kilogram
DUBLIN	15/09/2020	Live weight	1136	kilogram
DUBLIN	14/09/2020	Live weight	1132	kilogram
DUBLIN	29/07/2020	Live weight	1063	kilogram
DUBLIN	28/07/2020	Live weight	1077	kilogram
DUBLIN	21/07/2020	Live weight	1060	kilogram
DUBLIN	01/07/2020	Live weight	1068	kilogram
DUBLIN	23/06/2020	Live weight	1057	kilogram
DUBLIN	16/06/2020	Live weight	1058	kilogram
DUBLIN	09/06/2020	Live weight	1041	kilogram
DUBLIN	28/04/2020	Live weight	1027	kilogram
DUBLIN	07/04/2020	Live weight	990	kilogram
DUBLIN	03/03/2020	Live weight	990	kilogram
DUBLIN	20/02/2020	Live weight	970	kilogram
DUBLIN	06/02/2020	Live weight	957	kilogram
DUBLIN	04/02/2020	Live weight	947	kilogram
DUBLIN	07/01/2020	Live weight	932	kilogram
DUBLIN	16/12/2019	Live weight	929	kilogram
DUBLIN	11/12/2019	Live weight	913	kilogram
DUBLIN	13/11/2019	Live weight	888	kilogram
DUBLIN	12/11/2019	Live weight	765	kilogram
DUBLIN	06/11/2019	Live weight	890	kilogram
DUBLIN	05/11/2019	Live weight	881	kilogram
DUBLIN	30/10/2019	Live weight	894	kilogram
DUBLIN	29/10/2019	Live weight	884	kilogram
DUBLIN	28/10/2019	Live weight	876	kilogram
DUBLIN	23/10/2019	Live weight	883	kilogram
DUBLIN	15/10/2019	Live weight	849	kilogram
DUBLIN	09/10/2019	Live weight	851	kilogram
DUBLIN	26/09/2019	Live weight	850	kilogram
DUBLIN	24/09/2019	Live weight	839	kilogram
DUBLIN	11/09/2019	Live weight	836	kilogram
DUBLIN	22/08/2019	Live weight	798	kilogram
DUBLIN	13/08/2019	Live weight	798	kilogram
DUBLIN	06/08/2019	Live weight	801	kilogram
DUBLIN	17/04/2019	Live weight	714	kilogram
DUBLIN	05/04/2019	Live weight	709	kilogram
DUBLIN	12/03/2019	Live weight	700	kilogram
DUBLIN	06/03/2019	Live weight	677	kilogram
DUBLIN	05/03/2019	Live weight	670	kilogram
DUBLIN	18/02/2019	Live weight	674	kilogram
DUBLIN	07/02/2019	Live weight	677	kilogram
DUBLIN	31/01/2019	Live weight	658	kilogram
DUBLIN	30/01/2019	Live weight	668	kilogram
DUBLIN	21/01/2019	Live weight	656	kilogram
DUBLIN	18/01/2019	Live weight	648	kilogram
DUBLIN	16/01/2019	Live weight	657	kilogram
DUBLIN	14/01/2019	Live weight	656	kilogram
DUBLIN	07/01/2019	Live weight	638	kilogram
DUBLIN	01/01/2019	Live weight	638	kilogram
DUBLIN	20/12/2018	Live weight	622	kilogram
DUBLIN	06/12/2018	Live weight	615	kilogram
DUBLIN	06/11/2018	Live weight	590	kilogram
DUBLIN	13/09/2018	Live weight	549	kilogram
DUBLIN	06/09/2018	Live weight	536	kilogram
DUBLIN	16/08/2018	Live weight	510	kilogram
DUBLIN	02/08/2018	Live weight	502	kilogram
DUBLIN	17/07/2018	Live weight	486	kilogram
DUBLIN	12/07/2018	Live weight	482	kilogram
DUBLIN	03/07/2018	Live weight	469	kilogram
DUBLIN	13/06/2018	Live weight	462	kilogram
DUBLIN	12/06/2018	Live weight	461	kilogram
DUBLIN	06/06/2018	Live weight	463	kilogram
DUBLIN	05/06/2018	Live weight	450	kilogram
DUBLIN	29/05/2018	Live weight	450	kilogram
DUBLIN	23/05/2018	Live weight	441	kilogram
DUBLIN	16/05/2018	Live weight	444	kilogram
DUBLIN	15/05/2018	Live weight	484	kilogram
DUBLIN	09/05/2018	Live weight	434	kilogram
DUBLIN	24/04/2018	Live weight	425	kilogram

DUBLIN	09/04/2018	Live weight	411	kilogram	
DUBLIN	20/03/2018	Live weight	401	kilogram	
DUBLIN	27/02/2018	Live weight	386	kilogram	
DUBLIN	07/02/2018	Live weight	372	kilogram	
DUBLIN	30/01/2018	Live weight	366	kilogram	
DUBLIN	23/01/2018	Live weight	361	kilogram	
DUBLIN	11/01/2018	Live weight	357	kilogram	
DUBLIN	09/01/2018	Live weight	351	kilogram	
DUBLIN	06/12/2017	Live weight	333	kilogram	
DUBLIN	31/10/2017	Live weight	298	kilogram	
DUBLIN	10/10/2017	Live weight	283	kilogram	
DUBLIN	30/08/2017	Live weight	249	kilogram	
DUBLIN	16/08/2017	Live weight	241	kilogram	
DUBLIN	09/08/2017	Live weight	231	kilogram	
DUBLIN	26/07/2017	Live weight	217	kilogram	Weighed 1st time in CTC

Specimen Report: ZLG17-03907 | Local ID: DUBLIN / A17M27

Specimen Report

Species360 ZLG18-03997 Local ID: DUBLIN / A18M01
GAN
Elephas maximus Asian elephant
Studbooks EAZA, AZA, ZAA, JAZA
Order Proboscidea **Family** Elephantidae
IUCN Endangered (EN) **CITES** I
Start Date 01/01/2018 **End Date** 31/01/2022

Basic Animal Information

Sex - Contraception	Male -	**Status**	Alive
Birthdate - Age	10/02/2018 - 3Y,11M,21D	**Preferred ID**	DUBLIN / A18M01
Origin	Dublin Zoo - Zoological Society of Ireland	**Rearing**	Parent
Birth Type	Captive Birth/Hatch	**Hybrid Status**	Not Hybrid
Sire	6297841 (DUBLIN / A12M47)	**Dam**	17742981 (DUBLIN / A6M036)
Current Collection	Main Institution Animal Collection	**Collection Trip**	
Clutch / Litter		**Enclosure**	3010 - Kaziranga Forest Trail - Elephant

No Local Data Differences Found

Visit History

Date in	Acquisition - Vendor/Local ID	Phy	n	Reported By	Disposition - Recipient/Local ID	Phy	n	Date Out
10/02/2018	Birth/Hatch	In	In	DUBLIN / A18M01		-	-	

Identifiers

Reported By	Effective Date	Type	Identifier	Location	Status	Comments
DUBLIN	09/09/2021	Transponder	988004000017532	Assigned	Assigned	
DUBLIN	15/01/2019	Regional Studbook Number	EAZA/201802		Active	
DUBLIN	16/05/2018	House Name	Sanjay		Active	Means "victoroius" in Indonesian
EAZA	10/02/2018	Regional Studbook Number	EAZA/201802		Active	Studbook: Elephas maximus
DUBLIN	10/02/2018	Local ID	A18M01		Active	

Sex Information

Reported By	Date	Sex	Comments
DUBLIN	10/02/2018	Male	

Parent Info

Reported By	In ZIMS	Parent Info	Type / Probability	Birth Date	Comments
DUBLIN	Yes	17742981 [DUBLIN / A6M036]	Dam/100%	26/07/2003	
DUBLIN	Yes	6297841 [DUBLIN / A12M47]	Sire/100%	14/11/1994	

Ancestry Information (calculated by Species360 from shared data)

% Pedigree Known	% Pedigree Certain	Taxonomic Inconsistencies	No. Identified Ancestors
		No	

Rearing Information

Reported By	Start Date	End Date	Rearing	Comments
DUBLIN	10/02/2018		Parent	

Weights

Reported By	Date	Type	Value	Units	Comments
DUBLIN	10/12/2021	Live weight	1384	kilogram	
DUBLIN	30/11/2021	Live weight	1384	kilogram	
DUBLIN	16/11/2021	Live weight	1371	kilogram	
DUBLIN	10/11/2021	Live weight	1362	kilogram	
DUBLIN	15/10/2021	Live weight	1315	kilogram	
DUBLIN	14/10/2021	Live weight	1336	kilogram	
DUBLIN	24/08/2021	Live weight	1276	kilogram	
DUBLIN	15/06/2021	Live weight	1211	kilogram	
DUBLIN	03/06/2021	Live weight	1201	kilogram	
DUBLIN	29/05/2021	Live weight	1183	kilogram	
DUBLIN	24/05/2021	Live weight	1186	kilogram	
DUBLIN	21/05/2021	Live weight	1190	kilogram	
DUBLIN	05/05/2021	Live weight	1174	kilogram	
DUBLIN	22/04/2021	Live weight	1169	kilogram	
DUBLIN	20/04/2021	Live weight	1130	kilogram	
DUBLIN	15/04/2021	Live weight	1157	kilogram	
DUBLIN	01/04/2021	Live weight	1130	kilogram	
DUBLIN	09/11/2020	Live weight	1036	kilogram	
DUBLIN	20/10/2020	Live weight	1017	kilogram	
DUBLIN	12/10/2020	Live weight	1003	kilogram	
DUBLIN	22/09/2020	Live weight	995	kilogram	
DUBLIN	29/07/2020	Live weight	941	kilogram	

DUBLIN	28/07/2020	Live weight	937	kilogram
DUBLIN	21/07/2020	Live weight	931	kilogram
DUBLIN	01/07/2020	Live weight	926	kilogram
DUBLIN	23/06/2020	Live weight	905	kilogram
DUBLIN	16/06/2020	Live weight	909	kilogram
DUBLIN	09/06/2020	Live weight	900	kilogram
DUBLIN	28/04/2020	Live weight	871	kilogram
DUBLIN	07/04/2020	Live weight	841	kilogram
DUBLIN	03/03/2020	Live weight	823	kilogram
DUBLIN	20/02/2020	Live weight	801	kilogram
DUBLIN	06/02/2020	Live weight	784	kilogram
DUBLIN	04/02/2020	Live weight	783	kilogram
DUBLIN	17/12/2019	Live weight	750	kilogram
DUBLIN	06/11/2019	Live weight	711	kilogram
DUBLIN	05/11/2019	Live weight	704	kilogram
DUBLIN	30/10/2019	Live weight	710	kilogram
DUBLIN	29/10/2019	Live weight	706	kilogram
DUBLIN	23/10/2019	Live weight	694	kilogram
DUBLIN	15/10/2019	Live weight	686	kilogram
DUBLIN	08/10/2019	Live weight	685	kilogram

Specimen Report: ZLG18-03997 | Local ID: DUBLIN / A18M01

Specimen Report

Species360 17742980 **Local ID**: DUBLIN / A6M035
GAN
Elephas maximus Asian elephant
Studbooks EAZA, AZA, ZAA, JAZA
Order Proboscidea **Family** Elephantidae
IUCN Endangered (EN) **CITES** I
Start Date 01/01/2006 **End Date** 01/02/2022

Basic Animal Information

No Local Data Differences Found

Sex - Contraception	Female -	**Status**	Alive
Birthdate - Age	25/11/1990 - 31Y,2M,7D	**Preferred ID**	DUBLIN / A6M035
Origin	Rotterdam Zoo	**Rearing**	Parent
Birth Type	Captive Birth/Hatch	**Hybrid Status**	Not Hybrid
Sire	24931937 (ROTTERDAM / 101208)	**Dam**	10257473 (ROTTERDAM / 101209)
Current Collection	Main Institution Animal Collection	**Collection Trip**	
Clutch / Litter		**Enclosure**	3010 - Kaziranga Forest Trail - Elephant

Visit History

Date in	Acquisition - Vendor/Local ID	Phy	Own	Reported By	Disposition - Recipient/Local ID	Phy	Own	Date Out
25/11/1990	Birth/Hatch	In	In	ROTTERDAM / 104099	Donation To DUBLIN/104099	Out	Out	17/10/2006
18/10/2006	Loan In From Sender: ROTTERDAM/104099 Vendor: ROTTERDAM/104099	In	-	DUBLIN / A6M035		-	-	

Identifiers

Reported By	Effective Date	Type	Identifier	Location	Status	Comments
DUBLIN	01/02/2022	Transponder	988004000017510	Assigned	Assigned	
DUBLIN	18/10/2006	Local ID	A6M035		Active	
DUBLIN	25/11/1990	Regional Studbook Number	EAZA/9008		Active	Legacy SLocation: EAZA Legacy Comment:
ROTTERDAM	16/10/2006	Tag	2 Red		Active	Legacy SLocation: Bump Legacy Comment: Red Marker for Transport
DUBLIN	25/11/1990	House Name	Yasmin		Active	Legacy SLocation: Left tail fold Legacy Comment:
DUBLIN	01/02/2022	Transponder	967000000758902	Not located	Not located	Legacy Comment: Left tail fold. Not located by team after multple scans.

Sex Information

Reported By	Date	Sex	Comments
DUBLIN	18/10/2006	Female	

Parent Info

Reported By	In ZIMS	Parent Info	Type / Probability	Birth Date	Comments
DUBLIN	Yes	10257473 [ROTTERDAM / 101209]	Dam/100%	18/09/1970	
DUBLIN	Yes	24931937 [ROTTERDAM / 101208]	Sire/100%	07/12/1970	
ROTTERDAM	Yes	10257473 [ROTTERDAM / 101209]	Dam/100%	18/09/1970	
ROTTERDAM	Yes	24931937 [ROTTERDAM / 101208]	Sire/100%	07/12/1970	

Ancestry Information (calculated by Species360 from shared data)

% Pedigree Known	% Pedigree Certain	Taxonomic Inconsistencies	No. Identified Ancestors
75.00%	75.00%	Yes-Subspecies level	6

Rearing Information

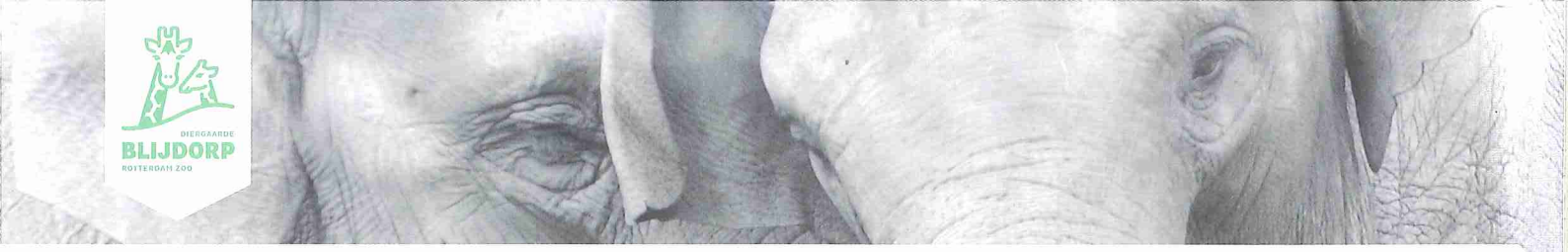
Reported By	Start Date	End Date	Rearing	Comments
DUBLIN	18/10/2006		Parent	

Weights

Reported By	Date	Type	Value	Units	Comments
DUBLIN	16/11/2021	Live weight	3885	kilogram	
DUBLIN	03/06/2021	Live weight	3755	kilogram	
DUBLIN	29/04/2021	Live weight	3805	kilogram	
DUBLIN	15/09/2020	Live weight	3875	kilogram	
DUBLIN	29/10/2019	Live weight	3950	kilogram	
DUBLIN	15/10/2019	Live weight	3890	kilogram	
DUBLIN	20/12/2017	Live weight	3880	kilogram	
DUBLIN	21/12/2016	Live weight	4100	kilogram	
DUBLIN	23/11/2016	Live weight	4140	kilogram	

Reported By	Date	Type	Value	Units	Comments
DUBLIN	01/02/2016	Live weight	3980	kilogram	
DUBLIN	07/12/2015	Live weight	3865	kilogram	
DUBLIN	29/04/2015	Live weight	3915	kilogram	
DUBLIN	21/04/2015	Live weight	3955	kilogram	
DUBLIN	25/03/2015	Live weight	4005	kilogram	(LM) Approximate weight < 5kg difference.
DUBLIN	04/12/2014	Live weight	4055	kilogram	
DUBLIN	18/03/2014	Live weight	4448	kilogram	
DUBLIN	18/02/2014	Live weight	4462	kilogram	
DUBLIN	10/02/2014	Live weight	4414	kilogram	
DUBLIN	04/02/2014	Live weight	4390	kilogram	
DUBLIN	27/01/2014	Live weight	4366	kilogram	
DUBLIN	07/01/2014	Live weight	4280	kilogram	
DUBLIN	30/12/2013	Live weight	4262	kilogram	
DUBLIN	09/12/2013	Live weight	4238	kilogram	
DUBLIN	21/11/2013	Live weight	4186	kilogram	
DUBLIN	22/10/2013	Live weight	4114	kilogram	
DUBLIN	04/10/2013	Live weight	4066	kilogram	
DUBLIN	27/09/2013	Live weight	4094	kilogram	
DUBLIN	13/09/2013	Live weight	4096	kilogram	
DUBLIN	10/09/2013	Live weight	4084	kilogram	
DUBLIN	15/08/2013	Live weight	4041	kilogram	
DUBLIN	01/07/2013	Live weight	3928	kilogram	
DUBLIN	19/06/2013	Live weight	3882	kilogram	
DUBLIN	31/05/2013	Live weight	3806	kilogram	
DUBLIN	22/05/2013	Live weight	3856	kilogram	
DUBLIN	30/04/2013	Live weight	3820	kilogram	
DUBLIN	29/03/2013	Live weight	3710	kilogram	
DUBLIN	21/02/2013	Live weight	3650	kilogram	
DUBLIN	19/02/2013	Live weight	3648	kilogram	
DUBLIN	22/01/2013	Live weight	3678	kilogram	
DUBLIN	14/01/2013	Live weight	3750	kilogram	
DUBLIN	18/09/2012	Live weight	3808	kilogram	
DUBLIN	21/08/2012	Live weight	3876	kilogram	
DUBLIN	19/07/2012	Live weight	3876	kilogram	
DUBLIN	17/05/2012	Live weight	3934	kilogram	
DUBLIN	24/04/2012	Live weight	4004	kilogram	
DUBLIN	18/04/2012	Live weight	3988	kilogram	
DUBLIN	24/01/2012	Live weight	3948	kilogram	
DUBLIN	12/12/2011	Live weight	3995	kilogram	
DUBLIN	29/11/2011	Live weight	3995	kilogram	
DUBLIN	12/07/2011	Live weight	4040	kilogram	
DUBLIN	09/06/2011	Live weight	4150	kilogram	
DUBLIN	27/05/2011	Live weight	4150	kilogram	
DUBLIN	25/05/2011	Live weight	4020	kilogram	
DUBLIN	04/05/2011	Live weight	4100	kilogram	
DUBLIN	26/04/2011	Live weight	4134	kilogram	
DUBLIN	06/04/2011	Live weight	4130	kilogram	
DUBLIN	14/02/2011	Live weight	4140	kilogram	
DUBLIN	11/02/2011	Live weight	4152	kilogram	
DUBLIN	14/01/2011	Live weight	4152	kilogram	
DUBLIN	06/01/2011	Live weight	4152	kilogram	
DUBLIN	15/12/2010	Live weight	4106	kilogram	
DUBLIN	24/11/2010	Live weight	4110	kilogram	
DUBLIN	12/11/2010	Live weight	4078	kilogram	
DUBLIN	22/09/2010	Live weight	4030	kilogram	
DUBLIN	13/08/2010	Live weight	4042	kilogram	
DUBLIN	04/08/2010	Live weight	3986	kilogram	
DUBLIN	28/07/2010	Live weight	4050	kilogram	
DUBLIN	23/07/2010	Live weight	4050	kilogram	
DUBLIN	14/07/2010	Live weight	4066	kilogram	
DUBLIN	08/07/2010	Live weight	4030	kilogram	
DUBLIN	07/07/2010	Live weight	3984	kilogram	
DUBLIN	17/06/2010	Live weight	4012	kilogram	
DUBLIN	11/06/2010	Live weight	4030	kilogram	
DUBLIN	02/06/2010	Live weight	4044	kilogram	
DUBLIN	26/05/2010	Live weight	4062	kilogram	
DUBLIN	13/05/2010	Live weight	4070	kilogram	
DUBLIN	05/05/2010	Live weight	4030	kilogram	
DUBLIN	29/04/2010	Live weight	4052	kilogram	
DUBLIN	21/04/2010	Live weight	4030	kilogram	

Reported By	Date	Type	Value	Units	Comments
DUBLIN	31/03/2010	Live weight	4060	kilogram	
DUBLIN	14/01/2010	Live weight	4134	kilogram	
DUBLIN	07/12/2009	Live weight	4070	kilogram	
DUBLIN	13/08/2009	Live weight	4022	kilogram	
DUBLIN	28/04/2009	Live weight	3900	kilogram	
DUBLIN	25/03/2009	Live weight	4000	kilogram	
DUBLIN	18/02/2009	Live weight	4200	kilogram	
DUBLIN	24/11/2008	Live weight	3955	kilogram	
DUBLIN	18/11/2008	Live weight	3962	kilogram	
DUBLIN	15/11/2008	Live weight	3962	kilogram	
DUBLIN	03/11/2008	Live weight	3962	kilogram	
DUBLIN	20/10/2008	Live weight	3862	kilogram	
DUBLIN	24/07/2008	Live weight	3848	kilogram	
DUBLIN	17/07/2008	Live weight	3940	kilogram	
DUBLIN	31/03/2008	Live weight	3896	kilogram	
DUBLIN	18/03/2008	Live weight	3800	kilogram	
DUBLIN	13/02/2008	Live weight	3924	kilogram	
DUBLIN	29/01/2008	Live weight	4002	kilogram	
DUBLIN	13/11/2007	Live weight	3952	kilogram	
DUBLIN	02/11/2007	Live weight	3954	kilogram	
DUBLIN	23/10/2007	Live weight	3940	kilogram	
DUBLIN	22/10/2007	Live weight	3922	kilogram	
DUBLIN	02/10/2007	Live weight	3900	kilogram	
DUBLIN	12/09/2007	Live weight	3886	kilogram	
DUBLIN	21/08/2007	Live weight	3922	kilogram	
DUBLIN	23/07/2007	Live weight	3866.0	kilogram	
DUBLIN	19/07/2007	Live weight	3870.0	kilogram	
DUBLIN	24/04/2007	Live weight	3782	kilogram	
DUBLIN	28/03/2007	Live weight	3782	kilogram	
DUBLIN	04/02/2007	Live weight	3780	kilogram	
ROTTERDAM	17/10/2006	Live weight	3500	kilogram	
ROTTERDAM	01/08/2006	Live weight	3100	kilogram	Migrated from MedARKS Clinical Notes module.



BIJZONDERE ONTMOETINGEN

CERTIFICATE OF CAPTIVE BIRTH

To Whom It May Concern:

This is to certify that the following females 0.2 Asian Elephants, *Elephas maximus,* were born at the Diergaarde Blijdorp Rotterdam Zoo, Blijdorplaan 8, 3041 JG Rotterdam, Netherlands.

1. House name "Yasmin", transponder# 967.00.00007.58902, ZIMS GAN 17742980 was born November 25, 1990.

   Parents locations:
   - sire "Ramon"/GAN 24931937
     Diergaarde Blijdorp Rotterdam Zoo
     Blijdorplaan 8
     3041 JG Rotterdam
     resided there until his death on April 24, 1998
   - dam "Irma"/GAN 10257473
     Diergaarde Blijdorp Rotterdam Zoo
     Blijdorplaan 8
     3041 JG Rotterdam
     Netherlands

2. House name "Anak", transponder# 967.00.00009.07087, ZIMS GAN 17742981 was born July 26, 2003.

   Parents locations:
   - sire "Alexander"/GAN MIG12-29966045
     Miejski Ogród Zoologiczny w Lodzi Sp. z o.o.
     Ul. Konstantynowska, 8/10
     Lódz, Lódzkie 94-303
     Poland
   - dam "Yasmin"/GAN 17742980
     Dublin Zoo
     Phoenix Park, North Road
     Dublin D08 WF88
     Ireland

Signature _____ Date 25-10-2021

Rotterdam ZOO

Stichting Koninklijke Rotterdamse Diergaarde
Royal Rotterdam Zoological & Botanical Gardens
Postbus 532, 3000 AM Rotterdam

T 0900 1857 (10 cent per minuut)
www.diergaardeblijdorp.nl
KVK NR.: 41125139

IBAN: NL30 RABO 0356 3168 90
BIC: RABONL2U
BTW NR.: 002772036 B 01

CERTIFICATE OF CAPTIVE BIRTH

To Whom It May Concern:

This is to certify that the following males 2.0 Asian Elephants, *Elephas maximus,* were born at the Dublin Zoo, Phoenix Park, North Road, Dublin D08 WF88.

1. House name “Kabir”, transponder# 988.00.40000.17531, ZIMS GAN ZLG17-03907 was born May 15, 2017.

   Parents current locations:

   - Sire “Upali”/GAN 6297841
     Le Pal, Parc Animalier
     Dompierre sur Besbre
     St Pourçain-sur-Besbre, Allier
     F-03290 France

     Dam “Yasmin”/GAN 17742980
     Dublin Zoo Phoenix Park, North Road
     Dublin D08 WF88, Ireland

2. House name “Sanjay”, transponder# 988.00.40000.17532, ZIMS GAN ZLG18-03997 was born February 10, 2018.

   Parents current locations:

   - Sire “Upali”/GAN 6297841
     Le Pal, Parc Animalier
     Dompierre sur Besbre
     St Pourçain-sur-Besbre, Allier
     F-03290 France

     Dam “Anak”/GAN 17742981
     Dublin Zoo Phoenix Park, North Road
     Dublin D08 WF88, Ireland

Miguel Bueno
General Curator
Dublin Zoo

Signature

20th October 2021

Date

CARING FOR OUR ELEPHANTS

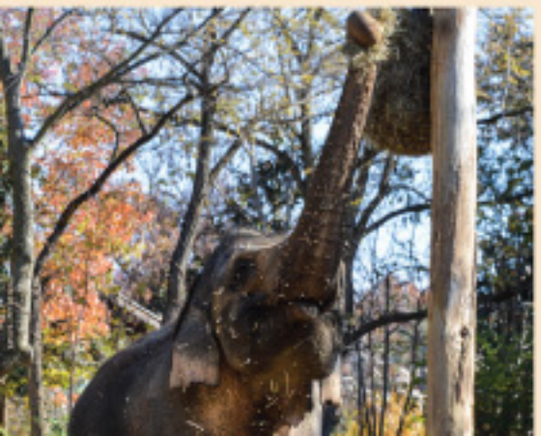
A lot goes into providing excellent care for our elephant herd.

Socializing

The opportunity to socialize with others is an important part of an elephant's well-being, and you'll see our elephants travelling with different members of the herd. Males in the wild also spend some time on their own as does our male, Sabu.

Habitat

We provide stimulating environments that encourages the elephants to explore, exercise, and make choices about how to spend their day.



Feeding

Our Zoo nutritionist ensures the elephants receive proper nutrition in their diets. Food is offered day and night in different ways at various locations to promote natural foraging behavior.

Monitoring

Understanding each elephant's personality and normal behavior is an important part of their care and well-being. Every day, the elephant care team reinforces behaviors that allow for routine preventative care such as foot exams and blood draws.

Enrichment

We keep our elephants mentally and physically fit by providing enriching experiences such as novel items and opportunities to investigate and interact with their environment.

Research

We continuously evaluate and improve the well-being of our elephants through behavioral research. We also partner with universities on studies that contribute to a better understanding of elephant biology.

MEET OUR ELEPHANTS

Sabu

Male

Birth year: 1987

Sabu is our only male (bull) and has long white tusks.

Mai Thai

Female

Birth year: 1971

Mai Thai is smaller and has less freckling and light sections than Schottzie. She has a small hole in her left ear and is missing the hairy tip of her tail.

Schottzie

Female

Birth year: 1975

Schottzie is the largest of our females. She has the most freckling and lighter coloring, especially on her trunk, ears and front of her body.

Jati

Female

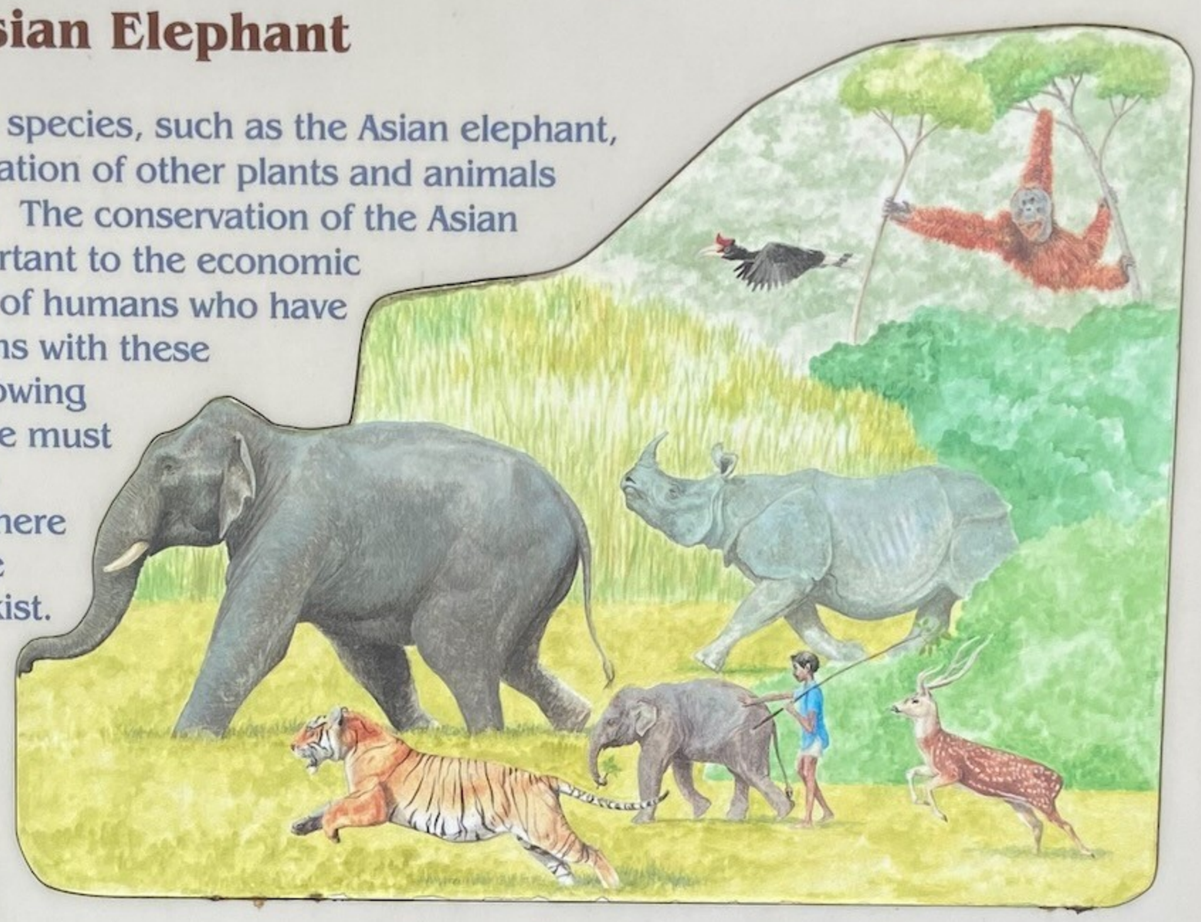
Birth year: 1987

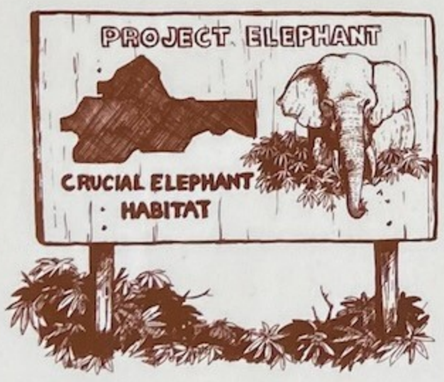
The smallest of our elephants, Jati is recognizable by the reddish hair on her head.

The Ultimate Flagship Species

The Asian Elephant

A flagship species, such as the Asian elephant, promotes the preservation of other plants and animals that live in its habitat. The conservation of the Asian elephant is also important to the economic and social well being of humans who have centuries-old traditions with these animals. With the growing human population, we must take action quickly to create a landscape where elephants and people can continue to co-exist. Otherwise, this giant may vanish before our eyes.





Preserve Places to Live

The long-term survival of Asian elephants requires the protection of large, biologically diverse tracts of tropical forests. These habitats also shelter many more animals such as Asian rhinos, tigers and orangutans.

Create Safe Passages

Natural migration corridors must be allowed to link isolated elephant populations to promote genetic diversity and prevent conflict between elephants and rural communities.

Resolve the Conflict

As a result of habitat fragmentation, dangerous encounters between people and wild elephants are on the rise. Solutions must be sought which incorporate the needs of those affected while ensuring the long-term survival of the Asian Elephant.

End Poaching

Anti-poaching efforts, hampered by a lack of equipment and funds, must improve. In addition, the ban on the trade of ivory must continue.

Provide Health Care

Working populations of elephants in Asia need better long-term management, including veterinary care as well as breeding programs to reduce the number of elephants taken from the wild.

Educate

Education efforts open the door to a better understanding of elephants' behavior and their needs in the wild. By working together, we can help build an international commitment to save this endangered species.

The success of any strategy to help save wildlife and wild places depends upon people. Building commitments to conservation strategies involves not only understanding how to save wildlife and wild places, but also why to save them.

Asian Elephant *Elaphas maximus*

Asia's largest land mammal is most famous for its trunk, which is indispensable for feeding, drinking, smelling, touching, communicating and bathing.

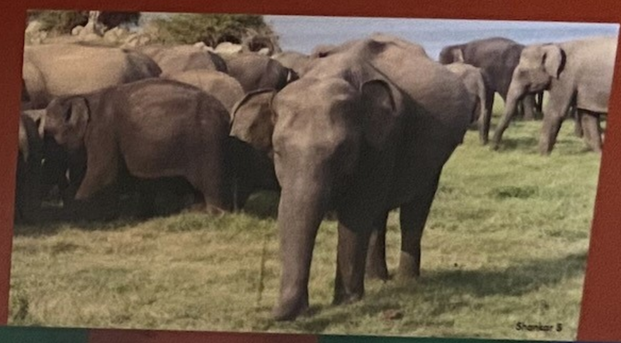
Over 100,000 muscles form the elephant's trunk.

Range: Southern and Southeast Asia

Height: Up to 10 ft
Weight: Up to 11,000 lbs
Lifespan: 40 to 55 yrs
Habitat: Forest
Diet: Grasses, leaves, barks, and fruits

SPECIES@RISK
IUCN-Endangered

Elephants live in herds led by older, experienced females; females stay with the herd, while males leave when they reach puberty.



ASIAN ELEPHANT

Elephas maximus

Asia's largest land mammal is most famous for its trunk, which is indispensable for feeding, drinking, smelling, touching, communicating and bathing. Over 100,000 muscles of the face, nose, and upper lip combine to form the elephant's trunk. The tip of an Asian elephant's trunk even has a prehensile "finger".

Fact File

HEIGHT
Up to 10 ft

WEIGHT
Up to 11,000 lbs

LIFE EXPECTANCY (MEDIAN)
40-55 yrs

HABITAT
Forest

DIET
Grasses, leaves, barks, and fruits

RANGE
Southern and Southeast Asia

LIFE IN THE HERD

Elephants live in herds led by older, experienced females; females stay with the herd, while males leave when they reach puberty.

Species Survival Plan®

SPECIES@RISK

(IUCN-Endangered)

Blueprint of a Forest Giant

Adaptations of an Asian Elephant

From trunk to toe, Asia's largest land mammal displays some amazing adaptations to life as a forest-dwelling herbivore.

The Fifth Limb

Over 100,000 muscles of the face, nose and upper lip combine to form this amazing "fifth limb". The trunk is indispensable for feeding, drinking, smelling, touching, communicating and bathing.

Thick-skinned and wrinkly

Thick skin protects the elephant from insect bites and injuries as it tromps through the forest. Wrinkles provide a large surface area and trap water and mud, all of which aid in cooling the elephant.

Left or Right-Tusked?

Only male Asian elephants have prominent tusks. Tusks are used as tools while digging for minerals, water or food, and occasionally as weapons between competitive males. Just as we are left or right-handed, elephants are either left or right-tusked, with the dominant tusk being shorter due to more frequent use.

Portable Air Conditioning

Since elephants don't sweat, they must rely on other methods to eliminate excess heat. As elephants flap their large, thin ears, air flows across the blood vessels in the ear. This cools the blood, which then circulates throughout the body.

Sculptors of a Forest Landscape

While moving through the forest, elephants stamp down vegetation and tear down trees, creating trails that they and other animals use for travel. Seeds are dispersed in elephant dung, which encourages the growth of new plants. As elephants eat leaves and branches, they are essentially pruning them so that the foliage grows back thicker, thereby replenishing the food source.

Why do you VALUE

...and wild places ...important because they are a source for inspiration and they spur curiosity and imagination.

ndscape

rest, elephants stamp
n trees, creating trails
. Seeds are dispersed
owth of new plants. As
are essentially pruning
er, thereby replenishing
the food source.

Point of View:

Wildlife and wild places are important because they are a source for inspiration and they spur curiosity and imagination.

Vanishing Giants Waterfall donated by

Isaac & Esther Jerson, Stanley & Mickey Kaplan Foundation

- Moved to Louisville
  & returned to Cin
- Sabu means "boy" i
- Sabu has sired two
  and a female nam

MAI-THAI

- 8,600 lb female
- Born in 1973 (estimated)
- Rescued as an orphan from the wild and came to the Cincinnati Zoo on February 14, 1974
- Small hole in left ear

rphants

SABU

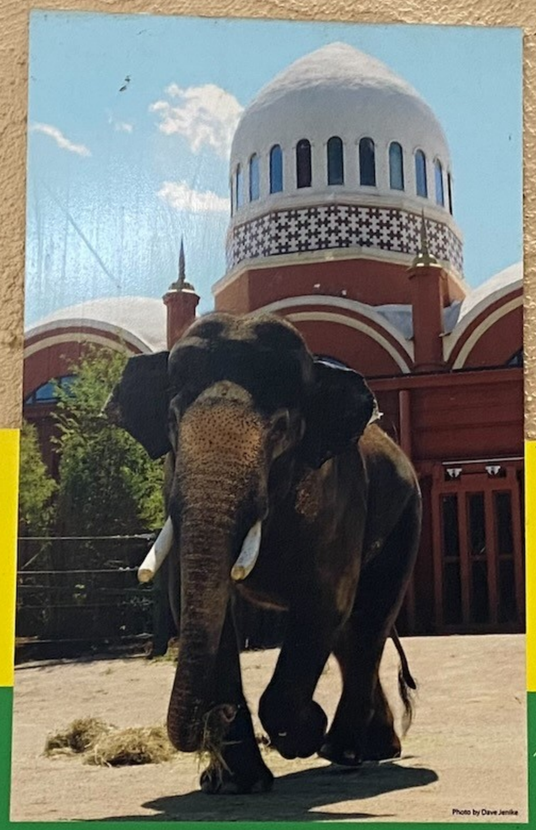
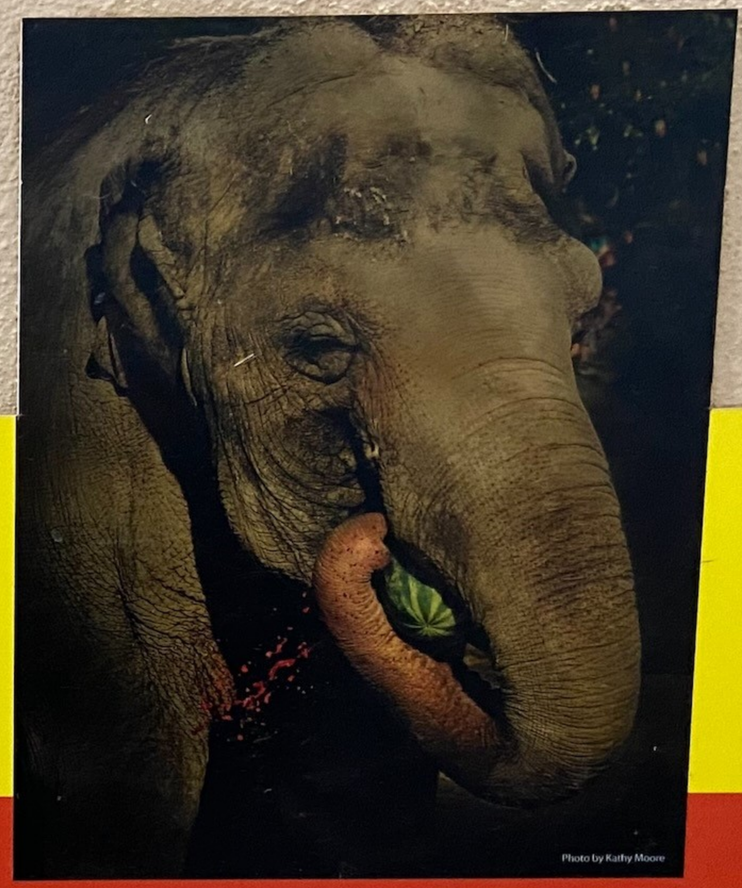


Photo by Dave Jenike

- 9,700 lb male
- Born in 1988 (estimated)
- Rescued as an orphan from the wild and came to the Cincinnati Zoo in 1991
- Moved to Louisville Zoo in 1998, then to Dickerson Park Zoo, & returned to Cincinnati in 2007
- Sabu means "boy" in Thai
- Sabu has sired two calves—a male named Ganesh in 1998 and a female named Nisha in 2006

SCHOTTZIE



- 9,300 lb female; largest of the females
- Born on December 15, 1975, at Copenhagen Zoo
- Came to Cincinnati Zoo in 1978
- Schottzie means "sweetheart" in German

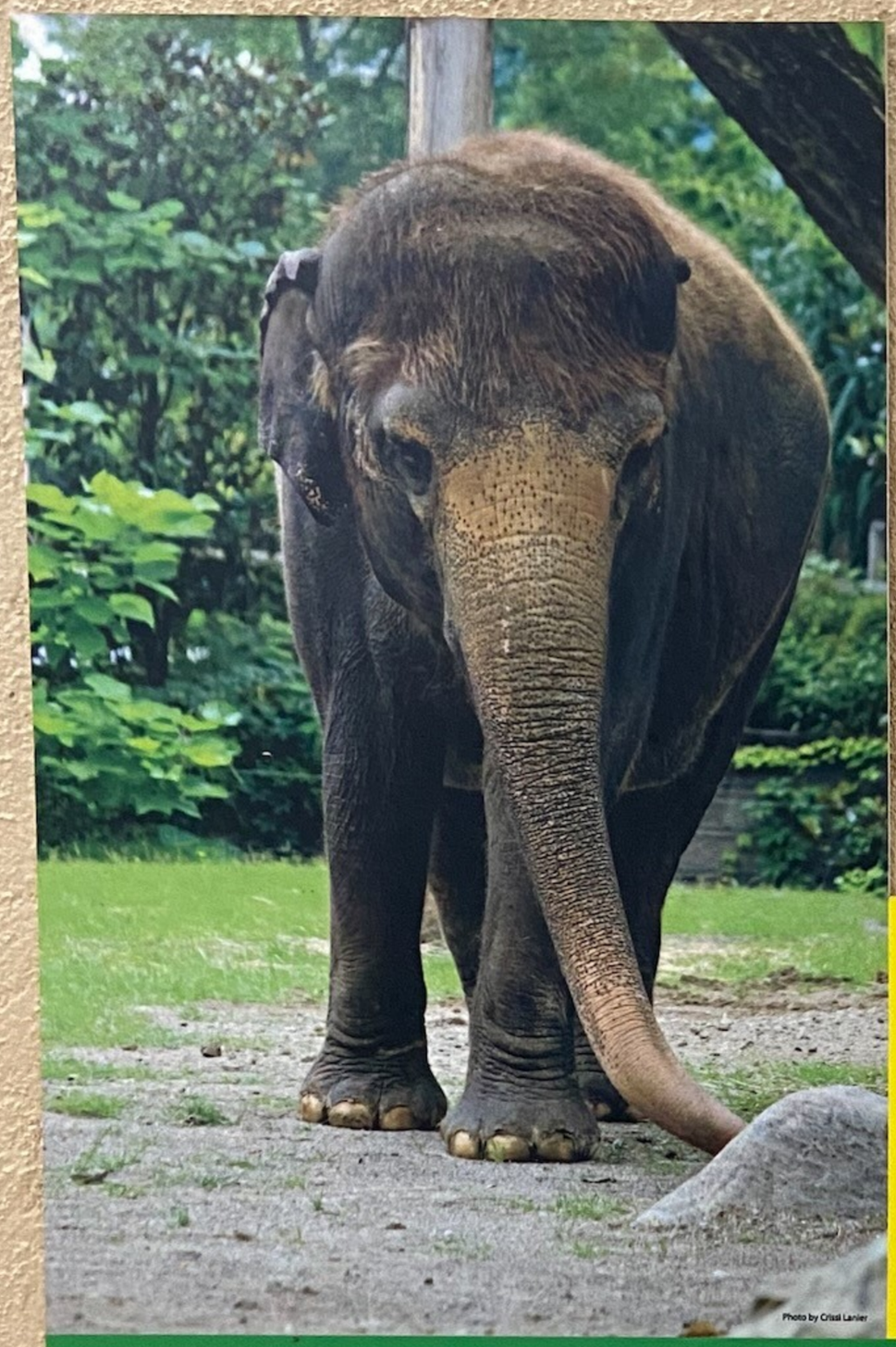
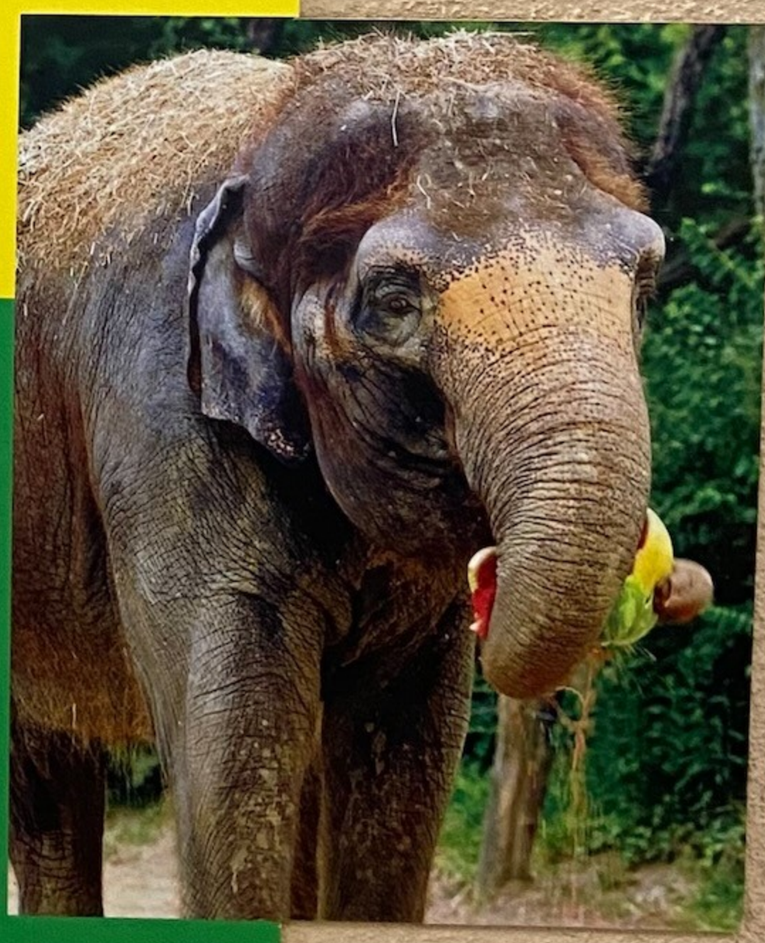


Photo by Crissi Lanier

JATI



- 7,600 lb female; smallest of the females
- Born in 1987 (estimated)
- Rescued as an orphan from the wild and came to Cincinnati Zoo in 1991
- Lots of hair on her head
- Jati is named for a type of Malaysian wood
- Jati and Sabu produced a male calf, Ganesh, in 1998

ELEPHANT FOUNDATION.ORG

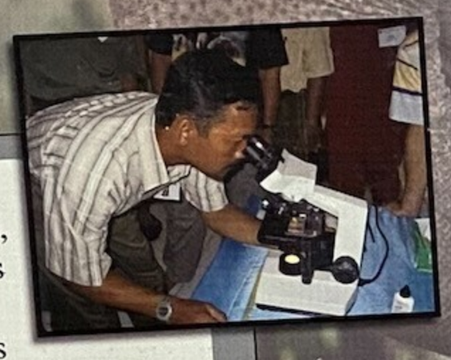
Cincinnati Zoo is a proud supporter of the International Elephant Foundation's many conservation and research projects:

CINCINNATI ZOO & BOTANICAL GARDEN

ASIAN ELEPHANT SUPPORT
www.asianelephantsupport.org

Supporting actions to eliminate the illegal killing and trafficking of elephants

Researching critical diseases — Elephant Endotheliotropic Herpesvirus (EEHV) and Mycobacterium tuberculosis (MTB) complex in elephants

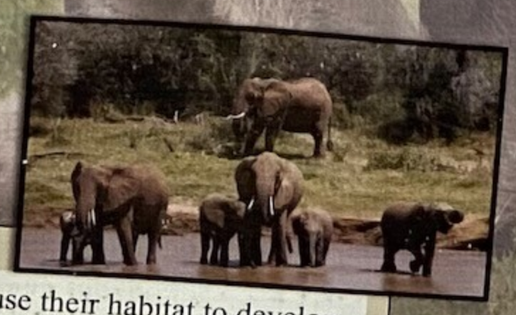


Funding scholarships, symposiums and publications to share best practices and build capacity of elephant conservationists

Constructing and equipping marine stations, enabling law enforcement to use the waterways to apprehend poachers

Reducing wildlife crime, elephant poaching and protecting elephant habitat through forest patrol and monitoring

Raising awareness of the importance of conserving elephants and their habitat



Understanding how elephants use their habitat to develop programs to reduce habitat fragmentation and loss.

Supporting community-based strategies to encourage the peaceful co-existence between humans and elephants

INTERNATIONAL ELEPHANT FOUNDATION.ORG

IEF funds projects worldwide to protect endangered and threatened elephants

Cultural Traditions

The Asian elephant has been many things to many people.

It has been revered as a divine creature, has been ridden into battle as a war machine and has worked side-by-side with people. It is the only endangered species that has a working partnership with humans. This partnership may be the key to the elephant's ultimate survival.

The Remover of Obstacles

In Hinduism, the elephant-headed god, Ganesh, is the remover and creator of all obstacles. At the beginning of any new undertaking, practitioners of the Hindu faith make a visit to the temple of Ganesh.

Elephant Art

The decorative art of carving elephant ivory is a 4000-year-old practice. With elephant populations dwindling, we are faced with the prospect of losing both a traditional art form and a valued species.

Ceremonial Elephant

Often ornately decorated, elephants are a focal point of many cultural festivals. These chosen elephants are living works of art.

The Natural Alternative to Sports Utility Vehicles

During the monsoon season, Asian elephants are a dependable form of transportation. Elephants have no trouble wading or swimming through flooded areas, where cars or trucks are useless.

Selective Forestry

Asian elephants are used to selectively harvest trees, such as teak, from the forests of Asia with a less damaging effect than clear-cutting. If properly managed, this type of forestry can be sustainable.

Point of View:

It is important to protect wildlife and wild places because they provide many medical, economic and cultural benefits to society.

Cincinnati Zoo & Botanical Garden
David Orban - 07/29/2019

Elephant Wellness Signage

Messaging Points for New Signage at CZBG Elephant Reserve

Potential Themes/Titles:

Creating Optimal Experiences for Our Elephants
Home in Cincinnati
Striving for Animal Excellence (continuous improvement)
More Home To Roam

Tenets of our Elephants' Current Experience:

- Environment
  - Recently expanded and enhanced habitat area features more soft substrates and the new barriers allow for more efficient training and exercise programming with care staff.
  - Entire outdoor elephant habitat is now accessible to all elephants over the entire 24-hour period, which means that our elephants may sleep outside if the weather is nice enough.
  - Often, the elephants will have access to both indoor or outdoor areas, which allows them to have more choice in how they explore their surroundings.
  - Indoor behind-the-scenes areas have sand piles to enhance comfort.
- Feeding
  - Each elephant consumes about ___ pounds of food per day, making them the most expensive animal in the Zoo to feed!
  - Automatic timed feeders are placed strategically throughout the elephant behind-the-scenes areas to promote feeding and exploration overnight.
  - A new feed tree was installed in the larger outdoor habitat, offering opportunities to remotely drop food throughout the day.
  - Our elephants' diet is specially customized by our Cincinnati Zoo nutritionist and animal health team.
- Social
  - Social experience is important to elephant welfare. You'll find our elephants spend time traveling with different members of the herd.
  - Male Asian elephants do spend more of their life solitary or roaming between social groups. Our male Asian elephant, Sabu, will spend some time with different female elephants or by himself.
- Human Relationships
  - Our elephant care team has collectively worked with this elephant herd for decades, understanding each of their personalities, motivations, and preferences.
  - Every day, care staff implement operant conditioning training with our elephants, using positive reinforcement to teach behaviors that aide in the elephants' health care. These behaviors include body presentations, foot exams, and blood draws.
  - The staff also encourage elephants to participate in different exercise routines, including walking and stretching. This is good for their health (and that of our care staff).
  - Elephant receive various times of environmental enrichment daily, which helps to promote exercise and problem-solving.
- Research
  - The Cincinnati Zoo & Botanical Garden are proud collaborators in the Elephant Welfare Initiative, where we partner with other zoos to track and improve indicators of elephant welfare.

- Daily, keepers record various aspects of the elephants' 24-hour experience, including where they spend their time, who they spend time with, and what events take place in their day. This data is summarized each month and trends are reviewed over time.
- Behavioral observations also take place daily. Various staff and interns will observe the elephants throughout the day, recording behaviors at set intervals. This information tells us how our elephants are responding to changes in their care routine or habitats.
- The Cincinnati Zoo elephant program also regularly partners with universities to study different health, behavioral, or physiological components of elephant biology, which contributes to science and better understanding of elephants in accredited zoos and in the wild.

A Future for Elephants in Cincinnati:

- Cornerstone of *More Home To Roam* campaign
- 4.5-acre area dedicated to elephants, including multiple outdoor habitats to explore and a large indoor community building
- Habitats will feature multiple feeding points throughout and opportunities to self-maintain (sand pits, pools, mud wallows), which will promote exploration and exercise.
- Our elephant herd will expand and develop into a multi-generational family group, as they would live in over in Southeast Asia.

THE 2 SPECIES OF ELEPHANTS ARE THE AFRICAN AND ASIAN

Kingdom: Animalia

Phylum: Chordata

Class: Mammalia

Order: Proboscidea

- (Gr. *proboskis*, elephant trunk)

Genus: 2 genera

Species: 2 species

African elephants are in the genus

Asian elephants are in the genus ***Elephas***

African Elephant

Asian Elephant

ASIAN ELEPHANT

At our Zoo we have Asian elephants. The Asian elephant is an endangered species threatened by habitat loss and poaching, The surviving population of Asian elephants is estimated between 30,000–50,000, one-tenth of the population of African elephants.

ASIAN ELEPHANT QUICK FACTS

Latin name: Elephas maximus

Where: Elephant Reserve

Height: Up to 10 ft

Weight: Up to 11,000 lbs.

Lifespan: 47 yrs.

Habitat: Forest

Diet: Grasses, leaves, barks, and fruits

Risk Status: Species at Risk (IUCN—Endangered)

ASIAN ELEPHANTS QUICK FACTS

Weight: 3–7 tons (6,000–14,000 lbs.)

Height: 7–12 feet

Tallest point: Top of the head

Body shape:
– Back: Rounded,
– Belly: Level or slopes to middle,
– Head: Two domes,
– Ears: Small and rectangular

Tusks: Some males have large tusks. Females and some males have tusks called “tushes” which seldom extend beyond the upper lip.

Trunk: Tip of trunk has 1 finger-like projection

ASIAN ELEPHANTS QUICK FACTS

Skin: Lightly wrinkled with sparse hair over entire body

Feet: Usually have five toenails on each front foot and four on each rear foot

Habitat: Forest of Southeast Asia

Diet: Primarily a browser

Social life: Female family groups. Adult males are solitary or form loose social relationships.

Gestation: 659 days ± 30 days

Interbirth interval: 3–5 years

Status: Endangered due to loss of habitat. Numbers are currently around 30,000 – 50,000

RANGE OF THE ASIAN ELEPHANT IN THE WILD

Asian elephants are found in 14 countries throughout Asia

India has the largest population between 24,000 to 33,000 elephants

Vietnam has the smallest population at 76-94 elephants

MEET OUR ELEPHANTS

MAI THAI

Mai Thai is about 9,000 pounds and is the middle-sized elephant. She is mostly brown-grey with small sections of lighter coloring and freckles around her eyes, the edges of her ears and on her trunk. If you look closely, you can see a hole in her left ear. She is also missing the hairy tip of her tail.

SCHOTTZIE

Schottzie is the largest of the females, weighing nearly 10,000 pounds! She is also the tallest. Schottzie has the most freckling and lighter coloring, especially on her trunk, ears and the front of her body.

JATI

Jati is the easiest of the females to identify with the reddish hair on top of her head. She also is the smallest of the elephants. Occasionally, she may be found with Sabu as they are the Zoo's breeding pair.

SABU

The easiest elephant to pick out is Sabu. He's the only male (bull) elephant and has long white tusks. Sabu hangs out by himself in the side yard except when he and Jati, the youngest female, are paired for breeding. There are plans to introduce him to Schottzie and Mai Thai if possible. The south yard has already been modified for a bull.

KEYSTONE SPECIES

A ***keystone species*** is any species that has a disproportionately large effect on the ecosystem where it lives. Apex predators such as the brown bear, honey bees around us, hummingbirds and fruit bats in the tropics act as principal pollinators.

Elephants are ***keystone species*** through their role as a ***bioengineer*** in their ecosystem.

ELEPHANTS AS BIOENGINEERS

Seed germination and dispersal

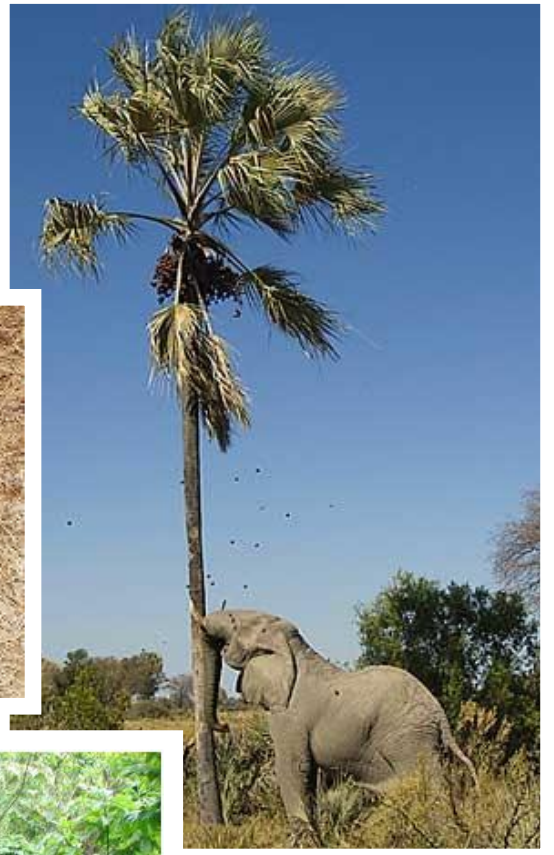
Control plant growth

Create and maintain watering holes other wildlife can benefit from

Shake and drop seeds and vegetation

Keep up insects and other animals for others

Paths can be fire breaks and water conduits



SOCIAL

Female elephants spend their live often within touching distance of their family members. Mothers, sisters and young are together in overlapping generations, which is one of the elements of social behavior.

Young males leave the herd at about 10 years old.

Males or bulls are more solitary, but do form loose groups and visit female herds to look for mates and perhaps visit offspring.

MAINTAINING ELEPHANTS IN ZOOS

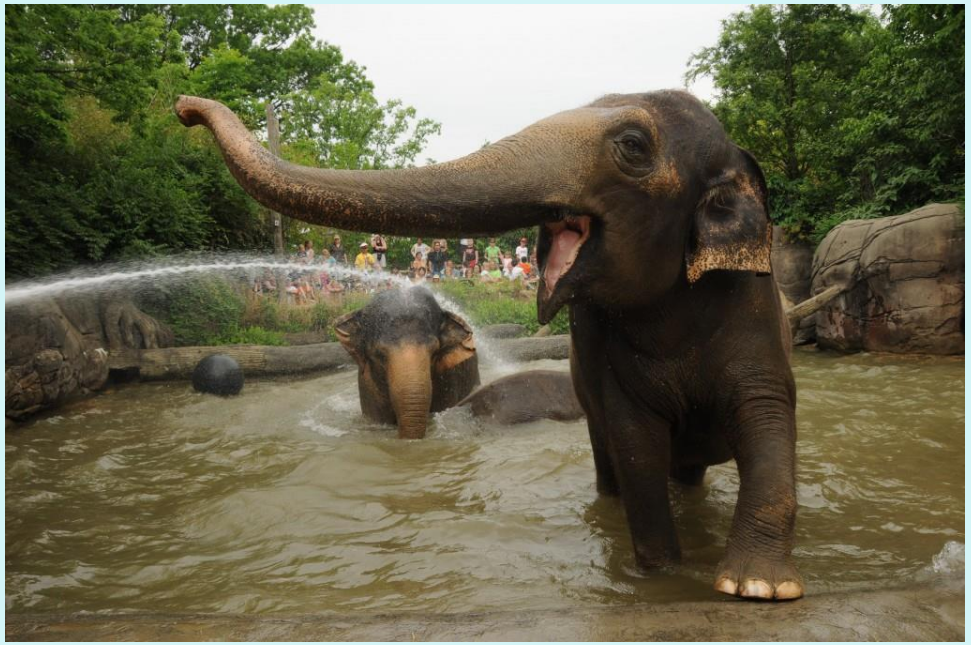
Elephants are important conservation ambassadors for their species and ecosystems. Experiencing elephants in zoos creates an emotional connection that can inspire people to help protect them.

MAINTAINING ELEPHANTS IN ZOOS

The Zoo participates in the ***Asian Elephant Species Survival Plan (SSP***) through which elephant care facilities accredited by the ***Association of Zoos and Aquariums (AZA)*** work in partnership to enhance the long-range plan for elephant care, management, conservation and research.

AZA institutions ensure that each elephant has superior care that meets the needs of their social, behavioral, psychological and physical senses.

ENRICHMENT



Each species' individual needs are considered when designing enrichment activities. Our keepers use enrichment to keep animals healthy by ***encouraging physical activity and mental stimulation***. Some of the ways our animals are enriched include ***environmental, social, training, environmental enrichment devices, sensory and novel food***

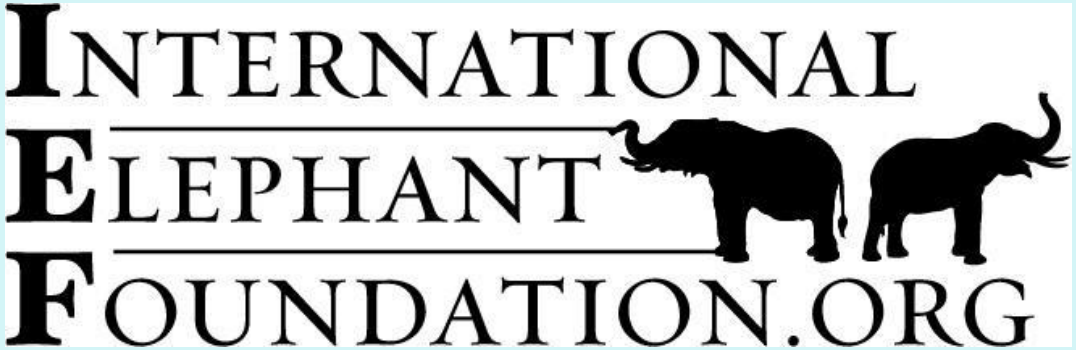
ELEPHANT ENRICHMENT TREE

ELEPHANT PLAY TIME!

SAVING ELEPHANTS IN THE WILD THROUGH THE INTERNATIONAL ELEPHANT FOUNDATION

The International Elephant Foundation (IEF)

The IEF is a non-profit corporation of both individuals and institutions that are dedicated to the protection and preservation of both African and Asian Elephants. To date, the IEF has supported over 120 conservation and research projects. The Cincinnati Zoo is a partner and supporter of the IEF.



SAVING ELEPHANTS IN THE WILD THROUGH THE INTERNATIONAL ELEPHANT FOUNDATION

INTERNATIONAL ELEPHANT FOUNDATION.ORG

Human-elephant conflict is one of the main driver behind population decline, local communities often face crop decimation and structural damage from wild elephant herds. This has caused a lot of resentment towards elephants from communities and has led farmers to harm, or even kill local herds.

SAVING ELEPHANTS IN THE WILD THROUGH THE INTERNATIONAL ELEPHANT FOUNDATION

INTERNATIONAL ELEPHANT FOUNDATION.ORG

Sumatran Elephant Conservation Center (ECC)

The ECC helps to ***relocate elephants that have wandered into human settlements,*** protecting them from potential harm while also helping local communities. More than 700 elephants have been relocated to these centers.

Support from the Zoo through the International Elephant Foundation provides supplies and training to ensure that the elephants are cared for properly.

SAVING ELEPHANTS IN THE WILD THROUGH THE INTERNATIONAL ELEPHANT FOUNDATION

INTERNATIONAL ELEPHANT FOUNDATION.ORG

Elephant Conservation Response Units (CRU)

In 2004, the IEF established Conservation Response Units in Sumatra to provide protection of native wildlife.

CRUs utilize once neglected captive elephants and their caretakers (mahouts) for direct field conservation efforts.

SAVING ELEPHANTS IN THE WILD THROUGH THE INTERNATIONAL ELEPHANT FOUNDATION

INTERNATIONAL ELEPHANT FOUNDATION.ORG

Elephant Conservation Response Units (CRU)

These teams work with forest rangers and conservation officers to mitigate human-elephant conflict, reduce wildlife crimes, raise local conservation awareness, and establish community-based ecotourism to sustain the CRUs

SUPPORT IS ALSO PROVIDED FOR CONSERVATION RESPONSE UNITS (CRU) WHEREBY ELEPHANTS, CARRYING THEIR MAHOUTS AND FOREST RANGERS, ARE TRAINED TO PATROL THE FOREST TO DETER CRIME, MONITOR WILDLIFE, HERD WILD ELEPHANTS AWAY FROM HUMAN SETTLEMENTS AND CONDUCT COMMUNITY OUTREACH.

SAVING ELEPHANTS IN THE WILD THROUGH:

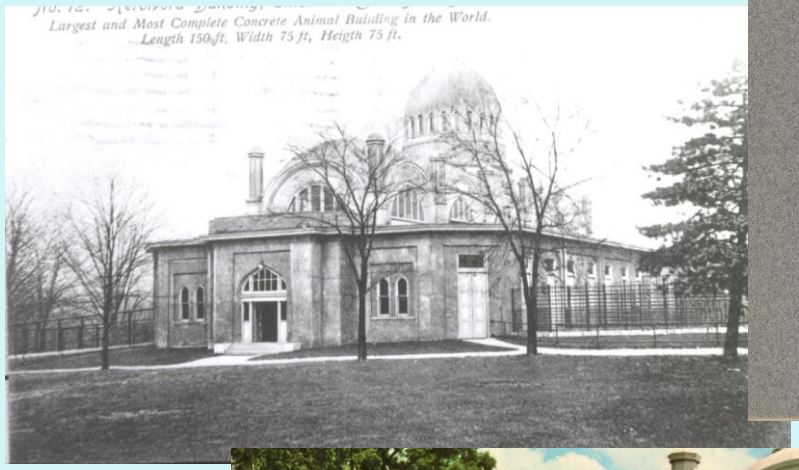
ASIAN ELEPHANT SUPPORT

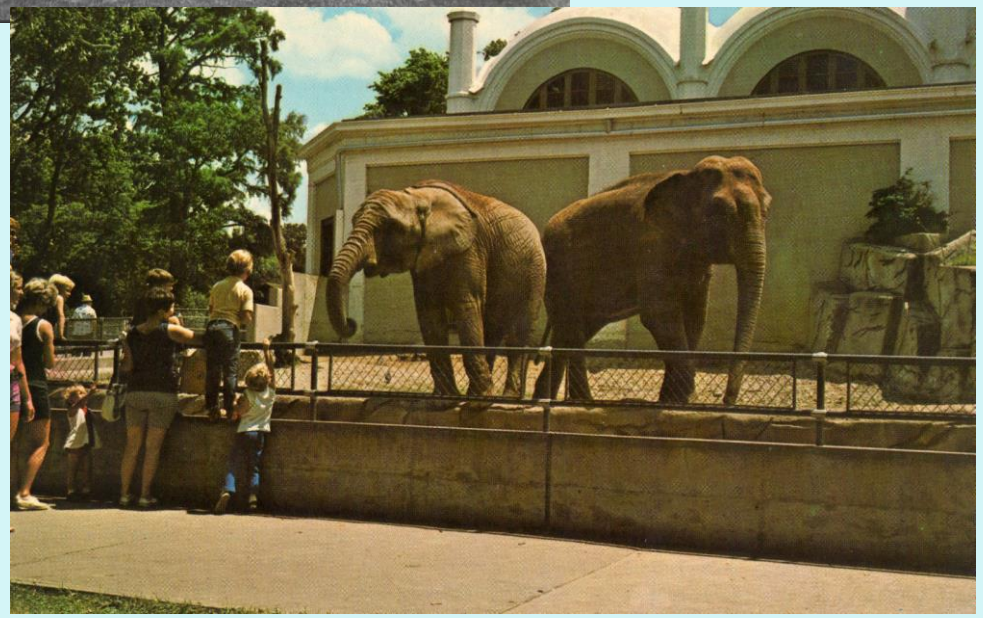
Asian Elephant Support is also funded through the Zoo's Field Projects grant

Supporting the conservation and care of Asian elephants in their range countries.

THE HERBIVORA HOUSE, NOW ELEPHANT RESERVE

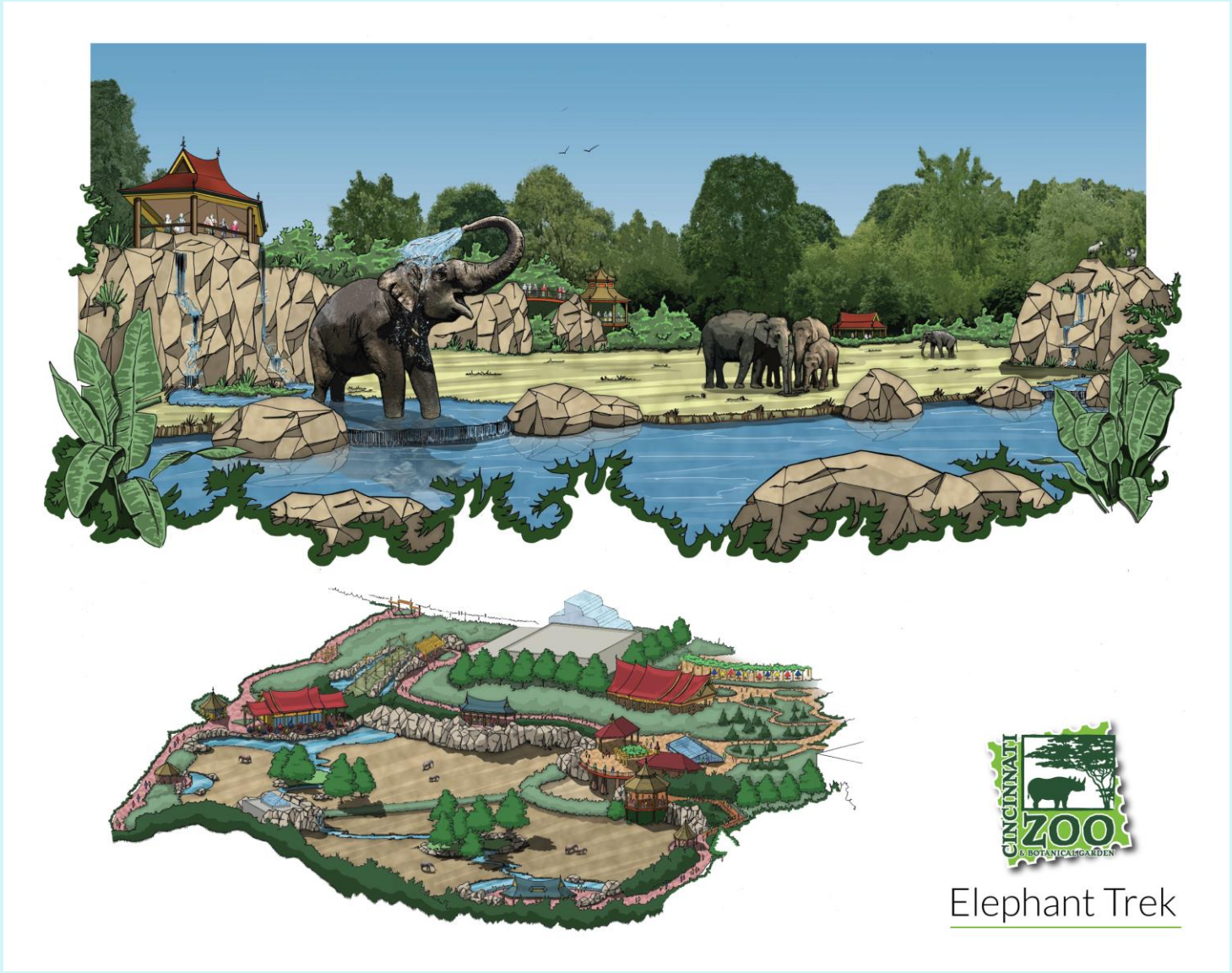
Elephant Reserve Opened in 1906 at a cost of $50,000! Listed on the Register of Historic Buildings





ELEPHANT TREK

Plans for the new habitat include natural elements like trees, mud wallows, grasses, pools, streams, and, best of all, plenty of room for these magnificent mammals to explore. People have been considered in the plans too. Zoo visitors will enjoy watching the elephant herd roam their 4-acre habitat from a shaded gazebo or while having a snack on the patio of a new café.



Asian Elephant (*Elephas maximus*)

July 2020

Population Viability Analysis Summary Report

Photo courtesy of R. Winkelman

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Current Population Status

- Currently the population has 126 individuals (33 males, 93 females) distributed among 29 AZA facilities; the breeding population has only 60 (33.27) individuals
- The population has been stable (0.1% decline annually) and had 2.4 births per year and 4.9 deaths per year on average in the past decade
- Conservation status: IUCN Endangered (Choudry et al. 2008), Endangered under the U.S. Endangered Species Act, and listed in Appendix I of CITES

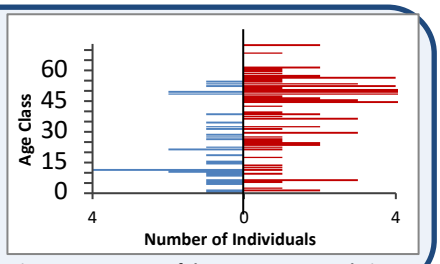

Fig 1. Age structure of the current SSP population

Program Challenges

- The program is focused on increasing reproductive efforts as the continued low birth rate is a cause for concern
- The population also has a large number of older females, many of which are expected to pass out of the population in the coming decades

Model Results

Projected Status <u>WITHOUT</u> Potential Changes

- Under current breeding rates and without imports, the SSP population would decline to on average ~67 individuals in 20 years and ~43 (20.23) individuals in 100 years (Scenario A)

Projected Status <u>WITH</u> Potential Changes

- If possible, increasing reproduction would improve the long-term viability of the SSP. If the population could achieve and maintain a higher breeding rate (corresponding to viable females having on average 1 offspring every 6-7 years), it would grow to ~93 (44.49) individuals in 100 years (Scenario C)
- The population would still first undergo a demographic bottleneck as older females pass out of the population, declining to on average ~74 (33.41) individuals in 20 years
- Other actions such as lowering first year mortality and importing animals could also help to improve viability

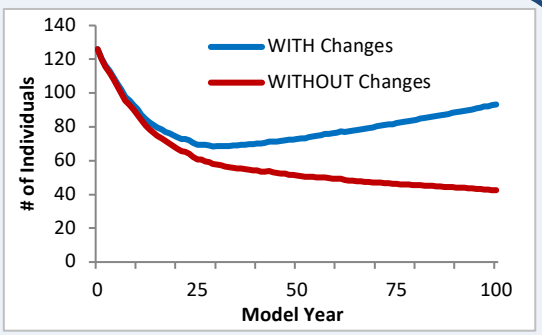

Fig. 2. Projected mean population size under model scenarios A and C. Projected results are averaged across 1000 model iterations.

How Institutions Can Help

- Implement breeding, transfer, and other recommendations given to your facility as quickly as possible, as they are critical to the long-term viability of this SSP population
- When building or expanding facilities, make sure to plan for housing males, as projections predict a more equal sex ratio

Management Actions

- Institutions and the TAG/SSP should continue to prioritize efforts to breed every reproductively viable female
- If possible, import reproductively viable individuals (in accordance with federal and international regulations)
- Manage exhibits carefully to accommodate a declining population and for a more even sex ratio in the future

EXECUTIVE SUMMARY

All analyses were performed using ZooRisk 3.80 (Earnhardt et al. 2008), a PVA modeling software, to examine what would happen to an SSP population if current conditions remain the same (the baseline scenario), and then assess the impact of changes in reproductive rates, space availability, imports/exports, and other potential management actions (alternate scenarios). Model scenarios for the Asian elephant population were developed with members of the Association of Zoos and Aquarium (AZA) Asian Elephant Species Survival Plan© Program in 2020 in conjunction with the 2020 Population Analysis and Breeding and Transfer Plan (Fischer et al. 2020).

CURRENT POPULATION STATUS AND PROGRAM CHALLENGES

The AZA Asian Elephant (*Elephas maximus*) Species Survival Plan© (SSP) population consists of 126 (33.93.0) individuals distributed among 29 facilities as of the studbook currentness date (Sept. 3, 2019). We excluded 66 females from breeding due to age, health, or breeding history, leaving a potentially breeding population of 60 individuals (33.27). Over the past 10 years (2010-2019), the population was stable, with an average annual rate of 0.1% decrease (annual rates varied from -3.1% to +3.9%). In that time, the population had on average ~2.4 births, ~4.9 deaths, 2.8 imports, and 0.4 exports per year. (Note that throughout this report, "imports" are animals entering the SSP population which may be coming from outside sources such as the private sector, zoos in other regions, or the wild, and conversely "exports" are animals exiting the SSP population and going to outside sources.) The population currently retains 97.3% of founding gene diversity and has an average inbreeding coefficient (F) of 0.005. The program is focused on managing the population demographically as many older females are post-reproductive and will age and pass out of the population in the coming decades.

PVA RESULTS

Overall the model results are similar to those from the previous PVA (Faust and Marti 2011). Under average rates of breeding from the past 10 years (2.4 births/year, corresponding to viable females having on average 1 offspring every 8-9 years) and without importations, the Asian elephant population would decline to on average ~67 individuals in 20 years and ~43 individuals over the next century. Higher breeding rates are needed to stabilize and grow the population in the long term, and other management changes such as lowering first year mortality and importing animals from private holders or other zoo regions could also contribute to improving viability. However, the population would still decline initially as older females age and pass out of the population in the next ~20-30 years. If the population could achieve and maintain a higher breeding rate (corresponding to viable females having on average 1 offspring every 6-7 years), it would first decline to on average ~74 individuals in 20 years then grow to ~93 individuals in 100 years. When this higher breeding rate is combined with lower first year mortality (30%) and importing ten young individuals in year 5, the population would grow at a faster rate in the long term to a size of ~186 individuals in 100 years. It would also have a 31% probability of filling the 223 spaces available in 100 years. Importing animals into the population without also increasing breeding rates would still lead to a declining population in the long term for Asian elephants. Additionally, we modeled scenarios that included animals from other holding facilities in North America. Including animals from one potential Sustainability Partner facility may also help to improve the viability of the AZA Asian elephant population.

MANAGEMENT ACTIONS

Given the current challenges for the Asian Elephant SSP population, PVA results indicate that the following changes in management should be considered in an effort to improve this population's sustainability. Note that the PVA allows us to compare between these hypothetical changes, but cannot evaluate whether achieving these changes is feasible, practical, or desirable given the Program's constraints.

- **Increasing reproduction:** New births are *extremely* important to the Asian elephant population, and holding facilities and the TAG/SSP should continue to prioritize efforts to breed every reproductively viable female. If an average of ~3 births are produced each year, the population would still experience a demographic bottleneck but could then become stable in the long term.
- **Importing reproductively viable individuals:** Importing individuals from other populations (in accordance with federal and international regulations), if possible, could help to offset the expected loss of older animals and increase the population's capacity to produce new births. The population may also benefit from including key facilities as Sustainability Partners in the future.
- **Setting a lower, more realistic Target Population Size (TPS):** Although management changes could help the population return to stable or growing after an initial demographic bottleneck, it would still be unlikely to reach the current TPS within the next 100 years.
- **Thinking carefully about strategies for managing exhibits:** Expansion of existing herds is likely to happen slowly. Holding facilities should phase in new exhibits gradually to avoid being left with empty exhibits, and should actively build male holding space to reflect the increasingly even sex ratio going forward.

Population Analysis & Breeding and Transfer Plan

Asian Elephant (*Elephas maximus*)
AZA Species Survival Plan®
Yellow Program

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23 June 2020

PMC Population Management Center

LINCOLN PARK ZOO.

ASSOCIATION OF ZOOS & AQUARIUMS

Description of Population Status

Species Survival Plan® for the Asian Elephant (*Elephas maximus*)

Introduction: This current Species Survival Plan (SSP) population consists of 132 animals (35 males, 97 females) distributed among 30 North American AZA facilities (125 (33.92)) and two new international AZA facilities (7 (2.5)). The Elephant Taxon Advisory Group (TAG) has set the target population size for this population to be 223 animals based on a five-year space assessment of AZA facilities (2017 Elephant TAG Regional Collection Plan (RCP)). Under AZA's current sustainability designations, this Program qualifies as a Yellow SSP (≥50 animals; <90% gene diversity for 100 years). This is the sixth Breeding and Transfer Plan (BTP) for this Program.

Analytical Assumptions and Exclusions: The current pedigree of the SSP population is 88.4% known due to 15 animals having all or some portion of their pedigree unknown. Pedigree assumptions were created during this meeting and previous planning sessions to address some of the unknownness and complete the pedigree of the potentially breeding population (Appendix A). Sixty-three females were excluded from the potentially breeding population due to age, health, reproductive cyclicity status, or other factors as outlined in the Demography section and Appendix C. The seven (2.5) elephants at the two new international AZA facilities currently have unknown pedigree and were excluded from the potentially breeding population for this Plan. Efforts will be made to determine the pedigree of these elephants, so they may be incorporated in the breeding population in the future. After these assumptions and exclusions, the potentially breeding population of Asian elephants consists of 62 (33.29) animals with 100% known (100% certain) pedigree.

Demography: Asian elephants have a long history in North American zoos. Wild born animals were first recorded in 1874 when two elephants arrived at the Philadelphia Zoo. The AZA population remained in the single digits until the early 1900s, and steadily increased from that time until it reached a peak population size of 169 elephants in 1974 (Fig. 1). However, since this time, the North American AZA population has been declining and over the past five years, the population has decreased by 1.2% (λ = 0.988). Growth in the population is largely due to animals entering the AZA population from non-AZA facilities rather than births of new animals. There has been an average of 1.8 births/year over the past five years, and an average of 2.6 elephants per year have been imported into the AZA population over that same period. Combined, the number of animals entering the population has not been sufficient to offset the average annual mortalities (5.6/year) which has caused the population to decrease in the last five years. As this population ages, it is expected to experience further decline unless the number of animals entering the SSP (via births and/or imports) substantially increases (Che-Castaldo et al., 2020).

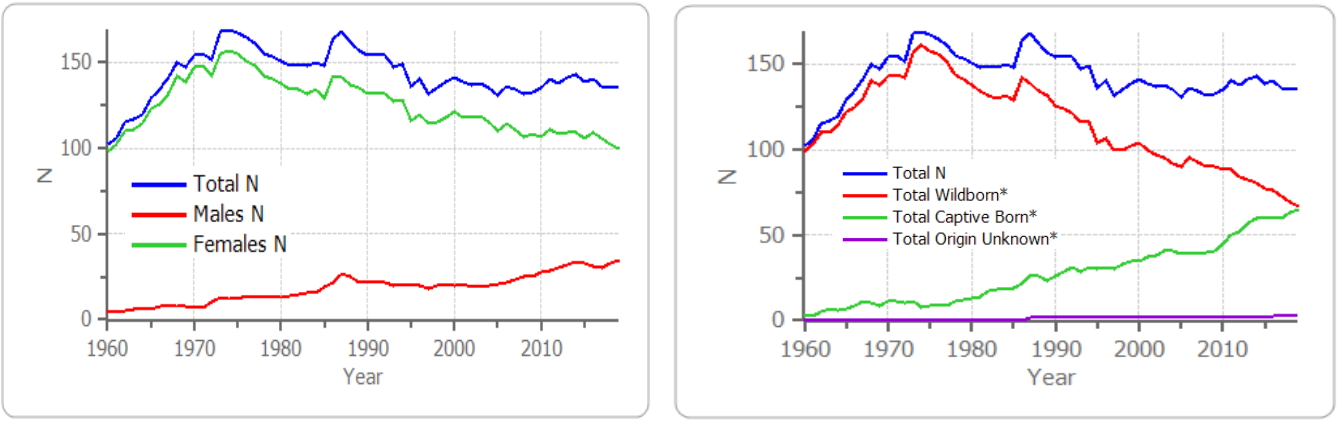

Figure 1. Census of the Asian Elephant SSP from 1960 to 2019 by sex (left) and birth type (right).

The age structures of the Asian Elephant SSP population are columnar, reflecting the long-life expectancy and reproductive span but relatively slow reproductive rate of elephants. However, the current age structures deviate from stable due to several empty or small age classes, a sex bias, and a shortage of animals in the younger age classes compared to the older age classes (Fig. 2, left). While a female-biased population is compatible with the management of this herd species, having fewer males does not necessarily limit the breeding potential at the population level because of successful bull management and the availability of assisted reproductive technology. However, only having a small number of males contributing genes will increase the likelihood of inbreeding and hinder gene diversity retention in the future. For this reason, the SSP recommends efforts should be made to recruit all available males for natural breeding

and/or assisted reproduction. Sixty-three females were designated as non-reproductive because they would not be expected or recommended to breed and seven (2.5) elephants have unknown pedigree leaving only 62 (33.29) elephants in the potentially breeding population (Fig. 2, right). Although the species is long-lived, facilities should focus on consistent breeding at a maximized rate in order to produce a broader base of young individuals and promote demographic stability. Age class gaps throughout the structure, especially prevalent in the lower age classes, reflect the long gestation and lactation period of elephants and the inconsistencies in breeding success. Births have been sporadic over the last five years ranging from one to four births per year. Also, with the exclusion of so many females due to age, the potentially breeding population becomes male biased, which raises additional difficulties with managing this long-lived species. Reduction in the number of reproductive animals, a sex bias, lack of juveniles and the long-lived biology of this species could limit population growth and the ability to offset aging elephants as they become post-reproductive and are eventually lost naturally to attrition.

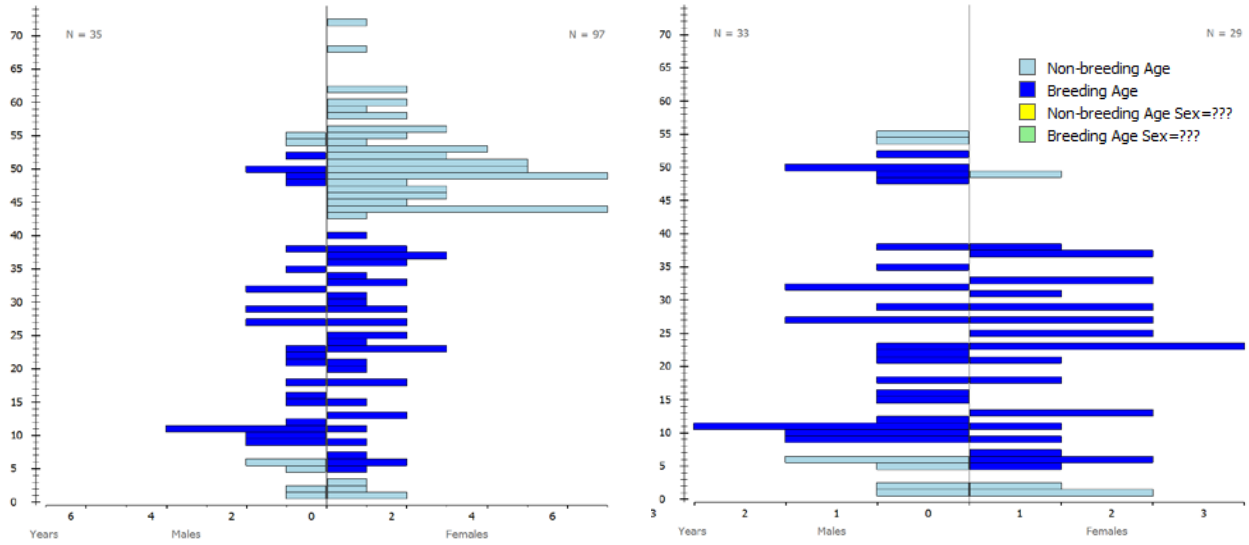

Figure 2. Age distribution of the total AZA population (N = 132 (35.97); left) and the potentially breeding population (N = 62 (33.29); right) in the Asian Elephant SSP.

Table 1: *Demographic status of the SSP population, according to studbook.*

Demography Summary		
Current size of SSP population (N) – Total (Males.Females.Unknown Sex)	132 (35.97.0)	
Number of individuals excluded from genetic analyses	70 (2.68.0)	
Population size following exclusions	62 (33.29.0)	
Target population size (Kt) from Elephant TAG 2017 RCP	223	
Mean generation time (T, years)	26.2	
Population growth rates (λ; lambda)*: Life Table / 5-year / Projected	0.972 / 0.988 / 0.966	
Survival/Mortality	**Males**	**Females**
Observed first year mortality rate (Q_x)	0.39	0.36
Median life expectancy (MLE), excluding first year mortalities (years) (from PopLink Survival Statistics Report (https://www.aza.org/species-survival-statistics))	NA	47.5
Observed maximum longevity (L_x) (Studbook ID # of individual)	62 (SB # 435)	72 (SB # 166, 525)
Reproduction		
Observed reproductive age range	7–55	5–45
Gestation time	699 days	
Median litter size born	1	

* Life table (AZA; 1960-present); 5-year from studbook census; Projected from PMx stochastic 20-year projections

Although AZA studbook data indicate that female Asian elephants have conceived as young as four years of age and have given birth at five or six years of age, the TAG and SSP believe that a realistic age of first birth from a management perspective is ten (with eight being the earliest age of conception). Most nulliparous females older than 24 years of age have had limited success delivering calves or dystocia has occurred. For the purposes of genetic and demographic planning, females determined to be non- or post-reproductive after reproductive assessments, including most females over age 24 that have never bred and most females over age 40, were assumed to be ineligible for breeding. The oldest recorded female to have given birth was 45.9 years old (with a year age estimate). The TAG and SSP believe it is reasonable that some females older than 40 may continue to have offspring if they have bred before and continue to cycle. Females fitting these criteria were left in the genetic analyses. Males have sired offspring at ages as young as seven years (at the time of conception) and as old as 55 years of age. As this population ages in zoos, it continually sets new records for maximum age of reproduction and longevity.

Genetics: Based on pedigree assumptions and exclusions, the studbook indicates that this SSP is descended from 44 founders with six potential founders remaining (Fig. 3). The gene diversity of the population is 97.37%, which is equivalent to that found in approximately 19 founders (FGE = 19.01). Typical AZA program goals include thresholds for tolerance of gene diversity loss over time; 90% gene diversity retention for 100 years is a common population management goal. Decreases in gene diversity below 90% of that in the founding population have been associated with reproduction increasingly compromised by, among other factors, lower birth weights and greater neonatal mortality in some species.

Projections based on current potentially breeding population parameters, which include the effective population size (Ne/N = 0.4349 *(including founders)*) and the lambda calculated from the life tables (λ = 0.97), indicate that gene diversity is expected to remain above 90% for around 49 years and will decline to approximately 62.2% over the next 100 years. While the retention of gene diversity is extended due to the species' long generation time and high Ne/N (proportion of animals contributing genetically to the next generation), the population cannot reach the standard goal of retaining 90% gene diversity for 100 years due to a declining growth rate. Importing animals into the SSP has been a notable factor contributing to population growth over the years; however, as the availability of future imports from outside the SSP is unknown, using a higher growth rate, while possible, may be overly optimistic. To better represent the demographic instability and unsustainable state of this population, the declining life table lambda was used for current projections. If, however, breeding increases and is able to offset future mortalities to maintain the current population size (λ = 1.00), the population is projected to retain over 90% gene diversity for over 100 years (See Table 2). **To achieve this goal, it is crucial that all facilities follow the SSP recommendations to breed all reproductively viable males and females.**

Table 2: *Genetic status and projections for the Asian Elephant SSP population.*

Genetics Summary*					
	2011	*2014*	*2017*	**2020****	**Potential**
Founders	*37*	*40*	*41*	44	6
Founder genome equivalents (FGE)	*16.75*	*18.30*	*17.18*	19.01	33.50
Gene diversity (GD %)	*97.02*	*97.27*	*97.09*	97.37	98.51
Population mean kinship (MK)	*0.0298*	*0.0273*	*0.0291*	0.0263	--
Mean inbreeding (F)	*0.0142*	*0.0165*	*0.0089*	0.0051	--
Effective population size (N_e/N) *(includes founders)*	*0.3541*	*0.3573*	*0.4859*	0.4349	--
Percentage of pedigree known before / after assumptions and exclusions	*78.8%/100%*	*95%/100%*	*95.9%/100%*	88.4%/100%	--
Projections					
Years to 90% gene diversity	*70*	*80*	*62*	49	109
Years to 10% loss of gene diversity	*91*	*94*	*76*	58	150
Gene diversity at 100 Years (%)	*85.6*	*85.7*	*79.7*	62.2	90.6
(To account for space occupied by non-breeders Target Population Size (Kt) = 223 – 70 =153)	*Assuming λ = 0.99, Kt = 220, T = 27.4, Starting pop size = 74*	*Assuming λ = 0.98, Kt = 220, T = 25, Starting pop size = 78*	*Assuming λ = 0.98, Kt = 155, T = 24.9, Starting pop size = 69*	Assuming λ = 0.972, Kt = 153, T = 26, Starting pop size = 62	Assuming λ = 1.00, Kt = 153, T = 26, Starting pop size = 62

*Genetic statistics may not be comparable across years due to changes in software and parameters used for projections from year to year.
**Pedigree assumptions were created for this population and may over- or under-estimate genetic statistics shown in this table.

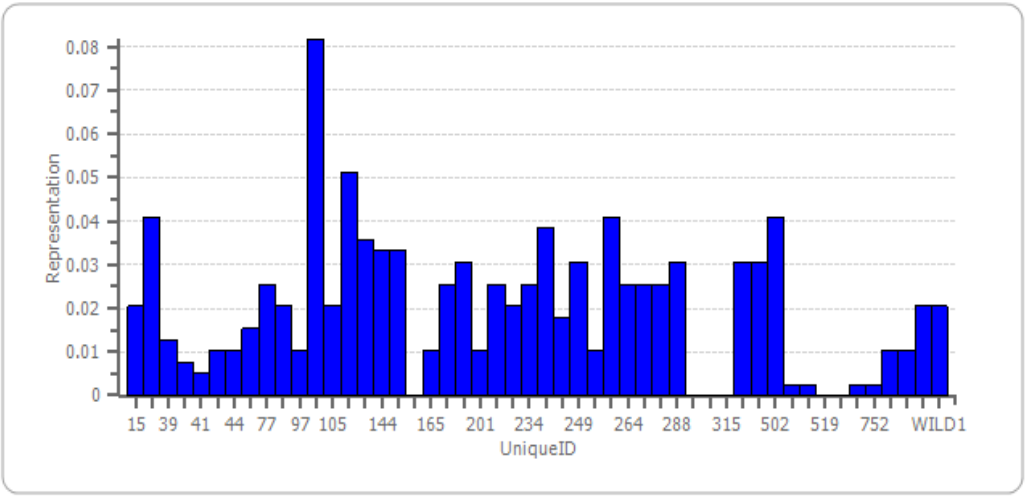

Figure 3. Founder representation distribution of the analytical Asian Elephant SSP population.

Management Strategies: This is a 3-year plan (2020 – 2022). Interim recommendations will continue to be made as needed until another full set of recommendations are produced. Recommendations contained in this plan supersede all previous recommendations.

Table 3: *Historic reproduction and future population goals.*

Current Reproductive Goals Summary		
	Number of Births Needed *per Year* over the next 3 Years	**Target Population Size**
To maintain current population size (λ = 1.00)	7–10 births per year (21–30 total births by end of 2022)	132
To grow to the TAG's recommended target population size in 25 years (λ = 1.02)	11–16 births per year (33–48 total births by end of 2022)	223
Reproductive Goals Summary from the Last BTP (2017)		
Number of females recommended to breed	28	
Number of births since last BTP	6 births (plus 4 current pregnancies)	
Average Number of Births in the SSP Population		
Average number of births *per year*, from the past five years	1.8	

In the 2017 Asian Elephant Breeding and Transfer Plan, 28 females were given breeding recommendations, either with specific males or via artificial insemination (AI). Since this time, six different females have given birth with one offspring dying within the first month. There are also four females currently pregnant. Including the pregnant females, only eight of 28 females (28.6%) recommended to breed have bred since the last Plan with an average of only two births per year over the last three years. At this rate, the current breeding population will be unable to reproduce enough to fill the 223 available spaces. If this same birth rate continues and no animals are imported from outside the SSP, the current population of 132 elephants *may* decline to 118 animals by the end of 2022.

At this time, the SSP:

1. **Recommends 26 females to breed at 11 facilities.** All reproductively mature females in the potentially breeding population are recommended to breed. Twenty-two females were given breeding recommendations with specific males and four females are recommended to breed via AI. Three females in the population are too young to breed during this three-year plan, but will be given breeding recommendations once they become reproductively mature.
    a. **Four females are being recommended for AI in this BTP.** Two females are recommended for AI in 2020 and two females in 2022.

2. **Recommends four transfers at this time.** Three males and one female are available for transfer. Please contact the SSP Coordinator if interested in receiving one of these animals.

3. **The TAG and SSP recommend that all male elephants eight years of age and older be trained and available for semen collection.** The availability of reliable semen donors is crucial to achieving all of the SSP's breeding recommendations and retaining optimum gene diversity. Efforts should be made to recruit all males, including breeding and unproven males, to provide semen.

4. **The TAG and SSP recommend that all male elephants providing semen for artificial inseminations (now or in the future) have samples banked as soon as possible for future paternity testing and to store for future AI procedures.**

5. **The TAG and SSP encourage institutions to reduce interbirth intervals in order to maximize the overall birth rate for this population.** Reducing the interbirth interval may be accomplished by breeding recent dams once they begin cycling again.

6. **The TAG and SSP encourage institutions to recruit additional breeding animals into the AZA Elephant TAG/SSP managed population.**

7. SSP facilities should contact the SSP Coordinators if they need assistance with the elephant social group composition standards. As per the AZA Standards for Elephant Management and Care (Approved March 2011, Revised April 2012, Revised May 2020):

   E.2.2.1.1 Age and sex structure of social group

   Standard: Each zoo with elephants must have a minimum of three females (or the space to have three females), two males or three elephants of mixed gender.

   Measurement: The institutional commitment to elephants must be reviewed. If the institution is not in compliance with the Standard, plans for meeting the Standard and a timeline must be submitted to the AZA Accreditation Commission.

   Explanation: Good welfare is supported by spending more time in larger, stable social groupings (Meehan et al., 2016). If a zoo cannot meet this Standard in terms of space, they must apply for a variance. If a zoo does not meet the social requirements, they must apply for a variance. In the case of social requirements, before the variance can be issued by the AZA Accreditation Commission, the zoo (a) must describe their plan to obtain additional elephants or describe their plan for de-acquisitioning their elephants, and (b) must describe what will occur if they experience the loss of one elephant. [NOTE: see *Accreditation Policies On Variances* in the Introduction section of these standards on page 39 for further details on variances.]

8. A Population Viability Analysis (PVA) was last preformed for this species in 2011; however, an updated PVA is currently being completed and will be available in September 2020. A PVA is a computer model that projects the likely future status of a population and is used to evaluate the long-term sustainability of a population under various management strategies. Summary results from this current analysis can be obtained from the SSP Coordinator.

Citations:

Che-Castaldo, J., M. Fischer, B. Lee, and A. S. Lawless. 2020. Asian Elephant (*Elephas maximus*) AZA Animal Program Population Viability Analysis Report. Lincoln Park Zoo, Chicago, IL.

Meehan, C.L., Mench, J.A., Carlstead, K., and Hogan, J.N. (2016). Determining connections between the daily lives of zoo elephants and their welfare: An epidemiological approach. *PLoS ONE* 11(7):e0158124. Doi: 10.1371/journal.pone.0158124.

Explanation of Recommendations Using MateR$_x$

Recommendations Using MateR$_x$: MateR$_x$ is analytical software developed jointly by the Smithsonian's National Zoo and Lincoln Park Zoo. The primary output is a matrix of genetic ratings (Mate Suitability Indices = MSI) for possible breeding pairs.

Each MSI represents the genetic consequences for the population if a given pair was to produce offspring. There are seven values for MSIs varying in degree of genetic benefit or detriment to the genetic health of the population.

These MSI values are defined as:

MSI Value	*Genetic consequences*	*Demographic consequences*
1	very beneficial	ok to breed
2	moderately beneficial	ok to breed
3	slightly beneficial	ok to breed
3.5	slightly beneficial	ok to breed
4	slightly detrimental/beneficial	ok to breed
5	moderately detrimental	may be necessary to breed to maintain or increase population size
6	very detrimental	may be necessary to breed in declining populations
X	extremely detrimental	not to be bred without a consultation with a population biologist

If MateRx setting have been modified by the population biologist, the interpretation of the MSI values may differ. Your population biologists may provide additional MateR$_x$ instructions, as MateR$_x$ values do not integrate a population's demographic goals or needs.

MateR$_x$ integrates four genetic factors to produce the Mate Suitability Index:

1. the expected change in genetic diversity (increase, decrease) that would result if an offspring of a pair is added to the population
2. the relative rareness or commonness of the parent's genome (i.e., the difference between the male and female mean kinships)
3. the inbreeding coefficient of offspring that would be produced by a pair
4. the proportion, if any, of the dam and sire's pedigree that is of unknown origin.

Additional information on reading, interpreting, using MateRx Matrices can be found at:
http://youtu.be/0YX-FdOCekI

	Females >	315	353	539	655	42	179	302	515	750	288	308	735	773	775	307	365	385	764	776	70	361	519	337	759	386	642	646	749	424
< Males	Breed 1,2,3,3.5,4 & 5. Check with Advisor and SSP Coordinator before breeding 6. DO NOT BREED X.	CINCINNAT	COLUMBUS	COLUMBUS	COLUMBUS	DICKERSON	FORTWORTH	FORTWORTH	FORTWORTH	FORTWORTH	HOUSTON	HOUSTON	HOUSTON	HOUSTON	HOUSTON	NZP-WASH	OKLAHOMA	OKLAHOMA	OKLAHOMA	OKLAHOMA	PORTLAND	PORTLAND	PORTLAND	RIO GRAND	RIO GRAND	ST LOUIS	ST LOUIS	ST LOUIS	ST LOUIS	SYRACUSE
297	CINCINNAT	1	3.5	3.5	3.5	1	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	2	3.5	1	3.5	3.5	3.5	3.5	3.5	3.5	3.5
276	COLUMBUS	3.5	3	3	3	3	3	X	2	2	2	6	3	4	3	3	4	4	4	4	2	2	3.5	2	4	4	4	4	4	6
657	COLUMBUS	3.5	X	4	4	4	3	4	4	3	3	4	4	4	4	4	4	4	4	4	3	3	3.5	4	4	4	4	4	4	4
203	DENVER	3.5	4	3	3	2	1	3	X	X	1	6	4	6	4	3	6	4	4	4	1	2	3.5	3	4	4	4	6	4	4
551	DENVER	3.5	X	4	4	4	3	4	4	3	3	4	4	4	4	4	4	4	4	4	3	3	3.5	4	4	4	4	4	4	4
653	DENVER	3.5	4	4	4	6	4	4	4	4	4	5	4	5	4	4	5	4	X	X	4	4	3.5	4	4	6	4	5	4	X
687	DENVER	3.5	4	4	4	4	3	4	4	3	3	4	4	4	4	4	4	4	X	X	3	3	3.5	4	4	4	4	4	4	4
757	DENVER	3.5	X	3	3	3	2	3	2	2	2	6	3	4	3	3	4	4	4	4	2	2	3.5	2	4	4	4	6	4	4
27	DICKERSON	3.5	4	4	4	4	3	2	2	2	3	4	4	4	4	2	4	4	4	4	3	3	3.5	2	4	X	4	X	4	X
747	DICKERSON	3.5	4	2	2	4	3	6	2	2	3	4	4	4	4	2	4	4	4	4	3	2	3.5	2	4	4	4	4	4	6
327	FORTWORTH	3.5	3	3	3	3	1	3	3	2	2	6	3	6	3	3	6	4	4	4	1	2	3.5	3	4	4	4	6	4	4
343	FORTWORTH	3.5	3	3	3	3	1	3	3	2	2	6	3	6	3	3	4	4	4	4	1	2	3.5	3	4	3	4	6	4	4
758	FORTWORTH	3.5	4	4	4	6	X	4	X	X	4	5	4	5	4	6	5	4	4	4	4	4	3.5	4	X	4	4	5	4	4
126	HOUSTON	3.5	4	4	4	4	4	4	4	4	3	4	X	X	X	4	4	4	4	4	4	3	3.5	4	4	4	4	4	4	4
632	HOUSTON	3.5	4	2	2	4	3	2	2	2	X	4	X	4	X	2	4	4	4	4	3	2	3.5	2	4	4	4	4	4	4
671	HOUSTON	3.5	4	4	4	6	6	4	4	4	6	X	X	X	X	4	6	6	5	5	6	6	3.5	4	5	4	5	5	5	5
760	HOUSTON	3.5	4	4	4	6	6	4	4	4	6	X	X	X	X	4	6	6	5	5	6	6	3.5	4	5	4	5	5	5	5
309	LOSANGELE	1	3.5	3.5	3.5	1	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	2	3.5	1	3.5	3.5	3.5	3.5	3.5	3.5	3.5
139	METROZOO	3.5	4	3	3	4	3	3	2	2	2	6	4	4	4	2	4	4	4	4	3	2	3.5	2	4	4	4	4	4	4
778	METROZOO	2	4	4	4	2	1	3	3	2	2	6	4	6	4	3	6	4	6	6	1	2	2	3	6	4	6	6	6	6
141	NZP-WASH	3.5	4	4	4	4	3	2	2	2	3	4	4	4	4	2	4	4	4	4	3	3	3.5	2	4	4	4	4	4	4
263	OKLAHOMA	3.5	4	4	4	4	3	2	2	2	3	4	4	4	4	2	4	4	X	X	3	3	3.5	2	4	4	4	4	4	4
538	OKLAHOMA	3.5	4	4	4	4	3	4	2	2	3	4	4	4	4	X	4	4	4	4	3	3	3.5	2	6	4	4	4	4	4
514	PORTLAND	3.5	4	4	4	6	4	4	4	4	4	5	4	5	4	X	5	4	5	5	6	4	3.5	4	X	4	5	5	5	5
649	PORTLAND	3.5	4	2	2	4	3	2	2	2	2	4	4	4	4	2	4	4	4	4	3	X	3.5	2	4	4	4	4	4	4
652	PUEBLA	1	3.5	3.5	3.5	1	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	2	3.5	1	3.5	3.5	3.5	3.5	3.5	3.5	3.5
516	RIO GRAND	3.5	X	4	4	6	4	4	4	4	4	5	4	4	4	X	4	4	4	4	4	4	3.5	4	6	4	4	5	4	4
774	RIO GRAND	3.5	4	4	4	6	4	4	4	4	4	5	4	5	4	6	5	4	4	4	4	4	3.5	X	X	4	4	5	4	4
339	ST LOUIS	3.5	4	4	4	6	6	4	4	6	6	X	4	6	4	4	X	X	6	6	6	6	3.5	4	5	5	X	X	X	5
420	SYRACUSE	3.5	4	X	X	6	4	4	4	4	4	5	4	4	4	4	4	4	4	4	4	4	3.5	4	4	4	4	5	4	4
766	SYRACUSE	3.5	4	6	6	6	6	4	4	4	4	5	4	5	4	4	5	4	5	5	6	4	3.5	4	5	6	5	5	5	X
779	SYRACUSE	3.5	4	6	6	6	6	4	4	4	4	5	4	5	4	4	5	4	5	5	6	4	3.5	4	5	6	5	5	5	X
160	TULSA	1	3.5	3.5	3.5	1	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	2	3.5	1	3.5	3.5	3.5	3.5	3.5	3.5	3.5

Artificial Insemination Donor Availability Lists

By Studbook ID

- All males in the SSP are listed in one of the tables below and categorized by their availability to be an AI donor.
- Use the MateRx on the preceding pages to match breeding females with genetically appropriate male AI donors. Facilities should attempt to prioritize AI efforts with the highest-priority males recommended for their female. However, due to logistical difficulties with AI, facilities may use any of the recommended males that are available for AI or have a frozen sample available at the necessary time, except those ranked as an "X".
- **Donor males should be genetically evaluated and re-ranked by the PMC frequently as successful reproduction may quickly alter the mean kinship of donor males as they sire offspring.**
- **Four females are being recommended for AI in this BTP.** Two females are recommended for AI in 2020 and two females in 2022.

Males Available as AI Donor (as of June 2020)

SB ID	Location	House Name	Age	# of Living Descendants	Facility Contact
160	TULSA	Sneezy	49	0	Jordan Piha (jpiha@tulsazoo.org)
203	DENVER	Groucho	50	3	Dale Leeds (dleeds@denverzoo.org)
263	OKLAHOMA	Rex	52	8	Rachel Emory (remory@okczoo.com)
276	COLUMBUS	Hank	32	0	Adam Felts (adam.felts@columbuszoo.org)
327	FORTWORTH	Colonel	28	0	Don Nevitt (dnevitt@fortworthzoo.org)
339	ST LOUIS	Raja	27	3	Martha Fischer (fischer@stlzoo.org)
343	FORTWORTH	Romeo	27	2	Don Nevitt (dnevitt@fortworthzoo.org)
420	SYRACUSE	Doc	22	3	Ashley Sheppard (ashleysheppard@ongov.net)
514	PORTLAND	Samson	21	3	Bob Lee (bob.lee@oregonzoo.org)
516	RIO GRAND	Albert	21	0	Amber Alink (aalink@cabq.gov)
538	OKLAHOMA	Kandula	18	0	Rachel Emory (remory@okczoo.com)
653	DENVER	Chuck	11	0	Dale Leeds (dleeds@denverzoo.org)
657	COLUMBUS	Beco	10	0	Adam Felts (adam.felts@columbuszoo.org)
687	DENVER	Jake	10	0	Dale Leeds (dleeds@denverzoo.org)

Males in Training

SB ID	Location	House Name	Age	# of Living Descendants	Facility Contact
141	NZP-WASH	Ganesha	38	0	Bryan Amaral (amaralb@si.edu)
551	DENVER	Bodhi	15	0	Dale Leeds (dleeds@denverzoo.org)
632	HOUSTON	Tucker	14	0	Daryl Hoffman (dhoffman@houstonzoo.org)
671	HOUSTON	Baylor	9	0	Daryl Hoffman (dhoffman@houstonzoo.org)
757	DENVER	Billy	11	0	Dale Leeds (dleeds@denverzoo.org)

Males Recommended to Train for AI (Please contact the SSP Coordinator for training resources)

SB ID	Location	House Name	Age	# of Living Descendants	Institutional Contact
139	METROZOO	Dalip	53	1	Heather Keenan (heather.keenan@miamidade.gov)
297	CINCINNAT	Sabu-hit	32	0	Christina Gorsuch (christina.gorsuch@cincinnatizoo.org)
309	LOSANGELE	Billy	35	0	Patrick Maluy (patrick.maluy@lacity.org)
649	PORTLAND	Samudra	11	0	Bob Lee (bob.lee@oregonzoo.org)
652	PUEBLA	Ramos	49	0	Frank Camacho (fcamacho@africamsafari.com.mx)
747	DICKERSON	Hugo	8	0	Jackson Thompson (jthompson@springfieldmo.gov)
758	FORTWORTH	Bowie	6	0	Don Nevitt (dnevitt@fortworthzoo.org)
760	HOUSTON	Duncan	6	0	Daryl Hoffman (dhoffman@houstonzoo.org)
766	SYRACUSE	Batu	4	0	Ashley Sheppard (ashleysheppard@ongov.net)
774	RIO GRAND	Thorn	1	0	Amber Alink (aalink@cabq.gov)
778	METROZOO	Ongard	9	0	Heather Keenan (heather.keenan@miamidade.gov)
779	SYRACUSE	Ajay	1	0	Ashley Sheppard (ashleysheppard@ongov.net)
790	YONG IN	Kosik	29	0	Nahee Kim (nahee00.kim@samsung.com)
792	YONG IN	Udara	11	0	Nahee Kim (nahee00.kim@samsung.com)

Males Not Available for AI

SB ID	Location	House Name	Age	# of Living Descendants	Institutional Contact
27	DICKERSON	Indy	48	8	Jackson Thompson (jthompson@springfieldmo.gov)
126	HOUSTON	Thailand	55	5	Daryl Hoffman (dhoffman@houstonzoo.org)

Breeding and Transfer Recommendations by Facility

AUDUBON

Audubon Zoo

New Orleans, LA

SB ID	Local ID	House Name	Sex	Age	Disposition	Location	Breeding	With	Notes
19	38	Jean	F	48	HOLD	AUDUBON	DO NOT BREED		Excluded
268	18M057	Jothi	F	38	HOLD	AUDUBON	DO NOT BREED		Excluded
269	18M058	Surapa	F	37	HOLD	AUDUBON	DO NOT BREED		Excluded

BUSCH TAM

Busch Gardens Tampa Bay

Tampa, FL

SB ID	Local ID	House Name	Sex	Age	Disposition	Location	Breeding	With	Notes
30	52190	Carina	F	48	HOLD	BUSCH TAM	DO NOT BREED		Excluded
32	52188	Tina	F	51	HOLD	BUSCH TAM	DO NOT BREED		Excluded
34	52171	Rosie	F	50	HOLD	BUSCH TAM	DO NOT BREED		Excluded
35	52170	Simba	F	52	HOLD	BUSCH TAM	DO NOT BREED		Excluded
304	52144	Karnaudi	F	29	HOLD	BUSCH TAM	DO NOT BREED		Excluded

CINCINNAT

Cincinnati Zoo & Botanical Garden

Cincinnati, OH

Facility Note: Female 315 should breed with current male 297 until she is transferred, then she should breed at her new facility.

SB ID	Local ID	House Name	Sex	Age	Disposition	Location	Breeding	With	Notes
78	M13002	Mai-Thai	F	46	HOLD	CINCINNAT	DO NOT BREED		Excluded
79	M13006	Schottzie	F	44	HOLD	CINCINNAT	DO NOT BREED		Excluded
297	191018	Sabu-hit	M	32	HOLD	CINCINNAT	BREED WITH	315	Recommended to train for AI donation
315	191019	Jati	F	33	HOLD	CINCINNAT	BREED WITH	297	Available for transfer

ASSOCIATION OF ZOOS & AQUARIUMS

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www.aza.org

1 September 2021

To: Christina Gorsuch, AZA Elephant TAG/SSP Institutional Representative, Cincinnati Zoo & Botanical Garden

Re: AZA Elephant TAG/SSP Recommendation to Transfer Asian Elephants EAZA studbook #9008 (Yasmin), EAZA Studbook #200305 (Anak), EAZA Studbook #201711 (Kabir), EAZA Studbook #201802 (Sanjay)

The Association of Zoos and Aquariums (AZA) Elephant Taxon Advisory Group and Species Survival Plan® (TAG/SSP) is a cooperative population management program overseeing African elephants and Asian elephants in AZA accredited zoos and associated elephant care facilities in North America.

The Steering Committee of the AZA Elephant TAG/SSP endorses the transfer of two female Asian elephants and two male Asian elephants from the Dublin Zoo (Saint James' (part of Phoenix Park), Dublin 8, Ireland to Cincinnati Zoo & Botanical Garden (CZBG), Cincinnati, Ohio, USA.

Females, Studbook #9008 (EAZA), House name "Yasmin" and Studbook #200305 (EAZA), House name "Anak" along with Males, Studbook # 201711 (Kabir) both males born at Dublin Zoo in 2018. If both females are received by CABG, a breeding recommendation for both females with male Studbook # 297 (AZA), house name "Sabu" is approved.

The Dublin Zoo is accredited by the European Association of Zoos and Aquaria (EAZA). The CZBG is accredited by the AZA and is a collaborative partner of the AZA Elephant TAG and of the AZA Asian Elephant SSP®.

The long-term commitments of both facilities to cooperative management programs and *in situ* conservation programs to benefit Asian elephants are commendable. The AZA TAG/SSP Steering Committee believes the transfer of these elephants from the Dublin Zoo to the CZBG in inconjunction with the breeding recommendation will enhance the long-term sustainability of the AZA SSP population.

Special thanks to both facilities involved in this transfer – Dublin Zoo and the Cincinnati Zoo & Botanical Garden -for their willingness to collaborate internationally for the long-term commitment to the conservation of Asian elephants. Please do not hesitate to contact us if you need further information.

Best Regards,

David Hagan

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Asian Elephant SAFE Program

Action Plan 2019-2022

Submitted: July 1, 2019

Program Leader: Adam Felts

Program Co-Leader: Nick Newby

with the Elephant TAG, International Elephant Foundation, EEHV Advisory Group

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Program Goals

The goal of the AZA Asian Elephant SAFE Program (AeSP) is to enhance and assist Asian elephant conservation efforts within the 13 range countries and to report and celebrate elephant conservation efforts within AZA. The IUCN Red List of Threatened Species indicates that the Asian elephant is endangered, and is included in CITES Appendix I, indicating that they are threatened with extinction [1]. Asian elephants have declined by nearly 50% over the last 3 generations, from more than 100,000 animals to, by some estimates, less than 40,000 animals [2]. With 20% of the world's human population living in or near the present range of the Asian elephant, 30% of the Asian elephant population remaining in human-managed settings [3], and the continued destruction of their habitat; human interactions in the region are of serious concern. Therefore, the AeSP will strive to ensure this species' survival by concentrating efforts on the management strategies of elephants in human-care, realizing these populations have the potential to play a role in the survivability of the Asian elephant.

Asian Elephant SAFE Objectives

Utilizing the strengths and expertise of the dedicated professionals at AZA institutions and AZA partners, the AeSP aims to play a strategic role in contributing to elephant conservation through:

1. **Engaging communities with elephants in human-care, first by enhancing the current registry of human managed Sumatran elephants through a layered registry of all elephants utilizing:**
    1. Elephant recognition technology
    2. Already implemented microchip technology
    3. DNA mapping of individual elephants
    4. Utilization of a robust database system for tracking and documentation
2. **Supporting science of the treatment and management of EEHV in Asian elephant range states:** The AeSP will encourage fundraisers amongst AZA institutions directed towards supporting the needs of range states in the treatment and management of EEHV. AeSP will engage the elephant care professionals within AZA institutions to:
    1. Develop framework and guidance information for fundraisers directed at supporting EEHV lab development, research, and treatment in Asia
    2. Engage elephant care professionals and encourage participation through distribution of fundraiser materials
    3. Provide guidance in fundraiser hosting
    4. Collaborate with the EEHV Advisory Group and International Elephant Foundation to determine greatest needs in range states (Currently, this is the purchase of anti-viral medications, Polymerase Chain Reaction Machines for viral detection, and laboratory enhancements for testing)
    5. Direct and track all funds raised through the International Elephant Foundation in collaboration with the EEHV Advisory Group
3. **Developing education materials, tools kits, and social media materials to introduce to all AZA institutions, which then can be used to educate AZA visitors and social media followers about the Asian elephant.**

Elephants in Human-Care

It is estimated that 30% (14,142 individuals) of all elephants in Asia are in human-care [4]. By supporting these populations, the AeSP will have a direct impact on the global Asian elephant population and the conservation of the species. Currently elephant registry programs of elephants in human-care are inconsistent across range states leading to difficulties in the management and monitoring of cross border movement. Specifically, the number of animals, distribution/demographics, and genetic profiles are incomplete or insufficient to support best management practices and monitoring of these populations. This topic was a priority at the 2006 Range States Meeting, and again in 2017 with the signing of the Jakarta Declaration for Asian Elephant Conservation (2017 Asian Elephant Range State Meeting Report (AeRSM) [4]), as well as Decision 17.217 of CITES (Table A). Using the Jakarta Declaration for Asian Elephant Conservation as the recovery plan, the AeSP will first participate in building a government-supported registration database as a starting point to have a direct impact on the elephants in human managed situations. Ultimately, this will create opportunities for AeSP to be a part of critical conversations, such as breeding, welfare, and other aspects of elephants in human-care. This registry will be a multi-layered approach using physical identification based on photographs, microchipping, and DNA, which collectively will be compiled into a database accessible through a government supported; user-friendly technology that will ensure each animal is identifiable and verifiable. This effort will lead to a well-documented, robust registration system for elephants in human-care in Indonesia, which will then be introduced and transferred to other Asian elephant range countries. This will give governments and stakeholders the ability to monitor the number and demographics of their populations in human-care, develop breeding programs, track individuals, and ensure legal sourcing of elephants transferred in and out of range states. Through range-wide participation of a robust and dependable registry of elephants in human-care, a strong registry will:

- Ensure that the trade and cross border movement of live Asian elephants are conducted in accordance with national and international guidelines (i.e., CITES);
- Support law enforcement efforts to ensure the legal trade of Asian elephants;
- Facilitate individual country's governance of their elephant population;
- Support local capacity building through the transfer of technology and skills;
- Support the population management of Asian elephants throughout their range; and
- Potentially be used as forensics tool for identification of illegally trafficked parts and derivatives.

Table A. Conservation Priority

Jakarta Declaration for Asian Elephant Conservation Cooperatively develop captive Asian elephant registration programs including where appropriate microchipping and/or DNA based systems and ensure cross border movements of captive Asian elephants are in compliance with all national and international laws and regulations; Ensure the welfare of captive elephants is maintained at all times.
Decision 17.217 of CITES All parties involved in the trade of live Asian elephants are encouraged to: a) Undertake, as necessary, investigations into the illegal trade in live Asian elephants, and endeavor to enforce and where necessary improve, national laws concerning international trade in specimens of Asian elephants with the explicit intention of preventing the illegal trade in live Asian elephants; b) Develop strategies to manage captive Asian elephant populations; c) Ensure trade in, and cross border movements of live Asian elephants are conducted in compliance with CITES, including the provisions in Article III, paragraph 3, for Asian elephants of wild origin; **d) Collaborate in the development and application of a registry system for registering, marking and tracing live Asian Elephants, requesting as necessary assistance from experts, specialized agencies of the Secretariat and;** e) At the request of the Secretariat, provide information on the implementation of this Decision for reporting by the Secretariat to the Standing Committee.

Understanding that this is an enormous undertaking, strategic partners from North America and Asia gathered in February of 2019 to begin to formulate a path forward. The group agreed that Indonesia would be the ideal Asian elephant range country to serve as a pilot program for a registry model because:

- the Indonesian government has already started a registry program;
- the Indonesian government has jurisdiction over all elephants in Indonesia; and
- Indonesia's natural heritage includes the critically endangered Sumatran elephant (IUCN Red List).

The vision of the project is to build upon the existing registry process in Indonesia to ultimately facilitate the development of a global registry and identification process for Asian elephants, in human-care, in all 13 range states. The initial goal is to work with the Indonesian government to enhance their existing registry and create a standardized process as a model for other range states using four strategic components. The AeSP will work alongside Indonesian experts to enhance the existing registration program by identifying and documenting all Indonesian elephants, in human-care, through photo identification, microchipping, DNA analysis of each individual elephant, and inputting all relevant information into a proven database system. The database will contain all pertinent information that will allow for easy processing and confirmation of each individual elephant's identity using existing technology. With the help and guidance of the Indonesian Government's Ministry of Environment and Forestry (MoEF), the AeSP will formalize this process for future use in other Asian elephant range states with elephant populations, human-care, with the intent of transferring the process and technology to all interested range state governments.

As Indonesia will be the country for this pilot program, AeSP will specifically focus on the Sumatran elephant, which was elevated in 2012 to a critically endangered subspecies according to IUCN Red list (WCS, Indonesia). The Sumatran elephant is a protected subspecies in Indonesia with the highest level of government and legal protection status. In Indonesia, all protected species, including the Sumatran elephant, legally belong to the government, meaning private ownership is not allowed. In terms of laws and protection status, there is no difference between captive and free ranging wildlife. In the central Government of Indonesia, the agency in charge of wildlife is the National Agency for Forest Protection and Nature Conservation (KSDAE), and in the different provinces, this is represented by provincial Agencies for Nature Resource Conservation (BKSDA).

The AeSP is coordinating efforts with the KSDAE in Indonesia, with Wahdi Azmi (Ache Center for Wildlife Studies) as the project coordinator. To ensure proper DNA testing (for the purposes of the registry), the AeSP is closely cooperating with the Centre for Wildlife Studies and faculty in Veterinary Medicine at the University of Syiah Kuala (through Mr. Azmi) in Sumatra, which has already formalized cooperation through a memorandum of understanding. The Center for Wildlife Studies is one of the key local stakeholders as it has a mandate to assist with medical services for wildlife under a memorandum of understanding with the government conservation agency. The Center for Wildlife Studies has a long history in the region, responding to various emergency medical services for wildlife and assisting with more than 20 GPS collar-fitting operations on wild elephants in Sumatra.

For laboratory staff training at the Center for Wildlife Studies, the AeSP is collaborating with colleagues in India to oversee DNA laboratory work in Indonesia. Using the expertise of Dr. Arun Zachariah (Wildlife Disease Laboratory, India), Asian elephant SAFE and Mr. Azmi will coordinate the training necessary for DNA analysis. Dr. Zachariah was the first vet to discover EEHV in wild populations and has worked in India developing DNA finger printing of the Asian elephant, by extracting DNA and amplifying the microsatellite loci. Specifically, DNA profiling will look for polymorphic traits to match together. Although blood samples will be preferred, fecal samples will also be suitable when it is not possible to collect blood. The goal of this is to use the animal's genotype to correlate with the individual profile of the animal, which

will include the microchip number, all information pertaining to that animal, and facial recognition confirmation based on photographs.

Another component of the pilot registry program is the development of facial recognition technology which is being done in collaboration with Dr. Daniella Chusyd and Dr. David Crandall, from the Indiana University-Bloomington, who are creating a field friendly phone application that will allow people to verify the elephant in question. Automatic identification of individual elephants may be possible because of recent advances in Artificial Intelligence (AI) and computer vision. Dr. Chusyd will be directing efforts for this technology through Indiana University-Bloomington. Drs. Chusyd and Crandall have already begun developing similar technology with the African Bush elephant and they will use AI algorithms to identify individual elephants in real-time, and incorporate the software in a downloadable smartphone application. This app, "EleID", will not only identify the individual elephant, but will display pertinent demographic data (e.g., age, life history, known health concerns, etc.). Because cellphones are ubiquitous and portable, EleID will have unimpeded access to populations not only in Indonesia, but across Southeast Asia. This portion of the SAFE program will have a valuable tie in from AZA holding institutions as hundreds-thousands of photos are needed to create the program. Identifying individual elephants is an image matching problem: given a target elephant photo and a library of other elephant images, the algorithm must identify matches. The challenge is images of the same elephant will differ (lighting, pose) and the algorithm must cue on only those features that do not change and are specific to that elephant. Drs. Chusyd and Crandall will adapt their already established approach for human facial recognition and fine-tune it on elephant data. Therefore, the application will be developed, trained, and evaluated using image data from zoo Asian elephants as elephant identities are known and the settings are controlled, allowing for easier collection of diverse photos for each elephant. Dr. Chusyd has traveled extensively to over 20 AZA zoos, where she worked with elephant managers and keepers, veterinarians, and zoo research teams to implement her studies. In addition, she has presented her research at the Elephant Managers Association Conference for the past 3 years. These experiences have allowed her to forge strong working relationships with many of the zoos that will collaborate with us on this project. In fact, she has already started working with the Birmingham Zoo, Indianapolis Zoo, Cincinnati Zoo & Botanical Garden, and Columbus Zoo on elephant facial recognition, collecting over thousands of images of both African and Asian elephants. Recently Dr. Chusyd received a grant from the University of Indiana Bloomington to pursue this technology.

Finally, to ensure the registry database is proven, the AeSP is investigating the use of Species360 as the database for a complete robust registry. Species360 is a non-profit NGO and global leader in wildlife care and conservation. Species360 has mobilized a network of more than 1,200 progressive zoos, sanctuaries, aquariums, universities, and research and governmental members on 6 continents and in 96 countries to improve animal welfare and species conservation. Their members address today's most urgent wildlife issues, including establishing best practices in husbandry, enrichment, medical care, welfare, reproduction, population management, and biodiversity.

Together, Species360 members curate the Zoological Information Management System (ZIMS), the world's most comprehensive open database of knowledge on more than 22,000 species. ZIMS vastly increases what is known about thousands of species, and is instrumental in identifying sustainability strategies for many of the species assessed as vulnerable, endangered, and extinct in the wild. In fact, 14 sites in Indonesia already use this system.

The Conservation Science Alliance (CSA) – led by Species360 - is a science-based consortium of conservation leaders and researchers working together to address some of our most urgent wildlife exploitation problems. CSA researchers provide conservationists with evidence-based findings integrating the full scope of global data, including IUCN Red List, CITES, TRAFFIC, EDGE, AZE, ZIMS, and more. Research led in collaboration with IUCN Species Survival Commission, and others, drives insightful decisions on many levels, from enforcing illegal wildlife trade laws to calculating viability of insurance populations.

On any given day, CSA data scientists apply a unique multi-disciplinary combination of wildlife expertise in biology and veterinary sciences, with sophisticated data science skills to power advances in species conservation. CSA participants have the shared objective to 'use open and freely available data in the fight to stop extinction'. Progressive CSA sponsors and partners include Copenhagen Zoo, the World Association of Zoos and Aquariums (WAZA), and Wildlife Reserves Singapore.

Elephant Endotheliotropic Herpesvirus (EEHV)

The Asian Elephant SAFE program is committed to supporting the science of diseases that affect both *in-situ* and *ex-situ* elephant populations, including the treatment, management and prevention of emerging diseases, such as elephant endotheliotropic herpesvirus (EEHV). EEHV is a herpes virus that causes deadly hemorrhagic disease in young elephants. It is the largest single cause of death of Asian elephants in North America and Europe. Furthermore, at the 3rd Asian EEHV Strategy meeting in Thailand, 124 cases of EEHV hemorrhagic disease had been reported from 11 Range states with an 82% fatality rate (2019 EEHV Meeting, Houston). This disease is affecting Asian elephant populations both in range habitats and in human-care and is negatively impacting the global development of a self-sustaining meta-population as a hedge against extinction. The impact of EEHV on the long-term survival of wild populations is still unknown; however, understanding and finding solutions to diseases such as EEHV is critical for the overall Asian elephant population.

One strategic goal for the AeSP is to tap into the elephant care professionals (ECP) passion for elephant conservation encouraging fundraisers amongst AZA institutions directed towards supporting the needs of Range states in the treatment and management of EEHV. Through experiences the AeSP steering committee understand elephant care professionals at all levels want to have a direct, tangible, and measurable impact on conservation. The AeSP will create tools and provide guidance to elephant care professionals on simple, yet effective, ways to host local fundraising events that will create opportunities for ECPs to have that direct conservation impact on Asian elephants in Range states in relation to EEHV. AeSP will collaborate with strategic partners at the EEHV Advisory Group (EEHV AG) and the International Elephant Foundation to determine the most imperative needs for funding dispersal. Currently, the greatest need is for the purchase of anti-viral medications, Polymerase Chain Reaction Machines for viral detection, and laboratory enhancements for testing. Through small, yet impactful, fundraising events, AZA ECPs can be engaged to make a significant difference for EEHV in Asian elephants.

The EEHV Advisory Group is a group of veterinarians, researchers, and experts from around the world, including from AZA institutions and their partnering universities (e.g., Baylor University and the Houston Zoo). The EEHV Advisory Group collaborates to:

- Recommend husbandry and veterinary management protocols as they pertain to EEHV;
- Develop priorities for diagnostic and research goals between the NEHL Consortium and other research labs;
- Coordinate research sample requests;
- Provide media assistance;
- Assist in the identification of necropsy teams as needed;
- Coordinate EEHV fund-raising;
- Assist with proposal submissions for EEHV research projects;
- Proactively provide elephant-holding institutions and the general public with current EEHV information;
- Continuously update information on EEHV Advisory Group website; and
- Manage EEHV listserves – one for only advisors and one for advisors and the elephant community (elephant managers/keepers, vets, researchers, etc.).

Education Campaign about Asian Elephants in North America

Another goal of the Asian Elephant SAFE program is to raise attention and awareness of guests visiting AZA institutions and to the issues facing Asian elephants. Elephants have long captured the public's attention. Charismatic and charming, they can be found throughout popular culture. A simple Google search about elephant conservation will turn up thousands of results, most of which are focused on African elephants. The AeSP strongly supports conservation of all elephants but feels strongly that attention to the specific plight of Asian elephants needs to be elevated in the public eye. During the 2019 AeSP stakeholders meeting the consensus was that the majority of the American public may not understand the difference between the Asian and the African elephant nor the conservation issues that impact these two distinct species. Educators from multiple AZA institutions communicated that most messages revolved around the poaching of elephants for their tusks. Even though the worldwide Asian elephant population numbers are just 10% (40,000) of the African elephant worldwide population (400,000), the Asian elephant receives less attention in the media and conservation education efforts. Though both species face many of the same issues that negatively impact their numbers such as habitat loss, destruction of historic migration routes, human-elephant conflict and poaching, the dominant message provided to the public is the illegal ivory trade and its impact on the African elephant. Although the Asian Elephant SAFE program understands this issue cannot be ignored, the program believes that the Asian elephant merits greater attention than it has received to date and issues, such as habitat loss and human/elephant conflict, will contribute greatly in the conservation of this extremely vulnerable species.

The Asian elephant program plans to work to increase awareness in two different areas. First, by providing resources and unified messaging for AZA accredited zoos that celebrate World Elephant Day. This effort will focus primarily on visitors who participate in World Elephant Day at AZA accredited zoos. Second, in partnership with AZA's Public Relations and Marketing committees, we will create an awareness campaign with consistent messaging focused on Asian elephant conservation, the Asian elephant SAFE program will identify and separate the issues facing the two species of elephants in order to better educate and engage guests about Asian elephant conservation. This awareness campaign will focus on social media users who engage with our respective social media platforms (Facebook, Instagram, Snapchat, etc).

The Asian elephant SAFE program acknowledges that conservation action is the ideal goal. The AeSP's plan is to work toward engaging our public in conservation action. However, at the SAFE stakeholder meeting, it was determined that the first priority should be on raising awareness of the issues facing Asian elephants with AZA visitors. In years two and three, the team will use lessons learned from the public awareness campaign to inform the strategy for how we lead our visitors to conservation action.

To date data is not available on where needs of stakeholders in the range countries are, but, as the team works with range countries on the development of a registry, we will better understand how to best identify appropriate action strategies to engage those stakeholders.

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Program Operational Structure

Program Leaders		
Columbus Zoo Program Leader	Adam Felts, Curator Heart of Africa/Asia Quest	adam.felts@columbsuzoo.org, 614-922-0068
White Oak Conservation Co-Leader	Nick Newby Collections Manager	NNewby@white-oak.org, 757-651-7344
Steering Committee		
Columbus Zoo and Aquarium	Danielle Ross, VP of Education	danielle.ross@columubszoo.org, 614-724-3551
Oklahoma City Zoo	Rachel Emory, Curator of Elephants	REmory@okczoo.org, 405-425-0654
Cincinnati Zoo and Botanical Gardens	Christina Gorsuch, Curator of Mammals	Christina.Gorsuch@cincinnatizoo.org, 513-559-8321
St Louis Zoo	Martha Fischer, Curator of Mammals/Ungulates and Elephants	fischer@stlzoo.org, 314-646-4610
Denver Zoo	Brittany Fredrick	BFrederick@denverzoo.org
Tulsa Zoo	Jordon Piha, Curator of Mammals	jpiha@tulsazoo.org, 918-669-6240
Oregon Zoo	Bob Lee, Curator of Elephants	Bob.Lee@oregonzoo.org, 503-220-5700
Program Partners		
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International Elephant Foundation	Deborah Olson, Executive Director	dolson@elephantconservation.org, 817-597-0956
United States Fish and Wildlife Services	Cory Brown, Asian Elephant Conservation Fund	cory_brown@fws.gov, 703-358-2221
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Africa Lion Safari	Charlie Gray, President of IEF	cgray@lionsafari.com
Columbus Zoo	Michael Kreger, VP of Conservation	Michael.Kreger@columbuszoo.org, 614-724-3409
Oregon Zoo	Grant Spickelmier, Curator of Inspiration	Grant.Spickelmier@oregonzoo.org, 503-525-4268
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University of Indiana Bloomington	Dr. David Crandall, Phd	djcran@indiana.edu
Wildlife Disease Research Laboratory, India	Dr. Arun Zachariah, Wildlife Veterinary	zacharun@gmail.com
Species 360	Peter Donlon, Director Global Member Development	Peter.Donlon@Species360.org, 651-447-5573
EEHV Advisory Group	Erin Latimer, Research Specialist Lauren Howard, Associate Director of Veterinary Services	LatimerE@si.edu, 202-633-4252 lhoward@sandiegozoo.org, 760-291-5400

Conservation Targets

Asian elephants have been part of the cultural heritage of many Asian countries for centuries. Unfortunately, their populations are declining, with only an estimated 40,000 elephants remaining in the wild. Therefore, the populations in human-care are of critical importance for the survival and viability of the species [4]. For instance, elephants in human-care may act as a genetic reservoir for declining wild populations, particularly for the critically endangered Sumatran elephant. For this reason, the conservation targets for the AeSP are the human-managed Asian elephant populations located in the region, which total an estimated 14,142 individuals [4]. The populations of human-managed Asian elephants should be regarded as an important resource and a safeguard against extinction. Because of the expertise found throughout the AZA facilities and the large number of elephants managed under human-care, the AeSP will target these populations as these populations cannot be ignored as the pressure from the increasing human population continues and destruction of their natural habitat continues.

Conservation success in Asian elephant range countries is dependent on a strong government commitment and oversight, a functional and effective legal system, and a human population interested in the survival of their elephants while also benefitting from wildlife and habitat conservation. Indonesia has such a government and desire to protect their elephants. Further, the AZA community supports organizations, such as the International Rhino Foundation and Heidi Riddle (having done extensive work in the region), that have already done much of the "groundwork" with Asian elephant conservation. Collectively, this will offer AeSP a great opportunity to provide valuable assistance to Indonesia, and later to other range countries, in the conservation of this species.

Tapping the expertise of the IUCN Asian Elephant Specialist Group, pointing the intent and commitment of range stage governments as demonstrated in the Jakarta Declaration for Asian Elephant Conservation of 2017 and other working strategic partners, the AeSP will develop a critical tool and resource that will benefit Asian elephant populations in their range states and the human communities that live near and support these populations.

Status of Taxa within the AZA Community

Asian elephant populations within AZA institutions are managed under a Species Survival Program (SSP). This population has not reached the100-year sustainability goal, placing it into a yellow SSP. As of the 2017 Population Analysis and Breeding and Transfer plan, the AZA Asian Elephant SSP population currently consists of 137 animals, comprised of 31 males and 106 females, at 33 institutions (32 AZA-accredited facilities and 1 AZA Approved Sustainability Partner) [5]. The currently living SSP population's pedigree is 95.9% known due to nine animals having all or some portion of their pedigree unknown. Pedigree assumptions were created in previous planning sessions to address this unknowingness and to complete the pedigree of the potential breeding population. Sixty-eight animals were excluded from the potential breeding population for reasons including: females (and one male) determined to be non-reproductive, post-reproductive after reproductive assessments, or females 24 years or older that have never bred and are considered unlikely to do so. After these assumptions and exclusions, the potential breeding population of Asian Elephants consists of 69 (30.39) individuals with a 100% known (100% certain) pedigree.

AZA Conservation Activities (see Appendix I)

AZA institutions have a long history of supporting *in situ* Asian elephant conservation, with 32 institutions contributing a total of $1,759,995 to 77 projects between 2013 and 2017. Projects supported were in 10 of the 13 range states where Asian elephants can be found:

- Indonesia
- Malaysia
- India
- Myanmar
- Cambodia
- Sri Lanka
- Thailand
- Vietnam
- China
- Laos

Many zoos also contribute to Asian elephant conservation through the International Elephant Foundation (IEF), a US-based non-profit organization with which AZA has had a long-term partnership. Through these collective efforts, AZA institutions have contributed funds that address various issues facing Asian elephants in their natural habitats, such as human elephant conflict, deforestation, illegal logging, and supporting the local communities. Because of the commitment of AZA institutions to elephant conservation and the expertise found in the management of Asian elephants and educational activities, this program will directly align with increasing awareness of the Asia elephant conservation with measurable outcomes.

AZA Public Engagement Activities

AZA institutions have historically participated in World Elephant Day and/or Elephant Awareness days and the 96 Elephant Campaign over the last several years according to a recent survey (Asian Elephant SAFE program). World Elephant and Elephant Awareness Days activities have historically been driven by individual institutions while the 96 Elephant Campaign engaged AZA institutions with consistent messaging and actions.

Conservation Status of Taxa

The IUCN Red List of Threatened Species and the US Fish and Wildlife Services have classified the Asian elephant (*Elephas maximus*) as endangered, with populations decreasing over the last century, citing a population of 41,410–52,345 [2]. Asian elephants are also included in CITES Appendix I indicating they are threatened with extinction [1] and have declined by nearly 50% over the last 3 generations from more than 100,000 animals to less than 40,000[6]. IUCN identifies three subspecies of the Asian elephant: *E.m. indicus* on the Asian Mainland, *E.m. maximus* on Sri Lanka, and *E.m. sumatranus* on the Indonesian Island of Sumatra. Borneo's elephants have been considered a sub-species in the past [2].

In 2017, an Asian Elephant Range States Meeting reported an overall population of up to 49,683 free-ranging and 14,142 managed animals, although the accuracy of these numbers are unknown. From the latest Asian Elephant Range States Meeting, the populations of elephants are as follows:

- Bangladesh: 268 Resident, 93 Residential, 96 Managed
- Bhutan: 513 Wild, 9 Managed
- Cambodia: 400–600 Wild, 70 Managed
- China: 300 Wild, 243 Managed
- India: 29,291–30,711 Wild, 3,467–3,667 Managed
- Indonesia: 1,724 Wild, 467 Managed
- Lao PDR: 600–800 Wild, 454 Managed
- Malaysia: 1,223–1677 Wild, 92 Managed

- Sabah: 2,040 Wild, 23 Captive
- Myanmar: 2,000 Wild, 5,000 Managed
- Sri Lanka: 5,879 Wild, 230 Captive
- Thailand: 3,100–3,600 Wild, 3783 Managed
- Vietnam: 104–132 Wild, 8 Managed

Recovery Plan

The AeSP will focus its efforts using the information garnished from Asian Elephant Range State Meeting held April 18-20, 2017 in Jakarta, Indonesia as its guide. This meeting included government officials, NGOs, and other experts from 12 of the 13 range states and provided information and priorities agreed upon by these countries. In this report parties agreed to "cooperatively develop captive Asia Elephant registration programs, including where appropriate microchipping and/or DNA based systems, and ensure cross border movements of captive Asian Elephants are in compliance with all national and international laws and regulations; Ensure the welfare of captive elephants is maintained at all times"[4].

During this 2-day meeting, a session on Captive Elephant Management, facilitated by Heidi Riddle, discussed captive management issues, such as:

- The overall range state governments' plan to maintain populations of captive elephants;
- The high level of interest among range state governments to develop captive elephant breeding programs so that wild populations are not affected; and
- Several range state governments would be interested in elephant exchange between countries, primarily to help develop captive elephant breeding programs.

From this session priorities for captive populations were suggested by the Jakarta Declaration for Asian Elephant Conservation (see table A)

Executive Summary from the Asian Elephant Range State Meeting Final Report [4]:
With a remaining population of approximately 40,000 individuals, the Asian elephant (*Elephas maximus*) is highly endangered and at risk of local extinction in some range countries. Threats such as habitat loss, fragmentation of elephant populations, the consequences of human-elephant conflict (HEC), and the illegal killing of elephants require significant efforts to find solutions to mitigate these threats and ensure the long-term sustainability of the Asian elephant.
In an effort to continue the work to conserve Asian elephants, all Asian Elephant Range States (with the exception of Nepal, which was unable to participate due to national elections) sent two high level delegates to the second Asian Elephant Range States Meeting to improve collaboration and cooperation amongst countries. This meeting, hosted by the Ministry of Environment and Forestry, Republic of Indonesia, took place in Jakarta, April 18-20, 2017. The meeting was facilitated by the IUCN Species Survival Commission Asian Elephant Specialist Group (AsESG), and supported by the Asian Elephant Conservation Fund of the U.S. Fish and Wildlife Service and by the European Union Indonesia Office. Technical support was provided by Regain Foundation, the International Elephant Foundation, and the Forum Konservasi Gajah Indonesia.
The primary output of the meeting is "The Jakarta Declaration for Asian Elephant Conservation" signed by all delegates at the conclusion of the meeting. This is the first time that all 13 Asian elephant range states have declared a common vision to promote Asian elephant conservation range-wide, affirming their intent to cooperate based on the principles of sustainable development, science, education and training, as well as other activities relevant to Asian elephant conservation and development within the range States. The delegates also declared their commitment to develop, where necessary, and implement National Elephant Action Plans.
Through the Jakarta Declaration, range state governments call upon the international community to join them in reversing the decline in Asian elephant population numbers and positioning the Asian elephant securely on the road to recovery. Preserving Asian elephants is a global challenge requiring strong government partnerships and a cohesive regional strategy.

Threats to Asian Elephants

Primary Threats to Asian Elephants [4]

- Illegal killing and trade
- Habitat Fragmentation
- Human elephant conflict
- Human managed populations [7]
    1. Illegal trade in live elephants continues;
    2. Laws relating to elephants are not adequately enforced;
    3. Registration systems are outdated and insufficient to prevent illegal trade;
    4. National responsibility for elephants is shared amongst a number of agencies;
    5. Excessive populations of former labor elephants present potentially overwhelming challenges; and
    6. Future threats are inadequately researched and strategies to manage them are not in place.

Conservation Objectives

1. **Partner with the Indonesian government and other stake holders to enhance existing elephant registry programs:** With the approval of the Indonesia's Ministry of Environment and Forestry the AeSP will build upon the existing elephant registry program in Indonesia. This enhanced registry will be used to record, log, track and report individual elephants by creating a database that includes microchip and animal information, DNA profile of each elephant, photographic recognition technology that allows for quick confirmation of each individual elephant's identity.
2. **Invite Asian elephant range countries in the development of a range-wide standardized registry for identifying, monitoring, and managing elephants in human-care to:**
    - Ensure that the trade and cross border movement of live Asian elephants are conducted in accordance with national and international guidelines (i.e., CITES);
    - Support law enforcement efforts to ensure the legal trade of Asian elephants;
    - Facilitate individual country's governance of their elephant population;
    - Support local capacity building through the transfer of technology and skills;
    - Support the population management of Asian elephants throughout their range; and
    - Potentially be used as forensics tool for identification of illegally trafficked parts and derivatives.
3. **Support the science of the treatment, and management of EEHV in Asian elephant Range states**

Public/Stakeholder Engagement Objectives

1. **Promote capacity building by enhancing the current registry program in Indonesia**. This starts with local lab enhancements for DNA analysis, educating elephant mahouts, and communities where the elephants are located on the use of the technology that will be used for the registry program. Success will be demonstrated once each lab facilities' personnel are trained and capable of entering information, genetic material collected, and each elephant is registered. Key stakeholders involved in this portion of the plan are Wahdi Azmi (coordinator of the project), the Indonesian Government's Ministry of Environment and Forestry (MoEF), Centre for Wildlife Studies, and Faculty of Veterinary Medicine, University of Syiah Kuala (through Mr. Azmi) in Sumatra which has formalized a co-operation through a MoU. The Center for Wildlife Studies is one of the key local stakeholders as it has a mandate to assist with medical services for wildlife under an MoU with the government conservation agency.

2. **Engage other Range states at the completion of the Indonesian pilot program.**
   To create a consistent registry for all Asian elephants in human managed settings, SAFE will partner with Indonesia to host a range wide workshop introducing the enhanced registry program created. At the conclusion of t 433his the pilot program Range states will be invited to a Range state workshop for the work to be revealed and for further inclusion of a Range wide registry. A final report from this workshop will be provided.
3. **EEHV Support in Range State Stakeholder Engagement and Public Awareness Objectives.**
   ECP driven activities will provide public awareness, through ECP driven events at their local zoos and stakeholder engagement within Range states. This project involves direct collaboration with both the EEHV Advisory Group and the International Elephant Foundation. The fundraising tool kit materials that will be distributed will engage and encourage elephant care professionals across the nation to have a direct impact on Asian elephant conservation.

Funding Objectives

1. **Allocate funding through available grants to support the enhancement of the existing registry program in Indonesia.**
   Much, if not all of the registry pilot program can be funded by USFWS grant and partnering zoo grant programs. Through communications with USWFS, it is highly probable funds can be acquired through the appropriate grants due to the scope of this work. Metrics for evaluating the success of this objective will be the successful acquisition of funding needed to complete the project. A team has been created to begin this grant writing and the funding requests will be broken down as follows:
   1. Phase 2 (Table B) of the project is to understand costs associated and itemized budget to complete pilot program:
      a. Note: Elephant recognition project is an ongoing project with funds already allocated. Cost associated with the AeSP will be strictly related to this program.
   2. Phase 3 (Table B) funds will be acquired through:
      a) Columbus Zoo Conservation Management Grants
      b) Saint Louis Zoo WildCare Institute Grants
   3. Phase 4 (Table B) funds will be acquired through:
      c) USFWS Asian Elephant Conservation Grant
      d) USFWS International Narcotics and Law Enforcement Grant
      e) Other AZA Grant opportunities through AZA and member institution
   4. The grant writing team and reviewers are: Robbie Clark (San Diego Zoo), Rachel Emory (Oklahoma City), Dr. Daniella Chusyd (University of Indiana Bloomington), and Dr. Michael Kreger (Columbus Zoo and Aquarium)
2. **Raise funds through elephant care staff fundraisers to assist with the treatment of EEVH in range States.**
   The AeSP has set an initial goal of $5000 to be raised utilizing the toolkits developed and collaborating with AZA member institutions and other local entities, such as a local AAZK chapter. Funds raised will be used to support the greatest need in a range state at that time, with the assistance and guidance of the EEHV advisory committee. Metrics for evaluating this project will be the goal of $5000 for the first year raised, and then successful transfer of funds to needed areas, using the EEHV advisory committee's recommendations.

Communications/Public Awareness Objectives

1. **Build consistent messaging and an educational campaign focused on Asian elephant conservation with the aim to raise attention and awareness of the issues facing Asian elephants, focusing on two primary audiences (AZA institutions' visitors and social media audiences) (Table D):** The goals of this portion are that participants will:
    - Feel appreciation for Asian elephants;
    - Feel interest in supporting Asian elephant conservation;
    - Learn that Asian elephants are a distinct species found in 13 Asian countries and they are more endangered than African elephants;
    - Learn the specific Asian elephant conservation work being done or supported by their local zoo;
    - Share the message about Asian elephants with others;
    - Donate to elephant conservation (this will be focused on later in the campaign); and
    - Download and use the palm oil app (this will be focused on later in the campaign).
2. **Support and unify messaging for elephant holding zoos celebrating World Elephant Day (Table D).** This will be accomplished through:
    - Collecting existing messaging on World Elephant Day;
    - Assess/code the messages that the team has gathered.
    - Find trends and overarching messages to share with Asian elephant holding zoos;
    - Communicate these unified messages with zoos. These messages will be vetted with through TAG/SAFE professionals;
    - Assess the overall success of World Elephant Day by providing an evaluation tool to be used by participating zoos;
    - Feedback from these evaluation tools will help guide the team in providing resources for future World Elephant Day celebrations; and
    - Share findings with other zoos, either at AZA conferences or through the AZA network.
3. **Raise awareness of Asian elephants and the issues they face through a public awareness campaign**. In year one the team will kick off a simple campaign, with the goal of expanding it in future years.
    - Solicit professionals from the PR/Marketing community to help develop a campaign strategy;
    - Using messages garnered from Strategic Objective 1, create attention grabbing soundbites, compile stories, etc;
    - Create an engaging campaign, possibly something related to the idea that we want 40,000 shares, likes, etc for 40,000 elephants;
    - Develop a toolkit that will guide organizations who wish to participate in the social media campaign;
    - Invite AZA organizations to participate in the campaign and provide them with resources;
    - Launch the campaign; and
    - Report and celebrate success. Make recommendations for the next year's campaign.
4. **Incorporate action-based messaging related to Asian elephant conservation into a public awareness campaign**. This will be accomplished through:
    - Revisiting messages compiled in the year one survey. Use these messages to develop unified action-based messages. Likely the messages will focus on

donations that support SAFE's objectives or that focus on sustainable palm oil use;
- Developing an action strategy that can easily be used by zoos as they focus on conservation action. This strategy should include an evaluation component that helps zoos measure success;
- Disseminating messages to Asian elephant holding zoos;
- Working with zoos to evaluate success; and
- Reporting and celebrating success. Use feedback to make adjustments for year three (and beyond).

5. **Based off the recommendations of the Asian elephant team, explore the feasibility to develop a communication plan related to the registry. This could include providing updates to the public stateside, as well as explaining to residents in the 13 range states the importance of the registry.**

Table B: Conservation and Funding Actions Elephant Registry Pilot Program (2019-2022):

Phase 1: Gather verbal commitment from Indonesian government and initial analysis of the scope of the project to be promoted at CITES meeting				
Action	**Metrics**	**Time Frame**	**Participants**	**Total Cost**
Informal communication with DG using bullets of the SAFE program	Verbal commitment given to SAFE via Wahdi Azmi	Complete	Wahdi Azmi, MoEF	0
Secure AZA pre-approval	Email stating it is approved to move forward	Complete	AZA SAFE	0
Develop concept note	4 hard copies sent to Wahdi to be hand delivered to DG, biodiversity direction, convention deputy and dean of Syah Kuala	Complete	Adam Felts	0

Phase 2: Secure official project approval, develop operating procedures/costs and initiate training of laboratory.				
Action	**Metrics**	**Time Frame**	**Participants**	**Total Cost**
Secure Indonesian government commitment	Formal letter or decree giving authorization that provides proof of the agreement between SAFE and Indonesia	May, 2019	Wahdi Azmi	0
US government embassy supply letter of support		April, 2019	Cory, Brown	0
Connect with CITES Secretariat	Letter indicating connection and approval	April, 2019	Heidi Riddle	0
Notify the Asian elephant Specialist Group	Notify the AeSG	May, 2019	Martha Fischer	0
Announce project at CITES CoP	Begin and alert participants of project at the CITES meeting. Brief report and summary of discussions.	May, 2019	Mike Kreger	0
Develop elephant recognition technology	Written plan for accomplishing the development of this technology through the University of Indiana through a masters or PhD program	June 2019-October 2021	Daniella Chusyd, Christina Gorsuch	$20,000
SAFE members travel and visit labs to understand costs associated with DNA mapping and any needed lab enhancements. Initial discussions took place in February of 2018	1. Secure commitments, visit labs, elephant sites, and design program policy and procedure during in-country visit. 2. Establish standard operating procedures and protocols, formulating methodology for sample collection and molecular analysis. 3. Finalize budget (i.e. costs for lab enhancements and cost per elephant to run DNA mapping 4. Understand number of microchips needed	October, 2018	Adam Felts, Nick Newby, Wahdi Azmi	$5,000

	to complete microchipping animals 5. Introduce Species 360 as possible system to use to register elephants.			
Create contact list for local laboratories and other personnel to be strategic points of contact for project.	Provide list of names, titles, contact info, and institutions to steering committee.	October, 2019	Adam Felts, Wahdi Azmi	0

Phase 3: Development of pilot program				
Action	**Metrics**	**Time Frame**	**Participants**	**Total Cost**
Begin to secure funding	1. Complete and secure funding for lab enhancements and Dr. Zachariah's expenses through Columbus Conservation Grant and Saint Louis' Wildlife Institute ($13,000). 2. Completed grant through USFWS Asian Elephant Conservation Grant and International Narcotics and Law Enforcement	January, 2020	Adam Felts, Rachel Emory, Daniella Chusyd, Robbie Clark, Mike Kreger	0
Lab Enhancements	Secure equipment/set up and materials for labs. Photos and receipts provided.	February, 2020	Adam Felts	$8,000
Trip 1 for Dr. Arun Zachariah to train lab staff.	Provide methodology for lab faculties to follow.	March, 2020	Arun Zachariah, Wahdi Azmi	$2,500
Create data base and information that would be imported into Species 360	A pilot database of Indonesian elephants, in human-care, that includes microchip number, and other information relevant to individual elephants.	April, 2020	Wahdi, AZA SAFE	$10,000
Trip 2 for Dr. Arun Zachariah to train lab staff.	Dr. Zachariah to provide written update.	July, 2020	Arun Zachariah, Wahdi Azmi	$2,500

Phase 4: Develop data base of elephants in human-care across Indonesia				
Action	**Description**	**Time Frame**	**Participants**	**Total Cost**
Initiate Project	DNA analysis, microchipping, photo ID of elephants in human-care with all relevant information recorded into database. DNA analysis for all 467 in human-care elephants, based on 2017 reported captive population, lab costs, staff pay, etc.	September-February 2021	Indonesian Partners, Wahdi Azmi	$56,040
Species360 Training	Member of the SAFE team to travel to train local community care givers or appropriate personnel how to import and use Speicies360		Peter Donlon, Species360	$5,000
Secure Additional Microchips	$10/microchip, any remaining elephants needing microchips will be microchipped.	December, 2020	Elephant SAFE	$4,670
Test recognition technology	A product that is tested and complete to allow on the ground personal to accurately ID an elephant in human management and verify elephant information	February, 2021	AZA Member Institutions	0
Safe member travel and recognition scientist travel	Recognition testing and implementation with written report upon return	February, 2021	Daniella Chusyd, SAFE Members	$5,000

Phase 5. Host workshop inviting all 13 range states to learn about program developed.				
Action	**Description**	**Time Frame**	**Participants**	**Total Cost**
Range State workshop	Hold range state workshop to introduce process	2022	AZA SAFE, Indonesian Partners	$40,000

$158,710

Table C: Conservation Actions EEHV Support

To develop an avenue for AZA institutions, elephant caretakers, and supporting groups to contribute to Asian elephant conservation through EEHV research, prevention, and treatment support.			
Action	**Metrics**	**Time Frame**	**Participants**
Investigate most urgent needs for assistance in Asian Range States	Working with the EEHV Advisory Group the steering committee will determine where funds raise should go.	Complete	Steering Committee, EEHV AG, IEF
Develop idea and tool kit for elephant care professionals to use to host local fund raisers	Minimum of five fundraiser options will be created to be shared with elephant care professionals to assist with fund raising	In progress	Rachel Emory
Engage elephant care professionals and gauge interest/willingness from AZA institutions and other animal care professional organizations (i.e. AAZK, EMA, etc)	Survey will be developed and distributed	January, 2020	Rachel Emory
Initiate fund raisers	Encourage elephant care professionals to participate. Document and track participation.	January, 2020	Rachel, Steering Committee
Provide funding for EEHV cases in Asia	Secure profit from fundraisers, send to EEHV Advisory Group Secure profit from fundraisers, send to International Elephant Foundation to be kept in EEHV AG account with written report of outcomes	January, 2021	Rachel Emory, Program Leaders, EEHV AG
Distribute funds to areas in Range states with greatest needs	Current greatest needs are the purchasing of antiviral medication for treatment, PCR machines for detection, and lab enhancement for testing with written report and photos of labs.	September, 2021	Rachel Emory, Program Leaders, EEHV AG

Table D: Communications/Public Awareness Actions

Strategic Education Objective 1 - Support and unify messaging for Asian elephant holding zoos celebrating World Elephant Day			
Action	**Metrics**	**Time Frame**	**Participants**
Collecting existing messaging on World Elephant Day.	50% of Asian elephant holding zoos will share their messages.	Complete	Education Team
Celebrate World Elephant Day	75% of Asian elephant holding zoos will participate in World Elephant Day and use messages provided by Asian elephant SAFE.	August 2019	All Asian elephant holding zoos
Assess the overall success of World Elephant Day by providing an evaluation tool to be used by participating zoos.	50% of the above zoos will participate in evaluation and provide feedback for improvement for the next year.	Sept-Oct 2019	Education Team
Strategic Education Objective 2 - Raise awareness of Asian elephants and the issues they face through a public awareness campaign. In Year One the team will kick off a simple campaign, with the goal of expanding it in future years.			
Action	**Metrics**	**Time Frame**	**Participants**
Expand World Elephant Day celebration	50% of Asian elephant holding zoos will participate in the year one launch. An increase in 10% of zoos who commit to participate in the 2020 launch. 10% more will commit for 2021.	August 2019, 2020, 2021	Education Team
Create and launch an engaging campaign.	Over 40,000 social media users will share a post that raises awareness related to Asian elephants, using the hashtag we provide (to be determined).	August – Sept 2020 and 2021	PR/Marketing Committee members, Education Team

Strategic Education Objective 3 - Incorporate action-based messaging related to Asian elephant conservation into both World Elephant Day and the public awareness campaign.			
Action	**Metrics**	**Time Frame**	**Participants**
Revisit messages compiled in the year one survey. Use these messages to develop unified action-based messages. Likely the messages will focus on donations that support SAFE's objectives or that focus on sustainable palm oil use.	60% of Asian elephant holding zoos incorporate messages into their World Elephant Day activities.	Spring 2020, 2021	Education Team
Refine and continue awareness campaign	60% of Asian elephant holding zoos participate in year two of the social media campaign. 70% participate in year three.	Summer 2020, 2021	PR/Marketing Committee members, Education Team
Develop an action strategy that can easily be used by zoos as they focus on conservation action. This strategy should include an evaluation component that helps zoos measure success.	Over 40,000 social media users will share a post that raises awareness related to Asian elephants, using the hashtag we provide (to be determined).	Summer 2020, 2021	PR/Marketing Committee members, Education Team
Work with zoos to evaluate success.	80% of participating zoos evaluate success of their activities.	Fall 2020, 2021	All Asian elephant holding zoos

Elephants in Human-Care Registry Work Plan (Table B):

Supporting Asian elephant range countries in the development of a range-wide standardized registry for identifying, monitoring, and managing elephants in human-care (Table B): With the approval of the Indonesia's Ministry of Environment and Forestry (MoEF), the Asian Elephant SAFE program will build upon the existing captive elephant registry program in Indonesia. This enhanced registry will be used, by utilizing Species360, to record, log, track and report individual elephants that includes microchip and document, DNA profile of each elephant, photographic record, and developing/utilizing technology that allows for quick confirmation of each individual elephant's identity. With the support of the MoEF, the scope of this pilot program is as follows:

Phase 1:

1. Receive a letter of commitment from Indonesia
    a) Letters from SAFE leadership have been delivered to all necessary parties in Indonesia to approve this pilot project; and
    b) Verbal commitment from the DG was received.

Phase 2:

1. SAFE leadership to visit sites and laboratories to:
    a) Develop standard operating procedures;
    b) Understand time frame and policies to have materials collected, delivered, and analyzed;
    c) To present Species360 as the recommended database;
    d) To develop a reporting process of progress;
    e) To discuss timeline for Dr. Zachariah's visits for training;
    f) To look into potentially working with a local university as a master's program;
    g) To finalize budget; and
        - Initial costs of DNA mapping for this project were discussed at the 2019 Stake Holders meeting with the expertise input of Dr. Arun Zachariah.
        - Laboratory enhancements (at the 2019 Stakeholders meeting it was estimated this would be $8000).
        - Determine number of microchips needed for elephant population.
        - Finalize cost per elephant to run DNA sample.
    h) Introduce Species360.
2. Develop technology (Ele-ID) that will be smart phone accessible to assist with identifying an elephant and confirming the elephant's information.
    a) Pilot data to be collected through December 2019;
    b) Protocols created and introduced to AZA facilities by January 2020;
    c) Collection and goal of 100% participation of all Asian elephants in AZA institutions by June of 2020;
    d) Development of app and refining of AZA holding institutions elephants; and
    e) Introduction and input of Indonesian elephants for program development and registry, 2021.

Phase 3:

1. Secure funds through available grants and participating AZA institutions for the lab enhancements and scientists' travel for training;
    a) Grants will be submitted for funding to Columbus Zoo and Aquarium and Saint Louis Wildlife Institute grant programs.
2. Develop the capacity of local laboratory partners to run DNA analyses;
    a) Schedule first trip (from India to Indonesia) training completed by Dr. Zachariah.
    b) Veterinary faculty will be trained and protocol written for DNA analyses.

3. Work with Species360 to identify measures such as microchip numbers, photo identification (possibly), building upon existing registry information and techniques for importing of information; and
4. Schedule the second trip (from India to Indonesia) training completed by Dr. Zachariah.

Phase 4:

1. Collect samples to run DNA analysis and provide microchips where necessary;
2. Integrate the DNA profile and other individual identification schemes to the registration database;
3. Capacity building and training for appropriate personnel for Species 360;
4. Purchase and distribute additional needed microchips; and
5. Schedule trip for scientist working on recognition technology for:
    a) Pilot data to be collected through December 2019
    b) Incorporate technology to registry program

Phase 5:

1. Host a registry workshop and invite other Asian elephant range states to learn from the successes in Indonesia and to participate in the registry program.
    a) Determine location of workshop including host city and accommodations
    b) Create a list of invites for workshop
    c) Create budget and costs of a workshop
    d) Secure funding

Pilot Registry Program Metrics: To measure the success of this program continual communication from the field coordinator (Wahdi Azmi) with progress and oversight. Success will be determined by:

1. Receiving official letter of support from Indonesia;
2. SAFE leadership will provide written report after site visit:
    a) Finalized budget
        - Lab enhancements
        - Cost per elephant to run sample
        - Cost of staff time
        - Cost of use of Species360
    b) List of stakeholders, and contacts that will be producing the work; and
    c) Standard operating procedures.
3. Written reports from Dr. Arun Zachariah after each visit for training purposes.
4. Progress reports after the start of the project:
    a) Time frame of 6 months was given to collect all samples with a measurement of success to be:
        - All Sumatran elephants in human-care microchipped
        - All Sumatran elephants in human-care individually DNA tests and mapped
        - All Sumatran elephants in human-care imported into Species360
        - All Sumatran elephants in human-care imported in photo ELE ID
5. Support a Range wide workshop to introduce the developed registry
    a) Invite all interested parties
    b) Written report of workshop provided .

Stakeholder Engagement and Public Awareness Objectives – The primary objective of this program is to promote capacity building by building upon the current registry program in Indonesia. This starts with local lab enhancements, educating elephant mahouts, and communities where the elephants are located. Success

will be demonstrated once each elephant is registered, and member(s) of each elephant site are trained and capable of entering information into the registry. At the end of the 3-year program the final measurement of success will be to have a product to introduce to other range states. A final report from this workshop will be provided.

Funding Objectives – Much, if not all of this project may be funded by USFWS grant and partnering zoo grant programs. Through communications with USWFS, it is highly probable funds can be acquired through the appropriate grants due to the scope of this work. A team has been created to begin this grant writing and the funding requests will be broken down as follows:

1. Phase 3 funds will be acquired through (table B):
    a) Columbus Zoo Conservation Management Grants
    b) Saint Louis Zoo WildCare Institute Grants
2. Phase 4 funds will be acquired through (table B):
    c) USFWS Asian Elephant Conservation Grant
    d) USFWS International Narcotics and Law Enforcement Grant
    e) Other AZA Grant opportunities through AZA and member institution

EEHV Support Work Plan

Supporting science of the treatment, management and prevention of EEHV in Asian elephant range states (Table D): The Asian Elephant SAFE Program will engage the elephant care professionals within AZA institutions to:

1. Develop framework for fundraisers to support EEHV lab development, research, and treatment in Asia to be hosted by elephant care professionals;
2. Distribute fundraiser materials to institutions;
3. Assist with fundraiser planning as need; and
4. To direct funds raised through the EEHV Advisory Group to provide the most urgent funding to assist with this disease in Asia.

EEHV Support in Range State Metrics: To measure the success of this program the Asian Elephant SAFE Program has set an initial goal of $5000 to be raised through fundraisers utilizing the toolkits developed. Through engaging ECPs and other groups, such as the American Association of Zoo Keepers, these funds will be raised through these easy to host, local fundraisers. This funding will be utilized to support the greatest need in range states at that time with the guidance of the EEHV AG and International Elephant Foundation. The success of these events will be measured by the amount of funds raised, number of events hosted, and the determination of a positive trend in increased number of participants.

Stakeholder Engagement and Public Awareness Objectives – Through ECP driven events for EEHV support in Asia, not only will needed funds for EEHV support be raised, but it will provide a platform for elephant care professionals to educate about Asian elephant conservation, increase awareness of EEHV and elephant related issues, and celebrate Asian elephants in zoological settings. The success of these events can be measured by the funds raised, the number of participants, and by the increased number of participants each year.

Education Campaign Work Plan

Building consistent messaging and an educational campaign focused on Asian elephant conservation with the aim to raise attention and awareness of the issues facing Asian elephant, focusing on two primary audiences (AZA institutions' visitors and social media audiences)(Table C): The goals of this portion are that participants will:

1. Feel appreciation for Asian elephants;
2. Feel interest in supporting Asian elephant conservation;
3. Learn that Asian elephants are a distinct species that are only found in 13 Asian countries and they are more endangered than African elephants are remaining;
4. Learn the specific Asian elephant conservation work being done or supported by their local zoo;
5. Share the message about Asian elephants with others;
6. Donate to elephant conservation (this will be focused on later in the campaign); and
7. Download and use the palm oil app (this will be focused on later in the campaign)

Strategic Objective 1 – to support and unify messaging for elephant holding zoos celebrating World Elephant Day.

1. Collecting existing messaging on World Elephant Day;
2. Assess/code the messages that the team has gathered;
3. Find trends and overarching messages to share with Asian elephant holding zoos;
4. Communicate these unified messages with zoos. These messages will be vetted with through TAG/SAFE professionals;
5. Assess the overall success of World Elephant Day by providing an evaluation tool to be used by participating zoos;
6. Feedback from these evaluation tools will help guide the team in providing resources for future World Elephant Day celebrations; and
7. Share findings with other zoos, either at AZA conferences or through the AZA network.

Strategic Objective 2 – to raise awareness of Asian elephants and the issues they face through a public awareness campaign. In Year one the team will kick off a simple campaign, with the goal of expanding it in future years.

1. Solicit professionals from the PR/Marketing community to help develop a campaign strategy;
2. Using messages garnered from Strategic Objective 1, create attention grabbing soundbites, compile stories, etc.;
3. Create an engaging campaign, possibly something related to the idea that we want 40,000 shares, likes, etc. for 40,000 elephants;
4. Develop a toolkit that will guide organizations who wish to participate in the social media campaign;
5. Invite AZA organizations to participate in the campaign and provide them with resources;
6. Launch the campaign; and
7. Report and celebrate success. Make recommendations for the next year's campaign.

Strategic Objective 3 – to incorporate action-based messaging related to Asian elephant conservation into both World Elephant Day and the public awareness campaign. This will be accomplished by:

1. Revisiting messages compiled in the year one survey. Use these messages to develop unified action-based messages. Likely the messages will focus on donations that support SAFE's objectives or that focus on sustainable palm oil use;
2. Developing an action strategy that can be used by zoos as they focus on conservation action. This strategy should include an evaluation component that helps zoos measure success;
3. Disseminating messages to Asian elephant holding zoos;
4. Work with zoos to evaluate success; and

5. Reporting and celebrating success. Use feedback to make adjustments for year three (and beyond).

Strategic Objective 4 – to investigate the feasibility of developing a communication strategy related to the elephant registry portion of the AeSP.

Education Campaign Metrics

1. 50% of Asian elephant holding zoos will share their messages;
2. 75% of Asian elephant holding zoos will participate in World Elephant Day and use messages provided by Asian elephant SAFE;
3. 50% of the above zoos will participate in evaluation and provide feedback for improvement for the next year;
4. 50% of Asian elephant holding zoos will participate in the year one launch;
5. An increase in 10% of zoos who commit to participate in the 2020 launch. 10% more will commit for 2021;
6. 60% of Asian elephant holding zoos incorporate messages into their World Elephant Day activities;
7. 60% of Asian elephant holding zoos participate in year two of the social media campaign. 70% participate in year three;
8. Over 40,000 social media users will share a post that raises awareness related to Asian elephants, using the hashtag we provide (to be determined); and
9. 80% of participating zoos evaluate success of their activities.

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6. World Wildlife Foundation. *Asian Elephants*. [cited 2019; Available from: (http://wwf.panda.org/knowledge_hub/endangered_species/elephants/asian_elephants/.
7. Riddle, H., et al., *Illegal Trade in Live Asian Elephants: a review of current legislative, regulatory, enforcement, and other measures across range States.*

Appendix 1: AZA Elephant Field Conservation: 2013-2017

Organization Name	Title	Species Focus
Akron Zoological Park	International Rhino Foundation (IRF) - Rhino Protection Units for Sumatran Rhino, Tiger and Elephant	Asian Elephant
Albuquerque Biological Park	Asian Elephant Support	Asian Elephant
Brevard Zoo	Hutan: Asian Elephants	Asian Elephant
Buffalo Zoo	Asian Elephant Support (AES)	Asian Elephant
Busch Gardens Tampa Bay	Care for Rescued Wildlife: Elephant Conservation Center at PTWRC	Asian Elephant
Busch Gardens Tampa Bay	Direct Protection to Endangered Wildlife and its Cardamom Rainforest Habitat	Asian Elephant
Busch Gardens Tampa Bay	Institutionalizing Support for Wildlife Guardians in Thailand's Forgotten Parks: Lasting Protection for Elephants and Their Habitat Through Forest Ranger Training and Community Support in the Dong Pha	Asian Elephant
Busch Gardens Tampa Bay	Linking Elephant Research and Conservation Education in Thai Classrooms	Asian Elephant
Busch Gardens Tampa Bay	Sumatran Elephant Conservation Response Units (CRU)	Asian Elephant
Busch Gardens Tampa Bay	Wild Earth Allies (Fauna and Flora): Asian Elephant Conservation in Cambodia	Asian Elephant
Busch Gardens Tampa Bay	Wildlife Alliance: Kouprey Express Environmental Education and Outreach	Asian Elephant
Buttonwood Park Zoo	Elephant Care International	Asian Elephant
Buttonwood Park Zoo	The Elephant Family - Asian Elephant Conservation	Asian Elephant
Chicago Zoological Society - Brookfield Zoo	Quality of Management of Captive Asian Elephants in Range Countries Through the Development and Dissemination of a Professional Development Program	Asian Elephant
Cincinnati Zoo & Botanical Garden	Asian Elephant Support	Asian Elephant
Cincinnati Zoo & Botanical Garden	International Elephant Foundation (IEF) - Elephant Conservation Units in Sumatra	Asian Elephant
Columbus Zoo and Aquarium	Biodiversity and Elephant Conservation Trust - Schools Awareness Project	Asian Elephant
Columbus Zoo and Aquarium	Community Based Effective and Pro-Active Human Elephant Conflict Mitigation Program	Asian Elephant
Columbus Zoo and Aquarium	Human Elephant Conflict and Conservation of the Critically Endangered Sumatran Elephant in Aceh, Sumatra	Asian Elephant
Columbus Zoo and Aquarium	Satellite Tracking and Social Behavior of the Bornean Elephant in Kinabatangan	Asian Elephant
Columbus Zoo and Aquarium	Thailand Wildlife Guardians - Lasting Protection for Elephants and Their Habitat	Asian Elephant
Denver Zoo	Elephant Surveys and Training in Taman Negara National Park, Malaysia	Asian Elephant
Denver Zoo	Raising Elephant Awareness Among the Local Communities in and Around Vinh Cuu Nature Reserve, Vietnam	Asian Elephant
Denver Zoo	Wildlife SOS India	Asian Elephant
Dickerson Park Zoo	Elephant-Human Coexistence: How Elephants Persist in Traditional Agricultural Systems of South Asia	Asian Elephant
Disney's Animal Kingdom	Conservation Hero - Dr. Kusworo Ahmad	Asian Elephant

Disney's Animal Kingdom	Conservation Hero - Irma Hermawati	Asian Elephant
Disney's Animal Kingdom	Conservation Hero - Musir Riswan	Asian Elephant
Disney's Animal Kingdom	Conservation Hero - Nurzhafarina Othman	Asian Elephant
Disney's Animal Kingdom	Conservation of Sumatran Elephants	Asian Elephant
Disney's Animal Kingdom	Sharing Space with China's Elephants	Asian Elephant
El Paso Zoo	Palm Oil Public Awareness Effort	Asian Elephant
El Paso Zoo	World Wildlife Fund (WWF) - Flying Squad Project	Asian Elephant
Honolulu Zoo	Wildlife SOS	Asian Elephant
Houston Zoo, Inc.	Asian Elephant Support Organization	Asian Elephant
Houston Zoo, Inc.	Asian Nature Conservation Foundation	Asian Elephant
Houston Zoo, Inc.	Elephant Conservation Unit	Asian Elephant
Houston Zoo, Inc.	Laos Elephant Conservation Center	Asian Elephant
Houston Zoo, Inc.	Satellite Tracking and Social Behaviour of the Bornean Elephant in the Lower Kinabatangan Wildlife Sanctuary: Sabah, Malaysia	Asian Elephant
Lincoln Park Zoo	Population Management Advising for Species Recovery and Conservation Assurance Populations	Asian Elephant
Little Rock Zoo	Asian Elephant Support	Asian Elephant
Little Rock Zoo	Wildlife SOS	Asian Elephant
Los Angeles Zoo and Botanical Gardens	Human-Elephant Conflict in Cambodia	Asian Elephant
Los Angeles Zoo and Botanical Gardens	Minimizing the Conflict Between Asian Elephants and Local Villagers	Asian Elephant
Nashville Zoo, Inc.	Rainforest Trust	Asian Elephant
Ocean Park Corporation	Conserving and Protecting the Sumatran Rhino and Other Megavertebrates in Way Kambas National Park, Sumatra, Indonesia	Asian Elephant
Ocean Park Corporation	Informed Landscape Conservation: a Multi-species Study Evaluating the Impacts of Habitat Fragmentation and Quality on Ranging Patterns of Threatened Wildlife in the Lower Kinabatangan Wildlife Sanctua	Asian Elephant
Ocean Park Corporation	Mitigating Human Elephant Conflict Through Research and Community Interface in Golaghat District, Assam, India	Asian Elephant
Oklahoma City Zoological Park	Rainforest Trust	Asian Elephant
Oklahoma City Zoological Park	Rakhine Yoma Elephant Range	Asian Elephant
Oregon Zoo	Forest Elephant Conservation in Borneo	Asian Elephant
Oregon Zoo	Long-Term Reproductive Hormone Monitoring of Asian Elephants	Asian Elephant
Phoenix Zoo	Behavior and Social Dynamics of Crop-Raiding in Asian Elephants: Can Beehive Fences Be Used to Deter Crop-Raiding Elephants?	Asian Elephant
Phoenix Zoo	Recycle of Abandoned Crop Land in Order to Minimize Slash and Burn Cultivation Practice Through Community Participation and Identification of Habitat Used by Elephants Regularly	Asian Elephant
Point Defiance Zoo & Aquarium	Developing Conservation Response Units in Sumatra	Asian Elephant
Point Defiance Zoo & Aquarium	Paws for the Cause	Asian Elephant
Riverbanks Zoo & Garden	Forest Protection Through Conservation Response Units (CRU)	Asian Elephant

Riverbanks Zoo & Garden	Protecting Elephants, Forests, Wildlife and Communities Through Conservation Response Units	Asian Elephant
Riverbanks Zoo & Garden	Riverbanks Field Conservation Associates Program	Asian Elephant
Rosamond Gifford Zoo at Burnet Park	AZA SAFE	Asian Elephant
Smithsonian National Zoological Park	Baselining Human-Elephant Conflict to Better Understand Causes, Patterns and Management Options	Asian Elephant
Smithsonian National Zoological Park	Elephant Collaring and Satellite Tracking in Myanmar	Asian Elephant
Smithsonian National Zoological Park	Improving EEHV diagnostic and research capacity in Southeast Asia with a series of training workshops	Asian Elephant
Smithsonian National Zoological Park	Managing Human-Elephant Conflict in Myanmar (Burma)	Asian Elephant
Smithsonian National Zoological Park	Monitoring the Effectiveness of Translocation as a Management Tool For Asian Elephant Conservation in Peninsular Malaysia	Asian Elephant
Smithsonian National Zoological Park	Satellite-Tracking Asian Elephant Movements Inside and Outside a Fenced Protected Area	Asian Elephant
Smithsonian National Zoological Park	Smithsonian Myanmar Initiative	Asian Elephant
Smithsonian National Zoological Park	The Role of Fire in Maintaining Critical Elephant Habitat in Sri Lanka	Asian Elephant
Topeka Zoo	Elephants Helping Elephants in Sumatra	Asian Elephant
Tulsa Zoo	96 Elephants	Asian Elephant
Tulsa Zoo	Berdiri Foundation Elephant Response Unit - Way Kambas	Asian Elephant
Tulsa Zoo	Veterinary Society for Sumatran Wildlife Conservation (VESSWIC) - Sumatra Conservation Camera Trap Project	Asian Elephant
Utah's Hogle Zoo	Wildlife SOS	Asian Elephant
Virginia Zoological Park	Capacity Building for Veterinarians Working with Elephants in Thailand	Asian Elephant
Woodland Park Zoo	Asian Elephant Support	Asian Elephant
Woodland Park Zoo	Elephant Health Camp at Sonpur Mela, India	Asian Elephant
Woodland Park Zoo	Hutan-Kinabatangan Orangutan Conservation Project - Elephant Conservation	Asian Elephant
Audubon Zoo	International Elephant Foundation (IEF)	Elephant (Species Unspecified)
BREC's Baton Rouge Zoo	International Elephant Foundation (IEF)	Elephant (Species Unspecified)
Buffalo Zoo	International Elephant Foundation	Elephant (Species Unspecified)
Caldwell Zoo	International Elephant Foundation (IEF) - Elephant Painting Sales	Elephant (Species Unspecified)
Cameron Park Zoo	International Elephant Foundation	Elephant (Species Unspecified)
Columbus Zoo and Aquarium	International Elephant Foundation (IEF)	Elephant (Species Unspecified)
Dallas Zoo	International Elephant Foundation (IEF)	Elephant (Species Unspecified)
Denver Zoo	International Elephant Foundation (IEF)	Elephant (Species Unspecified)
Disney's Animal Kingdom	International Elephant Foundation (IEF)	Elephant (Species Unspecified)
Erie Zoo	Wildlife Conservation Society (WCS)	Elephant (Species Unspecified)
Fort Worth Zoo	International Elephant Foundation (IEF)	Elephant (Species Unspecified)

Fossil Rim Wildlife Center	International Elephant Foundation (IEF) - Salary Administration	Elephant (Species Unspecified)
Greenville Zoo	International Elephant Foundation (IEF)	Elephant (Species Unspecified)
Honolulu Zoo	International Elephant Foundation	Elephant (Species Unspecified)
Houston Aquarium, Inc.	Wildlife Alliance	Elephant (Species Unspecified)
Houston Zoo, Inc.	International Elephant Foundation (IEF)	Elephant (Species Unspecified)
Indianapolis Zoological Society, Inc.	International Elephant Foundation (IEF)	Elephant (Species Unspecified)
Jacksonville Zoo and Gardens	International Elephant Foundation (IEF)	Elephant (Species Unspecified)
Little Rock Zoo	International Elephant Foundation (IEF)	Elephant (Species Unspecified)
Louisville Zoological Garden	International Elephant Foundation	Elephant (Species Unspecified)
Memphis Zoo	International Elephant Foundation - Elephant Conservation	Elephant (Species Unspecified)
Milwaukee County Zoological Gardens	International Elephant Foundation (IEF)	Elephant (Species Unspecified)
Nashville Zoo, Inc.	International Elephant Foundation - Project MIKE (Monitoring the Illegal Killing and Hunting of Elephants)	Elephant (Species Unspecified)
Oklahoma City Zoological Park	International Elephant Foundation (IEF)	Elephant (Species Unspecified)
Omaha's Henry Doorly Zoo & Aquarium	International Elephant Foundation (IEF)	Elephant (Species Unspecified)
Oregon Zoo	International Elephant Foundation (IEF)	Elephant (Species Unspecified)
Pittsburgh Zoo & PPG Aquarium	International Elephant Foundation	Elephant (Species Unspecified)
Reid Park Zoo	International Elephant Foundation (IEF)	Elephant (Species Unspecified)
Riverbanks Zoo & Garden	Riverbanks Composting (ComPOOst) Program	Elephant (Species Unspecified)
Roger Williams Park Zoo	International Elephant Foundation (IEF)	Elephant (Species Unspecified)
Rosamond Gifford Zoo at Burnet Park	International Elephant Foundation	Elephant (Species Unspecified)
Safari West Wildlife Preserve	Lawrence Anthony Earth Organization	Elephant (Species Unspecified)
Saint Louis Zoo	International Elephant Foundation (IEF)	Elephant (Species Unspecified)
San Antonio Zoological Society	International Elephant Foundation (IEF)	Elephant (Species Unspecified)
San Diego Zoo Global	International Elephant Foundation (IEF)	Elephant (Species Unspecified)
San Diego Zoo Global	Using Genomic Analyses to Ensure Sustainability of Global Elephant Populations	Elephant (Species Unspecified)
Santa Barbara Zoological Gardens	International Elephant Foundation (IEF)	Elephant (Species Unspecified)
Sedgwick County Zoo	International Elephant Foundation	Elephant (Species Unspecified)
Seneca Park Zoo	International Elephant Foundation (IEF)	Elephant (Species Unspecified)

The Maryland Zoo in Baltimore	International Elephant Foundation (IEF)	Elephant (Species Unspecified)
Topeka Zoo	International Elephant Foundation (IEF)	Elephant (Species Unspecified)
Tulsa Zoo	International Elephant Foundation (IEF)	Elephant (Species Unspecified)
Utah's Hogle Zoo	International Elephant Foundation (IEF)	Elephant (Species Unspecified)
Virginia Zoological Park	International Elephant Foundation (IEF)	Elephant (Species Unspecified)
Wildlife Safari	International Elephant Foundation (IEF)	Elephant (Species Unspecified)
Woodland Park Zoo	Woodland Park Zoo Conservation Advocacy and Action Campaigns	Elephant (Species Unspecified)
Zoo Miami	International Elephant Foundation	Elephant (Species Unspecified)

CHRISTINA N. GORSUCH

[redacted]

WORK HISTORY

- CINCINNATI ZOO AND BOTANICAL GARDEN — OCTOBER 2015-PRESENT

  Director of Animal Care — **July 2020 – Present**

  Oversee the operations of the Animal Department which includes 14 animal care teams, 9 animal managers, over 2000 animals, and an annual operating budget of 5.5 million dollars. Directly manage the zoo's Asian elephant program which includes 4 elephants, 7 keepers, and goal setting for daily expectations, behavioral husbandry, and research.

  Curator of Mammals — **October 2015 – July 2020**

  Manager of animal collection, personnel, and operations for seven areas within the Animal Department. Areas include over 60 animal species, including a breeding herd of Asian elephants.

- BROOKFIELD ZOO — NOVEMBER 2010-OCTOBER 2015

  Lead Keeper: Habitat Africa Savannah and Regenstein Wolf Woods

  Primary supervisor of an exhibit area that includes giraffe, African painted dogs, and Mexican gray wolves. Back-up supervisor for three other sections that include exotic hoofstock, Australian mammals, birds and reptiles and black rhino.

- ZOO ATLANTA — JUNE 2002-NOVEMBER 2010

  Lead Keeper Mammals — **May 2008-November 2010**

  Immediate supervisor of two sections: Outback Station (Petting Zoo and Australian exhibits) and Hoofstock (giraffe/exotic hoofstock and black rhino).

  Keeper III, Large Mammals — **June 2006-April 2008**

  Senior keeper of Outback Station. Swing Elephant and Hoofstock keeper.

  Keeper I, II, III, Birds and Small Animals — **June 2002-May 2006**

- AUDUBON ZOO — JANUARY 2000-APRIL 2002

  Keeper I, Children's Zoo — **October 2000-April 2002**

  Performed husbandry, training and enrichment in the Petting Zoo and Educational Animal Building.

  Seasonal Keeper, Primates — **January 2000-September 2000**

  Performed husbandry, training and enrichment with a variety of primates, including Orangutans and Gorillas.

EDUCATION

TULANE UNIVERSITY — NEW ORLEANS, LA

BA of Anthropology and English — Fall 1996-Spring 2000

Cecil Jackson, Jr.

[redacted]

Experience:

Elephant Manager: Cincinnati Zoo & Botanical Garden, Cincinnati, OH, June 2018 - Present:

Responsibilities include overseeing the Zoo's collection of one adult male and three adult female Asian elephants. Managed the workforce of departmental keepers and coordinated the daily work schedules. Work closely with Public Relations, Development, Marketing, Special Events and Group Sales with regards to special projects and promotions having to do with the departmental collection.

Elephant Head Keeper / Head Elephant Trainer, Cincinnati Zoo & Botanical Garden, Cincinnati, OH, 1999 – May 2002:

Responsibilities included overseeing of the Zoo's collection of one young male and three adult female Asian elephants, breeding group of Okapi and a giraffe. Managed the workforce of departmental keepers and coordinated the daily work schedules. Worked closely with Public Relations, Development, Marketing, Special Events and Group Sales with regards to special projects and promotions having to do with the departmental collection.

Elephant Keeper / Assistant Elephant Trainer: Cincinnati Zoo & Botanical Garden, Cincinnati, Ohio, 1983 – 1999

Responsibilities included working under the direction of the Head Elephant Keeper and Trainer to learn the techniques of working elephants in a free contact environment.

Part-time Keeper, Children's Zoo and Elephant Behavior Program, Cincinnati Zoo & Botanical Garden, Cincinnati, OH 1975 – 1983

Responsibilities included care of both exotic and domestic animal species during the seasonal operations of the Children's Zoo as well as participating with behavioral demonstrations of the Zoo's performing elephants during seasonal programs.

Education:

Attended Director's Meetings regarding Elephants - St. Louis, MO – 2012 & 2013
Principal of Elephant Management II Course, Houston, TX – 2012
E.E.H.V. Conference, Houston, TX - 2011
A.Z.A. Principles of Elephant Management Course, Wheeling, WV – 1999
Graduate – Grant County High School – 1980

Professional Memberships and Activities:

Sets on the Board of Directors of EMA
EMA Ethics Committee
Elephant Managers Association
Attendee – Annual Elephant Managers Association Workshops / Conferences
Attendee- Regional Elephant Conferences
Presented papers at several EMA Conferences

Eric Duning
[redacted]

Experience:

Head Keeper: Cincinnati Zoo & Botanical Garden, Cincinnati, OH, 2019 - Present:
Responsibilities included assisting the Team Leader in overseeing of the Zoo's collection of 1.3 Asian elephants. Managed the workforce of departmental keepers and coordinated the daily work schedules. Worked closely with Public Relations, Development, Marketing, Special Events and Group Sales with regards to special projects and promotions having to do with the departmental collection.

Senior Elephant Keeper, Cincinnati Zoo & Botanical Garden, Cincinnati, OH, 2008 – 2019:
Responsibilities included Training and Husbandry of 1.3 Asian elephants and 3.2 Masai Giraffe.

Aviculture Keeper, Cincinnati Zoo & Botanical Garden, Cincinnati, OH 2003 – 2008:
Responsibilities included daily care of over 125 species of exotic and domestic birds.

African Veldt Keeper, Cincinnati Zoo & Botanical Garden, Cincinnati, OH 2000-2008:
Responsibilities included daily care of a variety of ungulates, birds, and primates.

Education:

Graduated – "Animal Conservation and Care" – high school vocational program, Cincinnati Zoo

A.Z.A. Principles of Elephant Management Course, Wheeling, WV – 2012
A.ZA. Principal of Elephant Management II Course, Houston, TX – 2019

Professional Membership:

Elephant Managers Association

Conferences and Workshops:

Attendee-
Annual Elephant Managers Association Conferences
Regional Elephant Conference
Giraffid Conference
Elephant Business- Elephant Care Workshop

Presenter-
International Giraffe Care Professional (IAGCP) 2010
Annual Elephant Managers Association Conferences 2017 and 2020
Animal Behavior Management Alliance (A.B.M.A,) 2017
Next Generation Elephant Management (Next G.E.M) 2018

Conservation projects:

Guam Rail Project- Islands of Guam and Rota 2007
Smithsonian Primate project- Panama 2016

Val Nastold

[redacted]
val.nastold@cincinnatizoo.org

Professional Profile
Accomplished Zookeeper experienced in managing husbandry practices, exhibit aesthetics, and living collection. Over thirty-five years working at the Cincinnati Zoo & Botanical Garden. Experience with large/small mammals and avian species.

Education
American History and Biology
University of Cincinnati - Cincinnati, Ohio

Experience
Zookeeper
August 1985 to September 2021; **Cincinnati Zoo & Botanical Garden** - Cincinnati, Ohio
Relief Keeper, Hoof stock Keeper, over 30 years as an Elephant Keeper

Qualifications
- Animal Biology and husbandry
- Animal handling and Operant Conditioning
- Exhibit maintenance

Relevant Experience
- Educational courses taken through AZA, AAZK and Elephant Managers Association
- Courses on Leadership in the classroom and online.
- Susan Freidman course "Living and Learning With Animals".
- "RECON" Elephant course taught by Steve Martin/ Susan Freidman
- "Elephant Foot Care and Management" taught by Alan Roocroft
- Mentoring of students, interns, volunteers and young staff

Affiliations
- American Zoo & Aquarium (AZA)
- American Association of Zoo keepers (AAZK) Elephant Managers Association (EMA)
- Zoo administration
- International Species Information System (ISIS) Public speaking

Amanda Weisel

[redacted]

Experience:

Full-Time Elephant Keeper, Cincinnati Zoo and Botanical Garden, Cincinnati, OH, July 2020-Present:

Responsibilities include daily care for the Zoo's 1.3 adult Asian elephants in a protected contact setting. Daily tasks include, but not limited to: feeding/watering of animals, cleaning up living spaces of animals, diet prep, moving and shifting of animals, presenting novel ways of feeding and enrichment, foot care, operant conditioning, baths, husbandry training, vet procedures including blood draws, trunk washes, laser therapy; exercising animals. Also work with other departments in zoo (PR, Marketing, Group Sales) to help with special projects/promotions/media coverage for the zoo or elephant department; worked closely with vet staff, maintenance, commissary, horticulture, VEC to help with needs of elephant care.

Animal Trainer, Midwest Animal Training, Cincinnati, Ohio, August 2019-Present:

Responsible for training animals for media appearances (movies, television, television and social media commercials). Responsibilities include, but not limited to: housing and caring for animals being trained, training animals (using operant conditioning) to complete behaviors that were determined by production companies, transported animals to/from filming sites, housed animals on filming sites per Humane Society guidelines, worked directly with producers, directors, production assistants, etc. and American Humane Society to ensure the desired behaviors were achieved, appropriately.

Africa Keeper, Cincinnati Zoo and Botanical Garden, Cincinnati, OH, June 2017 – July 2020:

Responsibilities included care of Africa animal collection including: hippos, meerkats, giraffe, lions, painted dogs and a variety of bird and hoofstock species. Daily tasks included, but not limited to: feeding/watering of animals, cleaning up living spaces of animals, diet prep, moving and shifting of animals, presenting novel ways of feeding and enrichment, hoof care on giraffe, operant conditioning with all species (primary trainer for giraffe), husbandry training, vet procedures including blood draws, voluntary vaccines, anesthetizing animals, laser therapy. Also work with other departments in zoo (PR, Marketing, Group Sales, etc) to help with special projects/promotions/media coverage for the zoo or Africa department; worked closely with vet staff, maintenance, commissary, horticulture, VEC to help with needs of animals in department.

Night Hunters Keeper, Cincinnati Zoo and Botanical Garden, Cincinnati, OH, October 2010 – June 2017:

Responsibilities included care of 17 species of exotic cats (including lions and tigers) and small nocturnal mammals and birds. Daily tasks included, but not limited to: feeding/watering of animals, , cleaning up living spaces of animals, diet prep, moving and shifting of animals, presenting novel ways of feeding and enrichment, operant conditioning with all species (primary trainer for mountain lions, tigers, lions, snow leopards, clouded leopards), husbandry training, vet procedures including blood draws, voluntary vaccines, anesthetizing animals, physicals. Assisted in hand rearing of mountain lion and tiger cubs. Also work with other departments in zoo (PR, Marketing, Group Sales, etc) to help with special projects/promotions/media coverage for the zoo and/or night hunters departments; worked closely with vet staff, maintenance, commissary, horticulture, VEC to help with needs of animals in department.

Seasonal Giraffe/Elephant Keeper, Cincinnati Zoo and Botanical Garden, Cincinnati, OH, August-September 2008, March – November 2009, March – October 2010

Responsibilities included daily care of giraffe herd and assisting elephant keepers in daily upkeep of elephants. Daily tasks included, but not limited to: feeding/watering of animals, diet prep, moving and shifting of animals (giraffe only), presenting novel ways of feeding and enrichment, operant conditioning with giraffe, assisted elephant keepers with and observed foot care, yard/exhibit care and cleaning while working in free contact with elephants.

Christine Ison

[redacted] [redacted]

Professional Experience

Cincinnati Zoo and Botanical Garden *August 2019-Present*
Elephant Keeper *Cincinnati, OH*

- Training lead responsible for coordinating new behaviors with elephants and trainers
- Revamped the exercise program for all elephants and trained new behaviors such as downward facing dog
- Elephant team representative for enrichment committee
- Responsible for maintenance of Bobcat skid loader
- Maintain consistency and quality of over 50 different behaviors for each of the 1.3 elephants
- Assist in teaching new staff safety protocols and the daily routine
- Daily responsibilities include diet preparation, yard and facility maintenance, daily husbandry, enrichment preparation, animal observation, maintaining records, daily training and exercise sessions, interaction with the public, and staying current on issues affecting the care and handling of elephants

ABQ BioPark *June 2017-June 2019*
Elephant Keeper *Albuquerque, NM*

- Primary trainer of female elephant, age 47
- Maintain consistency and quality of over 50 different behaviors for each of the 2.4 elephants
- Participated in a bull elephant ship out, semen collections, as well as EEHV preparedness training
- Participated in the successful herd birth of a male Asian elephant (2018), including pre and post-delivery overnight watches
- Observed an in-house successful artificial insemination
- Assist in teaching new staff safety protocols and the daily routine
- Assist in training male Asian elephant calf new behaviors, including rectal fluids and blood draw
- Daily responsibilities include diet preparation, yard and facility maintenance, daily husbandry, enrichment preparation, animal observation, maintaining records, daily training and exercise sessions, interaction with the public, and staying current on issues affecting the care and handling of elephants
- Participated in introducing herd members including a bull elephant to cows and a new calf to the rest of the herd
- Collaborated with team in meetings to design a new herd barn
- Certified by New Mexico Department of Transportation to operate machinery including, front end loader, fork lift, back hoe, and skid loader
- Responsible for weekly vehicle maintenance

May 2016-June 2017

Temporary Keeper Elephants *Albuquerque, NM*

- Assist in daily husbandry of 2.4 Asian elephants, from three year old calf to 50 years and understand the details of their care
- Perform exhibit maintenance including cleaning, sand maintenance, and machinery operation
- Operate hydraulic doors to shift herd
- Communicate clearly with elephant care staff and work to maintain safety procedures
- Observe and participate in semen collections
- First elephant support staff to receive elephant training sign off sheet to include basic targeting, two man training, and more
- Implemented scheduled keeper talks with the public
- Observe artificial insemination procedure

Healthy Pets of Wedgewood *Nov 2015-May 2016*

Vet Assistant *Columbus, OH*

- Assisted vets and technicians in the diagnosis process and treatment of patients-canine, feline, reptile, avian
- Maintained records on patients and hospital supplies
- Daily husbandry of hospitalized patients while monitoring health and administering medication

The Columbus Zoo and Aquarium *April 2015-May 2016*

Heart of Africa Regional Seasonal Keeper *Columbus, OH*

- Assisted in the daily husbandry of Reticulated and Masai giraffe, wildebeest, kudu, gazelle, Saddlebill storks and African crowned cranes, Dromedary camels and ponies
- Performed exhibit maintenance including cleaning, weed whipping, and operating machinery
- Performed miscellaneous tasks preparing diets, maintaining records, and public relations
- Selected to stay on as Wildlights staff through beginning of January

Asia Quest and Pachyderm Intern *Aug 2014-Nov 2014*

- Assisted in the daily husbandry of Asian elephants, black rhinoceros, Amur tiger, Amur leopard, Pallas' cat, sunbear, red panda, markhor, muntjac, tufted deer, red crowned crane, white-naped cranes.
- Observed training sessions including both protected and free contact sessions with the elephants, blood draws, baths, and foot work
- Performed miscellaneous tasks including exhibit maintenance, preserving records, preparing diets, driving all-terrain vehicles

KSR Cattle Company *Nov 2007-Sept 2013*

Farm Assistant *Mt Gilead, OH*

- Responsible for daily husbandry of cows and bull as well as artificial insemination and palpation of cows, and administration of medical care when needed
- Operated heavy machinery including a skid loader and a variety of other tractors
- Maintained property and equipment
- Baled and stacked hay in summer months

Education

The Ohio State University, Columbus, OH, United States
Evolution and Ecology Candidate, May 2012

ANNA MILLER

[redacted]

Professional Summary

Team oriented, positive, motivated and dependable with 11 years of progressive and unique experiences providing excellent care and welfare for African Elephants. Knowledgable about the daily management of a herd, including bulls and a calf, and successful at elephant introductions, AI procedures and semen collections. Member of the Elephant Managers Association who is always eager to further my education.

Professional Experience

The Toledo Zoo, Elephant Keeper **August 2012 – Present**

- Trained 2.2 African Elephants in protected contact, including a 1.0 calf
- Daily husbandry including foot care, blood draws, maintaining and shaping new behaviors
- Experience with medical exams, x-rays, tusk trims, medicating, ERD training, plasma collections, semen collections, enemas, AI procedures and EEHV treatment
- Involvement with elephant introductions and an outgoing shipment of our 1.0 Elephant in 2017
- Creating and implementing enrichment, as well as daily upkeep of sand areas including rebuilding sand mounds, digging out soiled areas and tilling yards
- Maintenance and repair of enrichment devices like kegs, barrels etc.
- Inspecting exhibits for potential hazards, maintenance and safety issues; reporting such to managers
- Participate in educational behind-the-scenes tours, VIP encounters, public demonstrations, media interviews and Facebook live streams
- Assisted with the planning and hosting of the 2014 Elephant Managers Association conference, as well as presenting at the conference about “Summer/Winter Elephant Enrichment Comparisons”
- All aspects of daily husbandry for a 1.0 Indian Rhino and a colony of Naked Mole Rats
- Certified forklift and bobcat operator
- Maintain records of behavior, health and enrichment, as well as daily reports. Proficient in ZIMS

Jacksonville Zoo and Gardens, Elephant and Giraffe Keeper **May 2010 - August 2012**

- Trained 1.3 African Elephants and a large breeding herd of Giraffe in protected contact
- Daily husbandry with all elephants and giraffes including foot care, blood draw, and ERD/GRD training
- Experience with medical exams, enemas and semen collections
- Assisted with animal acquisitions and dispositions
- Guided behind-the-scenes tours and VIP encounters
- Worked with heavy machinery, including a Kubota tractor
- Involved in daily keeper chats and weekly off-grounds browsing
- Member of Florida Fish and Wildlife’s Marine Mammal Rescue team

Gandoca Costa Rica ANAI/Widecast Turtle Conservation Project Volunteer **July 2009**

Jacksonville Zoo and Gardens, Temporary Elephant and Giraffe Keeper **May 2007 – August 2007**

Jacksonville Zoo and Gardens, Intern for Range of the Jaguar area **June 2006 – August 2006**

Jacksonville Zoo and Gardens, Mammal Keeper Volunteer **2004 – 2006**

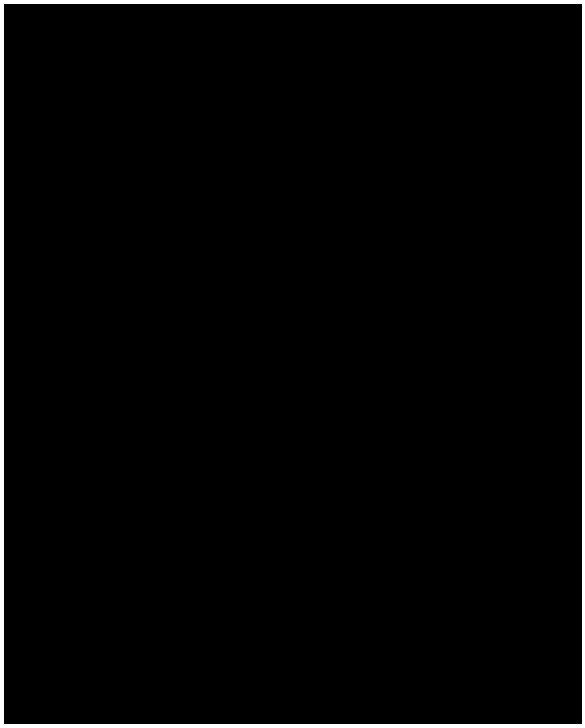
Education

- The University of South Florida, Bachelors of Science in Anthropology 2010
- Phoenix Zoo Elephant Care Workshop attendee 2013
- Completed Principles of Elephant Management 1, 2016
- Elephant Managers Association conference attendee 2014, 2017, and 2019

Publications

- "Increasing Foraging Time Through the Use of Enrichment". *Journal of the Elephant Managers Association. Volume 26. Number 2. Page 30-31.* 2015
- "Elephant Herd: Shared Learning Experiences". *Safari: The Official Magazine of the Toledo Zoo. Volume 25. Issue 2. Page 6.* Summer 2016
- "Popcorn Blowers: How to Build Them". *Journal of the Elephant Managers Association. Volume 27. Number 2. Page 26-27*. 2016

References



SARA PARSONS

ELEPHANT TRAINER

[redacted] sparsons@indyzoo.com [redacted]

EDUCATION

BACHELOR OF SCIENCE
BIOLOGY, MAGNA CUM LAUDE WITH HONORS
Albright College
2006 – 2010

ZOOLOGY GRADUATE COURSEWORK
Miami University
2010 – 2012

KEY SKILLS

Operant Conditioning Training

EEHV Monitoring & Treatment

Geriatric Elephant Care

Habitat & Barn Maintenance

Artificial & Natural Breeding

Excellence in Guest Interaction

Commissary & Supply Ordering

Exhibit & Enrichment Design

Technology & Log Keeping

CERTIFICATIONS

Principles of Elephant Management I
2019 – Wheeling, WV

RECON Elephant Workshop
2018 – Colorado Springs, CO

Elephant Manager's Association Member

PROFESSIONAL PROFILE

I have a deep passion for the welfare and conservation of elephants with over 5 years of full-time keeping experience working with Asian and African elephants. I began my zoo career at Cincinnati Zoo and Botanical Garden which set the foundation for my work ethic and passion for engaging the public in animal conservation. At Indianapolis Zoo, I have gained experiences in elephant introductions, EEHV treatment and monitoring, reproduction, geriatric care, and training behaviors in order to provide the greatest care for the herd.

EXPERIENCE

ELEPHANT TRAINER
Indianapolis Zoo / Indianapolis, IN / 2017 – Present

I apply operant conditioning training with 1.4 African elephants during daily husbandry routines including bathing, blood collection and foot care. I order commissary for the barn and write daily reports pertaining to elephant care and research data collection.

- Train elephants for medical procedures including ultrasounds, blood collection, injections, tuberculosis testing and rectal fluids.
- Work with veterinary staff to perform artificial insemination, semen collection, tusk and foot radiographs, EEHV monitoring, and geriatric care for elephant herd.
- Conduct behind the scenes tours for elephant bathing and painting experiences with guests as well as public demonstrations with elephant training and touch experiences.

ANIMAL KEEPER SPECIALIST I: ELEPHANT TEAM
Maryland Zoo in Baltimore / Baltimore, MD / 2015 – 2016

I provided daily husbandry care for 2.2 African elephants in a free contact and protected contact setting. I acted as a secondary handler for bathing and transfers of bull elephants and trained with senior keepers working with cow elephants.

- Daily cleaning of indoor and outdoor habitats and preparing enrichment and diets.
- Wrote daily reports pertaining to diets, medical procedures and enrichment.

SEASONAL ZOOKEEPER: ELEPHANT AND GIRAFFE TEAM
Cincinnati Zoo and Botanical Garden / Cincinnati, OH / 2014 – 2015

I worked independently to clean indoor and outdoor elephant and giraffe habitats as well as preparing daily diets and enrichment. I assisted keepers in bathing elephants and extravaganzas while observing keepers training elephants.

- Worked closely with zoo interns and volunteers and facilitated their elephant barn training.
- Assisted keepers with writing AZA elephant training protocols and mandates.

26896117 | Undetermined: 191018 / Sabu

Individual | **Indian elephant** | **Endangered (EN)** | **Elephas maximus indicus**

Date in	Acquisition - Vendor/Local ID	Phy	Own	Reported By	Disposition - Recipient/Local ID	Phy	Own	Date out
1/29/1991	Donation From PHPA/NONE	In	In	CINCINNAT / 191018	Loan Out To LOUISVILL/101899	Out	-	1/16/1998
1/16/1998	Loan In From Sender: CINCINNAT/191018 Vendor: CINCINNAT/191018	In	-	LOUISVILL / 101899	Loan Transfer To DICKERSON/5500	Out	-	9/9/2002
-	-	-	-	CINCINNAT / 191018	Loan Out To (Change in Reported Holder) DICKERSON/5500	-	-	9/10/2002
9/10/2002	Loan In From Sender: LOUISVILL/101899 Vendor: CINCINNAT/191018	In	-	DICKERSON / 5500	Loan Return To Owner CINCINNAT/191018	Out	-	11/7/2007
11/7/2007	Loan Return to Us Sender: DICKERSON/5500	In	-	CINCINNAT / 191018	-	-	-	-

Sex/Contraception	Male / -	**Birth Type**	Wild Birth/Hatch
Hybrid Status	Not a hybrid	**Birth Location**	Perak (ms) (state) (MY)
Enclosure	Elephant Reserve	**Birth Date/Age**	~ from 12/1/1987 to 2/1/1988 / 33Y,9M,24D
Rearing	Undetermined	**House Name**	[Sabu/CINCINNAT]
Dam	[UNK / UNKNOWN]	**Local ID**	[191018/CINCINNAT]
Sire	[UNK / UNKNOWN]	**Regional Studbook #**	[297-AZA /CINCINNAT]
		Undetermined	[191018 / Sabu/CINCINNAT]

27966442 | Undetermined: 191019 / Jati

Individual | **Indian elephant** | **Endangered (EN)** | **Elephas maximus indicus**

Date in	Acquisition - Vendor/Local ID	Phy	Own	Reported By	Disposition - Recipient/Local ID	Phy	Own	Date out
1/29/1991	Donation From PHPA/NONE	In	In	CINCINNAT / 191019	-	-	-	-

Sex/Contraception	Female / -	**Birth Type**	Wild Birth/Hatch
Hybrid Status	Not a hybrid	**Birth Location**	Perlis (ms) (state) (MY)
Enclosure	Elephant Reserve	**Birth Date/Age**	~ from 7/31/1987 to 7/31/1987 / 34Y,2M,25D
Rearing	Undetermined	**House Name**	[Jati/CINCINNAT]
		Local ID	[191019/CINCINNAT]
		Regional Studbook #	[315-AZA /CINCINNAT]
		Undetermined	[191019 / Jati/CINCINNAT]

26892933 | Undetermined: M13002 / My-Thai

Individual | **Indian elephant** | **Endangered (EN)** | **Elephas maximus indicus**

Date in	Acquisition - Vendor/Local ID	Phy	Own	Reported By	Disposition - Recipient/Local ID	Phy	Own	Date out
2/14/1974	Purchase FERNDALE/UNK	In	In	CINCINNAT / M13002	Loan Out To DICKERSON/4356	Out	-	9/25/1995
9/25/1995	Loan In From Vendor: CINCINNAT/M13002	In	-	DICKERSON / 4356	Loan Return To Owner CINCINNAT/M13002	Out	-	11/2/1995
11/2/1995	Loan Return to Us Sender: DICKERSON/4356	In	-	CINCINNAT / M13002	Loan Out To DICKERSON/4356	Out	-	4/15/1996
4/15/1996	Loan In From Vendor: CINCINNAT/M13002	In	-	DICKERSON / 4356	Loan Return To Owner CINCINNAT/M13002	Out	-	6/24/1996
6/24/1996	Loan Return to Us Sender: DICKERSON/4356	In	-	CINCINNAT / M13002	-	-	-	-

Sex/Contraception	Female / -	**Birth Type**	Wild Birth/Hatch
Hybrid Status	Not a hybrid	**Birth Location**	Thailand /
Enclosure	Elephant Reserve	**Birth Date/Age**	5/1/1971 +/- 1 month / 50Y,5M,24D
Rearing	Undetermined	**House Name**	[Mai Thai/CINCINNAT]
		Local ID	[M13002/CINCINNAT]
		Regional Studbook #	[78-AZA /CINCINNAT]
		Undetermined	[M13002 / My-Thai/CINCINNAT]

MIG12-28481906 | Undetermined: M13006 / Schottzie

Individual | **Indian elephant** | **Endangered (EN)** | **Elephas maximus indicus**

Date in	Acquisition - Vendor/Local ID	Phy	Own	Reported By	Disposition - Recipient/Local ID	Phy	Own	Date out
12/15/1975	Birth/Hatch	In	In	COPENHAGE / 100101	Sale CINCINNAT/M13006	Out	Out	12/8/1978
12/12/1978	Purchase COPENHAGE/100101	In	In	CINCINNAT / M13006	Loan Out To FORTWORTH/723	Out	-	4/22/1990
4/23/1990	Loan In From Vendor: CINCINNAT/13006	In	-	FORTWORTH / 723	Loan Return To Owner CINCINNAT/13006	Out	-	5/25/1994
5/26/1994	Loan Return to Us Sender: FORTWORTH/723	In	-	CINCINNAT / M13006	Loan Out To DICKERSON/4433	Out	-	4/22/1996
4/22/1996	Loan In From Sender: CINCINNAT/M13006 Vendor: CINCINNAT/M13006	In	-	DICKERSON / 4433	Loan Return To Owner CINCINNAT/M13006	Out	-	6/17/1996
6/17/1996	Loan Return to Us Sender: DICKERSON/4433	In	-	CINCINNAT / M13006	-	-	-	-

Sex/Contraception	Female / -	**Birth Type**	Captive Birth/Hatch
Hybrid Status	Not a hybrid	**Birth Location**	Copenhagen Zoo
Enclosure	Elephant Reserve	**Birth Date/Age**	12/15/1975 / 45Y,10M,10D
Rearing	Undetermined	**House Name**	[Schottzie/CINCINNAT]
Dam	[GAN: 27911882 | COPENHAGE / 100096]	**Local ID**	[M13006/CINCINNAT]
Sire	[GAN: MIG12-30090296 | COPENHAGE / 100095]	**Regional Studbook #**	[79-AZA /CINCINNAT]
		Undetermined	[M13006 / Schottzie/CINCINNAT]

Scope Association of Zoos & Aquariums (AZA) / AZA
Studbook Name Elephant, Asian (Elephas maximus)
Date of Export 14 January 2022
Filters Institution = CINCINNAT

Studbook Animals

Studbook ID	Last Location	Sex	Birth Date	Current Status	Sire	Dam	Birth Type	Event Type	Date	Location	Local ID
508	COLUMBUS	Male	Mar 15, 1998	Dead	297	315	Captive Birth/Hatch	Birth/Hatch	Mar 15, 1998	CINCINNAT	198027
								Transfer	Apr 18, 2003	COLUMBUS	203018
								Death	Aug 16, 2005	COLUMBUS	203018
297	CINCINNAT	Male	Jan 01, 1988 +/- 6 month	Alive	WILD	WILD	Wild Birth/Hatch	Birth/Hatch	Jan 01, 1988 +/- 6 month	Malaysia / Perak (ms) (state) (MY)	-
								Wild Capture	Jan 26, 1988	Malaysia / Perak (ms) (state) (MY)	-
								Transfer	Jan 29, 1991	CINCINNAT	191018
								Transfer	Jan 16, 1998	LOUISVILL	101899
								Transfer	Sep 10, 2002	DICKERSON	5500
								Transfer	Nov 07, 2007	CINCINNAT	191018
315	CINCINNAT	Female	Jan 01, 1987 +/- 6 month	Alive	WILD	WILD	Wild Birth/Hatch	Birth/Hatch	Jan 01, 1987 +/- 6 month	Malaysia / Perlis (ms) (state) (MY)	-
								Wild Capture	Apr 14, 1988	Malaysia / Perlis (ms) (state) (MY)	-
								Transfer	Jan 29, 1991	CINCINNAT	191019
79	CINCINNAT	Female	Dec 15, 1975	Alive	512	513	Captive Birth/Hatch	Birth/Hatch	Dec 15, 1975	COPENHAGE	100101
								Transfer	Dec 12, 1978	CINCINNAT	M13006
								Transfer	Apr 23, 1990	FORTWORTH	723
								Transfer	May 25, 1994	CINCINNAT	M13006
								Transfer	Apr 22, 1996	DICKERSON	4433
								Transfer	Jun 17, 1996	CINCINNAT	M13006
78	CINCINNAT	Female	May 01, 1973 +/- 15 day	Alive	WILD	WILD	Wild Birth/Hatch	Birth/Hatch	May 01, 1973 +/- 15 day	Thailand / ~	-
								Wild Capture	Undetermined	Thailand / ~	-
								Transfer	Feb 14, 1974	CINCINNAT	M13002

								Transfer	Sep 25, 1995	DICKERSON	4356
								Transfer	Nov 02, 1995	CINCINNAT	M13002
								Transfer	Apr 15, 1996	DICKERSON	4356
								Transfer	Jun 24, 1996	CINCINNAT	M13002
T2067	CINCINNAT	Female	Jan 01, 1950 +/- 6 month	Dead	WILD	WILD	Wild Birth/Hatch	Birth/Hatch	Jan 01, 1950 +/- 6 month	Asia	-
								Wild Capture	Undetermined	Asia	-
								Transfer	Jun 29, 1955	CINCINNAT	_____
								Death	Aug 07, 1960	CINCINNAT	_____
T2040	CENTERHIL	Female	Jan 01, 1948 +/- 6 month	Dead	WILD	WILD	Wild Birth/Hatch	Birth/Hatch	Jan 01, 1948 +/- 6 month	Asia	-
								Wild Capture	Undetermined	Asia	-
								Transfer	Jan 01, 1949 +/- 6 month	TREFELICH	_____
								Transfer	Nov 02, 1949	COLO SPRG	_____
								Transfer	Oct 30, 1961	CINCINNAT	_____
								Transfer	Oct 24, 1973	CENTERHIL	_____
								Death	Undetermined	CENTERHIL	_____
524	CINCINNAT	Female	Jan 01, 1946 +/- 6 month	Dead	WILD	WILD	Wild Birth/Hatch	Birth/Hatch	Jan 01, 1946 +/- 6 month	Asia	-
								Wild Capture	Jun 21, 1961 +/- 6 month	Asia	-
								Transfer	Oct 21, 1961	CINCINNAT	M13001
								Death	Jan 31, 1978	CINCINNAT	M13001
T2234	CINCINNAT	Female	Undetermined	Dead	WILD	WILD	Wild Birth/Hatch	Birth/Hatch	Undetermined	WILD	NONE
								Wild Capture	Undetermined	WILD	NONE
								Transfer	Aug 21, 1948	CINCINNAT	_____
								Death	Aug 31, 1949 +/- 15 day	CINCINNAT	_____
T2145	CINCINNAT	Male	Undetermined	Undetermined (Lost to follow up)	WILD	WILD	Wild Birth/Hatch	Birth/Hatch	Undetermined	WILD	NONE
								Wild Capture	Undetermined	WILD	NONE

								Transfer	Undetermined	AMER SHOW	_____
								Transfer	Jan 01, 1875 +/- 6 month	CINCINNAT	_____
								GO LTF	Jan 01, 1875 +/- 6 month	CINCINNAT	_____
T2138	CINCINNAT	Male	Undetermined	Dead	WILD	WILD	Wild Birth/Hatch	Birth/Hatch	Undetermined	WILD	NONE
								Wild Capture	Undetermined	WILD	NONE
								Transfer	Jan 01, 1875 +/- 6 month	ROBINS C	_____
								Transfer	Jan 01, 1889 +/- 6 month	CINCINNAT	_____
								Death	Dec 31, 1891 +/- 6 month	CINCINNAT	_____
T2297	CINCINNAT	Female	Jan 01, 1860 +/- 6 month	Dead	WILD	WILD	Wild Birth/Hatch	Birth/Hatch	Jan 01, 1860 +/- 6 month	WILD	NONE
								Wild Capture	Undetermined	WILD	NONE
								Transfer	Oct 01, 1860 +/- 6 month	ROBINS C	_____
								Transfer	Jan 01, 1925 +/- 6 month	CINCINNAT	_____
								Death	Dec 31, 1932 +/- 6 month	CINCINNAT	_____

SH A4.2.3 CONSTRUCTION NOTES
VIEWING & KEEPER FLOOR PLANS

1. 42" GUARDRAIL @ VIEWING PERIMETER.
2.

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Drawing Title
VIEWING & KEEPER FLOOR PLANS

Sheet No.
A4.2.3

1 VIEWING
A4.2.3 1/8" = 1'-0"

SH A4.2.2 CONSTRUCTION NOTES
BASEMENT & HOLDING BARN FLOOR PLANS

1. PROTECTIVE PIPE BARRIER
2. CONCRETE SLAB FOR BATH
3. STEEL BEAMS WITH METAL DECK AND CONCRETE SLAB ABOVE.
4. CAST-IN-PLACE BASEMENT WALL
5. ELEPHANT TRAINING WALL
6. ELEPHANT RESTRAINING DEVICE (ERD)
7. CONCRETE RAMP BELOW SAND.
8. EQUIPMENT ACCESS DOOR.
9. EXTERIOR SLIDING DOOR.
10. INTERIOR DUMP AND FILL POOL WITH ANIMAL ACTIVATED SHOWER ABOVE.
11. CONCRETE FILLED METAL PAN STAIR.
12. INDUSTRIAL STAIR.
13. CIP CONCRETE EXTERIOR STAIR.
14. RELOCATED ELEPHANT RESTRAINING DEVICE. EXISTING ERD FROM ELEPHANT HOUSE TO BE RELOCATED TO NEW BARN.

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BASEMENT & HOLDING BARN FLOOR PLAN

Sheet No.
A4.2.2

1 A4.2.2 HOLDING BARN
1/8" = 1'-0"

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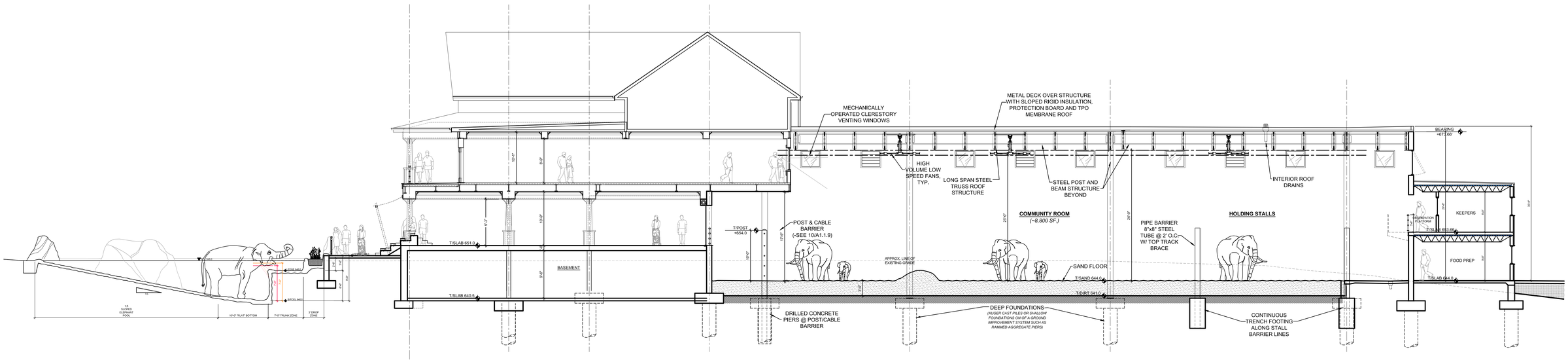
Drawing Title

ELEPHANT HOLDING
CONCEPT SECTION

Sheet No.

A4.4.1



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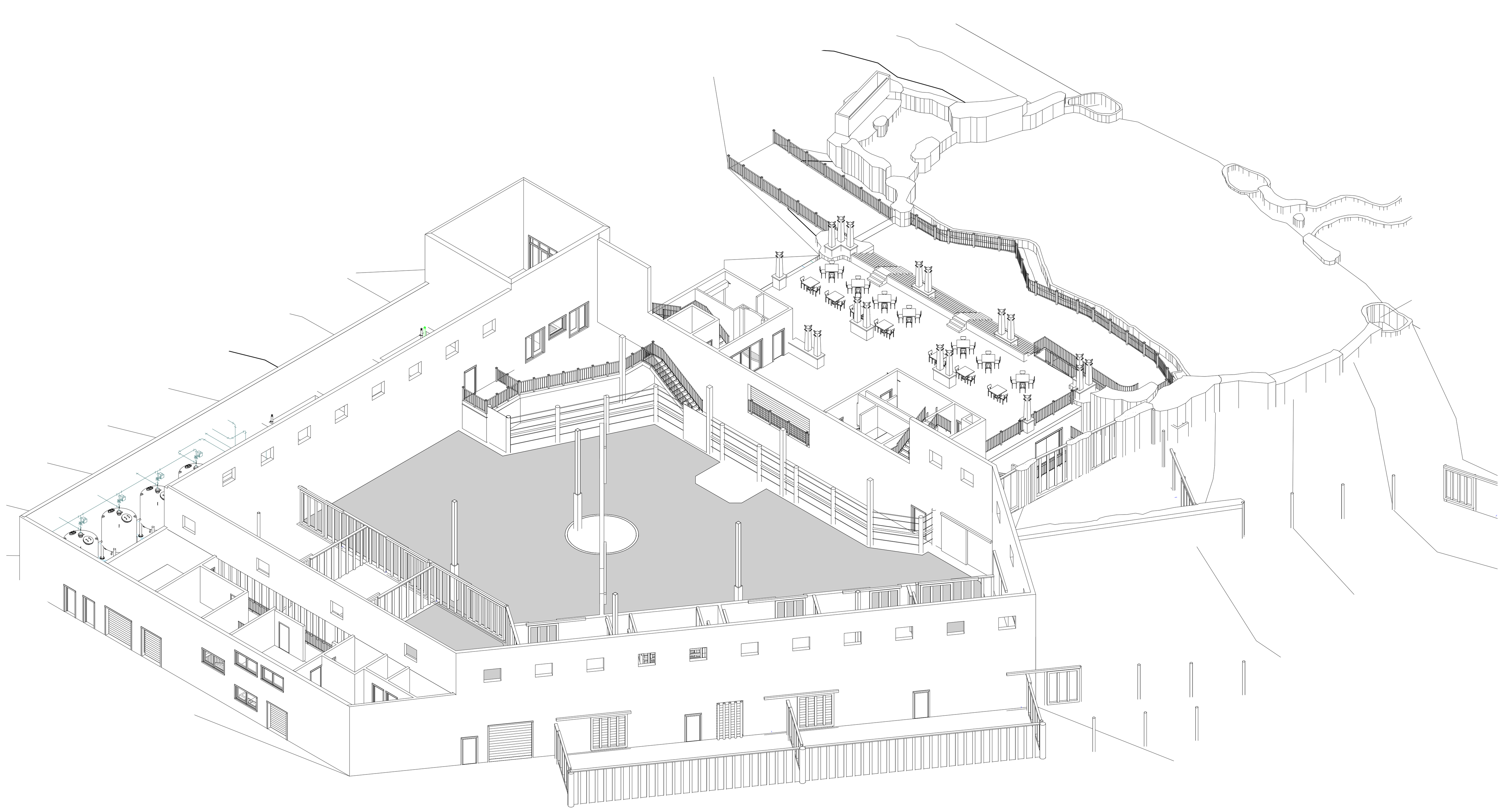

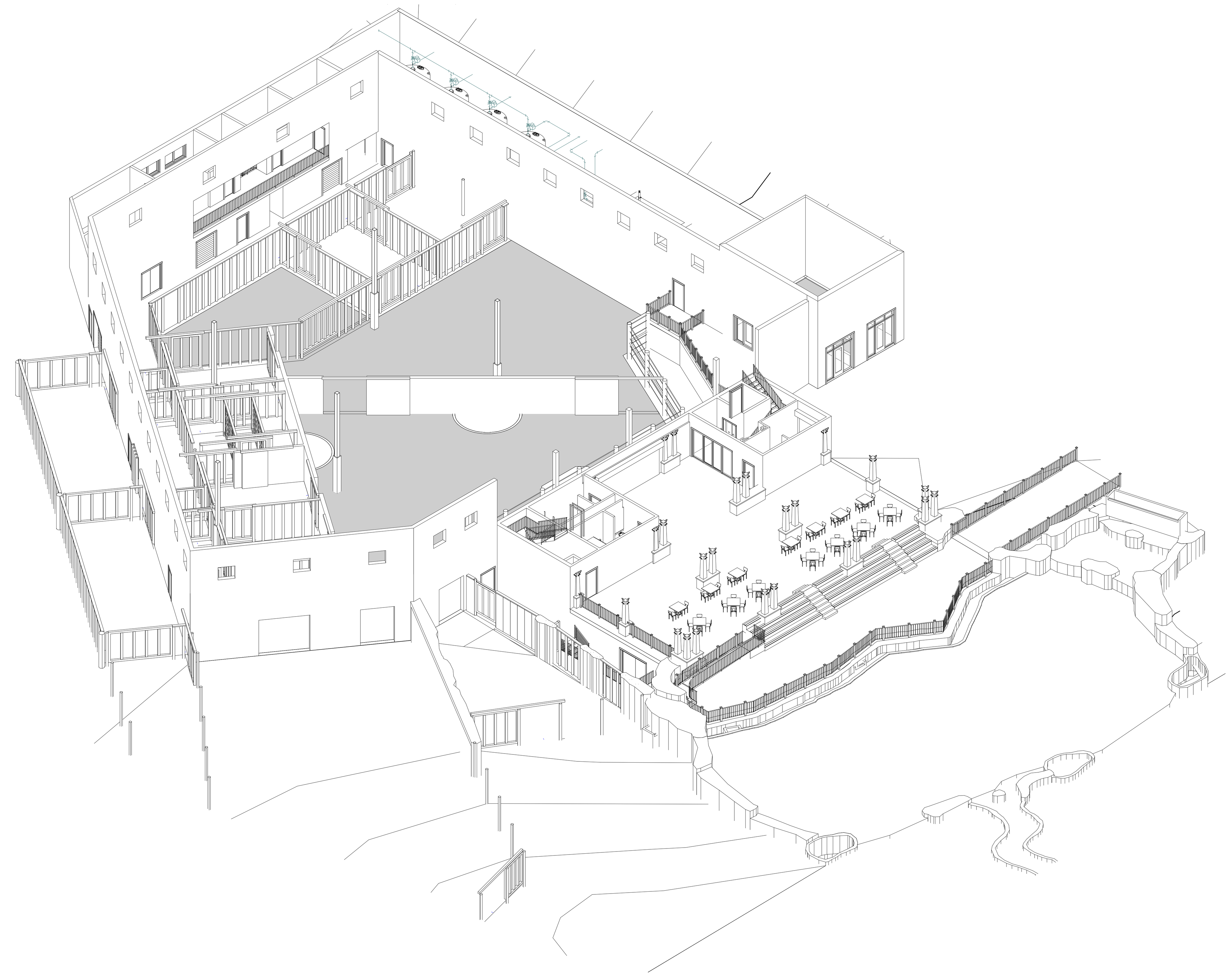

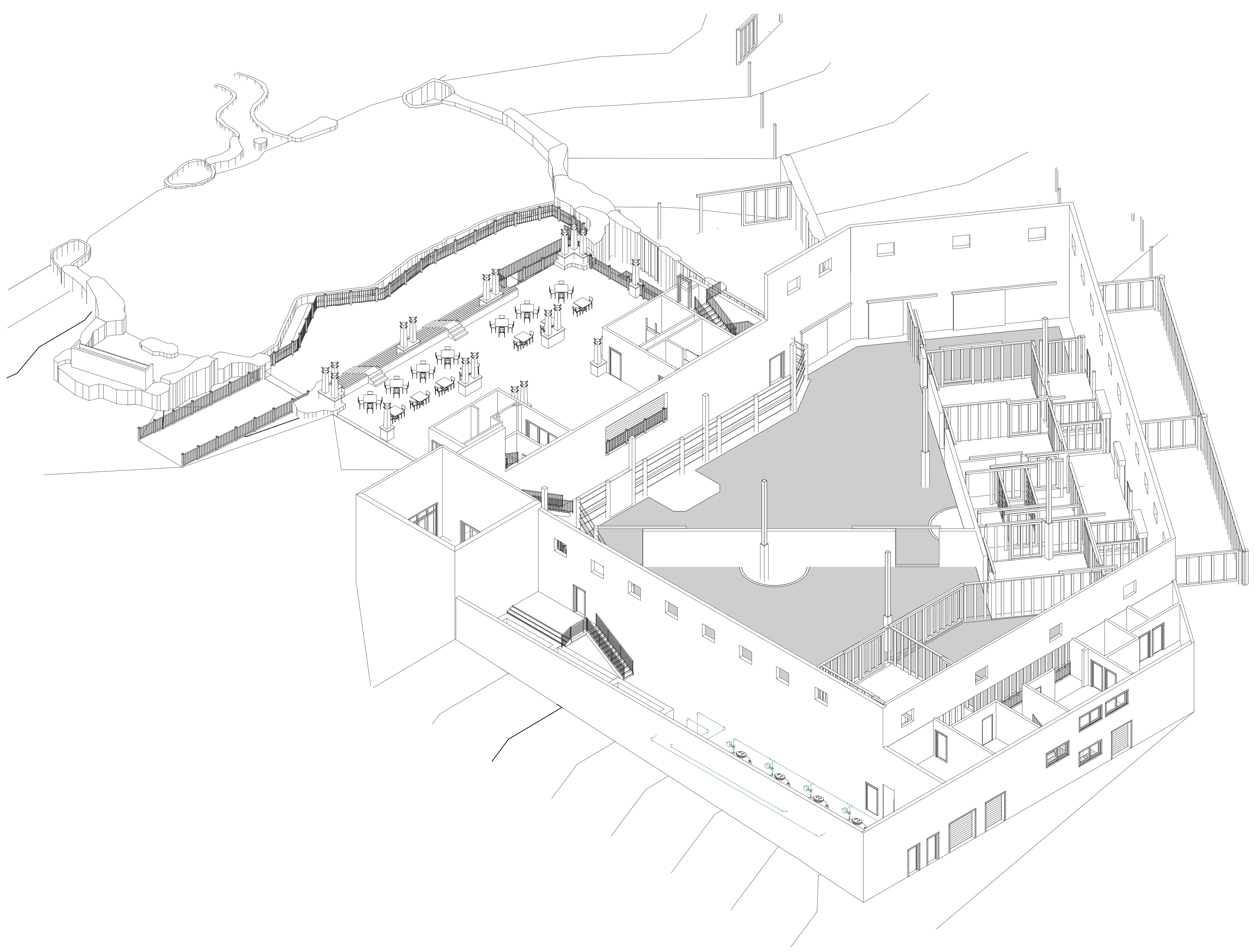

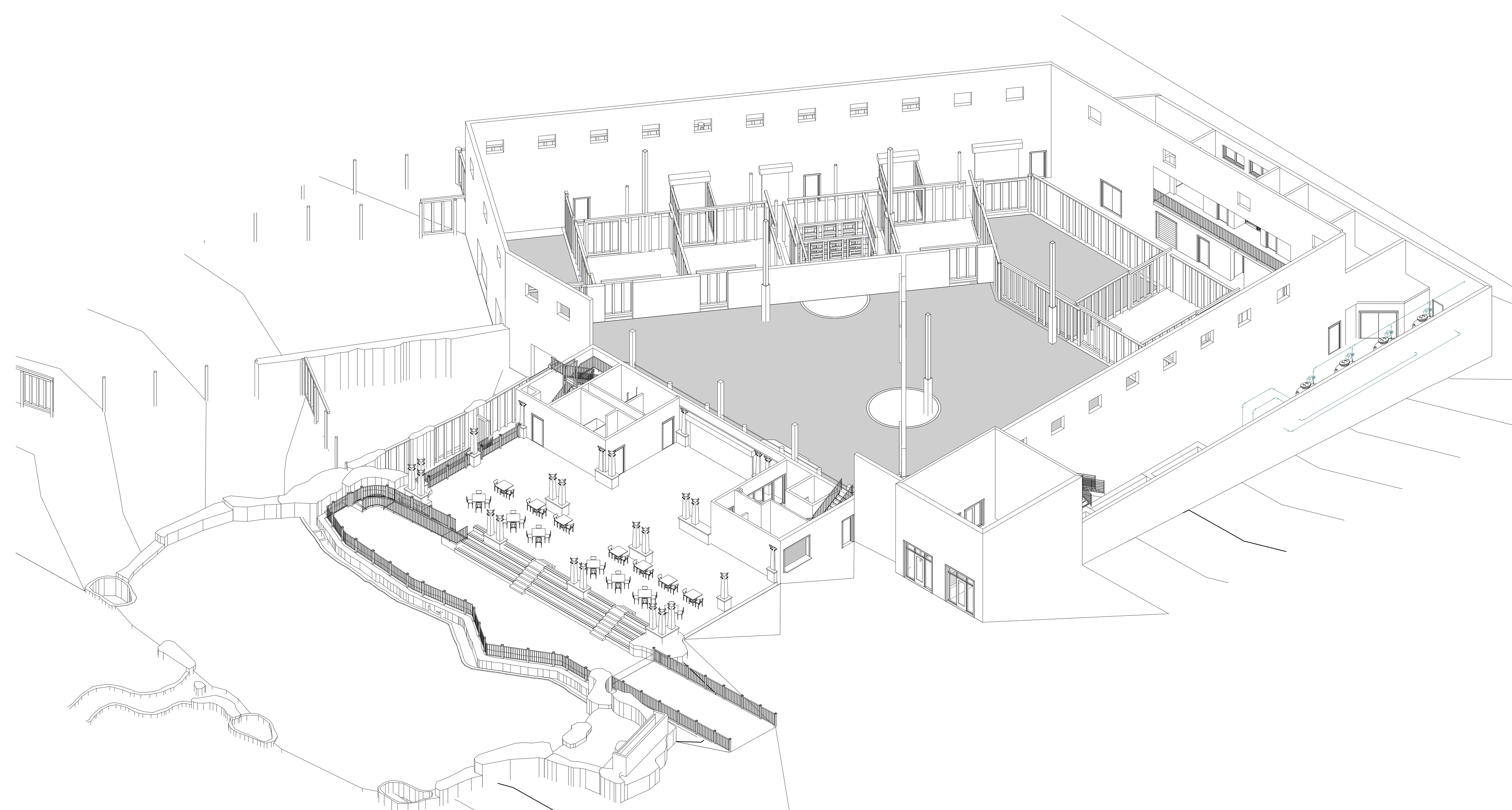

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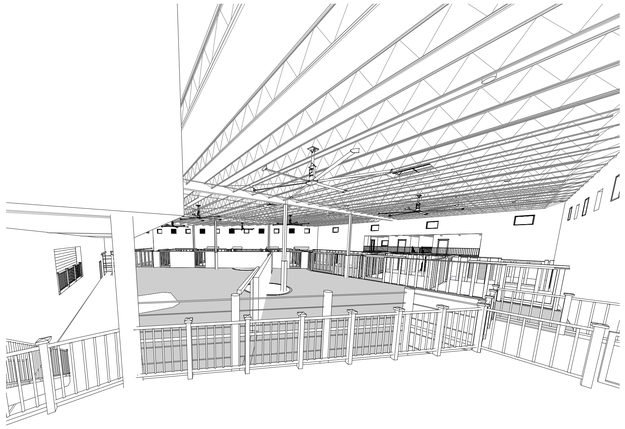
Drawing Title

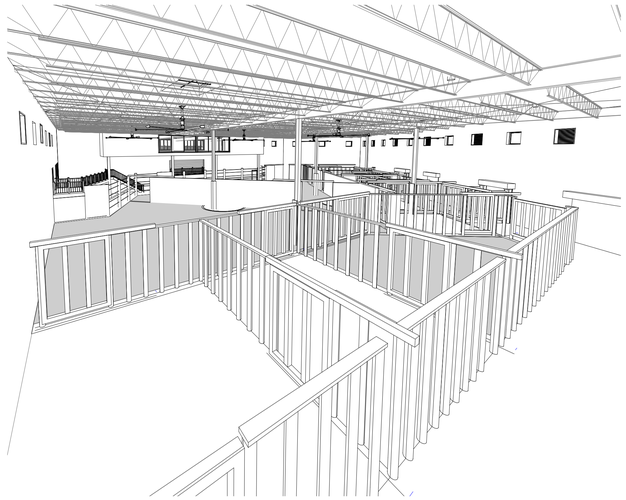
ELEPHANT HOLDING
3D VIEWS

Sheet No.

A4.4.5



1 A4.4.7 HOLDING CORNER 1



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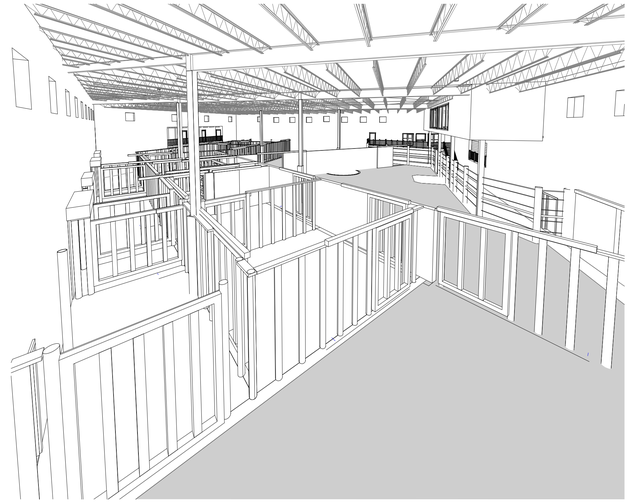
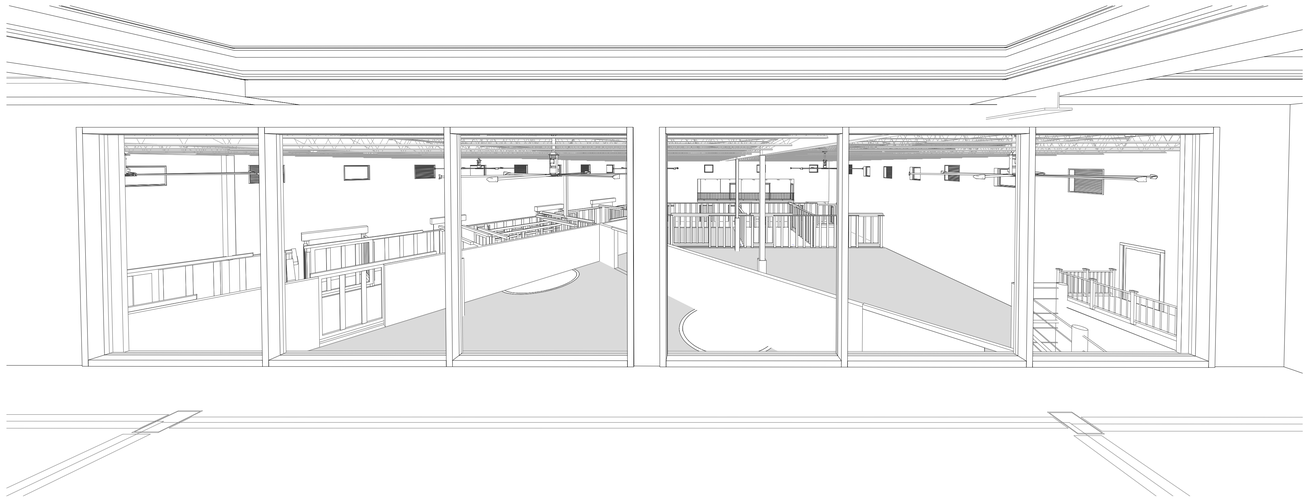


2 A4.4.7 HOLDING CORNER 2

4 A4.4.7 HOLDING CORNER 4



5 A4.4.7 GROUP SALES OVERLOOK

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HOLDING BARN INTERIOR

Sheet No.

A4.4.7

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ENRICHMENT LEGEND

	FEATURE	DESCRIPTION
	GRASSY KNOLL (G.)	3'-5'+/- ROLLING GRASSY KNOLL, ELEPHANT ACCESS ALLOWED
	MUD WALLOW (W.)	MUD WALLOW 1-2' DEEP; KEEPER MAINTAINED; STUDY REQUIREMENT FOR WATER SOURCE NEARBY IN YARD
	SAND MOUNDS (S.)	KEEPER MAINTAINED AND MANIPULATED SAND AREA; DAILY TO WEEKLY CHANGES; BOBCAT ACCESS TO MOUNDS REQUIRED
	ENRICHMENT ITEM	ENRICHMENT PIECE (GUNITE) WITHIN GRASSY KNOLLS. TYPE TO BE DETERMINED
	BROWSE HOLDER	BURIED CONCRETE TUBE (30"-36"Ø- SIM. TO EXISTING YARD) BROWSE HOLDER

ELEPHANT YARD #3 (50,400 s.f.)
ELEPHANT YARD #2 (72,800 s.f.)
ELEPHANT YARD #1 (8,250 s.f.)
L11
L19
L10
L2
L20
L12
L14
SHALLOW ELEPHANT POOL (~4' DEEP)
DEEP ELEPHANT POOL (~8' DEEP)
ALT. PHEASANT HABITAT
ANIMAL HOSPITAL
KING COBRA
KEEPER WALKWAY
DENSE TREES

1 A1.1.1 PROPOSED SITE PLAN 1"=40'-0"
1"=20'-0" 0 20 60 N

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PROPOSED ENRICHMENT PLAN

Sheet No.
A1.1.9

1 PROPOSED PHASING DIAGRAM
A1.1.x 1"=40'-0"

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PROPOSED PHASING DIAGRAM

Sheet No.

A1.1.x

1 SITE AERIAL VIEW 1
A1.1.10 N.T.S.

2 SITE AERIAL VIEW 2
A1.1.10 N.T.S.

3 SITE AERIAL VIEW 3
A1.1.10 N.T.S.

4 SITE AERIAL VIEW 4
A1.1.10 N.T.S.

5 OVERALL SITE AERIAL VIEW
A1.1.10 N.T.S.

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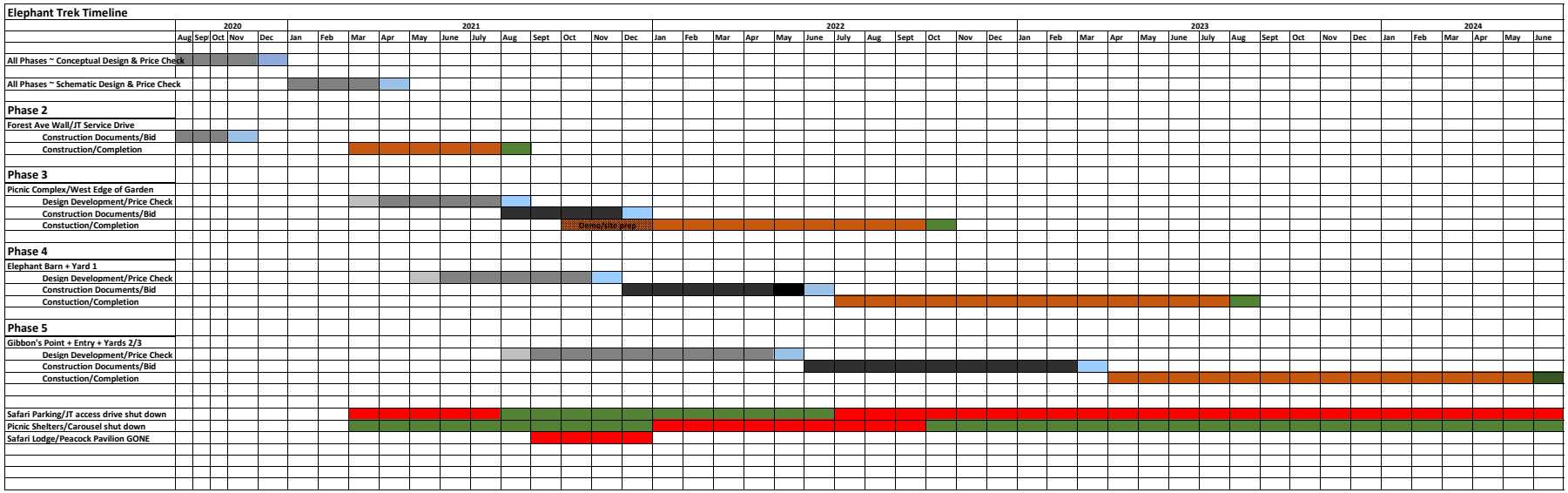
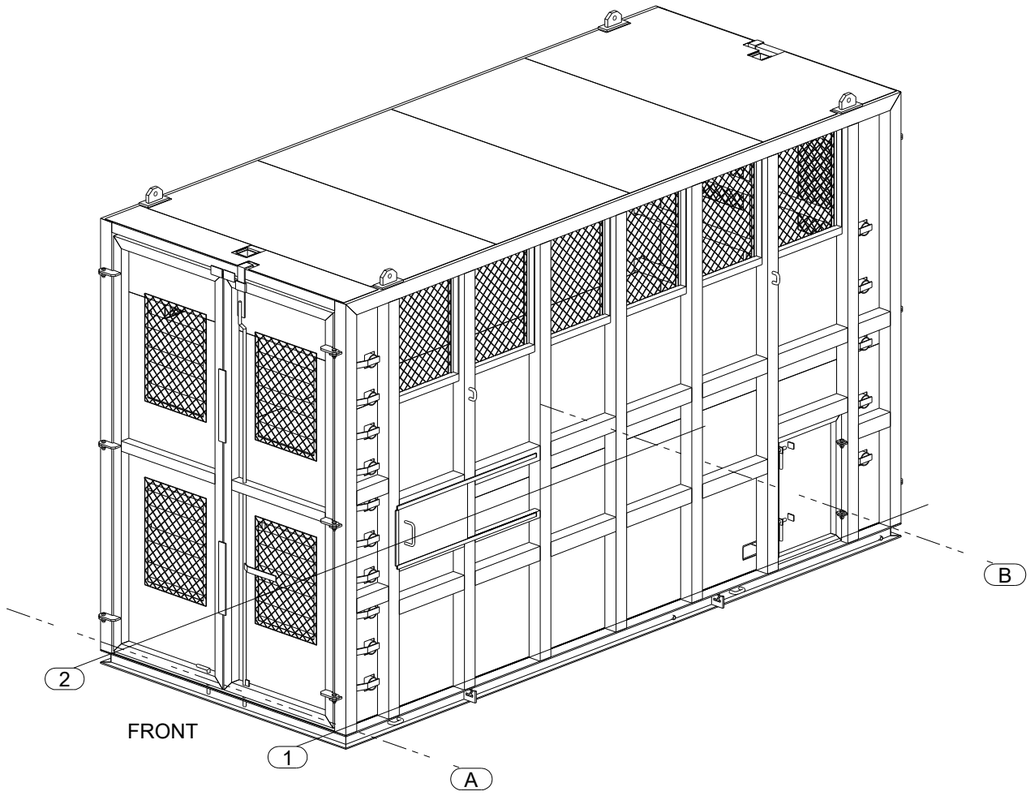
SITE AERIAL VIEWS

Sheet No.

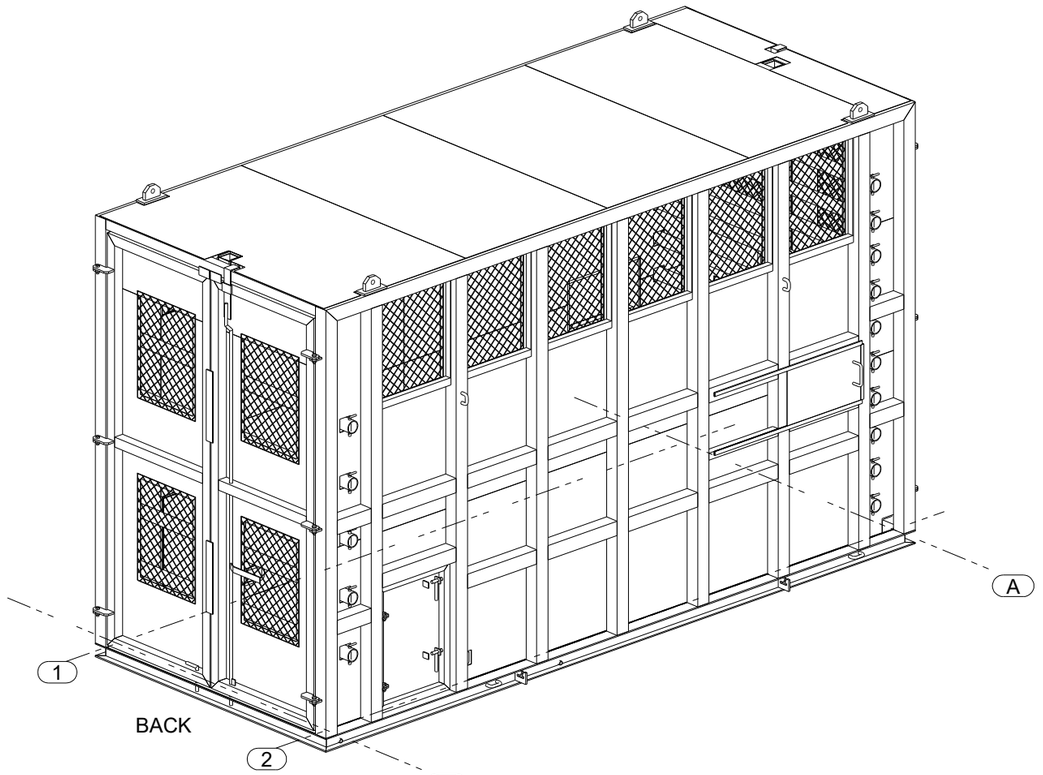
A1.1.10


Elephant Trek Timeline
2020
2021
2022
2023
2024
Aug Sep Oct Nov Dec Jan Feb Mar Apr May June July Aug Sept Oct Nov Dec Jan Feb Mar Apr May June July Aug Sept Oct Nov Dec Jan Feb Mar Apr May June July Aug Sept Oct Nov Dec Jan Feb Mar Apr May June
All Phases ~ Conceptual Design & Price Check
All Phases ~ Schematic Design & Price Check
Phase 2
Forest Ave Wall/JT Service Drive
Construction Documents/Bid
Construction/Completion
Phase 3
Picnic Complex/West Edge of Garden
Design Development/Price Check
Construction Documents/Bid
Constuction/Completion
Demo/site prep
Phase 4
Elephant Barn + Yard 1
Design Development/Price Check
Construction Documents/Bid
Constuction/Completion
Phase 5
Gibbon's Point + Entry + Yards 2/3
Design Development/Price Check
Construction Documents/Bid
Constuction/Completion
Safari Parking/JT access drive shut down
Picnic Shelters/Carousel shut down
Safari Lodge/Peacock Pavilion GONE



FRONT

3d



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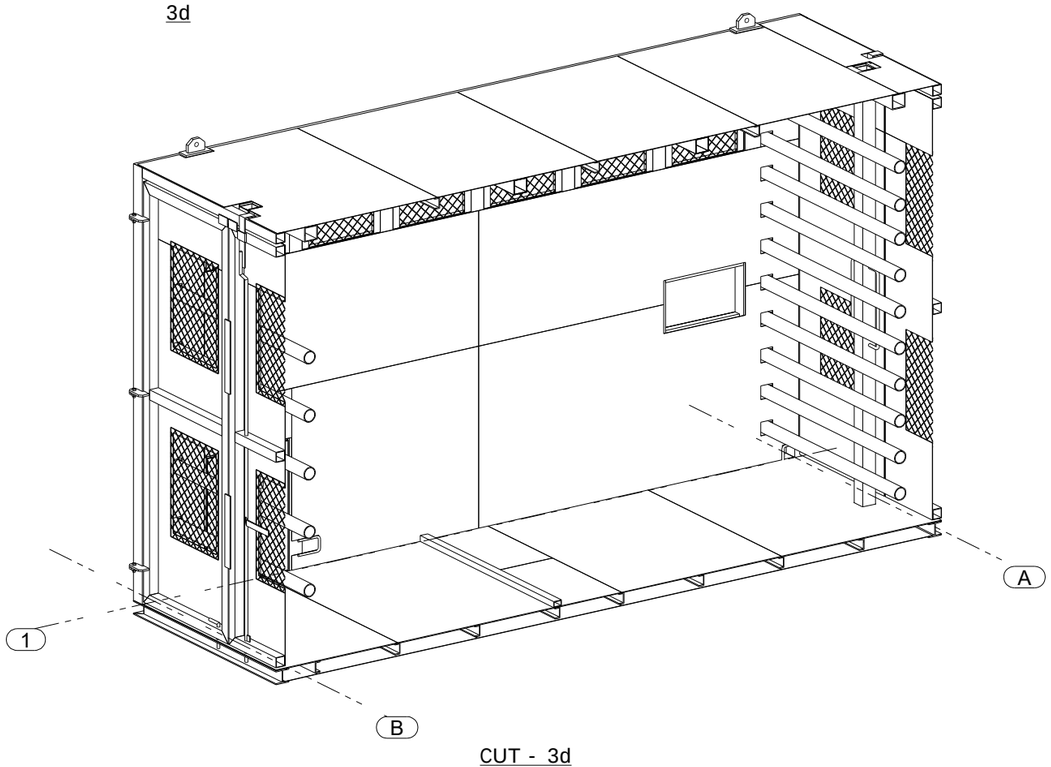

CUT - 3d

REV MARK	REVISION DESCRIPTION	DATE

Noel Lynch

Draughting and Design

Carrick, Virginia, Co. Cavan. Ph: 086 4198484

DRAWING TITLE	CRATE 3D VIEWS		
CONTRACT	ELEPHANT CRATE		
MODELLED BY	NL	ISSUE DATE	
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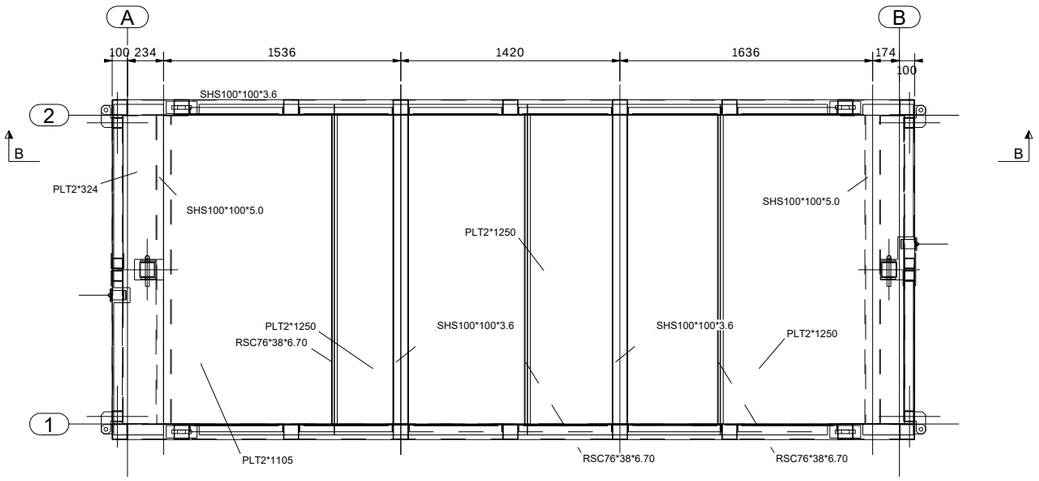
DRAWING No	G [1]	REVISION No.	



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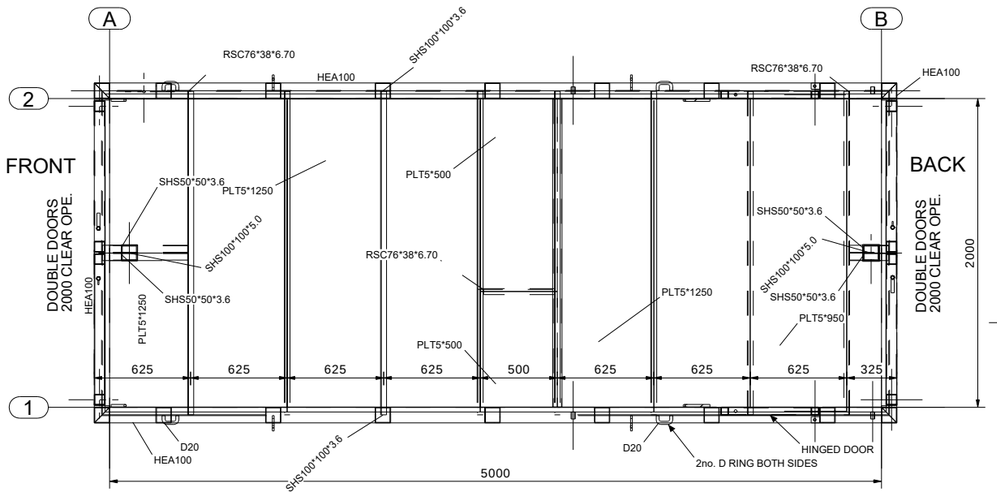

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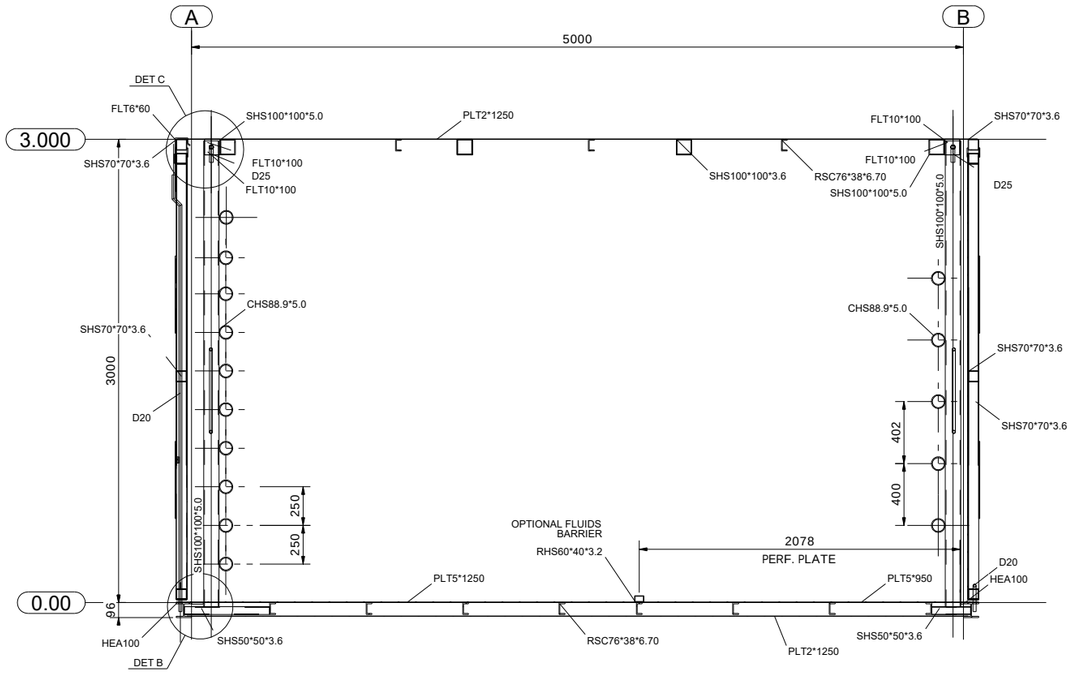

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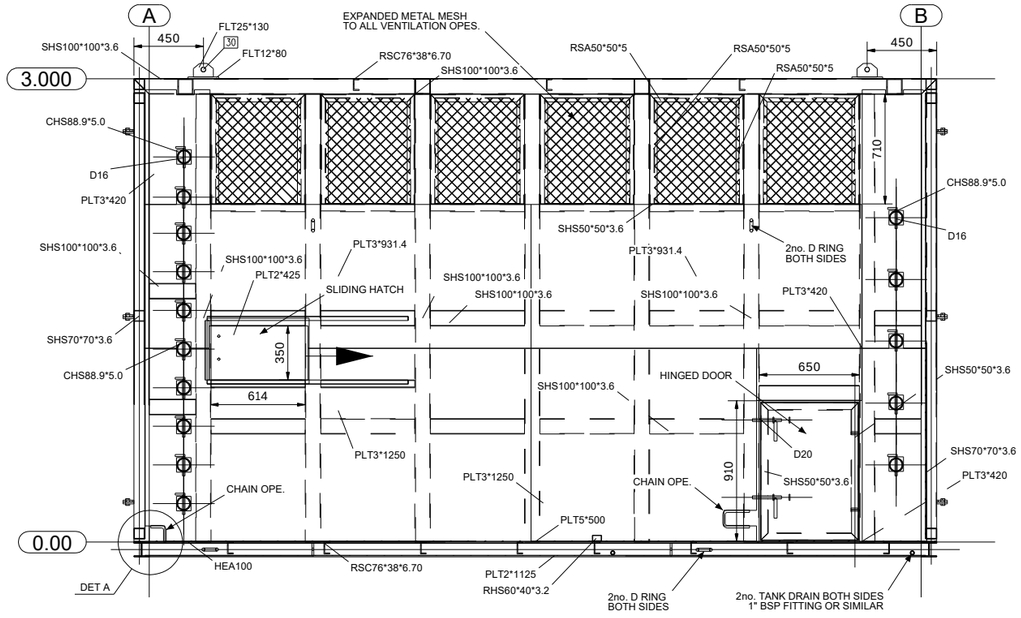

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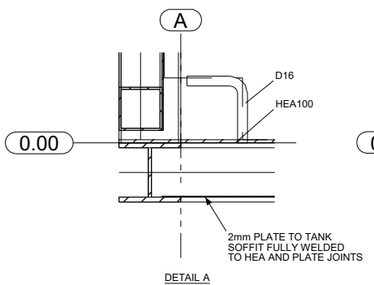

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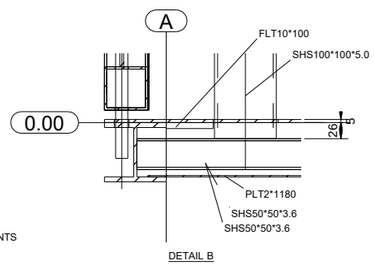

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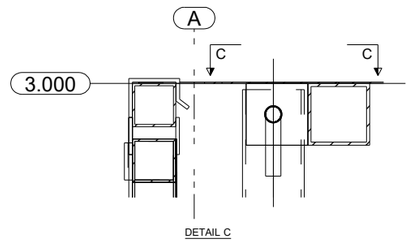

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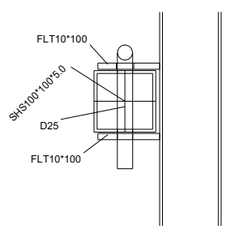

C - C

ALL STEEL Gr. S275.
ALL WELDS 6mm FW UNO.
ALL INTERNAL WELDS GROUND SMOOTH.
ALL MS PINS TO HAVE RETAINING CLIP
& CHAIN WHERE REQUIRED.
ALL BOLTS M16 Gr. 8.8 TYPICAL.
ALL TANK OUTLET DETAILS TBC BY OTHERS.
ALL STEEL FINISH TBC BY OTHERS.
CRATE WEIGHT UNFINISHED 3800KG.

Tekla structures

REV MARK	REVISION DESCRIPTION	DATE

Noel Lynch
Draughting and Design

Carrick, Virginia, Co. Cavan. Ph: 086 4198484

DRAWING TITLE	CRATE PLAN VIEWS		
CONTRACT	ELEPHANT CRATE		
MODELLED BY	NL	ISSUE DATE	
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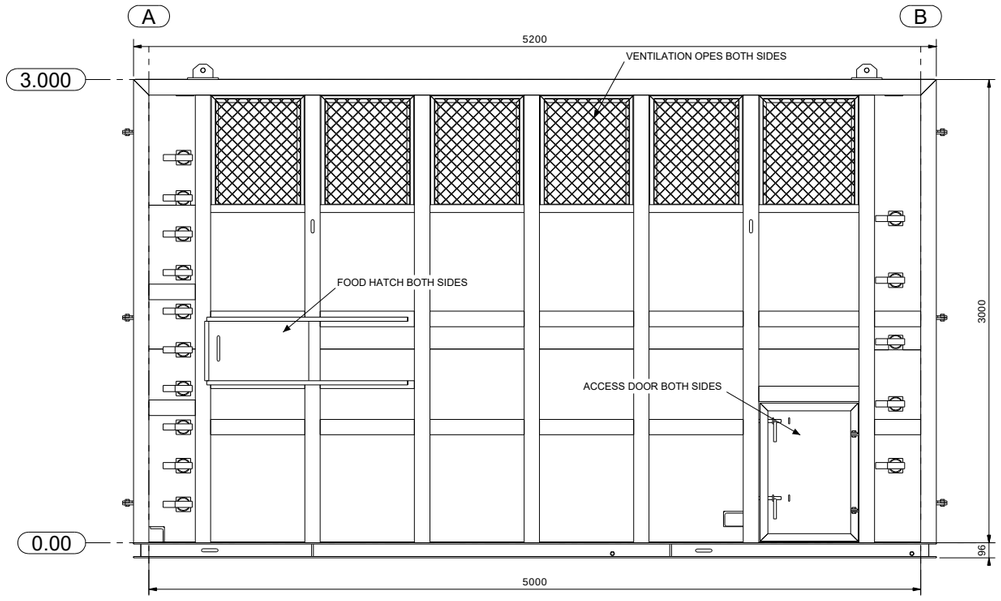
DRAWING No	G [2]	REVISION No.	



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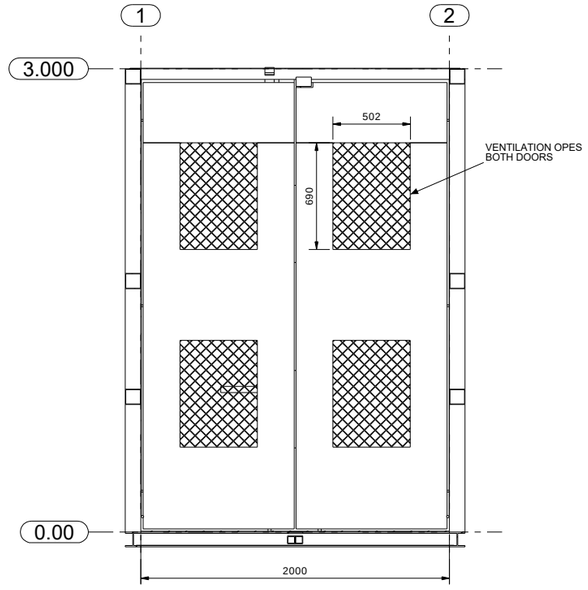

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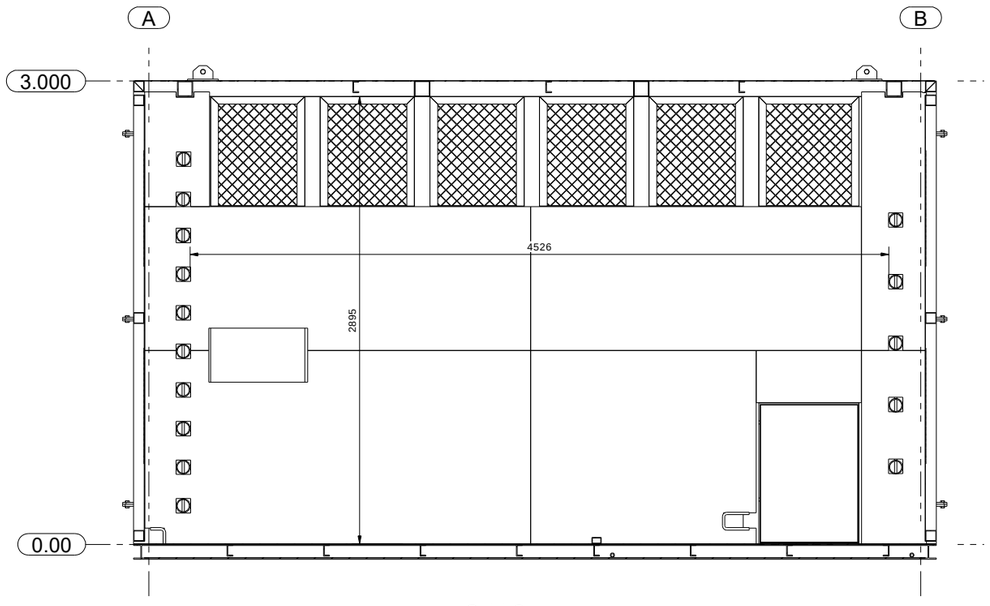

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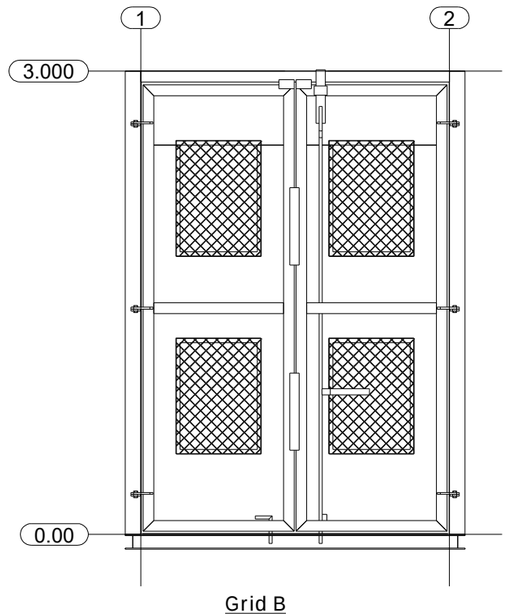


Grid B

REV MARK	REVISION DESCRIPTION	DATE

Noel Lynch

Draughting and Design

Carrick, Virginia, Co. Cavan. Ph: 086 4198484

DRAWING TITLE	CRATE ELEVATIONS		
CONTRACT	ELEPHANT CRATE		
MODELLED BY	NL	ISSUE DATE	
CONTRACT NO	21-10001	SCALE	1:20
DRAWING No	G [3]	REVISION No.	

Tekla Structures


REAR
REAR
REAR


FRONT
FEEDING

Wild Discover Zone

ELEPHANT RESERVE

This activity is designed to engage all ages of Zoo visitors. Your duty as an excellent educator and interpreter is to adjust your approach to fit each group you interact with. Be aware that all groups are on some kind of a time limit. There are no set time requirements for this interaction. Read their behavior and end the interaction when they seem ready to move on.

Theme: Elephants are a great example of a keystone species because of their ability to "bioengineer" their habitat in ways that other plants and animals rely on to survive and thrive. Because of this, conserving elephants and their natural habitat is vital. The Cincinnati Zoo plays an important role in elephant conservation.

Summary: Educators will lead observation and discussion about why elephants are a keystone species and the impact they have on their habitat. Educators will connect this information with the importance of elephant conservation and the partnership the Zoo has with the International Elephant Foundation.

Objectives:

During and after the encounter, guests will:

1. Be able to define ***"keystone species"***
2. Understand ***why elephants are a keystone species*** in their habitats
3. Participate in observation and discussion about what makes an elephant a ***"bioengineer"***
4. Learn about the different threats that elephants face in the wild and gain understanding of the Zoo's involvement in ***elephant conservation.***

Location: Cart near Elephant Reserve

Materials: Elephant poop, elephant tooth, elephant tooth picture, keystone species poster, dung beetle photo, Conservation Response Unit picture

Contents:

Part 1: Breaking the Ice
- Doing the Activity

Part 2: Background Information:
- International Elephant Foundation
- Keystone Species
- Common Keystone Species
- Keystone Species: The Elephant
- Elephants in the Forest –Asian Elephant
- Conservation Connection

Part 1:
Breaking the Ice:

Volunteer A should mingle with guests as they view the elephants. Engage them with an icebreaker by answering their questions, adding something to their observations, or introducing yourself as a volunteer and striking up a conversation about their experience at the Cincinnati Zoo. Volunteer B can do the same thing at the cart as guests approach. Ask them if they'd like to learn more about how amazing these animals are, the impact they have on their ecosystem, and what the Zoo is doing to help them in the wild!

Doing the Activity:

Depending on how your initial conversation starts, there are a variety of ways to have an engaging discussion about elephants as a keystone species. Go with the flow of what the guests are interested in while still focusing on the theme.

1. When mingling with the guests, ask them what their favorite thing about our elephants is. Based on their answer, you can direct the conversation towards how their favorite feature is actually extremely important both for the elephant and their habitat.

   Example #1: "I really love how BIG these animals are!" could lead to a discussion about their size being extremely important to their habitat:

   - *Their paths can act as firebreaks and rain water conduits*
   - *An elephant's journey can provide food for birds by disturbing small reptiles, amphibians and insects.*
   - *Elephants will spill or shake free vegetation from high branches that becomes available for other animals on the ground*
   - *Elephants are known to enlarge and deepen water supplies with their tusks in times of drought*

   Example #2: "I can't believe how much they eat!" could lead to a discussion about their digestive process being extremely important to their habitat:

   - *Elephants will spill or shake free vegetation from high branches that becomes available for other animals on the ground*
   - *Their consumption of vast amounts of vegetation ensures that certain plant species don't come to dominate in their environment.*
   - *Numerous plants rely on elephants to disperse their seeds and help them germinate in their very own parcels of organic fertilizer.*

   Example #3: "Elephants are one of my favorite animals!" could lead to a conservation about elephant conservation and how the Zoo is directly involved in saving this species:

   - *Both African and Asian elephants are on the Endangered Species List. In the wild elephants are threatened by human-elephant conflict, habitat loss, and poaching for ivory.*
   - *The Zoo is a partner of the International Elephant Foundation (IEF) which supports over 120 different elephant conservation and research programs around the world.*
   - *The IEF works very hard to mitigate human-elephant conflict, as elephants are known to wander in human settlements and destroy entire crop fields.*
   - *One program the Zoo specifically supports are Conservation Response Units, which utilize once neglected elephants and their caretakers to help build positive experiences with locals, while also actively patrolling forests to reduce wildlife related crimes.* `

When leading a discussion, you want to encourage the guests to critically think, make educated guesses, and discover information with your guidance. Ask them guiding questions or create a scenario for them to think about and discuss. The information and message will more likely stick if they participate in their learning experience, not just receive a brain dump of information.

2. Encourage the guests to make some other observations about the elephants and discuss why elephants are a great example of a **keystone species**. Because so many other plants and animals rely on elephants, it is extremely important to conserve these amazing creatures.

3. Use the zone materials to support and provide a context for your discussion. If you are talking about elephant size, the tooth and poop are both great examples of size and their eating habits. Teeth made for eating massive quantities of vegetation and large quantities of waste help illustrate the impact these animals have on their habitat.

4. Discuss how elephant waste can impact the plants of their habitat. Draw the guest's attention to it utilizing the poop biofact. To point out how important their waste can be, you can discuss the pictures of dung beetles, an animal that relies heavily on elephant waste to survive.

5. At this point, if the conversation hasn't turned to elephant conservation and the Zoo's involvement with the International Elephant Foundation, ask the guests if they are aware of any threats elephants may face in the wild. Relate these threats to how the Cincinnati Zoo and the IEF work hard to protect wild elephants, conserve natural habitat, and mitigate human-elephant conflict. Helping to conserve elephants helps to protect the species that depend on them for survival, as well as benefits local communities who co-exist with elephants!

Part 2: Background Information:

International Elephant Foundation

The International Elephant Foundation (IEF) is a non-profit corporation of both individuals and institutions that are dedicated to the protection and preservation of both African and Asian Elephants. The IEF came into being in 1998, established by Michael Fouraker, the Director of the Fort Worth Zoo in Texas, and nine other representatives from other organizations. The IEF is recognized as a conservation organization by the Association of Zoos and Aquariums, the Morris Animal Foundation, and the United States Fish and Wildlife Service.

Both African and Asian elephants are an IUCN Red List species. In the wild elephant populations are declining, largely due to habitat loss and poaching for ivory. Human-elephant conflict is one of the main driver behind this decline, local communities often face crop decimation from wild elephant herds. This has caused a lot of resentment towards elephants and has led farmers to harm, or even kill local herds. The IEF looks to create a sustainable future for elephants, where both people and elephants can thrive together!

The IEF has supported over 120 elephant conservation and research programs, both for wild elephants and elephants in human care. They award grants annually for these purposes. Since its founding, the IEF has provided around $5 million to elephant conservation and research programs around the world.

The Cincinnati Zoo is a partner and supporter of the IEF. Our support provides the IEF with supplies and training to make sure that elephants are cared for properly. Two programs that the zoo specifically supports is the Sumatran Elephant Conservation Center and the Conservation Response Units (CRUs).

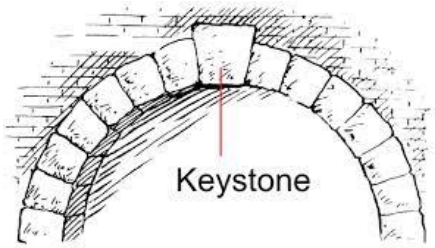
In Sumatra, elephants and people frequently come into conflict. Farmers will often wake up to find their entire fields destroyed by elephants who have left protected areas. The Sumatran Elephant Conservation

Center helps to relocate elephants that have wandered into human settlements, protecting them from potential harm while also helping local communities. More than 700 elephants have been relocated to these centers where they are provided with food, medical care, and protection funded by the IEF and their supporters. This provides protection and care for many elephants as Indonesia works to develop programs for elephant habitat protection.

In 2004, the IEF established Conservation Response Units in Sumatra to provide protection of native wildlife. CRUs utilize once neglected captive elephants and their caretakers (mahouts) for direct field conservation efforts. These teams work with forest rangers and conservation officers to mitigate human-elephant conflict, reduce wildlife crimes, raise local conservation awareness, and establish community-based ecotourism to sustain the CRUs. These teams help local communities see elephants as important resources that can be beneficial to human welfare. Currently there are 14 teams placed throughout three targeted areas.

Keystone Species

All species in an ecosystem rely on each other; however, some species play a significantly larger role in that ecosystem. A "keystone species" is a species whose presence and role within an ecosystem has a disproportionate effect on other organisms within a system. Usually a dominate predator, some keystone species are those that significantly alter the habitat around them and thus affect large numbers of other organisms. This phrase references a "keystone" which is a wedge-shaped piece at the summit of an arch that holds all the other pieces in place.



When a keystone species disappears from its habitat, the habitat can change dramatically. The species' disappearance triggers the loss of other resident species, and the connections among the remaining residents begin to unravel. In a "domino effect," species losses cascade through the habitat, as the loss of one species prompts the loss of even more.

As resident species vanish, other species can move in or become more abundant. This altered mix changes the habitat's appearance and character. The "new" habitat arrangement looks different from the original one; it houses a new mix of plants and animals. Often, the new habitat supports fewer species and works less efficiently than the original one. Nutrients and energy turn over more slowly and less efficiently, biological diversity dwindles and the landscape beings to change.

Common Keystone Species

Prairie dogs – They contribute to the soil and water quality in their plains ecosystem. Their foraging retains water in the soil and forces fresh new grasses to grow. Young grass has more nutrients for species like bison and elk.

Sea Otters - An important keystone species to kelp forest habitat. Kelp is a giant species of seaweed that is home to hundreds of different species including sea urchins that feed on kelp. When sea otters eat the sea urchins, they prevent an overpopulation of urchins from destroying the ecosystem.

Hummingbirds – Hummingbirds living in the Sonoran Desert pollinate many varities of native cactus and other plants. In areas of the Desert with few hummingbirds, invasive species such as buffelgrass have taken over that ecosystem.

Mountain Lion – Predators like the mountain lion are often keystone species because they control the populations of other species such as deer, rabbits, or birds. Areas without mountain lions see an explosion in those populations which in turn affects the plant life these animals consume.

Keystone Species: The Elephant

Elephants are a great example of an ecological "keystone" species because the lives of so many other organisms depend on their existence. Their consumption of vast amounts of vegetation and how they physically open up clearings, for example, ensures that certain plant species don't come to dominate in their environment. This results in a much greater variety of plants and also animals that feed on them.

Elephants are a Keystone Species through Their Activities as Bioengineers

- Elephants will spill or shake free vegetation from high branches that becomes available for other animals on the ground
- Elephants are known to enlarge and deepen water supplies with their tusks in times of drought
    - Even their footprints trap water for other species
- Numerous plants rely on elephants to disperse their seeds and help them germinate in their very own parcels of organic fertilizer.
- They modify their habitat by converting Savannah and woodlands into grasslands
- Their paths can act as firebreaks and rain water conduits
- An elephant's journey can provide food for birds by disturbing small reptiles, amphibians and insects.

Elephants in the Forest –Asian Elephants

In the forest, elephants are the only species large enough to eat and disperse the seeds of some very important plant species. Studies show that almost 30-40 percent of tree species in these forests depend on elephants for seed dispersal. Without elephants, many of these plant species would be unable to reproduce.

Many of these trees depend on elephants for their seed dispersal because the trees produce a large fruit with a thick shell. The shells surrounding the fruits may be a quarter of an inch thick, and only elephants are strong enough to break it open. The pits pass through the elephant's digestive track unharmed, and the seed is deposited with the animal's dung, an excellent source of fertilizer.

Elephants are key to maintaining these habitats and ensuring the long-term survival of other organisms that are adapted to live in these places!

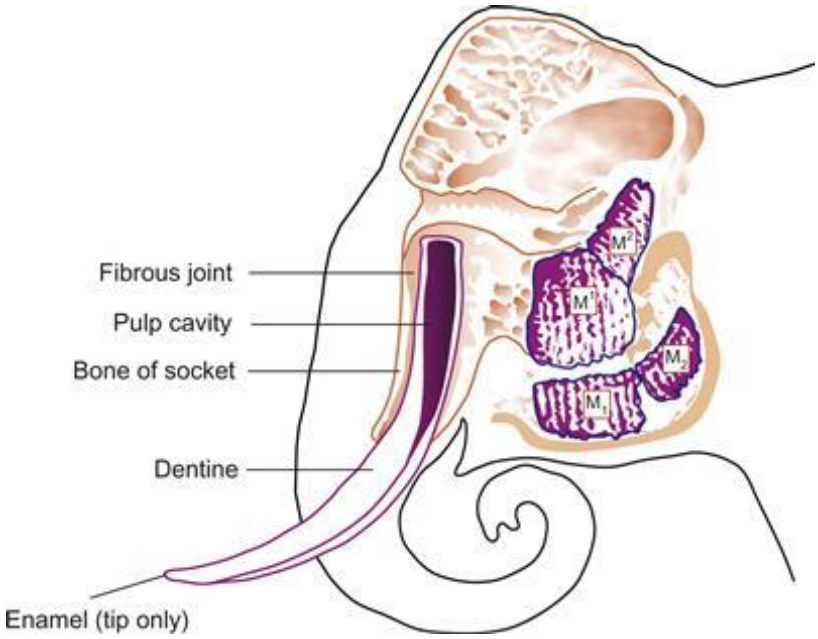
About the teeth of an elephant

Our elephant tooth biofact

Diagram showing the structure of an elephant tusk embedded in the upper jaw. Note that only **one pair of grinding molar teeth are ever present on each side of the jaw** (labeled M^1 in the upper jaw and M_1 in the lower jaw). When they are worn down, they are replaced from behind by the next pair of molar teeth (labeled M^2 in the upper jaw and M_2 in the lower jaw). **When the sixth and last molar teeth have been worn down the elephant would die.**

The tusks of African elephants are larger than those of Asian elephants. Tusks can grow up to a rate of 3 mm per week, which, coincidentally, is the same as that for incisors in rodents such as the rat. The difference is that rodents continually wear their teeth away as they use them for gnawing, so that the incisor remains more or less the same size throughout life. Rodents also live only for a year or two, compared with 50 years or more for an elephant, which does not wear its tusks away.

Source: http://pocketdentistry.com/2-tusks-and-ivory/



Conservation Connection

Elephants play a vital role in the ecosystems they inhabit. As a "keystone species" elephants modify the habitat around them, allowing hundreds of species of animals and plants to survive and thrive! Currently, both the African and Asian species of elephants are on the Endangered Species List. The loss of these species could trigger a cascade of extinctions, resulting in the loss of the local residents that depend on elephants for survival.

Today elephants face many threats, largely due to human related activities such as habitat loss, human encroachment, poaching, and harm from human-elephant conflict. The conservation and survival of elephant species depends on the support from the local communities who co-exist with these animals. Often elephants are negatively viewed by the local communities who inhabit the area. Elephants are known to cause structural damage and demolish whole fields of crops in a single night**.** To save elephants it is important that the needs and frustrations of local people are addressed and understood.

By partnering with the IEF, the Cincinnati Zoo is helping to promote positive human-elephant experiences between elephants and local communities to ensure the long-term survival of these animals. The Sumatran Elephant Conservation Center (ECC) and Conservation Response Units (CRU) work tirelessly to protect elephants and conserve their natural habitat. They also have a heavy focus on meeting the needs of the local communities and providing conservation education to help people see elephants as a valuable resource, thereby gaining greater support and protection. The IEF not only benefits elephants and the species that depend on them, but also provides protection and economic security to local communities.

Zone Set-up: Assign one person as Volunteer A and one person as Volunteer B. Feel free to switch roles as often as you both like throughout your shift. Volunteer A should be positioned farther away from the cart to engage visitors in conversation closer to the habitat and can direct them towards Volunteer B. Volunteer B will be stationed at the cart with the activity materials. Make sure you count guest attendance if during your shift.

Ending the Activity:

Find out if there is any more information they'd like to know about our habitat and our elephants. Make sure to remind guests about other cool places to visit or things to see while they are here! Find out what the guest is interested in and make an appropriate suggestion. Make sure to thank them for stopping by!

Zone Clean-up:

Put all Biofacts and all other materials inside the cart. Record your attendance on the attendance sheet and make a note if any materials are missing. Please report any cart issues on the clipboard in the volunteer room.

Appendix I – Quick Elephant Fact Reference

FACT FILE

Height: Up to 10 ft

Weight: Up to 11,000 lbs

Lifespan: About 45 yrs

Habitat: Forest

Diet: Grasses, leaves, barks, and fruits

Risk Status: Species at Risk (IUCN—Endangered)

SPECIES@RISK

Species Survival Plan®

The Elephants

NAME	Birth and Place	Acquired	Identifying Characteristics
	The Girls		
Schottzie	12/15/1975 – Copenhagen Zoo, Denmark	12/12/1978	Largest of the cows; known as Princess Schottzie II; Sort of the "boss elephant" of all the females (if she wants it, she takes it from the others); will trumpet when asked by the caretakers

Jati	4/1988- Malaysia	1/29/1991	Smallest of the cows; very hairy; gave birth to the first elephant born at the Cincinnati Zoo on 3/15/1998; when visitors see a female with our male, it is always Jati
Mai-Thai	5/1973- Thailand	2/14/1974	Middle-sized of the cows; hole in the bottom of left ear; no long tail hair (Jati bit the end of her tail about 11 years ago); she did all rides/personal appearances outside the park; elephant painter; when happy, will make a sound by flipping the end of her trunk
The Bull			
Sabu	1/1989- Malaysia	1/29/1991	Only male, has large tusks; Left Cincinnati in 1998 then came back in 2007; he is "left dominant", his left tusk is shorter than his right

Musth Facts

Musth- a normal periodic condition in bull (male) elephants, characterized by a large rise in reproductive hormones, temporal drainage, and dribbling/trickling of urine.

Musth is not a disease or ailment, and therefore there is no "cure." If a bull elephant goes into musth, it actually means he is healthy.

Testosterone levels in an elephant in musth can be as much as 6 times greater than normal.

This rise in hormones causes the animal to feel more restless, aggressive, and frequently acts unpredictable.

Bull elephants in musth lose their appetite, and it is not uncommon for a bull to lose up to 1000 pounds by the end of the musth cycle. This is completely normal and quickly returns to his normal weight.

Musth typically lasts between 2-3 months and occurs in three stages – a 3-4 week pre-*musth* condition, a 4-5 week peak *musth*, and a 4-5 week post-*musth* condition.

Elephants in musth discharge a thick tar-like secretion called temporin from the temporal ducts on the sides of the head. Temporin contains proteins and lipids.

The elephant's aggression may be partially caused by a reaction to the temporin, which naturally trickles down into the elephant's mouth. Another contributing factor may be the accompanying swelling of the temporal glands. Elephants sometimes try to counteract this pain by digging their tusks into the ground or pushing on trees.

There is no definitive reason why bulls go into musth, but some theories prevail:

1. Expelling of other bulls from an area in order to maintain territory.
2. Giving a physically weaker bull strength and energy to reproduce/gain dominance.

Here is some information regarding the chart:

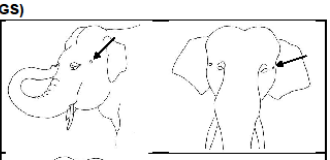
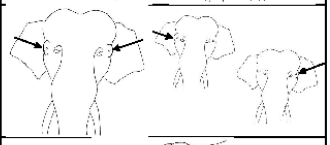
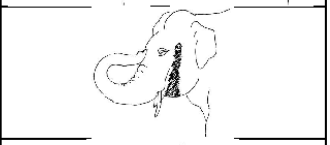
The goal is to provide a communication tool to empower management expertise for consistent communication of musth signs. This pictorial scale is for tracking and communicating musth signs. **This scale includes only the visible signs**; it does not include the behavioral signs, which are critical in assessing the onset and intensity of musth. The pictorial definitions can be used by speakers of any language in both western facilities and range countries. The text descriptions are written in simplified English that can be translated to other languages. This scale and the descriptions have been approved by the Elephant Managers Association Board of Directors, a team of veterinarians at Chiang Mai University who work closely with mahouts throughout Thailand, and the Oregon Zoo elephant staff.

The Oregon Zoo and other western facilities use some variation of the scale proposed here. **The biggest difference is that western facilities likely do not include the category 5 (TGS/UD #5) showing staining after draining and dribbling have stopped, which indicates post-musth.** This post-musth sign was requested by the team of Thai vets. In Asian range countries where animals are moved between facilities, one facility or a mahout may receive a post-musth bull and they need to know for safety reasons that the bull has just come out of musth. In addition, any indication of musth is important in Human Elephant Conflict (HEC) situations.

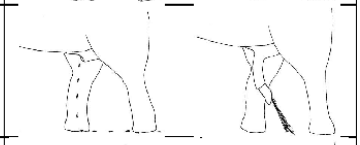
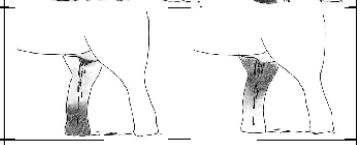
Asian Elephant Musth Scale – visible signs

Visible sign	Nonmusth	Pre Musth	Musth	Post Musth
TGS	0	1	2-4	TGS-5
UD	0	0	1-4	UD-5

Temporal Gland Secretion (TGS)

0	No visible TGS	
1	Swollen temporal gland area Opening may be enlarged May not be symmetrical	
2	Temporal gland area wet TGS less than 1/4 way to jawline	
3	TGS between 1/4 and 3/4 way to jawline	
4	TGS from 3/4 to all the way to jawline	
5	TGS staining is dried (lighter color than wet)	

Urine Dribbling (UD)

0	No visible UD Urination occurs normally (with penis fully extended)	
1	Occasional drops (without penis extended) Urination occurs with penis partially extended	
2	Regular drops and/or some steady streams (without penis extended) Urination occurs with penis less extended less than #1 Legs (upper or lower) a little wet or stained with urine	
3	Steady streams from the opening and some dribbling from the skin of the sheath (without penis extended) Penis does not drop to urinate Legs (upper or lower) half wet or stained with urine Skin around sheath wet with urine	
4	Heavy steady streams falling from the opening and skin of the sheath so the stream looks wider than #3 (without penis extended) Penis does not drop to urinate Legs entirely wet with urine Skin around sheath wet with urine	
5	UD staining is dried (lighter color than wet)	

This musth scale was adapted from previous work by:

Jainudeen, M. R., C. B. Katongole and R. V. Short (1972). "Plasma testosterone levels in relation to musth and sexual activity in the male Asiatic elephant, *Elephas maximus*." Journal of Reproduction and Fertility **29**: 99-103

Poole, J. H. (1987). "Rutting behavior in African elephants: the phenomenon of musth." Behaviour **102**: 283-316

Scott, N. L. (2002). "Chemical communication and musth in captive male elephants", Portland, OR (USA): Portland State University

Somgird, C., S. Sripiboon, S. Mahasawangkul, K. Boonprasert, J. L. Brown, T. A. Stout, B. Colenbrander and C. Thitaram (2016). "Differential testosterone response to GnRH-induced LH release before and after musth in adult Asian elephant (Elephas maximus) bulls." Theriogenology **85**(7): 1225-1232

Contacts:

Shawn Finnell (shawn.finnell@oregonzoo.org)

Sharon Glaeser (sharon@pdxwildlife.com)

Elephant Managers Association

PDX wildlife

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All Applicants Must Complete

1. Name and address where you wish the permit to be mailed, **if different from physical address**. If you would like expedited shipping, please enclose a self-addressed, pre-paid, computer-generated, courier service airway bill. If unspecified, all documents will be mailed via regular mail through the U.S. Postal Service.

   A Fedex airwaybill will be included in the documents uploaded for this application, labelled 1. Fedex return label.

2. Point of contact if we have questions about the application (name, phone number, and email).

   Mary Noell, Curator of Animal Data and Logistics
   Ph: 513-569-8225; Email: mary.noell@cincinnatizoo.org

3. Have you or any of the owners of the business (if applying as a business, corporation, or institution), been assessed a civil penalty or convicted of any criminal provision of any statute or regulation relating to the activity for which the application is filed; been convicted, or entered a plea of guilty or nolo contendere, for a felony violation of the Lacey Act, the Migratory Bird Treaty Act, or the Bald and Golden Eagle Protection Act; forfeited collateral; OR are currently under charges for any violation of the laws mentioned above?

   ☑ No ☐ Yes

   If you answered "Yes" to Question 3, provide: a) the individual's name; b) date of charge; c) charge(s); d) location of incident; e) court, and f) action taken for each violation. Please be aware that a "Yes" response does not automatically disqualify you from getting a permit.

Proposed Activity

- ■ Import
- ☐ Export
- ☐ Re-export (e.g. export of a specimen that was previously imported into the United States)

4. The **current** location of the samples (if different from the physical address provided):

Name:	Dublin Zoo
Address:	Phoenix Park, North Road
City:	Dublin D08 WF88
State/Province:	Ireland
Postal Code:	Contact: Miguel Bueno, General Curator
Country:	Email: miguel.bueno@dublinzoo.ie

5. **Recipient/Sender:**

- If **export or re-export**, provide name and **physical address** of the recipient in the foreign country.
- If **import**, provide name and **physical address** of the exporter/re-exporter in the foreign country.

Name: Dublin Zoo
Address: Phoenix Park, North Road
City: Dublin D08 WF88
State/Province: Ireland
Postal Code: Contact: Miguel Bueno, General Curator
Country: Email: miguel.bueno@dublinzoo.ie

6. Information on the type of **biological samples** involved in the import/export/re-export, provide for **each species** (you may use the table located below):

a. Scientific name (genus, species, and, if applicable, subspecies);

b. Common name;

c. Number and type of sample(s) (e.g. 10 blood samples, ear clips, etc.)

d. Source (wild or captive-born)

e. Approximate date of collection (MM/YYYY)

f. Description of packaging (vials, slides, envelopes, etc.)

g. Total # of all samples in shipment.

a. Scientific name (genus, species, and, if applicable, subspecies)	b. Common Name	c. Number & type of sample/part	d. Wild or Captive born	e. Approximate date of collection (mm/yyyy)	f. Description of packaging (vials, slides, envelopes, etc)
Elephas maximus	Asian Elephant	2 samples of serum - adult female "Anak"	Captive born	09/2023	vials
Elephas maximus	Asian Elephant	3 saline trunk wash samples (saliva) - adult female "Anak"	Captive born	09/2023	50ml sterile specimen containers
Elephas maximus	Asian Elephant	2 samples of serum - adult female "Yasmin"	Captive born	09/2023	vials
Elephas maximus	Asian Elephant	3 saline trunk wash samples (saliva) - adult female "Yasmin"	Captive born	09/2023	50ml sterile specimen containers
Elephas maximus	Asian Elephant	2 samples of serum - young male "Sanjay"	Captive born	09/2023	vials
Elephas maximus	Asian Elephant	3 saline trunk wash samples (saliva) - young male "Sanjay"	Captive born	09/2023	50ml sterile specimen containers
Elephas maximus	Asian Elephant	2 samples of serum - young male "Kabir"	Captive born	09/2023	vials
Elephas maximus	Asian Elephant	3 saline trunk wash samples (saliva) - young male "Kabir"	Captive born	09/2023	50ml sterile specimen containers
				g. TOTAL # of all samples in the shipment:	20

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Source of Specimen

7. For **each biological sample taken from a captive-born/captive hatched animal(s)**, provide a signed and dated statement from the breeder or appropriate documentation (e.g. Species 360 report) that includes the following:
   a. Scientific name (genus, species, and *if applicable*, subspecies),
   b. Common name,
   c. Name and address of the facility where the animal was bred and born;
   d. Birth/hatch date (mm/dd/yyyy),
   e. Identification information (studbook #, microchip, leg band, etc.),
   f. Name and address of facility where the parental stock is located; and
   g. A statement from the breeder that the animal was bred and born at the breeder's facility (including the facility's name and address), and
   h. If not the breeder, documentation demonstrating the history of transactions (e.g., chain of custody or ownership of the sample(s), *if applicable*).

   Please see uploaded breeder's statements – all labelled "7. Breeders Statement"

8. **For each biological sample taken from an animal in the wild**, provide:
   a. Scientific name (genus, species, and *if applicable*, subspecies),
   b. Common name,
   c. Specific location (e.g., county, state, province, country) where the samples were taken from the wild,
   d. The name of the individual(s) who collected the animal/samples and their authorization to do so including (but not limited to) copies of foreign and domestic (Federal, State, and/or Tribal) government collecting permits, licenses, contracts, and/or agreements.
   e. Method of collection: sampling protocol, approximate length of time held in captivity, any injury and/or mortality experienced during collection, transport, or holding;
   f. Information related to any remuneration, either financial or in-kind, provided for acquiring the sample(s);
   g. Efforts to use captive specimens (e.g., captive-born, captive-held) in lieu of taking samples from wild animals.

   n/a, the samples were not collected from animals in the wild

9. For each biological sample being re-exported (e.g., exporting a specimen that was previously imported into the United States), provide:
   a. A copy of the canceled CITES export or re-export document issued by the appropriate CITES office in the country from which the wildlife was imported;
   b. A copy of your Declaration for Importation or Exportation of Fish or Wildlife (Form 3-177), cleared by USFWS Office of Law Enforcement.
   c. A copy of the ESA permit that authorized the original import.
   d. If you did not make the original import, please provide documentation outlining chain-of-ownership since import, including:
      i. A copy of the importer's CITES, ESA, and declaration documents (a, b, & c above) and,
      ii. Subsequent invoices (or other documentation) showing the history of transactions leading to your ownership of the sample(s) after import (provenance).

   n/a, the samples are not being re-exported.

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Description and Justification For Requested Activity

10. Describe the purpose of the scientific research and include:

a-b. The Cincinnati Zoo & Botanical Garden requests a permit to import serum and trunk wash samples (saliva) from four elephants that are pending to be being imported at the same time (as per import permit application CS0084318). These samples will be used to run an EEHV test on the elephants upon their arrival into the United States.

Elephant Endotheliotropic Herpesvirus (EEHV) is one of the leading causes of death for Asian elephant calves in human care and in the wild. There is currently no vaccine for the disease so the best line of defense is to collect blood and saliva samples to test for the presence of EEHV in an animal. Currently, both the assessment of EEHV infections of individual animals and the assessment of herd prevalence are largely performed using Polymerase chain reaction (PCR) tests on blood samples that only measure when an animal is actively shedding the virus and becoming sick.

Recently, Dr. Paul Ling of the Baylor College of Medicine in Houston, TX has begun testing a new serology test that would allow for faster and more accurate identification of EEHV antibodies in an elephant. Currently this is the only lab capable of conducting this test. Specifically, the luciferase immunoprecipitation system (LIPS), combined with the genomic sequences of the viruses, are being trialed to more precisely identify the presence of active or latent virus in an individual animal. Baylor's EEHV1-specific LIPS assay should be useful for assessing the vulnerability of elephant calves to infection with different EEHVs. The ability to screen for EEHV immune status in elephant calves should have a major impact on the management of these animals and significantly increase their chances for survival.

Cincinnati Zoo practices preventive medicine for all of its animals. The elephants arriving from Dublin will be vulnerable to EEHV activation due to the stress of transport and adjusting to a new environment. Despite measures taken to reduce this stress, it might be many months before they return to participation in husbandry behaviors such as voluntary blood draw. The Baylor serology test requires 2 serum samples taken 6 months apart in order to assure accuracy of results. The ability to run this test upon the arrival of the elephants using serum and saliva samples collected from the elephants just prior to import greatly improves our ability to begin preventative health care as soon as possible.

Please see webpage from embedded link for further information on Baylor College of Medicine's EEHV Project

c. Detailed information on sampling methods including:

i. who will be taking the samples

The samples will be collected by the Dublin Zoo vet team: Niamh McGill MVB, MRCVS; Frank O'Sullivan MVB, MSc, MRCVS; Emma Flynn, DVM

ii. equipment and methods used

For blood collection: The elephant has been trained to voluntarily stand adjacent to the habitat wall and present it's ear. Blood is collected from an ear vein using a butterfly catheter attached to either a syringe or vacutainer tube depending on the amount and sample of blood needed.

Trunk Wash: The elephant is trained to voluntarily present it's trunk and allow for saline to be instilled into both sides of the trunk. A total of 60mL of saline is instilled into the trunk by hand using a catheter- tip syringe. The elephant then holds the trunk up above it's head for 30-60 seconds. The trunk is lowered and the elephant blows into a plastic bag to collect the saline and debris from the trunk.

i. measures taken to prevent injuries and mortalities during collection

Trunk wash and blood samples are collected using standard means as described in Cii. with trained, voluntary participation from the elephants. Elephants are trained using protected contact protocols.

ci. A copy of the study's Institutional Animal Care and Use Committee (IACUC) form (if applicable),
cii. Peer-reviewed scientific papers published from this research (if applicable),
ciii. An explanation of whether similar research has already been conducted or is currently being conducted.

n/a, this application is requesting the import of serum and saliva samples for testing for EEHV and not for scientific research.

11. Please provide a detailed description on how the proposed activities will **enhance or benefit the wild population within its native range** (e.g., direct or indirect **conservation efforts**) and provide documentation (e.g., signed memorandums of understanding) demonstrating your commitment to supporting the program and how the program contributes directly to the species identified in your application.

The Cincinnati Zoo & Botanical Garden (CZBG) has provided support for conservation efforts with wild elephants for many years. Since 2004, the CZBG has made an annual contribution to the International Elephant Foundation (IEF) in support of the Elephant Conservation Response Units program on the island of Sumatra. In total, the CZBG's support of this program has exceeded $91,000 with $40,000 of that provided over the past five years. These CRUs consist of trained mahouts and their elephants that work together in local communities surrounding the forests to mitigate elephant-human conflict. The CRUs monitor elephant numbers in the national parks, educate local people about elephants, provide advice on how to avoid conflict with wild elephants, encourage safety measures to keep communities out of harms way when elephants are in the area, and patrol for poachers or other illegal activity in the forests.

Utilizing a percentage of funds from our Elephant Extravaganza Behind The Scenes tours, we have raised an additional $59,650 for the support of keeper identified elephant conservation projects. For the last five years, Asian Elephant Support (AES), Baylor College of Medicine's EEHV project, and the IEF have received these funds. In addition to the IEF support listed above, the elephant department has contributed $39,900 to their important work. AES has received $9,200 from the CZBG's elephant department and been recognized as a valued supporter. They identify and support collaborative projects in situ that seek to resolve issues of human-elephant conflict where both human and elephants can benefit from the solution. Baylor's EEHV project has made a huge impact on the elephant community by creating a test for the early diagnoses and tracking of EEHV, identifying different strains of the virus, and currently working on creating a vaccine that could help saves hundreds of young elephants. CZBG has proudly contributed $32,150 to this project over the years.

CZBG continues to be a leader across zoos and aquariums as a Steering Committee member of the AZA SAFE Asian Elephant Program. Our staff are partnering in innovative efforts to document all Asian elephants across Sumatra to enable the monitoring of their movements. The zoo is also a supporter and active partner of Asian Nature Conservation Foundation (ANCF) in India, giving $20,000 for GPS collars in 2019 and 2020. CZBG partners with this leading conservation foundation in India where scientists are researching and protecting 60% of the world's remaining Asian elephants. As our state-of-the-art Elephant Trek habitat is being built here in Cincinnati, CZBG staff are developing innovative projects with ANCF to get more of our audiences involved in Asian elephant conservation. CZBG is partnering with ANCF to track the movement of Asian elephants with new GPS collars to discover where these secretive herds trek when they leave the national park boundaries during the rainy season when the parks flood. Mapping the elephants' paths and the essential forested corridors through community lands and tea farms will help our partners to guide the communities to maintain land use that is elephant-friendly.

In addition to the direct support of elephant conservation discussed above, the Zoo also supports Rhino Protection Units (RPUs) and the Sumatran Rhino Sanctuary on the island of Sumatra. Although the focus of these programs is to protect and breed the rhinos, because there are elephants in the same national park, the RPUs are protecting wild elephants, tigers, etc., as well during their patrols. Over the past five years, the CZBG has provided over $100,000 through the International Rhino Foundation in support of Indonesia's rhino conservation efforts.

The Cincinnati Zoo & Botanical Garden has also contributed to elephant research and conservation efforts for many years. We do our best to accommodate as many research requests as possible. In the past, we participated in the AZA Elephant Welfare Project and long-term, ongoing studies of TB and EEHV in elephants. In addition, CREW served as the U.S. base for an elephant semen cryopreservation study led by our Canadian colleagues that recently resulted in a scientific paper describing a field-friendly technique for processing and cryopreserving Asian elephant semen. More recently we participated in a study led by scientists at the University of Alabama and the Smithsonian's Conservation Biology Institute in which elephant body condition, metabolic state and fat deposits were assessed. Additionally, we provided samples to a scientist at the University of Missouri who is studying the genetic and genomic diversity of Asian elephants in an attempt to develop assays for better monitoring wild elephants and identifying poaching victims.

Please see uploaded AZA Elephant SAFE Action Plan, labelled 11, and follow the embedded links for International Elephant Foundation, Asian Elephant Support, Baylor College of Medicine's EEHV project and Asian Nature Conservation Foundation for further information.

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Technical Expertise & Authorizations

12. CV or resume outlining the technical experience of the researchers and field technicians collecting the samples, as it relates to the proposed activities, including experience with other similar species.

Since 2018 Frank O Sullivan with Emma Flynn and Niamh Mcgill have been providing veterinary services to Dublin zoo.
During that time, elephant health care and disease prevention has been a core activity of the veterinary team in collaboration with the keepers including the following;

· Clinical observations and consultations (for EEHV and other disease and health issues)
· Temperature check
· Weighing
· Foot care
· Trunk wash (Tb monitoring)
· Blood draws
· Fecal testing
· Training; including preparation for moves
· Microchipping
· Nutrition review; including body condition scoring
· Welfare assessments
· Accompanying elephant moves

Frank O'Sullivan MVB, MSc (Food Sc), MRCVS is a member of the vet team at Dublin Zoo graduating from University College, Dublin in 1983. He is a part time lecturer at Technological University Dublin delivering courses in animal affairs, zoonoses, welfare and food safety systems. He has achieved the following post graduate qualifications:

1. Certificate in teaching and learning from the Royal veterinary College London 2020.
2. Diploma in Veterinary Practice Management from University College Dublin in 2014.
3. Master of Applied Science (Food Science), graduating from University College Dublin in 1999.

Niamh McGill MVB, MRCVS is a member of the vet team at Dublin Zoo graduating from University College, Dublin in 2008. She is currently completing her thesis in part-fulfilment of an MSc in Conservation Medicine through the University of Edinburgh. She has been involved in in-situ conversation work with Asian Elephants in Thailand, spending two months working with both the Helping Asian Elephant Foundation and Think Elephant International. Her postgraduate undertakings are listed below:

1. MSc of Conservation Medicine through the University of Edinburgh (near completion)
2. Working towards a Certificate of Advanced Veterinary Practice (Zoological Medicine)

Emma Flynn DVM has been a member of the Dublin zoo veterinary team since 2018. She is currently completing her MSC in Conservation Medicine through the University of Edinburgh. Emma works closely with the elephant team and is an integral part of the training programme. During her time at Dublin zoo, the team has transported a bull elephant to France and 2 sub-adult males to Australia. Her work with the team included blood sampling, TB testing, trunk washing and crate training alongside routine preventative care. She continues her close work with the elephant husbandry team in preparation for the transport of 4 elephants to Cincinnati.

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Shipment Information

13. Please indicate if this is a one-time shipment or if you anticipate needing to import/export/re-export samples multiple times within one year or over multiple years.

    This is a one time shipment.

14. How will the samples be imported or exported (e.g., personally carried or shipped)?

    The samples will be imported with the four elephants that are pending to be being imported at the same time (as per import permit application CS0084318). The samples will be shipped in a cargo plane and accompanied by zoo staff. The shipping container with the samples will be strapped to a shipping pallet alongside the elephant crates.

15. If personally carried, please specify the individual(s) who will be transporting the samples.

    The elephants and samples will be transported by professional, accredited exotic animal transporters via cargo plane. Eric Duning (Cincinnati Zoo Head Keeper of Elephants) will be accompanying the elephants on the plane and will also transport the samples.

All international shipment(s) must be through a designated port. A list of designated ports (where an inspector is posted) is available. If you wish to use a port not listed, please contact the Office of Law Enforcement for a Designated Port Exemption Permit (form 3-200-2).

CITES Appendix I & Marine Mammal Species

- For **export** of a **CITES Appendix I-listed species**, provide a copy of the CITES import permit, or evidence one will be issued by the Management Authority of the country to which you plan to export the specimen(s). In accordance with Article III of the CITES treaty, it is required that import permits are issued before the corresponding export permit.

  n/a, this application is for an import of samples

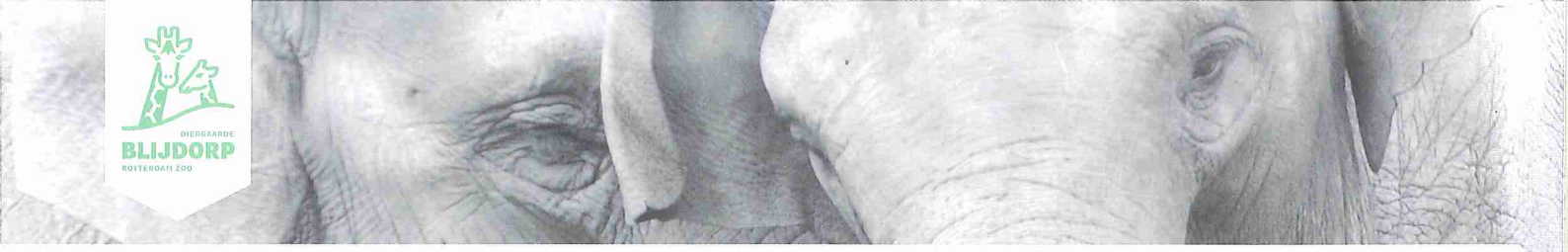
- For **import** of **CITES Appendix-I listed species**, provide information to show the import is not for primarily commercial purposes as outlined in Resolution Conf. 5.10 (Rev CoP15).

  As described in #10, the proposed import of serum and saliva samples collected from captive bred Asian Elephants by the Cincinnati Zoo & Botanical Garden is to test for EEHV only. Once the testing is completed, the samples will be destroyed.

  The Cincinnati Zoo & Botanical Garden (CZBG) is a 501.c.3 not for profit corporation with the mission to "Conserve Nature, Convey Knowledge, Create Adventure." As described in #11, CZBG has donated over $100,000 over the past 5 years for direct support of Asian elephant conservation. This financial commitment to conservation and research projects is in addition to even larger allocations for conservation education and maintenance and breeding of endangered species at the Zoo - many of which are in managed breeding programs including SSPs and PMPs.

- For import of CITES Appendix-I marine mammal samples, please provide a copy of your FWS or NMFS Marine Mammal Protection Act (MMPA) permit or authorization.

  n/a, this application is for samples from Asian elephants and not for marine mammals.



BIJZONDERE ONTMOETINGEN

CERTIFICATE OF CAPTIVE BIRTH

To Whom It May Concern:

This is to certify that the following females 0.2 Asian Elephants, *Elephas maximus,* were born at the Diergaarde Blijdorp Rotterdam Zoo, Blijdorplaan 8, 3041 JG Rotterdam, Netherlands.

1. House name "Yasmin", transponder# 967.00.00007.58902, ZIMS GAN 17742980 was born November 25, 1990.

   Parents locations:
   - sire "Ramon"/GAN 24931937
     Diergaarde Blijdorp Rotterdam Zoo
     Blijdorplaan 8
     3041 JG Rotterdam
     resided there until his death on April 24, 1998
   - dam "Irma"/GAN 10257473
     Diergaarde Blijdorp Rotterdam Zoo
     Blijdorplaan 8
     3041 JG Rotterdam
     Netherlands

2. House name "Anak", transponder# 967.00.00009.07087, ZIMS GAN 17742981 was born July 26, 2003.

   Parents locations:
   - sire "Alexander"/GAN MIG12-29966045
     Miejski Ogród Zoologiczny w Lodzi Sp. z o.o.
     Ul. Konstantynowska, 8/10
     Lódz, Lódzkie 94-303
     Poland
   - dam "Yasmin"/GAN 17742980
     Dublin Zoo
     Phoenix Park, North Road
     Dublin D08 WF88
     Ireland

Signature _____ Date 25-10-2021

Rotterdam ZOO

Stichting Koninklijke Rotterdamse Diergaarde
Royal Rotterdam Zoological & Botanical Gardens
Postbus 532, 3000 AM Rotterdam

T 0900 1857 (10 cent per minuut)
www.diergaardeblijdorp.nl
KVK NR.: 41125139

IBAN: NL30 RABO 0356 3168 90
BIC: RABONL2U
BTW NR.: 002772036 B 01

CERTIFICATE OF CAPTIVE BIRTH

To Whom It May Concern:

This is to certify that the following males 2.0 Asian Elephants, *Elephas maximus,* were born at the Dublin Zoo, Phoenix Park, North Road, Dublin D08 WF88.

1. House name “Kabir”, transponder# 988.00.40000.17531, ZIMS GAN ZLG17-03907 was born May 15, 2017.

   Parents current locations:

   - Sire “Upali”/GAN 6297841
     Le Pal, Parc Animalier
     Dompierre sur Besbre
     St Pourçain-sur-Besbre, Allier
     F-03290 France

     Dam “Yasmin”/GAN 17742980
     Dublin Zoo Phoenix Park, North Road
     Dublin D08 WF88, Ireland

2. House name “Sanjay”, transponder# 988.00.40000.17532, ZIMS GAN ZLG18-03997 was born February 10, 2018.

   Parents current locations:

   - Sire “Upali”/GAN 6297841
     Le Pal, Parc Animalier
     Dompierre sur Besbre
     St Pourçain-sur-Besbre, Allier
     F-03290 France

     Dam “Anak”/GAN 17742981
     Dublin Zoo Phoenix Park, North Road
     Dublin D08 WF88, Ireland

Miguel Bueno
General Curator
Dublin Zoo

Signature

20th October 2021

Date

Asian Elephant SAFE Program

Action Plan 2019-2022

Submitted: July 1, 2019

Program Leader: Adam Felts

Program Co-Leader: Nick Newby

with the Elephant TAG, International Elephant Foundation, EEHV Advisory Group

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Program Goals

The goal of the AZA Asian Elephant SAFE Program (AeSP) is to enhance and assist Asian elephant conservation efforts within the 13 range countries and to report and celebrate elephant conservation efforts within AZA. The IUCN Red List of Threatened Species indicates that the Asian elephant is endangered, and is included in CITES Appendix I, indicating that they are threatened with extinction [1]. Asian elephants have declined by nearly 50% over the last 3 generations, from more than 100,000 animals to, by some estimates, less than 40,000 animals [2]. With 20% of the world's human population living in or near the present range of the Asian elephant, 30% of the Asian elephant population remaining in human-managed settings [3], and the continued destruction of their habitat; human interactions in the region are of serious concern. Therefore, the AeSP will strive to ensure this species' survival by concentrating efforts on the management strategies of elephants in human-care, realizing these populations have the potential to play a role in the survivability of the Asian elephant.

Asian Elephant SAFE Objectives

Utilizing the strengths and expertise of the dedicated professionals at AZA institutions and AZA partners, the AeSP aims to play a strategic role in contributing to elephant conservation through:

1. **Engaging communities with elephants in human-care, first by enhancing the current registry of human managed Sumatran elephants through a layered registry of all elephants utilizing:**
    1. Elephant recognition technology
    2. Already implemented microchip technology
    3. DNA mapping of individual elephants
    4. Utilization of a robust database system for tracking and documentation
2. **Supporting science of the treatment and management of EEHV in Asian elephant range states:** The AeSP will encourage fundraisers amongst AZA institutions directed towards supporting the needs of range states in the treatment and management of EEHV. AeSP will engage the elephant care professionals within AZA institutions to:
    1. Develop framework and guidance information for fundraisers directed at supporting EEHV lab development, research, and treatment in Asia
    2. Engage elephant care professionals and encourage participation through distribution of fundraiser materials
    3. Provide guidance in fundraiser hosting
    4. Collaborate with the EEHV Advisory Group and International Elephant Foundation to determine greatest needs in range states (Currently, this is the purchase of anti-viral medications, Polymerase Chain Reaction Machines for viral detection, and laboratory enhancements for testing)
    5. Direct and track all funds raised through the International Elephant Foundation in collaboration with the EEHV Advisory Group
3. **Developing education materials, tools kits, and social media materials to introduce to all AZA institutions, which then can be used to educate AZA visitors and social media followers about the Asian elephant.**

Elephants in Human-Care

It is estimated that 30% (14,142 individuals) of all elephants in Asia are in human-care [4]. By supporting these populations, the AeSP will have a direct impact on the global Asian elephant population and the conservation of the species. Currently elephant registry programs of elephants in human-care are inconsistent across range states leading to difficulties in the management and monitoring of cross border movement. Specifically, the number of animals, distribution/demographics, and genetic profiles are incomplete or insufficient to support best management practices and monitoring of these populations. This topic was a priority at the 2006 Range States Meeting, and again in 2017 with the signing of the Jakarta Declaration for Asian Elephant Conservation (2017 Asian Elephant Range State Meeting Report (AeRSM) [4]), as well as Decision 17.217 of CITES (Table A). Using the Jakarta Declaration for Asian Elephant Conservation as the recovery plan, the AeSP will first participate in building a government-supported registration database as a starting point to have a direct impact on the elephants in human managed situations. Ultimately, this will create opportunities for AeSP to be a part of critical conversations, such as breeding, welfare, and other aspects of elephants in human-care. This registry will be a multi-layered approach using physical identification based on photographs, microchipping, and DNA, which collectively will be compiled into a database accessible through a government supported; user-friendly technology that will ensure each animal is identifiable and verifiable. This effort will lead to a well-documented, robust registration system for elephants in human-care in Indonesia, which will then be introduced and transferred to other Asian elephant range countries. This will give governments and stakeholders the ability to monitor the number and demographics of their populations in human-care, develop breeding programs, track individuals, and ensure legal sourcing of elephants transferred in and out of range states. Through range-wide participation of a robust and dependable registry of elephants in human-care, a strong registry will:

- Ensure that the trade and cross border movement of live Asian elephants are conducted in accordance with national and international guidelines (i.e., CITES);
- Support law enforcement efforts to ensure the legal trade of Asian elephants;
- Facilitate individual country's governance of their elephant population;
- Support local capacity building through the transfer of technology and skills;
- Support the population management of Asian elephants throughout their range; and
- Potentially be used as forensics tool for identification of illegally trafficked parts and derivatives.

Table A. Conservation Priority

Jakarta Declaration for Asian Elephant Conservation Cooperatively develop captive Asian elephant registration programs including where appropriate microchipping and/or DNA based systems and ensure cross border movements of captive Asian elephants are in compliance with all national and international laws and regulations; Ensure the welfare of captive elephants is maintained at all times.
Decision 17.217 of CITES All parties involved in the trade of live Asian elephants are encouraged to: a) Undertake, as necessary, investigations into the illegal trade in live Asian elephants, and endeavor to enforce and where necessary improve, national laws concerning international trade in specimens of Asian elephants with the explicit intention of preventing the illegal trade in live Asian elephants; b) Develop strategies to manage captive Asian elephant populations; c) Ensure trade in, and cross border movements of live Asian elephants are conducted in compliance with CITES, including the provisions in Article III, paragraph 3, for Asian elephants of wild origin; **d) Collaborate in the development and application of a registry system for registering, marking and tracing live Asian Elephants, requesting as necessary assistance from experts, specialized agencies of the Secretariat and;** e) At the request of the Secretariat, provide information on the implementation of this Decision for reporting by the Secretariat to the Standing Committee.

Understanding that this is an enormous undertaking, strategic partners from North America and Asia gathered in February of 2019 to begin to formulate a path forward. The group agreed that Indonesia would be the ideal Asian elephant range country to serve as a pilot program for a registry model because:

- the Indonesian government has already started a registry program;
- the Indonesian government has jurisdiction over all elephants in Indonesia; and
- Indonesia's natural heritage includes the critically endangered Sumatran elephant (IUCN Red List).

The vision of the project is to build upon the existing registry process in Indonesia to ultimately facilitate the development of a global registry and identification process for Asian elephants, in human-care, in all 13 range states. The initial goal is to work with the Indonesian government to enhance their existing registry and create a standardized process as a model for other range states using four strategic components. The AeSP will work alongside Indonesian experts to enhance the existing registration program by identifying and documenting all Indonesian elephants, in human-care, through photo identification, microchipping, DNA analysis of each individual elephant, and inputting all relevant information into a proven database system. The database will contain all pertinent information that will allow for easy processing and confirmation of each individual elephant's identity using existing technology. With the help and guidance of the Indonesian Government's Ministry of Environment and Forestry (MoEF), the AeSP will formalize this process for future use in other Asian elephant range states with elephant populations, human-care, with the intent of transferring the process and technology to all interested range state governments.

As Indonesia will be the country for this pilot program, AeSP will specifically focus on the Sumatran elephant, which was elevated in 2012 to a critically endangered subspecies according to IUCN Red list (WCS, Indonesia). The Sumatran elephant is a protected subspecies in Indonesia with the highest level of government and legal protection status. In Indonesia, all protected species, including the Sumatran elephant, legally belong to the government, meaning private ownership is not allowed. In terms of laws and protection status, there is no difference between captive and free ranging wildlife. In the central Government of Indonesia, the agency in charge of wildlife is the National Agency for Forest Protection and Nature Conservation (KSDAE), and in the different provinces, this is represented by provincial Agencies for Nature Resource Conservation (BKSDA).

The AeSP is coordinating efforts with the KSDAE in Indonesia, with Wahdi Azmi (Ache Center for Wildlife Studies) as the project coordinator. To ensure proper DNA testing (for the purposes of the registry), the AeSP is closely cooperating with the Centre for Wildlife Studies and faculty in Veterinary Medicine at the University of Syiah Kuala (through Mr. Azmi) in Sumatra, which has already formalized cooperation through a memorandum of understanding. The Center for Wildlife Studies is one of the key local stakeholders as it has a mandate to assist with medical services for wildlife under a memorandum of understanding with the government conservation agency. The Center for Wildlife Studies has a long history in the region, responding to various emergency medical services for wildlife and assisting with more than 20 GPS collar-fitting operations on wild elephants in Sumatra.

For laboratory staff training at the Center for Wildlife Studies, the AeSP is collaborating with colleagues in India to oversee DNA laboratory work in Indonesia. Using the expertise of Dr. Arun Zachariah (Wildlife Disease Laboratory, India), Asian elephant SAFE and Mr. Azmi will coordinate the training necessary for DNA analysis. Dr. Zachariah was the first vet to discover EEHV in wild populations and has worked in India developing DNA finger printing of the Asian elephant, by extracting DNA and amplifying the microsatellite loci. Specifically, DNA profiling will look for polymorphic traits to match together. Although blood samples will be preferred, fecal samples will also be suitable when it is not possible to collect blood. The goal of this is to use the animal's genotype to correlate with the individual profile of the animal, which

will include the microchip number, all information pertaining to that animal, and facial recognition confirmation based on photographs.

Another component of the pilot registry program is the development of facial recognition technology which is being done in collaboration with Dr. Daniella Chusyd and Dr. David Crandall, from the Indiana University-Bloomington, who are creating a field friendly phone application that will allow people to verify the elephant in question. Automatic identification of individual elephants may be possible because of recent advances in Artificial Intelligence (AI) and computer vision. Dr. Chusyd will be directing efforts for this technology through Indiana University-Bloomington. Drs. Chusyd and Crandall have already begun developing similar technology with the African Bush elephant and they will use AI algorithms to identify individual elephants in real-time, and incorporate the software in a downloadable smartphone application. This app, "EleID", will not only identify the individual elephant, but will display pertinent demographic data (e.g., age, life history, known health concerns, etc.). Because cellphones are ubiquitous and portable, EleID will have unimpeded access to populations not only in Indonesia, but across Southeast Asia. This portion of the SAFE program will have a valuable tie in from AZA holding institutions as hundreds-thousands of photos are needed to create the program. Identifying individual elephants is an image matching problem: given a target elephant photo and a library of other elephant images, the algorithm must identify matches. The challenge is images of the same elephant will differ (lighting, pose) and the algorithm must cue on only those features that do not change and are specific to that elephant. Drs. Chusyd and Crandall will adapt their already established approach for human facial recognition and fine-tune it on elephant data. Therefore, the application will be developed, trained, and evaluated using image data from zoo Asian elephants as elephant identities are known and the settings are controlled, allowing for easier collection of diverse photos for each elephant. Dr. Chusyd has traveled extensively to over 20 AZA zoos, where she worked with elephant managers and keepers, veterinarians, and zoo research teams to implement her studies. In addition, she has presented her research at the Elephant Managers Association Conference for the past 3 years. These experiences have allowed her to forge strong working relationships with many of the zoos that will collaborate with us on this project. In fact, she has already started working with the Birmingham Zoo, Indianapolis Zoo, Cincinnati Zoo & Botanical Garden, and Columbus Zoo on elephant facial recognition, collecting over thousands of images of both African and Asian elephants. Recently Dr. Chusyd received a grant from the University of Indiana Bloomington to pursue this technology.

Finally, to ensure the registry database is proven, the AeSP is investigating the use of Species360 as the database for a complete robust registry. Species360 is a non-profit NGO and global leader in wildlife care and conservation. Species360 has mobilized a network of more than 1,200 progressive zoos, sanctuaries, aquariums, universities, and research and governmental members on 6 continents and in 96 countries to improve animal welfare and species conservation. Their members address today's most urgent wildlife issues, including establishing best practices in husbandry, enrichment, medical care, welfare, reproduction, population management, and biodiversity.

Together, Species360 members curate the Zoological Information Management System (ZIMS), the world's most comprehensive open database of knowledge on more than 22,000 species. ZIMS vastly increases what is known about thousands of species, and is instrumental in identifying sustainability strategies for many of the species assessed as vulnerable, endangered, and extinct in the wild. In fact, 14 sites in Indonesia already use this system.

The Conservation Science Alliance (CSA) – led by Species360 - is a science-based consortium of conservation leaders and researchers working together to address some of our most urgent wildlife exploitation problems. CSA researchers provide conservationists with evidence-based findings integrating the full scope of global data, including IUCN Red List, CITES, TRAFFIC, EDGE, AZE, ZIMS, and more. Research led in collaboration with IUCN Species Survival Commission, and others, drives insightful decisions on many levels, from enforcing illegal wildlife trade laws to calculating viability of insurance populations.

On any given day, CSA data scientists apply a unique multi-disciplinary combination of wildlife expertise in biology and veterinary sciences, with sophisticated data science skills to power advances in species conservation. CSA participants have the shared objective to 'use open and freely available data in the fight to stop extinction'. Progressive CSA sponsors and partners include Copenhagen Zoo, the World Association of Zoos and Aquariums (WAZA), and Wildlife Reserves Singapore.

Elephant Endotheliotropic Herpesvirus (EEHV)

The Asian Elephant SAFE program is committed to supporting the science of diseases that affect both *in-situ* and *ex-situ* elephant populations, including the treatment, management and prevention of emerging diseases, such as elephant endotheliotropic herpesvirus (EEHV). EEHV is a herpes virus that causes deadly hemorrhagic disease in young elephants. It is the largest single cause of death of Asian elephants in North America and Europe. Furthermore, at the 3rd Asian EEHV Strategy meeting in Thailand, 124 cases of EEHV hemorrhagic disease had been reported from 11 Range states with an 82% fatality rate (2019 EEHV Meeting, Houston). This disease is affecting Asian elephant populations both in range habitats and in human-care and is negatively impacting the global development of a self-sustaining meta-population as a hedge against extinction. The impact of EEHV on the long-term survival of wild populations is still unknown; however, understanding and finding solutions to diseases such as EEHV is critical for the overall Asian elephant population.

One strategic goal for the AeSP is to tap into the elephant care professionals (ECP) passion for elephant conservation encouraging fundraisers amongst AZA institutions directed towards supporting the needs of Range states in the treatment and management of EEHV. Through experiences the AeSP steering committee understand elephant care professionals at all levels want to have a direct, tangible, and measurable impact on conservation. The AeSP will create tools and provide guidance to elephant care professionals on simple, yet effective, ways to host local fundraising events that will create opportunities for ECPs to have that direct conservation impact on Asian elephants in Range states in relation to EEHV. AeSP will collaborate with strategic partners at the EEHV Advisory Group (EEHV AG) and the International Elephant Foundation to determine the most imperative needs for funding dispersal. Currently, the greatest need is for the purchase of anti-viral medications, Polymerase Chain Reaction Machines for viral detection, and laboratory enhancements for testing. Through small, yet impactful, fundraising events, AZA ECPs can be engaged to make a significant difference for EEHV in Asian elephants.

The EEHV Advisory Group is a group of veterinarians, researchers, and experts from around the world, including from AZA institutions and their partnering universities (e.g., Baylor University and the Houston Zoo). The EEHV Advisory Group collaborates to:

- Recommend husbandry and veterinary management protocols as they pertain to EEHV;
- Develop priorities for diagnostic and research goals between the NEHL Consortium and other research labs;
- Coordinate research sample requests;
- Provide media assistance;
- Assist in the identification of necropsy teams as needed;
- Coordinate EEHV fund-raising;
- Assist with proposal submissions for EEHV research projects;
- Proactively provide elephant-holding institutions and the general public with current EEHV information;
- Continuously update information on EEHV Advisory Group website; and
- Manage EEHV listserves – one for only advisors and one for advisors and the elephant community (elephant managers/keepers, vets, researchers, etc.).

Education Campaign about Asian Elephants in North America

Another goal of the Asian Elephant SAFE program is to raise attention and awareness of guests visiting AZA institutions and to the issues facing Asian elephants. Elephants have long captured the public's attention. Charismatic and charming, they can be found throughout popular culture. A simple Google search about elephant conservation will turn up thousands of results, most of which are focused on African elephants. The AeSP strongly supports conservation of all elephants but feels strongly that attention to the specific plight of Asian elephants needs to be elevated in the public eye. During the 2019 AeSP stakeholders meeting the consensus was that the majority of the American public may not understand the difference between the Asian and the African elephant nor the conservation issues that impact these two distinct species. Educators from multiple AZA institutions communicated that most messages revolved around the poaching of elephants for their tusks. Even though the worldwide Asian elephant population numbers are just 10% (40,000) of the African elephant worldwide population (400,000), the Asian elephant receives less attention in the media and conservation education efforts. Though both species face many of the same issues that negatively impact their numbers such as habitat loss, destruction of historic migration routes, human-elephant conflict and poaching, the dominant message provided to the public is the illegal ivory trade and its impact on the African elephant. Although the Asian Elephant SAFE program understands this issue cannot be ignored, the program believes that the Asian elephant merits greater attention than it has received to date and issues, such as habitat loss and human/elephant conflict, will contribute greatly in the conservation of this extremely vulnerable species.

The Asian elephant program plans to work to increase awareness in two different areas. First, by providing resources and unified messaging for AZA accredited zoos that celebrate World Elephant Day. This effort will focus primarily on visitors who participate in World Elephant Day at AZA accredited zoos. Second, in partnership with AZA's Public Relations and Marketing committees, we will create an awareness campaign with consistent messaging focused on Asian elephant conservation, the Asian elephant SAFE program will identify and separate the issues facing the two species of elephants in order to better educate and engage guests about Asian elephant conservation. This awareness campaign will focus on social media users who engage with our respective social media platforms (Facebook, Instagram, Snapchat, etc).

The Asian elephant SAFE program acknowledges that conservation action is the ideal goal. The AeSP's plan is to work toward engaging our public in conservation action. However, at the SAFE stakeholder meeting, it was determined that the first priority should be on raising awareness of the issues facing Asian elephants with AZA visitors. In years two and three, the team will use lessons learned from the public awareness campaign to inform the strategy for how we lead our visitors to conservation action.

To date data is not available on where needs of stakeholders in the range countries are, but, as the team works with range countries on the development of a registry, we will better understand how to best identify appropriate action strategies to engage those stakeholders.

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Program Operational Structure

Program Leaders		
Columbus Zoo Program Leader	Adam Felts, Curator Heart of Africa/Asia Quest	adam.felts@columbsuzoo.org, 614-922-0068
White Oak Conservation Co-Leader	Nick Newby Collections Manager	NNewby@white-oak.org, 757-651-7344
Steering Committee		
Columbus Zoo and Aquarium	Danielle Ross, VP of Education	danielle.ross@columubszoo.org, 614-724-3551
Oklahoma City Zoo	Rachel Emory, Curator of Elephants	REmory@okczoo.org, 405-425-0654
Cincinnati Zoo and Botanical Gardens	Christina Gorsuch, Curator of Mammals	Christina.Gorsuch@cincinnatizoo.org, 513-559-8321
St Louis Zoo	Martha Fischer, Curator of Mammals/Ungulates and Elephants	fischer@stlzoo.org, 314-646-4610
Denver Zoo	Brittany Fredrick	BFrederick@denverzoo.org
Tulsa Zoo	Jordon Piha, Curator of Mammals	jpiha@tulsazoo.org, 918-669-6240
Oregon Zoo	Bob Lee, Curator of Elephants	Bob.Lee@oregonzoo.org, 503-220-5700
Program Partners		
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International Elephant Foundation	Deborah Olson, Executive Director	dolson@elephantconservation.org, 817-597-0956
United States Fish and Wildlife Services	Cory Brown, Asian Elephant Conservation Fund	cory_brown@fws.gov, 703-358-2221
Aceh Center for Wildlife Studies, Indonesia	Wahdi Azim, Director	wahdiazmi@yahoo.com
Africa Lion Safari	Charlie Gray, President of IEF	cgray@lionsafari.com
Columbus Zoo	Michael Kreger, VP of Conservation	Michael.Kreger@columbuszoo.org, 614-724-3409
Oregon Zoo	Grant Spickelmier, Curator of Inspiration	Grant.Spickelmier@oregonzoo.org, 503-525-4268
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University of Indiana Bloomington	Dr. David Crandall, Phd	djcran@indiana.edu
Wildlife Disease Research Laboratory, India	Dr. Arun Zachariah, Wildlife Veterinary	zacharun@gmail.com
Species 360	Peter Donlon, Director Global Member Development	Peter.Donlon@Species360.org, 651-447-5573
EEHV Advisory Group	Erin Latimer, Research Specialist Lauren Howard, Associate Director of Veterinary Services	LatimerE@si.edu, 202-633-4252 lhoward@sandiegozoo.org, 760-291-5400

Conservation Targets

Asian elephants have been part of the cultural heritage of many Asian countries for centuries. Unfortunately, their populations are declining, with only an estimated 40,000 elephants remaining in the wild. Therefore, the populations in human-care are of critical importance for the survival and viability of the species [4]. For instance, elephants in human-care may act as a genetic reservoir for declining wild populations, particularly for the critically endangered Sumatran elephant. For this reason, the conservation targets for the AeSP are the human-managed Asian elephant populations located in the region, which total an estimated 14,142 individuals [4]. The populations of human-managed Asian elephants should be regarded as an important resource and a safeguard against extinction. Because of the expertise found throughout the AZA facilities and the large number of elephants managed under human-care, the AeSP will target these populations as these populations cannot be ignored as the pressure from the increasing human population continues and destruction of their natural habitat continues.

Conservation success in Asian elephant range countries is dependent on a strong government commitment and oversight, a functional and effective legal system, and a human population interested in the survival of their elephants while also benefitting from wildlife and habitat conservation. Indonesia has such a government and desire to protect their elephants. Further, the AZA community supports organizations, such as the International Rhino Foundation and Heidi Riddle (having done extensive work in the region), that have already done much of the "groundwork" with Asian elephant conservation. Collectively, this will offer AeSP a great opportunity to provide valuable assistance to Indonesia, and later to other range countries, in the conservation of this species.

Tapping the expertise of the IUCN Asian Elephant Specialist Group, pointing the intent and commitment of range stage governments as demonstrated in the Jakarta Declaration for Asian Elephant Conservation of 2017 and other working strategic partners, the AeSP will develop a critical tool and resource that will benefit Asian elephant populations in their range states and the human communities that live near and support these populations.

Status of Taxa within the AZA Community

Asian elephant populations within AZA institutions are managed under a Species Survival Program (SSP). This population has not reached the100-year sustainability goal, placing it into a yellow SSP. As of the 2017 Population Analysis and Breeding and Transfer plan, the AZA Asian Elephant SSP population currently consists of 137 animals, comprised of 31 males and 106 females, at 33 institutions (32 AZA-accredited facilities and 1 AZA Approved Sustainability Partner) [5]. The currently living SSP population's pedigree is 95.9% known due to nine animals having all or some portion of their pedigree unknown. Pedigree assumptions were created in previous planning sessions to address this unknowingness and to complete the pedigree of the potential breeding population. Sixty-eight animals were excluded from the potential breeding population for reasons including: females (and one male) determined to be non-reproductive, post-reproductive after reproductive assessments, or females 24 years or older that have never bred and are considered unlikely to do so. After these assumptions and exclusions, the potential breeding population of Asian Elephants consists of 69 (30.39) individuals with a 100% known (100% certain) pedigree.

AZA Conservation Activities (see Appendix I)

AZA institutions have a long history of supporting *in situ* Asian elephant conservation, with 32 institutions contributing a total of $1,759,995 to 77 projects between 2013 and 2017. Projects supported were in 10 of the 13 range states where Asian elephants can be found:

- Indonesia
- Malaysia
- India
- Myanmar
- Cambodia
- Sri Lanka
- Thailand
- Vietnam
- China
- Laos

Many zoos also contribute to Asian elephant conservation through the International Elephant Foundation (IEF), a US-based non-profit organization with which AZA has had a long-term partnership. Through these collective efforts, AZA institutions have contributed funds that address various issues facing Asian elephants in their natural habitats, such as human elephant conflict, deforestation, illegal logging, and supporting the local communities. Because of the commitment of AZA institutions to elephant conservation and the expertise found in the management of Asian elephants and educational activities, this program will directly align with increasing awareness of the Asia elephant conservation with measurable outcomes.

AZA Public Engagement Activities

AZA institutions have historically participated in World Elephant Day and/or Elephant Awareness days and the 96 Elephant Campaign over the last several years according to a recent survey (Asian Elephant SAFE program). World Elephant and Elephant Awareness Days activities have historically been driven by individual institutions while the 96 Elephant Campaign engaged AZA institutions with consistent messaging and actions.

Conservation Status of Taxa

The IUCN Red List of Threatened Species and the US Fish and Wildlife Services have classified the Asian elephant (*Elephas maximus*) as endangered, with populations decreasing over the last century, citing a population of 41,410–52,345 [2]. Asian elephants are also included in CITES Appendix I indicating they are threatened with extinction [1] and have declined by nearly 50% over the last 3 generations from more than 100,000 animals to less than 40,000[6]. IUCN identifies three subspecies of the Asian elephant: *E.m. indicus* on the Asian Mainland, *E.m. maximus* on Sri Lanka, and *E.m. sumatranus* on the Indonesian Island of Sumatra. Borneo's elephants have been considered a sub-species in the past [2].

In 2017, an Asian Elephant Range States Meeting reported an overall population of up to 49,683 free-ranging and 14,142 managed animals, although the accuracy of these numbers are unknown. From the latest Asian Elephant Range States Meeting, the populations of elephants are as follows:

- Bangladesh: 268 Resident, 93 Residential, 96 Managed
- Bhutan: 513 Wild, 9 Managed
- Cambodia: 400–600 Wild, 70 Managed
- China: 300 Wild, 243 Managed
- India: 29,291–30,711 Wild, 3,467–3,667 Managed
- Indonesia: 1,724 Wild, 467 Managed
- Lao PDR: 600–800 Wild, 454 Managed
- Malaysia: 1,223–1677 Wild, 92 Managed

- Sabah: 2,040 Wild, 23 Captive
- Myanmar: 2,000 Wild, 5,000 Managed
- Sri Lanka: 5,879 Wild, 230 Captive
- Thailand: 3,100–3,600 Wild, 3783 Managed
- Vietnam: 104–132 Wild, 8 Managed

Recovery Plan

The AeSP will focus its efforts using the information garnished from Asian Elephant Range State Meeting held April 18-20, 2017 in Jakarta, Indonesia as its guide. This meeting included government officials, NGOs, and other experts from 12 of the 13 range states and provided information and priorities agreed upon by these countries. In this report parties agreed to "cooperatively develop captive Asia Elephant registration programs, including where appropriate microchipping and/or DNA based systems, and ensure cross border movements of captive Asian Elephants are in compliance with all national and international laws and regulations; Ensure the welfare of captive elephants is maintained at all times"[4].

During this 2-day meeting, a session on Captive Elephant Management, facilitated by Heidi Riddle, discussed captive management issues, such as:

- The overall range state governments' plan to maintain populations of captive elephants;
- The high level of interest among range state governments to develop captive elephant breeding programs so that wild populations are not affected; and
- Several range state governments would be interested in elephant exchange between countries, primarily to help develop captive elephant breeding programs.

From this session priorities for captive populations were suggested by the Jakarta Declaration for Asian Elephant Conservation (see table A)

Executive Summary from the Asian Elephant Range State Meeting Final Report [4]:
With a remaining population of approximately 40,000 individuals, the Asian elephant (*Elephas maximus*) is highly endangered and at risk of local extinction in some range countries. Threats such as habitat loss, fragmentation of elephant populations, the consequences of human-elephant conflict (HEC), and the illegal killing of elephants require significant efforts to find solutions to mitigate these threats and ensure the long-term sustainability of the Asian elephant.
In an effort to continue the work to conserve Asian elephants, all Asian Elephant Range States (with the exception of Nepal, which was unable to participate due to national elections) sent two high level delegates to the second Asian Elephant Range States Meeting to improve collaboration and cooperation amongst countries. This meeting, hosted by the Ministry of Environment and Forestry, Republic of Indonesia, took place in Jakarta, April 18-20, 2017. The meeting was facilitated by the IUCN Species Survival Commission Asian Elephant Specialist Group (AsESG), and supported by the Asian Elephant Conservation Fund of the U.S. Fish and Wildlife Service and by the European Union Indonesia Office. Technical support was provided by Regain Foundation, the International Elephant Foundation, and the Forum Konservasi Gajah Indonesia.
The primary output of the meeting is "The Jakarta Declaration for Asian Elephant Conservation" signed by all delegates at the conclusion of the meeting. This is the first time that all 13 Asian elephant range states have declared a common vision to promote Asian elephant conservation range-wide, affirming their intent to cooperate based on the principles of sustainable development, science, education and training, as well as other activities relevant to Asian elephant conservation and development within the range States. The delegates also declared their commitment to develop, where necessary, and implement National Elephant Action Plans.
Through the Jakarta Declaration, range state governments call upon the international community to join them in reversing the decline in Asian elephant population numbers and positioning the Asian elephant securely on the road to recovery. Preserving Asian elephants is a global challenge requiring strong government partnerships and a cohesive regional strategy.

Threats to Asian Elephants

Primary Threats to Asian Elephants [4]

- Illegal killing and trade
- Habitat Fragmentation
- Human elephant conflict
- Human managed populations [7]
    1. Illegal trade in live elephants continues;
    2. Laws relating to elephants are not adequately enforced;
    3. Registration systems are outdated and insufficient to prevent illegal trade;
    4. National responsibility for elephants is shared amongst a number of agencies;
    5. Excessive populations of former labor elephants present potentially overwhelming challenges; and
    6. Future threats are inadequately researched and strategies to manage them are not in place.

Conservation Objectives

1. **Partner with the Indonesian government and other stake holders to enhance existing elephant registry programs:** With the approval of the Indonesia's Ministry of Environment and Forestry the AeSP will build upon the existing elephant registry program in Indonesia. This enhanced registry will be used to record, log, track and report individual elephants by creating a database that includes microchip and animal information, DNA profile of each elephant, photographic recognition technology that allows for quick confirmation of each individual elephant's identity.
2. **Invite Asian elephant range countries in the development of a range-wide standardized registry for identifying, monitoring, and managing elephants in human-care to:**
    - Ensure that the trade and cross border movement of live Asian elephants are conducted in accordance with national and international guidelines (i.e., CITES);
    - Support law enforcement efforts to ensure the legal trade of Asian elephants;
    - Facilitate individual country's governance of their elephant population;
    - Support local capacity building through the transfer of technology and skills;
    - Support the population management of Asian elephants throughout their range; and
    - Potentially be used as forensics tool for identification of illegally trafficked parts and derivatives.
3. **Support the science of the treatment, and management of EEHV in Asian elephant Range states**

Public/Stakeholder Engagement Objectives

1. **Promote capacity building by enhancing the current registry program in Indonesia**. This starts with local lab enhancements for DNA analysis, educating elephant mahouts, and communities where the elephants are located on the use of the technology that will be used for the registry program. Success will be demonstrated once each lab facilities' personnel are trained and capable of entering information, genetic material collected, and each elephant is registered. Key stakeholders involved in this portion of the plan are Wahdi Azmi (coordinator of the project), the Indonesian Government's Ministry of Environment and Forestry (MoEF), Centre for Wildlife Studies, and Faculty of Veterinary Medicine, University of Syiah Kuala (through Mr. Azmi) in Sumatra which has formalized a co-operation through a MoU. The Center for Wildlife Studies is one of the key local stakeholders as it has a mandate to assist with medical services for wildlife under an MoU with the government conservation agency.

2. **Engage other Range states at the completion of the Indonesian pilot program.**
   To create a consistent registry for all Asian elephants in human managed settings, SAFE will partner with Indonesia to host a range wide workshop introducing the enhanced registry program created. At the conclusion of t 433his the pilot program Range states will be invited to a Range state workshop for the work to be revealed and for further inclusion of a Range wide registry. A final report from this workshop will be provided.
3. **EEHV Support in Range State Stakeholder Engagement and Public Awareness Objectives.**
   ECP driven activities will provide public awareness, through ECP driven events at their local zoos and stakeholder engagement within Range states. This project involves direct collaboration with both the EEHV Advisory Group and the International Elephant Foundation. The fundraising tool kit materials that will be distributed will engage and encourage elephant care professionals across the nation to have a direct impact on Asian elephant conservation.

Funding Objectives

1. **Allocate funding through available grants to support the enhancement of the existing registry program in Indonesia.**
   Much, if not all of the registry pilot program can be funded by USFWS grant and partnering zoo grant programs. Through communications with USWFS, it is highly probable funds can be acquired through the appropriate grants due to the scope of this work. Metrics for evaluating the success of this objective will be the successful acquisition of funding needed to complete the project. A team has been created to begin this grant writing and the funding requests will be broken down as follows:
   1. Phase 2 (Table B) of the project is to understand costs associated and itemized budget to complete pilot program:
      a. Note: Elephant recognition project is an ongoing project with funds already allocated. Cost associated with the AeSP will be strictly related to this program.
   2. Phase 3 (Table B) funds will be acquired through:
      a) Columbus Zoo Conservation Management Grants
      b) Saint Louis Zoo WildCare Institute Grants
   3. Phase 4 (Table B) funds will be acquired through:
      c) USFWS Asian Elephant Conservation Grant
      d) USFWS International Narcotics and Law Enforcement Grant
      e) Other AZA Grant opportunities through AZA and member institution
   4. The grant writing team and reviewers are: Robbie Clark (San Diego Zoo), Rachel Emory (Oklahoma City), Dr. Daniella Chusyd (University of Indiana Bloomington), and Dr. Michael Kreger (Columbus Zoo and Aquarium)
2. **Raise funds through elephant care staff fundraisers to assist with the treatment of EEVH in range States.**
   The AeSP has set an initial goal of $5000 to be raised utilizing the toolkits developed and collaborating with AZA member institutions and other local entities, such as a local AAZK chapter. Funds raised will be used to support the greatest need in a range state at that time, with the assistance and guidance of the EEHV advisory committee. Metrics for evaluating this project will be the goal of $5000 for the first year raised, and then successful transfer of funds to needed areas, using the EEHV advisory committee's recommendations.

Communications/Public Awareness Objectives

1. **Build consistent messaging and an educational campaign focused on Asian elephant conservation with the aim to raise attention and awareness of the issues facing Asian elephants, focusing on two primary audiences (AZA institutions' visitors and social media audiences) (Table D):** The goals of this portion are that participants will:
    - Feel appreciation for Asian elephants;
    - Feel interest in supporting Asian elephant conservation;
    - Learn that Asian elephants are a distinct species found in 13 Asian countries and they are more endangered than African elephants;
    - Learn the specific Asian elephant conservation work being done or supported by their local zoo;
    - Share the message about Asian elephants with others;
    - Donate to elephant conservation (this will be focused on later in the campaign); and
    - Download and use the palm oil app (this will be focused on later in the campaign).
2. **Support and unify messaging for elephant holding zoos celebrating World Elephant Day (Table D).** This will be accomplished through:
    - Collecting existing messaging on World Elephant Day;
    - Assess/code the messages that the team has gathered.
    - Find trends and overarching messages to share with Asian elephant holding zoos;
    - Communicate these unified messages with zoos. These messages will be vetted with through TAG/SAFE professionals;
    - Assess the overall success of World Elephant Day by providing an evaluation tool to be used by participating zoos;
    - Feedback from these evaluation tools will help guide the team in providing resources for future World Elephant Day celebrations; and
    - Share findings with other zoos, either at AZA conferences or through the AZA network.
3. **Raise awareness of Asian elephants and the issues they face through a public awareness campaign**. In year one the team will kick off a simple campaign, with the goal of expanding it in future years.
    - Solicit professionals from the PR/Marketing community to help develop a campaign strategy;
    - Using messages garnered from Strategic Objective 1, create attention grabbing soundbites, compile stories, etc;
    - Create an engaging campaign, possibly something related to the idea that we want 40,000 shares, likes, etc for 40,000 elephants;
    - Develop a toolkit that will guide organizations who wish to participate in the social media campaign;
    - Invite AZA organizations to participate in the campaign and provide them with resources;
    - Launch the campaign; and
    - Report and celebrate success. Make recommendations for the next year's campaign.
4. **Incorporate action-based messaging related to Asian elephant conservation into a public awareness campaign**. This will be accomplished through:
    - Revisiting messages compiled in the year one survey. Use these messages to develop unified action-based messages. Likely the messages will focus on

donations that support SAFE's objectives or that focus on sustainable palm oil use;
- Developing an action strategy that can easily be used by zoos as they focus on conservation action. This strategy should include an evaluation component that helps zoos measure success;
- Disseminating messages to Asian elephant holding zoos;
- Working with zoos to evaluate success; and
- Reporting and celebrating success. Use feedback to make adjustments for year three (and beyond).

5. **Based off the recommendations of the Asian elephant team, explore the feasibility to develop a communication plan related to the registry. This could include providing updates to the public stateside, as well as explaining to residents in the 13 range states the importance of the registry.**

Table B: Conservation and Funding Actions Elephant Registry Pilot Program (2019-2022):

Phase 1: Gather verbal commitment from Indonesian government and initial analysis of the scope of the project to be promoted at CITES meeting				
Action	**Metrics**	**Time Frame**	**Participants**	**Total Cost**
Informal communication with DG using bullets of the SAFE program	Verbal commitment given to SAFE via Wahdi Azmi	Complete	Wahdi Azmi, MoEF	0
Secure AZA pre-approval	Email stating it is approved to move forward	Complete	AZA SAFE	0
Develop concept note	4 hard copies sent to Wahdi to be hand delivered to DG, biodiversity direction, convention deputy and dean of Syah Kuala	Complete	Adam Felts	0

Phase 2: Secure official project approval, develop operating procedures/costs and initiate training of laboratory.				
Action	**Metrics**	**Time Frame**	**Participants**	**Total Cost**
Secure Indonesian government commitment	Formal letter or decree giving authorization that provides proof of the agreement between SAFE and Indonesia	May, 2019	Wahdi Azmi	0
US government embassy supply letter of support		April, 2019	Cory, Brown	0
Connect with CITES Secretariat	Letter indicating connection and approval	April, 2019	Heidi Riddle	0
Notify the Asian elephant Specialist Group	Notify the AeSG	May, 2019	Martha Fischer	0
Announce project at CITES CoP	Begin and alert participants of project at the CITES meeting. Brief report and summary of discussions.	May, 2019	Mike Kreger	0
Develop elephant recognition technology	Written plan for accomplishing the development of this technology through the University of Indiana through a masters or PhD program	June 2019-October 2021	Daniella Chusyd, Christina Gorsuch	$20,000
SAFE members travel and visit labs to understand costs associated with DNA mapping and any needed lab enhancements. Initial discussions took place in February of 2018	1. Secure commitments, visit labs, elephant sites, and design program policy and procedure during in-country visit. 2. Establish standard operating procedures and protocols, formulating methodology for sample collection and molecular analysis. 3. Finalize budget (i.e. costs for lab enhancements and cost per elephant to run DNA mapping 4. Understand number of microchips needed	October, 2018	Adam Felts, Nick Newby, Wahdi Azmi	$5,000

	to complete microchipping animals 5. Introduce Species 360 as possible system to use to register elephants.			
Create contact list for local laboratories and other personnel to be strategic points of contact for project.	Provide list of names, titles, contact info, and institutions to steering committee.	October, 2019	Adam Felts, Wahdi Azmi	0

Phase 3: Development of pilot program				
Action	**Metrics**	**Time Frame**	**Participants**	**Total Cost**
Begin to secure funding	1. Complete and secure funding for lab enhancements and Dr. Zachariah's expenses through Columbus Conservation Grant and Saint Louis' Wildlife Institute ($13,000). 2. Completed grant through USFWS Asian Elephant Conservation Grant and International Narcotics and Law Enforcement	January, 2020	Adam Felts, Rachel Emory, Daniella Chusyd, Robbie Clark, Mike Kreger	0
Lab Enhancements	Secure equipment/set up and materials for labs. Photos and receipts provided.	February, 2020	Adam Felts	$8,000
Trip 1 for Dr. Arun Zachariah to train lab staff.	Provide methodology for lab faculties to follow.	March, 2020	Arun Zachariah, Wahdi Azmi	$2,500
Create data base and information that would be imported into Species 360	A pilot database of Indonesian elephants, in human-care, that includes microchip number, and other information relevant to individual elephants.	April, 2020	Wahdi, AZA SAFE	$10,000
Trip 2 for Dr. Arun Zachariah to train lab staff.	Dr. Zachariah to provide written update.	July, 2020	Arun Zachariah, Wahdi Azmi	$2,500

Phase 4: Develop data base of elephants in human-care across Indonesia				
Action	**Description**	**Time Frame**	**Participants**	**Total Cost**
Initiate Project	DNA analysis, microchipping, photo ID of elephants in human-care with all relevant information recorded into database. DNA analysis for all 467 in human-care elephants, based on 2017 reported captive population, lab costs, staff pay, etc.	September-February 2021	Indonesian Partners, Wahdi Azmi	$56,040
Species360 Training	Member of the SAFE team to travel to train local community care givers or appropriate personnel how to import and use Speicies360		Peter Donlon, Species360	$5,000
Secure Additional Microchips	$10/microchip, any remaining elephants needing microchips will be microchipped.	December, 2020	Elephant SAFE	$4,670
Test recognition technology	A product that is tested and complete to allow on the ground personal to accurately ID an elephant in human management and verify elephant information	February, 2021	AZA Member Institutions	0
Safe member travel and recognition scientist travel	Recognition testing and implementation with written report upon return	February, 2021	Daniella Chusyd, SAFE Members	$5,000

Phase 5. Host workshop inviting all 13 range states to learn about program developed.				
Action	**Description**	**Time Frame**	**Participants**	**Total Cost**
Range State workshop	Hold range state workshop to introduce process	2022	AZA SAFE, Indonesian Partners	$40,000

$158,710

Table C: Conservation Actions EEHV Support

To develop an avenue for AZA institutions, elephant caretakers, and supporting groups to contribute to Asian elephant conservation through EEHV research, prevention, and treatment support.			
Action	**Metrics**	**Time Frame**	**Participants**
Investigate most urgent needs for assistance in Asian Range States	Working with the EEHV Advisory Group the steering committee will determine where funds raise should go.	Complete	Steering Committee, EEHV AG, IEF
Develop idea and tool kit for elephant care professionals to use to host local fund raisers	Minimum of five fundraiser options will be created to be shared with elephant care professionals to assist with fund raising	In progress	Rachel Emory
Engage elephant care professionals and gauge interest/willingness from AZA institutions and other animal care professional organizations (i.e. AAZK, EMA, etc)	Survey will be developed and distributed	January, 2020	Rachel Emory
Initiate fund raisers	Encourage elephant care professionals to participate. Document and track participation.	January, 2020	Rachel, Steering Committee
Provide funding for EEHV cases in Asia	Secure profit from fundraisers, send to EEHV Advisory Group Secure profit from fundraisers, send to International Elephant Foundation to be kept in EEHV AG account with written report of outcomes	January, 2021	Rachel Emory, Program Leaders, EEHV AG
Distribute funds to areas in Range states with greatest needs	Current greatest needs are the purchasing of antiviral medication for treatment, PCR machines for detection, and lab enhancement for testing with written report and photos of labs.	September, 2021	Rachel Emory, Program Leaders, EEHV AG

Table D: Communications/Public Awareness Actions

Strategic Education Objective 1 - Support and unify messaging for Asian elephant holding zoos celebrating World Elephant Day			
Action	**Metrics**	**Time Frame**	**Participants**
Collecting existing messaging on World Elephant Day.	50% of Asian elephant holding zoos will share their messages.	Complete	Education Team
Celebrate World Elephant Day	75% of Asian elephant holding zoos will participate in World Elephant Day and use messages provided by Asian elephant SAFE.	August 2019	All Asian elephant holding zoos
Assess the overall success of World Elephant Day by providing an evaluation tool to be used by participating zoos.	50% of the above zoos will participate in evaluation and provide feedback for improvement for the next year.	Sept-Oct 2019	Education Team
Strategic Education Objective 2 - Raise awareness of Asian elephants and the issues they face through a public awareness campaign. In Year One the team will kick off a simple campaign, with the goal of expanding it in future years.			
Action	**Metrics**	**Time Frame**	**Participants**
Expand World Elephant Day celebration	50% of Asian elephant holding zoos will participate in the year one launch. An increase in 10% of zoos who commit to participate in the 2020 launch. 10% more will commit for 2021.	August 2019, 2020, 2021	Education Team
Create and launch an engaging campaign.	Over 40,000 social media users will share a post that raises awareness related to Asian elephants, using the hashtag we provide (to be determined).	August – Sept 2020 and 2021	PR/Marketing Committee members, Education Team

Strategic Education Objective 3 - Incorporate action-based messaging related to Asian elephant conservation into both World Elephant Day and the public awareness campaign.			
Action	**Metrics**	**Time Frame**	**Participants**
Revisit messages compiled in the year one survey. Use these messages to develop unified action-based messages. Likely the messages will focus on donations that support SAFE's objectives or that focus on sustainable palm oil use.	60% of Asian elephant holding zoos incorporate messages into their World Elephant Day activities.	Spring 2020, 2021	Education Team
Refine and continue awareness campaign	60% of Asian elephant holding zoos participate in year two of the social media campaign. 70% participate in year three.	Summer 2020, 2021	PR/Marketing Committee members, Education Team
Develop an action strategy that can easily be used by zoos as they focus on conservation action. This strategy should include an evaluation component that helps zoos measure success.	Over 40,000 social media users will share a post that raises awareness related to Asian elephants, using the hashtag we provide (to be determined).	Summer 2020, 2021	PR/Marketing Committee members, Education Team
Work with zoos to evaluate success.	80% of participating zoos evaluate success of their activities.	Fall 2020, 2021	All Asian elephant holding zoos

Elephants in Human-Care Registry Work Plan (Table B):

Supporting Asian elephant range countries in the development of a range-wide standardized registry for identifying, monitoring, and managing elephants in human-care (Table B): With the approval of the Indonesia's Ministry of Environment and Forestry (MoEF), the Asian Elephant SAFE program will build upon the existing captive elephant registry program in Indonesia. This enhanced registry will be used, by utilizing Species360, to record, log, track and report individual elephants that includes microchip and document, DNA profile of each elephant, photographic record, and developing/utilizing technology that allows for quick confirmation of each individual elephant's identity. With the support of the MoEF, the scope of this pilot program is as follows:

Phase 1:

1. Receive a letter of commitment from Indonesia
    a) Letters from SAFE leadership have been delivered to all necessary parties in Indonesia to approve this pilot project; and
    b) Verbal commitment from the DG was received.

Phase 2:

1. SAFE leadership to visit sites and laboratories to:
    a) Develop standard operating procedures;
    b) Understand time frame and policies to have materials collected, delivered, and analyzed;
    c) To present Species360 as the recommended database;
    d) To develop a reporting process of progress;
    e) To discuss timeline for Dr. Zachariah's visits for training;
    f) To look into potentially working with a local university as a master's program;
    g) To finalize budget; and
        - Initial costs of DNA mapping for this project were discussed at the 2019 Stake Holders meeting with the expertise input of Dr. Arun Zachariah.
        - Laboratory enhancements (at the 2019 Stakeholders meeting it was estimated this would be $8000).
        - Determine number of microchips needed for elephant population.
        - Finalize cost per elephant to run DNA sample.
    h) Introduce Species360.
2. Develop technology (Ele-ID) that will be smart phone accessible to assist with identifying an elephant and confirming the elephant's information.
    a) Pilot data to be collected through December 2019;
    b) Protocols created and introduced to AZA facilities by January 2020;
    c) Collection and goal of 100% participation of all Asian elephants in AZA institutions by June of 2020;
    d) Development of app and refining of AZA holding institutions elephants; and
    e) Introduction and input of Indonesian elephants for program development and registry, 2021.

Phase 3:

1. Secure funds through available grants and participating AZA institutions for the lab enhancements and scientists' travel for training;
    a) Grants will be submitted for funding to Columbus Zoo and Aquarium and Saint Louis Wildlife Institute grant programs.
2. Develop the capacity of local laboratory partners to run DNA analyses;
    a) Schedule first trip (from India to Indonesia) training completed by Dr. Zachariah.
    b) Veterinary faculty will be trained and protocol written for DNA analyses.

3. Work with Species360 to identify measures such as microchip numbers, photo identification (possibly), building upon existing registry information and techniques for importing of information; and
4. Schedule the second trip (from India to Indonesia) training completed by Dr. Zachariah.

Phase 4:

1. Collect samples to run DNA analysis and provide microchips where necessary;
2. Integrate the DNA profile and other individual identification schemes to the registration database;
3. Capacity building and training for appropriate personnel for Species 360;
4. Purchase and distribute additional needed microchips; and
5. Schedule trip for scientist working on recognition technology for:
    a) Pilot data to be collected through December 2019
    b) Incorporate technology to registry program

Phase 5:

1. Host a registry workshop and invite other Asian elephant range states to learn from the successes in Indonesia and to participate in the registry program.
    a) Determine location of workshop including host city and accommodations
    b) Create a list of invites for workshop
    c) Create budget and costs of a workshop
    d) Secure funding

Pilot Registry Program Metrics: To measure the success of this program continual communication from the field coordinator (Wahdi Azmi) with progress and oversight. Success will be determined by:

1. Receiving official letter of support from Indonesia;
2. SAFE leadership will provide written report after site visit:
    a) Finalized budget
        - Lab enhancements
        - Cost per elephant to run sample
        - Cost of staff time
        - Cost of use of Species360
    b) List of stakeholders, and contacts that will be producing the work; and
    c) Standard operating procedures.
3. Written reports from Dr. Arun Zachariah after each visit for training purposes.
4. Progress reports after the start of the project:
    a) Time frame of 6 months was given to collect all samples with a measurement of success to be:
        - All Sumatran elephants in human-care microchipped
        - All Sumatran elephants in human-care individually DNA tests and mapped
        - All Sumatran elephants in human-care imported into Species360
        - All Sumatran elephants in human-care imported in photo ELE ID
5. Support a Range wide workshop to introduce the developed registry
    a) Invite all interested parties
    b) Written report of workshop provided .

Stakeholder Engagement and Public Awareness Objectives – The primary objective of this program is to promote capacity building by building upon the current registry program in Indonesia. This starts with local lab enhancements, educating elephant mahouts, and communities where the elephants are located. Success

will be demonstrated once each elephant is registered, and member(s) of each elephant site are trained and capable of entering information into the registry. At the end of the 3-year program the final measurement of success will be to have a product to introduce to other range states. A final report from this workshop will be provided.

Funding Objectives – Much, if not all of this project may be funded by USFWS grant and partnering zoo grant programs. Through communications with USWFS, it is highly probable funds can be acquired through the appropriate grants due to the scope of this work. A team has been created to begin this grant writing and the funding requests will be broken down as follows:

1. Phase 3 funds will be acquired through (table B):
    a) Columbus Zoo Conservation Management Grants
    b) Saint Louis Zoo WildCare Institute Grants
2. Phase 4 funds will be acquired through (table B):
    c) USFWS Asian Elephant Conservation Grant
    d) USFWS International Narcotics and Law Enforcement Grant
    e) Other AZA Grant opportunities through AZA and member institution

EEHV Support Work Plan

Supporting science of the treatment, management and prevention of EEHV in Asian elephant range states (Table D): The Asian Elephant SAFE Program will engage the elephant care professionals within AZA institutions to:

1. Develop framework for fundraisers to support EEHV lab development, research, and treatment in Asia to be hosted by elephant care professionals;
2. Distribute fundraiser materials to institutions;
3. Assist with fundraiser planning as need; and
4. To direct funds raised through the EEHV Advisory Group to provide the most urgent funding to assist with this disease in Asia.

EEHV Support in Range State Metrics: To measure the success of this program the Asian Elephant SAFE Program has set an initial goal of $5000 to be raised through fundraisers utilizing the toolkits developed. Through engaging ECPs and other groups, such as the American Association of Zoo Keepers, these funds will be raised through these easy to host, local fundraisers. This funding will be utilized to support the greatest need in range states at that time with the guidance of the EEHV AG and International Elephant Foundation. The success of these events will be measured by the amount of funds raised, number of events hosted, and the determination of a positive trend in increased number of participants.

Stakeholder Engagement and Public Awareness Objectives – Through ECP driven events for EEHV support in Asia, not only will needed funds for EEHV support be raised, but it will provide a platform for elephant care professionals to educate about Asian elephant conservation, increase awareness of EEHV and elephant related issues, and celebrate Asian elephants in zoological settings. The success of these events can be measured by the funds raised, the number of participants, and by the increased number of participants each year.

Education Campaign Work Plan

Building consistent messaging and an educational campaign focused on Asian elephant conservation with the aim to raise attention and awareness of the issues facing Asian elephant, focusing on two primary audiences (AZA institutions' visitors and social media audiences)(Table C): The goals of this portion are that participants will:

1. Feel appreciation for Asian elephants;
2. Feel interest in supporting Asian elephant conservation;
3. Learn that Asian elephants are a distinct species that are only found in 13 Asian countries and they are more endangered than African elephants are remaining;
4. Learn the specific Asian elephant conservation work being done or supported by their local zoo;
5. Share the message about Asian elephants with others;
6. Donate to elephant conservation (this will be focused on later in the campaign); and
7. Download and use the palm oil app (this will be focused on later in the campaign)

Strategic Objective 1 – to support and unify messaging for elephant holding zoos celebrating World Elephant Day.

1. Collecting existing messaging on World Elephant Day;
2. Assess/code the messages that the team has gathered;
3. Find trends and overarching messages to share with Asian elephant holding zoos;
4. Communicate these unified messages with zoos. These messages will be vetted with through TAG/SAFE professionals;
5. Assess the overall success of World Elephant Day by providing an evaluation tool to be used by participating zoos;
6. Feedback from these evaluation tools will help guide the team in providing resources for future World Elephant Day celebrations; and
7. Share findings with other zoos, either at AZA conferences or through the AZA network.

Strategic Objective 2 – to raise awareness of Asian elephants and the issues they face through a public awareness campaign. In Year one the team will kick off a simple campaign, with the goal of expanding it in future years.

1. Solicit professionals from the PR/Marketing community to help develop a campaign strategy;
2. Using messages garnered from Strategic Objective 1, create attention grabbing soundbites, compile stories, etc.;
3. Create an engaging campaign, possibly something related to the idea that we want 40,000 shares, likes, etc. for 40,000 elephants;
4. Develop a toolkit that will guide organizations who wish to participate in the social media campaign;
5. Invite AZA organizations to participate in the campaign and provide them with resources;
6. Launch the campaign; and
7. Report and celebrate success. Make recommendations for the next year's campaign.

Strategic Objective 3 – to incorporate action-based messaging related to Asian elephant conservation into both World Elephant Day and the public awareness campaign. This will be accomplished by:

1. Revisiting messages compiled in the year one survey. Use these messages to develop unified action-based messages. Likely the messages will focus on donations that support SAFE's objectives or that focus on sustainable palm oil use;
2. Developing an action strategy that can be used by zoos as they focus on conservation action. This strategy should include an evaluation component that helps zoos measure success;
3. Disseminating messages to Asian elephant holding zoos;
4. Work with zoos to evaluate success; and

5. Reporting and celebrating success. Use feedback to make adjustments for year three (and beyond).

Strategic Objective 4 – to investigate the feasibility of developing a communication strategy related to the elephant registry portion of the AeSP.

Education Campaign Metrics

1. 50% of Asian elephant holding zoos will share their messages;
2. 75% of Asian elephant holding zoos will participate in World Elephant Day and use messages provided by Asian elephant SAFE;
3. 50% of the above zoos will participate in evaluation and provide feedback for improvement for the next year;
4. 50% of Asian elephant holding zoos will participate in the year one launch;
5. An increase in 10% of zoos who commit to participate in the 2020 launch. 10% more will commit for 2021;
6. 60% of Asian elephant holding zoos incorporate messages into their World Elephant Day activities;
7. 60% of Asian elephant holding zoos participate in year two of the social media campaign. 70% participate in year three;
8. Over 40,000 social media users will share a post that raises awareness related to Asian elephants, using the hashtag we provide (to be determined); and
9. 80% of participating zoos evaluate success of their activities.

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Appendix 1: AZA Elephant Field Conservation: 2013-2017

Organization Name	Title	Species Focus
Akron Zoological Park	International Rhino Foundation (IRF) - Rhino Protection Units for Sumatran Rhino, Tiger and Elephant	Asian Elephant
Albuquerque Biological Park	Asian Elephant Support	Asian Elephant
Brevard Zoo	Hutan: Asian Elephants	Asian Elephant
Buffalo Zoo	Asian Elephant Support (AES)	Asian Elephant
Busch Gardens Tampa Bay	Care for Rescued Wildlife: Elephant Conservation Center at PTWRC	Asian Elephant
Busch Gardens Tampa Bay	Direct Protection to Endangered Wildlife and its Cardamom Rainforest Habitat	Asian Elephant
Busch Gardens Tampa Bay	Institutionalizing Support for Wildlife Guardians in Thailand's Forgotten Parks: Lasting Protection for Elephants and Their Habitat Through Forest Ranger Training and Community Support in the Dong Pha	Asian Elephant
Busch Gardens Tampa Bay	Linking Elephant Research and Conservation Education in Thai Classrooms	Asian Elephant
Busch Gardens Tampa Bay	Sumatran Elephant Conservation Response Units (CRU)	Asian Elephant
Busch Gardens Tampa Bay	Wild Earth Allies (Fauna and Flora): Asian Elephant Conservation in Cambodia	Asian Elephant
Busch Gardens Tampa Bay	Wildlife Alliance: Kouprey Express Environmental Education and Outreach	Asian Elephant
Buttonwood Park Zoo	Elephant Care International	Asian Elephant
Buttonwood Park Zoo	The Elephant Family - Asian Elephant Conservation	Asian Elephant
Chicago Zoological Society - Brookfield Zoo	Quality of Management of Captive Asian Elephants in Range Countries Through the Development and Dissemination of a Professional Development Program	Asian Elephant
Cincinnati Zoo & Botanical Garden	Asian Elephant Support	Asian Elephant
Cincinnati Zoo & Botanical Garden	International Elephant Foundation (IEF) - Elephant Conservation Units in Sumatra	Asian Elephant
Columbus Zoo and Aquarium	Biodiversity and Elephant Conservation Trust - Schools Awareness Project	Asian Elephant
Columbus Zoo and Aquarium	Community Based Effective and Pro-Active Human Elephant Conflict Mitigation Program	Asian Elephant
Columbus Zoo and Aquarium	Human Elephant Conflict and Conservation of the Critically Endangered Sumatran Elephant in Aceh, Sumatra	Asian Elephant
Columbus Zoo and Aquarium	Satellite Tracking and Social Behavior of the Bornean Elephant in Kinabatangan	Asian Elephant
Columbus Zoo and Aquarium	Thailand Wildlife Guardians - Lasting Protection for Elephants and Their Habitat	Asian Elephant
Denver Zoo	Elephant Surveys and Training in Taman Negara National Park, Malaysia	Asian Elephant
Denver Zoo	Raising Elephant Awareness Among the Local Communities in and Around Vinh Cuu Nature Reserve, Vietnam	Asian Elephant
Denver Zoo	Wildlife SOS India	Asian Elephant
Dickerson Park Zoo	Elephant-Human Coexistence: How Elephants Persist in Traditional Agricultural Systems of South Asia	Asian Elephant
Disney's Animal Kingdom	Conservation Hero - Dr. Kusworo Ahmad	Asian Elephant

Disney's Animal Kingdom	Conservation Hero - Irma Hermawati	Asian Elephant
Disney's Animal Kingdom	Conservation Hero - Musir Riswan	Asian Elephant
Disney's Animal Kingdom	Conservation Hero - Nurzhafarina Othman	Asian Elephant
Disney's Animal Kingdom	Conservation of Sumatran Elephants	Asian Elephant
Disney's Animal Kingdom	Sharing Space with China's Elephants	Asian Elephant
El Paso Zoo	Palm Oil Public Awareness Effort	Asian Elephant
El Paso Zoo	World Wildlife Fund (WWF) - Flying Squad Project	Asian Elephant
Honolulu Zoo	Wildlife SOS	Asian Elephant
Houston Zoo, Inc.	Asian Elephant Support Organization	Asian Elephant
Houston Zoo, Inc.	Asian Nature Conservation Foundation	Asian Elephant
Houston Zoo, Inc.	Elephant Conservation Unit	Asian Elephant
Houston Zoo, Inc.	Laos Elephant Conservation Center	Asian Elephant
Houston Zoo, Inc.	Satellite Tracking and Social Behaviour of the Bornean Elephant in the Lower Kinabatangan Wildlife Sanctuary: Sabah, Malaysia	Asian Elephant
Lincoln Park Zoo	Population Management Advising for Species Recovery and Conservation Assurance Populations	Asian Elephant
Little Rock Zoo	Asian Elephant Support	Asian Elephant
Little Rock Zoo	Wildlife SOS	Asian Elephant
Los Angeles Zoo and Botanical Gardens	Human-Elephant Conflict in Cambodia	Asian Elephant
Los Angeles Zoo and Botanical Gardens	Minimizing the Conflict Between Asian Elephants and Local Villagers	Asian Elephant
Nashville Zoo, Inc.	Rainforest Trust	Asian Elephant
Ocean Park Corporation	Conserving and Protecting the Sumatran Rhino and Other Megavertebrates in Way Kambas National Park, Sumatra, Indonesia	Asian Elephant
Ocean Park Corporation	Informed Landscape Conservation: a Multi-species Study Evaluating the Impacts of Habitat Fragmentation and Quality on Ranging Patterns of Threatened Wildlife in the Lower Kinabatangan Wildlife Sanctua	Asian Elephant
Ocean Park Corporation	Mitigating Human Elephant Conflict Through Research and Community Interface in Golaghat District, Assam, India	Asian Elephant
Oklahoma City Zoological Park	Rainforest Trust	Asian Elephant
Oklahoma City Zoological Park	Rakhine Yoma Elephant Range	Asian Elephant
Oregon Zoo	Forest Elephant Conservation in Borneo	Asian Elephant
Oregon Zoo	Long-Term Reproductive Hormone Monitoring of Asian Elephants	Asian Elephant
Phoenix Zoo	Behavior and Social Dynamics of Crop-Raiding in Asian Elephants: Can Beehive Fences Be Used to Deter Crop-Raiding Elephants?	Asian Elephant
Phoenix Zoo	Recycle of Abandoned Crop Land in Order to Minimize Slash and Burn Cultivation Practice Through Community Participation and Identification of Habitat Used by Elephants Regularly	Asian Elephant
Point Defiance Zoo & Aquarium	Developing Conservation Response Units in Sumatra	Asian Elephant
Point Defiance Zoo & Aquarium	Paws for the Cause	Asian Elephant
Riverbanks Zoo & Garden	Forest Protection Through Conservation Response Units (CRU)	Asian Elephant

Riverbanks Zoo & Garden	Protecting Elephants, Forests, Wildlife and Communities Through Conservation Response Units	Asian Elephant
Riverbanks Zoo & Garden	Riverbanks Field Conservation Associates Program	Asian Elephant
Rosamond Gifford Zoo at Burnet Park	AZA SAFE	Asian Elephant
Smithsonian National Zoological Park	Baselining Human-Elephant Conflict to Better Understand Causes, Patterns and Management Options	Asian Elephant
Smithsonian National Zoological Park	Elephant Collaring and Satellite Tracking in Myanmar	Asian Elephant
Smithsonian National Zoological Park	Improving EEHV diagnostic and research capacity in Southeast Asia with a series of training workshops	Asian Elephant
Smithsonian National Zoological Park	Managing Human-Elephant Conflict in Myanmar (Burma)	Asian Elephant
Smithsonian National Zoological Park	Monitoring the Effectiveness of Translocation as a Management Tool For Asian Elephant Conservation in Peninsular Malaysia	Asian Elephant
Smithsonian National Zoological Park	Satellite-Tracking Asian Elephant Movements Inside and Outside a Fenced Protected Area	Asian Elephant
Smithsonian National Zoological Park	Smithsonian Myanmar Initiative	Asian Elephant
Smithsonian National Zoological Park	The Role of Fire in Maintaining Critical Elephant Habitat in Sri Lanka	Asian Elephant
Topeka Zoo	Elephants Helping Elephants in Sumatra	Asian Elephant
Tulsa Zoo	96 Elephants	Asian Elephant
Tulsa Zoo	Berdiri Foundation Elephant Response Unit - Way Kambas	Asian Elephant
Tulsa Zoo	Veterinary Society for Sumatran Wildlife Conservation (VESSWIC) - Sumatra Conservation Camera Trap Project	Asian Elephant
Utah's Hogle Zoo	Wildlife SOS	Asian Elephant
Virginia Zoological Park	Capacity Building for Veterinarians Working with Elephants in Thailand	Asian Elephant
Woodland Park Zoo	Asian Elephant Support	Asian Elephant
Woodland Park Zoo	Elephant Health Camp at Sonpur Mela, India	Asian Elephant
Woodland Park Zoo	Hutan-Kinabatangan Orangutan Conservation Project - Elephant Conservation	Asian Elephant
Audubon Zoo	International Elephant Foundation (IEF)	Elephant (Species Unspecified)
BREC's Baton Rouge Zoo	International Elephant Foundation (IEF)	Elephant (Species Unspecified)
Buffalo Zoo	International Elephant Foundation	Elephant (Species Unspecified)
Caldwell Zoo	International Elephant Foundation (IEF) - Elephant Painting Sales	Elephant (Species Unspecified)
Cameron Park Zoo	International Elephant Foundation	Elephant (Species Unspecified)
Columbus Zoo and Aquarium	International Elephant Foundation (IEF)	Elephant (Species Unspecified)
Dallas Zoo	International Elephant Foundation (IEF)	Elephant (Species Unspecified)
Denver Zoo	International Elephant Foundation (IEF)	Elephant (Species Unspecified)
Disney's Animal Kingdom	International Elephant Foundation (IEF)	Elephant (Species Unspecified)
Erie Zoo	Wildlife Conservation Society (WCS)	Elephant (Species Unspecified)
Fort Worth Zoo	International Elephant Foundation (IEF)	Elephant (Species Unspecified)

Fossil Rim Wildlife Center	International Elephant Foundation (IEF) - Salary Administration	Elephant (Species Unspecified)
Greenville Zoo	International Elephant Foundation (IEF)	Elephant (Species Unspecified)
Honolulu Zoo	International Elephant Foundation	Elephant (Species Unspecified)
Houston Aquarium, Inc.	Wildlife Alliance	Elephant (Species Unspecified)
Houston Zoo, Inc.	International Elephant Foundation (IEF)	Elephant (Species Unspecified)
Indianapolis Zoological Society, Inc.	International Elephant Foundation (IEF)	Elephant (Species Unspecified)
Jacksonville Zoo and Gardens	International Elephant Foundation (IEF)	Elephant (Species Unspecified)
Little Rock Zoo	International Elephant Foundation (IEF)	Elephant (Species Unspecified)
Louisville Zoological Garden	International Elephant Foundation	Elephant (Species Unspecified)
Memphis Zoo	International Elephant Foundation - Elephant Conservation	Elephant (Species Unspecified)
Milwaukee County Zoological Gardens	International Elephant Foundation (IEF)	Elephant (Species Unspecified)
Nashville Zoo, Inc.	International Elephant Foundation - Project MIKE (Monitoring the Illegal Killing and Hunting of Elephants)	Elephant (Species Unspecified)
Oklahoma City Zoological Park	International Elephant Foundation (IEF)	Elephant (Species Unspecified)
Omaha's Henry Doorly Zoo & Aquarium	International Elephant Foundation (IEF)	Elephant (Species Unspecified)
Oregon Zoo	International Elephant Foundation (IEF)	Elephant (Species Unspecified)
Pittsburgh Zoo & PPG Aquarium	International Elephant Foundation	Elephant (Species Unspecified)
Reid Park Zoo	International Elephant Foundation (IEF)	Elephant (Species Unspecified)
Riverbanks Zoo & Garden	Riverbanks Composting (ComPOOst) Program	Elephant (Species Unspecified)
Roger Williams Park Zoo	International Elephant Foundation (IEF)	Elephant (Species Unspecified)
Rosamond Gifford Zoo at Burnet Park	International Elephant Foundation	Elephant (Species Unspecified)
Safari West Wildlife Preserve	Lawrence Anthony Earth Organization	Elephant (Species Unspecified)
Saint Louis Zoo	International Elephant Foundation (IEF)	Elephant (Species Unspecified)
San Antonio Zoological Society	International Elephant Foundation (IEF)	Elephant (Species Unspecified)
San Diego Zoo Global	International Elephant Foundation (IEF)	Elephant (Species Unspecified)
San Diego Zoo Global	Using Genomic Analyses to Ensure Sustainability of Global Elephant Populations	Elephant (Species Unspecified)
Santa Barbara Zoological Gardens	International Elephant Foundation (IEF)	Elephant (Species Unspecified)
Sedgwick County Zoo	International Elephant Foundation	Elephant (Species Unspecified)
Seneca Park Zoo	International Elephant Foundation (IEF)	Elephant (Species Unspecified)

The Maryland Zoo in Baltimore	International Elephant Foundation (IEF)	Elephant (Species Unspecified)
Topeka Zoo	International Elephant Foundation (IEF)	Elephant (Species Unspecified)
Tulsa Zoo	International Elephant Foundation (IEF)	Elephant (Species Unspecified)
Utah's Hogle Zoo	International Elephant Foundation (IEF)	Elephant (Species Unspecified)
Virginia Zoological Park	International Elephant Foundation (IEF)	Elephant (Species Unspecified)
Wildlife Safari	International Elephant Foundation (IEF)	Elephant (Species Unspecified)
Woodland Park Zoo	Woodland Park Zoo Conservation Advocacy and Action Campaigns	Elephant (Species Unspecified)
Zoo Miami	International Elephant Foundation	Elephant (Species Unspecified)

[EXTERNAL] RE: USFWS Applications CS0084318 and CS0096987

Mary Noell <mary.noell@cincinnatizoo.org>

Fri 5/5/2023 10:37 AM

To: Mesler, Emily C <emily_mesler@fws.gov>

Good afternoon, I have responded to your questions in blue below
Thank you very much!

Mary Noell
Curator of Animal Data and Logistics
Cincinnati Zoo & Botanical Garden
3400 Vine Street, Cincinnati OH 45220
o (513) 569-8225 |**m** (859) 360-9137

From: Mesler, Emily C <emily_mesler@fws.gov>
Sent: Thursday, May 4, 2023 2:56 PM
To: Mary Noell <mary.noell@cincinnatizoo.org>
Subject: USFWS Applications CS0084318 and CS0096987

Good afternoon Ms. Noell,

We are in receipt of your applications, CS0084318 and CS0096987, to import four live Asian elephants (*Elephas maximus*) and associated biological samples from the Dublin Zoo, Dublin, Ireland. We apologize for the delay in the processing of your applications. We are preparing the submission of your applications to the Federal Register, but before completion would like clarification on the following:

- As it appears the samples and live elephants are proposed for import at the same time, we would recommend that we combine these two permit application requests into one. This would mean that if approved, everything would be listed on a single permit. This will also assist in streamlining our processing to make our findings under a single request instead of two. However, is this okay or would you prefer to keep the two requests separate?
  Yes, please combine the two permit application requests into one.

- Are you able to provide a copy of the CITES export permit(s) issued by the Management Authority of Ireland? This is not necessary, but it will help us assess what authorizations are required for importation.
  Since most CITES permits are only good for 6 months, we were waiting for information on our import permit before directing our partners to apply for their export permit. If we all feel that the import permit process is moving forward and will be received in that timeframe, we can work with our partners to start that permit application and upload the permit as soon as it has been received.

- Finally, for the biological samples, please provide further information on how the samples are packaged. What may be easiest is if you provide the total quantity of the samples (ml, number, grams, etc.), the total number of containers that the samples are going to be in, and the amount of the total samples that are going to be in each container (e.g., a total of 40 ml of serum in 20 vials in 2 ml aliquots). It is okay to combine the samples from the different elephants.

  To clarify, the samples have not been collected yet – they will be collected much closer to the time of shipment. Here is the anticipated collection amounts and containers as best as we know now:

  - 10ml serum x 4 elephants = 40ml serum, divided into appropriately sized transport tubes (5, 7.5, or 10ml tubes depending on volume collected, if less than 10ml/elephant).
  - 10ml whole blood x 4 elephants = 40ml whole blood, divided into appropriately sized transport tubes (5, 7.5, or 10ml tubes depending on volume collected, if less than 10ml/elephant).
  - 20ml saline trunk wash samples (saliva) x 4 elephants = 80ml, divided into four sterile, sealed containers

Please let me know if you have any questions or concerns. Please reply directly to this email with the requested information.

In accordance with 50 CFR 13.11(e), if the requested information is not received by this office by **June 18, 2023**, your application will be abandoned and administratively closed. Once a file is closed you will need to submit a new application and all required fees for the Service to consider your proposed activity. Please refer to permit application numbers CS0084318 and CS0096987 in your correspondence.

Regards,
Emily

Emily Mesler | Supervisory Biologist
U.S. Fish and Wildlife Service | International Affairs
Division of Management Authority | Branch of Permits
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Falls Church, VA 22041-3803