U.S. Fish and Wildlife Service

Federal Fish and Wildlife Permit Application

Form 3-200-37

From Fresno Chaffee Zoo, for export of

2.1 Red ruffed lemurs to

Bermuda Aquarium, Museum, and Zoo

FRESNO CHAFFEE ZOO
Fresno Chaffee Zoo • 894 West Belmont Avenue • Fresno, California 93728
Phone (559) 498-5910 • Fax (559) 264-922 USDA #93-C-0752

March 14, 2019

USFWS Export Permit Specialist
U. S. Fish and Wildlife Service
Division of Management Authority
Branch of Permits, MS: IA
5275 Leesburg Pike
Falls Church, VA 22041-2104

Dear Permit Specialist:

Enclosed you will find a 2019 Export permit Form 3-200-37 application for the export of 2.1 red ruffed lemurs *(Varecia rubra)* from the Fresno Chaffee Zoo, Fresno, California to the Bermuda Aquarium, Museum, and Zoo which is located in Flatts, Bermuda. The animals to be donated to Bermuda Aquarium, Museum, and Zoo were captive born in the United States, as were their parents.

To facilitate the approval of the application, all items required for approval of the permit have been included in this binder, with marked dividers for finding required attachments and information.

Please let me know if there is any other information required for the approval of this permit. Feel free to call me at 559-498-5912. I can also be emailed at lcover@fresnochaffeezoo.org.

I appreciate your attention in this matter.

Sincerely,

Linda I. Cover

Linda I. Cover, Registrar/Animal Records
Fresno's Chaffee Zoo
894 W. Belmont Ave.
Fresno, CA 93728
(559) 498-5912
lcover@fresnochaffeezoo.org

Form 3-200-37

OMB Control No. 1018-0093
Expires 08/31/2020

Department of Interior
U.S. Fish and Wildlife Service

Federal Fish and Wildlife Permit Application Form

U.S. Fish and Wildlife Service
Division of Management Authority
Branch of Permits, MS: IA
5275 Leesburg Pike
Falls Church, VA 22041-3803
1-800-358-2104 or 703-358-2104

Type of Activity

EXPORT/RE-EXPORT/IMPORT/INTERSTATE AND FOREIGN COMMERCE/TAKE OF ANIMALS (LIVE/ SAMPLES/PARTS/PRODUCTS) under the Convention on International Trade in Endangered Species (CITES) and/or the U.S. Endangered Species Act (ESA)

Complete Sections A or B, and C, D, and E of this application. U.S. address may be required in Section C, see instructions for details. **Instructions on how to make your application complete and help avoid unnecessary delays are attached.**

Section A: Complete if applying as an individual

1.a. Last Name		1.b. First Name	1.c. Middle Name/Initial	1.d. Suffix
2. Date of Birth (mm/dd/yyyy)	3. Telephone Number	3.a. Alternate Telephone Number	4. E-mail address	

Section B: Complete if applying on behalf of a business, corporation, public agency, Tribe, or institution

1.a. Name of business, agency, Tribe, or institution		1.b. Doing business as (DBA)	
Fresno Chaffee Zoo		Fresno Chaffee Zoo	
2. Tax identification no.		3. Description of business, agency, Tribe, or institution	
42-166145		Zoological Gardens	
4.a. Principal officer Last name	4.b. Principal officer First Name	4.c. Principal officer Middle name/initial	4.d. Suffix
Barton	Scott	R.	Mr.
5. Principal officer title		6. Primary contact name	
Chief Executive Officer		Linda Cover	
7.a. Business telephone number	7.b. Alternate telephone number	7.c. Business fax number	7.d. Business e-mail address
559-498-5910	559-498-5912	559-264-9226	lcover@fresnochaffeezoo.org

Section C: All applicants complete address information

1.a. Physical address (Street address; Apartment #, Suite #, or Room #; no P.O. Boxes)				
894 W. Belmont				
1.b. City	1.c. State	1.d. Zip code/Postal code	1.e. County/Province	1.f. Country
Fresno	CA	93728	Fresno County	United States
2.a. Mailing address (include if different than physical address; include name of contact person if applicable)				
Same as above.				
2.b. City	2.c. State	2.d. Zip code/Postal code	2.e. County/Province	2.f.Country

Section D: All applicants MUST complete

1. Attach the **nonrefundable application processing fee** in the form of a check or money order payable to the U.S. FISH AND WILDLIFE SERVICE **in the amount of $100.** Federal, Tribal, State, and local government agencies, and those acting on behalf of such agencies, are exempt from the processing fee – *attach documentation of fee exempt status as outlined in instructions* [50 CFR 13.11(d)].

2. Certification: I hereby certify that I have read and am familiar with the regulations contained in ***Title 50 Part 13 of the Code of Federal Regulations*** and the other ***applicable parts in subchapter B of Chapter I of Title 50***, and I certify that the information submitted in this application for a permit is complete and accurate to the best of my knowledge and belief. I understand that any false statement herein may subject me to the criminal penalties of 18 U.S.C. 1001.

Sam Barton — 02/21/2019

Signature of applicant/Principal Officer for permit (No photocopied or stamped signatures) Date of signature (mm/dd/yyyy)

Please continue to next page

OMB Control No. 1018-0093
Expires 08/31/2020

E. EXPORT/RE-EXPORT/IMPORT/INTERSTATE AND FOREIGN COMMERCE/TAKE OF ANIMALS (Live/samples/parts/products) (CITES and/or ESA)

Allow at least 90 days for the application to be processed. Applications for endangered species permits must be published in the Federal Register for a 30-day public comment period.

Complete all questions on the application. Mark questions that are not applicable with "N/A". If needed, use separate sheets of paper. On all attachments or separate sheets you submit, indicate the application question number you are addressing. If you are applying for multiple specimens, be sure to indicate which specimen you are addressing in each response.

NOTE: The import of live southern white rhinoceros from South Africa and Swaziland must meet specific CITES criteria for an import permit to be issued. If you are requesting authorization for the import of these species, please ensure that you respond to question 14 below.

Electronic submission of inventories, photographs, and receipts: Some applications contain extensive inventories and /or a large number of photographs or receipts. You may provide electronic versions of the documents. Such a submission will assist the processing of your application since it may reduce data entry by the U.S. Fish and Wildlife Service. If you wish to provide information electronically, once you have received an application number via the e-mailed acknowledgment letter, e-mail your information to Permits@fws.gov. Be sure to include the application number provided in the acknowledgment e-mail that will be sent to you when we receive your application.

☐ I will be submitting documents electronically.

1. Name and address where you wish the permit to be mailed, **if different from page 1**. 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.

Same as page 1.
Please see attachment 1 and all corresponding attachments for detailed answers to all permit questions.

2. Who should we contact if we have questions about the application (name, phone number, and e-mail)?

Linda Cover, 559-498-5912, lcover@fresnochaffeezoo.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. What activity are you requesting authorization to carry out (Indicate appropriate activities):

☑ EXPORT ☐ RE-EXPORT ☐ IMPORT ☐ TAKE (e.g., cull, lethal harvest)
☐ INTERSTATE COMMERCE ☐ FOREIGN COMMERCE

Note: Interstate Commerce permits authorize the sale of endangered and threatened species across State lines, but only for activities that will contribute to enhancing the propagation or survival of that species. Interstate commerce activities with wildlife require the buyer to obtain a permit prior to the sale or offer for sale.

5. For **EACH** animal/specimen involved in the proposed activity provide:

a. Scientific name (genus, species, and, if applicable, subspecies)	**b. Common name**	**c. Birth/ Hatch Date** *(mm/dd/yyyy)* (approximate of actual unknown)	**d. Wild or captive-born**	**e. Quantity**	**f. Gender** (male or female, if known), if	**g. Permanent markings**, if alive (e.g., tattoo, ID #, microchip #, scars)	**h. Type of sample or product** (e.g., blood, tissue, DNA)
EXAMPLE: *Pan troglodytes*	Chimpanzee						
See attachment, Question 5.							
See attachment, Question 5.							
See attachment, Question 5.							
See attachment, Question 5.							

6. The current location of the specimen(s) (address and country):

Name: Fresno Chaffee Zoo
Address: 894 W. Belmont Ave.
City: Fresno
State/Province: CA
County, Postal Code: Fresno, 93728
United States of America

7. Recipient/Sender:

- If **export**, provide name and address of the recipient in the foreign country.
- If **re-export**, provide the name and address of the recipient in the foreign country.
- If **import**, provide name and address of the exporter in the foreign country.
- If **interstate or foreign commerce**, provide name and address of the proposed seller/supplier.

Name: Bermuda Aquarium, Museum, and Zoo
Address: 40 North Shore Rd.
City: Flatt's
State/Province: Bermuda, FL04
County, Postal Code:

SOURCE OF SPECIMEN (answer question 8 or 9 for **EACH** animal/specimen involved, as appropriate).

8. For captive-bred animals or animal(s) from which the specimen(s) are/were obtained, provide a signed and dated statement from the breeder that includes the following: See attachment #1, question 8. for responses for a-f.
   a. Scientific name (genus, species, and, if applicable, subspecies) and common name;
   b. Name and address of the facility where the animal was bred and born;
   c. Birth/hatch date (mm/dd/yyyy), and, if applicable, identification information;
   d. Location (name of facility, address, city, State, postal code) of parental stock;
   e. A statement that the animal was bred at the above facility;
   f. Documentation demonstrating the history of transactions (e.g., chain of custody or ownership of the animal).
9. For **EACH** animal/specimen **taken from the wild**, provide the following:
   a. Scientific name (genus, species, and, if applicable, subspecies) and common name;

N/A - all animals were captive bred and born.

   b. Specific location of where, when, and by whom (name and address) the specimen was removed from the wild;

N/A

   c. Purpose of removal and length or approximate length of time held in captivity. Discuss issues such as the method of collection, was the collection done as part of a larger study, were animals returned to the wild after sampling, and did any mortalities or injuries occur due to collection or holding;

N/A

   d. If and how any remuneration, either financial or in-kind, was provided for taking or capturing animals or for the collection of samples.

N/A

   e. Your efforts to use captive specimens (e.g., captive-born, captive-held), or parts thereof, in lieu of taking animals from the wild.

N/A

   f. Copies of your foreign or domestic collecting permit, license, contract or agreement; N/A
   g. Documentation showing that the specimen(s) was/were legally obtained by the applicant; and N/A
   h. Copies of any applicable State, Tribal, Federal, or Foreign government permits or licenses that authorized the removal of this animal from the wild. N/A

JUSTIFICATION FOR REQUESTED ACTIVITY.

10. Provide a detailed statement justifying the proposed activity, particularly the following:

    a. Describe the purpose of your proposed activity. For example, if the purpose is scientific research, attach a copy of your research proposal outlining the purpose, objectives, methods (e.g., specific information on survey/collection methods, sampling regime, equipment to be used), and whether similar work has already been done or is currently being done. If the purpose includes conservation education, provide copies of educational materials (e.g., handouts, text of signage or public presentations), and include the purpose and objectives of the proposed activity. If the purpose is for propagation for conservation purposes (including culling as part of herd management), provide a description of how the species will be propagated and the disposition of progeny, as well as long-term goals of the breeding program, how the breeding program is managed to maintain genetic vitality, and information on any cooperative breeding programs or agreements that are/will be established, including any future plans for re-introduction.

See attachment 1 - question 10a, and attachment 8.

    b. Description of the technical expertise of each person (please also include CV or resume), as it relates to the proposed activities. If the proposed activity involves live animals, include the experience of each animal caretaker working with the species.

See attachment 1 - question 10b, and attachments 9-11.

    c. Copies of contracts, agreements or other documents that identify persons involved and dates of activities for which authorization is being requested. See attachment 12 for the animal transaction contract between FCZ & RSAMZ.

11. A statement on how the activities will **enhance or benefit the wild population** (e.g., in-situ and ex-situ projects).

See attachment 1, question 11. See also attachment 13.

12. If live specimens are to be held in captivity as part of the proposed activity:

a. Provide a detailed description (e.g., size, construction materials, protection from the elements) and photographs or diagrams (no blueprints, please) clearly depicting the existing facilities **where the wildlife will be maintained**. If the specimens will be housed at multiple facilities, either immediately or within the next year, provide a full description of each facility. If you are unsure of which facilities may be receiving specimens (e.g., final decisions on placement have not been made), please indicate likely candidates and the mechanism that will be used to determine recipient facilities;

See attachment 1, question 12. See also attachments 14 & 14a.

b. A statement of the specific technical experience of CV or resume available to the recipient(s) for maintaining and propagating live specimens of the same or similar species;

See attachment 1, question 12b. See also attachments 9-11.

c. The number of years each species has been maintained at the facility;

See attachment 1, question 12c.

d. The number of births by year for each species for the last 5 years; and

See attachment 1, question 12d.

e. Mortalities at the facility with these or similar species in the last 5 years, causes of such mortalities, and steps taken to avoid or decrease such mortalities.

See attachment 1, question 12e.

IMPORTS, EXPORTS, OR RE-EXPORTS.

13. For shipment of LIVE specimens, the transport conditions for animals must comply with the CITES Guidelines for Transport of Live Animals or, in the case of air transport, with the International Air Transport Association (IATA) live animal regulations (contact airline for information). As such, describe:

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

See attachment 1, question 13a.

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

See attachment 1, question 13b.

14. For import of live southern white rhinoceroses from South Africa and Swaziland, a determination that the importing facility meets the CITES "appropriate and acceptable destination" annotation must be made. Therefore, provide written documentation demonstrating that the proposed activity would promote *in situ* conservation of the species. **Note:** ***For any permit authorizing trade of live rhinoceroses under an "appropriate and acceptable destination" annotation, the rhinoceros horn from these animals may not enter commercial trade and the animal may not be sport hunted.*** N/A

15. **For import of LIVE CITES Appendix-I listed marine mammal species**, provide a copy of your FWS or NOAA Fisheries permit or authorization. N/A

16. 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 . N/A

17. For export of 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. See attachment 15 for BAMZ's cites permit.

18. If the specimen is being **re-exported** (e.g., exporting a specimen that was previously imported into the United States), provide:
N/A

    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 (if applicable); and

    b. A cleared copy of Form 3-177, wildlife Declaration for Import (hard copy or electronic release); **OR**

    c. If you did not make the original import, provide a copy of the importer's documents outlined above and the invoice or other documentation that shows you acquired the wildlife from the original importer or history of transactions which demonstrate chain of ownership.

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).

The lemurs will be imported through Bermuda. The port will be determined by BAMZ.

Export/Re-Export/Import/Interstate & Foreign Commerce/Take of Animals (Live/Samples/Parts/Products) under the Convention on International Trade in Endangered Species (CITES) and/or the U.S. Endangered Species Act (ESA)
Federal Fish and Wildlife Permit Application Form (3-200-37)
Fresno Chaffee Zoo Application
Attachment 1

Section E

1. Name and address where you wish the permit to be mailed, if different from page 1. 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. Fresno Chaffee Zoo
    Attn. Linda Cover
    894 W. Belmont Ave.
    Fresno, CA 93728

2. Who should we contact if we have questions about the application (name, phone number, and email)?
    a. Linda Cover
    559-498-5912
    lcover@fresnochaffeezoo.org

3. Have you or any of the owners of the business (if applying as a business, corporation, or institution), been addressed a civil penalty or convicted of any criminal provision of any statue 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?
    a. No

4. What activity are you requesting authorization to carry out (Indicate appropriate activities):
    a. Note: Interstate Commerce permits authorize the sale of endangered and threatened species across State lines, but only for activities that will contribute to enhancing the propagation or survival of that species. Interstate commerce activities with wildlife require the **buyer** to obtain a permit prior to the sale or offer for sale.
        i. Export

5. For EACH animal/specimen involved in the proposed activity provide:

Scientific Name (Genus, species, and subspecies)	**Common Name**	**Birth/Hatch Date** (MM/DD/YYYY) (approximate of actual unknown)	**Wild or Captive Born**	**Quantity**	**Gender** (Male or female, if known)	**Permanent Markings** (tattoo, ID#, microchip#, scars)	**Type of Sample or Product** (e.g., blood, tissue, DNA)
Varecia rubra	Red ruffed lemur	4/19/1998	C	1	Male	FCZ Local ID: 220056 GAN ID: 7611020 Transponder: 000132773F	N/A
Varecia rubra	Red ruffed lemur	5/12/2016	C	1	Male	FCZ Local ID: 207028 GAN ID: SMT16-01339 Transponder: 985111001104097	N/A
Varecia rubra	Red ruffed lemur	5/12/2016	C	1	Female	FCZ Local ID: 207027 GAN ID: SMT16-01338 Transponder: 985112008460359	N/A

6. The current location of the specimen(s) (address and country):
    a. Fresno Chaffee Zoo
    894 W. Belmont
    Fresno, CA 93728
    United States of America

7. Recipient/Sender:
    a. If export, provide name and address of the recipient in the foreign country.
        i. Bermuda Aquarium, Museum, and Zoo
        40 North Shore Rd.
        Flatt's, Bermuda FL04

8. For captive-bred animals or animal(s) from which the specimen(s) are/were obtained, provide a signed and dated statement from the breeder that includes the following:
    a. Scientific name (genus, species, and, if applicable, subspecies) and common name: (See table)
    b. Name and address of the facility where the animal was bred and born: (See table)
    c. Birth/hatch date (mm/dd/yyyy), and, if applicable, identification information: (See table)
    d. Location (name of facility, address, city, state, and postal code)of parental stock: (See table)

Scientific Name & Common Name (8a)	Birth Location (8b)	Local ID# (8c)	Birth Date (8c)	ID & Location of Parental Stock (Sire) (8d)	Location of Parental Stock (Dam) (8d)
Varecia rubra Red ruffed lemur	Charles Paddock Zoo 9100 Morro Rd. Atascadero, CA 93422	Local: 220056 GAN: 7611020	4/19/1998 See attachment 2 for birth statement	GAN:MIG12-292902039 Location: Duke Lemur Center 3705 Erwin Rd. Durham, NC 27708	GAN: MIG12-29716528 Location: Charles Paddock Zoo 9100 Morro Rd. Atascadero, CA 93422
Varecia rubra Red ruffed lemur	Fresno Chaffee Zoo 894 W. Belmont Fresno, CA 93728	Local: 207028 GAN: SMT16-01339	5/12/2016	GAN: 7611020 Location: Fresno Chaffee Zoo 894 W. Belmont Fresno, CA 93728	GAN: MIG12-30073594 (Deceased) Location: Fresno Chaffee Zoo 894 W. Belmont Fresno, CA 93728
Varecia rubra Red ruffed lemur	Fresno Chaffee Zoo 894 W. Belmont Fresno, CA 93728	Local: 207027 GAN: SMT16-01338	5/12/2016	GAN: 7611020 Location: Fresno Chaffee Zoo 894 W. Belmont Fresno, CA 93728	GAN: MIG12-30073594 (Deceased) Location: Fresno Chaffee Zoo 894 W. Belmont Fresno, CA 93728

    e. A statement that the animal was bred at the above facility:
        i. Lemur #220056
            1. 1.0 lemur was born at the Charles Paddock Zoo in Atascadero, California, on 4/19/1998.
                a. <u>See attachment 2 for a birth statement from Charles Paddock Zoo.</u>
                b. <u>See attachment 3 for a specimen report.</u>
        ii. Lemur #207027
            1. 0.1 lemur was born at the Fresno Chaffee Zoo in Fresno, California, on 5/12/2006.
                a. <u>See attachment 6 for a specimen report.</u>
        iii. Lemur #207028
            1. 1.0 lemur was born at the Fresno Chaffee Zoo in Fresno, California, on 5/12/2006.
                a. <u>See attachment 7 for a specimen report.</u>

f. Documentation demonstrating the history of transactions (e.g., chain of custody or ownership of the animal).
    i. For Animal 220056:
        1. **See attachment 2: Birth statement for 220056 from Charles Paddock Zoo**
        2. **See attachment 3: Specimen report for 220056**
        3. **See attachment 4: Breeding loan for 220056**
        4. **See attachment 5: Donation for 220056**
    ii. For animal 207027, **see attachment 6: Specimen report.**
    iii. For animal 207028, **see attachment 7: Specimen report.**

9. For each animal/specimen taken from the wild, provide the following:
    a. N/A – all animals were captive bred and born.

10. Provide a detailed statement justifying the proposed activity, particularly the following:
    a. Describe the purpose of your proposed activity. For example, if the purpose is scientific research, attach a copy of your research proposal outlining the purpose, objectives, methods (e.g. specific information on survey/collection methods, sampling regime, equipment to be used), and whether similar work has already been done or is currently being done. If the purpose includes conservation education, provide copies of education materials (e.g., handouts, text or signage or public presentations), and include the copies of educational materials (e.g., handouts, text of signage or public presentations), and include the purpose and objectives of the proposed activity. If the purpose is for propagation for conservation purposes (including culling as part of herd management), provide a description of how the species will be propagated and the disposition of progeny, as well as long-term goals of the breeding program, how the breeding program is managed to maintain genetic vitality, and information on any cooperative breeding programs or agreements that are/will be established, including any future plans for re-introduction.
        i. The purpose in BAMZ receiving these lemurs is for conservation education and exhibit enhancement from a visitor perspective. BAMZ's mission is to inspire interest in and appreciation of island environments. Their main goal is to educate visitors about the uniqueness of the islands and their fragile biodiversity. Consistent with this, they have devoted Madagascar exhibit to showcase the fragility of the islands of Madagascar and its unique endemism. The red ruffed lemurs will be a wonderful example of the importance of island environments and their native species.
        ii. Exposure to this unique species will serve to educate the public about the necessity of their conservation methods. All of BAMZ's collection are described in exhibit signage and species information is used in all of their educational initiatives. On an annual basis their education programs swerve 6,000-9,000 school children, and approximately 450 children and adults participate in their Nature Encounter programs every year. The overall goal for their education programs is to inform the public about the need for conservation methods to help ensure species viability in the wild.
        iii. The red ruffed lemur is a Species Survival Plan (SSP) species and as such BAMZ would comply with requests made by the studbook keeper with regards to breeding recommendations. The current recommendations do not include breeding these individuals.
            1. **See attachment 8 for examples of signage.**

    b. Description of the technical expertise of each person (please also include CV or resume), as it relates to the proposed activities. If the proposed activity involves live animals, include the experience of each animal caretaker working with the species.
        i. Currently BAMZ's zoo animal husbandry staff consists of five full time staff members; all of whom participate in regular training and professional development programs. Their animal husbandry staff has a combined work experience of over fifty years. All zoo husbandry staff are experienced working with lemurs.

ii. Their head zookeeper, Tricha Cross-Pitcher, has ten years of experience with BAMZ, as well as internship experience at other facilities. **See attachment 9 for resume.**
iii. Dr. Ian Walker joined BAMZ as the Curator in 2004 and now holds the position of Principle Curator. Prior to his career at BAMZ he had six years of experience as the Associate Veterinarian at the National Aquarium in Baltimore. His extensive knowledge of exotic animal medicine are a valuable asset to BAMZ. **See attachment 10 for CV.**
iv. RVT Roma Hayward has worked for BAMZ since 2012 where she is an Animal Care and Quarantine Officer. **See attachment 11 for CV for Roma Hayward.**

c. Copies of contracts, agreements or other documents that identify persons involved and dates of activities for which authorization is being requested.
    i. **See attachment 12 for the Animal Transaction Contract between Fresno Chaffee Zoo and Bermuda Aquarium, Museum, and Zoo.**

11. A statement on how the activities will enhance or benefit the wild population (e.g., in-situ and ex-situ projects).
    a. Since the opening the Madagascar exhibit in 2014, BAMZ has also been supporting conservation education efforts in Madagascar itself through financially supporting the building and provisioning of school classrooms to educate local children. A group of students from the Junior Volunteer program at BAMZ, together with staff from the education and zoo departments travelled to Madagascar in the summer of 2017. They took with them funds and supplies to further the conservation education in the villages they visited.
    b. The red ruffed lemur is a Species Survival Plan (SSP) species and as such BAMZ would comply with requests made by the studbook keeper with regards to breeding recommendations. The current recommendations do not include breeding these individuals.
        i. **See Attachment 13 for AZA's Species Survival Plan: Population Analysis & Breeding & Transfer Plan.**

12. If live specimens are to be held in captivity as part of the proposed activity:
    a. Provide a detailed description (e.g., size, construction materials, protection from the elements) and photographs or diagrams (no blueprints) clearly depicting the existing facilities **where the wildlife will be maintained**. If the specimens will be housed at multiple facilities, either immediately or within the next year, provide a full description of each facility. If you are unsure of which facilities may be receiving specimens (e.g., finial decisions on placement have not been made), please indicate likely candidates and the mechanism that will be used to determine recipient facilities:
        i. The red ruffed lemurs will be housed in their recently opened "Madagascar Islands" exhibit. The lemur exhibit area is a part of a mixed species lemur exhibit which currently houses 0.2 ringtail lemurs. The lemurs have approximately 750 square feet of exhibit and free access holding space. The exhibit area comprises a central lemur island surrounded by a water pond feature, and is connected by climbing walkways t the holding areas at the rear of the exhibit. There are rocky outcroppings and natural vegetation to provide shade, shelter and enrichment.
        ii. The exhibit is primarily rockwork covered concrete forming the "back walls" and central island features. There is a galvanized stainless steel frame that forms the top part of the walls and roof of the exhibit. This frame is covered with bronze coated stainless steel mesh resulting in an open air exhibit. There is plenty of shelter provided by trees and rocky overhangs as well as a covered tunnel with 5 gem exhibits. There are adjacent off-exhibit holding areas accessed from the upper level above the waterfall. A concrete path winds through the exhibit and the entry and exhibit vestibules are built of pressure treated lumber.
        iii. The Madagascar exhibit building also houses a veterinary hospital facility with multiple quarantine and off-exhibit holding areas. Upon initial arrival the red ruffed lemurs will be quarantined for a minimum of 30 days in an off-exhibit holding area and will receive an initial entrance physical examination. Once they have cleared quarantine, the lemurs will be introduced to their new exhibit area in a systematic manner ensuring a successful introduction and adjustment.

iv. **See attachment 14 descriptions and photographs of the animal's holdings.**
v. **See attachment 14a for the exhibit architectural plan.**

b. A statement of the specific technical experience of CV or resume available to the recipient(s) for maintaining and propagating live specimens of the same or similar species:
   i. All of BAMZ's husbandry staff have worked extensively with their ring-tailed lemurs. The red-ruff lemurs will be a new species for their collection. The Madagascar area has a principal keeper responsible for the area but all husbandry staff cover all areas as staffing levels dictate. They rotate their primary keeper responsibility area every two years.
   ii. BAMZ has housed ring-tailed lemurs for over 30 years; first acquiring the species in 1985, with a brief three year period (2009-2012) when they were without any specimens in their collection.
   iii. BAMZ most recent keeper hire was in 2011. All of their current keeper staff have been working with ring-tailed lemurs since they acquired a small troop in 2012.
      1. **See attachments 9-11 for resumes and CV's.**

c. The number of years each species has been maintained at the facility:
   i. BAMZ has been keeping ringtail lemurs *(Lemur catta)* since 1985. In 2012 they received 1.2 ring-tailed lemurs from Sacramento Zoo, then 0.2 lemurs from Greenville Zoo in April of 2013. Both social groups were introduced successfully and cohabitate well in the exhibit.
   ii. This proposed red ruffed lemurs *(Varecia rubra)* would be the first of their species at BAMZ.

d. The number of births by year for each species for the last 5 years:
   i. All of the BAMZ's lemurs are on permanent contraception and there have been no births in the collection for many years. Because of this the troop has slowly dwindled due to natural attrition.

e. Mortalities at the facility with these or similar species in the last 5 years, causes of such mortalities, and steps taken to avoid or decrease such mortalities.
   i. BAMZ has experienced three deaths within their lemur population in the last five years. All animals were considered of advanced age.
      1. Two lemurs were euthanized (ID's: 212001 & 213001). The first euthanasia was their 23 year old male who had been monitored for a four month period due to a growing abdominal mass. When his breathing and mobility became severely impacted the decision was made to euthanize him. Necropsy revealed suspected primary liver neoplasia with metastatic disease involving lungs. The second euthanasia was their 30 year old female who was euthanized due to advanced age and severe deterioration in her quality of life.
      2. One lemur was found drowned in the exhibit pond (ID# 212002). She was 20 years of age. Necropsy revealed cysts on her liver and a cancerous growth in one of her lungs. It is believed that she suffered a seizure that resulted in her falling into the pond and drowning.

Imports, Exports, or Re-Exports

13. For shipment of LIVE specimens, the transport conditions for animals must comply with the CITES guidelines for Transport of Live Animals or, in the case of air transport, with the International Air Transport Association (IATA) live animal regulations (contact airline for information). As such, describe:
    a. That type, size, and construction of any shipping container:
       i. Type: Petmate Sky Kennel
       ii. Size: 32 inches long, by 22.5 inches wide, by 24 inches high.
          1. Construction: The crate has a durable plastic shell, non-corrodible wing-nuts, extra strong steel wire, wire vents, and interlocking secure wire door. There is a four way vault door and it has 360-degree ventilation.

b. The arrangements for watering or otherwise caring for the wildlife during transport:
    i. Water will be provided per IATA regulations, in the form of a suspended water bowl attached to the crate. Airline attendants will refill as needed.
    ii. If transport will exceed 24 hours, a zoo will be chosen along the travel route. Their staff will go to the airport to feed and check on the animals.

14. For import of live southern white rhinoceroses from South Africa and Swaziland, a determination that the importing facility meets the CITES "appropriate and acceptable destination" annotation must be made. Therefore, provide written documentation demonstrating that the proposed activity would promote in situ conservation of the species.
    a. N/A

15. For import of **LIVE CITES Appendix-1 listed species**, provide a copy of your FWS or NOAA Fisheries permit or authorization.
    a. N/A

16. For import of **CITES Appendix-1 listed species**, provide information to show the import is not for primarily commercial purposes as outlined in Resolution Conf. 5.10.
    a. N/A

17. For export of CITES **Appendix-1 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.
    a. <u>See attachment 15 for BAMZ's CITES permit.</u>

18. If the specimen is being re-exported (e.g., exporting a specimen that was previously imported into the United States).
    a. N/A – All animals were captive born in the United States.

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).

- The lemurs will be imported through Bermuda, through a port of Bermuda Aquarium, Museums and Zoo's choosing.

CHARLES PADDOCK ZOO
9305 Pismo Ave., Atascadero, CA 93422
(805) 461-5080

2/7/2019

To whom it may concern,

This statement attests to the captive breeding and birth of the following animal at the Charles Paddock Zoo.

Male Red-Ruffed Lemur "Enno"
D.O.B. April 19, 1998
GAN: 7611020
Local ID's: [98M003/ATASCADERO] / [220056/FRESNO]

Any additional questions or requests for information may be directed to myself.

Best,

Steve Tirotta
Lead Zookeeper
Charles Paddock Zoo
9305 Pismo Ave.
Atascadero, CA 93422
Work: 805-461-5080 Mobile: 805-704-8756
stirotta@atascadero.org

Specimen Report

Species360 7611020 **Local ID**: FRESNO / 220056
GAN
Varecia rubra Red ruffed lemur
Studbooks EAZA, WAZA, AZA
Order Primates **Family** Lemuridae
IUCN Endangered (EN) **CITES** I
Start Date Jan 01, 1800 **End Date** Feb 04, 2019

Basic Animal Information

No Local Data Differences Found

Sex - Contraception	Male -	**Status**	Alive
Birthdate - Age	Apr 19, 1998 - 20Y,9M,16D	**Preferred ID**	FRESNO / 220056
Origin	Charles Paddock Zoo	**Rearing**	Parent
Birth Type	Captive Birth/Hatch	**Hybrid Status**	Not Hybrid
Sire		**Dam**	MIG12-29716528 (ATASCADER / 97M001)
Current Collection	Main Institution Animal Collection	**Collection Trip**	
Clutch / Litter		**Enclosure**	ISLAND 1

Visit History

Date in	Acquisition - Vendor/Local ID	Phy	Own	Reported By	Disposition - Recipient/Local ID	Phy	Own	Date Out
Apr 19, 1998	Birth/Hatch	In	In	ATASCADER / 98M003	Loan Out To FRESNO/220056	Out	-	Jul 31, 2002
Jul 31, 2002	Loan In From Sender: ATASCADER/98M003 Vendor: ATASCADER/98M003	In	-	FRESNO / 220056		-	-	
		-	-	ATASCADER / 98M003	Donation To (Ownership Only) FRESNO/220056	-	Out	Jan 20, 2019
Jan 20, 2019	Donation From Vendor: ATASCADER/98M003	-	In	FRESNO / 220056		-	-	

Identifiers

Reported By	Effective Date	Type	Identifier	Location	Status	Comments
FRESNO	Jul 31, 2002	Local ID	220056		Active	
FRESNO	Dec 10, 2000	Intl Stdbk#	745		Active	
ATASCADER	Dec 10, 2000	Intl Stdbk#	745		Active	
FRESNO	Feb 15, 2000	House Name	ENNO		Active	
ATASCADER	Feb 15, 2000	House Name	Enno		Active	
FRESNO	Jun 17, 1998	Transponder	000132773F		In-Use	Legacy SLocation: Intracapular Legacy Comment: at Atascader
ATASCADER	Jun 17, 1998	Transponder	000132773F		In-Use	Legacy SLocation: intrascapular Legacy Comment:
FRESNO	Apr 19, 1998	Regional Studbook Number	AZA/745		Active	Legacy SLocation: AZA Legacy Comment:
ATASCADER	Apr 19, 1998	Local ID	98M003		Active	

Sex Information

Reported By	Date	Sex	Comments
FRESNO	Jul 31, 2002	Male	
ATASCADER	Apr 19, 1998	Male	

Parent Info

Reported By	In ZIMS	Parent Info	Type / Probability	Birth Date	Comments
ATASCADER	Yes	MIG12-29716528 [ATASCADER / 97M001]	Dam/100%	Apr 19, 1991	
FRESNO	Yes	MIG12-29716528 [ATASCADER / 97M001]	Dam/100%	Apr 19, 1991	

Ancestry Information (calculated by Species360 from shared data)

% Pedigree Known	% Pedigree Certain	Taxonomic Inconsistencies	No. Identified Ancestors
100.00%	100.00%	No	10

Enclosure History

Enclosure Name	Date Moved In	Date Moved Out	Transfer Reason	Comments
ISLAND 1	Jun 29, 2007			Legacy Comment Reason: Lemur Island exhibit.
OH -1	Jun 24, 2003	Jun 29, 2007		

Notes

Reported By	Text	Source Animals
FRESNO	**Date:** Jan 20, 2019 | **Type/Subtype**: Transactions/Acquisition Note | **Keyword**: Accession Note 1.0 red ruffed lemur change of ownership terms. Loan was converted to donation from Charles Paddock Zoo to Fresno Chaffee Zoo. The purpose of terms change to donation will facilitate the transfer of this lemur to Bermuda Aquarium and Zoo in spring of 2019.	7611020

Reported By	Text	Source Animals
FRESNO	**Date:** Jul 31, 2002 | **Type/Subtype**: Transactions/Acquisition Note | **Keyword**: Accession Note	7611020

ISIS addition - the Physical Vendor/Local ID for the loan in were added by ISIS from another institution's already -connected record.

Duke University Primate Center

3705 Erwin Road
Durham, NC 27705-
5000

Post-it® Fax Note 7671	Date 6 May 09	# of pages ▶ 2
To Linda Cour	From David Haring	
Co./Dept. Registrar	Co.	
Phone #	Phone #	
Fax # 559-264-9226	Fax #	

LOAN AGREEMENT

between

DUKE UNIVERSITY PRIMATE CENTER (loaning institution)

and

CHARLES PADDOCK ZOO (loaning institution)

and

CHAFFEE ZOOLOGICAL GARDENS OF FRESNO (receiving institution)

Whereas, the Duke University Primate Center, herein called the DUPC, is interested in the captive propagation and preservation of wildlife, and

Whereas, Charles Paddock Zoo, herein called CPZ, is interested in the captive propagation and preservation of wildlife;

Whereas, Chaffee Zoological Gardens of Fresno , herein called CZG, is interested in the captive propagation and preservation of wildlife;

Therefore, both parties do hereby enter into an agreement defined by the terms listed below, regarding the following specimens:

Varecia variegata rubra (red ruffed lemur)

6685 female "Unicorn" born DUPC 17 May 1996 (received Chaffee 23/Aug 2002 loan transfer from Seattle #990333). Chaffee #220059, Studbook #618.

1) CZG has received the above mentioned specimen(s) from the DUPC for the purposes of:

SSP recommended transfer and breeding with male on loan from Charles Paddock Zoo (studbook 745)

2) CZG agrees to provide necessary housing, food, and veterinary care for the specimen(s) to the best of its ability. In the event of serious injury, illness, or death of the specimen(s), CZG will promptly inform the DUPC of the condition and consult with them.

3) In the case of a loan for captive propagation, CZG will attempt to breed the specimen(s) and any viable young produced by such breeding and born during the term of this agreement, or within a period after termination of this agreement measured by the normal gestation length of the species, will be divided between CZG, CPZ and the DUPC according to the following terms:

1st, 4nd, 7th, etc. surviving (more than 30 days) litters to DUPC
2nd, 5th, 8th, etc. surviving litters to CPZ
3rd, 6th, 9th, etc. surviving litters to CZG

4) In the case of a loan for exhibit or research, CZG agrees not to breed the specimen(s) without prior consultation with and approval from the DUPC.

5) In the event of termination of this agreement, transportation of the specimen(s) to the DUPC shall be borne by the party requesting termination of the loan.

6) This agreement shall remain in effect for the lifetime of the specimen(s), unless one of the parties terminates the agreement by giving the other party 60 days written notice.

7) Neither this agreement nor any rights or privileges granted there under shall be assigned to a third party without the prior written consent of both parties.

8) CZG agrees to provide the DUPC with a written report at the end of each calendar year which lists the status of the specimen(s) covered by this agreement, the number of young born during the previous year, and the number of specimens that died along with the cause of death.

9) In the event of the specimen(s)' death, the carcass and its parts remain property of the DUPC. The final disposition of the carcass and parts will be the decision of the DUPC.

10) This agreement may be amended or modified in writing by the mutual consent of both parties hereto. Such amendments shall be incorporated into this agreement as an addenda.

Signature: _____ FOR: Duke University Primate Center

Date: 19 Feb 2004

Signature: _____ FOR: Chaffee Zoological Gardens

Date: 04 Feb 2005

Signature: _____ FOR: Charles Paddock Zoo

Date: 09 - Feb 2005

CITY OF ATASCADERO
DEPARTMENT OF COMMUNITY SERVICES

Charles Paddock Zoo
Alan Baker
Zoo Director

9305 Pismo Ave.
Atascadero, CA 93422
805-461-7603
805-461-7625 Fax

ANIMAL WELFARE AGREEMENT

WHEREAS, the Charles Paddock Zoo is concerned for the present and long range welfare of all its specimens and believes it has an obligation to make a reasonable effort to guarantee that specimens leaving the zoo by sale, trade, donation, or loan will be maintained in a manner acceptable to modern professional zoological park and aquarium standards.

(Enno)

THEREFORE, the Charles Paddock Zoo agrees to the donation of the following specimen(s) Red Ruffed lemur 98M003
to Chaffee Zoological gardens for the following price of $ Loan
(firm or organization) plus sales tax of $ _____
Total $ _____

and/or conditions:
with the understanding that the recipient will comply with the animal welfare conditions set forth in this agreement.

I _____ representing Chaffee Zoological gardens
(agent or representative) (firm or organization)

agree to purchase or accept by trade or donation the above named specimen(s) from the Charles Paddock Zoo and understand that this transaction is contingent upon the following stipulation:

1. **The recipient will adhere to the AZA (American Zoo and Aquariums Association) Code of Ethics and Guidelines for disposing of animals from zoos and aquariums, even if the recipient is an individual or animal supplier.**
2. **Specimen(s) will not be sold, traded, loaned or donated to or used in any invasive or inhumane research program.**
3. **Specimen(s) will not be sold, traded, loaned or donated to any individual or organization which may use the specimen(s) in any hunting ranches, animal auction(s), or disposed of by the undersigned in any animal auction.**
4. **Specimen(s) will not be sold, traded, loaned or donated to pet shops, to an individual or firm not qualified to provide proper care, or used in the common pet trade.**

Executed this 28 day of Sept. 2002 by the authorized representatives of the respective parties.

CHARLES PADDOCK ZOO

Alan Baker
Zoo Director

RECIPIENT

_____
Signature
Director of Animal Care + Conservation
Title

Zoological Society of San Luis Obispo County

AMERICAN ZOO AND AQUARIUM ASSOCIATION

ACCREDITED BY THE AMERICAN ASSOCIATION OF ZOOLOGICAL PARKS AND AQUARIUMS

CITY OF ATASCADERO

CHARLES PADDOCK ZOO

9305 Pismo Ave., Atascadero, CA 93422
(805) 461-5080

ANIMAL WELFARE AGREEMENT

WHEREAS, the Charles Paddock Zoo is concerned for the present and long range welfare of all its specimens and believes it has an obligation to make a reasonable effort to guarantee that specimens leaving the zoo by sale, trade, donation, or loan will be maintained in a manner acceptable to modern professional zoological park and aquarium standards.

THEREFORE, the Charles Paddock Zoo agrees to the transfer of the following specimen(s) to Fresno Chaffee Zoo 894 W. Belmont Ave. Fresno, CA 93728

Common Name	Scientific Name	Sex	ID #	Price
Red Ruffed Lemur	*Varecia rubra*	M	GAN: 7611020	Donation
	This agreement converts the current loan of this animal to FCZ to a donation.			
			TOTAL	zero

The undersign will comply with the animal welfare conditions set forth in this agreement and agree to purchase or accept by trade or donation the above named specimen(s) from the Charles Paddock Zoo and understand that this transaction is contingent upon the following stipulation:

1. **The recipient will adhere to the AZA (Association of Zoos and Aquariums) Code of Ethics and Guidelines for disposing of animals from zoos and aquariums, even if the recipient is an individual or animal supplier.**
2. **Specimen(s) will not be sold, traded, loaned or donated to or used in any invasive or inhumane research program.**
3. **Specimen(s) will not be sold, traded, loaned or donated to any individual or organization which may use the specimen(s) in any hunting ranches, animal auction(s), or disposed of by the undersigned in any animal auction.**
4. **Specimen(s) will not be sold, traded, loaned or donated to pet shops, to an individual or firm not qualified to provide proper care, or used in the common pet trade.**

Executed this 18th Day of December, 2018 by the authorized representatives of the respective parties:

CHARLES PADDOCK ZOO

Alan Baker
Zoo Director

RECIPIENT:

Signature

CEO
Title

1/20/19
Date

ACCREDITED BY THE ASSOCIATION OF ZOOS & AQUARIUMS

Specimen Report

Species360 SMT16-01338 **Local ID**: FRESNO / 207027
GAN
Varecia rubra Red ruffed lemur
Studbooks EAZA, WAZA, AZA
Order Primates **Family** Lemuridae
IUCN Endangered (EN) **CITES** I
Start Date Jan 01, 1800 **End Date** Feb 04, 2019

Basic Animal Information

No Local Data Differences Found

Sex - Contraception	Female -	Status	Alive
Birthdate - Age	May 12, 2016 - 2Y,8M,23D	Preferred ID	FRESNO / 207027
Origin	Fresno Chaffee Zoo	Rearing	
Birth Type	Captive Birth/Hatch	Hybrid Status	Not Hybrid
Sire	7611020 (FRESNO / 220056)	Dam	MIG12-30073594 (FRESNO / 220059)
Current Collection	Main Institution Animal Collection	Collection Trip	
Clutch / Litter		Enclosure	ISLAND 1

Visit History

Date in	Acquisition - Vendor/Local ID	Phy	Own	Reported By	Disposition - Recipient/Local ID	Phy	Own	Date Out
May 12, 2016	Birth/Hatch	In	In	FRESNO / 207027		-	-	

Identifiers

Reported By	Effective Date	Type	Identifier	Location	Status	Comments
FRESNO	Aug 15, 2017	Transponder	985112008460359	Interscapular	In-Use	
FRESNO	Jul 26, 2016	House Name	SAKA		Active	Lemur's house name "Saka" is a Malagasy word for "cat-like".
FRESNO	May 12, 2016	Regional Studbook Number	AZA/1999		Active	
FRESNO	May 12, 2016	Local ID	207027		Active	
FRESNO	May 12, 2016	House Name	RED		Inactive	

[redacted] Information

Reported By	Date	Sex	Comments
FRESNO	May 12, 2016	Female	

Parent Info

Reported By	In ZIMS	Parent Info	Type / Probability	Birth Date	Comments
FRESNO	Yes	MIG12-30073594 [FRESNO / 220059]	Dam/100%	May 17, 1996	
FRESNO	Yes	7611020 [FRESNO / 220056]	Sire/100%	Apr 19, 1998	

Ancestry Information (calculated by Species360 from shared data)

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

Enclosure History

Enclosure Name	Date Moved In	Date Moved Out	Transfer Reason	Comments
ISLAND 1	May 12, 2016		Acquisition Event	

No Notes Found

Specimen Report

Species360 SMT16-01339 **Local ID**: FRESNO / 207028
GAN
Varecia rubra Red ruffed lemur
Studbooks EAZA, WAZA, AZA
Order Primates **Family** Lemuridae
IUCN Endangered (EN) **CITES** I
Start Date Jan 01, 1800 **End Date** Feb 04, 2019

Basic Animal Information

No Local Data Differences Found

Sex - Contraception	Male -	**Status**	Alive
Birthdate - Age	May 12, 2016 - 2Y,8M,23D	**Preferred ID**	FRESNO / 207028
Origin	Fresno Chaffee Zoo	**Rearing**	
Birth Type	Captive Birth/Hatch	**Hybrid Status**	Not Hybrid
Sire	7611020 (FRESNO / 220056)	**Dam**	MIG12-30073594 (FRESNO / 220059)
Current Collection	Main Institution Animal Collection	**Collection Trip**	
Clutch / Litter		**Enclosure**	ISLAND 1

Visit History

Date in	Acquisition - Vendor/Local ID	Phy	Own	Reported By	Disposition - Recipient/Local ID	Phy	Own	Date Out
May 12, 2016	Birth/Hatch	In	In	FRESNO / 207028		-	-	

Identifiers

Reported By	Effective Date	Type	Identifier	Location	Status	Comments
FRESNO	Jul 26, 2016	House Name	FREZY		Active	1.0 Frezy 207028 (meaning is strawberry) The male has a white ring around the base of his tail that none of our other lemurs have.
FRESNO	May 12, 2016	Regional Studbook Number	AZA/2000		Active	
FRESNO	May 12, 2016	Local ID	207028		Active	
FRESNO	May 12, 2016	House Name	SPOT		Inactive	

Sex Information

Reported By	Date	Sex	Comments
FRESNO	May 12, 2016	Male	

Parent Info

Reported By	In ZIMS	Parent Info	Type / Probability	Birth Date	Comments
FRESNO	Yes	MIG12-30073594 [FRESNO / 220059]	Dam/100%	May 17, 1996	
FRESNO	Yes	7611020 [FRESNO / 220056]	Sire/100%	Apr 19, 1998	

Ancestry Information (calculated by Species360 from shared data)

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

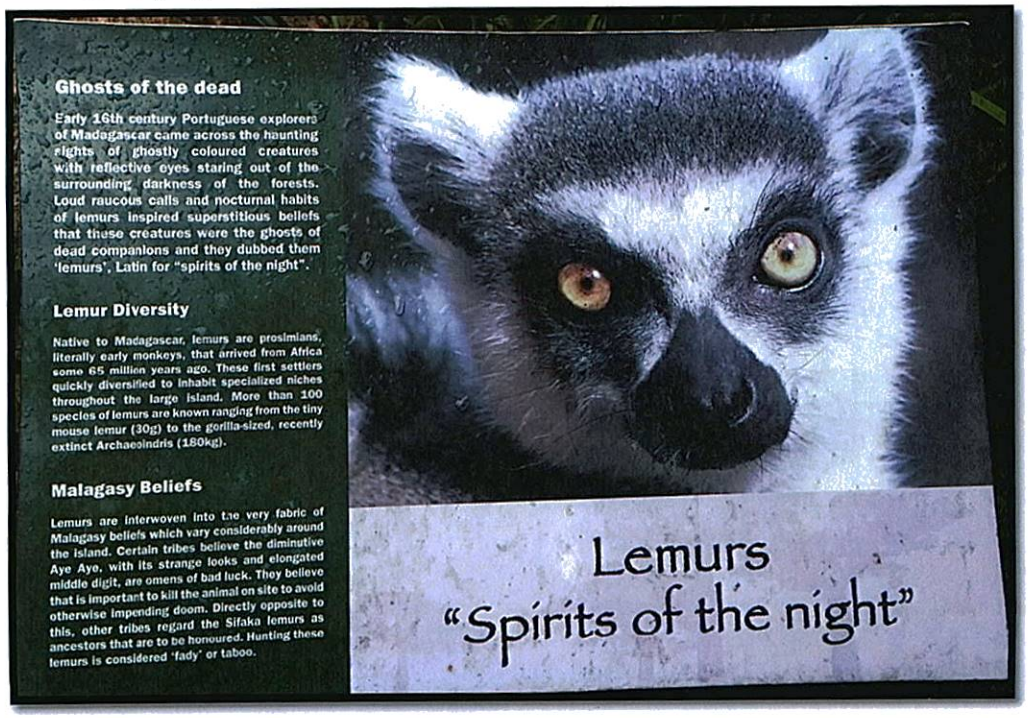
Enclosure History

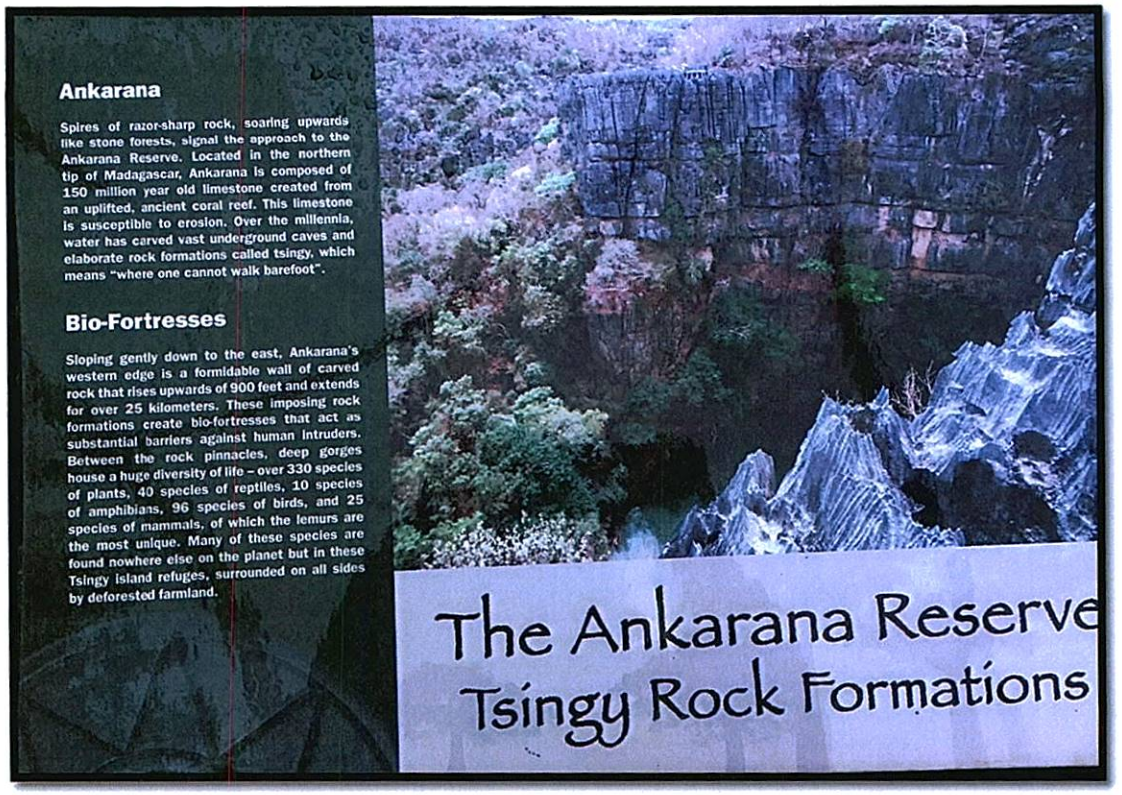
Enclosure Name	Date Moved In	Date Moved Out	Transfer Reason	Comments
ISLAND 1	May 12, 2016		Acquisition Event	

No Notes Found

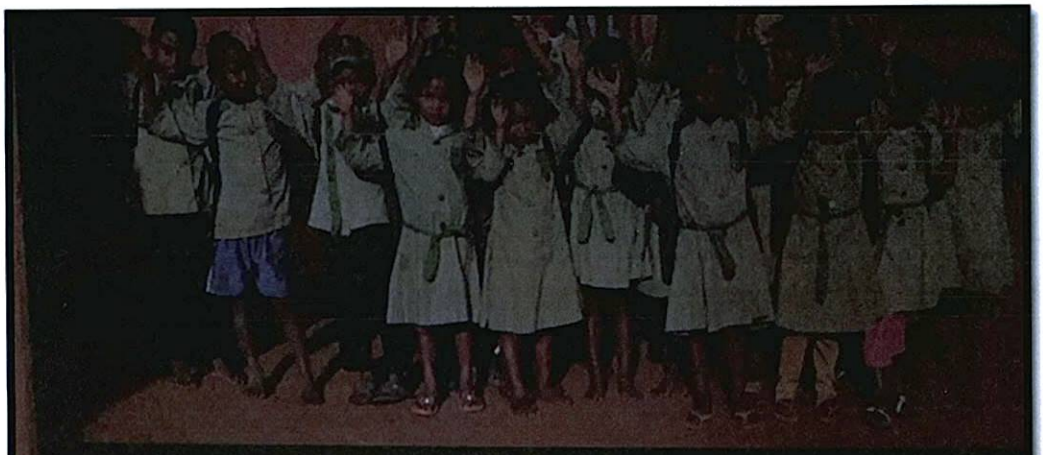
Export/Re-Export/Import/Interstate & Foreign Commerce/Take of Animals (Live/Samples/Parts/Products) under the Convention on International Trade in Endangered Species (CITES) and/or the U.S. Endangered Species Act (ESA)
Federal Fish and Wildlife Permit Application Form (3-200-37)
Fresno Chaffee Zoo Application
Attachment 8

10. Provide a detailed statement justifying the proposed activity, particularly the following:
    a. Describe the purpose of your proposed activity. For example, if the purpose is scientific research, attach a copy of your research proposal outlining the purpose, objectives, methods (e.g. specific information on survey/collection methods, sampling regime, equipment to be used), and whether similar work has already been done or is currently being done. If the purpose includes conservation education, provide copies of education materials (e.g., handouts, text or signage or public presentations), and include the copies of educational materials (e.g., handouts, text of signage or public presentations), and include the purpose and objectives of the proposed activity. If the purpose is for propagation for conservation purposes (including culling as part of herd management), provide a description of how the species will be propagated and the disposition of progeny, as well as long-term goals of the breeding program, how the breeding program is managed to maintain genetic vitality, and information on any cooperative breeding programs or agreements that are/will be established, including any future plans for re-introduction.
        i. The purpose in BAMZ receiving these lemurs is for conservation education and exhibit enhancement from a visitor perspective. BAMZ's mission is to inspire interest in and appreciation of island environments. Their main goal is to educate visitors about the uniqueness of the islands and their fragile biodiversity. Consistent with this, they have devoted Madagascar exhibit to showcase the fragility of the islands of Madagascar and its unique endemism. The red ruffed lemurs will be a wonderful example of the importance of island environments and their native species.
        ii. Exposure to this unique species will serve to educate the public about the necessity of their conservation methods. All of BAMZ's collection are described in exhibit signage and species information is used in all of their educational initiatives. On an annual basis their education programs swerve 6,000-9,000 school children, and approximately 450 children and adults participate in their Nature Encounter programs every year. The overall goal for their education programs is to inform the public about the need for conservation methods to help ensure species viability in the wild.
            1. Signage:




Ankarana
Spires of razor-sharp rock, soaring upwards like stone forests, signal the approach to the Ankarana Reserve. Located in the northern tip of Madagascar, Ankarana is composed of 150 million year old limestone created from an uplifted, ancient coral reef. This limestone is susceptible to erosion. Over the millennia, water has carved vast underground caves and elaborate rock formations called tsingy, which means "where one cannot walk barefoot".
Bio-Fortresses
Sloping gently down to the east, Ankarana's western edge is a formidable wall of carved rock that rises upwards of 900 feet and extends for over 25 kilometers. These imposing rock formations create bio-fortresses that act as substantial barriers against human intruders. Between the rock pinnacles, deep gorges house a huge diversity of life – over 330 species of plants, 40 species of reptiles, 10 species of amphibians, 96 species of birds, and 25 species of mammals, of which the lemurs are the most unique. Many of these species are found nowhere else on the planet but in these Tsingy island refuges, surrounded on all sides by deforested farmland.
The Ankarana Reserve
Tsingy Rock Formations


Range:
Southwestern
Madagascar
Near Threatened
Weight: up to 5.5 kg
Body length: up to 46 cm
Tail length: up to 56 cm
Lifespan: up to 27 years
Males switch troops every 3.5 years, reaching sexual maturity at 2.5 years. Females reach sexual maturity at 19 months
Ring-tailed Lemur
Lemur catta
Instantly recognized by their long, ringed tails, these highly social prosimians (primitive primates) live in troops of up to 30 individuals dominated by one female. Males, on the other hand, may 'stink fight' each other, anointing the tips of their tails with scent from glands on their wrists and chests, then waving them at their opponents.
Living in the forests and upland slopes of the southwest they feed on whatever the changing seasons offer – leaves, flowers and fruits, spiders and caterpillars, even chameleons. But unable to re-colonize secondary growth forests they are threatened by habitat destruction, charcoal production, and encroaching human settlements.



Helping hands

Bermuda Zoological Society has teamed with other non-profits around the world to help Madagascar and its people. Our focus is conservation and education projects. BZS has given funds to help build and outfit classrooms so children will have a place to learn. Blackboards, books and furniture provide much-needed resources. Our hope is that through projects like these, Madagascar's children will grow up to be stewards of their environment. Another project we support helps reforest areas inhabited by silkworms —a non-destructive industry that provides income for the struggling country.

Fun Fact

Want to help the people of Madagascar? You can join our fundraising efforts by putting a donation into our fun Spinal Wishing Well.

A Tale of Two Islands

Eight-thousand miles apart, Bermuda and Madagascar have many similarities as well as differences. Both are isolated islands. Bermuda lies in the Gulf Stream 600 miles from the nearest US mainland, while Madagascar is 250 miles off Africa's southeast coast.

Like Bermuda, Madagascar has coral reefs, humpback whales and endemic species —just many more than we do. The standard of living in both places is worlds apart. Bermuda is economically rich, but poor in biological diversity; Madagascar, by contrast, is diversity-rich and economically very poor.

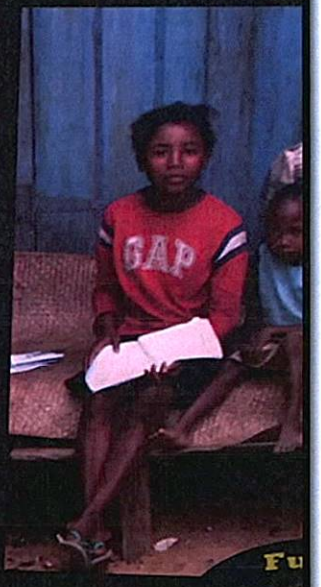
People of Madagascar

One of the poorest countries in the world, Madagascar is home to 20 million people of Asian and African origin. Many have tribal, French, Chinese or Indian heritage and most speak the indigenous national Malagasy language. Their traditional religions—particularly a strong belief in links between the living and dead—play an important part in island life. Mythology, superstitions, ceremonies and taboos are widespread, including fear of certain animals and rituals tied to food. Cultural differences vary according to the country's regional landscapes.

Fun Fact

Poverty in paradise

Illiteracy and infant mortality are high—and average life expectancy is just 55. The country is rich in natural resources, but the Malagasy people struggle to live on as little as $1 a day. Poverty and population growth put great pressure on the natural environment. Lemur forests are cleared for rice paddies, forcing wildlife to retreat into isolated habitats. Poaching, illegal logging and political turmoil also endanger conservation efforts. But positive change is coming. People are realising the economic value of rare ecosystems and the need to preserve threatened habitats and animals.



Madagascar by the Numbers

165m Number of years ago Madagascar drifted away from Africa

225,000 Square miles: making Madagascar the world's fourth-largest island (after Greenland, New Guinea, and Borneo)

20m The island's human population

50 Percentage of Malagasy people aged under 15

250,000 Number of species of plants and animals (5% of the world's total)

80 Percentage of Madagascar spec found nowhere el

90 Percentage of original forest destroyed since humans arrived

12,000 Number of plant species found in Madagascar

80 Number of lemur species (all endemic)

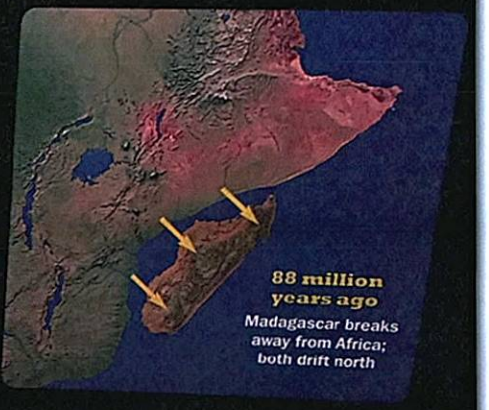
3 Height in metres of the world's largest bird, the Elephant Bird, now extinct

20 Length in millimetres of a pygmy stump-tailed chameleon

2,000 Age in years of some baobab trees

Unique island

An astonishing 80 percent of Madagascar's plants and animals are found nowhere else. Why? Because the island's special geography, geology and climate helped species evolve.



Isolation

Madagascar has been cut off from India and Africa for 88 million years. When the continents separated, some animals were trapped in Madagascar, while others arrived later by accident. Over time, they evolved into unique species, because of changing climate and lack of major predators, including humans. One example is the lemur, which arrived 54 million years ago and diversified from one to more than 80 species.

Tropical drift

Madagascar's slow drift northwards changed its climate from arid to tropical. When India collided with Asia, the Himalayas formed, causing monsoons, which helped create rainforests and rivers that further isolated and changed animal species.

Fun Fact

Amazing animals

Madagascar is home to many unusual creatures. More than 600 new species were identified in the first decade of this century alone!

Birds

Of Madagascar's 250 bird species, about 60 percent are endemic. An example is Bernier's Teal, which lives in mangroves. Madagascar's most famous fowl was the giant elephant bird—which went extinct 300 years ago. Habitat loss and hunting by humans led to the demise of this 10-foot-tall, flightless bird.

EXTINCT
ELEPHANT BIRD

Reptiles

Rainforests and wetlands provide ideal environments for frogs, snakes and chameleons. Critically-endangered radiated tortoises are found in the island's dry south and can live to 100 years.

Fun Fact

Mammals

Madagascar's two major mammals are the lemur and fossa. Lemurs range from tiny pygmies to child-size creatures. They live in many regions, but their habitats are disappearing. The fierce fossa looks like a mix of cat and dog, but this forest predator actually belongs to the mongoose family. An agile hunter with reversible ankles, its favourite prey is lemurs.

Fun Fact

Diverse habitats

Madagascar's diverse habitats have led the island's animals to evolve uniquely. Jungles, rainforest and dormant volcanoes in the north give way to salt lakes, scrubland and woodlands in the south. A 1,000-mile mountain spine splits the island, making the east wet and the west dry. Some of Madagascar's key zones are recreated in this exhibit.

1. Desert

Spiny forest and scrub dominate the south—home to baobab trees, cacti, succulents and creatures like radiated tortoises.

2. Ankarana Tsingy

This northerly limestone labyrinth is the geological remains of ancient reef, carved by rain and underground rivers into towers, cliffs and canyons where lemurs and chameleons live. Bats and crocodiles inhabit its caves.

3. Wetlands

Eastern marshes, rivers and ponds are home to endangered birds, reptiles, amphibians and lemurs. In the west, river deltas also create biodiverse wetlands.

4. Rainforests

Lemurs, eagles, owls, orchids and many other species are found in the island's rainforests. These are also home to the rarest animal species—but are most threatened by agriculture and development.

Fun Fac

Tricha Cross
[redacted]
DV 02 Bermuda
Telephone: [redacted]
Email: [redacted]
tacross@gov.bm

Education:

1993 -1998 Warwick Academy 9 - I.G.C.S.E certificates

1998 - 2001 Bermuda College AD Arts and Science

2004 - 2007 Jacksonville State University BS Biology - Animal Science

Employment:

Jan 1997 - Dec 1999	Bermuda Aquarium Museum and Zoo *Aquarium and Zoo husbandry; maintaining marine species, preparation of diets, daily husbandry and exhibit cleaning and maintenance.*
Summer 1999/2000	Department of Agriculture and Fisheries - Botanical Gardens Plant Lab *Assistant Plant Protection Officer- cataloguing imported plants, inspection and identification of plant pests and diseases, treatment of plants to prevent spread of pests and diseases, inspection of local orchards and golf courses for plant pests.*
Spring 2000	Bermuda College *Student Government Council office secretary*
May - November 2001	A.S. Cooper's & Sons Ltd. *Warehouse Staff*
April 2002 - Aug 2004	Aberfeldy Plant Nursery (Somerset) *Grower Bedding and House Plant depts. Planting and propagation of bedding and houseplants, creating and implementing fertilization regime, application of pest control, selection and transport of plants to retail hub.*
Summer 2005 & 2006	Department of Community and Cultural Affairs *Summer Student - Various Tasks*
June 2007 – Sept 2008	Ettrick Animal Hospital *Receptionist* *Kennel Assistant- animal husbandry, cleaning kennels, feeding cats and dogs, exercise and socializing dogs, dog and cat grooming, flea treating and medicating when necessary, assisting in animal surgeries.*

September 2008 – present Bermuda Aquarium Museum and zoo

Aquarist – Maintenance and husbandry of Aquarium exhibits, cleaning and feeding of tanks, exhibit enhancement, specimen collection, quarantine and medical treatment when necessary. Training and husbandry of harbor seals.

Senior Aquarist – Management of volunteer aquarists and junior staff. Managing "Local Tails" building including terrestrial exhibits, capture, quarantine and medical treatment (when necessary) of reptiles and amphibians for display, propagation of meal worms, crickets and flies as food for terrestrial animals.

Zookeeper – Cleaning, upkeep and maintenance of zoo exhibits, training and husbandry for binturongs, tree kangaroo, parma wallabies, fruit bats, cockatiels and eclectus parrot. Exhibit enhancement, new specimen research, assist with animal medical exams and procedures.

Head Zookeeper – Management of keeper staff, overseeing of exhibit improvements, animal care, training and management and facility requirements.

References:

IAN D. F. WALKER BVM&S MRCVS

CURRICULUM VITAE

[redacted]

Smiths, Bermuda

HOME PHONE [redacted]

EMAIL idwalker@gov.bm

EXPERIENCE

Principal Curator, Bermuda Aquarium Museum and Zoo

July 2009 - Present

Executive Director of the Bermuda Aquarium, Museum and Zoo

Veterinarian / Curator, Bermuda Aquarium, Museum, and Zoo

January 2004 – July 2009

Curator and veterinarian of the aquarium and zoo managing daily operations of an AZA accredited institution with a diverse aquatic and terrestrial collection. Chief responsibilities include:

- Managing and overseeing work of thirty plus people in our marine operations, aquarium, zoo, and plant departments
- Development and construction of a new veterinary hospital and associated exhibit
- Development of a new animal records system with full IT integration between all departments and a major international aquarium
- Continued development of National Aquarium in Baltimore's and Denver Zoological Park's database TRACKS
- Managing all aspects of the Preventative Medicine Plan and daily veterinary operations of the BAMZ collection

Associate Veterinarian. National Aquarium in Baltimore, Baltimore, Maryland, USA. *June 2000 – January 2004*

Chief clinical veterinarian providing daily care for eleven thousand animals including eight hundred different species.

Essential functions include:

- Daily medical care of collection animals and stranded marine animals.
- Developing, monitoring, and execution of preventative medicine practices.
- Performing clinical research and presenting findings through publications and conference presentations.
- Managing the daily veterinary operations, budget, and personnel at our off-site animal care center.
- Managing all aspects of the Veterinary Preceptorship Program
- Playing an integral part in the development of the animal care and laboratory modules of the National Aquarium's Animal Management Database *TRACKS*

Veterinary Internship. National Aquarium in Baltimore, Baltimore, Maryland, USA. *June 1998 - June 2000*
Sole veterinary intern providing veterinary care for all animals housed at the National Aquarium. Primary veterinarian for the Marine Animal Rescue Program which involved providing veterinary care for stranded marine animals from Delaware to Virginia.

Aquarist / Veterinarian. Bermuda Aquarium, Museum and Zoo, Flatts, Bermuda. *December 1996 – June 1998*
Aquarist duties included daily husbandry care of the animals housed at the Bermuda aquarium, water quality monitoring, and exhibit maintenance, design and construction. Veterinary duties included care of the harbor seal population, blood collection, hormonal analysis and reproduction control, and sea turtle examinations and necropsies.

Veterinarian. Abervet Companion Animal Hospital, Aberdeen, Scotland, UK *October 1995 – July 1996*
Veterinarian providing medical and surgical care for companion animals in a busy three veterinarian practice.

EDUCATION

Bachelor of Veterinary Medicine and Surgery. University of Edinburgh, Scotland, UK. *October 1990 – July 1995*
Courses included veterinary anatomy, physiology, biochemistry, animal husbandry and management, nutrition, genetics, breeding, statistics, pathology, microbiology, parasitology, pharmacology, general therapeutics, veterinary medicine, veterinary surgery, veterinary obstetrics and reproduction, veterinary public health, and principles of epidemiology.

Bachelor of Science (First Year). Queen's University, Kingston, Ontario, Canada. *September 1989 – June 1990*
Courses included Biology (Organization For Life – The Cell), General Chemistry, Differential and Integral Calculus, General Physics, Philosophy (Knowledge, Persons, and Goodness)

Post-Graduate Year. Saltus Grammar School, Pembroke, Bermuda *September 1988 – June1989*
Advanced Placements courses in Biology, Chemistry, Physics, and English Literature.

PUBLICATIONS

Amphibian therapeutics
In: Veterinary Clinics North America: Exotic Animal Practice 3[1]:239-55, 2000 Jan Walker I, Whitaker B

Public aquaria
In: Manual of Ornamental Fish, 2nd ed. 2001. Wildgoose WH, pp53-62. BSAVA, Gloucester, UK
Walker I, Whitaker B

Lymphoid leukemia in a yellow-lipped sea krait, *Laticauda colubrina*
In Proc: International Association of Aquatic Animal Medicine 30th Annual Conference. 1999, p31.
Walker I, Whitaker B, Kincaid A

Topical administration of recombinant human platelet-derived growth factor to aid healing of chronic dermal ulcerations in a giant leaf tree frog (*Phyllomedusa bicolor*)
In Proc: International Association of Aquatic Animal Medicine 34th Annual Conference. 2003, p178.
Walker I, Whitaker B

Intestinal anastamosis and administration of oxyglobin in an injured smalltooth sawfish (*Pristis pectinata*)
In Proc: International Association of Aquatic Animal Medicine 34th Annual Conference. 2003, p179.
Walker I, Whitaker B, Giardina M, Henningsen A

Modern Computed Tomography Applications in Veterinary Medicine
Radiographics 22:55-62, 2002
Garland M, Lawler L, Walker I, Whitaker B, Corl FM, Fishman E

Paramyxovirus infection in caiman lizards (*Draecena guianensis*)
J Vet Diagn Invest 13[2]:143-51 2001 Mar
Jacobson ER, Origgi F, Pessier AP, Lamirande EW, Walker I, Whitaker B, Stalis IH, Nordhausen R, Owens JW, Nichols DK, Heard D, Homer B

Pectoral and pelvic girdles and appendages of a schneider's smooth-fronted caiman (*Paleosuchus trigonatus*): radiographic, three dimensional volume rendered multidetector row computer automated tomography correlation
J Zoo Wildlife Med, In print
Giardina M, Lawler L, Fishman E, Walker I, Whitaker B

CONFERENCES

Lymphoid leukemia in a yellow-lipped sea krait, *Laticauda colubrina*
International Association of Aquatic Animal Medicine 30th Annual Conference 1999

Veterinary management of sharks
Special Species Club Conference, April 2002. University of Pennsylvania School of Veterinary Medicine

Topical administration of recombinant human platelet-derived growth factor to aid healing of chronic dermal ulcerations in a giant leaf tree frog (*Phyllomedusa bicolor*)
Eastern Fish Health Workshop Conference, April 2003. Gettysburg, Pennsylvania

Intestinal anastomosis and administration of oxyglobin in an injured smalltooth sawfish (*Pristis pectinata*)
International Association of Aquatic Animal Medicine 34th Annual Conference 2003

LECTURES

Aquatic animal nutrition
Introduction to Aquaculture Course, November 1998-2002. University of Maryland College Park

Diseases of wildlife: reptiles and amphibians
Wildlife Diseases Course, December 1999-2002. University of Maryland College Park

Diseases of reptiles and amphibians
Wildlife Diseases Course, March 2003. University of Pennsylvania School of veterinary medicine

Zoonotic diseases and the risks of working with marine animals
Marine Animal Rescue Program – Volunteer training. July 1998-2000

NATIONAL MEDIA EXPOSURE

Following completion of NAIB's Media Training Program

National Geographic Today Show

Discovery Channel Shark Week
Animal Planet
ABC's Hopkins 24/7
Reuters, CNN, ABC (written articles)

PROFESSIONAL AFFILIATIONS

Member of the Royal College of Veterinary Surgeons
Director (Ex-Officio), Bermuda Zoological Society
Director (Ex-Officio), Atlantic Conservation Partnership

SKILLS AND INTERESTS

PADI Rescue Diver
CPR Training
Recompression Chamber Training, British Sub-Aqua Club
Skilled computer user: Microsoft Office, Photoshop, Illustrator
Photography

REFERENCES

Available upon request

ROMA HAYWARD BSc. RVT

[redacted]

Animal Care and Quarantine Officer
Bermuda Aquarium Museum and Zoo, Flatts Bermuda
July 2012- Present

- Manage animal care centers which include zoo and marine quarantine, marine lab and veterinary hospital.
- Manage equipment and technology in the hospital and marine lab.
- Maintain accurate records in all areas of responsibility.
- Maintains inventory of veterinary hospital.
- Implements preventative veterinary medical plan.
- Conducts routine husbandry on marine and terrestrial species in quarantine.
- Maintain surgical suite and proper sterilisation techniques.
- Carry out treatment plans.
- Run diagnostics test on lab samples in haematology and cytology.
- Oversee protocols within the animal care sections.
- Oversee and care for animals in the wildlife rehabilitation program.

Humane Education Officer
Bermuda SPCA, Paget, Bermuda
October 2010- July 2012

- Developed an education program to provide Humane Education to the community and the local school systems.
- Communicated with the Department of Education
- Networked in the community.
- Developed programs that to be offered.
- Wrote classroom lesson plans that line up with the school curriculum
- Provided educational material for the shelter
- Assisted with staff professional development
- Established a budget for the program
- Followed a budget and monitored expenses

Manager of Marine Animals
Dolphin Quest Bermuda, Sandy's, Bermuda
February 2000-September2010

- Managed inventory of laboratory supplies and placed orders following a budget.
- Collected and conducted diagnostic laboratory testing including Complete Blood Counts, Chemistries, Urinalysis, and cytology.
- Prepared paperwork for import of equipment and pharmaceuticals.
- Prepared paperwork for export of laboratory samples adhering to Bermuda and USDA guidelines.
- Maintained records in accordance with the requirements of the USDA and Alliance of Marine Mammals Parks and Aquariums
- Maintained fish inventory by managing shipments and orders from overseas vendors. This included matching shipments for invoice accuracy.
- Budget planning and monitoring
- Managed daily operations and staff
- Preventative health care of 11 Atlantic Bottlenose dolphins
- Established training protocols within the department
- Responsible for payroll and staff schedules
- Responsible for staff recruitment and training
- Determined departmental needs, hiring with focus on retention
- Maintained and encouraged open communication to allow solid relationships between co-workers and general level employees and the management team
- Motivated the team through training, delegation, empowerment and regular positive and constructive feedback
- Shared monthly goals and projections with the staff
- Provided staff development and employee recognition program
- Wrote and presented staff evaluations and performance appraisals
- Developed and implemented new interactive programs
- Conducted onsite laboratory sample analysis (cytology, haematology and urinalysis) to assist with husbandry monitoring and preventative health care
- Lead on fetal ultrasound and practiced on general ultrasound of lungs, kidneys, testes and ovaries
- Maintained collaborative relationships (BAMZ, Windreach, BFAB, SPCA)
- Assigned behavior training and tracked progress
- Assessed Dolphin Diets including the monitoring of animal morphometrics
- Supported research projects by providing sample collection and in kind support
- Environmental assessment and needs for animals and facility repairs
- Hurricane monitoring and preparation
- Handled local and international media inquiries and visits including interviews

Registered Veterinary Technician
Endsmeet Animal Hospital, Devonshire, Bermuda
September 1999-February 2000

- Conducted diagnostic laboratory testing including Complete Blood counts, Chemistries, Urinalysis, and cytology.
- Responsible for radiographs.
- Assisted in surgery.
- Performed dentistries.
- Performed regular nursing care duties including continuing care.

Registered Veterinary Technician Instructor (Maternity Leave Coverage)
University of Guelph, Ridgetown College Campus, ON
November 1998-May 1999

- Instructed students in Radiographic techniques and troubleshooting
- Conducted Animal Behaviour lectures for domestic species
- Taught Medical Exercises for practical clinical techniques
- Developed lesson plans, tests and exams
- Explained both theory and practical techniques

Registered Veterinary Technician
Topsail Road Veterinary Clinic, St. John's, NL
June 1998- October 1998

- Involved in customer care and education
- Responsible for some hospital inventory and ordering
- Conducted in-house diagnostic laboratory tests (Haematology and Urinalysis and cytology)
- Responsible for radiography
- Assisted in surgery
- Performed dentistries
- Performed regular nursing care duties including continuing care

Registered Veterinary Technician
The Community Vet Hospital, Clarenville, NL
June 1997- June 1998

- Organised and set up a new laboratory and surgery suite with protocols
- Managed hospital inventory
- Involved in customer care and education
- Involved with community education
- Conducted behavioural consultations
- Conducted diagnostic laboratory tests (Urinalysis, Haematology, cytology)
- Responsible for radiography. Developed a technique chart for a new machine
- Performed dentistries
- Developed and taught puppy socialisation classes
- Performed regular nursing care duties including continuing care.
-

Aquaculture Assistant
Ocean Sciences Center, St. John's, NL
May - August 1995, 1996

- Performed plasma steroid analysis of the growth hormones in Cod and Flounder
- Raised Cod and Yellow Tail Flounder larvae
- Cared for mature fish
- Conducted radioactive Isotope Assays
- General laboratory techniques

EDUCATION

- **Veterinary Technology -** Ridgetown Agricultural College, Ontario April 1997
- **Registered Veterinary Technician** - Ontario Association of Veterinary Technicians registration exam June 1997
- **Artificial Insemination Certificate** - Gencor, Woodstock, ON 1996
- **Bachelor of Science, Biology Major** - Memorial University of Newfoundland May 1995

SKILLS AND MEMBERSHIPS

- Ontario Veterinary Medicine Association Award (Above Average Standing with Emphasis in Clinical Practice)
- A working knowledge of Microsoft Office applications (Word, Excel, Publisher, PowerPoint and Outlook)
- CPR and First Aid certified
- Radioisotope Safety Certificate 1995
- Member of the Ontario Association of Veterinary Technicians(OAVT) since 1997
- Professional Member of International Marine Animal Trainers Association (IMATA)since 2000
- PADI Open Water Diver certified in 2001
- Completed a Supervisory Management course with the Bermuda Community Education 2003
- Completed a Leadership Greatness Seminar facilitated by Bermuda Employers' Council in October 2006
- Completed and passed Bermuda Marine Engine Operators course April 2013

FRESNO CHAFFEE ZOO

ANIMAL TRANSACTION CONTRACT

Date: February 26 2019

Bermuda Aquarium, Museum, and Zoo	Patrick Talbot
Recipient	*Contact name*
40 North Shore Road	441-293-2727 x 2131
Address	*Telephone*
Hamilton, FL 04, Bermuda	pvtalbot@gov.bm
City/State/Zip	*Email address*

This document will serve as confirmation of the following animal transaction(s) from Fresno Chaffee Zoo (FCZ):

Quantity/Sex	Species	Local ID #	Conditions (donation/breeding loan/loan transfer)
2.1	red ruffed lemur *(Varecia rubra)*	220056; 207028 207027	Donation; move per SSP recommendation.

Fresno Chaffee Zoo animal transactions are subject to the following conditions:

1. The recipient agrees that the specimens and their offspring will not be utilized, sold, or traded for the purpose of sport or subsistence hunting; for use in any invasive or terminal research program (except when complying with requests from a Species Survival Plan); for disposal at any animal auction; nor for any other purpose that is contrary to the AZA Code of Ethics (see reverse, Appendix I). These conditions also apply to non-AZA members.
2. The recipient agrees that the specimens and their offspring will be housed, fed, and maintained in a manner that will ensure their health and well being.
3. The recipient agrees and certifies that the acceptance or disposal of these specimens and their offspring is in compliance with any Federal, State, or local regulations.
4. The recipient agrees to be responsible for shipping charges on the animal(s) it receives unless otherwise arranged. **When FCZ rigid plastic crates are used, the recipient will be invoiced for the replacement costs.**
5. FCZ will provide basic fecal and blood sample testing. Any other requested veterinary test will be charged to the receiving institution.
6. The recipient agrees to provide references and documentation of these conditions to the FCZ upon request, prior to the transfer of the animal(s). Such documentation might include, but is not limited to, information on the institution's purpose and goals in response to the animals to be acquired, photos and diagrams of the exhibit, copies of USDA inspections, copies of permits, collection expertise and qualifications of staff.
7. Recipients of nonhuman primates are subject to the conditions set forth by the Center for Disease Control (CDC) (see reverse, Appendix II).

I hereby affirm that I have read, understand, and agree to abide by all the conditions enumerated on both sides of this transaction form. I also declare this transaction has been approved through my institution's acquisition/disposition process and sign this form as a duly authorized representative.

2-27-19
Authorized Representative/ FCZ Date

2-27-19
Authorized Representative/ FCZ Date

1-3-19
Recipient Authorized Representative Date

PLEASE SIGN AND RETURN ONE COPY TO:

Linda Cover, Registrar
Fresno Chaffee Zoo
894 W. Belmont Ave.
Fresno, CA 93728
Telephone #: 559-498-5912
Fax #: 559-264-9226
Email: lcover@fresnochaffeezoo.org

Animal Transaction Contract

APPENDIX I

AZA Code of Ethics: Excerpts

I. Obligations of Professional Ethics

In order to promote high standards of conduct in our profession, the AZA has formulated the following basic principles for the guidance of its members:

As a member of the AZA, I pledge to:

A. Realize that I have moral responsibilities not only to my professional associates, my fellow employees, and the public, but also to the animals under my care.

B. Display the highest integrity, the best judgment or ethics possible, and use my professional skills to the best interests of all.

C. Deal fairly with members in the dissemination of professional information and advice.

H. Cooperate with qualified zoos/aquariums and other qualified persons/organizations in breeding programs of endangered and other species.

I. Aid the professional development of those who enter the zoological park and aquarium profession by assisting them to understand the functions, duties, and responsibilities of the profession.

II. Mandatory Standards

2. Misconduct

c. A member shall not knowingly engage in activities contrary to local, state, federal, or international laws as such laws relate to our profession; and a member will, to the best of his or her ability, cooperate with governmental agencies regulating animal welfare and animal transactions.

e. A member will make every effort to assure that all animals in his/her collection and under his/her care are disposed of in a manner which meets the current disposition standards of the Association and do not find their way into the hands of those not qualified to care for them properly.

3. Disclosure of Information

a. A member shall not knowingly misinform others regarding animal records or specimen disposition, professional information, and advice.

b. A member shall not alter animal records or alter the facts concerning age, condition, or other material information about any animal in order to affect the sale, trade, loan, or other transaction with respect to such animal.

ADDENDUM

Animal Auctions (1981)

AZA members offering wildlife for sale at auctions attended by the general public are in violation of the AZA Code of Professional Ethics, specifically Mandatory Standards, 2-e.

Use of *Animal Exchange* (1984)

Individuals may utilize *Animal Exchange* to purchase specimens if the following criteria are followed: the individual should, during the initial contact, identify his or her intentions and make the seller aware if the specimen(s) will go to the purchaser's private collection and not the zoo in question.

Procurement of SSP Animals (1986-modified 1990-revised 1993)

Attempts by members to circumvent AZA conservation programs in the procurement and/or disposition of specimens of SSP animals are detrimental to the Association and its conservation programs. Such actions may be detrimental to the species involved and could be construed as a violation of the Association's Code of Professional Ethics. All Association members should work through SSP species coordinators and appropriate propagation groups in efforts to procure or dispose of specimens of SSP species.

APPENDIX II

(42 CFR 17.53) (c) Live nonhuman primates may be imported and sold, resold, and otherwise distributed only for bona fide scientific, educational, or exhibition purposes. Importation for use in breeding colonies is also permitted provided all offspring will be used only for scientific, educational, or exhibition purposes. The maintenance of nonhuman primates as pets, hobby, or an avocation with occasional display to the general public is not a permissible use.

Population Analysis & Breeding and Transfer Plan

Red Ruffed Lemur (*Varecia rubra*)

AZA Species Survival Plan®
Yellow Program

AZA Species Survival Plan® Coordinator
Christie Eddie, Omaha's Henry Doorly Zoo & Aquarium
(christiee@omahazoo.com)

AZA Studbook Keeper
Mylisa Whipple, Saint Louis Zoo
(whipple@stlzoo.org)

AZA Adjunct Population Advisor
Gina M. Ferrie, Disney's Animal Kingdom®
(Gina.M.Ferrie@disney.com)

23 January 2019

PMC
Population Management Center
LINCOLN PARK ZOO. ASSOCIATION OF ZOOS & AQUARIUMS

Disney's ANIMALS, SCIENCE and ENVIRONMENT

Executive Summary
Species Survival Plan® for Red Ruffed Lemur (*Varecia rubra*)

The current SSP population of red ruffed lemurs lemurs is N = 189 animals (97 males; 90 females; 2 unknown sex) at 48 AZA institutions and 4 non-member participating institutions. This Population Analysis and Breeding and Transfer Plan was prepared December 2018 at Disney's Animal Kingdom®. The last Breeding and Transfer Plan for this species was finalized 3 December 2016. Analyses were based on the North American data of the International *Varecia rubra* Studbook (current to 27 July 2018) and were performed using PopLink 2.4 and PMx 1.5.20180925.

The target population size designated by the Prosimian Taxon Advisory Group 2014 Regional Collection Plan is 225. This population currently qualifies as a Yellow SSP.

Genetic diversity in this population is currently 91.49%. When gene diversity falls below 90% of that in the founding population, it is expected that reproduction will be increasingly compromised by, among other factors, lower birth weights and greater infant mortality. Gene diversity in 100 years is projected to be 83.3% (based on current statistics, assuming a target population for projections of 225 and lambda = 1.049). Gene diversity in 10 generations (85 years) is projected to be 84.5%. Equalizing the founder representation by breeding individuals from underrepresented lineages and increasing the effective size, and target population size could extend gene diversity retention.

Demography	
Current size of population (N) – Total (Males.Females.Unknown Sex)	189(97.90.2)
Number of individuals excluded from the potentially breeding population	25(11.14)
Population size following exclusions	164(86.76.2)
Target population size (Kt) from the Prosimian TAG's 2014 RCP	225
Mean generation time (T; years)	8.5
Historical population growth rate (λ; life table lambda 1973-present) / 5 – year from Poplink census / Projected growth rate from PMx stochastic 20 yr projections	1.049 / 0.986 / 1.035 <> 1.048 <> 1.060

Genetics		
	2019	***Potential***
Founders	12	0
Founder genome equivalents (FGE)	5.88	9.12
Gene diversity (GD %)	91.49%	94.52%
Population mean kinship (MK)	0.0851	-----
Mean inbreeding (F)	0.0454	-----
N_e/N (Effective population size/census size ratio)	0.2823*	-----
% Pedigree Known prior to assumptions and exclusions	89.0%	-----
% Pedigree Known after assumptions and exclusions	100%	-----
% Pedigree Certain after assumptions and exclusions	96.6%	-----
Projections		
	[a]Historical/ Projected λ = 1.049	
Years to 90% GD	17	-----
Years to 10% loss of GD	112	-----
Gene Diversity at 100 Years (%)	83.3%	-----
Gene Diversity in 10 Generations (%)	84.5%	-----
Generation time (*T*) and Target population size used in projections	*T*=8.5 x 10 = 85 Target = 225	

*Value includes founders in calculations.
[a]Projected/Historical λ is growth rate from PMx stochastic 20 yr projections and historical λ from demographic window (1973-2018) from life table calculated in PMx.

Demographic analyses indicated that to increase the population size to 225 in 4 years, approximately 19-24 births are required (λ = 1.045). To remain at the current size (λ = 1.00), approximately 10 births are needed in the next year. As with most SSP populations, pairings are prioritized to maintain or increase gene diversity through considerations of mean kinship, avoidance of inbreeding, differences in sire and dam mean kinships, and the degree of uncertainty within a pedigree.

Summary Actions: The SSP recommends 16 breeding males and 14 breeding females, as well as 18 transfers for this period. Approximately 19-24 births per year are required to grow this population to a size of 225 in the next 4 years.

This Animal Program is currently a Yellow SSP Program and recommendations proposed are non-binding – Participation is voluntary. Dispositions to non-AZA institutions must comply with each institution's acquisition/disposition policy, in accordance with the AZA policy on Responsible Population Management.

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Acknowledgments

A master planning session was held 10 August 2018 via internet conference and was attended by Gina Ferrie (Disney's Animal Kingdom), Christie Eddie (Omaha's Henry Doorly Zoo) and Britt Keith (Duke Lemur Center) and a number of additional institutions with representatives joining (Fresno, Bronx Zoo, and others).

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This report, including analyses and specific recommendations, has been produced by the Adjunct PMC advisor listed on the title page.

Description of Population Status
Species Survival Plan® for the Red Ruffed Lemur (*Varecia rubra*)

Introduction: The Prosimian Taxon Advisory Group Regional Collection Plan (2014) designated the red ruffed lemur population to be managed as an SSP with a target size of 225. The current population consists of 189 individuals (97 males; 90 females; 2 unknown sex) distributed among 48 AZA institutions and 4 non-member participating institutions. This population currently qualifies as a Yellow SSP.

Comprehensive genetic and demographic analyses of the population were performed in November 2018 resulting in the current Breeding and Transfer Plan for the red ruffed lemur SSP population. The last Breeding and Transfer Recommendations for this species were published 3 December 2016. Recommendations contained in this report represent the results of these analyses. Demographic and genetic analyses were performed on the North American data of the International Studbook (current to 27 July 2018) using PopLink 2.4 and PMx 1.5.20180925. The goal of these recommendations is to help ensure the genetic and demographic health of this population. Recommendations contained in this plan supersede those made in earlier plans.

Status and Conservation: Red ruffed lemurs are endemic to the country of Madagascar and are currently listed as Critically Endangered by IUCN due to severely fragmented habitat, restricted range and decline in the quality of habitat within in the range of the species. They are also susceptible to human encroachment and hunting and trapping for food.

Analytical Population: The current population size is 189 (TAG recommended size = 225). No assumptions were required for this population as the few animals with unknown pedigree have been excluded from genetic analyses (Appendix A). Prior to inclusion of MULT parentage and exclusions, the population is 89% known. A total of 25 individuals (11.14) were excluded from the potentially breeding population due to advanced age, sterility, health concerns, and being unknown pedigree (Appendix C). The population of potentially breeding animals following all exclusions is 164 (86.76.2).

Demography: Red ruffed lemurs were first seen in North American facilities in the early 1960s but in very small numbers, with the original imports being done by Duke Lemur Center. The first births occurred in 1966. Since then, the SSP population grew fairly consistently, peaking in 2011 with 197 animals. The North American managed population has displayed a general trend of increase since the early 1960s with an average growth rate of about 8.0% (average λ last 50 years = 1.080; Figure 1). Average growth for the last 10 years was stable (average λ = 1.004), and in the last five years the growth rate has been declining by 1.4% (average λ = 0.986). In the last five years, number of births has varied from 5-31 each year with an average of 12.8 births per year.

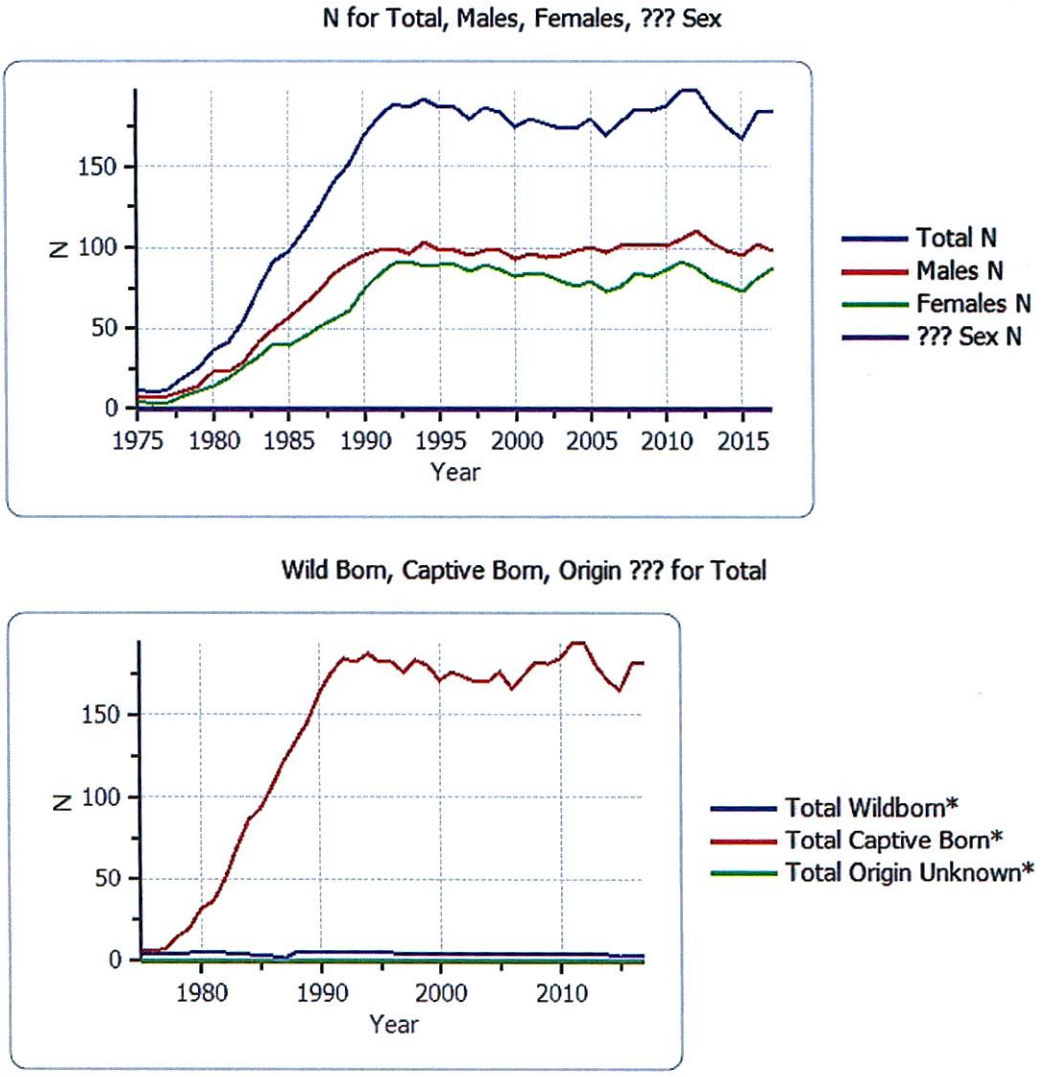
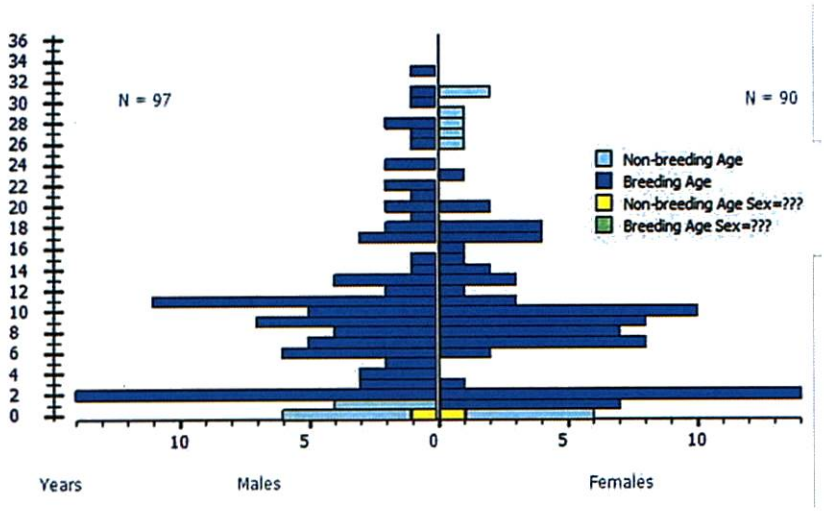


Figure 1. Census of red ruffed lemur in the North Americna managed population (AZA and Partners) 1975 - 2017 by sex and by birth type.

The age structure of the total population is fairly robust (Figure 2a). However, a series of short periods of high production interspersed with periods of low production are evident. Such inconsistencies in annual growth rates often result in difficulty predicting future population growth rates as the number of individuals entering and leaving reproductive age classes vary from year to year. Efforts should be made to stabilize the age distribution in the interest of easing future management by repeatedly evaluating the number of recommended breeding pairs, only breeding recommended pairings, and not bringing in animals from outside the managed population. The broad base of the pyramid shows the very recent success in producing more litters the last two years.

a)



b)

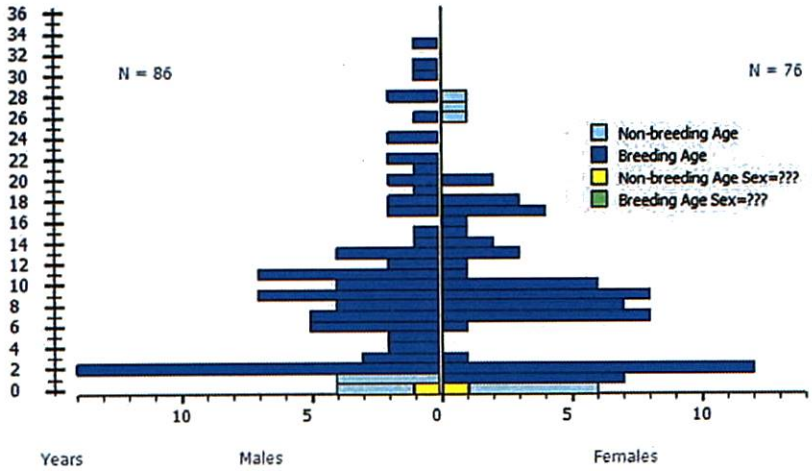


Figure 2. Age structure of the red ruffed lemur population in AZA and non-member participating institutions a) prior to and b) after genetic exclusions showing age classes 0-33 as of November 2018. Sterile and unknown sex animals appear half on both sides of the pyramid.

According to studbook records from 1973-2017, first year mortality in the SSP population is 27% for males and 22% for females. Males become sexually mature at almost two years of age. Females become reproductively mature just before two years of age as well. In males, it appears that fecundity peaks between 4-10 years of age, and declines slightly until senescence is reached at approximately age 33, although data in the very upper age classes is sparse for males, and they may be able to reproduce through the end of their lives. In females, fecundity peaks between ages 5-7, with senescence reached at approximately 23 years. However, the oldest female to give birth in the global population was almost 30 years old. The oldest male red ruffed lemur lived to be slightly older than 34 years and was born at San Diego and died at a zoo in France. The oldest female red ruffed lemur lived to be approximately 36 years old and was wild caught, and died at Duke Lemur Center. However, survival statistics suggest that if a red ruffed lemur survives its first birthday, its median life expectancy is 19.9 years. Most red ruffed lemurs in the SSP population give birth to twins (32.86%) or triplets (34.86%), but litter size up to six infants has been recorded. The median litter size is 2 offspring. Most births take place from March-June, with most occurring in April and May.

Genetics: The SSP red ruffed lemur population is descended from 12 founders and no potential founders remain. Given current population parameters, gene diversity is estimated to be approximately 91.49%. This is equivalent to approximately 6 unrelated individuals (FGE = 5.88). Population mean kinship (MK) is 0.0851, and mean inbreeding (F) is 0.0454. The ratio of N_e/N in this population, including founders in the calculations (0.2823) is slightly below average for monogamous species, and reflects the need to ensure multiple breeding pairs are successfully breeding.

Based on current statistics, at 100 years from present with a positive growth rate of 4.9% (historical λ from demographic window and 20 year projected λ = 1.049) and a target population size of 225, gene diversity is estimated to be 83.3%. In 10 generations, or 85 years, gene diversity is estimated to be 84.5%. When gene diversity falls below 90% of that in the founding population, it is expected that reproduction will be increasingly compromised by, among other factors, lower birth weights and greater infant mortality. To retain gene diversity for a longer period of time, pairings should be made in order to maintain or minimize low population mean kinship and mean inbreeding values and to equalize the founder representation (Figure 3).

At this time, this population meets the standards to be a Yellow SSP. In order to become a Green SSP, or maintain 90% gene diversity for 100 years or 10 generations, more founders would need to be incorporated into this population. Incorporating one new founder every nine years would lead to retention of 90% gene diversity for 108 years. There may be a small possibility to add new founders to this population through global cooperation and working with confiscated animals in Madagascar, but it is unlikely that a regular influx of new founders could occur at this time.

Genetics							
	2008	*2012*	*2014*	*2015*	*2016*	*2019*	*Potential*
Founders	12	12	12	12	12	12	0
Founder genome equivalents (FGE)	6.43	6.33	6.18	6.11	5.96	5.88	9.12
Gene diversity (GD %)	92.20%	92.10%	91.91%	91.82%	91.61%	91.49%	94.52%
Population mean kinship (MK)	0.078	0.0790	0.0809	0.0818	0.0839	0.0851	-----
Mean inbreeding (F)	0.052	0.0478	0.0419	0.0398	0.0430	0.0454	-----
N_e/N (Effective population size/census size ratio)	0.21	0.1923	0.2316*	0.2416*	0.3200*	0.2823*	-----
% Pedigree Known prior to assumptions and exclusions	----	----	93.0%	93.0%	92.0%	89.0%	-----
% Pedigree Known after assumptions and exclusions	99.0%	100.0%	100.0%	100%	100%	100%	-----
% Pedigree Certain after assumptions and exclusions	-----	-----	-----	-----	98.0%	96.6%	-----
Projections							
		[a]Projected λ = 0.993	[b]Historical λ = 1.051	[c]Historical/ Projected λ = 1.048	[d]Historical/ Projected λ = 1.05	[e]Historical/ Projected λ = 1.049	
Years to 90% GD	-----	12	16	16	20	17	-----
Years to 10% loss of GD	-----	-----	85	91	124	112	-----
Gene Diversity at 100 Years (%)	-----	72.38%	81.3%	81.8%	84.2%	83.3%	-----
Gene Diversity in 10 Generations (%)	-----	-----	83.4%	83.6%	85.4%	84.5%	-----
Generation time (*T*) and Target population size used in projections			*T*=7.9 x 10 = 79 Target = 225	*T*=8.1 x 10 = 81 Target = 225	*T*=8.3 x 10 = 83 Target = 225	*T*=8.5 x 10 = 85 Target = 225	

*Value includes founders in calculations.
[a]Projected λ was used in 2012 for projections with PM2000.
[b]Historical λ is population growth rate from demographic window (1973-2013) from life table calculated in PMx.
[c]Projected λ is growth rate from PMx stochastic 20 yr projections and historical λ from demographic window (1973-2014) from life table calculated in PMx.
[d]Projected/Historical λ is growth rate from PMx stochastic 20 yr projections and historical λ from demographic window (1973-2015) from life table calculated in PMx.
[e]Projected/Historical λ is growth rate from PMx stochastic 20 yr projections and historical λ from demographic window (1973-2018) from life table calculated in PMx.

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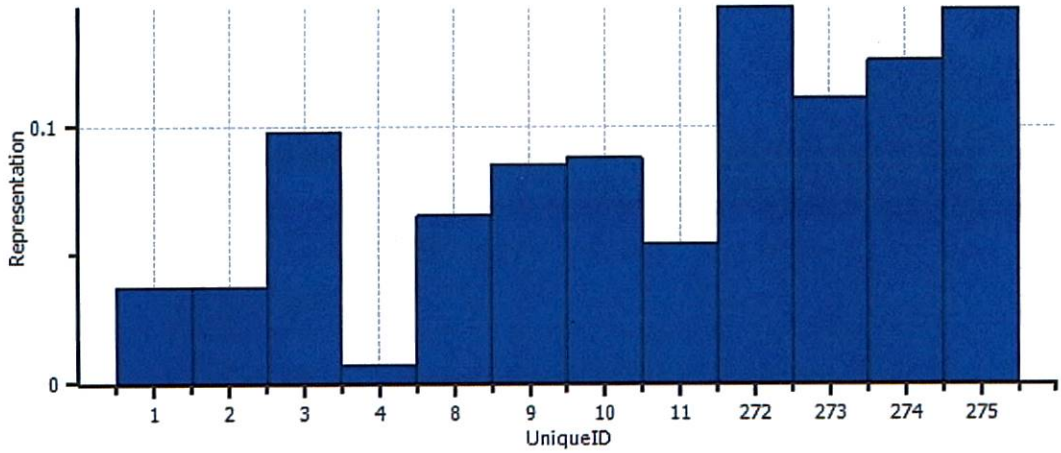

Figure 3. Founder representation graph illustrating the unequal distribution of founder lines in the red ruffed lemur SSP population as of December 2018.

Management Strategy: The current total population is 189 with a TAG recommended target of 225. According to demographic projections, approximately 19-24 births are needed each year to increase the population to the target size in 4 years at a growth rate of 4.5% ($\lambda = 1.045$). To simply maintain the population at its current size ($\lambda = 1.00$), approximately 10 births are required in the next year.

This is a 1-year plan (2019-2020). Another full set of recommendations will be produced in summer of 2020 but interim recommendations will be made as needed. **Please promptly report births and deaths to the SSP Coordinator so that interim recommendations can be made as soon as possible.**

To meet population goals, the SSP:

1) Recommends 16 males and 14 females to breed in this for this plan.
    - All institutions are expected to hold offspring in their family groups as long as possible, a minimum of 2-3 years.

2) Recommends 18 transfers to set up new breeding pairs and fulfill institutional requests.

3) Weight management of both males and females is crucial for reproductive success. Institutions that have breeding recommendations are expected to maintain healthy weights on their lemurs. The SSP requests that all institutions, particularly those with breeding recommendations follow the weight guidelines for *Varecia rubra*:
    - Maintain weight (particularly of breeding individuals) between 3.3-3.8kg
    - Obtain weights at a minimum of once a month, particularly on breeding individuals.

4) Recommendations about contraception options for females can be obtained from the AZA Reproductive Management Center in the Saint Louis Zoo (contraception@stlzoo.org or phone 314-646-4595). Females should be contracepted by the time they are 1.5 years old. ***Please contact the SSP coordinator before considering permanent contraception for any animals – all red ruffed lemurs are considered part of the SSP managed population and decisions about permanent contraception will be made on a case by case basis***

5) Institutions wishing to receive or place lemurs should contact the SSP Coordinator as soon as possible to identify animals or transfer locations. Animals are available for transfer within the SSP and we can create single-sexed or mixed-sexed pairs or groups for exhibit purposes and for potential breeding.

Recommendation Outcomes: The website PMCTrack calculates the outcomes for SSP recommendations by comparing Breeding and Transfer Plan recommendations to births and deaths recorded in the studbook. Of the recommendations proposed in the 2017 Red Ruffed Lemur Breeding and Transfer Plan, 37.5% of the BREED WITH recommendations were fulfilled, and 75.00% of SEND TO recommendations were fulfilled as requested by July 2018. There are many reasons that recommendations may not be fulfilled, including interim recommendations issued by the SSP Coordinator; these reasons can be captured using PMCTrack Outcomes Surveys. SSP participants are always encouraged to attempt to fulfill recommendations and to communicate successes and failures to the SSP Coordinator.

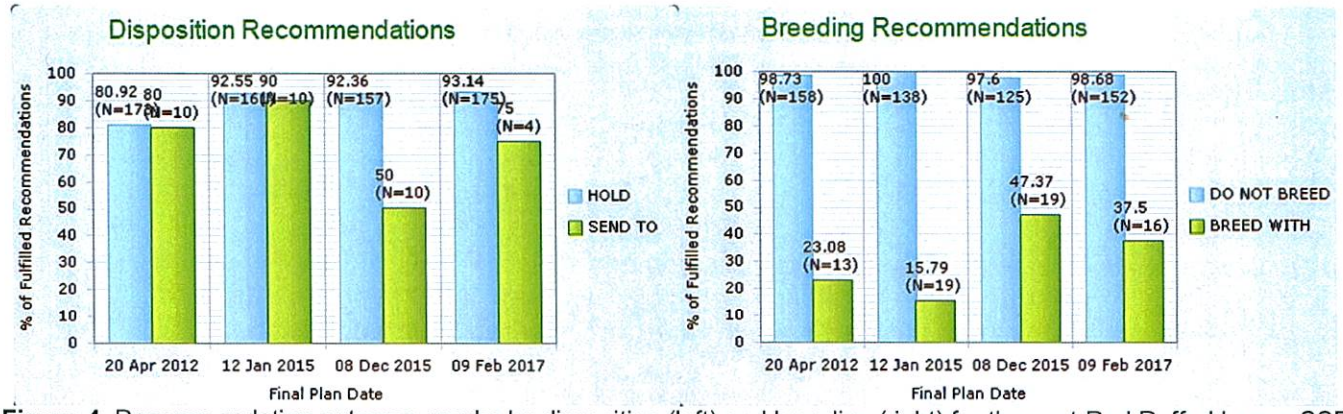

Figure 4. Recommendation outcome graphs by disposition (left) and breeding (right) for the past Red Ruffed Lemur SSP Breeding and Transfer Plans. *N* represents the number of recommendations scored for each recommendation type, per plan, and the number represents the percentage recommendations fulfilled. Please visit PMCTrack.org or contact pmctrack@lpzoo.org for more information or with any questions.

Summary of Breeding and Transfer Recommendations

Sorted by Studbook Number

SB#	Location	Sex	Age	Disposition	Location	Breeding	With	Notes
[redacted]	OMAHA	M	31	HOLD	OMAHA	BREED WITH	1704	Mis-matched pairing, male valuable, female over-represented, breed for demographics
272	SEATTLE	F	31	HOLD	SEATTLE	DO NOT BREED		Excluded, sterile
274	DUKE PRIM	F	31	HOLD	DUKE PRIM	DO NOT BREED		Excluded due to age
275	DUKE PRIM	M	33	HOLD	DUKE PRIM	DO NOT BREED		Genetically valuable founder
287	DUKE PRIM	M	30	HOLD	DUKE PRIM	DO NOT BREED		Genetically valuable
343	DUKE PRIM	F	29	HOLD	DUKE PRIM	DO NOT BREED		Excluded, sterile
368	SPRINGFIE	M	28	HOLD	SPRINGFIE	DO NOT BREED		Genetically valuable
394	ATTLEBORO	M	28	HOLD	ATTLEBORO	SEE NOTES		Genetically valuable
397	SANDIEGOZ	F	28	HOLD	SANDIEGOZ	DO NOT BREED		Genetically valuable
409	SANDIEGOZ	F	27	HOLD	SANDIEGOZ	DO NOT BREED		Genetically valuable
434	BROWNSVIL	M	27	HOLD	BROWNSVIL	DO NOT BREED		Excluded, sterile
463	GREEN NSC	F	26	HOLD	GREEN NSC	DO NOT BREED		Genetically valuable
464	SPRINGFIE	M	26	HOLD	SPRINGFIE	DO NOT BREED		Genetically valuable
578	DUKE PRIM	M	24	HOLD	DUKE PRIM	DO NOT BREED		
581	SANFORD	M	24	HOLD	SANFORD	DO NOT BREED		
601	DUKE PRIM	F	23	HOLD	DUKE PRIM	DO NOT BREED		Excluded due to age
615	BALTIMORE	M	22	HOLD	BALTIMORE	BREED WITH	1585	Mis-matched pairing, male valuable, female over-represented, breed for demographics
617	DUKE PRIM	M	22	HOLD	DUKE PRIM	DO NOT BREED		
660	PHOENIX	M	21	HOLD	PHOENIX	DO NOT BREED		Genetically valuable
741	DREHER PA	F	20	HOLD	DREHER PA	DO NOT BREED		Contracept
742	CHEHAW	M	20	HOLD	CHEHAW	DO NOT BREED		
744	DENVER	F	20	HOLD	DENVER	DO NOT BREED		Contracept
[redacted]	FRESNO	M	20	SEND TO	BERMUDA	DO NOT BREED		
747	DREHER PA	M	19	HOLD	DREHER PA	DO NOT BREED		
803	MYAKKACLR	M	18	HOLD	MYAKKACLR	BREED WITH	1000	Mis-matched pairing, female valuable, male over-represented, breed for demographics
804	WINSTON	F	18	HOLD	WINSTON	DO NOT BREED		
805	SANJOSECA	F	18	HOLD	SANJOSECA	DO NOT BREED		
807	EVANSVLLE	M	18	HOLD	EVANSVLLE	BREED WITH	949	Mis-matched pairing, male valuable, female over-represented, breed for demographics
854	TEMAIKEN	F	18	HOLD	TEMAIKEN	DO NOT BREED		Genetically valuable
937	GAINSVLL	F	17	HOLD	GAINSVLL	DO NOT BREED		Contracept
938	BLOOMINGT	M	17	HOLD	BLOOMINGT	BREED WITH	1900	Mis-matched pairing, male valuable, female over-represented, breed for demographics
939	CALDWELL	F	17	HOLD	CALDWELL	BREED WITH	1574	Genetically valuable pair
940	PHOENIX	F	17	HOLD	PHOENIX	DO NOT BREED		Genetically valuable, contracept
941	PHOENIX	M	17	HOLD	PHOENIX	DO NOT BREED		Genetically valuable
945	CHATTANOO	F	17	HOLD	CHATTANOO	BREED WITH	1538	Mis-matched pairing, female valuable, male over-represented, breed for demographics

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SB#	Location	Sex	Age	Disposition	Location	Breeding	With	Notes
949	EVANSVLLE	F	16	HOLD	EVANSVLLE	BREED WITH	807	Mis-matched pairing, male valuable, female over-represented, breed for demographics
959	TAUTPHAUS	F	15	HOLD	TAUTPHAUS	DO NOT BREED		
961	GAINSVLL	M	15	HOLD	GAINSVLL	DO NOT BREED		
968	DENVER	M	14	HOLD	DENVER	DO NOT BREED		
970	PITTSBURG	F	14	SEND TO	GREEN NSC	DO NOT BREED		
971	SCOTTSBLU	F	14	HOLD	SCOTTSBLU	DO NOT BREED		
973	SEATTLE	M	13	HOLD	SEATTLE	DO NOT BREED		
974	SANFORD	F	13	HOLD	SANFORD	DO NOT BREED		
984	CLEVELAND	F	13	HOLD	CLEVELAND	DO NOT BREED		Genetically valuable
985	NY BRONX	M	13	HOLD	NY BRONX	DO NOT BREED		Genetically valuable
987	NY BRONX	M	13	HOLD	NY BRONX	DO NOT BREED		Genetically valuable
988	COLUMBIA	M	13	HOLD	COLUMBIA	DO NOT BREED		
989	MILWAUKEE	F	13	HOLD	MILWAUKEE	DO NOT BREED		
990	DREHER PA	M	12	HOLD	DREHER PA	DO NOT BREED		
991	COLUMBIA	F	12	HOLD	COLUMBIA	DO NOT BREED		Contracept
992	WACO	M	12	HOLD	WACO	DO NOT BREED		
999	SEATTLE	M	11	HOLD	SEATTLE	BREED WITH	2009	Genetically valuable pairings
1000	MYAKKACLR	F	11	HOLD	MYAKKACLR	BREED WITH	803	Mis-matched pairing, female valuable, male over-represented, breed for demographics
1001	SEATTLE	M	11	HOLD	SEATTLE	BREED WITH	2009	Genetically valuable pairings
1008	DREHER PA	M	11	HOLD	DREHER PA	DO NOT BREED		
1009	LANSING	M	11	SEND TO	DICKERSON	DO NOT BREED		
1010	SAN FRAN	M	11	HOLD	SAN FRAN	DO NOT BREED		
1051	ASHEBORO	M	11	HOLD	ASHEBORO	DO NOT BREED		Excluded due to unknown pedigree
1052	ASHEBORO	F	11	HOLD	ASHEBORO	DO NOT BREED		Excluded due to unknown pedigree, contracept
1074	TEMAIKEN	F	18	HOLD	TEMAIKEN	DO NOT BREED		Excluded due to unknown pedigree
1092	TEMAIKEN	M	17	HOLD	TEMAIKEN	DO NOT BREED		Excluded due to unknown pedigree
1503	SAN ANTON	M	11	HOLD	SAN ANTON	DO NOT BREED		
1504	SAN ANTON	M	11	HOLD	SAN ANTON	DO NOT BREED		
1510	JNGLARY F	F	10	HOLD	JNGLARY F	BREED WITH	1989	Genetically valuable pairing
1511	SANDIEGOZ	F	10	HOLD	SANDIEGOZ	BREED WITH	2011	Genetically valuable pairing
1513	BROWNSVIL	F	10	HOLD	BROWNSVIL	BREED WITH	2006, 2007	Genetically valuable pairings
1523	MYAKKACLR	M	10	HOLD	MYAKKACLR	DO NOT BREED		
1524	MYAKKACLR	M	10	HOLD	MYAKKACLR	DO NOT BREED		
1538	CHATTANOO	M	10	HOLD	CHATTANOO	BREED WITH	945	Mis-matched pairing, female valuable, male over-represented, breed for demographics
1539	NASHV ZOO	F	10	HOLD	NASHV ZOO	DO NOT BREED		
1540	KANSASCTY	F	10	HOLD	KANSASCTY	BREED WITH	1994	Mis-matched pairing, male valuable, female over-represented, breed for demographics
1544	DREHER PA	F	10	HOLD	DREHER PA	DO NOT BREED		Contracept
1559	NZP-WASH	M	9	HOLD	NZP-WASH	DO NOT BREED		Genetically valuable
1560	NZP-WASH	M	9	HOLD	NZP-WASH	DO NOT BREED		Genetically valuable
1574	CALDWELL	M	9	HOLD	CALDWELL	BREED WITH	939	Genetically valuable pair

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SB#	Location	Sex	Age	Disposition	Location	Breeding	With	Notes
1575	SANDIEGOZ	F	9	HOLD	SANDIEGOZ	BREED WITH	1901	Genetically valuable pairing
1576	ST AUGUST	M	9	HOLD	ST AUGUST	DO NOT BREED		Genetically valuable
[illegible]7	WACO	F	9	HOLD	WACO	DO NOT BREED		Contracept
[illegible]8	SAN ANTON	M	9	HOLD	SAN ANTON	DO NOT BREED		
1579	SAN ANTON	F	9	HOLD	SAN ANTON	DO NOT BREED		Contracept
1585	BALTIMORE	F	9	HOLD	BALTIMORE	BREED WITH	615	Mis-matched pairing, male valuable, female over-represented, breed for demographics
1586	NZP-WASH	F	9	HOLD	NZP-WASH	DO NOT BREED		
1587	SAN FRAN	M	9	HOLD	SAN FRAN	DO NOT BREED		
1588	AKRON	F	9	HOLD	AKRON	DO NOT BREED		
1590	SANJOSECA	F	9	HOLD	SANJOSECA	DO NOT BREED		Genetically valuable
1591	SANJOSECA	M	9	HOLD	SANJOSECA	DO NOT BREED		Genetically valuable
1593	SPRINGFIE	F	9	HOLD	SPRINGFIE	DO NOT BREED		Genetically valuable
1599	OMAHA	M	11	HOLD	OMAHA	DO NOT BREED		Excluded due to unknown pedigree
1600	OMAHA	F	10	HOLD	OMAHA	DO NOT BREED		Excluded due to unknown pedigree, contracept
1601	OMAHA	F	10	HOLD	OMAHA	DO NOT BREED		Excluded due to unknown pedigree, contracept
1602	OMAHA	M	10	HOLD	OMAHA	DO NOT BREED		
1605	OMAHA	M	10	HOLD	OMAHA	DO NOT BREED		Excluded due to unknown pedigree
1606	OMAHA	F	10	HOLD	OMAHA	DO NOT BREED		Excluded due to unknown pedigree, contracept
1607	OMAHA	F	10	HOLD	OMAHA	DO NOT BREED		Excluded due to unknown pedigree, contracept
1625	AKRON	F	8	HOLD	AKRON	DO NOT BREED		
1626	AKRON	F	8	HOLD	AKRON	DO NOT BREED		
1627	AKRON	F	8	HOLD	AKRON	DO NOT BREED		
1628	OMAHA	M	8	HOLD	OMAHA	DO NOT BREED		
[illegible]0	OMAHA	M	8	HOLD	OMAHA	DO NOT BREED		
1631	SCOTTSBLU	F	8	HOLD	SCOTTSBLU	DO NOT BREED		
1632	WINSTON	F	8	HOLD	WINSTON	DO NOT BREED		Genetically valuable
1633	WINSTON	M	8	HOLD	WINSTON	DO NOT BREED		Genetically valuable
1634	JACKSON	F	8	HOLD	JACKSON	DO NOT BREED		Genetically valuable, contracept
1635	WINSTON	F	8	HOLD	WINSTON	DO NOT BREED		Genetically valuable
1637	MILWAUKEE	M	8	HOLD	MILWAUKEE	DO NOT BREED		
1649	BUSCH TAM	M	11	HOLD	BUSCH TAM	DO NOT BREED		Excluded due to unknown pedigree
1650	BUSCH TAM	F	11	HOLD	BUSCH TAM	DO NOT BREED		Excluded due to unknown pedigree, contracept
1699	CHEHAW	M	7	HOLD	CHEHAW	DO NOT BREED		
1700	ATTLEBORO	F	7	HOLD	ATTLEBORO	SEE NOTES		
1701	ATTLEBORO	F	7	HOLD	ATTLEBORO	SEE NOTES		
1702	NY BRONX	F	7	HOLD	NY BRONX	DO NOT BREED		Contracept
1703	ST AUGUST	M	7	HOLD	ST AUGUST	DO NOT BREED		
1704	OMAHA	F	7	HOLD	OMAHA	BREED WITH	228	Mis-matched pairing, male valuable, female over-represented, breed for demographics
1705	ST AUGUST	M	7	HOLD	ST AUGUST	DO NOT BREED		
1708	CLEVELAND	F	7	HOLD	CLEVELAND	DO NOT BREED		
1709	CLEVELAND	F	7	HOLD	CLEVELAND	DO NOT BREED		
1710	DICKERSON	F	7	HOLD	DICKERSON	DO NOT BREED		Contracept
1711	DUKE PRIM	F	7	HOLD	DUKE PRIM	DO NOT BREED		
1715	CHEHAW	M	7	HOLD	CHEHAW	DO NOT BREED		
1716	SAN FRAN	M	7	HOLD	SAN FRAN	DO NOT BREED		

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SB#	Location	Sex	Age	Disposition	Location	Breeding	With	Notes
1752	GARDENCTY	M	6	HOLD	GARDENCTY	DO NOT BREED		Genetically valuable
1753	NASHV ZOO	M	6	HOLD	NASHV ZOO	DO NOT BREED		Genetically valuable
1755	GARDENCTY	M	6	HOLD	GARDENCTY	DO NOT BREED		Genetically valuable
1756	CHEHAW	M	6	HOLD	CHEHAW	DO NOT BREED		Excluded due to health
1759	MEMPHIS	M	6	HOLD	MEMPHIS	DO NOT BREED		
1760	MEMPHIS	M	6	HOLD	MEMPHIS	DO NOT BREED		
1761	MEMPHIS	F	6	HOLD	MEMPHIS	DO NOT BREED		Contracept
1762	CHEHAW	M	5	SEND TO	SANDIEGOZ	DO NOT BREED		
1766	JACKSON	M	5	HOLD	JACKSON	DO NOT BREED		Genetically valuable
1811	BISMARCK	F	6	HOLD	BISMARCK	DO NOT BREED		Excluded due to unknown pedigree, contracept
1853	GAINSVLL	M	4	HOLD	GAINSVLL	DO NOT BREED		
1865	MYAKKACLR	M	4	HOLD	MYAKKACLR	DO NOT BREED		Genetically valuable
1900	BLOOMINGT	F	3	HOLD	BLOOMINGT	BREED WITH	938	Mis-matched pairing, male valuable, female over-represented, breed for demographics
1901	DUKE PRIM	M	3	SEND TO	SANDIEGOZ	BREED WITH	1575	Genetically valuable pairing
1903	DUKE PRIM	M	3	SEND TO	FRESNO	BREED WITH	2024	Genetically valuable pairing
1906	GAINSVLL	F	3	HOLD	GAINSVLL	DO NOT BREED		Contracept
1986	NZP-WASH	M	2	HOLD	NZP-WASH	DO NOT BREED		
1987	NZP-WASH	F	2	HOLD	NZP-WASH	DO NOT BREED		
1988	NZP-WASH	F	2	HOLD	NZP-WASH	DO NOT BREED		
1989	JNGLARY F	M	2	HOLD	JNGLARY F	BREED WITH	1510	Genetically valuable pairing
1990	SPRINGFIE	F	2	HOLD	SPRINGFIE	DO NOT BREED		Genetically valuable
1991	NY BRONX	M	2	SEND TO	BERMUDA	DO NOT BREED		
1992	NY BRONX	F	2	SEND TO	BERMUDA	DO NOT BREED		Contracept
1993	NY BRONX	F	2	SEND TO	BERMUDA	DO NOT BREED		Contracept
1994	TAUTPHAUS	M	2	SEND TO	KANSASCTY	BREED WITH	1540	Or send SB# 1995, Mis-matched pairing, male valuable, female over-represented, breed for demographics
1995	TAUTPHAUS	M	2	HOLD	TAUTPHAUS	DO NOT BREED		Genetically valuable
1996	MYAKKACLR	F	2	HOLD	MYAKKACLR	DO NOT BREED		Genetically valuable
1997	SANFORD	M	2	HOLD	SANFORD	DO NOT BREED		
1999	FRESNO	F	2	SEND TO	BERMUDA	DO NOT BREED		Contracept
2000	FRESNO	M	2	SEND TO	BERMUDA	DO NOT BREED		
2002	NASHV ZOO	F	2	SEND TO	PORTLAND	DO NOT BREED		Contracept
2003	NASHV ZOO	M	2	HOLD	NASHV ZOO	DO NOT BREED		
2004	NASHV ZOO	F	2	SEND TO	PORTLAND	DO NOT BREED		Contracept
2006	BROWNSVIL	M	2	HOLD	BROWNSVIL	BREED WITH	1513	Genetically valuable pairings
2007	BROWNSVIL	M	2	HOLD	BROWNSVIL	BREED WITH	1513	Genetically valuable pairings
2008	GAINSVLL	M	2	HOLD	GAINSVLL	DO NOT BREED		
2009	DUKE PRIM	F	2	SEND TO	SEATTLE	BREED WITH	999, 1001	Genetically valuable pairings
2010	DUKE PRIM	M	2	HOLD	DUKE PRIM	DO NOT BREED		Genetically valuable
2011	SANDIEGOZ	M	2	HOLD	SANDIEGOZ	BREED WITH	1511	Genetically valuable pairing
2014	COLUMBIA	F	2	HOLD	COLUMBIA	DO NOT BREED		Contracept
2015	COLUMBIA	M	2	SEND TO	BISMARCK	DO NOT BREED		
2016	COLUMBIA	M	2	SEND TO	BISMARCK	DO NOT BREED		
2017	NY BRONX	F	1	HOLD	NY BRONX	DO NOT BREED		Contracept
2018	NY BRONX	F	1	HOLD	NY BRONX	DO NOT BREED		Contracept
2019	DUKE PRIM	M	1	HOLD	DUKE PRIM	DO NOT BREED		Genetically valuable

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SB#	Location	Sex	Age	Disposition	Location	Breeding	With	Notes
2021	COLUMBUS	M	11	HOLD	COLUMBUS	DO NOT BREED		Excluded due to unknown pedigree
2022	DENVER	F	1	HOLD	DENVER	DO NOT BREED		Contracept
[redacted]4	ATTLEBORO	F	1	SEND TO	FRESNO	BREED WITH	1903	Genetically valuable pairing
2025	JACKSON	M	1	HOLD	JACKSON	DO NOT BREED		Genetically valuable
2026	JACKSON	M	1	HOLD	JACKSON	DO NOT BREED		Genetically valuable
2027	NASHV ZOO	M	1	HOLD	NASHV ZOO	DO NOT BREED		
2028	NASHV ZOO	F	1	HOLD	NASHV ZOO	DO NOT BREED		
2029	NASHV ZOO	F	1	HOLD	NASHV ZOO	DO NOT BREED		
2030	NASHV ZOO	F	1	HOLD	NASHV ZOO	DO NOT BREED		
2032	NY BRONX	M	0	HOLD	NY BRONX	DO NOT BREED		
2033	NY BRONX	M	0	HOLD	NY BRONX	DO NOT BREED		
2034	NY BRONX	F	0	HOLD	NY BRONX	DO NOT BREED		Contracept
2035	OMAHA	U	0	HOLD	OMAHA	DO NOT BREED		Genetically valuable
2036	OMAHA	U	0	HOLD	OMAHA	DO NOT BREED		Genetically valuable
2045	COLUMBUS	M	0	HOLD	COLUMBUS	DO NOT BREED		Excluded due to unknown pedigree
2046	COLUMBUS	M	0	HOLD	COLUMBUS	DO NOT BREED		Excluded due to unknown pedigree
2047	SPRINGFIE	F	0	HOLD	SPRINGFIE	DO NOT BREED		Genetically valuable
2048	SPRINGFIE	M	0	HOLD	SPRINGFIE	DO NOT BREED		Genetically valuable
2049	DUKE PRIM	F	0	HOLD	DUKE PRIM	DO NOT BREED		Genetically valuable
2050	DUKE PRIM	F	0	HOLD	DUKE PRIM	DO NOT BREED		Genetically valuable
2060	BLOOMINGT	F	0	HOLD	BLOOMINGT	DO NOT BREED		
2064	SAFARI W	M	4	HOLD	SAFARI W	DO NOT BREED		Excluded due to unknown pedigree
2065	SAFARI W	F	2	HOLD	SAFARI W	DO NOT BREED		Excluded due to unknown pedigree, contracept
2066	SAFARI W	F	2	HOLD	SAFARI W	DO NOT BREED		Excluded due to unknown pedigree, contracept

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Breeding and Transfer Recommendations by Institution

AKRON

Akron Zoological Park

Akron, Ohio

ID	Local ID	Sex	Age	House Name	Disposition	Location	Breeding	With	Notes
1588	100863	F	9	Gwen	HOLD	AKRON	DO NOT BREED		
1625	100864	F	8	Avatar	HOLD	AKRON	DO NOT BREED		
1626	100865	F	8	Ikoto	HOLD	AKRON	DO NOT BREED		
1627	100866	F	8	Zeke	HOLD	AKRON	DO NOT BREED		

ASHEBORO

North Carolina Zoological Park

Asheboro, NC

ID	Local ID	Sex	Age	House Name	Disposition	Location	Breeding	With	Notes
1051	1850	M	11	George	HOLD	ASHEBORO	DO NOT BREED		Excluded due to unknown pedigree
1052	1851	F	11	Weezy	HOLD	ASHEBORO	DO NOT BREED		Excluded due to unknown pedigree, contracept

ATTLEBORO

Capron Park Zoo

Attleboro, MA

Note: Male genetically valuable, females over-represented. Institution reported that they will not be able to breed again until offspring have a designated place to transfer. When ready, breed male SB#394 with either female, although SB#1701 is the preferred female to breed at this time.

ID	Local ID	Sex	Age	House Name	Disposition	Location	Breeding	With	Notes
394	108303	M	28	Joker	HOLD	ATTLEBORO	SEE NOTES		Genetically valuable
1700	114365	F	7	Chianti	HOLD	ATTLEBORO	SEE NOTES		
1701	114366	F	7	Bordeaux	HOLD	ATTLEBORO	SEE NOTES		
2024	117402	F	1		SEND TO	FRESNO	BREED WITH	1903	Genetically valuable pairing

BALTIMORE

Maryland Zoo in Baltimore

Baltimore, MD

ID	Local ID	Sex	Age	House Name	Disposition	Location	Breeding	With	Notes
615	6758	M	22	Shamus	HOLD	BALTIMORE	BREED WITH	1585	Mis-matched pairing, male valuable, female over-represented, breed for demographics
1585	6777	F	9	Ginny	HOLD	BALTIMORE	BREED WITH	615	

BERMUDA

Bermuda Aquarium Museum and Zoo

Flatts, Bermuda

Note: This is a new institution to the SSP. Discuss with SSP Coordinator if you cannot accept both groups but the SSP suggested that both institutions begin export paperwork.

ID	Local ID	Sex	Age	House Name	Disposition	Location	Breeding	With	Notes
745	220056	M	20	Enno	RECEIVE FROM	FRESNO	DO NOT BREED		
1991	M16037	M	2	Atticus	RECEIVE FROM	NY BRONX	DO NOT BREED		
1992	M16038	F	2	Scout	RECEIVE FROM	NY BRONX	DO NOT BREED		Contracept
1993	M16039	F	2	Finch	RECEIVE FROM	NY BRONX	DO NOT BREED		Contracept
1999	207027	F	2	Saka	RECEIVE FROM	FRESNO	DO NOT BREED		Contracept
2000	207028	M	2	Spot	RECEIVE FROM	FRESNO	DO NOT BREED		

BISMARCK

Dakota Zoo

Bismarck, ND

ID	Local ID	Sex	Age	House Name	Disposition	Location	Breeding	With	Notes
1811	3127	F	6	Sava	HOLD	BISMARCK	DO NOT BREED		Excluded due to unknown pedigree, contracept
2015	13577	M	2		RECEIVE FROM	COLUMBIA	DO NOT BREED		
2016	13578	M	2		RECEIVE FROM	COLUMBIA	DO NOT BREED		

BLOOMINGT

Miller Park Zoo

Bloomington, IL

ID	Local ID	Sex	Age	House Name	Disposition	Location	Breeding	With	Notes
938	M08079	M	17	Masoala	HOLD	BLOOMINGT	BREED WITH	1900	Mis-matched pairing, male valuable, female over-represented, breed for demographics
1900	M16049	F	3	Celeste	HOLD	BLOOMINGT	BREED WITH	938	
2060	M18012	F	0		HOLD	BLOOMINGT	DO NOT BREED		

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BROWNSVIL

Gladys Porter Zoo

Brownsville, TX

Note: Allow either male to breed female and please document sire if possible.

ID	Local ID	Sex	Age	House Name	Disposition	Location	Breeding	With	Notes
434	4850	M	27	Choko	HOLD	BROWNSVIL	DO NOT BREED		Excluded, sterile
1513	10050	F	10		HOLD	BROWNSVIL	BREED WITH	2006, 2007	Genetically valuable pairings
2006	11802	M	2	Ferris	HOLD	BROWNSVIL	BREED WITH	1513	Genetically valuable pairings
2007	11801	M	2	Rafe	HOLD	BROWNSVIL	BREED WITH	1513	Genetically valuable pairings

BUSCH TAM

Busch Gardens Tampa Bay

Tampa, FL

ID	Local ID	Sex	Age	House Name	Disposition	Location	Breeding	With	Notes
1649	63523	M	11	Bozemy	HOLD	BUSCH TAM	DO NOT BREED		Excluded due to unknown pedigree
1650	63522	F	11	Maditra	HOLD	BUSCH TAM	DO NOT BREED		Excluded due to unknown pedigree, contracept

CALDWELL

Caldwell Zoo

Tyler, TX

ID	Local ID	Sex	Age	House Name	Disposition	Location	Breeding	With	Notes
939	108175	F	17	Ankavia	HOLD	CALDWELL	BREED WITH	1574	Genetically valuable pair
1574	108160	M	9	Junior	HOLD	CALDWELL	BREED WITH	939	

CHATTANOO

Tennessee Aquarium

Chattanooga, TN

Note: Discuss breeding with SSP Coordinator as this female has not been successful breeding in the past, but is extremely valuable.

ID	Local ID	Sex	Age	House Name	Disposition	Location	Breeding	With	Notes
945	UNK	F	17	Josephine	HOLD	CHATTANOO	BREED WITH	1538	Mis-matched pairing, female valuable, male over-represented, breed for demographics
1538	UNK	M	10	Avior	HOLD	CHATTANOO	BREED WITH	945	

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CHEHAW – *non-AZA SSP participant*

Chehaw Wild Animal Park

Albany, GA

Note: Discuss Sustainability Partner application with SSP to continue as a member of the SSP in the future.

ID	Local ID	Sex	Age	House Name	Disposition	Location	Breeding	With	Notes
742	150038	M	20	Dweezil	HOLD	CHEHAW	DO NOT BREED		
1699	160013	M	7	Rusty	HOLD	CHEHAW	DO NOT BREED		
1715	160007	M	7	Gidro	HOLD	CHEHAW	DO NOT BREED		
1756	160009	M	6	Lando	HOLD	CHEHAW	DO NOT BREED		Excluded due to health
1762	103112	M	5	Jacob	SEND TO	SANDIEGOZ	DO NOT BREED		

CLEVELAND

Cleveland Metroparks Zoo

Cleveland, OH

ID	Local ID	Sex	Age	House Name	Disposition	Location	Breeding	With	Notes
984	M50511	F	13	Vari	HOLD	CLEVELAND	DO NOT BREED		Genetically valuable
1708	110504	F	7	Carina	HOLD	CLEVELAND	DO NOT BREED		
1709	110505	F	7	Cassiopeia	HOLD	CLEVELAND	DO NOT BREED		

COLUMBIA

Riverbanks Zoo and Garden

Columbia, SC

ID	Local ID	Sex	Age	House Name	Disposition	Location	Breeding	With	Notes
988	10200	M	13	Mahambo	HOLD	COLUMBIA	DO NOT BREED		
991	11125	F	12	Mena	HOLD	COLUMBIA	DO NOT BREED		Contracept
2014	13579	F	2		HOLD	COLUMBIA	DO NOT BREED		Contracept
2015	13577	M	2		SEND TO	BISMARCK	DO NOT BREED		
2016	13578	M	2		SEND TO	BISMARCK	DO NOT BREED		

COLUMBUS

Columbus Zoo and Aquarium

Columbia, SC

ID	Local ID	Sex	Age	House Name	Disposition	Location	Breeding	With	Notes
2021	215011	M	11	Paul	HOLD	COLUMBUS	DO NOT BREED		Excluded due to unknown pedigree
2045	218079	M	0	Finnigan	HOLD	COLUMBUS	DO NOT BREED		Excluded due to unknown pedigree
2046	218084	M	0		HOLD	COLUMBUS	DO NOT BREED		Excluded due to unknown pedigree

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DENVER

Denver Zoological Gardens

Denver, CO

ID	Local ID	Sex	Age	House Name	Disposition	Location	Breeding	With	Notes
744	980220	F	20	Sixpence	HOLD	DENVER	DO NOT BREED		Contracept
968	A08093	M	14	Mego	HOLD	DENVER	DO NOT BREED		
2022	A17092	F	1		HOLD	DENVER	DO NOT BREED		Contracept

DICKERSON

Dickerson Park Zoo

Springfield, MO

ID	Local ID	Sex	Age	House Name	Disposition	Location	Breeding	With	Notes
1009	2863	M	11	Mitsambikina	RECEIVE FROM	LANSING	DO NOT BREED		
1710	6590	F	7	Cordelia	HOLD	DICKERSON	DO NOT BREED		Contracept

DREHER PA

Palm Beach Zoo at Dreher Park

West Palm Beach, FL

ID	Local ID	Sex	Age	House Name	Disposition	Location	Breeding	With	Notes
741	204036	F	20	Moon	HOLD	DREHER PA	DO NOT BREED		Contracept
747	203237	M	19	Rastoban	HOLD	DREHER PA	DO NOT BREED		
990	206066	M	12	Meso	HOLD	DREHER PA	DO NOT BREED		
1008	207098	M	11	Kinga	HOLD	DREHER PA	DO NOT BREED		
1544	208127	F	10	Akisa	HOLD	DREHER PA	DO NOT BREED		Contracept

DUKE PRIM

Duke Lemur Center

Durham, NC

ID	Local ID	Sex	Age	House Name	Disposition	Location	Breeding	With	Notes
274	6205	F	31	Galaxy	HOLD	DUKE PRIM	DO NOT BREED		Excluded due to age
275	6206	M	33	Comet	HOLD	DUKE PRIM	DO NOT BREED		Genetically valuable founder
287	6240	M	30	Borealis	HOLD	DUKE PRIM	DO NOT BREED		Genetically valuable
343	6311	f	29	Antlia	HOLD	DUKE PRIM	DO NOT BREED		Excluded, sterile
578	6590	M	24	Minias	HOLD	DUKE PRIM	DO NOT BREED		
601	6633	F	23	Pyxis II	HOLD	DUKE PRIM	DO NOT BREED		Excluded due to age
617	6684	M	22	Hunter	HOLD	DUKE PRIM	DO NOT BREED		
1711	6995	F	7	Pandora	HOLD	DUKE PRIM	DO NOT BREED		
1901	7212	M	3	Arche	SEND TO	SANDIEGOZ	BREED WITH	1575	Genetically valuable pairing
1903	7215	M	3	Bode	SEND TO	FRESNO	BREED WITH	2024	Genetically valuable pairing
2009	7250	F	2	Sally	SEND TO	SEATTLE	BREED WITH	999, 1001	Genetically valuable pairings
2010	7251	M	2	Kalani	HOLD	DUKE PRIM	DO NOT BREED		Genetically valuable
2019	7278	M	1	Buzz	HOLD	DUKE PRIM	DO NOT BREED		Genetically valuable
2049	7298	F	0	Judith	HOLD	DUKE PRIM	DO NOT BREED		Genetically valuable
2050	7297	F	0	Mae	HOLD	DUKE PRIM	DO NOT BREED		Genetically valuable

EVANSVLLE

Mesker Park Zoo

Evansville, IN

ID	Local ID	Sex	Age	House Name	Disposition	Location	Breeding	With	Notes
807	100025	M	18	Heathen	HOLD	EVANSVLLE	BREED WITH	949	Mis-matched pairing, male valuable, female over-represented, breed for demographics
949	108022	F	16	Little Dipper	HOLD	EVANSVLLE	BREED WITH	807	

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FRESNO

Fresno Chaffee Zoo

Fresno, CA

Note: Receive new pair after export is complete.

ID	Local ID	Sex	Age	House Name	Disposition	Location	Breeding	With	Notes
745	220056	M	20	Enno	SEND TO	BERMUDA	DO NOT BREED		
1903	7215	M	3	Bode	RECEIVE FROM	DUKE PRIM	BREED WITH	2024	Genetically valuable pairing
1999	207027	F	2	Saka	SEND TO	BERMUDA	DO NOT BREED		Contracept
2000	207028	M	2	Spot	SEND TO	BERMUDA	DO NOT BREED		
2024	117402	F	1		RECEIVE FROM	ATTLEBORO	BREED WITH	1903	Genetically valuable pairing

GAINSVLL

Santa Fe Teaching College Zoo

Gainsville, FL

ID	Local ID	Sex	Age	House Name	Disposition	Location	Breeding	With	Notes
937	103108	F	17	Hedy	HOLD	GAINSVLL	DO NOT BREED		Contracept
961	103107	M	15	Moili	HOLD	GAINSVLL	DO NOT BREED		
1853	103116	M	4	Tupelo	HOLD	GAINSVLL	DO NOT BREED		
1906	103118	F	3	Aspen	HOLD	GAINSVLL	DO NOT BREED		Contracept
2008	103119	M	2		HOLD	GAINSVLL	DO NOT BREED		

GARDENCTY

Lee Richardson Zoo

Garden City, KS

Note: Males are valuable for breeding. Discuss with SSP Coordinator if you could bring in a female to breed or swap out animals in the future.

ID	Local ID	Sex	Age	House Name	Disposition	Location	Breeding	With	Notes
1752	113034	M	6	Bogey	HOLD	GARDENCTY	DO NOT BREED		Genetically valuable
1755	113037	M	6	Frank	HOLD	GARDENCTY	DO NOT BREED		Genetically valuable

GREEN NSC

Natural Science Center of Greensboro

Greensboro, NC

ID	Local ID	Sex	Age	House Name	Disposition	Location	Breeding	With	Notes
463	201731	F	26		HOLD	GREEN NSC	DO NOT BREED		Genetically valuable
970	102915	F	14	Carina	RECEIVE FROM	PITTSBURG	DO NOT BREED		

JACKSON – *non-AZA SSP participant*

Jackson Zoological Park

Jackson, MS

Note: Discuss Sustainability Partner application with SSP to continue as a member of the SSP in the future.

ID	Local ID	Sex	Age	House Name	Disposition	Location	Breeding	With	Notes
1634	201301	F	8	Nekena	HOLD	JACKSON	DO NOT BREED		Genetically valuable, contracept
1766	201156	M	5	Phoenix	HOLD	JACKSON	DO NOT BREED		Genetically valuable
2025	201314	M	1		HOLD	JACKSON	DO NOT BREED		Genetically valuable
2026	201313	M	1		HOLD	JACKSON	DO NOT BREED		Genetically valuable

JNGLARY F

The Naples Zoo

Naples, FL

ID	Local ID	Sex	Age	House Name	Disposition	Location	Breeding	With	Notes
1510	A8PO71	F	10		HOLD	JNGLARY F	BREED WITH	1989	Genetically valuable pairing
1989	15PO84	M	2	Indy	HOLD	JNGLARY F	BREED WITH	1510	

KANSASCTY

Kansas City Zoo

Kansas City, MO

ID	Local ID	Sex	Age	House Name	Disposition	Location	Breeding	With	Notes
1540	M11047	F	10	Hydra	HOLD	KANSASCTY	BREED WITH	1994	Mis-matched pairing, male valuable, female over-represented, breed for demographics
1994	17MO19	M	2	George	RECEIVE FROM	TAUTPHAUS	BREED WITH	1540	Or receive SB# 1995, Mis-matched pairing, male valuable, female over-represented, breed for demographics

LANSING

Potter Park Zoological Gardens

Lansing, MI

Note: This institution has requested to phase this species out of its collection.

ID	Local ID	Sex	Age	House Name	Disposition	Location	Breeding	With	Notes
1009	2863	M	11	Mitsambikina	SEND TO	DICKERSON	DO NOT BREED		

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MEMPHIS

Memphis Zoological Garden & Aquarium

Memphis, TN

ID	Local ID	Sex	Age	House Name	Disposition	Location	Breeding	With	Notes
1759	17M013	M	6	Titan	HOLD	MEMPHIS	DO NOT BREED		
1760	17M014	M	6	Puck	HOLD	MEMPHIS	DO NOT BREED		
1761	17M015	F	6	Carme II	HOLD	MEMPHIS	DO NOT BREED		Contracept

MILWAUKEE

Milwaukee County Zoological Gardens

Milwaukee, WI

ID	Local ID	Sex	Age	House Name	Disposition	Location	Breeding	With	Notes
989	5618	F	13	Morombe	HOLD	MILWAUKEE	DO NOT BREED		
1637	5849	M	8	Sirius	HOLD	MILWAUKEE	DO NOT BREED		

MYAKKACLR

Lemur Conservation Foundation

Myakka City, FL

Note: All potential breeding males currently over-represented, repair female with SB#1523 or 1524 in the future if possible, or consider bringing in new male.

ID	Local ID	Sex	Age	House Name	Disposition	Location	Breeding	With	Notes
803	100019	M	18	Tsikey	HOLD	MYAKKACLR	BREED WITH	1000	Mis-matched pairing, female valuable, male over-represented, breed for demographics
1000	100089	F	11	Ravina	HOLD	MYAKKACLR	BREED WITH	803	
1523	100059	M	10	Volana Bladstrom	HOLD	MYAKKACLR	DO NOT BREED		
1524	100058	M	10	Rivotra	HOLD	MYAKKACLR	DO NOT BREED		
1865	100109	M	4	Afo	HOLD	MYAKKACLR	DO NOT BREED		Genetically valuable
1996	100127	F	2	Zazabe	HOLD	MYAKKACLR	DO NOT BREED		Genetically valuable

NASHV ZOO

Nashville Zoo at Grassmere

Nashville, TN

ID	Local ID	Sex	Age	House Name	Disposition	Location	Breeding	With	Notes
1539	3684	F	10	Lyra	HOLD	NASHV ZOO	DO NOT BREED		
1753	4991	M	6	Dino	HOLD	NASHV ZOO	DO NOT BREED		Genetically valuable
2002	5151	F	2	Thalia	SEND TO	PORTLAND	DO NOT BREED		Contracept
2003	5152	M	2	Apollo	HOLD	NASHV ZOO	DO NOT BREED		
2004	5153	F	2	Calliope	SEND TO	PORTLAND	DO NOT BREED		Contracept
2027	5445	M	1	Emilio	HOLD	NASHV ZOO	DO NOT BREED		
2028	5446	F	1	Ally	HOLD	NASHV ZOO	DO NOT BREED		
2029	5447	F	1	Andie	HOLD	NASHV ZOO	DO NOT BREED		
2030	5448	F	1	Demi	HOLD	NASHV ZOO	DO NOT BREED		

NY BRONX

Bronx Zoo/ Wildlife Conservation Society

Bronx, NY

ID	Local ID	Sex	Age	House Name	Disposition	Location	Breeding	With	Notes
985	M07153	M	13	Boo	HOLD	NY BRONX	DO NOT BREED		Genetically valuable
987	M07152	M	13	Sunshine	HOLD	NY BRONX	DO NOT BREED		Genetically valuable
1702	M14096	F	7	Mena	HOLD	NY BRONX	DO NOT BREED		Contracept
1991	M16037	M	2	Atticus	SEND TO	BERMUDA	DO NOT BREED		
1992	M16038	F	2	Scout	SEND TO	BERMUDA	DO NOT BREED		Contracept
1993	M16039	F	2	Finch	SEND TO	BERMUDA	DO NOT BREED		Contracept
2017	M17066	F	1		HOLD	NY BRONX	DO NOT BREED		Contracept
2018	M17065	F	1		HOLD	NY BRONX	DO NOT BREED		Contracept
2032	M18038	M	0		HOLD	NY BRONX	DO NOT BREED		
2033	M18037	M	0		HOLD	NY BRONX	DO NOT BREED		
2034	M18039	F	0		HOLD	NY BRONX	DO NOT BREED		Contracept

NZP-WASH

Smithsonian National Zoological Park

Washington, DC

ID	Local ID	Sex	Age	House Name	Disposition	Location	Breeding	With	Notes
1559	115008	M	9	Coronado	HOLD	NZP-WASH	DO NOT BREED		Genetically valuable
1560	115009	M	9	Cortes	HOLD	NZP-WASH	DO NOT BREED		Genetically valuable
1586	114873	F	9	Molly	HOLD	NZP-WASH	DO NOT BREED		
1986	115317	M	2	Jude	HOLD	NZP-WASH	DO NOT BREED		
1987	115318	F	2	Julien	HOLD	NZP-WASH	DO NOT BREED		
1988	115319	F	2	Juniper	HOLD	NZP-WASH	DO NOT BREED		

OMAHA

Omaha's Henry Doorly Zoo

Omaha, NE

ID	Local ID	Sex	Age	House Name	Disposition	Location	Breeding	With	Notes
228	21743	M	31	Lynx	HOLD	OMAHA	BREED WITH	1704	Mis-matched pairing, male valuable, female over-represented, breed for demographics
1599	18376	M	11	Fabio	HOLD	OMAHA	DO NOT BREED		Excluded due to unknown pedigree
1600	18382	F	10	Red	HOLD	OMAHA	DO NOT BREED		Excluded due to unknown pedigree, contracept
1601	18379	F	10	Tigger	HOLD	OMAHA	DO NOT BREED		Excluded due to unknown pedigree, contracept
1602	18377	M	10	Ginger	HOLD	OMAHA	DO NOT BREED		
1605	18378	M	10	Howie	HOLD	OMAHA	DO NOT BREED		Excluded due to unknown pedigree
1606	18380	F	10	Scruffy	HOLD	OMAHA	DO NOT BREED		Excluded due to unknown pedigree, contracept
1607	18381	F	10	Freek	HOLD	OMAHA	DO NOT BREED		Excluded due to unknown pedigree, contracept
1628	24069	M	8	Bubba	HOLD	OMAHA	DO NOT BREED		
1630	24070	M	8	Vegas	HOLD	OMAHA	DO NOT BREED		
1704	23230	F	7	Hoskins	HOLD	OMAHA	BREED WITH	228	Mis-matched pairing, male valuable, female over-represented, breed for demographics
2035	25125	U	0		HOLD	OMAHA	DO NOT BREED		Genetically valuable
2036	25126	U	0		HOLD	OMAHA	DO NOT BREED		Genetically valuable

PHOENIX

Phoenix Zoo

Phoenix, AZ

ID	Local ID	Sex	Age	House Name	Disposition	Location	Breeding	With	Notes
660	10565	M	21	Comet	HOLD	PHOENIX	DO NOT BREED		Genetically valuable
940	10568	F	17	Catta	HOLD	PHOENIX	DO NOT BREED		Genetically valuable, contracept
941	10567	M	17	Mantabe	HOLD	PHOENIX	DO NOT BREED		Genetically valuable

PITTSBURG - *non-AZA SSP participant*

Pittsburgh Zoo & PPG Aquarium
Pittsburgh, PA
Note: This institution is phasing this species out of its collection.

ID	Local ID	Sex	Age	House Name	Disposition	Location	Breeding	With	Notes
970	6838	F	14	Carina	SEND TO	GREEN NSC	DO NOT BREED		

PORTLAND

Oregon Zoo
Portland, OR
Note: This is a new institution to the SSP.

ID	Local ID	Sex	Age	House Name	Disposition	Location	Breeding	With	Notes
2002	5151	F	2	Thalia	RECEIVE FROM	NASHV ZOO	DO NOT BREED		Contracept
2004	5153	F	2	Calliope	RECEIVE FROM	NASHV ZOO	DO NOT BREED		Contracept

SAFARI W

Safari West
Santa Rosa, CA

ID	Local ID	Sex	Age	House Name	Disposition	Location	Breeding	With	Notes
2064	118030	M	4	Innoko	HOLD	SAFARI W	DO NOT BREED		Excluded due to unknown pedigree
2065	117038	F	2	Kenai	HOLD	SAFARI W	DO NOT BREED		Excluded due to unknown pedigree, contracept
2066	117037	F	2	Denali	HOLD	SAFARI W	DO NOT BREED		Excluded due to unknown pedigree, contracept

SAN ANTON

San Antonio Zoological Gardens & Aquar
San Antonio, TX

ID	Local ID	Sex	Age	House Name	Disposition	Location	Breeding	With	Notes
1503	N13030	M	11	Aries	HOLD	SAN ANTON	DO NOT BREED		
1504	N13029	M	11	Scorpius	HOLD	SAN ANTON	DO NOT BREED		
1578	N13032	M	9	Orion Jr	HOLD	SAN ANTON	DO NOT BREED		
1579	N13031	F	9	Phoebe	HOLD	SAN ANTON	DO NOT BREED		Contracept

SAN FRAN

San Francisco Zoological Gardens
San Francisco, CA

ID	Local ID	Sex	Age	House Name	Disposition	Location	Breeding	With	Notes
1010	116032	M	11	Tomady	HOLD	SAN FRAN	DO NOT BREED		
1587	111038	M	9	Antonio	HOLD	SAN FRAN	DO NOT BREED		
1716	202065	M	7	John Patrick	HOLD	SAN FRAN	DO NOT BREED		

SANDIEGOZ

San Diego Zoo

San Diego, CA

ID	Local ID	Sex	Age	House Name	Disposition	Location	Breeding	With	Notes
397	590155	F	28	Ana	HOLD	SANDIEGOZ	DO NOT BREED		Genetically valuable
409	591231	F	27	Hendrix	HOLD	SANDIEGOZ	DO NOT BREED		Genetically valuable
1511	518002	F	10		HOLD	SANDIEGOZ	BREED WITH	2011	Genetically valuable pairing
1575	515081	F	9	Morticia	HOLD	SANDIEGOZ	BREED WITH	1901	Genetically valuable pairing
1762	103112	M	5	Jacob	RECEIVE FROM	CHEHAW	DO NOT BREED		
1901	7212	M	3	Arche	RECEIVE FROM	DUKE PRIM	BREED WITH	1575	Genetically valuable pairing
2011	515046	M	2	Ony	HOLD	SANDIEGOZ	BREED WITH	1511	Genetically valuable pairing

SANFORD

Central Florida Zoological Park

Lake Monroe, FL

ID	Local ID	Sex	Age	House Name	Disposition	Location	Breeding	With	Notes
581	94P217	M	24	Horst	HOLD	SANFORD	DO NOT BREED		
974	M09001	F	13	Amabella	HOLD	SANFORD	DO NOT BREED		
1997	16P244	M	2		HOLD	SANFORD	DO NOT BREED		

SANJOSECA

Happy Hollow Zoo

San Jose, CA

ID	Local ID	Sex	Age	House Name	Disposition	Location	Breeding	With	Notes
805	200393	F	18	Meva	HOLD	SANJOSECA	DO NOT BREED		
1590	200419	F	9	Antika	HOLD	SANJOSECA	DO NOT BREED		Genetically valuable
1591	200420	M	9	Razoky	HOLD	SANJOSECA	DO NOT BREED		Genetically valuable

SCOTTSBLU

Riverside Discovery Center

Scottsbluff, NE

ID	Local ID	Sex	Age	House Name	Disposition	Location	Breeding	With	Notes
971	1761	F	14	Fraudell	HOLD	SCOTTSBLU	DO NOT BREED		
1631	1762	F	8	Caby-dee	HOLD	SCOTTSBLU	DO NOT BREED		

SEATTLE

Woodland Park Zoo
Seattle, WA
Note: Receive new female to breed with valuable males when ready. Allow either male to breed female and please document sire if possible.

ID	Local ID	Sex	Age	House Name	Disposition	Location	Breeding	With	Notes
272	990331	f	31	Star	HOLD	SEATTLE	DO NOT BREED		Excluded, sterile
973	201878	M	13	Jamari	HOLD	SEATTLE	DO NOT BREED		
999	204096	M	11	Orion Rajoelina	HOLD	SEATTLE	BREED WITH	2009	Genetically valuable pairings
1001	204160	M	11	Lucien Mora	HOLD	SEATTLE	BREED WITH	2009	Genetically valuable pairings
2009	7250	F	2	Sally	RECEIVE FROM	DUKE PRIM	BREED WITH	999, 1001	Genetically valuable pairings

SPRINGFIE - *non-AZA SSP participant*

Henson Robinson Zoo
Springfield, IL
Note: Discuss Sustainability Partner application with SSP to continue as a member of the SSP in the future.

ID	Local ID	Sex	Age	House Name	Disposition	Location	Breeding	With	Notes
368	UNK	M	28	Rasalhague	HOLD	SPRINGFIE	DO NOT BREED		Genetically valuable
464	UNK	M	26	Sagittarius	HOLD	SPRINGFIE	DO NOT BREED		Genetically valuable
1593	UNK	F	9	Tsidika	HOLD	SPRINGFIE	DO NOT BREED		Genetically valuable
1990	1179	F	2		HOLD	SPRINGFIE	DO NOT BREED		Genetically valuable
2047	1215	F	0		HOLD	SPRINGFIE	DO NOT BREED		Genetically valuable
2048	1216	M	0		HOLD	SPRINGFIE	DO NOT BREED		Genetically valuable

ST AUGUST

St. Augustine Alligator Farm
St. Augustine, FL

ID	Local ID	Sex	Age	House Name	Disposition	Location	Breeding	With	Notes
1576	A1103	M	9	Eli	HOLD	ST AUGUST	DO NOT BREED		Genetically valuable
1703	A1508	M	7	Escort Radar	HOLD	ST AUGUST	DO NOT BREED		
1705	11P229	M	7	Dupree	HOLD	ST AUGUST	DO NOT BREED		

TAUTPHAUS

Tautphaus Park Zoo

Idaho Falls, ID

ID	Local ID	Sex	Age	House Name	Disposition	Location	Breeding	With	Notes
959	12M007	F	15	Iman	HOLD	TAUTPHAUS	DO NOT BREED		
1994	17MO19	M	2	George	SEND TO	KANSASCTY	BREED WITH	1540	Or send SB# 1995, Mis-matched pairing, male valuable, female over-represented, breed for demographics
1995	17MO18	M	2	Fred	HOLD	TAUTPHAUS	DO NOT BREED		Genetically valuable

TEMAIKEN

Parque de Animales Silvestres Temaikèn

Escobar Pcia, Buenos Aires, Argentina

Note: Please contact studbook keeper if there is any more information available about the origins of SB#s 1074 and 1092 to determine their pedigree.

ID	Local ID	Sex	Age	House Name	Disposition	Location	Breeding	With	Notes
854	1	F	18	Zacha	HOLD	TEMAIKEN	DO NOT BREED		Genetically valuable
1074	2	F	18	Mika	HOLD	TEMAIKEN	DO NOT BREED		Excluded due to unknown pedigree
1092	3	M	17	Mingo	HOLD	TEMAIKEN	DO NOT BREED		Excluded due to unknown pedigree

WACO

Cameron Park Zoo

Waco, TX

ID	Local ID	Sex	Age	House Name	Disposition	Location	Breeding	With	Notes
992	M00511	M	12	Weasley	HOLD	WACO	DO NOT BREED		
1577	M00913	F	9	Esther	HOLD	WACO	DO NOT BREED		Contracept

WINSTON

Wildlife Safari Inc

Winston, OR

ID	Local ID	Sex	Age	House Name	Disposition	Location	Breeding	With	Notes
804	270153	F	18	Deva	HOLD	WINSTON	DO NOT BREED		
1632	270328	F	8	Tanana	HOLD	WINSTON	DO NOT BREED		Genetically valuable
1633	270329	M	8	Zoky	HOLD	WINSTON	DO NOT BREED		Genetically valuable
1635	270331	F	8	Vivian	HOLD	WINSTON	DO NOT BREED		Genetically valuable

Appendix A
Pedigree Assumptions

No assumptions were created for this population at this time. The current animals in the population with unknown pedigree (8.10) were excluded from genetic analyses, leaving a pedigree that is 100% known.

MULT parentage assumptions were calculated using probabilistic parents with equal probabilities to each individual in the MULT.

Analytical data for true individuals:
NONE

PMx MULTs
ID:MULT9
*SIRES: 368; 464
ID:MULT10
*SIRES: 1559; 1560
ID:MULT11
*SIRES: 969; 985
ID:MULT12
*SIRES: 985; 987

Appendix B
Summary of Data Exports

PMx Project: Rubra 8 November 2018
Created: 2018-11-08 by PMx version 1.5.20180925
File: C:\PMxProjects\Rubra 8 November 2018.pmxproj

Primary data file
Data File Name: RUBRA_11Aug2018.ped
Common Name: RED RUFFED LEMUR
Scientific Name: VARECIA RUBRA
Data Source: PopLink
Studbook Name: RUBRA_11Aug2018
Exported On: 2018-08-10
Software version: PopLink 2.4
Current through: 2018-07-27
Compiled by: Mylisa A Whipple
Scope: InternationalYHOSTC.Saint Louis Zoo YLASTACCSC YLASTEDITC 2061
Dates: 2018-08-10
Locations:
Association: RUBRA.FED
Other Filters: Status = Living
User: Gina Ferrie

Locations data file
Data File Name: location.txt

Demographic input files
MPrn file: mRUBRA_11Aug2018.prn
FPrn file: fRUBRA_11Aug2018.prn
Census1 file: Exchcens.txt

This Animal Program is currently a Yellow SSP Program and recommendations proposed are non-binding – Participation is voluntary. Dispositions to non-AZA institutions must comply with each institution's acquisition/disposition policy, in accordance with the AZA policy on Responsible Population Management.

Male LifeTable filter:
*Common Name: RED RUFFED LEMUR
*Scientific Name: VARECIA RUBRA
*Data Source: PopLink
*Studbook Name: RUBRA_11Aug2018
*Exported On: 2018-08-10
*Software version: PopLink 2.4
*Current through: 2018-07-27
*Compiled by: Mylisa A Whipple
*Scope: InternationalYHOSTC.Saint Louis Zoo YLASTACCSC YLASTEDITC 2061
***Dates: 1973-01-01 to 2018-08-10**
*Locations:
***Association: RUBRA.FED**
*Other Filters: Status = Living
*User: Gina Ferrie

Female LifeTable filter:
*Common Name: RED RUFFED LEMUR
*Scientific Name: VARECIA RUBRA
*Data Source: PopLink
*Studbook Name: RUBRA_11Aug2018
*Exported On: 2018-08-10
*Software version: PopLink 2.4
*Current through: 2018-07-27
*Compiled by: Mylisa A Whipple
*Scope: InternationalYHOSTC.Saint Louis Zoo YLASTACCSC YLASTEDITC 2061
***Dates: 1973-01-01 to 2018-08-10**
*Locations:
***Association: RUBRA.FED**
*Other Filters: Status = Living
*User: Gina Ferrie

Selected population was changed from the originally imported data.

Demographic data from: C:\Documents\PopLink\PopLink Databases\RUBRA_11Aug2018\PMx Export\mRUBRA_11Aug2018.prn and RUBRA_11Aug2018.prn

Genetic data from: C:\Documents\PopLink\PopLink Databases\RUBRA_11Aug2018\PMx Export\RUBRA_11Aug2018.ped

Please note that the following numbers are calculated slightly differently from SPARKS:
For each offspring, each parent gets 0.5 of the birth attributed to him/her.
There are 633 total births in the demographic window.
614.5 births are attributed to known parents with a known age.
0 births are attributed to known parents with an unknown age.
18.5 births are attributed to unknown parents.
This means that 3% of the total births are attributed to unknown parents or parents with unknown ages.

***RUBRA.FED file is the AZA.FED file which has been altered to include JACKSON, PITTSBURG, SPRINGFIE**

Data changes after studbook submitted:

- SB#936 and 944 reported dead, removed from all analyses

Changes between DRAFT and FINAL:

Appendix C

Animals Excluded from the Genetic Analysis

Summary of Exclusions: 25 (11.14)
Age: 2 (0.2)
Health: 1 (1.0)
Sterile: 4 (2.2)
Unknown pedigree: 18 (8.10)

SB#	Location	Sex	Age	Reason for Exclusion
272	SEATTLE	F	31	Sterile
274	DUKE PRIM	F	31	Age
343	DUKE PRIM	F	29	Sterile
434	BROWNSVIL	M	27	Sterile
601	DUKE PRIM	F	23	Age
1051	ASHEBORO	M	11	Sterile
1052	ASHEBORO	F	11	Unknown pedigree
1074	TEMAIKEN	F	18	Unknown pedigree
1092	TEMAIKEN	M	17	Unknown pedigree
1599	OMAHA	M	11	Unknown pedigree
1600	OMAHA	F	10	Unknown pedigree
1601	OMAHA	F	10	Unknown pedigree
1605	OMAHA	M	10	Unknown pedigree
1606	OMAHA	F	10	Unknown pedigree
1607	OMAHA	F	10	Unknown pedigree
1649	BUSCH TAM	M	11	Unknown pedigree
1650	BUSCH TAM	F	11	Unknown pedigree
1756	CHEHAW	M	6	Health
1811	BISMARCK	F	6	Unknown pedigree
2021	COLUMBUS	M	11	Unknown pedigree
2045	COLUMBUS	M	0	Unknown pedigree
2046	COLUMBUS	M	0	Unknown pedigree
2064	SAFARI W	M	4	Unknown pedigree
2065	SAFARI W	F	2	Unknown pedigree
2066	SAFARI W	F	2	Unknown pedigree

Appendix D

Life Tables

*Birth flow was changed from continuous to pulse. Lemurs are seasonal breeders and when comparing seasonality the distribution is gnificantly different from uniform (χ^2= 620.92, df=11, p<0.05).

Males

Age (years)	Px	Mid Px	Qx	Risk Qx	Lx	Mx	Risk Mx	Ex	Vx
0	0.730	0.835	0.270	360.200	1.000	0.000	270.000	14.662	1.000
1	0.980	0.980	0.020	253.000	0.730	0.000	250.300	18.715	1.412
2	0.980	0.980	0.020	227.400	0.715	0.060	223.800	18.076	1.484
3	0.980	0.980	0.020	212.900	0.701	0.090	208.900	17.425	1.498
4	0.980	0.980	0.020	203.000	0.687	0.140	200.400	16.760	1.480
5	0.980	0.975	0.020	196.100	0.673	0.170	193.700	16.081	1.409
6	0.970	0.980	0.030	182.500	0.660	0.190	177.900	15.389	1.303
7	0.990	0.985	0.010	168.900	0.640	0.160	168.800	14.834	1.182
8	0.980	0.985	0.020	165.200	0.634	0.190	163.500	13.974	1.064
9	0.990	0.975	0.010	155.200	0.621	0.120	154.700	13.239	0.919
10	0.960	0.965	0.040	145.800	0.615	0.130	142.200	12.362	0.831
11	0.970	0.975	0.030	128.600	0.590	0.070	126.900	11.836	0.753
12	0.980	0.975	0.020	119.900	0.572	0.110	119.300	11.171	0.725
13	0.970	0.965	0.030	114.300	0.561	0.080	113.800	10.378	0.647
14	0.960	0.950	0.040	112.100	0.544	0.090	108.300	9.668	0.602
15	0.940	0.950	0.060	105.300	0.522	0.120	101.600	9.030	0.550
16	0.960	0.960	0.040	98.600	0.491	0.080	96.600	8.542	0.471
17	0.960	0.940	0.040	90.600	0.471	0.020	88.600	7.856	0.420
18	0.920	0.920	0.080	84.300	0.453	0.030	81.400	7.142	0.429
19	0.920	0.910	0.080	75.700	0.416	0.040	73.600	6.676	0.447
20	0.900	0.881	0.100	70.700	0.383	0.030	67.400	6.170	0.456
21	0.860	0.837	0.140	63.400	0.345	0.040	58.100	5.744	0.488
22	0.810	0.801	0.190	52.700	0.296	0.100	49.100	5.517	0.537
23	0.790	0.843	0.210	43.000	0.240	0.050	39.400	5.576	0.556
24	0.910	0.891	0.090	33.200	0.190	0.000	31.000	5.792	0.659
25	0.870	0.893	0.130	30.000	0.173	0.040	28.300	5.266	0.747
26	0.920	0.867	0.080	25.000	0.150	0.250	23.200	4.904	0.837
27	0.810	0.837	0.190	21.200	0.138	0.030	18.500	4.243	0.658
28	0.870	0.861	0.130	15.500	0.112	0.110	14.800	4.004	0.798
29	0.850	0.786	0.150	13.000	0.097	0.040	12.900	3.453	0.815
30	0.710	0.764	0.290	10.300	0.083	0.240	8.700	2.886	0.940
31	0.840	0.730	0.160	6.300	0.059	0.380	5.500	2.656	1.016
32	0.600	0.608	0.400	5.000	0.049	0.250	4.300	1.972	0.780
33	0.620	0.383	0.380	2.600	0.030	0.910	1.700	1.620	0.910
34	0.000	0.000	1.000	1.000	0.018	0.000	0.300	1.000	0.000

Px = survival; Qx = mortality; Lx = cumulative survivorship; Mx = fecundity; Ex = life expectancy; Vx = expected future reproduction, At Risk (Qx and Mx) = number of animals corresponding values are estimated from.

r = 0.030
lambda = 1.030
T = 9.8
N = 97
N(at 20 yrs) = 287

Females

Age (years)	Px	Mid Px	Qx	Risk Qx	Lx	Mx	Risk Mx	Ex	Vx
0	0.780	0.876	0.220	270.000	1.000	0.000	212.300	---	1.000
1	1.000	0.995	0.000	202.500	0.780	0.010	201.900	---	1.369
2	0.990	0.995	0.010	182.500	0.780	0.110	181.500	---	1.451
3	1.000	1.000	0.000	174.400	0.772	0.150	174.400	---	1.446
4	1.000	0.995	0.000	172.000	0.772	0.150	172.000	---	1.384
5	0.990	0.990	0.010	170.600	0.772	0.220	169.600	---	1.317
6	0.990	0.990	0.010	160.800	0.764	0.230	160.100	---	1.183
7	0.990	0.990	0.010	151.100	0.757	0.220	150.100	---	1.028
8	0.990	0.990	0.010	144.900	0.749	0.160	144.100	---	0.872
9	0.990	0.970	0.010	135.600	0.742	0.170	135.500	---	0.767
10	0.950	0.945	0.050	127.600	0.734	0.150	122.600	---	0.644
11	0.940	0.940	0.060	112.600	0.698	0.160	109.300	---	0.556
12	0.940	0.945	0.060	105.800	0.656	0.090	103.400	---	0.449
13	0.950	0.935	0.050	97.000	0.616	0.090	94.900	---	0.408
14	0.920	0.930	0.080	93.100	0.586	0.100	89.500	---	0.357
15	0.940	0.925	0.060	86.100	0.539	0.070	83.700	---	0.299
16	0.910	0.905	0.090	81.200	0.506	0.070	78.200	---	0.260
17	0.900	0.900	0.100	72.100	0.461	0.050	68.300	---	0.223
18	0.900	0.919	0.100	59.900	0.415	0.070	56.900	---	0.205
19	0.940	0.940	0.060	51.600	0.373	0.100	50.100	---	0.160
20	0.940	0.911	0.060	46.800	0.351	0.050	46.200	---	0.068
21	0.880	0.847	0.120	43.000	0.330	0.000	41.000	---	0.021
22	0.810	0.806	0.190	37.400	0.290	0.010	34.000	---	0.025
23	0.800	0.778	0.200	30.300	0.235	0.020	25.900	---	0.020
24	0.750	0.789	0.250	24.300	0.188	0.000	21.300	---	0.000
25	0.840	0.854	0.160	19.000	0.141	0.000	16.900	---	0.000
26	0.870	0.889	0.130	15.200	0.118	0.000	14.700	---	0.000
27	0.910	0.900	0.090	11.400	0.103	0.000	11.300	---	0.000
28	0.890	0.876	0.110	9.300	0.094	0.000	8.800	---	0.000
29	0.860	0.846	0.140	7.300	0.083	0.000	7.200	---	0.000
30	0.830	0.907	0.170	6.000	0.072	0.000	5.100	---	0.000
31	1.000	1.000	0.000	4.200	0.060	0.000	4.200	---	0.000
32	1.000	0.835	0.000	3.000	0.060	0.000	3.000	---	0.000
33	0.670	0.802	0.330	3.000	0.060	0.000	2.100	---	0.000
34	1.000	0.750	0.000	2.000	0.040	0.000	2.000	---	0.000
35	0.500	1.000	0.500	2.000	0.040	0.000	1.100	---	0.000
36	0.500	1.000	0.500	0.000	0.020	0.000	0.000	---	0.000

Px = survival; Qx = mortality; Lx = cumulative survivorship; Mx = fecundity; Ex = life expectancy; Vx = expected future reproduction, At Risk (Qx and Mx) = number of animals corresponding values are estimated from.

r = 0.066
lambda = 1.068
T = 7.2
N = 90
N(at 20 yrs) = 287

Appendix E

Ordered Mean Kinship

Note: This list is current to November 2018 and is based on studbook data with MULT parents. Values are subject to change with any birth, death, import, export, inclusion, or exclusion. Unknown sex animals appear on both sides of the chart. U signifies a portion of the pedigree is unknown.

Average Population MK = 0.0851

Males

SB#	MK	%Known	Age	Location
807	0.0491	100.0%	18	EVANSVLLE
1602	0.0508	100.0%	10	OMAHA
999	0.0581	100.0%	11	SEATTLE
1001	0.0581	100.0%	11	SEATTLE
394	0.0597	100.0%	28	ATTLEBORO
615	0.0636	100.0%	22	BALTIMORE
368	0.0672	100.0%	28	SPRINGFIE
228	0.0685	100.0%	31	OMAHA
1994	0.0685	100.0%	2	TAUTPHAUS
1995	0.0685	100.0%	2	TAUTPHAUS
1574	0.0686	100.0%	9	CALDWELL
1576	0.0686	100.0%	9	ST AUGUST
464	0.0687	100.0%	26	SPRINGFIE
2025	0.0688	100.0%	1	JACKSON
2026	0.0688	100.0%	1	JACKSON
275	0.0728	100.0%	33	DUKE PRIM
2011	0.0728	100.0%	2	SANDIEGOZ
1752	0.0736	100.0%	6	GARDENCTY
1755	0.0736	100.0%	6	GARDENCTY
1766	0.0736	100.0%	5	JACKSON
1591	0.0741	100.0%	9	SANJOSECA
1989	0.0741	100.0%	2	JNGLARY F
2048	0.0743	100.0%	0	SPRINGFIE
287	0.0779	100.0%	30	DUKE PRIM
660	0.0783	100.0%	21	PHOENIX
1753	0.0785	100.0%	6	NASHV ZOO
1633	0.0787	100.0%	8	WINSTON
2006	0.0788	100.0%	2	BROWNSVIL
2007	0.0788	100.0%	2	BROWNSVIL
1865	0.0791	100.0%	4	MYAKKACLR
941	0.0804	100.0%	17	PHOENIX
987	0.0811	100.0%	13	NY BRONX
1559	0.0811	100.0%	9	NZP-WASH
1560	0.0811	100.0%	9	NZP-WASH
2035	0.0817	100.0%	0	OMAHA
2036	0.0817	100.0%	0	OMAHA
1903	0.0822	100.0%	3	DUKE PRIM
2019	0.0822	100.0%	1	DUKE PRIM
985	0.0823	100.0%	13	NY BRONX
938	0.0834	100.0%	17	BLOOMINGT
1901	0.0848	100.0%	3	DUKE PRIM
2010	0.0848	100.0%	2	DUKE PRIM

Females

SB#	MK	%Known	Age	Location
945	0.0497	100.0%	17	CHATTANOO
1511	0.0581	100.0%	10	SANDIEGOZ
1513	0.0581	100.0%	10	BROWNSVIL
854	0.0589	100.0%	18	TEMAIKEN
1000	0.0593	100.0%	11	MYAKKACLR
1510	0.0593	100.0%	10	JNGLARY F
463	0.0664	100.0%	26	GREEN NSC
1575	0.0694	100.0%	9	SANDIEGOZ
397	0.0740	100.0%	28	SANDIEGOZ
409	0.0740	100.0%	27	SANDIEGOZ
1590	0.0741	100.0%	9	SANJOSECA
1990	0.0741	100.0%	2	SPRINGFIE
2047	0.0743	100.0%	0	SPRINGFIE
1593	0.0768	100.0%	9	SPRINGFIE
1632	0.0787	100.0%	8	WINSTON
1635	0.0787	100.0%	8	WINSTON
2024	0.0788	100.0%	1	ATTLEBORO
1996	0.0791	100.0%	2	MYAKKACLR
1634	0.0802	100.0%	8	JACKSON
939	0.0804	100.0%	17	PHOENIX
940	0.0804	100.0%	17	CALDWELL
2035	0.0817	100.0%	0	OMAHA
2036	0.0817	100.0%	0	OMAHA
984	0.0823	100.0%	13	CLEVELAND
2009	0.0848	100.0%	2	DUKE PRIM
2049	0.0848	100.0%	0	DUKE PRIM
2050	0.0848	100.0%	0	DUKE PRIM
1900	0.0856	100.0%	3	BLOOMINGT
1708	0.0857	100.0%	7	CLEVELAND
1709	0.0857	100.0%	7	CLEVELAND
2060	0.0860	100.0%	0	BLOOMINGT
2002	0.0879	100.0%	2	NASHV ZOO
2004	0.0879	100.0%	2	NASHV ZOO
2028	0.0879	100.0%	1	NASHV ZOO
2029	0.0879	100.0%	1	NASHV ZOO
2030	0.0879	100.0%	1	NASHV ZOO
1540	0.0889	100.0%	10	KANSASCTY
1710	0.0889	100.0%	7	DICKERSON
959	0.0898	100.0%	15	TAUTPHAUS
2008	0.0902	100.0%	2	GAINSVLL
2017	0.0903	100.0%	1	NY BRONX
2018	0.0903	100.0%	1	NY BRONX

This Animal Program is currently a Yellow SSP Program and recommendations proposed are non-binding – Participation is voluntary. Dispositions to non-AZA institutions must comply with each institution's acquisition/disposition policy, in accordance with the AZA policy on Responsible Population Management.

Males

SB#	MK	%Known	Age	Location
1637	0.0857	100.0%	8	MILWAUKEE
961	0.0863	100.0%	15	GAINSVLL
1523	0.0867	100.0%	10	MYAKKACLR
1524	0.0867	100.0%	10	MYAKKACLR
2003	0.0879	100.0%	2	NASHV ZOO
2027	0.0879	100.0%	1	NASHV ZOO
742	0.0880	100.0%	20	CHEHAW
1538	0.0889	100.0%	10	CHATTANOO
581	0.0891	100.0%	24	SANFORD
973	0.0898	100.0%	13	SEATTLE
1762	0.0902	100.0%	5	CHEHAW
1853	0.0902	100.0%	4	GAINSVLL
1906	0.0902	100.0%	3	GAINSVLL
1587	0.0904	100.0%	9	SAN FRAN
1703	0.0904	100.0%	7	ST AUGUST
1705	0.0904	100.0%	7	ST AUGUST
968	0.0913	100.0%	14	DENVER
1991	0.0914	100.0%	2	NY BRONX
1997	0.0914	100.0%	2	SANFORD
1628	0.0920	100.0%	8	OMAHA
1630	0.0920	100.0%	8	OMAHA
2032	0.0920	100.0%	0	NY BRONX
2033	0.0920	100.0%	0	NY BRONX
1699	0.0927	100.0%	7	CHEHAW
1986	0.0929	100.0%	2	NZP-WASH
1503	0.0952	100.0%	11	SAN ANTON
1504	0.0952	100.0%	11	SAN ANTON
1578	0.0952	100.0%	9	SAN ANTON
1759	0.0952	100.0%	6	MEMPHIS
1760	0.0952	100.0%	6	MEMPHIS
747	0.0956	100.0%	19	DREHER PA
990	0.0962	100.0%	12	DREHER PA
1008	0.0962	100.0%	11	DREHER PA
1009	0.0962	100.0%	11	LANSING
1010	0.0962	100.0%	11	SAN FRAN
803	0.0964	100.0%	18	MYAKKACLR
745	0.0972	100.0%	20	FRESNO
992	0.0989	100.0%	12	WACO
1715	0.0989	100.0%	7	CHEHAW
1716	0.0989	100.0%	7	SAN FRAN
2000	0.0989	100.0%	2	FRESNO
988	0.1012	100.0%	13	COLUMBIA
2015	0.1013	100.0%	2	COLUMBIA
2016	0.1013	100.0%	2	COLUMBIA
617	0.1039	100.0%	22	DUKE PRIM
578	0.1081	100.0%	24	DUKE PRIM

Females

SB#	MK	%Known	Age	Location
1588	0.0904	100.0%	9	AKRON
1625	0.0904	100.0%	8	AKRON
1626	0.0904	100.0%	8	AKRON
1627	0.0904	100.0%	8	AKRON
974	0.0906	100.0%	13	SANFORD
744	0.0910	100.0%	20	DENVER
937	0.0911	100.0%	17	GAINSVLL
1992	0.0914	100.0%	2	NY BRONX
1993	0.0914	100.0%	2	NY BRONX
1704	0.0919	100.0%	7	OMAHA
1631	0.0920	100.0%	8	SCOTTSBLU
2034	0.0920	100.0%	0	NY BRONX
1701	0.0927	100.0%	7	ATTLEBORO
2022	0.0927	100.0%	1	DENVER
1987	0.0929	100.0%	2	NZP-WASH
1988	0.0929	100.0%	2	NZP-WASH
741	0.0937	100.0%	20	DREHER PA
1711	0.0939	100.0%	7	DUKE PRIM
1539	0.0942	100.0%	10	NASHV ZOO
1700	0.0950	100.0%	7	ATTLEBORO
949	0.0952	100.0%	16	EVANSVLLE
1577	0.0952	100.0%	9	WACO
1579	0.0952	100.0%	9	SAN ANTON
1761	0.0952	100.0%	6	MEMPHIS
1544	0.0962	100.0%	10	DREHER PA
804	0.0971	100.0%	18	WINSTON
805	0.0971	100.0%	18	SANJOSECA
971	0.0975	100.0%	14	SCOTTSBLU
991	0.0985	100.0%	12	COLUMBIA
1702	0.0988	100.0%	7	NY BRONX
989	0.0989	100.0%	13	MILWAUKEE
1585	0.0989	100.0%	9	BALTIMORE
1999	0.0989	100.0%	2	FRESNO
1586	0.1012	100.0%	9	NZP-WASH
2014	0.1013	100.0%	2	COLUMBIA
970	0.1042	100.0%	14	PITTSBURG

This Animal Program is currently a Yellow SSP Program and recommendations proposed are non-binding – Participation is voluntary. Dispositions to non-AZA institutions must comply with each institution's acquisition/disposition policy, in accordance with the AZA policy on Responsible Population Management.

Appendix F

Descriptive Survival Statistics Report

RED RUFFED LEMUR Studbook
VARECIA RUBRA
International Saint Louis Zoo Studbook

Studbook data current as of 7/27/2018

Compiled by
Mylisa A Whipple

PopLink Studbook filename: RUBRA_11Aug2018
PopLink User Who Exported Report: Gina Ferrie
Date of Export: 11/9/2018
Data Filtered by: Association = RUBRA.FED AND StartDate = 1/1/1973 AND EndDate = 11/9/2018
PopLink Version: 2.4

REPORT OVERVIEW:

Based on this analysis, if a RED RUFFED LEMUR survives to its first birthday, its median life expectancy is 19.9 years. Please see the body of the report for more details.

BACKGROUND ON ANALYSES:

These analyses were conducted using animals that lived during the period 1 January 1973 to 9 November 2018 at institutions within RUBRA. The analyses mainly focus on survival statistics from 1 year (e.g. excluding any individuals that did not survive past their first birthday). These statistics most accurately reflect typical survival for animals which can be seen on exhibit in zoos and aquariums.

This report summarizes survival records of individuals housed at zoological facilities for a specific geographic range and time period; these records trace an individual's history from birth or entry into the population to death, exit out of the population, or the end of the time period. As such, this history only reflects standard practices - including management, husbandry, and acquisition/disposition practices - for the specified time period and geographic range. Thus, the report contents should be viewed with some caution as they may not fully reflect current and newly emerging zoo and aquarium management techniques or practices. For example, if the population has not been maintained in zoos and aquariums long enough to have many adults living into old age, median life expectancy will likely be an underestimate until more data accrue in older age classes. Thus, users of these reports should recognize that the results produced will likely vary over time or depending on the subset of data selected.

Although for many species, including humans, survival statistics often differ for males and females, for these analyses male and female statistics were not statistically different[1]; these results therefore include pooled data from males, females, and unknown sex individuals.

SUMMARY OF ANALYSES:

SURVIVAL STATISTICS

The dataset used for analysis includes partial or full lifespans of 511 individuals, 248 (48.5%) of which had died by 9 November 2018.

If a RED RUFFED LEMUR survives to its first birthday, its **median life expectancy**[2] is **19.9 years of age**. Given the quality of the data - how many animals are in the database and how many have died - there is a 95% chance that the true median falls between 18.6 and 21.1 years of age (i.e., these are the 95% confidence limits). Only 25% of RED RUFFED LEMUR can be expected to survive to be 24.0 years or older.

First-year (infant) survival[3] for RED RUFFED LEMUR is 75%. The year after birth/hatching is a period of relatively low survival for many species and life histories.

The **maximum longevity**[4] observed for RED RUFFED LEMUR is **36.3 years**; this longevity record is based on an individual which was DEAD as of the analysis end date (studbook number 3, sex = Female, origin = Wild Born, birth date estimate = Year).[5]

The correct interpretation of these statistics is that, if it survives the first year of life, the 'typical' RED RUFFED LEMUR will live 19.9 years; that half of all RED RUFFED LEMUR can be expected to die before they reach 19.9 and half will live longer than 19.9; that only 25% of all RED RUFFED LEMUR can be expected to live 24.0 years; and that it is rare but possible for RED RUFFED LEMUR to live 36.3 years.

The median life expectancy, confidence interval, first-year survival, and maximum longevity may change as more data are accumulated, the population's age structure changes, or management practices improve.

While both median life expectancy and maximum longevity are discussed in this report, it is more appropriate to rely on median life expectancy to place the age of any one individual in context. To put these statistics in perspective, median life expectancy from age one for people in the United States is 77.5 years and the maximum longevity (documented worldwide) is 122 years[6]. Therefore, if a person lived to be 85 years old, the appropriate context is that they lived well beyond the median life expectancy (77.5), not that they fell short of the maximum longevity (122).

DATA QUALITY

The PopLink Survival Tool uses five data quality measures to determine whether data are robust enough to make reliable estimates of key survival parameters. **This population passed all of the following data quality tests:**

1. Can the median life expectancy be calculated? **PASS**
2. Is the sample size (number of individuals at risk) greater than 20 individuals at the median? **PASS**
3. Is the 95% Confidence Interval (CI) bounded? **PASS**
4. Is the sample size in the first age class of analysis (e.g. the first day of analysis) greater than 30 individuals? **PASS**
5. Is the length of the 95% CI < 33% of the maximum longevity? **PASS**

PopLink data validation was last run on 11/9/2018. This validation found 19 errors, including 17 high priority errors, 2 medium priority errors, and 0 low priority errors. These errors may or may not directly affect the data in this analysis.

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[1] Statistical significance was determined by comparing 84% confidence intervals around median life expectancy for males and females, with 0 unknown sex individuals proportionally incorporated into the analysis. For this population, overlapping confidence intervals indicated that data could be pooled. See the PopLink manual for more details.

[2] The statistics analyzed for this report (median life expectancy, 95% confidence limits, and age to which 25% of individuals survive) exclude any individuals who did not survive to their first birthday; these individuals are excluded because this Report is focused on providing median survival estimates for the typical individual that

survives the vulnerable infant stage. In other words, this report answers the question, 'how long is this species expected to live once it has reached its first birthday?' For this studbook, 156 individuals died before their first birthday and were excluded from these analyses.

For all animals that survive to their first birthday, 50% will die before the median life expectancy in this report and 50% die after. Note that the median life expectancy obtained from population management software (PM2000, PMx, ZooRisk) or from life tables in Breeding and Transfer Plans (e.g. where Lx = 0.5) will be lower because it includes these individuals that did not survive to their first birthday in order to project the correct number of births needed. See the PopLink manual for more details.

[3]For reference, first-year survival is provided. For this studbook and the selected demographic window, 156 individuals did not survive to their first birthday and were excluded from the estimates provided above (median life expectancy, 95% confidence limits, and age to which 25% of individuals survive).

[4] Maximum longevity is the age of the oldest known individual for this species, living or dead. It is not necessarily the biological maximum age, but only reflects the individuals included in the dataset.

[5] Censored individuals are individuals whose deaths have not been observed as of the end of the analysis window, including individuals who 1) are still alive as of the end date, 2) exited the geographic window before the end date (through transfer or release), or 3) were lost-to-follow up before the end date.

[6] Median life expectancy for people is estimated from: Xu, Jiaquan, Kochanek KD, Murphy SL, and Tejada-Vera B. 2007. Deaths: Final Data for 2007. National vital statistics reports; vol 58 no 19. Hyattsville, MD: National Center for Health Statistics. Jeanne Calment of France was the oldest documented and fully validated human and died at 122 years and 164 days; from: http://www.grg.org/Adams/Tables.htm. Accessed August 9, 2007.

Appendix G
Definitions

Management Terms (as of June 2016)

Green Species Survival Plan® (Green SSP) Program – A Green SSP Program has a population size of 50 or more animals and is projected to retain 90% gene diversity for a minimum of 100 years or 10 generations. Green SSP Programs are subject to AZA's Full Participation and Non–Member Participation Policies.

Yellow Species Survival Plan® (Yellow SSP) Program – A Yellow SSP Program has a population size of 50 or more animals but cannot retain 90% gene diversity for 100 years or 10 generations. Yellow SSP participation by AZA institutions is voluntary.

Red Species Survival Plan® (Red SSP) Program – A Red SSP has a population size of greater than 20 but fewer than 50 animals, at least three AZA member institutions, and a published studbook. Animal Programs that manage species designated as Extinct in the Wild, Critically Endangered, or Endangered (IUCN) do not need to meet minimum population size and number of participating institution criteria to be designated as an SSP Program. Red Program participation by AZA institutions is voluntary.

Full Participation – AZA policy stating that all AZA accredited institutions and certified related facilities having a Green SSP animal in their collection are required to participate in the collaborative SSP planning process (e.g., provide relevant animal data to the AZA Studbook Keeper, assign an Institutional Representative who will communicate institutional wants and needs to the SSP Coordinator and comment on the draft plan during the 30-day review period, and abide by the recommendations agreed upon in the final plan).

All AZA member institutions and Animal Programs, regardless of management designation, must adhere to the AZA Policy on Responsible Population Management and the AZA Code of Professional Ethics. For more information on AZA policies, see https://www.aza.org/board-approved-policies-and-position-statements

Demographic Terms

Age Distribution – A two-way classification showing the numbers or percentages of individuals in various age and sex classes.

Ex, Life Expectancy – Average years of further life for an animal in age class x.

Lambda (λ) or Population Growth Rate – The proportional change in population size from one year to the next. Lambda can be based on life-table calculations (the expected lambda) or from observed changes in population size from year to year. A lambda of 1.11 means an 11% per year increase; lambda of 0.97 means a 3% decline in size per year.

lx, Age-Specific Survivorship – The probability that a new individual (e.g., age 0) is alive at the *beginning* of age *x*. Alternatively, the proportion of individuals which survive from birth to the beginning of a specific age class.

Mean Generation Time (T) – The average time elapsing from reproduction in one generation to the time the next generation reproduces. Also, the average age at which a female (or male) produces offspring. It is not the age of first reproduction. Males and females often have different generation times.

Mx, Fecundity – The average number of same-sexed young born to animals in that age class. Because studbooks typically have relatively small sample sizes, studbook software calculate Mx as 1/2 the average number of young born to animals in that age class. This provides a somewhat less "noisy" estimate of Mx, though it does not allow for unusual sex ratios. The fecundity rates provide information on the age of first, last, and maximum reproduction.

Px, Age-Specific Survival – The probability that an individual of age *x* survives one-time period; is conditional on an individual being alive at the beginning of the time period. Alternatively, the proportion of individuals which survive from the beginning of one age class to the next.

Qx, Mortality – Probability that an individual of age *x* dies during time period. Qx = 1-Px. Alternatively, the proportion of individuals that die during an age class. It is calculated from the number of animals that die during an age class divided by the number of animals that were alive at the beginning of the age class (i.e.-"at risk").

Risk (Qx or Mx) – The number of individuals that have lived during an age class. The number at risk is used to calculate Mx and Qx by dividing the number of births and deaths that occurred during an age class by the number of animals at risk of dying and reproducing during that age class.

Vx, Reproductive Value – The expected number of offspring produced this year and in future years by an animal of age x.

Genetic Terms

Allele Retention – The probability that a gene present in a founder individual exists in the living, descendant population.

Current Gene Diversity (GD) -- The proportional gene diversity (as a proportion of the source population) is the probability that two alleles from the same locus sampled at random from the population will not be identical by descent. Gene diversity is calculated from allele frequencies, and is the heterozygosity expected in progeny produced by random mating, and if the population were in Hardy-Weinberg equilibrium.

Effective Population Size (Inbreeding N_e) -- The size of a randomly mating population of constant size with equal sex ratio and a Poisson distribution of family sizes that would (a) result in the same mean rate of inbreeding as that observed in the population, or (b) would result in the same rate of random change in gene frequencies (genetic drift) as observed in the population. These two definitions are identical only if the population is demographically stable (because the rate of inbreeding depends on the distribution of alleles in the parental generation, whereas the rate of gene frequency drift is measured in the current generation).

Founder – An individual obtained from a source population (often the wild) that has no known relationship to any individuals in the derived population (except for its own descendants).

Founder Genome Equivalents (FGE) – The number wild-caught individuals (founders) that would produce the same amount of gene diversity as does the population under study. The gene diversity of a population is 1 - 1 / (2 * FGE).

Founder Representation -- Proportion of the genes in the living, descendant population that are derived from that founder.

Inbreeding Coefficient (F) -- Probability that the two alleles at a genetic locus are identical by descent from an ancestor common to both parents. The mean inbreeding coefficient of a population will be the proportional decrease in observed heterozygosity relative to the expected heterozygosity of the founder population.

Mean Kinship (MK) – The mean kinship coefficient between an animal and all animals (including itself) in the living, captive-born population. The mean kinship of a population is equal to the proportional loss of gene diversity of the descendant (captive-born) population relative to the founders and is also the mean inbreeding coefficient of progeny produced by random mating. Mean kinship is also the reciprocal of two times the founder genome equivalents: MK = 1 / (2 * FGE). MK = 1 - GD.

Percent Known – Percent of an animal's genome that is traceable to known founders. Thus, if an animal has an UNK sire, the % Known = 50. If it has an UNK grandparent, % Known = 75.

Percent Certain -- The percentage of the living individuals' pedigree that can be completely identified as *certain:* (exact identity of both parents is known) and traceable back to known founders. Individuals that are 100% *certain* do not have any MULTs or UNKs in their pedigree. *Certainty* represents a higher degree of knowledge than *Known* and therefore is always less than or equal to *Known.*

Prob Lost – Probability that a random allele from the individual will be lost from the population in the next generation, because neither this individual nor any of its relatives pass on the allele to an offspring. Assumes that each individual will produce a number of future offspring equal to its reproductive value, Vx.

Appendix H

Directory of Institutional Representatives

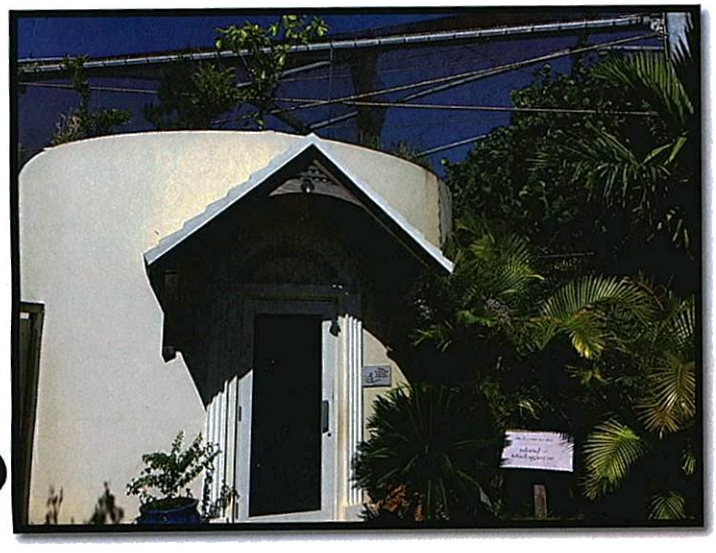
Mnemonic	Institution	First Name	Last Name	Email	Phone
AKRON	Akron Zoological Park	Shane	Good	s.good@akronzoo.org	(330)375-2550
ASHEBORO	North Carolina Zoological Park	Jennifer	Ireland	jennifer.ireland@nczoo.org	(336)879-7603
ATASCADER	Charles Paddock Zoo	Alan	Baker	abaker@atascadero.org	
ATTLEBORO	Capron Park Zoo	Brenda	Young	brenda.asstdirector@cityofattleboro.us	(774)203-1842
BALTIMORE	The Maryland Zoo in Baltimore	Erin	Cantwell	erin.cantwell@marylandzoo.org	(443)992-4590
BERMUDA	Bermuda Aquarium, Museum and Zoo	Barbara	Outerbridge	bcouterbridge@gov.bm	
BISMARCK	Dakota Zoo	Terry	Lincoln	director@dakotazoo.org	(701)223-7543 (4)
BLOOMINGT	Miller Park Zoo	Peter	Burvenich	pburvenich@cityblm.org	(309) 275-8376
BROWNSVIL	Gladys Porter Zoo	Walter	DuPree	wdupree@gpz.org	(229)412-9102
BUSCH TAM	Busch Gardens Tampa Bay	Michael	Malden	michael.malden@buschgardens.com	(813)987-5579
CALDWELL	Caldwell Zoo	Scotty	Stainback	sstainback@caldwellzoo.org	
CHATTANOO	Tennessee Aquarium	Chelsea	Feast	dec@tnaqua.org	(423)785-4081
CHEHAW	The Zoo at Chehaw	Samantha	Sassone	ssassone@chehaw.org	(229)420-1057
CLEVELAND	Cleveland Metroparks Zoo	Tad	Schoffner	tad@clevelandmetroparks.com	(216)635-3332
COLUMBIA	Riverbanks Zoo & Garden	Sue Pfaff	Davis	suepfaff@riverbanks.org	
COLUMBUS	Columbus Zoo	Shawn	Brehob	shawn.brehob@columbuszoo.org	(614)724-3433
DENVER	Denver Zoo	Marcia	Salverson	msalverson@denverzoo.org	(719)213-3328
DICKERSON	Dickerson Park Zoo	Kesha	Schreiber	kschreib@springfieldmo.gov	(417)833-1570
DREHER PA	Palm Beach Zoo	Janet	Steele	jsteele@palmbeachzoo.org	(561)833-7130 (224)
DUKE PRIM	Duke University Lemur Center	Britt	Keith	britt.keith@duke.edu	(919)401-7225
EVANSVLLE	Mesker Park Zoo & Botanic Garden	Susan	Lindsey	slindsey@meskerparkzoo.com	(812)435-6143 (403)
FRESNO	Fresno Chaffee Zoo	Nicole	Presley	NPresley@fresnochaffeezoo.org	559-492-4431
GAINSVLL	Santa Fe College Teaching Zoo	Kathy	Coyne-Russell	kathy.russell@sfcollege.edu	(352)395-5605
GARDENCTY	Lee Richardson Zoo	Kristi	Newland	Kristi.Newland@gardencityks.us	(620)276-1250
GREEN NSC	Greensboro Science Center	Jessica	Hoffman	jhoffman@greensboroscience.org	(336)288-3769 (1312)
JACKSON	Jackson Zoo	David	Wetzel	dlwetzel@jacksonzoo.org	(601)352-2590
JNGLARY F	Naples Zoo	Liz	Harmon	liz@napleszoo.org	(239) 262-5409
KANSASCTY	Kansas City Zoo	Cinnamon	Williams	cinnamonwilliams@fotzkc.org	(816)595-1325
LANSING	Potter Park Zoological Gardens	Sarah	Pechtel	spechtel@ingham.org	(517)230-0666
MEMPHIS	Memphis zoo	Amanda	Schweighart	ahadicke@memphiszoo.org	
MILWAUKEE	Milwaukee County Zoological Gardens	Patricia	Khan	patricia.khan@milwaukeecountywi.gov	(414)771-3040
MYAKKACLR	Lemur Conservation Foundation	Caitlin	Kenney	ckenney@lemurreserve.org	(941)322-8494
NASHV ZOO	Nashville Zoo at Grassmere	Sabrina	Barnes	sbarnes@nashvillezoo.org	(615)833-1534 (135)
NY BRONX	Bronx Zoo	Colleen	McCann	cmccann@wcs.org	
NZP-WASH	Smithsonian National Zoological Park	Becky	Malinsky	malinskyb@si.edu	(202)633-3275/3295
OMAHA	Omaha's Henry Doorly Zoo	Christie	Eddie	christiee@omahazoo.com	(402)557-6932
PHOENIX	Phoenix Zoo	Danyelle	Benza	dbenza@phoenixzoo.org	(602) 286-3800
PORTLAND	Oregon Zoo	Becca	VanBeek	Becca.VanBeek@oregonzoo.org	
SAFARI W	Safari West	Kimberly	Robertson	krobertson@safariwest.com	

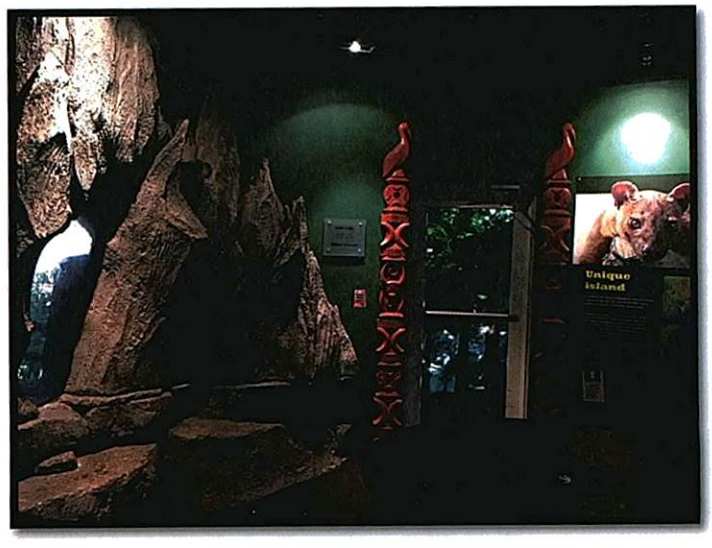
This Animal Program is currently a Yellow SSP Program and recommendations proposed are non-binding – Participation is voluntary. Dispositions to non-AZA institutions must comply with each institution's acquisition/disposition policy, in accordance with the AZA policy on Responsible Population Management.

Mnemonic	Institution	First Name	Last Name	Email	Phone
SAN ANTON	San Antonio Zoological Society	Jonathan	Reding	Jonathan.reding@sazoo.org	(210)734-7184 (1330)
SAN FRAN	San Francisco Zoological Gardens	Joe	Knobbe	joek@sfzoo.org	(415)753-7035
SANDIEGOZ	San Diego Zoo	Dean	Gibson	dgibson@sandiegozoo.org	(619)557-3985
SANFORD	Central Florida Zoo & Botanical Gardens	Erin	Hale	erinh@centralfloridazoo.org	(407)323-4450 (141)
SANJOSECA	Happy Hollow Zoo	Heather	Vrzal	heather.vrzal@sanjoseca.gov	(408)794-6433
SCOTTSBLUF	Riverside Discovery Center	Anthony	Mason	amason@riversidediscoverycenter.org	
SEATTLE	Woodland Park Zoo	Erin	Sullivan	erin.sullivan@zoo.org	(206)548-2507
SEDGWICK	Sedgwick County Zoo	Mike	Quick	michael.quick@scz.org	(316)266-8237
SPRINGFIE	Henson Robinson Zoo	Marikay	Altes	maltes@springfieldparks.org	(210)734-7184 (1335)
ST AUGUST	St. Augustine Alligator Farm	Sarah	Patterson	spatterson@alligatorfarm.com	(904)824-3337
TAUTPHAUS	Tautphaus Park Zoo	Darrell	Markum	Dmarkum@idahofallszoo.org	208-612-8419
TEMAIKEN	Parque De Animales Silvestres Temaikèn	Julieta	Esmaiman	jesmaiman@temaiken.org.ar	
WACO	Cameron Park Zoo	Manda	Butler	mandab@ci.waco.tx.us	(254)750-8435
WINSTON	Wildlife Safari Inc	Sara	Healas	shealas@wildlifesafari.net	(541)679-6761 (219)

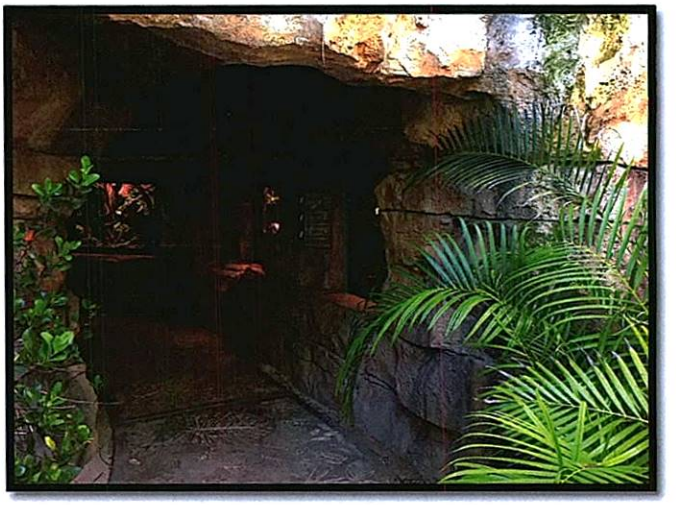
Export/Re-Export/Import/Interstate & Foreign Commerce/Take of Animals (Live/Samples/Parts/Products) under the Convention on International Trade in Endangered Species (CITES) and/or the U.S. Endangered Species Act (ESA)
Federal Fish and Wildlife Permit Application Form (3-200-37)
Fresno Chaffee Zoo Application
Attachment 14

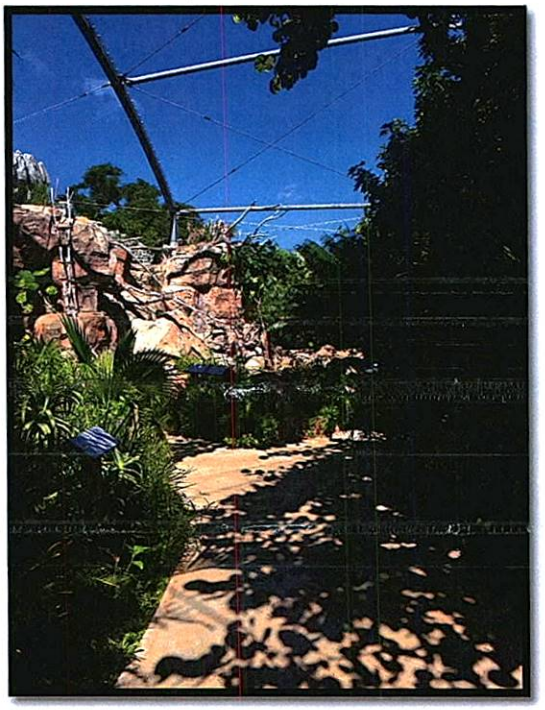
12. If live specimens are to be held in captivity as part of the proposed activity:
    a. Provide a detailed description (e.g., size, construction materials, protection from the elements) and photographs or diagrams (no blueprints) clearly depicting the existing facilities **where the wildlife will be maintained**. If the specimens will be housed at multiple facilities, either immediately or within the next year, provide a full description of each facility. If you are unsure of which facilities may be receiving specimens (e.g., finial decisions on placement have not been made), please indicate likely candidates and the mechanism that will be used to determine recipient facilities:
        i. The red ruffed lemurs will be housed in their recently opened "Madagascar Islands" exhibit. The lemur exhibit area is a part of a mixed species lemur exhibit which currently houses 0.2 ringtail lemurs. The lemurs have approximately 750 square feet of exhibit and free access holding space. The exhibit area comprises a central lemur island surrounded by a water pond feature, and is connected by climbing walkways t the holding areas at the rear of the exhibit. There are rocky outcroppings and natural vegetation to provide shade, shelter and enrichment.
        ii. The exhibit is primarily rockwork covered concrete forming the "back walls" and central island features. There is a galvanized stainless steel frame that forms the top part of the walls and roof of the exhibit. This frame is covered with bronze coated stainless steel mesh resulting in an open air exhibit. There is plenty of shelter provided by trees and rocky overhangs as well as a covered tunnel with 5 gem exhibits. There are adjacent off-exhibit holding areas accessed from the upper level above the waterfall. A concrete path winds through the exhibit and the entry and exhibit vestibules are built of pressure treated lumber.
        iii. The Madagascar exhibit building also houses a veterinary hospital facility with multiple quarantine and off-exhibit holding areas. Upon initial arrival the red ruffed lemurs will be quarantined for a minimum of 30 days in an off-exhibit holding area and will receive an initial entrance physical examination. Once they have cleared quarantine, the lemurs will be introduced to their new exhibit area in a systematic manner ensuring a successful introduction and adjustment.
        iv. See attachment 14a for the exhibit architectural plan.

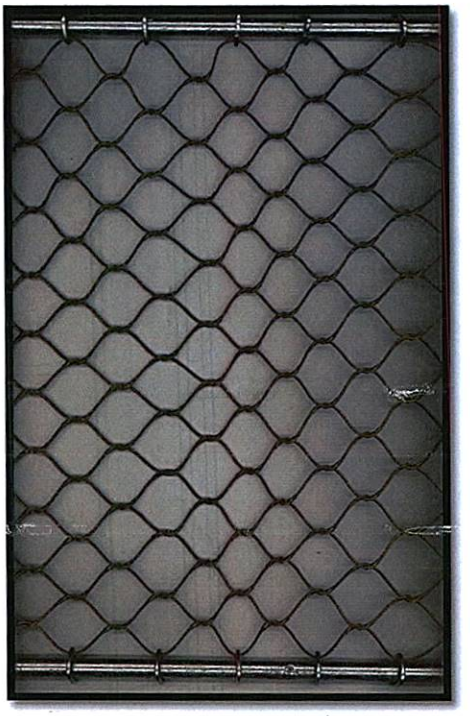


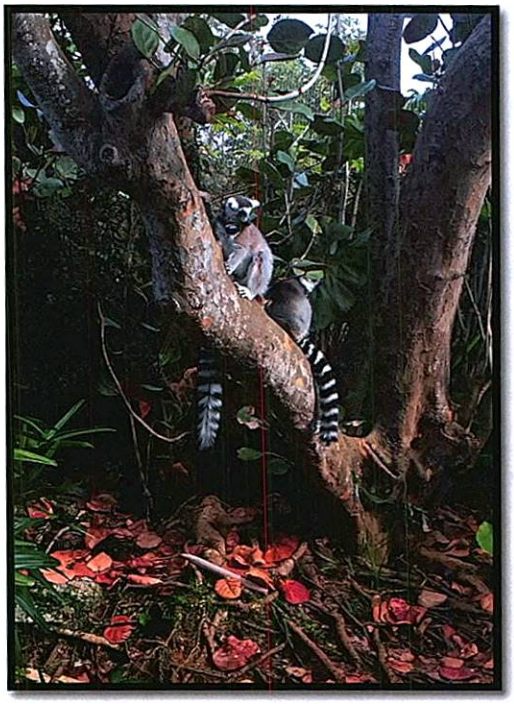


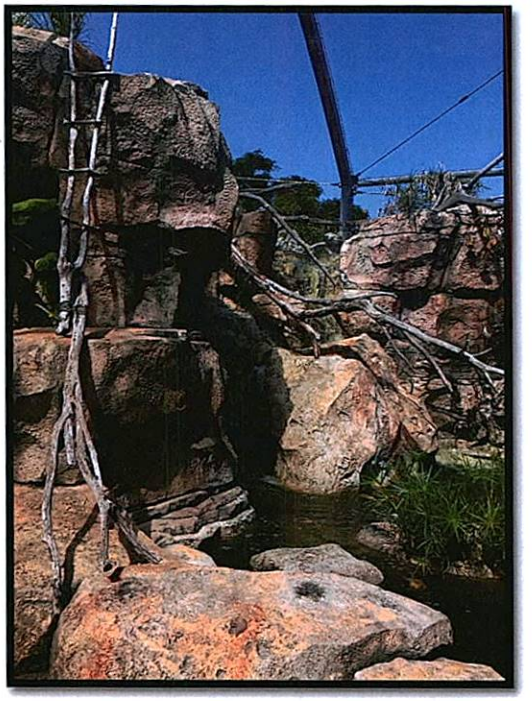

Please do not bang on the glass

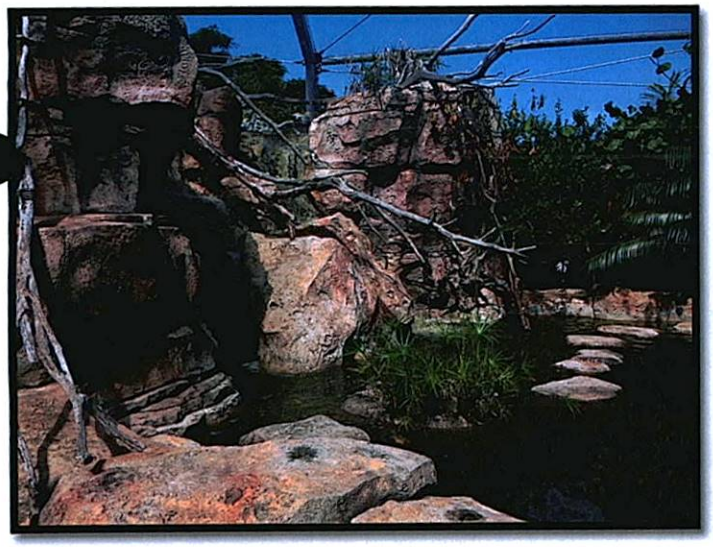


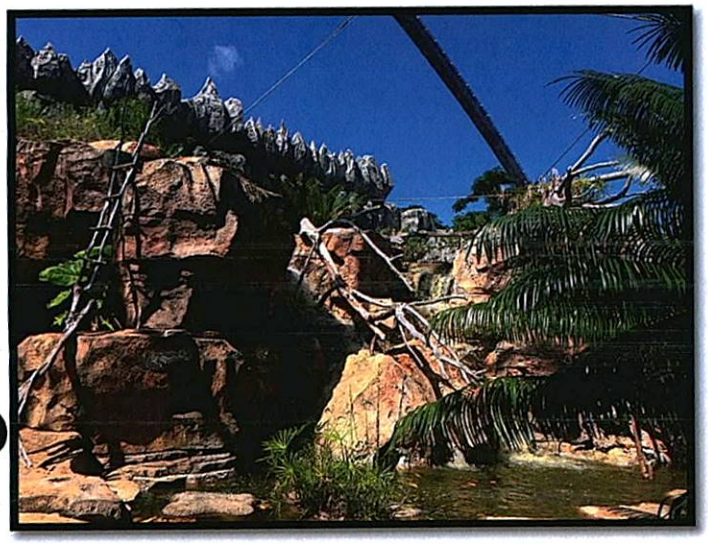


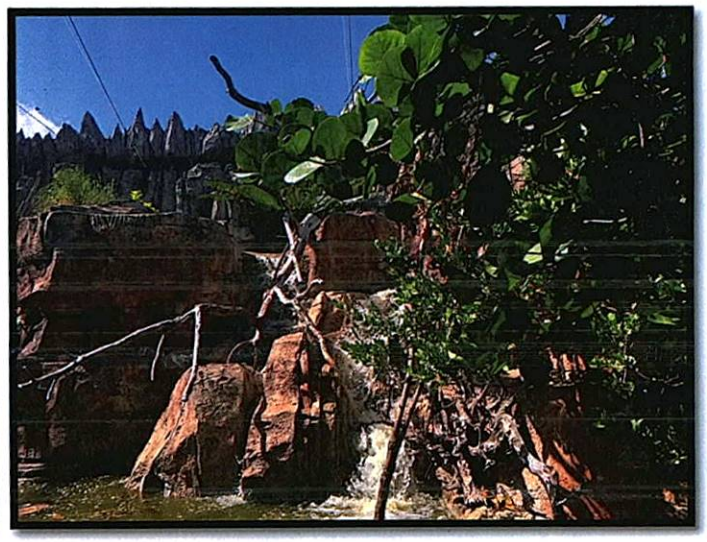


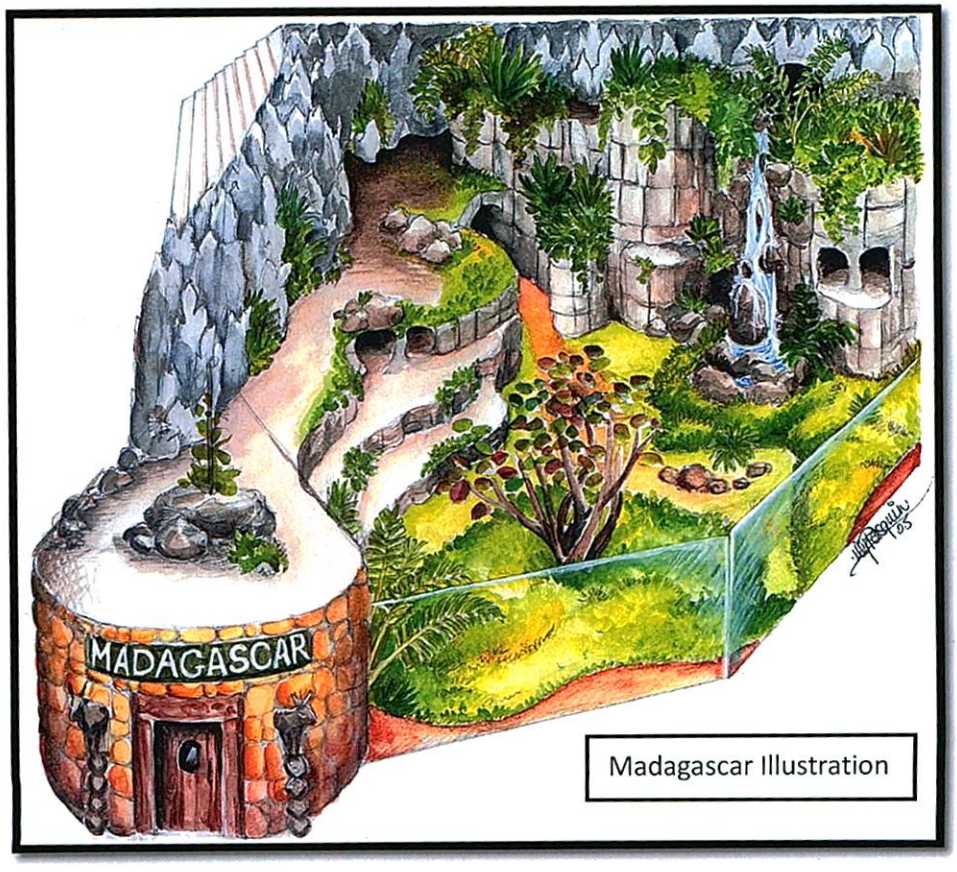






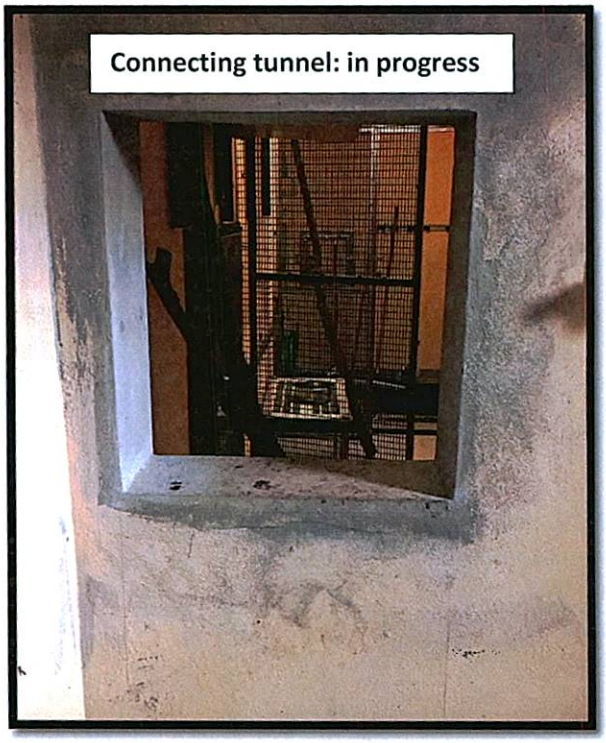


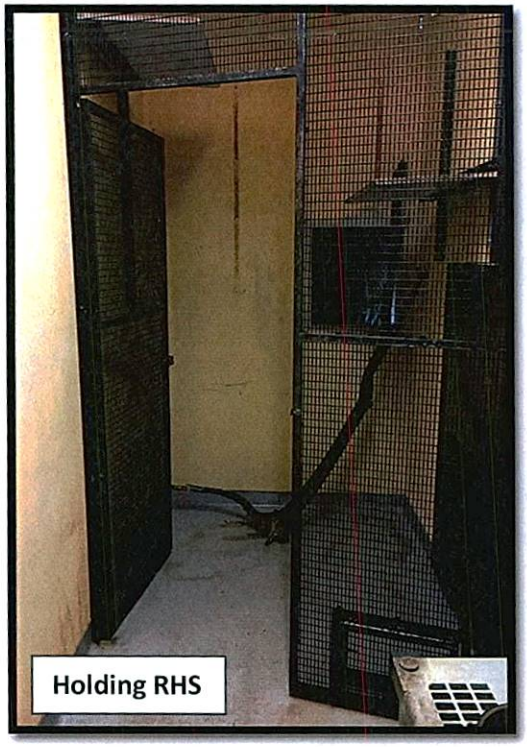


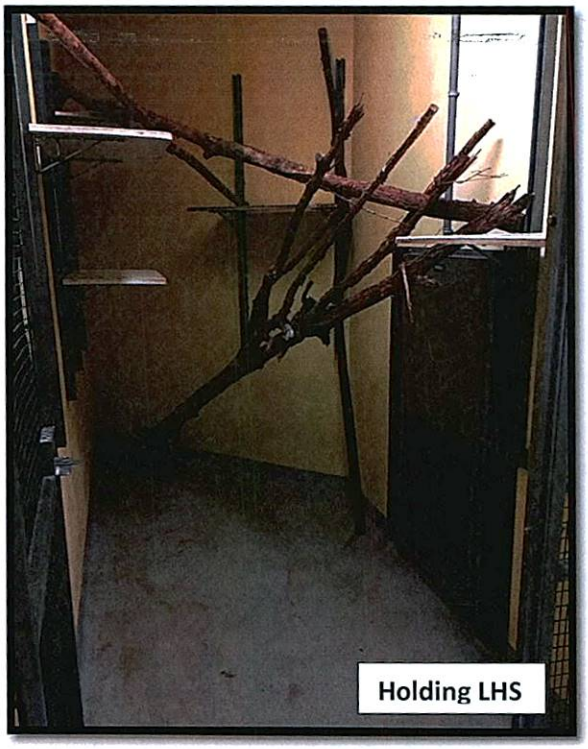


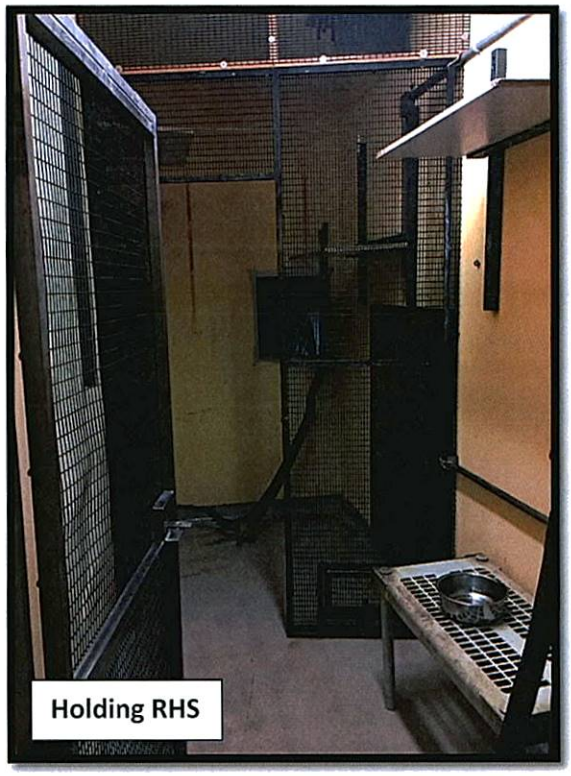
Madagascar Illustration

v. The Madagascar exhibit building also houses a veterinary hospital facility with multiple *quarantine* and off-exhibit holding areas. Upon initial arrival the red ruffed lemurs will be quarantined for a minimum of 30 days in an off-exhibit holding area and will receive an initial entrance physical examination. Once they have cleared quarantine, the lemurs will be introduced to their new exhibit area in a systematic manner ensuring a successful introduction and adjustment.









Holding RHS

Radiated Tortoise Exhibit

6 Feet

PUBLIC MALE
PUBLIC FEMALE
EXHIBIT
WORK AREA
Lemur Island
EXHIBIT
Lemur Holding 1
Pump Room
Lemur Holding 2
Closet
CORRIDOR
Closet
Animal Holding 2
Pump room
Fossa Holding 3
Closet
squeeze cage
Animal Holding
STAFF
MUD ROOM
HOLDING BIRDS
HOLDING REPTILES
HOLDING MAMMALS
LAUNDRY
TRANSFORMER
SWITCH ROOM
TREATMENT HOLDING
BARK ROOM
OFFICE
KITCHEN
FREEZER
FRIDGE

01 PROPOSED FLOOR PLAN
A.101 1/4" = 1'-0" 3329 SQ. FT.

DETAIL DESIGN STAGE

Conyers & Associates Ltd.

Proposed New Zoo Hospital

At the Bermuda Aquarium Museum & Zoo
40 North Shore Road, Flatts

Proposed Ground Floor Plan

450 | A.101

CONVENTION ON INTERNATIONAL TRADE IN ENDANGERED SPECIES OF WILD FAUNA AND FLORA

☒ Import permit
☐ Export permit
☐ Re-Export permit
☐ Other Certificate (see block 5)

Page 1 of 1 | **ORIGINAL**

1. Permit/Certificate Number: **19BM0003**

2. Valid until: **10-July-2019**

3. Importer (name and address, country)
Bermuda Aqaurium, Museum & Zoo (BAMZ)
40 North Shore Road
Flatts
BERMUDA FL-04

4. Exporter / Re-Exporter (name and address, country)
Fresno Chaffee Zoo
894 Belmont Avenue
Fresno, California
U.S.A. 93728

3a. Country of Import: BERMUDA

5. Special conditions

For live animals, this permit is valid if transport conditions conform to the CITES Guidelines for Transport of Live Animals, or in case of air transport, to the IATA Live Animals Regulations.

5a. Purpose of transaction: Z

5b. Security stamp: 1116639

6. Management Authority of Bermuda
ENDANGERED ANIMALS AND PLANTS ACT 2006

Ministry of Home Affairs
Department of Environment and Natural Resources
P.O. Box HM-834
Hamilton, Bermuda HM-CX

13. This permit/certificate has been issued by:
Jonathan Nisbett, DVM, Veterinary Officer
at offices of the Management Authority, Paget, Bermuda

10-January-2019
Date of issue

Security stamp, Signature & Seal

7/8. Common name and scientific name (genus and species) of animal or plant	9. Description of specimen including identifying marks or numbers (age/sex if live)	10. Appendix & Source	11. Quantity (Number or weight of specimens)
A. Common name: Red ruffed lemur Scientific name: *Varecia rubra*	"Enno" - Captive Born 1.0 DOB 19 April 1998 m/c 000132773F	10. I-C	11. One (1)
		12. Country of origin, Permit & Date: ***	
		12a. Country of last re-export, Permit & Date: ***	
B. Common name: Red ruffed lemur Scientific name: *Varecia rubra*	"Frezy" - Captive Born 1.0 DOB 12 May 2016	10. I-C	11. One (1)
		12. Country of origin, Permit & Date: ***	
		12a. Country of last re-export, Permit & Date: ***	
C. Common name: Red ruffed lemur Scientific name: *Varecia rubra*	"Saka" - Captive Born 0.1 DOB 12 May 2016 m/c 985112008460359	10. I-C	11. One (1)
		12. Country of origin, Permit & Date: ***	
		12a. Country of last re-export, Permit & Date: ***	

14. Export/Re-Export Endorsement
The official who inspects the shipment upon exportation/re-exportation must enter the actual quantities of specimens being exported/re-exported in this block.

See Block 7	Quantity
A.	
B.	
C.	

15. Bill of Lading / Airway Bill No.

Port of Export/Re-Export

Total No. of shipping containers

16. This document valid only with inspecting official's ORIGINAL stamp, signature and date in this block.

Inspector's signature, stamp & date

CONVENTION ON INTERNATIONAL TRADE IN ENDANGERED SPECIES OF WILD FAUNA AND FLORA

☒ Import permit
☐ Export permit
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40 North Shore Road
Flatts
BERMUDA FL-04

4. Exporter / Re-Exporter (name and address, country)
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		12. Country of origin, Permit & Date: ***	
		12a. Country of last re-export, Permit & Date: ***	
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1116639
Security stamp, Signature & Seal

5a. Purpose of transaction: Z

5b. Security stamp: 1116639

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Inspector's signature, stamp & date

RCVD MAR 15 2019

SECURITY FEATURES INCLUDE TRUE WATERMARK PAPER, HEAT SENSITIVE ICON AND FOIL HOLOGRAM.

FRESNO CHAFFEE

FRESNO'S CHAFFEE ZOO CORP.
894 WEST BELMONT AVE.
FRESNO, CA 93728
(559) 498-5910

PREMIER VALLEY BANK
FRESNO, CA 93720
90-4327/1211

Shield [redacted]

CHECK DATE	CHECK NO.
03/10/2019	102779

CHECK AMOUNT
$** 100.00

PAY **One hundred and 00/100 Dollars**

TO THE ORDER OF
U.S. Fish and Wildlife Service
Division of Management Authority
Branch Of Permits, MS-IA
5275 Leesburg Pike
Falls Church, VA 22041

VOID AFTER 180 DAYS
CHECKS OVER $5000.00 REQUIRE TWO SIGNATURES

AUT [redacted]

[redacted]