



January 9, 2020

JAN 17 2020

US Fish & Wildlife Service  
Division of Management Authority  
Branch of Permits  
5275 Leesburg Pike  
Falls Church, VA 22041-3803

**Re: Permit application 3-200-37 to export 4.4 Przewalski Horses under the Convention on International Trade in Endangered Species (CITES) and/or the U.S. Endangered Species Act (ESA)**

Enclosed is our application booklet requesting authorization to export 4.4 Przewalski Horses to the Orenburg Nature Reserve in Russia. The attachments in this booklet are referenced with the application question number I am addressing. I will submit this information electronically, once I have received an application reference number.

Attachments include:

- Sec D1 - Signed Document of Exempt status, USDA Exhibitors license
- Sec E5 - List of USA Przewalski Horses for export to Russia
- Sec E8 - Specimen reports for the 4.4 Przewalski Horses to be covered under this permit
- Sec E10a - Orenburg Nature Reserve full report
- Sec E10b/12b - Staff Resumes
- Sec E10c - Agreement between the Minnesota Zoo and Orenburg Nature Reserves
- Sec E13a - Simek EAZA crate design
- Sec E17 - Russian CITES import permit #19RU001068

I have also included a FedEx mailing label for return permit if approved.

If you have any question or need further information, please do not hesitate to contact me.

Sincerely,

Laurie J Kokkeler, Registrar  
Minnesota Zoological Gardens  
Tel: (952) 431-9271  
Email: [laurie.kokkeler@state.mn.us](mailto:laurie.kokkeler@state.mn.us)



JAN 17 2020

Department of Interior  
U.S. Fish and Wildlife Service  
**Federal Fish and Wildlife Permit Application Form**

Type of Activity

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

**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 <b>Minnesota Zoological Gardens</b>			
2. Tax identification no. <b>416007162</b>		3. Description of business, agency, Tribe, or institution <b>Zoo</b>	
4.a. Principal officer Last name <b>Frawley</b>	4.b. Principal officer First Name <b>John</b>	4.c. Principal officer Middle name/initial <b>A.</b>	4.d. Suffix
5. Principal officer title <b>Zoo Director/CEO</b>		6. Primary contact name <b>Laurie Kokkeler</b>	
7.a. Business telephone number <b>952.431-9299</b>	7.b. Alternate telephone number <b>952.431.9271</b>	7.c. Business fax number <b>952.997.4383</b>	7.d. Business e-mail address <b><a href="mailto:Laurie.kokkeler@state.mn.us">Laurie.kokkeler@state.mn.us</a></b>

**Section C: All applicants complete address information**

1.a. Physical address (Street address; Apartment #, Suite #, or Room #; no P.O. Boxes) <b>13000 Zoo Blvd</b>				
1.b. City <b>Apple Valley</b>	1.c. State <b>MN</b>	1.d. Zip code/Postal code <b>55124</b>	1.e. County/Province <b>Dakota</b>	1.f. Country <b>USA</b>
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 [50CFR 13.11(d)]. **Signed Document of Exempt status is included**

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.

01/08/2020

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

Please continue to next page



**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](mailto: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.

**Please use the same address provided on Page 1 and send Attention: Laurie Kokkeler**

**A prepaid FedEx shipping label and envelope is included in this application packet**

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

**Please contact: Laurie Kokkeler, ph: 952.431.9271, [laurie.kokkeler@state.mn.us](mailto:laurie.kokkeler@state.mn.us)**

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. **N/**

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    ☐ FOREIGNCOMMERCE

**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) (approximat e of actual unknown)	d. Wild or captive- born	e. Qty	f. Gender (male or female, if known)	g. Permanent markings, if alive (e.g., tattoo, ID#, microchip #, scars)	h. Type of sample or product (e.g., blood, tissue, DNA)
EXAMPLE: <i>Pan troglodytes</i>	Chimpanzee						
<i>Equus ferus przewalski</i>	Przewalski Horse	4/25/2018	Captive- born	1	Female	Brand – LK50 Left flank Transponder- 985112006694801	Live animal
<i>Equus ferus przewalski</i>	Przewalski Horse	5/29/2018	Captive- born	1	Female	Brand – LK49 Left flank Transponder- 00-07D4-0DAE	Live animal
<i>Equus ferus przewalski</i>	Przewalski Horse	7/14/2015	Captive- born	1	Male	Brand-LK44 Left flank Transponder- 00-07D4-0F78	Live animal
<i>Equus ferus przewalski</i>	Przewalski Horse	3/23/2018	Captive- born	1	Male	Brand- 4 Left flank Transponder- 933000220020897	Live animal
<i>Equus ferus przewalski</i>	Przewalski Horse	6/23/2013	Captive- born	1	Female	Brand- LK51 Left flank Transponder- 0007BA2E11	Live animal
<i>Equus ferus przewalski</i>	Przewalski Horse	8/30/2015	Captive- born	1	Female	Brand-7 Right flank Transponder- 00-07D4-160A	Live animal
<i>Equus ferus przewalski</i>	Przewalski Horse	6/28/2015	Captive- born	1	Male	Brand- 16 Right flank Transponder- 000780FE6D	Live animal
<i>Equus ferus przewalski</i>	Przewalski Horse	4/9/2014	Captive- born	1	Male	Brand- 7 Left flank Transponder- 00-07D4-5AC8	Live animal

\*\* See separate attached list with photos of the Przewalski Horses described above



6. The current location of the specimen(s) (address and country): Name: **Minnesota Zoo**

Address: **13000 Zoo Blvd**

City: **Apple Valley**

State/Province: **Minnesota**

Country: **USA**

PostalCode: **55057**

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: **Orenburg Reserves, Director Rafilia Bakirova**

Address: **Donetskaya STR., 2/2**

City/State: **Orenburg**

Country: **Russian Federation**

Postal Code: **460001**

**SOURCE OF SPECIMEN** (answer question 8 or 9 or **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: **I have included specimen reports for each individual that contains all the below information a-f. The reports also state that all the horses to be covered under this permit are captive born. I have highlighted this information on each report.**

- Scientific name (genus, species, and, if applicable, subspecies) and common name;
- Name and address of the facility where the animal was bred and born;
- Birth/hatch date (mm/dd/yyyy), and, if applicable, identification information;
- Location (name of facility, address, city, State, postal code) of parental stock;
- A statement that the animal was bred at the above facility;
- 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:

**N/A These animals were all captive born.**

- Scientific name (genus, species, and, if applicable, subspecies) and common name;
- Specific location of where, when, and by whom (name and address) the specimen was removed from the wild;

- 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;
- d. If and how any remuneration, either financial or in-kind, was provided for taking or capturing animals or for the collection of samples.
- e. Your efforts to use captive specimens (e.g., captive-born, captive-held), or parts thereof, in lieu of taking animals from the wild.
- f. Copies of your foreign or domestic collecting permit, license, contract or agreement;
- g. Documentation showing that the specimen(s) was/were legally obtained by the applicant; and
- h. Copies of any applicable State, Tribal, Federal, or Foreign government permits or licenses that authorized the removal of this animal from the wild.

#### 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.

**The export of these Przewalski Horses is for reintroduction into Orenburg Nature Reserves, Russia. This reserve currently has a semi-free ranging population of 38 horses amongst three different harems and one bachelor group. Those horses were brought in from semi-reserves in France and Hungary in 2015, 2016, and 2017. Pedigree analysis indicates there will be a 12.5% increase in the genetic diversity of the current Orenburg horse population as a result of adding these horses from the United States zoos, thereby resulting in a healthier population of Przewalski Horses in Russia. (A full report on Orenburg Nature Reserve is attached).**

- 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.

**Orenburg Nature Reserve**

**Tatjana Zharkikh, Head of the Reintroduction Centre for the Przewalski Horse, Orenburg Reserve**

**Minnesota Zoo**

**Tony Fisher, Director of Animal Collections, Minnesota Zoo**

**Diana Weinhardt, Curator of Northern Trail, Minnesota Zoo**

**Trista Fischer, Assistant Curator of Northern Trail, Minnesota Zoo**

**Dr. Lesanna Lahner, Veterinarian, Minnesota Zoo**

- c. Copies of contracts, agreements or other documents that identify persons involved and dates of activities for which authorization is being requested.



**Agreement on Scientific and Technical Cooperation between the Minnesota Zoological Garden (United States) and Orenburg Nature Reserves (Russian Federation) is attached.**

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

**Orenburg Nature Reserve in Russia currently has a population of 38 Przewalski Horses but they estimate the carrying capacity to be 400-500 according to their vegetation surveys. The horses from the United States will boost their population numbers and increase genetic diversity by an estimated 12.5%.**

**The Minnesota Zoo has supported the conservation efforts of Przewalski horses in the wild for many years.**

**1) In 2004 the Minnesota Zoo sent \$2500 to the Hustai Nuruu National Park in Mongolia for the purchase of a snowmobile to be utilized for checking on the Przewalski Horses and supplemental feeding in the severe winter months.**

**2) In 2006 the Minnesota Zoo sent \$2500 to the Smithsonian Institute for the purchase of two GPS tracking collars. These collars were utilized in their habitat use study of Przewalski Horses in the Kalameili Reserve in China.**

**3) In 2017 to 2019 the Minnesota Zoo has been conducting GPS collar and water hole studies on the Przewalski Horse population in Hustai Nuruu National Park in Mongolia. The zoo also funded the installation of a second water hole within this park to expand the available habitat utilized by the horses.**

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;

**The Przewalski horses when transported to Orenburg Nature Reserve, will spend their first year in an acclimation pen. Two round-shaped acclimation pens each measuring 45 ha in size are available at Orenburg for this purpose. They have shelters placed in each for windbreaks and they also adjoin a central capture and holding pen facility for treating and handling horses. Water is provided by an artesian well and hay will be supplemented if warranted by the weather and grazing conditions in the acclimation enclosure (See full details in attached report on Orenburg Nature Reserve).**

**The Przewalski horses will be released into the larger reserve after their one year acclimation period. This larger reserve area is 16,538 ha and is completely enclosed by a 2 meter high perimeter fence, that measures 52 km long. The fence prevents migration of the horse population into neighboring lands and also prevents local domestic horses from encroaching into the reserve and inter breeding with the endangered Przewalski horses. (See full details in attached report on Orenburg Nature Reserve).**

- 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;

**Resumes attached: Orenburg Nature Reserve**

**Tatjana Zharkikh, Head of the Reintroduction Centre for the Przewalski Horse, Orenburg Reserve**



Minnesota Zoo

Tony Fisher, Director of Animal Collections, Minnesota Zoo  
 Diana Weinhardt, Curator of Northern Trail, Minnesota Zoo  
 Trista Fischer, Assistant Curator of Northern Trail, Minnesota Zoo  
 Dr. Lesanna Lahner, Veterinarian, Minnesota Zoo

- c. The number of years each species has been maintained at the facility;  
**The Minnesota Zoo has maintained Przewalski horses since 1978, a total of 41 years.**  
**Orenburg Nature Reserve has maintained this species since 2015, a total of 4 years.**
- d. The number of births by year for each species for the last 5 years; and  
**The Minnesota Zoo has had six births in the last five years (2015, 2016, 2017, and 2018)**  
**Orenburg Nature Reserve has had 15 foals born between 2015 and 2019 (personal communication).**
- 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.  
**The Minnesota Zoo has had one death in the last five years (22 year old stallion) due to age related issues.**  
**Orenburg Nature Reserve has had five deaths since 2015. Causes of these deaths were from bowel inflammation (colic), trauma from conspecifics, and unknown. Reserve management staff are striving to minimize conflict whenever possible in a free-ranging herd environment.**

**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  
**The horses will be air shipped in crates that meet IATA regulations for Container #73. They will also have modifications in place as recommended by Chris Walzer & colleagues (see Simek-EAZA crate attachment) for feeding and watering, extra padding, etc. This crate design is also endorsed by the EAZA (European Association of Zoos and Aquariums). Photos are included.**
- b. The arrangements for watering or otherwise caring for the wildlife during transport.  
**We will send at least two zoo staff members that will accompany the shipment to feed, water, and care for the horses during the entire transport time, from initial loading at the zoo to final unloading at Orenburg Reserve. One staff will be a zoo veterinarian.**
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 **LIVECITES 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 Cont. 5.10](#)

**N/A. This is not for commercial purpose**

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.

**The approved Russian CITES import permit # 19RU001068 is attached.**

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).**



## Memorandum

DATE: May 1, 2018

TO: US Fish and Wildlife Service

FROM: Jeff Higgins, Accounting Director, MN Zoo

RE: Exemption request for Minnesota State Agency

The Minnesota Zoo requests the exemption to the Fee requirement based on the exemption for state agencies. The Minnesota Zoo is a state agency created in Minnesota Statute under Chapter 85A, which operates under the supervision of the Minnesota Zoo Board.

Thank you for your consideration.

## 2017 Minnesota Statutes

- Minnesota Zoo
- Zoological Board

### 85A.01 CREATION; ORGANIZATION.

#### Subdivision 1. **Creation.**

The Minnesota Zoological Garden is established under the supervision and control of the Minnesota Zoological Board.





## STATE of MINNESOTA

WHEREAS: The 66<sup>th</sup> Minnesota Legislature voted to establish the Minnesota Zoological Garden Board, which opened the Minnesota Zoological Garden on May 22, 1979; and

WHEREAS: The Minnesota Zoological Garden is a state agency and belongs to the people of Minnesota; and

WHEREAS: The Minnesota Zoological Garden is a world-class zoo connecting people, animals, and the natural world to save wildlife; and

WHEREAS: The Minnesota Zoological Garden serves 1.35 million visitors each year; and

WHEREAS: The Minnesota Zoological Garden is an economic engine, with \$227.7 million in gross output, approximately 2,265 jobs and \$137.2 million in value-added impacts; and

WHEREAS: The Minnesota Zoological Garden is a respected world leader in conservation, with significant conservation achievements in Minnesota to restore trumpeter swans and bison, and projects underway to save prairie butterflies, freshwater mussels, and turtles; and

WHEREAS: The Minnesota Zoological Garden is celebrating "40 years of Amazing!"

NOW, THEREFORE, I, MARK DAYTON, Governor of Minnesota, do hereby proclaim Tuesday, May 22, 2018 as:

## MINNESOTA ZOOLOGICAL GARDEN DAY

in the State of Minnesota.



*Steve Pimon*

SECRETARY OF STATE

IN WITNESS WHEREOF, I have hereunto set my hand and caused the Great Seal of the State of Minnesota to be affixed at the State Capitol this 18<sup>th</sup> day of May.

*Mark Dayton*  
GOVERNOR





**United States  
Department of  
Agriculture**

**Marketing and  
Regulatory  
Programs**

**Animal and  
Plant Health  
Inspection  
Service**

**Animal Care**

**EXPIRATION DATE: JUNE 14, 2020**

**This is to certify that** **STATE OF MINNESOTA**

**is a licensed** **CLASS C EXHIBITOR**  
**under the**

**Animal Welfare Act**

**(7 U.S.C. 2131 et seq.)**

**Certificate No.** **41-C-0019**

**Customer No.** **2793**

**Deputy Administrator**

A handwritten signature in black ink, appearing to be "J. L. [unclear]", written over a horizontal line.



### AZA Asian Wild Horse Release Candidates

#### USA export to Russia in 2020

Increases Genetic Diversity (GD) in Orenburg from 0.7908 to 0.8109 (12.5% increase)

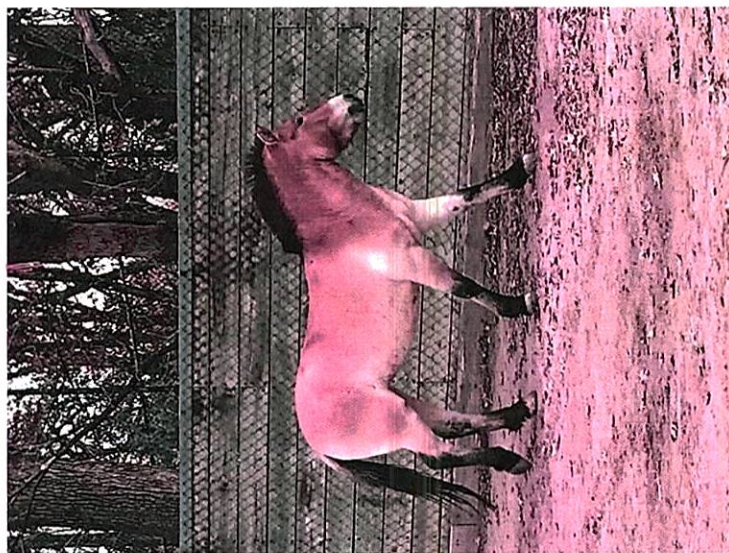
#### United States Group

<u>Sex</u>	<u>Birthdate</u>	<u>Location</u>	<u>Brand</u>	<u>Transponder</u>	<u>Name</u>
Female	4/25/2018	El Paso	LK50 Left Hip	985 112 006 694 801 Base of left ear	Misha
Female	5/29/2018	Minnesota	LK49 Left Hip	00-07D4-0DAE Base of right ear	Nadyezhda
Male	7/14/2015	Minnesota	LK44 Left Hip	00-07D4-0F78 Base of right ear	Nicolai
Male	3/23/2018	NZP-CRC	4 Left Hip	933000220020897 Base of right ear	Gobi Wan Kenobi
Female	6/23/2013	SD-WAP	LK51 Left Hip	0007BA2E11 Interscapular	Paisley
Female	8/30/2015	WILDS	7 Right hip	00-07D4-160A Base of right ear	Wazi
Male	6/28/2015	WILDS	16 Right hip	000780FE6D Base right ear	Aik
Male	4/9/2014	WILDS	7 Left hip	00-07D4-5AC8 Base of right ear	Ballstein

NZP-CRC 2018 Stallion Colt on left "Gobi Wan Kenobi"



SDWAP 2013 Mare "Paisley"





# Specimen Report

SPECIES  
360

Species360 DPK18-03142

Local ID: MINNESOTA / 15404

*Misha*

GAN

Equus caballus przewalskii

Przewalski's wild horse

Studbooks EAZA, WAZA, AZA, ZAA

Order Perissodactyla

Family Equidae

IUCN Endangered (EN)

CITES I

Start Date Jan 01, 1800

End Date Nov 22, 2019

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## Basic Animal Information

## No Local Data Differences Found

<b>Sex - Contraception</b>	Female -	<b>Status</b>	Alive
<b>Birthdate - Age</b>	Apr 25, 2018 - 1Y,6M,28D	<b>Preferred ID</b>	MINNESOTA / 15404
<b>Origin</b>	El Paso Zoo	<b>Rearing</b>	Parent
<b>Birth Type</b>	Captive Birth/Hatch	<b>Hybrid Status</b>	Not Hybrid
<b>Sire</b>	MIG12-28715432 (EL PASO / 201080)	<b>Dam</b>	MIG12-28486890 (EL PASO / 201824)
<b>Current Collection</b>	Quarantine Collection	<b>Collection Trip</b>	
<b>Clutch / Litter</b>		<b>Enclosure</b>	MINNESOTA

## Visit History

Date In	Acquisition - Vendor/Local ID	Phy	Own	Reported By	Disposition - Recipient/Local ID	Phy	Own	Date Out
Jan 15, 2018	Fetus Identified	In	In	EL PASO / 201942		-	-	
Apr 25, 2018	Birth Event	-	-	EL PASO / 201942	Donation To MINNESOTA/UNDETERM+	Out	Out	Oct 09, 2019
Oct 09, 2019	Donation From EL PASO/201942	In	In	MINNESOTA / 15404		-	-	

## Identifiers

Reported By	Effective Date	Type	Identifier	Location	Status	Comments
MINNESOTA	Nov 21, 2019	Freeze Branding	LK50	Hip / Left	Active	
MINNESOTA	Oct 09, 2019	Local ID	15404		Active	
EL PASO	Apr 25, 2018	House Name	Misha		Active	
EL PASO	Jan 15, 2018	Local ID	201942		Active	
EL PASO		Old Accession Number	DPK18-03185-IA			
EL PASO	Apr 26, 2018	Transponder	985 112 006 694 801	Ear / Left	In-Use	

## Sex Information

Reported By	Date	Sex	Comments
MINNESOTA	Oct 09, 2019	Female	
EL PASO	Apr 25, 2018	Female	

## Parent Info

Reported By	In ZIMS	Parent Info	Type / Probability	Birth Date	Comments
EL PASO	Yes	MIG12-28486890 [EL PASO / 201824]	Dam/100%	Nov 12, 2008	
EL PASO	Yes	MIG12-28715432 [EL PASO / 201080]	Sire/100%	Jun 19, 2009	

## Ancestry Information (calculated by Species360 from shared data)

% Pedigree Known	% Pedigree Certain	Taxonomic Inconsistencies	No. Identified Ancestors
14.45%	13.96%	No	116

## Rearing Information

Reported By	Start Date	End Date	Rearing	Comments
EL PASO	Apr 25, 2018		Parent	

# Specimen Report



Species360 RCV18-00815

Local ID: MINNESOTA / 15078

*Nadyezhda*

GAN

Equus caballus przewalskii

Przewalski's wild horse

Studbooks EAZA, WAZA, AZA, ZAA

Order Perissodactyla

Family Equidae

IUCN Endangered (EN)

CITES I

Start Date Jan 01, 1800

End Date Nov 22, 2019

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## Basic Animal Information

## No Local Data Differences Found

<b>Sex - Contraception</b>	Female -	<b>Status</b>	Alive
<b>Birthdate - Age</b>	May 29, 2018 - 1Y,5M,24D	<b>Preferred ID</b>	MINNESOTA / 15078
<b>Origin</b>	Minnesota Zoological Garden	<b>Rearing</b>	Parent
<b>Birth Type</b>	Captive Birth/Hatch	<b>Hybrid Status</b>	Not Hybrid
<b>Sire</b>	MIG12-29616142 (MINNESOTA / 13980)	<b>Dam</b>	MIG12-29769113 (MINNESOTA / 11961)
<b>Current Collection</b>	Main Institution Animal Collection	<b>Collection Trip</b>	
<b>Clutch / Litter</b>		<b>Enclosure</b>	MINNESOTA

## Visit History

Date In	Acquisition - Vendor/Local ID	Phy	Own	Reported By	Disposition - Recipient/Local ID	Phy	Own	Date Out
May 29, 2018	Birth/Hatch	In	In	MINNESOTA / 15078				

## Identifiers

Reported By	Effective Date	Type	Identifier	Location	Status	Comments
MINNESOTA	Nov 21, 2019	Freeze Branding	LK49	Hip / Left	Active	
MINNESOTA	Nov 21, 2019	Transponder	00-07D4-0DAE	Assigned	Assigned	
MINNESOTA	Jan 01, 2019	House Name	Nadyezhda		Active	
MINNESOTA	May 29, 2018	Local ID	15078		Active	

## Sex Information

Reported By	Date	Sex	Comments
MINNESOTA	May 29, 2018	Female	

## Parent Info

Reported By	In ZIMS	Parent Info	Type / Probability	Birth Date	Comments
MINNESOTA	Yes	MIG12-29769113 [MINNESOTA / 11961]	Dam/100%	May 23, 2000	
MINNESOTA	Yes	MIG12-29616142 [MINNESOTA / 13980]	Sire/100%	Jul 05, 1995	

## Ancestry Information (calculated by Species360 from shared data)

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

## Rearing Information

Reported By	Start Date	End Date	Rearing	Comments
MINNESOTA	May 29, 2018		Parent	



# Specimen Report



Species360 RCV15-03968

Local ID: MINNESOTA / 14258

*Nicolai*

GAN

Equus caballus przewalskii

Przewalski's wild horse

Studbooks EAZA, WAZA, AZA, ZAA

Order Perissodactyla

Family Equidae

IUCN Endangered (EN)

CITES I

Start Date Jan 01, 1800

End Date Nov 22, 2019

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## Basic Animal Information

## No Local Data Differences Found

<b>Sex - Contraception</b>	Male -	<b>Status</b>	Alive
<b>Birthdate - Age</b>	Jul 14, 2015 - 4Y,4M,8D	<b>Preferred ID</b>	MINNESOTA / 14258
<b>Origin</b>	Minnesota Zoological Garden	<b>Rearing</b>	
<b>Birth Type</b>	Captive Birth/Hatch	<b>Hybrid Status</b>	Not Hybrid
<b>Sire</b>	MIG12-29616142 (MINNESOTA / 13980)	<b>Dam</b>	MIG12-29769113 (MINNESOTA / 11961)
<b>Current Collection</b>	Main Institution Animal Collection	<b>Collection Trip</b>	
<b>Clutch / Litter</b>		<b>Enclosure</b>	MINNESOTA

## Visit History

Date in	Acquisition - Vendor/Local ID	Phy	Own	Reported By	Disposition - Recipient/Local ID	Phy	Own	Date Out
Jul 14, 2015	Birth/Hatch	In	In	MINNESOTA / 14258		-	-	

## Identifiers

Reported By	Effective Date	Type	Identifier	Location	Status	Comments
MINNESOTA	Nov 21, 2019	Transponder	00-07D4-0F78	Assigned	Assigned	
MINNESOTA	Jan 01, 2019	House Name	Nicolai		Active	
MINNESOTA	Nov 07, 2018	Intl Stdbk#	T71415		Active	
MINNESOTA	Oct 04, 2017	Freeze Branding	LK44	Rump / Left	Active	
MINNESOTA	Jul 14, 2015	Local ID	14258		Active	

## Sex Information

Reported By	Date	Sex	Comments
MINNESOTA	Jul 14, 2015	Male	

## Parent Info

Reported By	In ZIMS	Parent Info	Type / Probability	Birth Date	Comments
MINNESOTA	Yes	MIG12-29769113 [MINNESOTA / 11961]	Dam/100%	May 23, 2000	
MINNESOTA	Yes	MIG12-29616142 [MINNESOTA / 13980]	Sire/100%	Jul 05, 1995	

## Ancestry Information (calculated by Species360 from shared data)

% Pedigree Known	% Pedigree Certain	Taxonomic Inconsistencies	No. Identified Ancestors
13.45%	12.48%	No	78

## No Rearing Information Found

# Specimen Report



Species360 MGH18-01162

Local ID: MINNESOTA / 15420

*Gobi Wan Kenobi*

GAN

Equus caballus przewalskii

Przewalski's wild horse

Studbooks EAZA, WAZA, AZA, ZAA

Order Perissodactyla

Family Equidae

IUCN Endangered (EN)

CITES I

Start Date Jan 01, 1800

End Date Nov 22, 2019

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## Basic Animal Information

## No Local Data Differences Found

<b>Sex - Contraception</b>	Male -	<b>Status</b>	Alive
<b>Birthdate - Age</b>	Mar 23, 2018 - 1Y,7M,30D	<b>Preferred ID</b>	MINNESOTA / 15420
<b>Origin</b>	Smithsonian Conservation Biology Institute	<b>Rearing</b>	Parent
<b>Birth Type</b>	Captive Birth/Hatch	<b>Hybrid Status</b>	Not Hybrid
<b>Sire</b>	26734436 (NZIP-CRC / 114545)	<b>Dam</b>	27870017 (NZIP-CRC / 114335)
<b>Current Collection</b>	Main Institution Animal Collection	<b>Collection Trip</b>	
<b>Clutch / Litter</b>		<b>Enclosure</b>	MINNESOTA

## Visit History

Date in	Acquisition - Vendor/Local ID	Phy	Own	Reported By	Disposition - Recipient/Local ID	Phy	Own	Date Out
Mar 23, 2018	Birth/Hatch	In	In	NZIP-CRC / 115639	Donation To MINNESOTA/UNDETERM+	Out	Out	Nov 12, 2019
Nov 12, 2019	Donation From NZIP-CRC/115639	In	In	MINNESOTA / 15420				

## Identifiers

Reported By	Effective Date	Type	Identifier	Location	Status	Comments
MINNESOTA	Nov 12, 2019	Local ID	15420		Active	
NZIP-CRC	Sep 05, 2019	Heat Branding	4	Hip / Left	Active	
NZIP-CRC	Aug 15, 2018	House Name	Gobi Wan Kenobi		Active	3.0 colts born this year at SCBI were named by public vote from five choices listed on SCBI's webpage. The name choices reflect attributes of Przewalski's horses and their native country, with a twist from My Little Pony.
NZIP-CRC	Mar 23, 2018	Local ID	115639		Active	
NZIP-CRC	Sep 05, 2019	Transponder	933000220020897	Ear / Base, Right	In-Use	

## Sex Information

Reported By	Date	Sex	Comments
MINNESOTA	Nov 12, 2019	Male	
NZIP-CRC	Mar 23, 2018	Male	

## Parent Info

Reported By	In ZIMS	Parent Info	Type / Probability	Birth Date	Comments
NZIP-CRC	Yes	27870017 [NZIP-CRC / 114335]	Dam/100%	Jun 27, 2008	
NZIP-CRC	Yes	26734436 [NZIP-CRC / 114545]	Sire/100%	Jul 19, 2008	

## Ancestry Information (calculated by Species360 from shared data)

% Pedigree Known	% Pedigree Certain	Taxonomic Inconsistencies	No. Identified Ancestors
7.23%	7.23%	No	74

## Rearing Information

Reported By	Start Date	End Date	Rearing	Comments
NZIP-CRC	Mar 23, 2018		Parent	



# Specimen Report

SPECIES  
360

Species360 SQW14-01731

Local ID: MINNESOTA / 15411

*Paisley*

GAN

Equus caballus przewalskii

Przewalski's wild horse

Studbooks EAZA, WAZA, AZA, ZAA

Order Perissodactyla

Family Equidae

IUCN Endangered (EN)

CITES I

Start Date Jan 01, 1800

End Date Nov 22, 2019

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## Basic Animal Information

## No Local Data Differences Found

<b>Sex - Contraception</b>	Female -	<b>Status</b>	Alive
<b>Birthdate - Age</b>	Jun 23, 2013 - 6Y,4M,30D	<b>Preferred ID</b>	MINNESOTA / 15411
<b>Origin</b>	San Diego Zoo Safari Park	<b>Rearing</b>	Parent
<b>Birth Type</b>	Captive Birth/Hatch	<b>Hybrid Status</b>	Not Hybrid
<b>Sire</b>	26733535 (SD-WAP / 600452)	<b>Dam</b>	26734725 (SD-WAP / 609245)
<b>Current Collection</b>	Main Institution Animal Collection	<b>Collection Trip</b>	
<b>Clutch / Litter</b>		<b>Enclosure</b>	MINNESOTA

## Visit History

Date In	Acquisition - Vendor/Local ID	Phy	Own	Reported By	Disposition - Recipient/Local ID	Phy	Own	Date Out
Jun 23, 2013	Birth/Hatch	In	In	SD-WAP / 613252	Donation To	Out	Out	Oct 27, 2019
Oct 29, 2019	Donation From SD-WAP/613252	In	In	MINNESOTA / 15411	MINNESOTA/UNDETERM+			

## Identifiers

Reported By	Effective Date	Type	Identifier	Location	Status	Comments
MINNESOTA	Nov 21, 2019	Freeze Branding	LK51	Hip / Left	Active	
MINNESOTA	Oct 29, 2019	Local ID	15411		Active	
SD-WAP	Jul 18, 2013	House Name	PAISLEY		Active	Legacy SLocation: Legacy Comment: HN: (A) PAISLEY *20130718
SD-WAP	Jun 23, 2013	Breeder Number	SD 149		Active	Legacy SLocation: Legacy Comment: SI: (A) SD 149 *20130623 +ESTIMATED DATE USING THE BIRTH DATE.
SD-WAP	Jun 23, 2013	Local ID	613252		Active	
SD-WAP	Jun 23, 2013	Regional Studbook Number	AZA/6316		Active	
SD-WAP	Jun 23, 2013	Notching	(WAP)150	Ear	Active	Legacy SLocation: Legacy Comment: EN: (A) (WAP)150 *20130623
SD-WAP	Sep 10, 2019	Transponder	0007BA2E11	Interscapular	In-Use	

## Sex Information

Reported By	Date	Sex	Comments
MINNESOTA	Oct 29, 2019	Female	
SD-WAP	Jun 23, 2013	Female	

## Parent Info

Reported By	In ZIMS	Parent Info	Type / Probability	Birth Date	Comments
SD-WAP	Yes	26734725 [SD-WAP / 609245]	Dam/100%	Jul 05, 2009	
SD-WAP	Yes	26733535 [SD-WAP / 600452]	Sire/100%	Jul 12, 2000	

## Ancestry Information (calculated by Species360 from shared data)

% Pedigree Known	% Pedigree Certain	Taxonomic Inconsistencies	No. Identified Ancestors
9.28%	9.28%	No	56

## Rearing Information

Reported By	Start Date	End Date	Rearing	Comments
SD-WAP	Jun 23, 2013		Parent	



# Specimen Report

SPECIES  
360

Species360 WVL15-01156

Local ID: MINNESOTA / 15421

Wazi

GAN

Equus caballus przewalskii

Przewalski's wild horse

Studbooks EAZA, WAZA, AZA, ZAA

Order Perissodactyla

Family Equidae

IUCN Endangered (EN)

CITES I

Start Date Jan 01, 1800

End Date Nov 22, 2019

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## Basic Animal Information

## No Local Data Differences Found

<b>Sex - Contraception</b>	Female -	<b>Status</b>	Alive
<b>Birthdate - Age</b>	Aug 30, 2015 - 4Y,2M,23D	<b>Preferred ID</b>	MINNESOTA / 15421
<b>Origin</b>	The Wilds	<b>Rearing</b>	
<b>Birth Type</b>	Captive Birth/Hatch	<b>Hybrid Status</b>	Not Hybrid
<b>Sire</b>	18728665 (WILDS / 107038)	<b>Dam</b>	MIG12-29901375 (WILDS / 990510)
<b>Current Collection</b>	Main Institution Animal Collection	<b>Collection Trip</b>	
<b>Clutch / Litter</b>		<b>Enclosure</b>	MINNESOTA

## Visit History

Date In	Acquisition - Vendor/Local ID	Phy Own	Reported By	Disposition - Recipient/Local ID	Phy Own	Date Out
Aug 30, 2015	Birth/Hatch	In	In WILDS / 115062	Donation To MINNESOTA/UNDETERM+	Out	Out Nov 12, 2019
Nov 12, 2019	Donation From WILDS/115062	In	In MINNESOTA / 15421		-	-

## Identifiers

Reported By	Effective Date	Type	Identifier	Location	Status	Comments
MINNESOTA	Nov 21, 2019	Transponder	00-07D4-160A	Assigned	Assigned	
MINNESOTA	Nov 12, 2019	Local ID	15421		Active	
WILDS	Jul 01, 2016	Heat Branding	7	Hip / Right	Active	
WILDS	Apr 26, 2016	Regional Studbook Number	AZA/6726		Active	
WILDS	Aug 31, 2015	House Name	WAZI		Active	NAMED WALTROUT ZIMMERMAN FROM INTERNATIONAL STUDBOOK KEEPER FOR P-HORSE
WILDS	Aug 30, 2015	Local ID	115062		Active	

## Sex Information

Reported By	Date	Sex	Comments
MINNESOTA	Nov 12, 2019	Female	
WILDS	Aug 30, 2015	Female	

## Parent Info

Reported By	In ZIMS	Parent Info	Type / Probability	Birth Date	Comments
WILDS	Yes	MIG12-29901375 [WILDS / 990510]	Dam/100%	May 25, 1999	
WILDS	Yes	18728665 [WILDS / 107038]	Sire/100%	May 19, 1990	

## Ancestry Information (calculated by Species360 from shared data)

% Pedigree Known	% Pedigree Certain	Taxonomic Inconsistencies	No. Identified Ancestors
16.21%	16.21%	No	62

## No Rearing Information Found



# Specimen Report

SPECIES  
360

Species360 WVL15-01142

GAN

Equus caballus przewalskii

Przewalski's wild horse

AIK

Studbooks EAZA, WAZA, AZA, ZAA

Order Perissodactyla

Family Equidae

IUCN Endangered (EN)

CITES I

Start Date Jan 01, 1800

End Date Nov 22, 2019

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## Basic Animal Information

## No Local Data Differences Found

Sex - Contraception Male -

Status

Alive

Birthdate - Age Jun 28, 2015 - 4Y,4M,25D

Preferred ID

Origin The Wilds

Rearing

Birth Type Captive Birth/Hatch

Hybrid Status

Not Hybrid

Sire 25214741 (WILDS / MM0707)

Dam

MIG12-28086308 (WILDS / 106019)

Current Collection

Collection Trip

Clutch / Litter

Enclosure

## Visit History

Date in	Acquisition - Vendor/Local ID	Phy Own Reported By	Disposition - Recipient/Local ID	Phy Own Date Out
Jun 28, 2015	Birth/Hatch	In In WILDS / 115049		

## Identifiers

Reported By	Effective Date	Type	Identifier	Location	Status	Comments
WILDS	Jul 01, 2016	Heat Branding	16	Hip / Right	Active	
WILDS	Apr 26, 2016	Regional Studbook Number	AZA/6699		Active	
WILDS	Oct 21, 2015	Transponder	000780FE6D	Ear / Medial, Right In-Use		
WILDS	Jun 30, 2015	House Name	AIK		Active	AIK after Bob Aikin.
WILDS	Jun 30, 2015	Local ID	115049		Active	

## Sex Information

Reported By	Date	Sex	Comments
WILDS	Jun 28, 2015	Male	

## Parent Info

Reported By	In ZIMS	Parent Info	Type / Probability	Birth Date	Comments
WILDS	Yes	MIG12-28086308 [WILDS / 106019]	Dam/100%	May 04, 2006	
WILDS	Yes	25214741 [WILDS / MM0707]	Sire/100%	Jul 15, 2000	

## Ancestry Information (calculated by Species360 from shared data)

% Pedigree Known	% Pedigree Certain	Taxonomic Inconsistencies	No. Identified Ancestors
11.23%	11.23%	No	53

## No Rearing Information Found

# Specimen Report

SPECIES  
360

Species360 WVL14-00713

GAN

Equus caballus przewalskii

Przewalski's wild horse

*Ballstein*

Studbooks EAZA, WAZA, AZA, ZAA

Order Perissodactyla

Family

Equidae

IUCN Endangered (EN)

CITES I

Start Date Jan 01, 1800

End Date Nov 22, 2019

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## Basic Animal Information

## No Local Data Differences Found

Sex - Contraception Male -

Status

Alive

Birthdate - Age Apr 09, 2014 - 5Y,7M,13D

Preferred ID

Origin The Wilds

Rearing

Birth Type Captive Birth/Hatch

Hybrid Status

Not Hybrid

Sire 15717192 (WILDS / 106001)

Dam

MIG12-29901375 (WILDS / 990510)

Current Collection

Collection Trip

Clutch / Litter

Enclosure

## Visit History

Date in	Acquisition - Vendor/Local ID	Phy Own	Reported By	Disposition - Recipient/Local ID	Phy Own	Date Out
Apr 09, 2014	Birth/Hatch	In	In WILDS / 114024	-	-	-

## Identifiers

Reported By	Effective Date	Type	Identifier	Location	Status	Comments
WILDS	Nov 21, 2019	Transponder	00-07D4-5AC8	Assigned	Assigned	Assigned 11/21/19 by Minnesota Zoo, to be implemented on arrival in Minnesota Base of right ear
WILDS	Jan 05, 2016	Regional Studbook Number	AZA/6380		Active	
WILDS	Jul 01, 2015	Heat Branding	7	Hip / Left	Active	
WILDS	Apr 09, 2014	Local ID	114024		Active	
WILDS	Apr 09, 2014	House Name	Ballstein		Active	

## Sex Information

Reported By	Date	Sex	Comments
WILDS	Apr 09, 2014	Male	

## Parent Info

Reported By	In ZIMS	Parent Info	Type / Probability	Birth Date	Comments
WILDS	Yes	MIG12-29901375 [WILDS / 990510]	Dam/100%	May 25, 1999	
WILDS	Yes	15717192 [WILDS / 106001]	Sire/100%	Jan 14, 2000	

## Ancestry Information (calculated by Species360 from shared data)

% Pedigree Known	% Pedigree Certain	Taxonomic Inconsistencies	No. Identified Ancestors
10.55%	10.55%	No	49

## No Rearing Information Found



Federal State Funded Institution  
'Joint Directorate of State Nature Reserves "Orenburg" and "Shaitan-Tau"'

**PROGRAMME ON ESTABLISHING A SEMI-FREE POPULATION OF PRZEWALSKI'S  
HORSE IN ORENBURG STATE NATURE RESERVE**



**Report for 2015–2018**

Pre-Urals Steppe  
Russia

Annual mean temperature is +3,9°C; the maximum is +40°C; the minimum is -42°C. Annual mean precipitation is 280 mm. The snow usually falls in the end of November. Table 2 provides the average depth of snow cover by month (cm).

Table 2

Decades	Months					
	November	December	January	February	March	April
I	—	3	11	19	22	6
II	—	6	14	22	20	—
III	2	8	15	22	21	—

The flora of Pre-Urals Steppe includes 473 species of vascular plants (Golovanov et al., 2018). Grasslands occupy more than 90% of the territory and represent 24 types of rich bunchgrass, psammophytic, petrophytic, halophytic steppes, and their anthropogenic derivatives (Fedorov et al., 2018). The pasture/forage resources of Pre-Urals Steppe in 2016 totalled 434,386.6 centners or 26.3 centners per hectare (Fedorov et al., 2017). Though compared with a year with favourable weather conditions, in drought periods they are expected to decrease up to three times (Fedorov et al., in press).

There are about 12 species of amphibians and reptiles, more than 100 species of migratory and nesting birds and about 30 species of mammals registered in the Pre-Urals Steppe area (Обоснование..., 2013).

#### **The Programme on Establishing a Semi-Free Population of Przewalski's Horse in Orenburg State Nature Reserve**

The Programme started in summer 2015 with the construction of the Reintroduction Centre for the Przewalski Horse in the Pre-Urals Steppe site (Figure 2a), which is part of the scientific department of Orenburg State Nature Reserve. It serves for acclimation of imported animals (founders of the semi-free population) and environmental education. The Pre-Urals Steppe site is too small for a free self-sustained population of Przewalski's horse, thus the animals may leave the strictly protected area and vanish in the wild. To prevent this, in 2016, a 2m high and 52 km long wire mesh fence was constructed along the perimeter of the site (Figure 2b). All native steppe animals except Przewalski's horses may easily get through the mesh because of its large size at the bottom (30x30 cm). For water there are three natural ponds and in 2016–2018 dams were constructed in three local ravines.

The Przewalski's Horse Reintroduction Programme at Orenburg State Nature Reserve is supervised by:

**Dr. Rafilia T. Bakirova,**

Director of FSFI «Orenburg Reserves»

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460001, Russian Federation

Tel.: +7 353 247 52 30 ; +7 932 536 96 13

E-mail: [orenzap\\_info@mail.ru](mailto:orenzap_info@mail.ru)  
[rbakirova@gmail.com](mailto:rbakirova@gmail.com)

**Tatjana L. Zharkikh**

Head of the Reintroduction Centre for the  
Przewalski Horse, FSFI «Orenburg Reserves»  
Pre-Urals Steppe

Tel.: +7 922 827 16 04

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[tatjanazharkikh@yandex.ru](mailto:tatjanazharkikh@yandex.ru)

The Ministry of Natural Resources and Environment of the Russian Federation bears the expenses to care for and manage the Przewalski's horses at Orenburg State Nature Reserve as long as the population exists.



horses. At 500 m from the enclosures' entrance there is a ranger station supplied with electricity, water, two bedrooms, a laboratory, a kitchen, a toilet, a septic system, and a sauna (Figure 3a).

A small visitor centre for tourists is next to the ranger station (Figure 3c).



Figure 3a. Ranger station for the Pre-Urals Steppe site



Figure 3b. Laboratory room in the ranger station





Figure 5a. Bird's-eye view of the acclimatization enclosure and additional pens

Besides wire mesh, an additional electric fence is set inside and outside of the enclosures' perimeter (Figure 5b). Each enclosure has a shelter: two perpendicular walls with a roof (Figure 5c). There is an artesian well next to the enclosures; a set of hoses deliver water for animals to watering troughs.



Figure 5b. Fence



A pen for capture of 25x35m in size is intended to round up horses from the acclimatization enclosures. It is fenced with a 2m high wire mesh (Fig 6b).

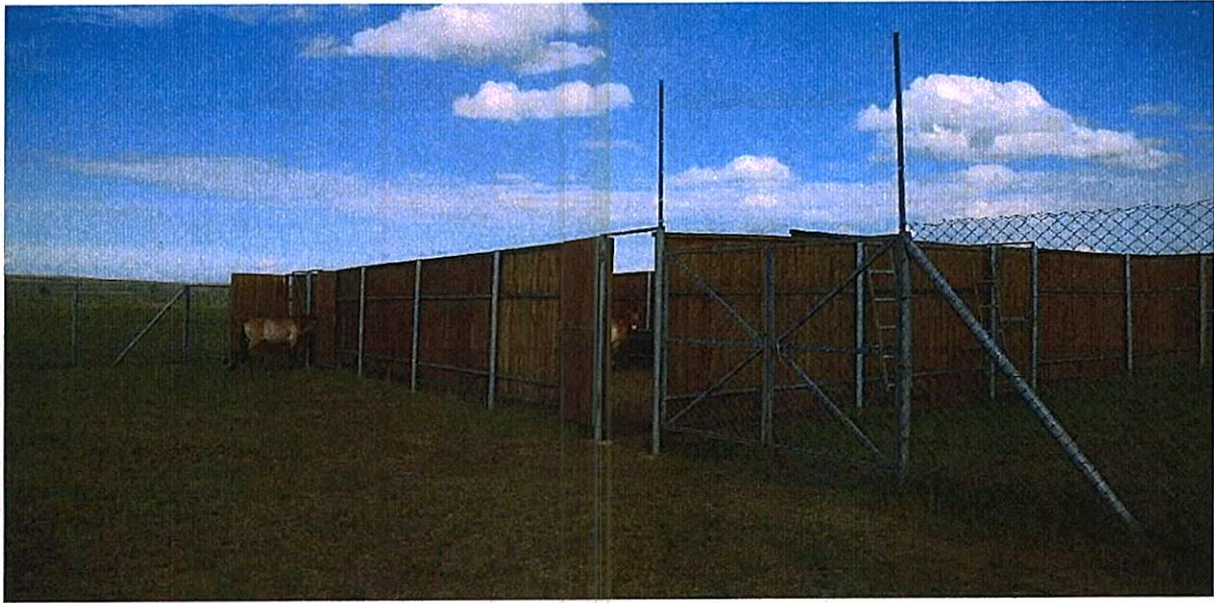


Figure 6b. Inside the pen for capture; the horse at the left is entering a corridor for capture, the horse at the right is in a holding pen

A corridor for capture (Figure 6c, d) is intended to separate the horses from each other; its total length is 26m, width is 1.5 m. The walls are wooden of 2.3m in height. There are three gates: one is inside the corridor and two other ones are at each end.

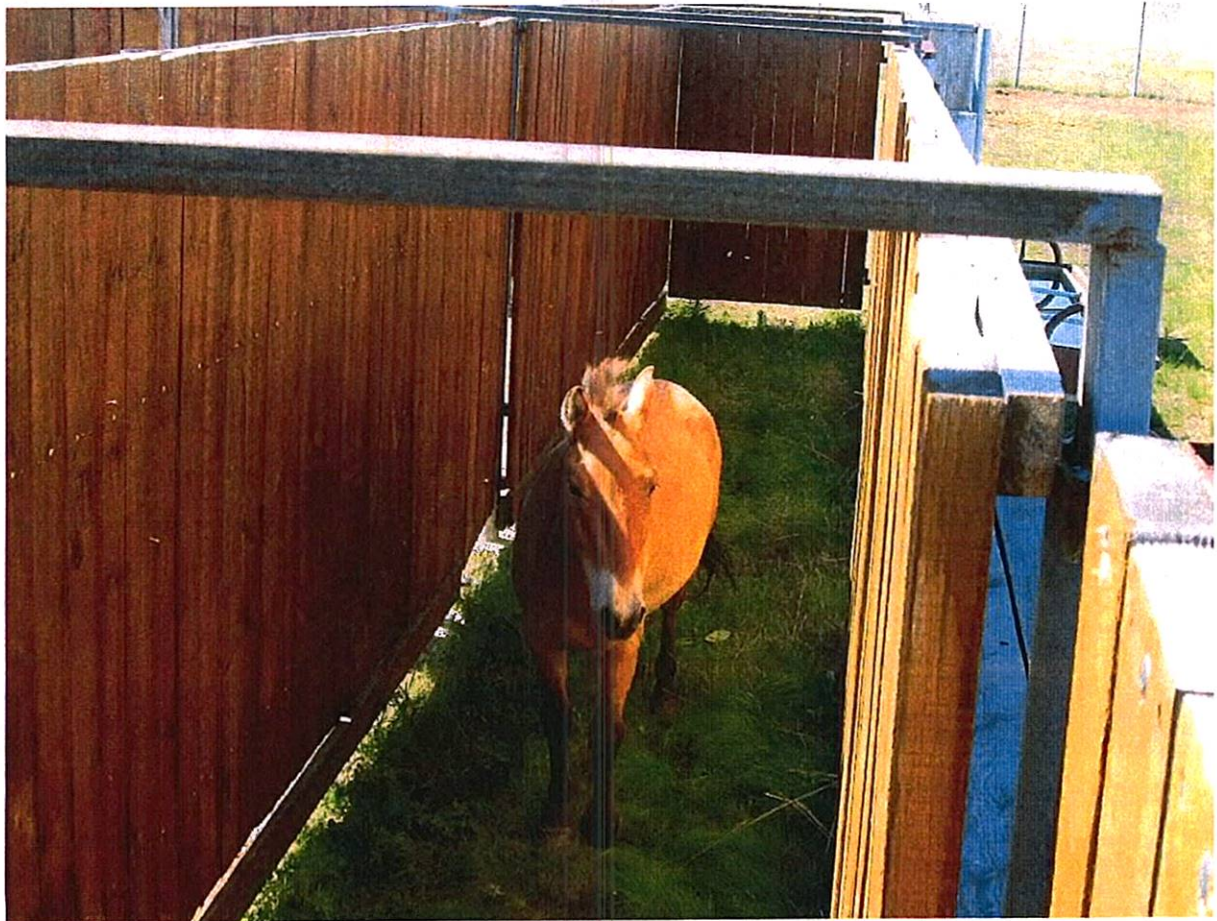


Figure 6c. A horse is in the corridor for capture



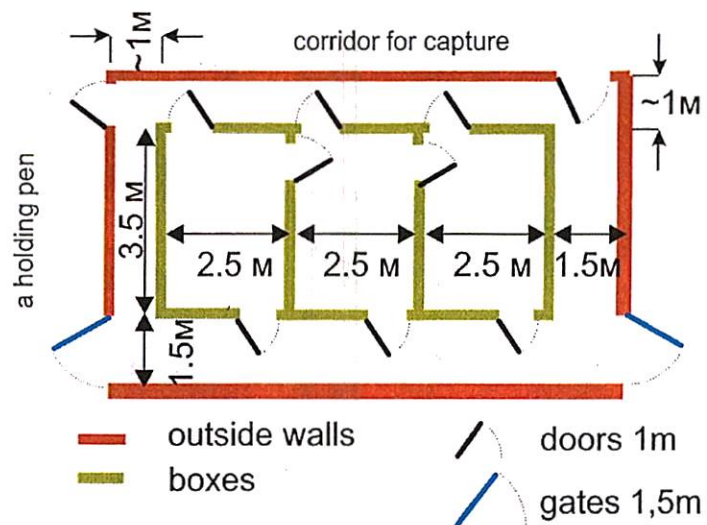


Figure 6f. Plan of the stable

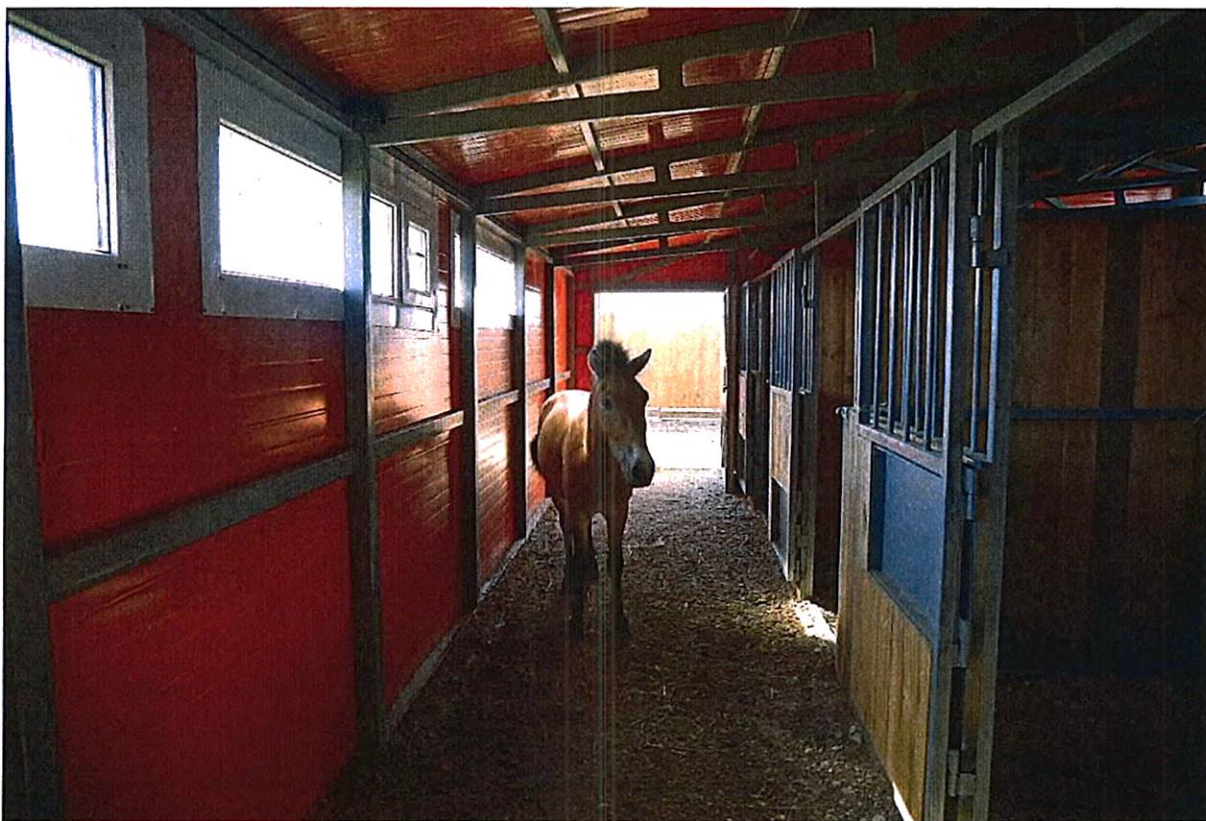


Figure 7j. A horse entering the stable from a holding pen



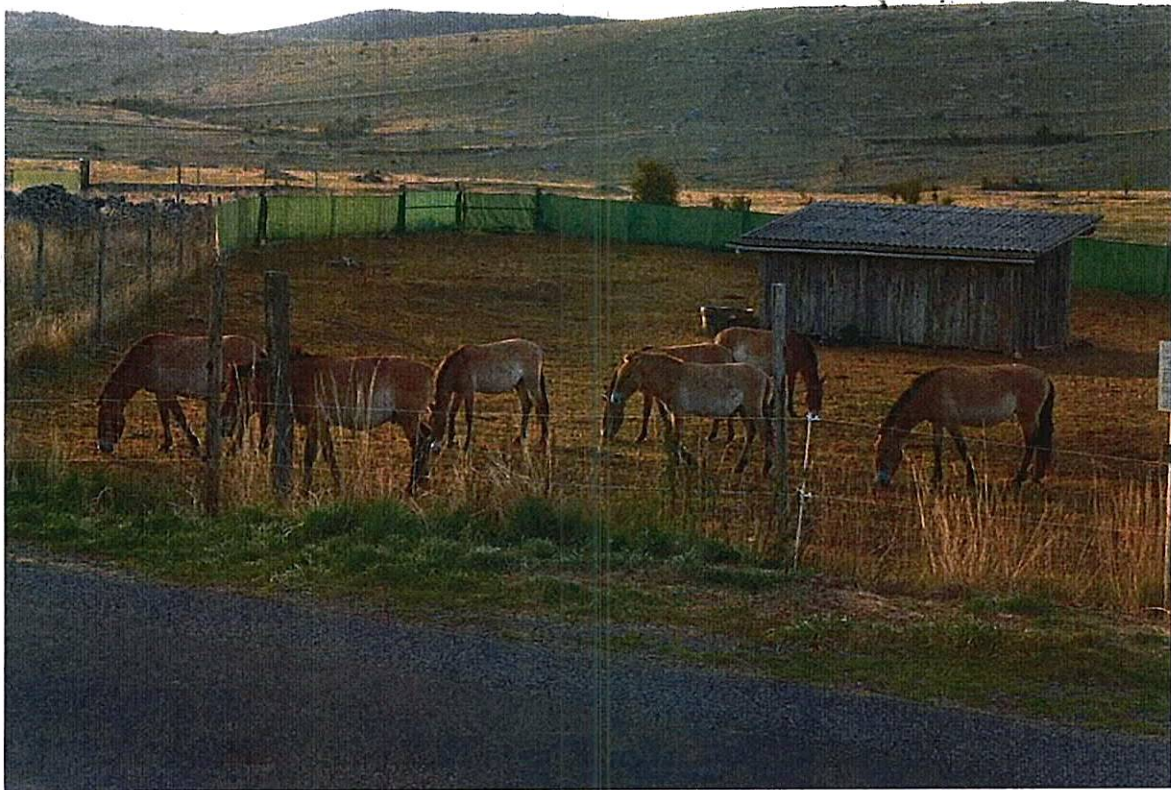


Figure 7. A group of Przewalski's horses in a quarantine enclosure at Association pour le Cheval de Przewalski: TAKH, France before transportation to Russia (August 2015).

The horses were brought by air; two persons from Association (a manager of the project and a horse keeper) and a veterinarian from the Palmyra Zoo convoyed the animals. The transportation lasted about 19 hours.

On arrival at the Reintroduction Centre the animals were inspected by local state veterinarians and placed in additional pens for quarantine. Five weeks later they were released into the acclimatization enclosure (Figures 8, 9).

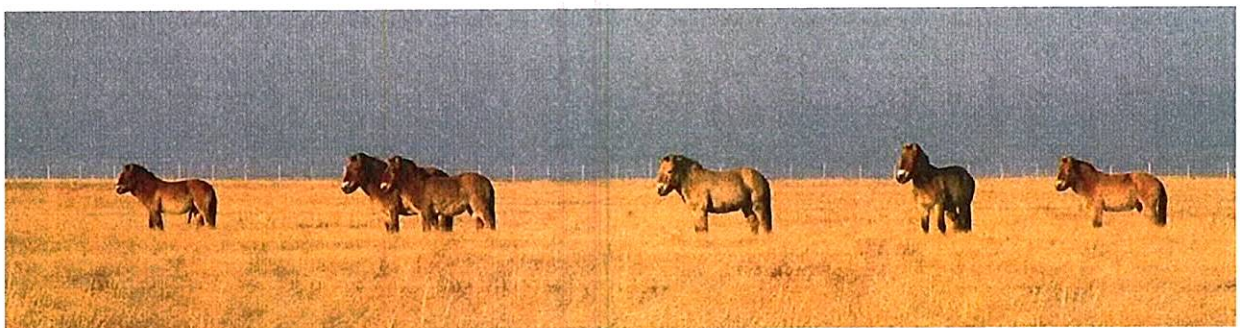


Figure 8. The group after release into their large acclimatization enclosure of 45 ha (November 2015)



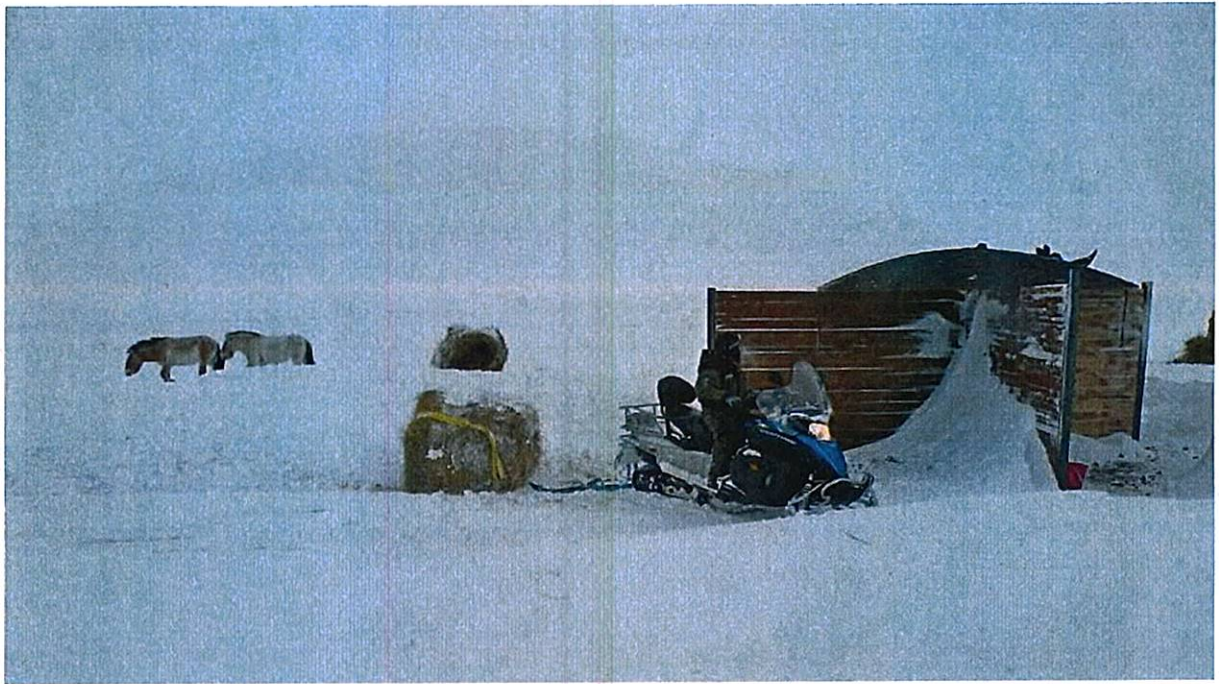


Figure 11. Przewalski's horses are given hay ad libitum...



Figure 12. ...and some oats twice a week (January 2016)



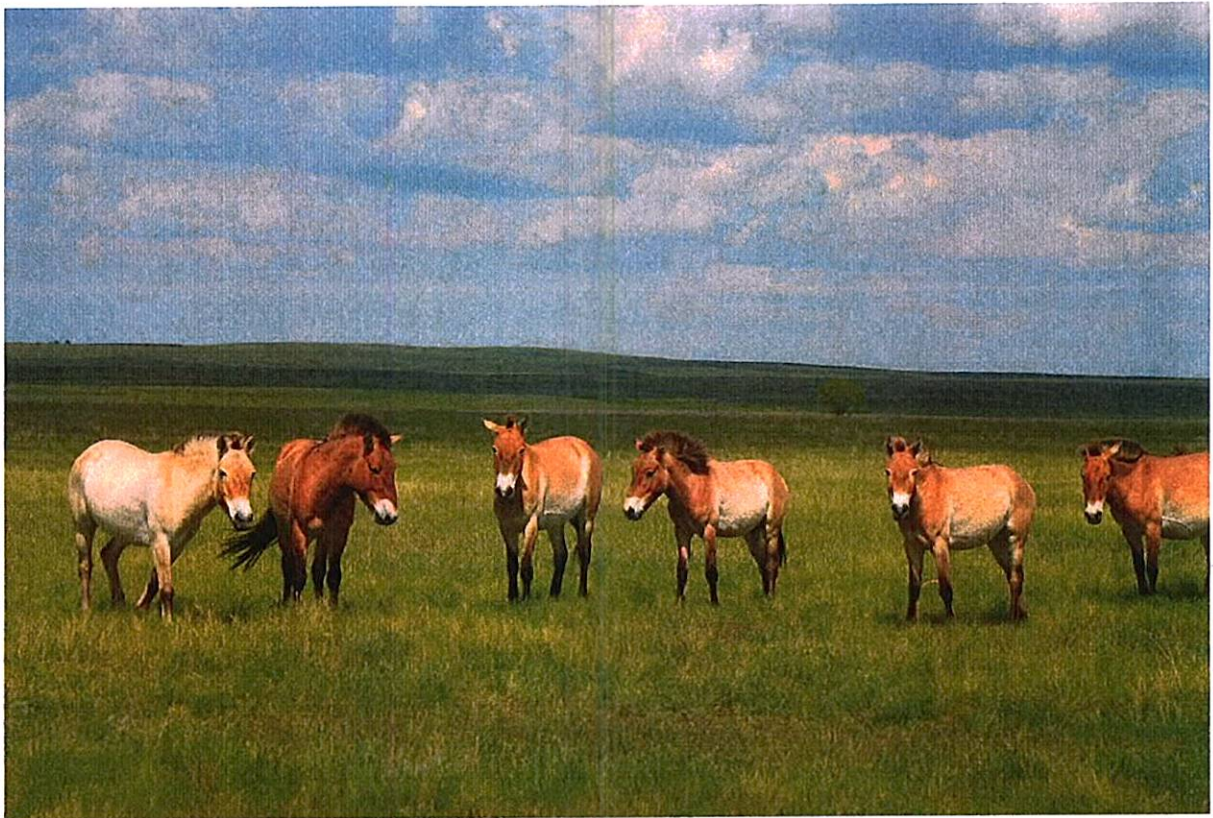


Figure 15. May 12, 2016



Figure 16. July 10, 2016



### Release of the First Group from the Acclimatization Enclosure

On October 3, 2016, Vladimir Putin, President of Russia, and Rafilia Bakirova, Director of FSFI 'Orenburg Reserves' opened the gate and six Przewalski's horses left their acclimatization enclosure (Figure 19).



Figure 19. Rafilia Bakirova and Vladimir Putin opened the gate for the Przewalski's horses

For the first 10 days the horses surveyed about 70% of the Pre-Urals Steppe site. They explored the whole territory within a month after release.



Figure 20. The horses after being released (October 10, 2016)



Figure 22. Makos's harem group around a hay bale. The fence between enclosures was covered with canvas for visual isolation of both groups (December 15, 2016)

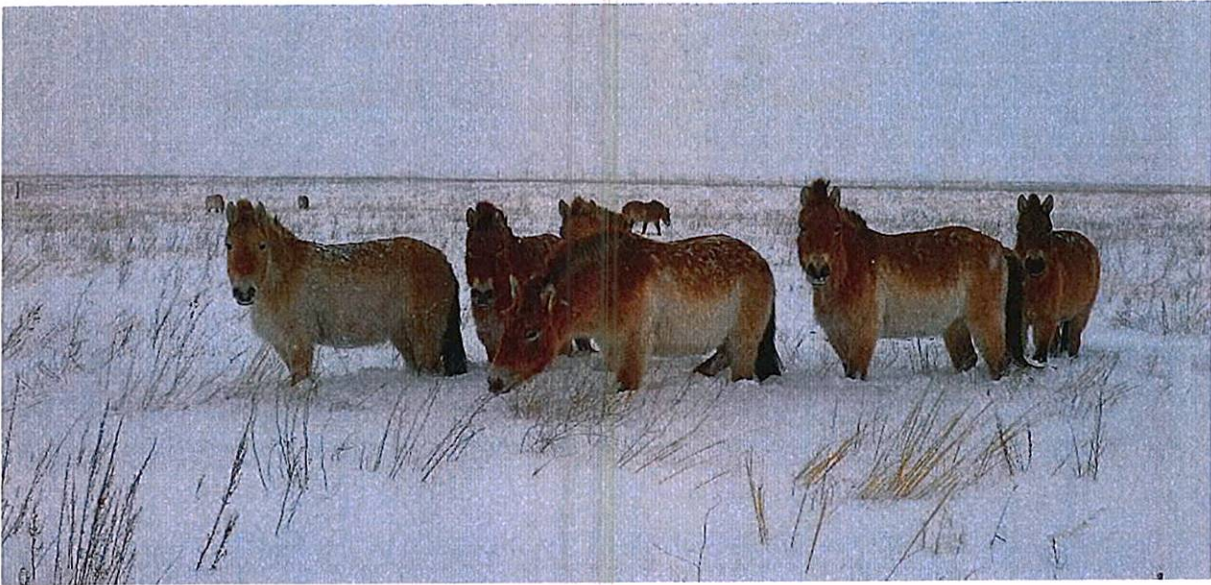


Figure 21. Makos's harem (January 26, 2017)

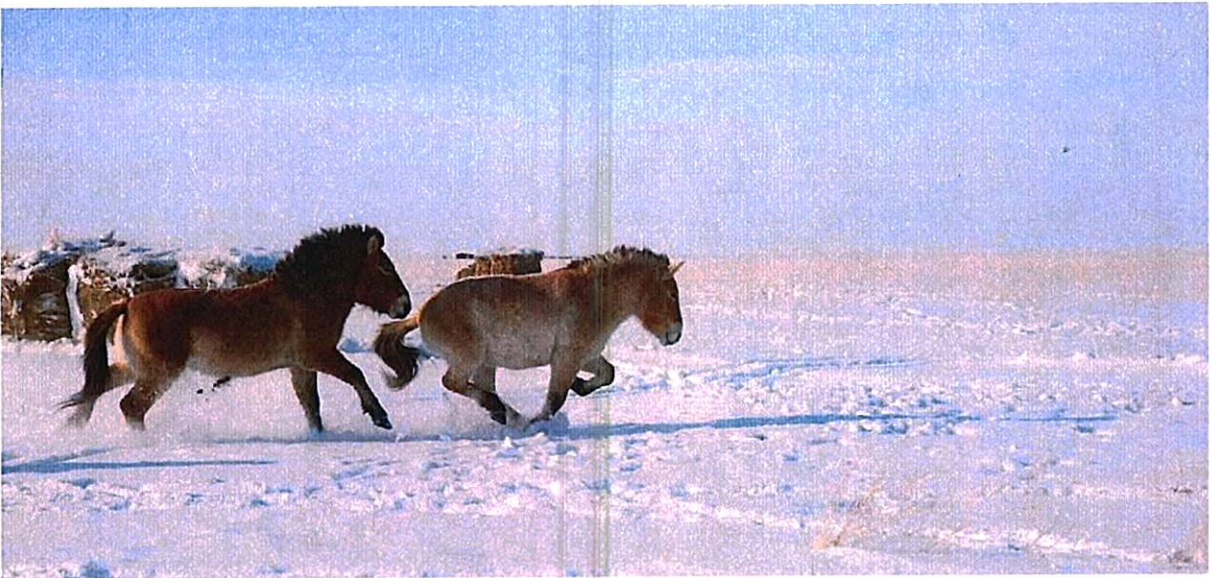


Figure 22. The bachelors (January 28, 2017)

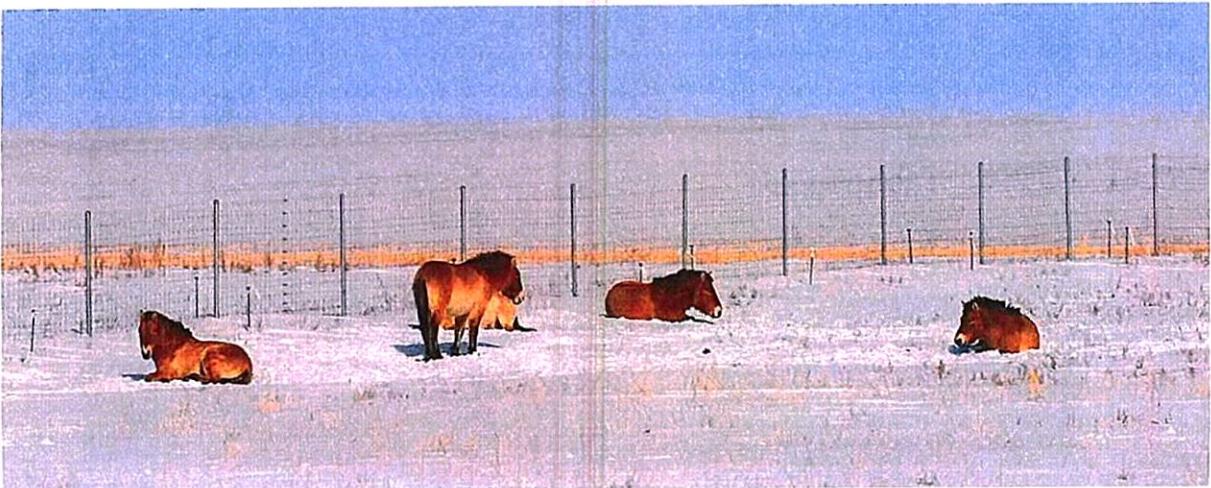




Figure 26. The bachelors (April 21, 2017)



Figure 27. The harem's watering (April 28, 2017)

On May 3, 2017, 3-year-old male 6384 Paprika (born in France) was chased away from his natal group by the harem stallion Makos. Soon he came to the acclimatization enclosures and joined the bachelor group on June 4 (Figures 28, 29).



Figure 28. Bachelors greet Paprika (June 3, 2017)





Figure 31. Bachelors and Paprika on the right (June 17, 2017)



Figure 32. The Hungarian (Makos's) harem (inside the acclimatization enclosure) and the French (Aven's) harem (outside) meet (July 28, 2017)

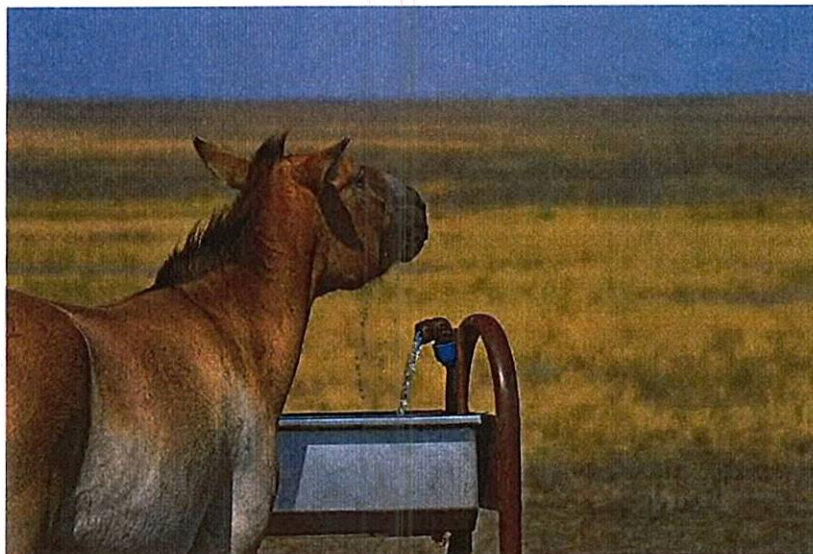


Figure 33. A Hungarian female drinking (August 29, 2017)



The horses were divided into two single-sex groups. Females were released into a vacant acclimatization enclosure; four males were placed in a quarantine pen first, then, they successfully joined the bachelor group in the second acclimatization enclosure.



Татьяна Жарких (с)

Figure 35. At Orenburg Airport (October 10, 2017)



Татьяна Жарких (с)

Figure 36. Releasing horses from their transport crates to quarantine pens (October 10, 2017)





Figure 40. Male-newcomers joined the bachelor group (November 11, 2017)

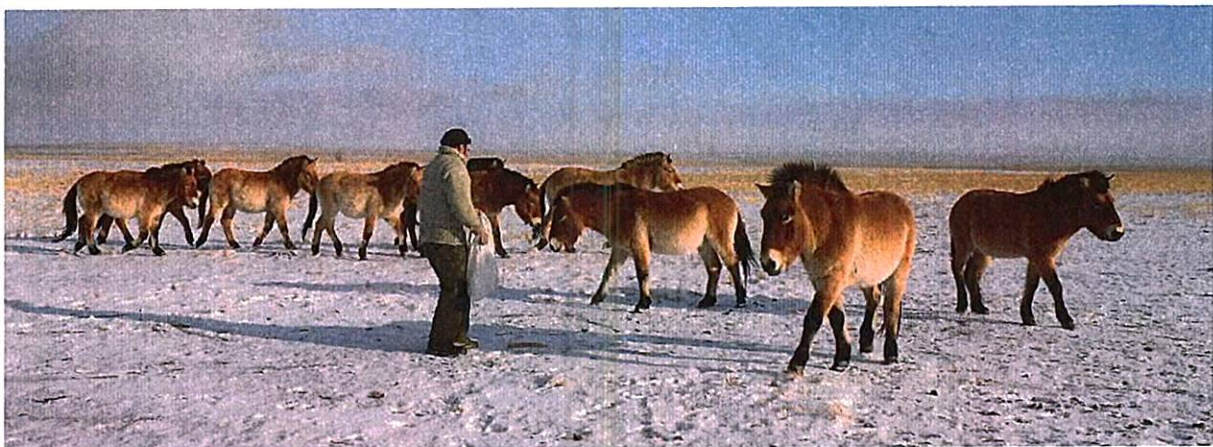


Figure 41. Vladimir Petrov, specialist of the Reintroduction Centre, feeding oats to the bachelors (January 10, 2018)



Figure 42. Females in the acclimatization enclosure (February 5, 2018)





Figure 46. Females (March 13, 2018)



Figure 47. Females eating oats (March 13, 2018)

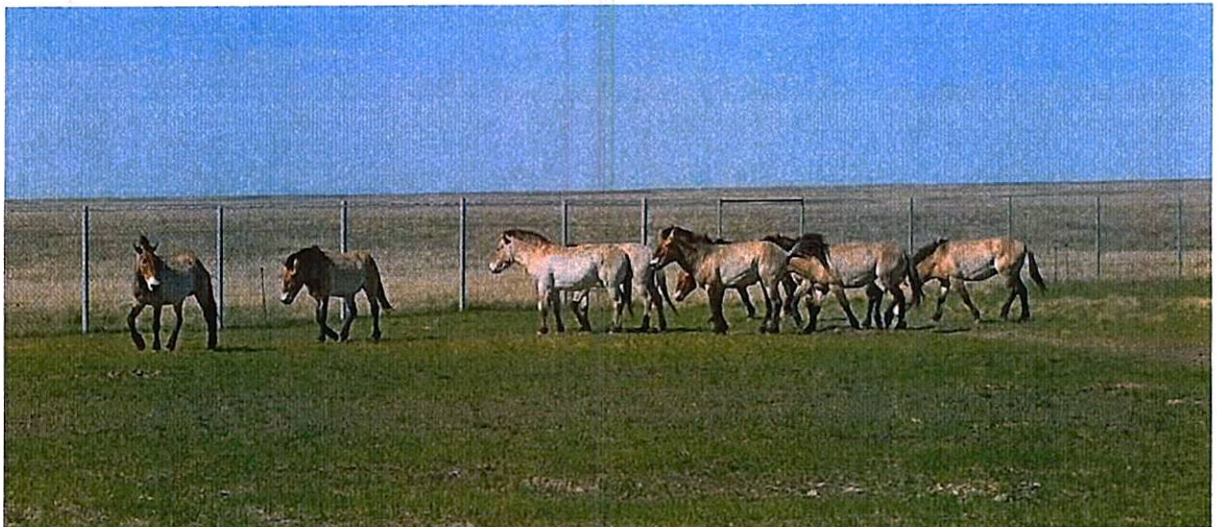


Figure 48. Bachelors (May 8, 2018)





Figure 51. 5629 Makos's harem (June 4, 2018)

On May 30, male 6297 Pompas was moved from the bachelor group to the neighbouring enclosure to the rest of the females of the third imported group to form one more harem.

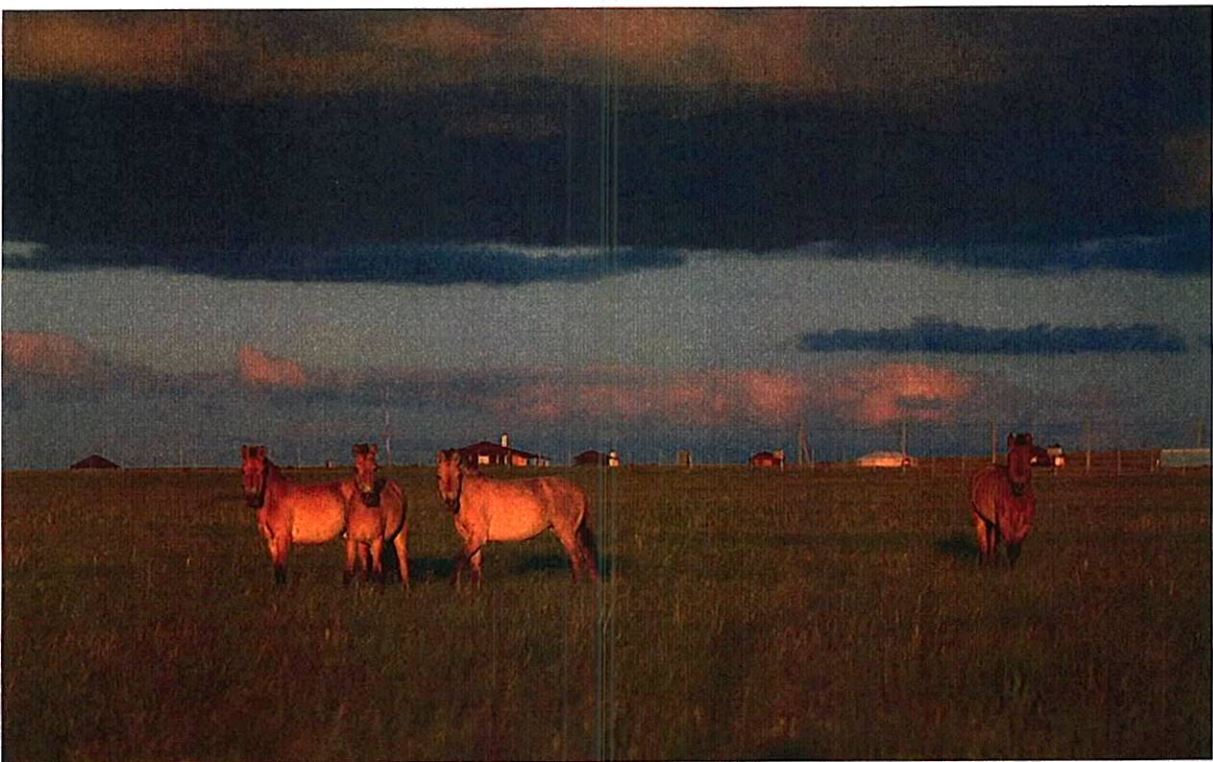


Figure 52. The third harem (Pompas's) in the acclimatization enclosure (June 1, 2018)

Male Origo roamed the main area but did not succeed to lure any females from harem groups. He was let into the bachelors' enclosure on July 4, 2018.

### Dynamics of the Population

Since 2015, 36 Przewalski's horses from European semi-reserves were transported to Orenburg State Nature Reserve (Table 6).

Table 6.

Data of transfer	Place of birth	Males	Females	Total
18-10-2015	Le Villare semi-reserve, France	2	4	6
20-11-2016	Hortobagy National Park, Hungary	6	8	14
10-10-2017	Hortobagy National Park, Hungary	4	12	26
Total		12	24	36

One of the French females was already pregnant at the time of transport, and foaled on May 17, 2016 (Table 7). The foal died before the staff noticed it; its remains were found two months later and it was



June 2018 after being released from the acclimatization enclosure to the main area. Probably, she died soon after release (Table 8).



Figure 54. Male Atas born on May 22, 2018





Table 8. Deaths of horses in Pre-Urals Steppe

Studb #no	Sex	Horse name	Date of Birth	Date of Death	Father: #-no	Mother: #-no	Death cause
	?		17-05-2016	17-05-2016	3173 Bruant	5584 Selena	unknown
6712	F	Susi	12-07-2015	04-12-2017	4539 Huba	5132 Kincső	bowel inflammation
6636	F	Solyom	04-05-2015	26-03-2018	5138 Kerecsen	6046 Onedin	bowel inflammation
6622	F	Szirom	28-04-2015	June 2018	3838 Félix	6001 Orchidea	unknown
	F		27-10-2018	29-10-2018	5629 Makos	6256 Pehely	killed by an adult horse

At present, there are three harem groups in the Pre-Urals Steppe site. One of them consisting of four individuals is kept in the acclimatization enclosure (Pompas's harem). Others roam freely around the main area. Aven's group consists of five adult individuals; Makos's group consists of 15 adults and three foals (Figure 58). A bachelor group of nine males is kept in the second acclimatization enclosure.



Figure 58. Makos's and Aven's harems meet (August 19, 2018)

Totally, there are 38 Przewalski's horses (16 males and 22 females) in the Pre-Urals Steppe area on January 1, 2019 (Figure 59).

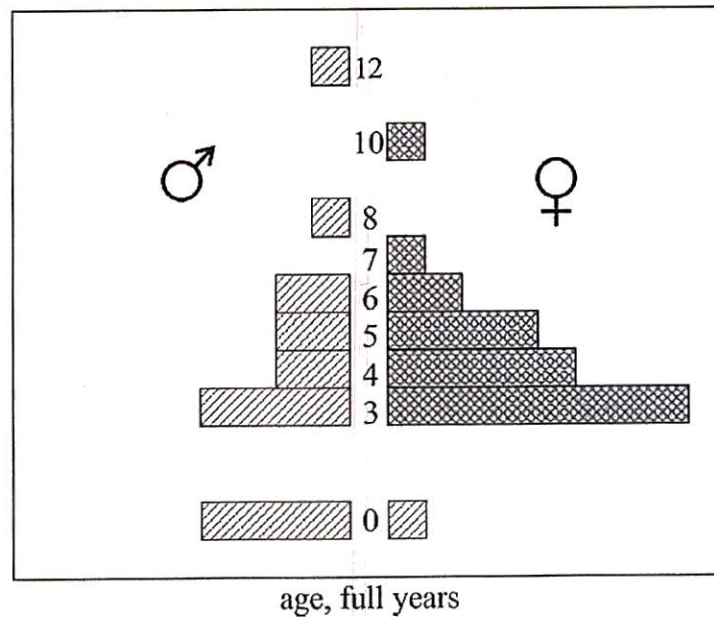


Figure 59. Age and sex structure of the Przewalski's horse population on January 1, 2019



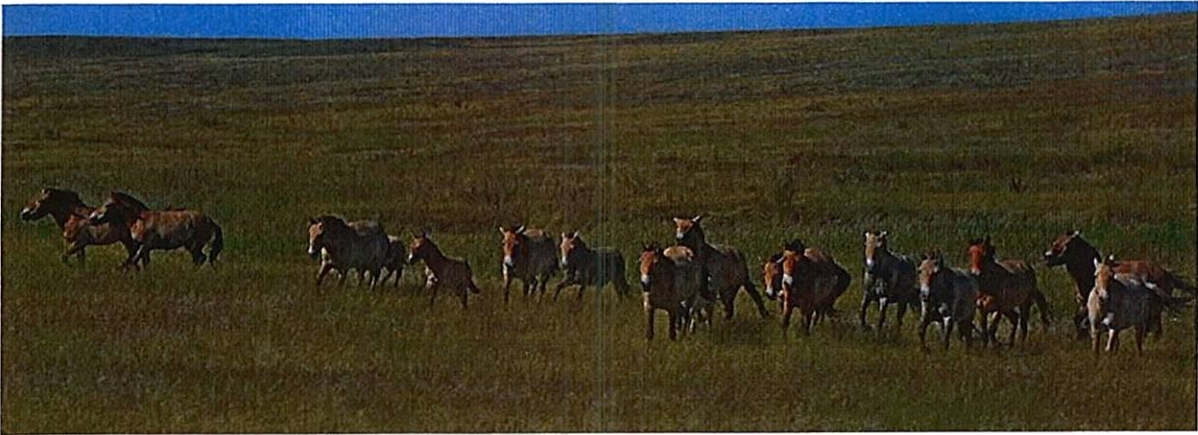


Figure 63. Makos's (Hungarian) free-roaming harem (August 16, 2018)

### Management of the Population

In general, the management of the Przewalski's horse population at Orenburg State Nature Reserve is patterned on the Hortobagy National Park (Hungary), Askania Nova Reserve (Ukraine) and some other best European semi-reserves; the best practices are being disseminated and introduced.

According to the vegetation productivity in Pre-Urals Steppe, the carrying capacity of the whole territory is estimated of 400 to 500 horses. This number will not overgraze and damage the natural steppe vegetation communities. Orenburg State Nature Reserve will control the number of Przewalski's horses much earlier than the carrying capacity is reached. Population size control measures will be taken if necessary (e.g. limitation of breeding by castration, PZP vaccination and other possible and legal methods).

As a daily routine, the staff of the Reintroduction Centre keep the centre going, take care of Przewalski's horses, and maintain the equipment in good working order. They water the horses in the acclimatization enclosures, give extra forage if necessary, provide some health care (e.g. give medicines with oats or autonomously via special sticks), repair the fence of the enclosures etc. (Figures 64–67). They make hay every year to feed both the free-ranging and captured Przewalski's horses in case of natural disaster such as snowy winter and/or heavy icing (Figure 68).

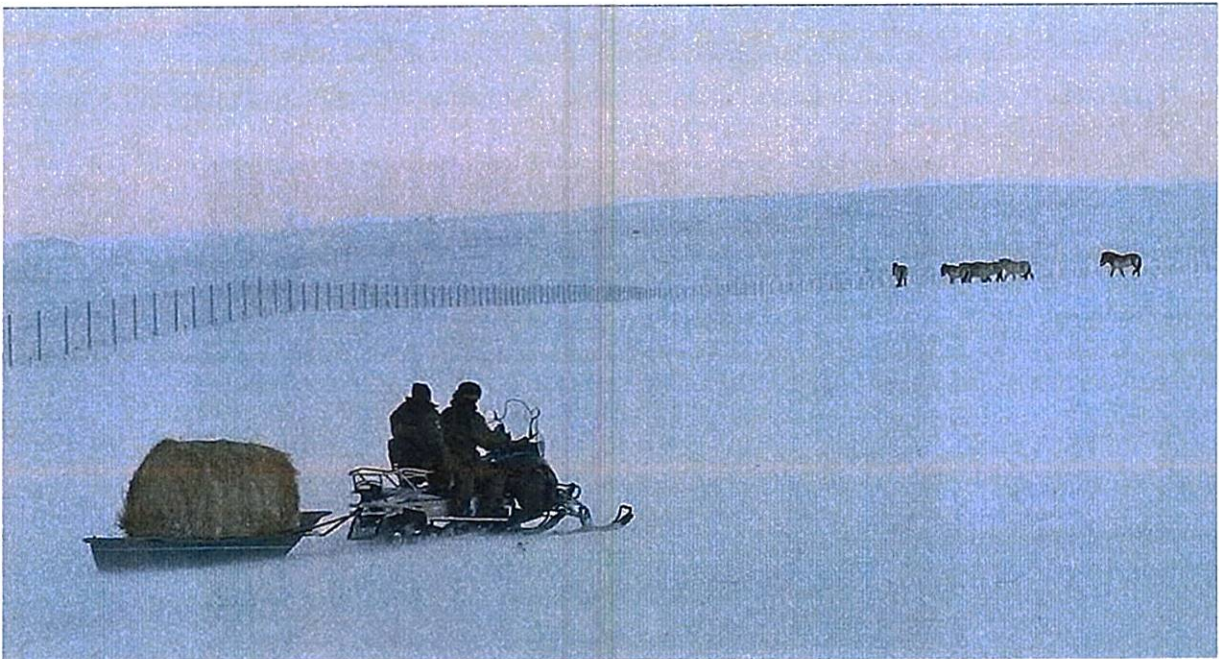


Figure 64. Vladimir Petrov, specialist of the Reintroduction Centre, and Alex Ivliev, the reserve ranger, carting a hay bale to horses in the acclimatization enclosure (February 20, 2016)



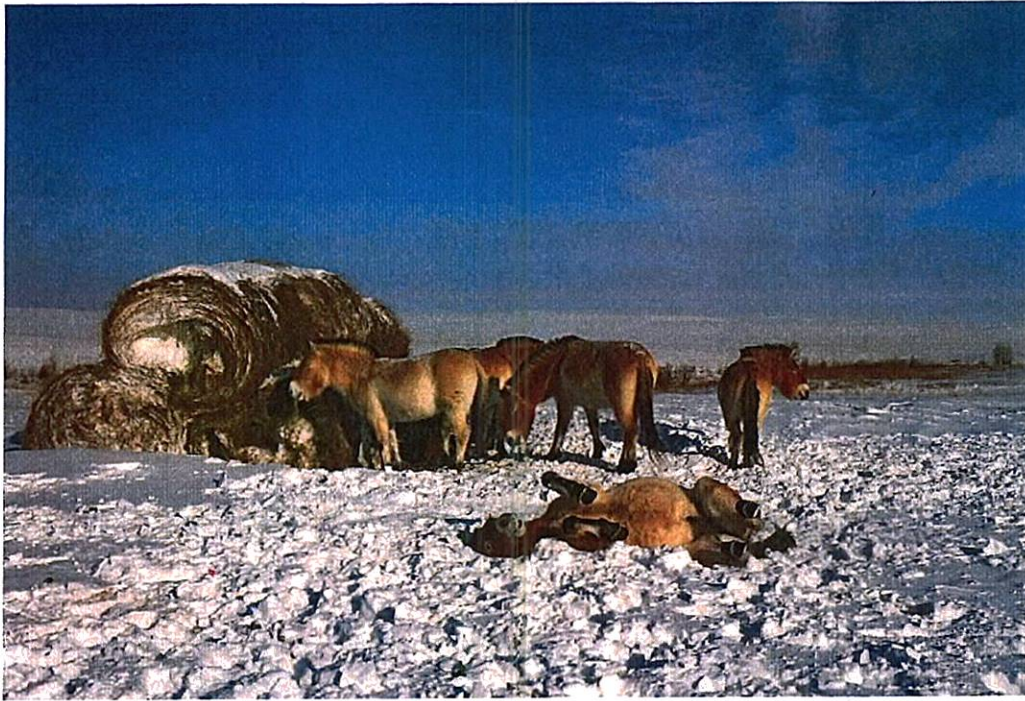


Figure 68. The French harem at the haystack (January 22, 2017)

The staff of the Reintroduction Centre examine all the Przewalski's horse population regularly. The horses are given some oats (about 200 to 300 g per individual) one to two times a week; that is why they tolerate people and allow coming to the distance of dozens metres. The personnel identify the animals and watch their body condition and behaviour (Figures 69–74). The location of each free-roaming group is recorded by a GPS navigator when met. Any changes in the composition of the groups are recorded. Faeces are collected from each individual monthly for calculating parasite eggs in the faeces samples; the analyses are made in the laboratory of the ranger-station. The horses receive deworming treatment once a year.



Figure 69. Vladimir Petrov watching the French harem on their second day at large (October 4, 2016)





Figure 73. Aven's harem (February 9, 2018)



Figure 74. Vladimir Petrov identifying members of Makos's harem (March 19, 2018)

All the cases of births and deaths with post-mortem examination if possible are registered. The catalogue of identity cards of the horses with their photos and descriptions is supplemented. Parentage of new-born foals is planned to be confirmed by DNA analyses from hair and faeces. Some of the foals





Figure 76. Vladimir Petrov packing vegetation (June 26, 2016)



Figure 77. Tatjana Zharkikh cutting vegetation in the acclimatization enclosure (July 15, 2017)





Figure 80. Nataliya Zvegintsova and Tatjana Zharkikh washing horses' faeces to extract intestinal nematodes (August 30, 2016)

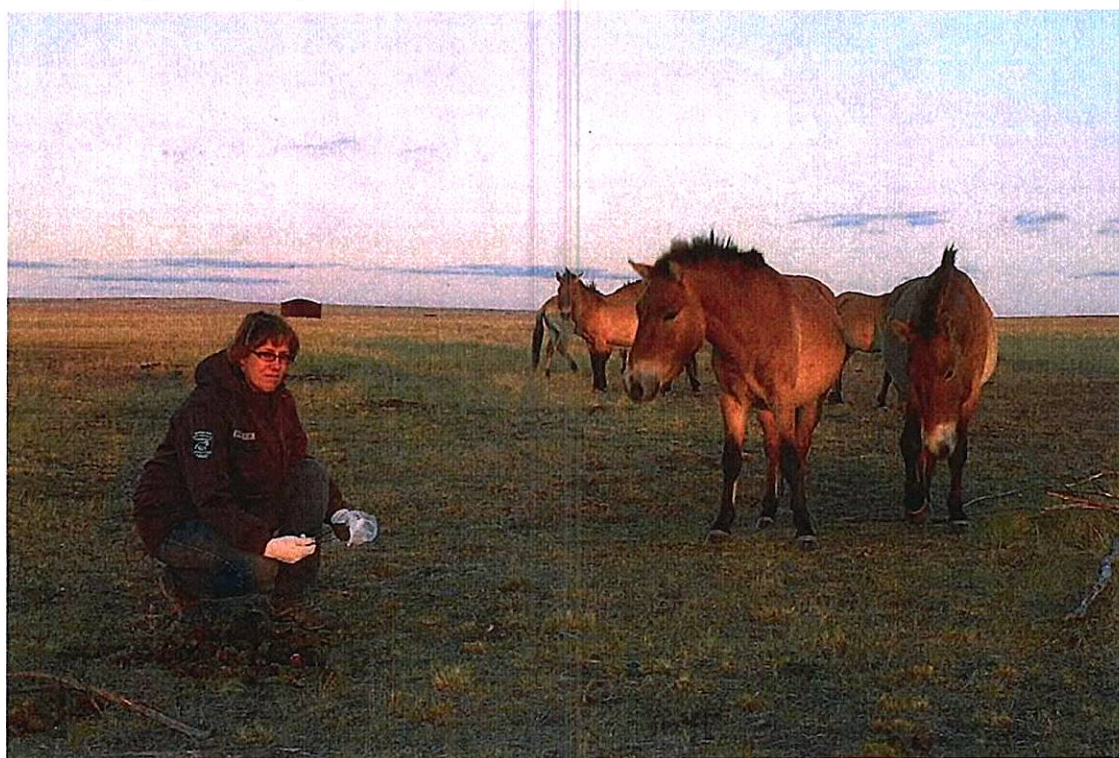


Figure 81. Tatjana Zharkikh collecting horses' faeces to analyse (September 11, 2017)



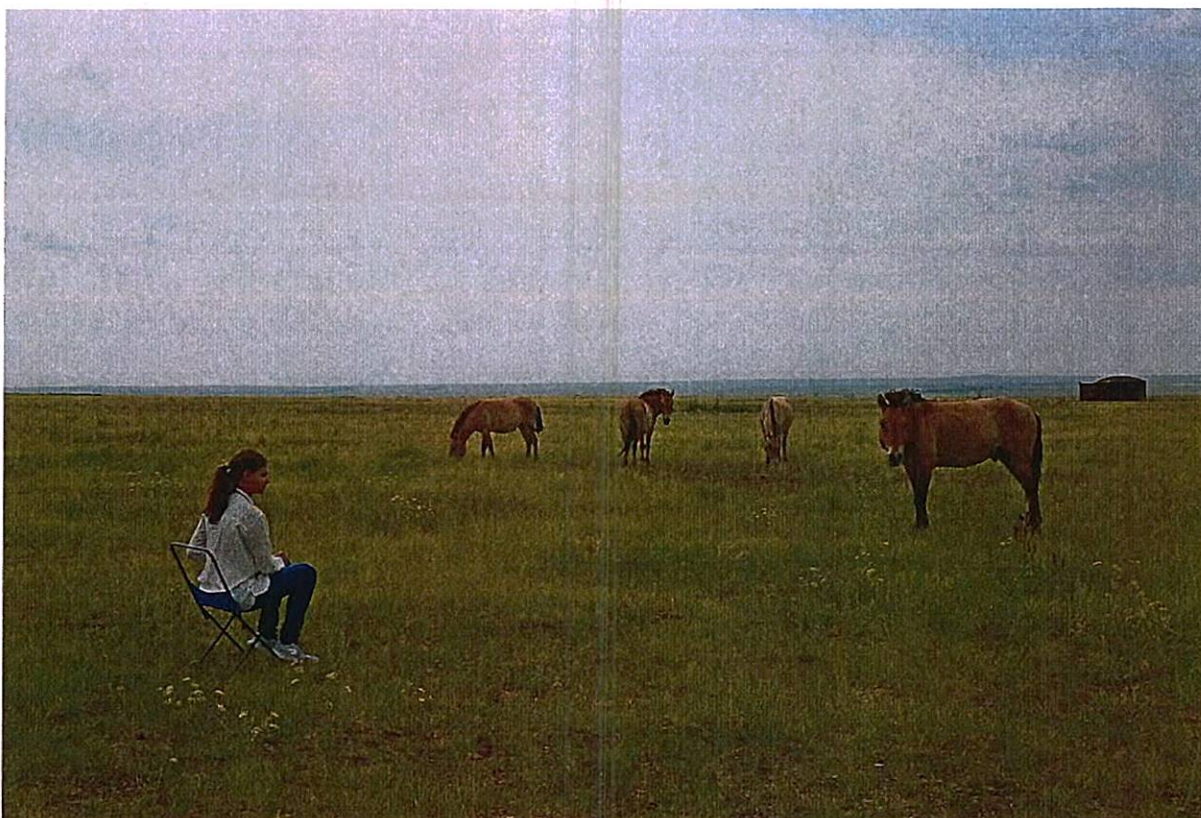


Figure 84. Polina Kazarina (Samara State University) recording horses' behaviour (July 20, 2018)

#### **Education in Pre-Urals Steppe**

The personnel of the Reintroduction Centre introduction promotes environmental education in the form of lectures, guided tours in Pre-Urals Steppe, etc. (Figures 85–90).



Figure 85. Tatiana Luginina, tourist from Ukraine, in the acclimatization enclosure (August 4, 2016)



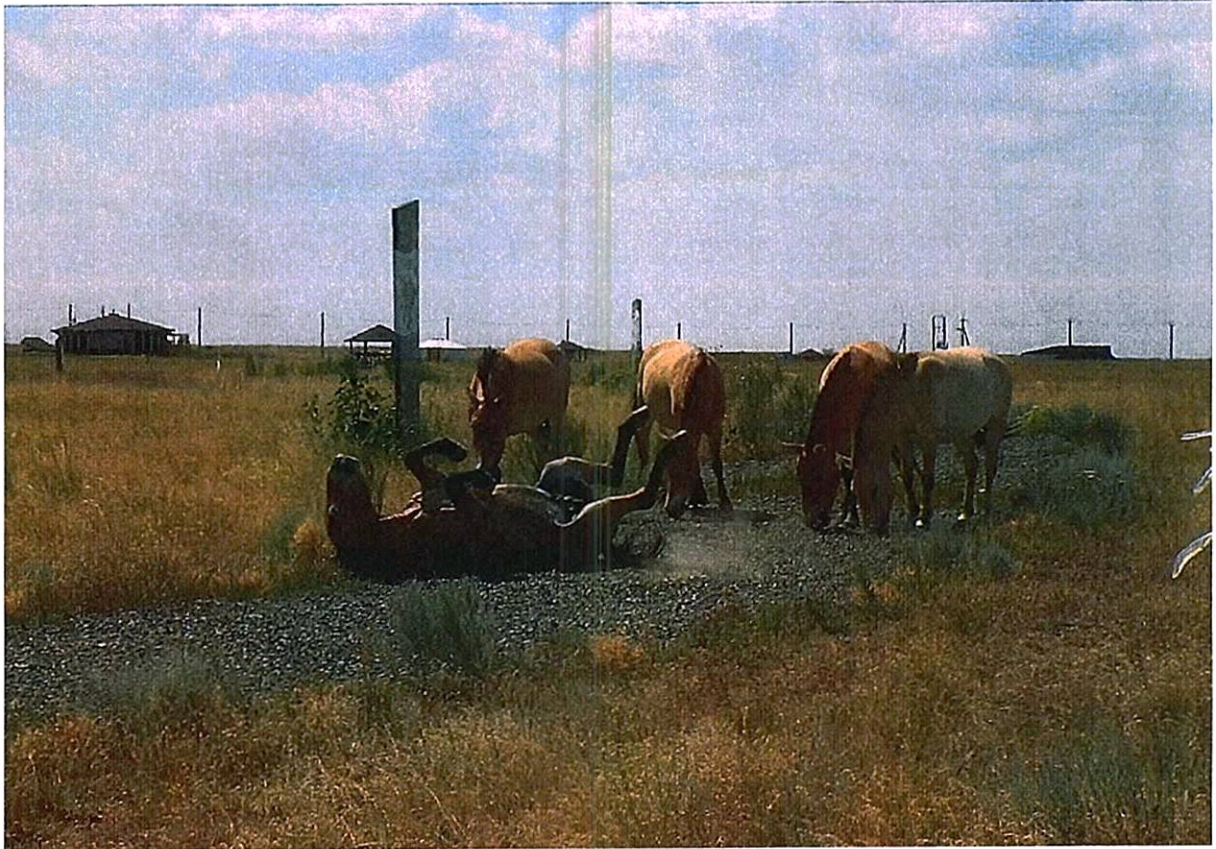


Figure 88. Aven's harem roaming along a tourist pathway (July 28, 2017)

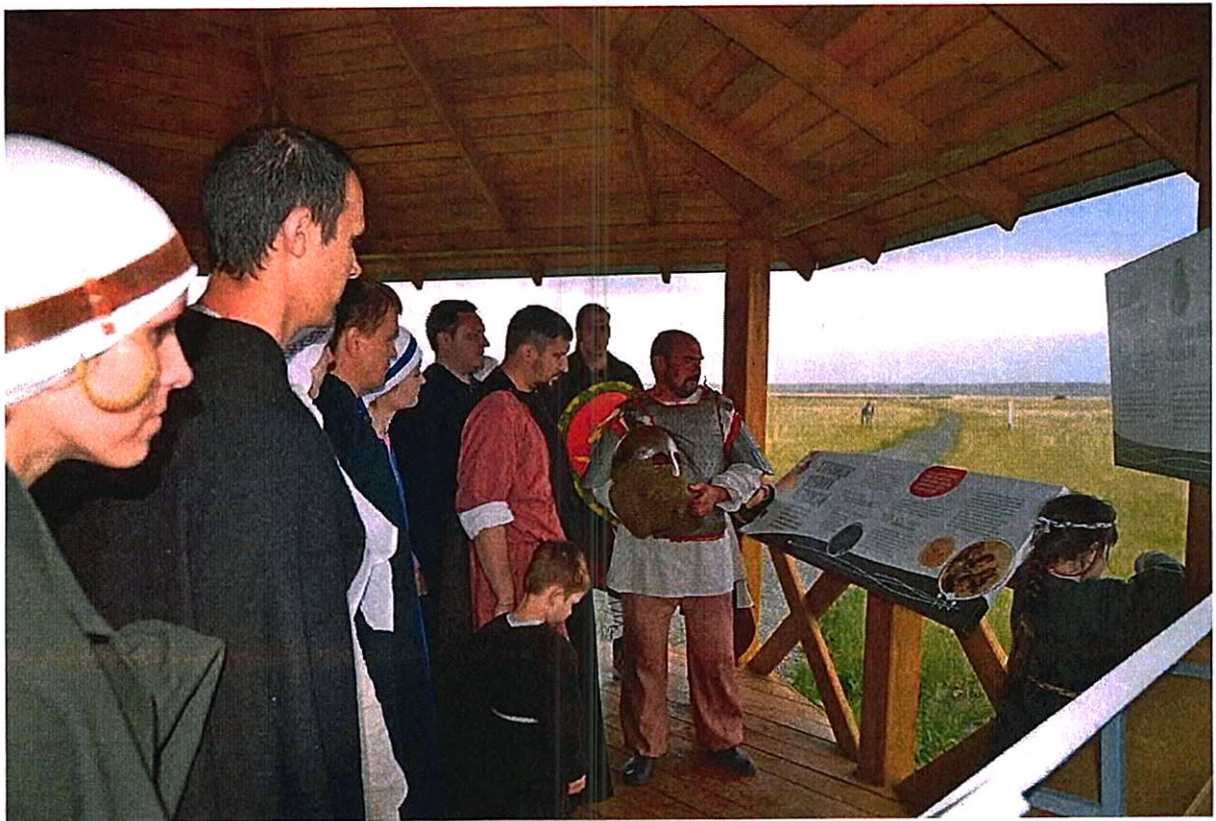


Figure 89. Vladimir Petrov dressed like a medieval Russian warrior, leading a guided tour in the Reintroduction Centre for members of Orenburg Society 'Peresvet' (June 3, 2017)



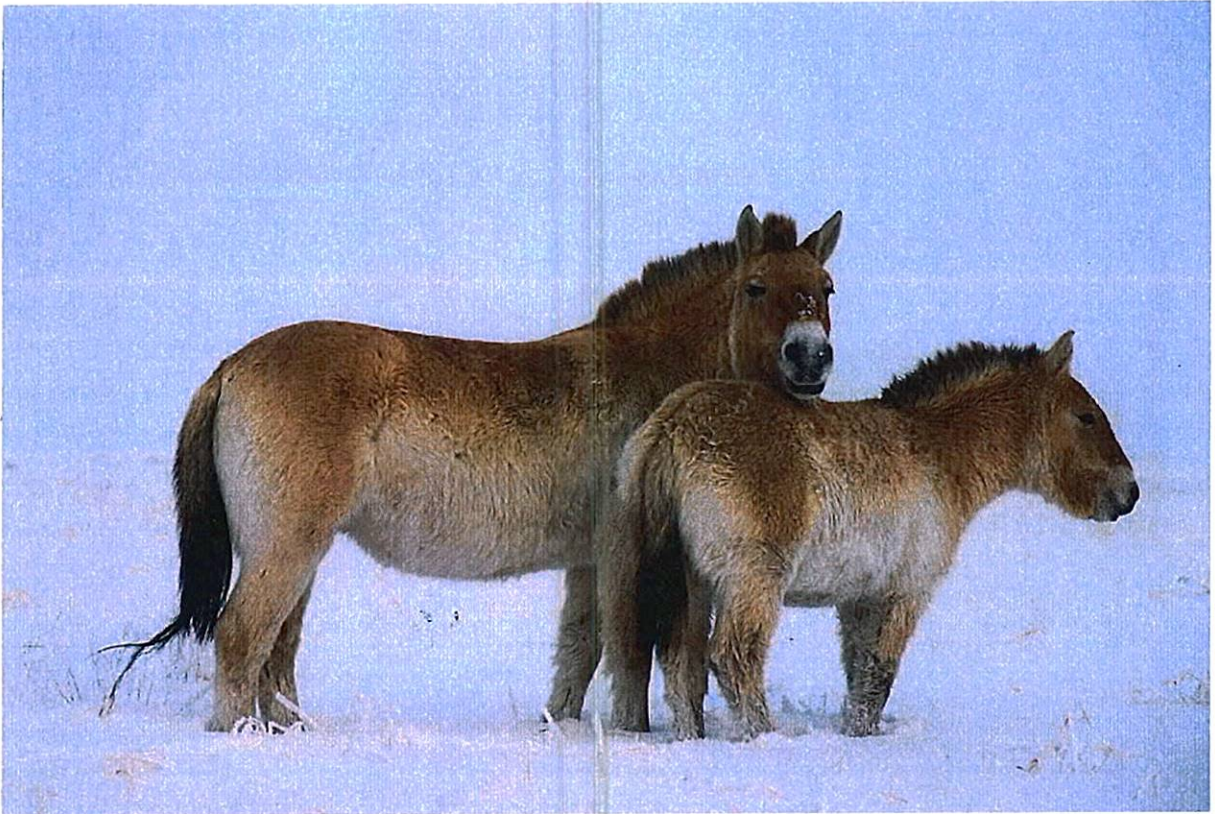


Figure 92. 6322 Pluto and Argod (January 2, 2019)

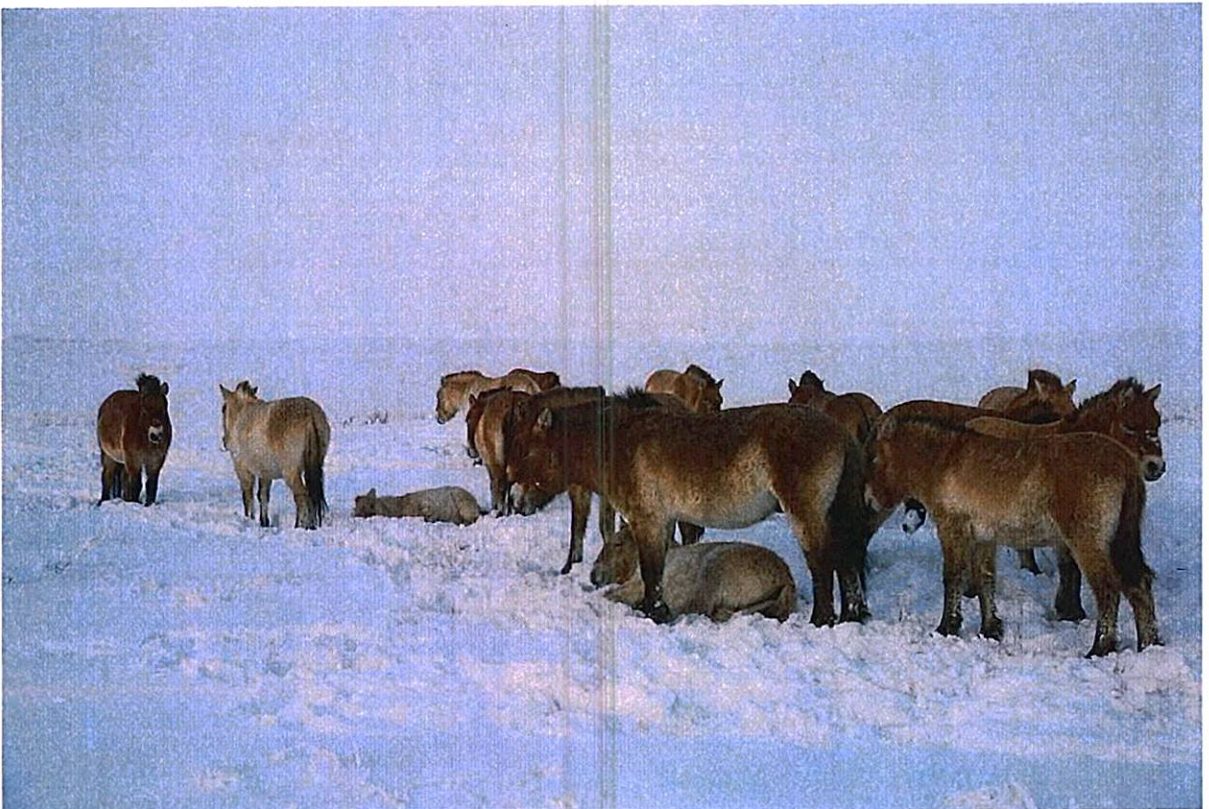


Figure 93. Makos's harem with four foals (January 2, 2019)



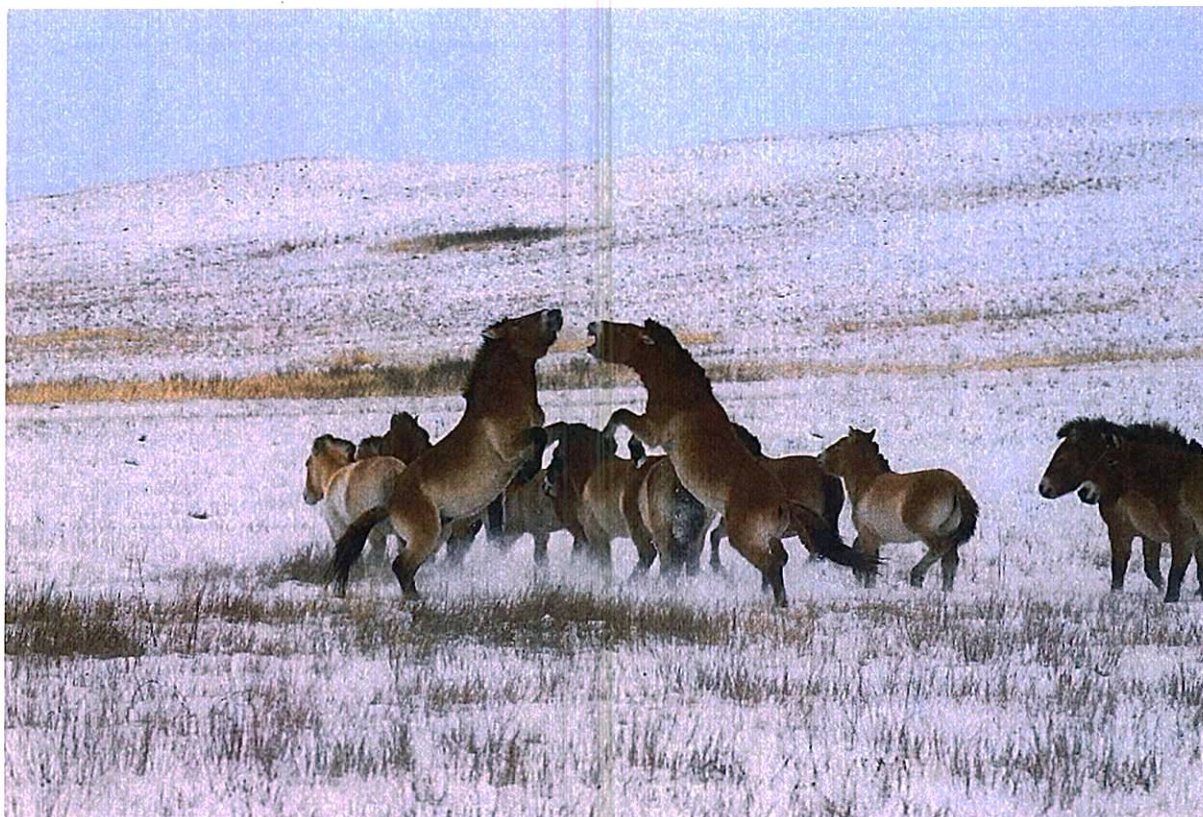
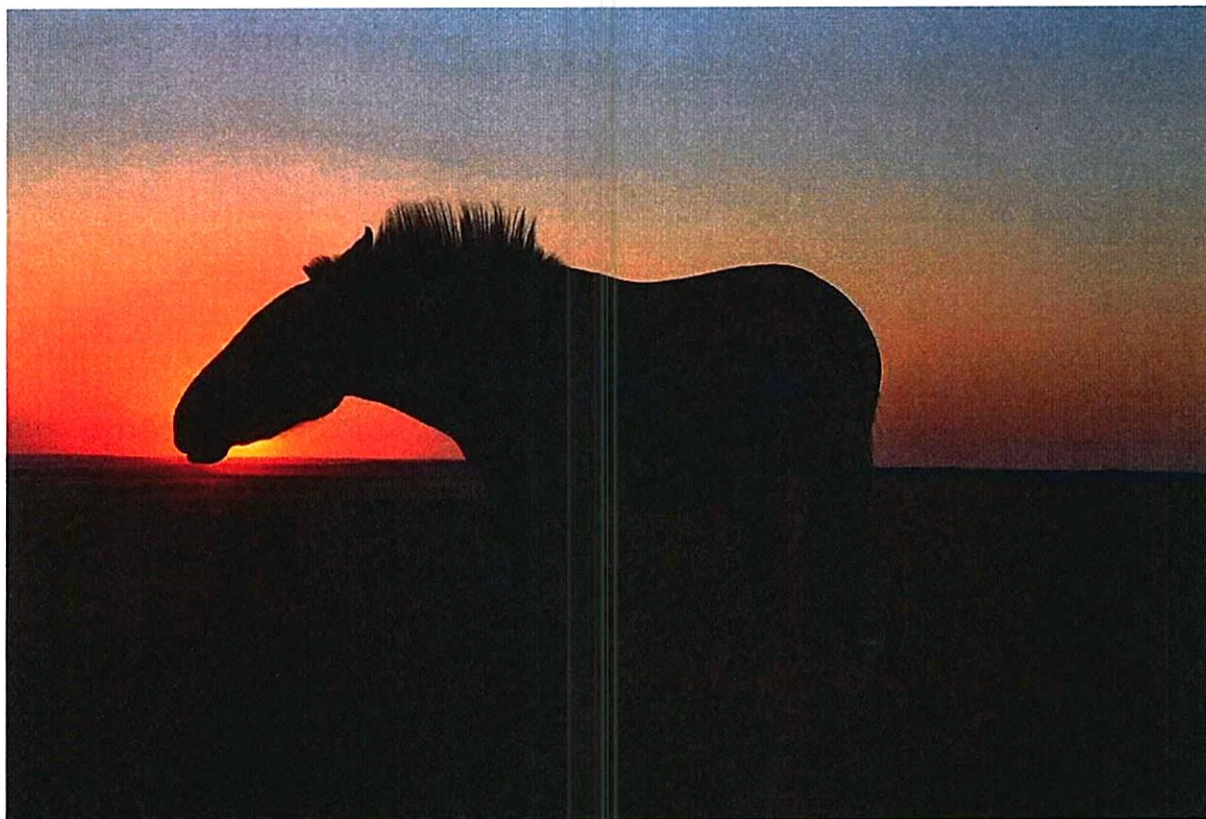


Figure 95. Makos's and Aven's harems met (December 10, 2018)



Pre-Urals Steppe



# Lesanna L Lahner DVM, MPH

## PROFESSIONAL OBJECTIVE

To promote conservation and improve ecosystem and community health through exceptional veterinary medical care, research, and translational science.

## EDUCATION

### Doctor of Veterinary Medicine (DVM)

University of Wisconsin – Madison, WI. GPA 3.8, 2006-2011

### Master of Public Health (MPH)

University of Wisconsin – Madison, WI. GPA 3.9, 2008-2010

### Bachelor of the Arts (BA)

Carleton College, Northfield, MN. Biology, 2000-2004

## WILDLIFE VETERINARY and RESEARCH EXPERIENCE

### Execute Director and Veterinarian, SR<sup>3</sup> Sealife Response, Rehab, and Research Seattle, WA

2016- current, full-time

- Overall strategic and operational responsibility for staff, programs, construction of a new facility, and execution of the mission.
- Develop core scientific and medical programs, operations, and a sustainable business plan.
- Manage field and onsite veterinary care including stranded/injured wildlife response as well as medical aspects of research programs.
- Provide emergency veterinary medical care for marine mammals and birds.
- Develop, maintain, and support a strong Board of Directors and build board involvement with strategic direction.

### Veterinarian, Sarvey Wildlife Rehabilitation Center, Arlington, WA

2012-present, part-time

- Provide veterinary medical care, including surgery and intensive care, for a variety of native wildlife species with an emphasis on birds of prey such as bald eagles, hawks, and owls.
- Work with state and federal agencies to ensure priorities are met for wildlife recovery and rehabilitation.
- Perform necropsies and obtain information on local wildlife disease issues for surveillance of important emerging diseases such as highly pathogenic avian influenza, White Nose Syndrome, and more.

### Affiliate Professor, University of Washington, Seattle WA

2015-present, part-time

- Lecture for and mentor students from a variety of programs including the MPH, MD, and PhD students associated with the Center for One Health Research and Environmental Health.

## AWARDS & HONORS

2017 Nominated and Appointed  
to the AVMA Steering Committee on  
Human-Animal Interactions for Wildlife

2016 Nominated by peers to author the  
Sea Otter Medicine Chapter, CRC Marine  
Mammal Medicine

2015 NSF Grant recipient, Sea Star Wasting  
Disease, Boeing Research Award for Marine  
Mammal Disentanglement

2014 Boeing Research Award for Sea Star  
Wasting Disease Initiative

2011 Excellence in Avian Medicine and  
Surgery, UW-Madison

2011 Excellence in Wildlife, Exotics,  
& Zoo Animal Medicine, & Henry  
Vilas Zoological Scholarship,  
Connor DVM/MPH  
Scholarship



**UW-Madison, School of Population Health, Master of Public Health Thesis**

***Master of Public Health Student, January 2009-June 2010***

- Acted as lead coordinator to investigate the spatial and temporal dynamics of the sustained high incidence of human West Nile Virus (WNV) infections in North Dakota.
- Collected and analyzed data on human WNV infections and environmental and social variables using geographic information systems (GIS) and Bayesian (WinBUGS) statistics.

**National Wildlife Health Center Honolulu Field Station, Honolulu, Hawai'i**

***Research Assistant to Dr. Thierry Work, Summer 2008***

- Performed chelonian, avian, and fish necropsies and fieldwork including coral health transects and ecological field studies.
- Designed and executed a repeatable experimental model for the assessment of disease in coral species under natural or artificial conditions.

**University of Wisconsin –Madison, Large Animal Teaching Hospital**

***Veterinary medical technician, 2005-2007***

- Performed physical examinations, administered medications and treatments, and placed intravenous catheters on large animals including horses, cattle, and camelids.
- Assisted with the care of non-ambulatory large animals including transport, sling placement, float tank usage, and emergency stabilization of critically ill patients.

**Minnesota Wildlife Rehabilitation Center, Roseville, Minnesota**

***Wildlife Rehabilitation Intern, Spring/Summer 2005***

- Assisted veterinarians with the examination, stabilization, and treatment of various wildlife species.
- Supervised and trained volunteers, organized supplies and fundraising events.

**The Raptor Center, University of Minnesota, St. Paul, Minnesota**

***Raptor Handler, Veterinary Assist, and Education Volunteer, 1995-2002***

- Assisted veterinarians with the examination and treatment of various birds of prey.
- Fed and medicated birds and maintained enclosures.
- Presented educational seminars to children and adults on raptor conservation.

**The Wildlife Rehabilitation Center, University of Minnesota, St. Paul, Minnesota**

***Bat and Avian Caretaker, 1997-2000***

- Assisted veterinarians with the examination and treatment of various wildlife species with an emphasis on bats and waterfowl species.
- Fed and medicated bats and birds and maintained enclosures.
- Trained new volunteers in safe handling of bats and various aquatic birds.

**SKILLS**

Exceptional interpersonal and communication skills

Strong technical and scientific background

Highly productive & hardworking

Proven ability to work remotely & independently

Competent and safe animal handler including wildlife and large animals

Fluent in Spanish & basic skills in Japanese

Trained in SAS, GIS, and WinBUGs statistical software



## PROFESSIONAL MEMBERSHIPS

- American Association of Zoo Veterinarians (AAZV), Associate Member, 2011-present
- International Association for Aquatic Animal Medicine (IAAAM), 2013-present
- Wildlife Disease Association (WDA), Member, 2011-present
- American Veterinary Medical Association (AVMA), Member, 2006 to present
- Association of Zoos and Aquariums (AZA), Professional Affiliate, 2011-2016
- National Wildlife Rehabilitation Association (NWRA), 2016-present
- Wisconsin and Illinois Veterinary Medical Associations, 2010-2012
- Washington State Veterinary Medical Association, 2012-present

## PROFESSIONAL CERTIFICATIONS

- Certified Veterinary Acupuncturist (CVA) for large, small and exotic animals.  
The Chi Institute of Traditional Chinese Veterinary Medicine, Reddick, FL. 2009
- USDA Licensed Veterinarian, 2013-present



# Tony Fisher



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## Education:

**B.A. Degree in Captive Wildlife Biology and Management**  
*Minnesota State University –Metropolitan campus, Saint Paul, Minnesota*

**Technical Degree - Natural Resources Management**  
*Central Lakes College, Brainerd, Minnesota*

## Related Work Experience:

### **2003 – 2019 Director of Animal Collections: Minnesota Zoo, Apple Valley, MN**

- Provide managerial oversight for the Minnesota Zoo's exotic and domestic animal collection and maintain the Institutional Collection Plan for the realization of exhibition, conservation and captive population goals.
- Work proactively with organized breeding programs and other zoological institutions on all aspects of animal husbandry, acquisition and transfer of animals.
- Manage animal programs, including animal research and exhibit design.
- Assist with policy planning and development, personnel management, and budgeting.
- Development and oversight of new temporary summer exhibits.
- Coordinate the design and review of new permanent animal holding and exhibit spaces.
- Coordinate the acquisition and international importation of new animal species for the Minnesota Zoo.
- Serve as zoo spokesperson in numerous media events with TV, radio, newspapers.
- Serve on the South China Tiger Advisory Team for Hupingshan National Nature Reserve, China; a team that was organized to consult the Chinese government for the eventual release of traditional tiger prey species and the reintroduction of tigers into south China.
- Serve as the American Zoological Association (AZA) Cervid Taxon Advisory Group Chair from 2004 to 2014.
- Serve as the AZA Asian Wild Horse Species Survival Plan Coordinator from 2012 to 2019.
- Serve as the AZA Moose Species Survival Plan Coordinator from 2010 to 2019.

### **1999 - 2003 Zoo Farm Supervisor: Minnesota Zoo, Apple Valley, MN**

- Assist with design and development of an 8.5 acre Farm exhibit.
- Selection and acquisition of domestic farm animals.
- Design and implement area protocols on animal husbandry and exhibition.
- Hiring and supervision of Zoologist, Farm keepers, Tram Drivers and Student Workers.
- Formal presentations for donor groups, special events and local media.

### **1986 - 1999 Zookeeper: Minnesota Zoo, Apple Valley, MN**

- Zoo animal and exhibit maintenance in outdoor large hoofstock and big cat areas. Experience working amur tigers, amur leopards, Asian lions, arctic fox, red pandas, Mexican wolves, bactrian camels, Asian wild horses, takin, musk ox, caribou, bison, pronghorn antelope, elk, prairie dogs, trumpeter swans, snow geese, and sandhill cranes.
- Assist veterinary staff with animal tranquilization procedures and treatments.
- Conduct interpretive animal demonstrations, guide informative tours, assist with animals in off-site public relations functions, and transport animals to other zoos.



# DIANA WEINHARDT-TREANGEN

[diana.weinhardt@state.mn.us](mailto:diana.weinhardt@state.mn.us)

## Summary

High-energy Manager successful in building and motivating dynamic teams. Cultivates a positive work culture in which staff members feel comfortable voicing questions and concerns, as well as contributing new ideas that drive team and zoological facility growth. Results-focused management professional offering 40 years of progressive zoological leadership experience with varied species experience.

## Core Qualifications

- Diverse and extensive animal experience
- Policy/program development
- Staff training & development
- Effective Public Speaker
- Safety Oriented

## Professional Experience

### Curator of Northern Trail & RGC

05/2007 to Current  
Apple Valley, MN

#### Minnesota Zoo

- Managed team of 10-15 of staff
- Integral part of team that implemented the AZA award winning Russia' Grizzly Coast Exhibit
- Assisted Minnesota Zoo/Minnesota DNR Bison Reintroduction Project
- Created and implemented Pepper Spray policy for staff/keepers in dangerous large animal areas

### Program Coordinator

05/2015 to 2017  
Houston, MN

#### Houston Nature Center

- Coordinate and develop Adult Education Wildlife Speakers Series
- Coordinate, develop and teach Homeschool/ Daycare Wildlife Class
- Develop new exhibits
- Research and write grants for new exhibits and program tools

### Director of Conservation & Wildlife Programs

11/2004 to 05/2007  
Portage, AK

#### Alaska Wildlife Conservation Center

- Managed team of 25-35 of staff
- Active participant in the Alaska Department of Fish and Game (ADFG) Wood Bison Reintroduction Project
- Advised and assisted ADFG
- Coordinated Orphan wildlife placements in AZA Zoos for ADFG
- Develop Animal Care and Safety Protocols
- Developed and instituted Intern Program and adult lecture programs
- Assisted Local and Federal Agencies with field projects including brown bears, polar bears, moose, wolverine and marine mammals
- Liaison for Cruise Lines and Alaska tour industry guests
- Fulfilled veterinary responsibilities in partnership with consulting veterinarian



## Trista Fischer

• Trista.Fischer@state.mn.us

### PROFESSIONAL EXPERIENCE

---

#### Zoologist, Minnesota Zoo, MN

January 2017 - Present

- Assist the Curator in the operations of the Northern Trail; including oversight of husbandry for the Asian wild horses, pronghorn, bison, wild boar, Sichuan takin, Bactrian camels, moose, reindeer, muskox, gazelle, brown bears, Amur leopards, Amur tigers and dhole.
- Vice Coordinator for the Amur Tiger Species Survival Plan (August 2019 – Present), overseeing the population management and cooperative breeding program of Amur Tigers within AZA facilities.
- Coordinate veterinary procedures and maintain animal health notes.
- Additional responsibilities include those listed in keeper role at the Minnesota Zoo.

#### Keeper, Minnesota Zoo, MN

June 2016 – January 2017

- Routine husbandry for the carnivore and hoofstock species on the Northern Trail
- Monitor animals' daily diets and consumption. Making suggestions for dietary changes as appropriate.
- Observe and report animal behavioral activities, including abnormalities and health concerns.
- Provide behavioral enrichment per species and individual needs.
- Administer medications as established by the animal health and animal management staff.
- Assist animal health staff with health monitoring and treatments.
- Facilitate medical care of specified animals through the use of operant conditioning.
- Participate in animal training sessions through positive reinforcement techniques.
- Ensure the safety of all visitors, staff and animals.
- Accountable for knowledge and implementation of all safety procedures.
- Inspect all assigned exhibits and holding areas on routine basis.
- Perform regular maintenance of enclosures and facility grounds, maintaining aesthetics for animal areas.
- Provide positive guest experiences through engaging and educational presentations, and conversation through keeper chats and private tours.

#### Temporary Keeper, Minnesota Zoo, MN

May 2016- June 2016,  
May 2015- January 2016,  
April 2014 - September 2014

- Provided routine husbandry for the following animals on the Northern Trail: Amur tiger, Amur leopard, brown bear, red panda and dhole.
- Assisted with bottle-feeding of moose calves.
- Assisted with Northern Trail hoofstock husbandry as needed.
- Completed husbandry care and fulfilled responsibilities as listed in above MN Zoo keeper position.

#### Lead Keeper, Wildcat Sanctuary, MN

January 2007- November 2013

- Responsible for daily oversight of facility operations with 100+ wild feline residents.
- Managed the animal care team including: keepers, interns and onsite volunteers.
- Recruited, hired, supervised, scheduled, conducted performance evaluations for reporting staff.
- Motivated animal care team through daily assignments.
- Facilitated conflict resolution between employees under my supervision.
- Established internship program, which included the management of 16+ interns annually.
- Updated and maintained organization's operations manual to include revised policies, safety standards, crisis action plan, and animal management practices.
- In charge of training reporting staff on such protocols.
- Led safety team through training and preparation. Responsible for conducting safety and crisis drills.
- Accountable for implementing husbandry, veterinary and safety SOPs.
- Maintained chemical immobilization certification and ensured training of appropriate veterinary and keeper staff on proper chemical immobilization techniques for felids. This responsibility included the safe sedation of 40+ felids annually.



## CURRICULUM VITAE

1. FAMILY NAME: *Zharkikh*
2. FIRST NAME: *Tatjana*
3. TEL/E-MAIL: [REDACTED]
4. DATE OF BIRTH: [REDACTED]
5. NATIONALITY: [REDACTED]
6. AFFILIATION: *Federal State Funded Institution «The Joint Directorate of State Nature Reserves «Orenburg» and «Shaitan Tau» (Russian Federation)*
7. POSITION: *Head of the Reintroduction Centre for the Przewalski Horse*
8. EDUCATION:

*Institution: Post graduate course, UAAS Institut of Cattlebreeding in the Steppe Region  
"Askania-Nova", Askania-Nova, Kherson Region, Ukraine.*

*Date: 1994-1996*

*Institution: Odessa State University, Biological Department, Ukraine.*

*Date: 1997-1992*

*Degree or Diplomas: MSc.*

### 9. PROFESSIONAL EXPERIENCE:

- |                       |  |
|-----------------------|--|
| <i>2015 - present</i> | <i>Head of the Reintroduction Centre for the Przewalski Horse, Federal State Funded Institution «The Joint Directorate of State Nature Reserves «Orenburg» and «Shaitan Tau», Orenburg, Russia</i> |
| <i>2010 – 2013</i>    | <i>Deputy Director at the private Zoo 'Limpopo', Nizhniy Novgorod, Russia</i>  |
| <i>2010 – 2011</i>    | <i>Deputy Director at the municipal Belgorod Zoo, Belgorod, Russia</i>   |
| <i>1997 – 2010</i>    | <i>Scientist at the Biosphere Reserve "Askania-Nova", Askania-Nova, Kherson Region, Ukraine.</i>   |
| <i>1993 – 2010</i>    | <i>Przewalski Horse European Endangered Species Program-Committee-member.</i>  |
| <i>1992 – 1996</i>    | <i>Junior Scientist at the Biosphere Reserve "Askania-Nova", Askania-Nova, Kherson Region, Ukraine.</i>  |

### 10. PUBLICATIONS: 133 research papers.



## ДОГОВОР

о научно-техническом сотрудничестве между  
Миннесотским зоопарком  
(Соединённые Штаты Америки) и  
Федеральное государственное бюджетное  
учреждение «Объединённая дирекция  
государственных природных заповедников  
«Оренбургский» и «Шайтан-Тау» (Российская  
Федерация)

г. Оренбург

16 июля 2019 г

Миннесотский зоопарк, Соединённые Штаты Америки, в лице директора коллекции животных Энтони Фишера, и Федеральное государственное бюджетное учреждение «Объединённая дирекция государственных природных заповедников «Оренбургский» и «Шайтан-Тау» (далее – «Заповедники Оренбуржья»), Российская Федерация, в лице директора Рафии Т. Бакировой, действующей на основании Устава, оба далее именуемые «СТОРОНЫ» заключили Договор о нижеследующем:

### 1. Цель и сфера применения:

1.1. СТОРОНЫ посредством дружеских консультаций, основанных на справедливости, честности, доверии, равном сотрудничестве и взаимном выгоде, желают предпринять усилия для сохранения *Equus ferus przewalskii*, также называемого азиатской дикой лошадью или лошадью Пржевальского (лошадь Пржевальского). Целью настоящего Договора является описание того, как СТОРОНЫ намерены сотрудничать в целях содействия сохранению лошади Пржевальского, в том числе о том, как СТОРОНЫ намерены сотрудничать, чтобы способствовать будущей передаче определённого количества лошадей Пржевальского из Соединённых Штатов в Государственный природный заповедник «Оренбургский», Российская Федерация. Настоящий Договор соответствует духу сотрудничества, изложенному в Соглашении между Правительством Российской Федерации и Правительством Соединённых Штатов Америки о сотрудничестве в области охраны окружающей среды от 1994 года.

1.2. Работы по настоящему Договору осуществляются в рамках Программы по созданию полувольной популяции лошади Пржевальского в Государственном природном заповеднике «Оренбургский», РФ (далее – ПРОГРАММА).

1.3. СТОРОНЫ по настоящему Договору осуществляют сотрудничество, которое включает:

## AGREEMENT

on Scientific and Technical Cooperation  
between the Minnesota Zoological Garden,  
(United States) and Federal State Funded  
Institution «The Joint Directorate of State  
Nature Reserves «Orenburg» and «Shaitan  
Tau» (Russian Federation)

Orenburg,

16 July 2019

The Minnesota Zoo (United States), represented by Director of Animal Collections Anthony Fisher, and the Federal State Funded Institution «The Joint Directorate of State Nature Reserves «Orenburg» and «Shaitan Tau» (hereinafter referred to as «Orenburg Reserves»), represented by Director Rafilia T. Bakirova, acting under the Reserve's Charter, shall hereinafter be jointly known as «the PARTIES» and have entered into the following Agreement:

### 1. Goals and Scope

1.1. Through friendly consultations based on fairness, honesty, trust, equal collaborative effort and mutual benefit, the PARTIES wish to undertake measures for the conservation of *Equus ferus przewalskii*, also called the Asian wild horse, or Przewalski's horse. The goal of this Agreement is to lay out the ways in which the PARTIES intend to collaborate for the purpose of promoting the conservation of the Przewalski's horse, including cooperation in accomplishing the future transfer of a certain number of Przewalski's horses from the United States to Orenburg State Nature Reserve in the Russian Federation. This Agreement furthers the spirit of cooperation embodied in the 1994 Agreement between the Government of the United States of America and the Government of the Russian Federation on Cooperation in the Field of Protection of the Environment and Natural Resources.

1.2. Work on of this Agreement shall be carried out in the framework of the PROGRAM on establishing a semi-free population of the Przewalski's horse in Orenburg State Nature Reserve, Russian Federation (hereinafter referred to as PROGRAM).

1.3. Under this Agreement the PARTIES shall undertake cooperation which entails the



ОРЕНБУРЖЬЯ» для участия в ПРОГРАММЕ. Лошади Пржевальского в настоящее время принадлежат различным зоопаркам в Северной Америке, которые принимают участие в Плате по выживанию видов Ассоциации зоопарков и аквариумов.

4.1.2. Выполнить все необходимые генетические анализы, чтобы убедиться, что лошади Пржевальского обладают необходимым генетическим разнообразием, чтобы быть приемлемыми кандидатурами для интеграции с настоящей коллекцией лошадей в ПРОГРАММЕ;

4.1.3. Согласовать с «ЗАПОВЕДНИКАМИ ОРЕНБУРЖЬЯ» список лошадей Пржевальского, намеченных для отправки в РФ; предоставить все необходимые сведения о лошадях основной группы и резервных особей, согласовать пол, возраст и другие характеристики.

4.1.4. Предоставить возможность представителям «ЗАПОВЕДНИКОВ ОРЕНБУРЖЬЯ» осмотреть в США намеченных для транспортировки лошадей для оценки экстерьера, физических характеристик, условий содержания и т.д.

4.1.5. Сотрудничать с «ЗАПОВЕДНИКАМИ ОРЕНБУРЖЬЯ» для определения взаимосогласованного пункта въезда в Россию, куда будут доставлены лошади Пржевальского («ПУНКТ ВЪЕЗДА»).

4.1.6. Искать средства для оплаты всех расходов, связанных с экспортом лошадей Пржевальского до ПУНКТА ВЪЕЗДА. Примеры таких затрат включают: (1) стоимость предпереходного тестирования; (2) все расходы по передаче, доставке и обработке до ПУНКТА ВЪЕЗДА; и (3) все расходы, связанные с получением необходимых экспортных разрешений, включая ветеринарный сертификат, или разрешений в соответствии с государственным, федеральным и международным законодательством.

4.1.7. Подготовить и подать все необходимые заявки на разрешение на вывоз лошадей Пржевальского, в соответствии с требованиями применимого государственного, федерального и международного права.

#### 4.2. «ЗАПОВЕДНИКИ ОРЕНБУРЖЬЯ»:

4.2.1. Предоставить международные племенные номера лошадей Пржевальского, завезенные на Участок в 2015–2017 гг, с целью отбора подходящих лошадей-кандидатур из зоопарков Северной Америки.

4.2.2. Сотрудничать с МИНЕСОТСКИМ ЗООПАРКОМ или зоопарком, аккредитованным в Ассоциации зоопарков и аквариумов (АЗА), чтобы

RESERVES», for the purpose of participation in the PROGRAM. The Przewalski's horses currently belong to various zoos in North America which take part in the Species Survival Plan of the Association of Zoos and Aquariums;

4.1.2. Carry out all necessary genetic analyses necessary to show that the Przewalski's horses have the required genetic diversity to be suitable candidates for integration into the current collection of horses in the PROGRAM;

4.1.3. Reach agreement with «ORENBURG RESERVES» on a list of horses to be sent to Russia; make available all necessary information about the horses of the main group to be sent as well as horses in reserve; agree on the sexes, ages and other characteristics;

4.1.4. Offer to representatives of «ORENBURG RESERVES» an opportunity to view in the U.S. the horses designated for transfer, in order to evaluate their exterior appearance, physical features, conditions of maintenance, etc.;

4.1.5. Cooperate with «ORENBURG RESERVES» to determine the horses' Point of Entry into Russia (hereinafter «POINT OF ENTRY»);

4.1.6. Secure funding for payment of all costs associated with transfer of the Przewalski's horses to the POINT OF ENTRY. Examples of such costs include: (1) testing prior to transfer; (2) all expenses connected with transfer, delivery and processing up to the POINT OF ENTRY; (3) all expenses for obtaining the necessary export permits, including veterinary certificates, or permits in accordance with governmental, federal and international regulations;

4.1.7. Prepare and submit all necessary application forms for permits to export Przewalski's horses, in accordance with the requirements of existing governmental, federal and international laws.

#### 4.2. «ORENBURG RESERVES»:

4.2.1. Make available the International Studbook numbers of the Przewalski's horses received at the SITE in 2015–2017, with the goal of selecting appropriate candidate horses from North American zoos;

4.2.2. Work with the Minnesota Zoo or a zoo accredited by the Association of Zoos and Aquariums (AZA) to determine the POINT OF



настоящему Договору, совместимы и публикуются в соавторстве с согласия СТОРОН.

5.6. СТОРОНЫ будут обсуждать методы публикации результатов исследований до издания первого опубликования и публикации всех результатов. Подробности права на публикацию будут согласованы взаимно. Черновые копии всех рукописей, подготовленных в результате сотрудничества, будут переданы другой СТОРОНЕ для комментариев до представления для публикации. Обе СТОРОНЫ будут ссылаться друг на друга в последующих публикациях, где это уместно. Если между СТОРОНАМИ будет возникать недоразумение в интерпретации данных, они попытаются добиться взаимопонимания путём дружеской переписки, а если не смогут согласиться, то об этом будет упомянуто в той секции публикации, где обсуждаются результаты.

## **6. Финансирование**

6.1. Финансовая поддержка СТОРОНАМИ обязанностей, обсуждаемых в настоящем Договоре, зависит от наличия средств. Ничто в настоящем Договоре не должно истолковываться как обязывающее любую СТОРОНУ тратить деньги сверх имеющихся финансирования или ассигнований, или производить какие-либо платежи другой СТОРОНЕ в поддержку действий, описанных в Договоре.

6.2. Ничто в настоящем Договоре не ограничивает СТОРОНЫ от самостоятельного использования любых возможностей финансирования, конкретно не указанных в настоящем Договоре, или сотрудничества с другими учреждениями, университетами или организациями.

## **7. Средства массовой информации**

7.1. Ни одна из СТОРОН не будет ссылаться на другую СТОРОНУ или на её сотрудников в любых рекламированиях, рекламах, маркетингах, промоматериалах, сборе средств или в любых других целях, кроме с предварительного письменного разрешения другой СТОРОНЫ.

## **8. Ответственность**

8.1. Каждая СТОРОНА несёт единоличную ответственность за свои собственные расходы, действия или упущения, связанные или возникающие в соответствии с настоящим Договором.

8.2. Ни одна из СТОРОН не уполномочена действовать в качестве представителя-агента

Agreement shall be checked for compatibility and published in co-authorship with the approval of the PARTIES.

5.6. The PARTIES shall discuss methods of publishing research results to the point of issuance of the first publication and publication of all results. Specific rights of publication shall be mutually agreed. Draft copies of all manuscripts prepared as a result of collaboration shall be sent to the other PARTY for comment prior to submission for publication. Wherever appropriate, both PARTIES shall refer to each other in subsequent publications. Should any disagreement arise between the PARTIES concerning the interpretation of data, they shall first attempt to resolve those differences through friendly correspondence. Should they be unable to do so, then such disagreement shall be mentioned in the results discussion section of the publication

## **6. Financial Considerations**

6.1. Financial support by the two PARTIES of the responsibilities laid out in this Agreement shall be dependent on availability of funds. Nothing in this Agreement shall be construed as obligating either PARTY to spend money beyond funds already in hand or appropriated, or to pay to the other PARTY funds intended to support activities described in this Agreement.

6.2. Nothing in this Agreement shall prevent the PARTIES from pursuing independently any funding possibilities they wish, or from cooperating with other entities, universities or organizations.

## **7. Mass Media**

7.1. Neither PARTY shall refer to the other Party or its employees in any publicity, advertising, marketing, promotional materials, fund collection or for any other purpose without first obtaining the written permission of the other PARTY.

## **8. Responsibility**

8.1. Each PARTY shall be solely responsible for its own expenses, actions or omissions connected with or arising from this Agreement.

8.2. Neither PARTY shall be authorized to act as a representative or agent for any other entities or



## PART II: CRATE DESIGN

Original crate design for long distance transports from early reintroductions,  
by Chris Walzer & coll.

Modified and improved by  
personal experiences

Later successfully used by others  
Hortobagy - Orenburg

DON'T **REINVENT**  
THE WHEEL JUST TWEAK IT  
TO SUIT YOUR NEEDS



[snailpacetransformations.com](http://snailpacetransformations.com)



## PART II: CRATE DESIGN

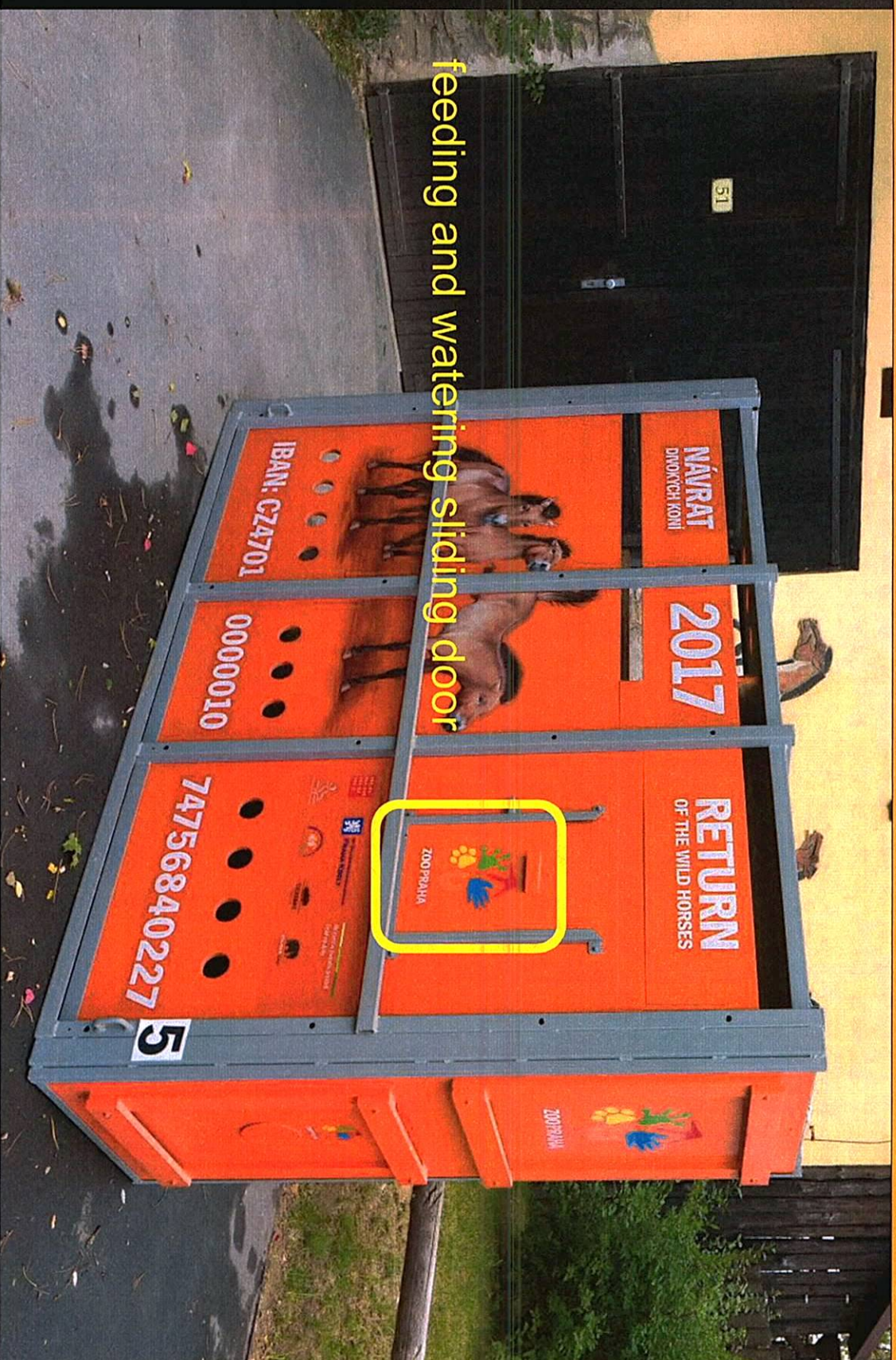


horizontal opening at rear part only





## PART II: CRATE DESIGN



feeding and watering sliding door







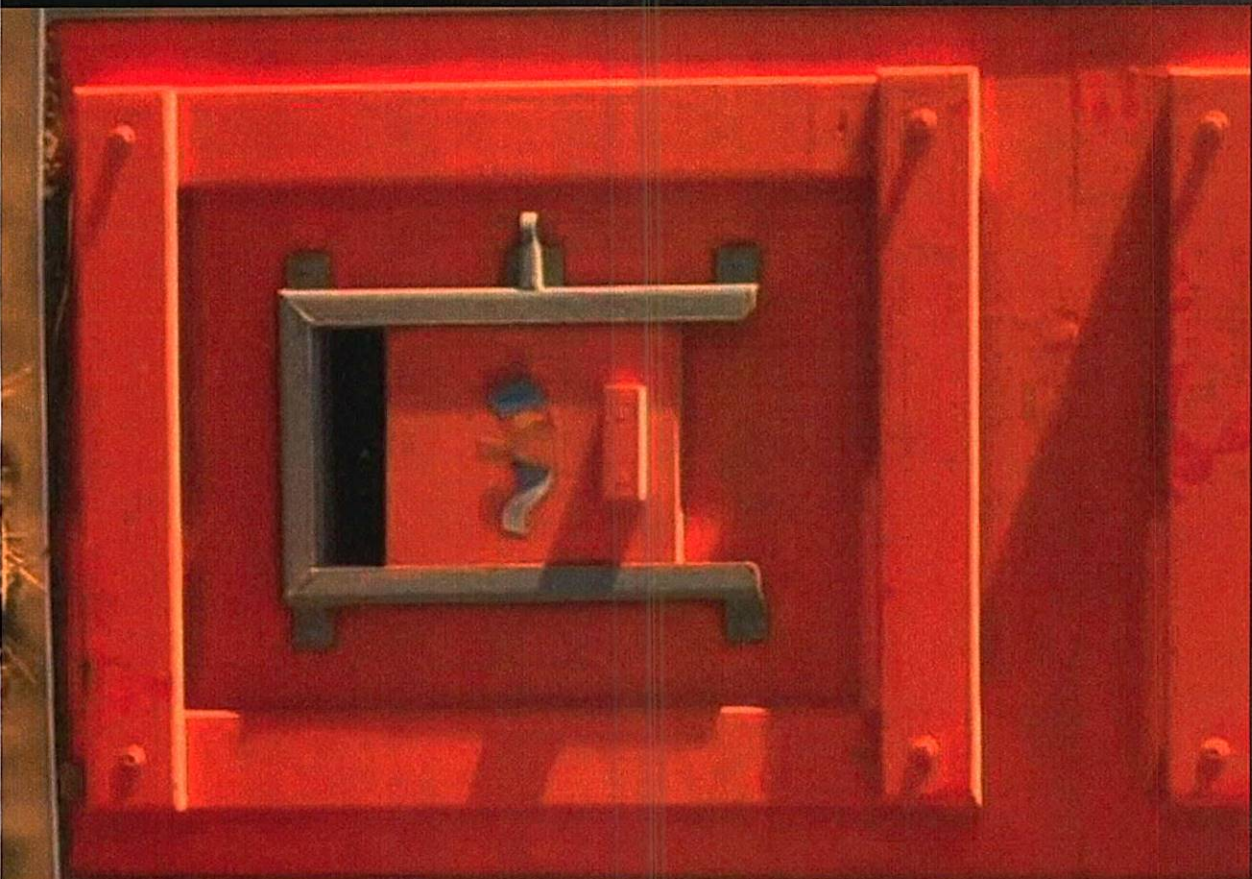
## PART II: CRATE DESIGN



Opening at the bottom part of sliding door



# Front doors

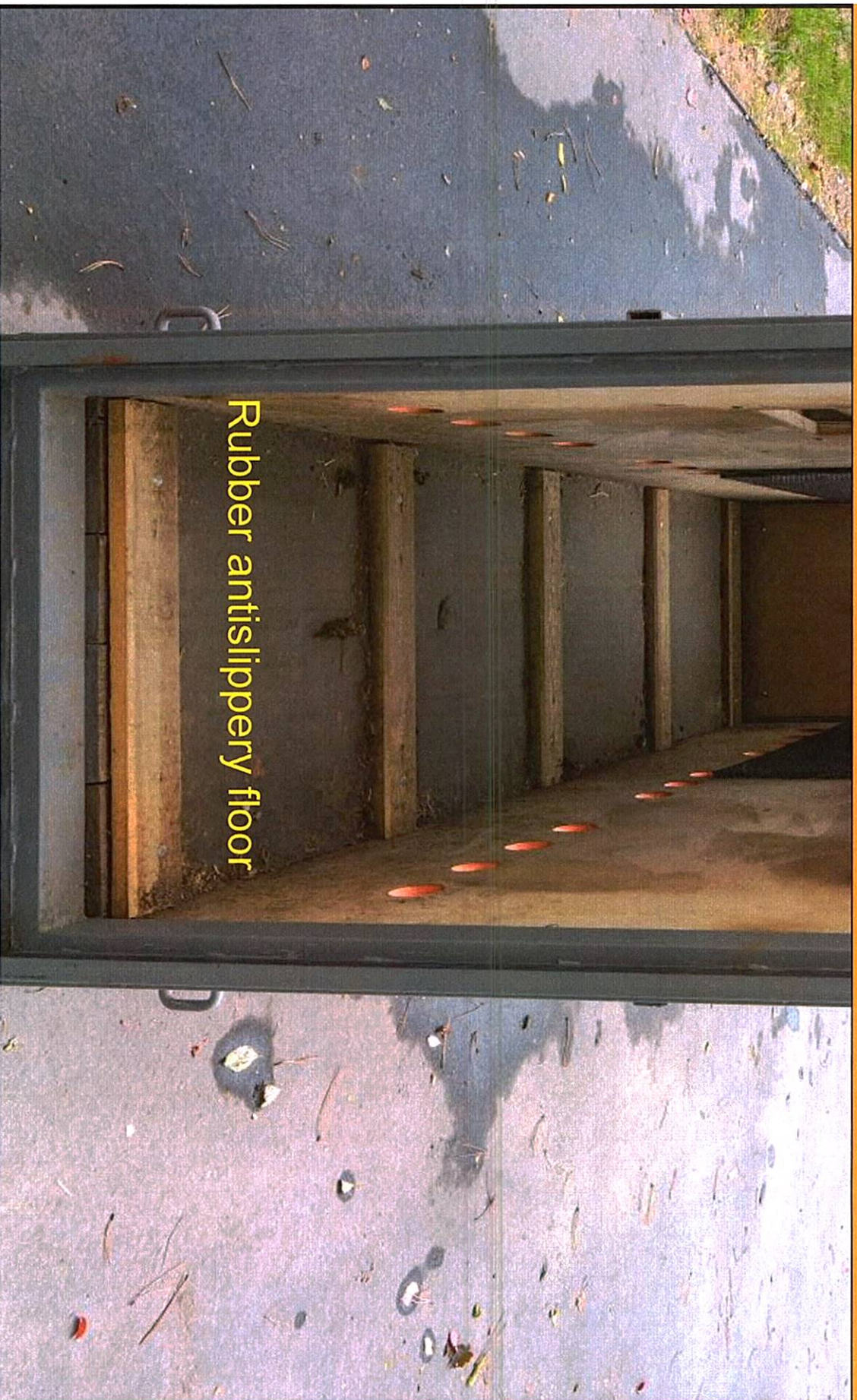








## PART II: CRATE DESIGN





## PART II: CRATE DESIGN





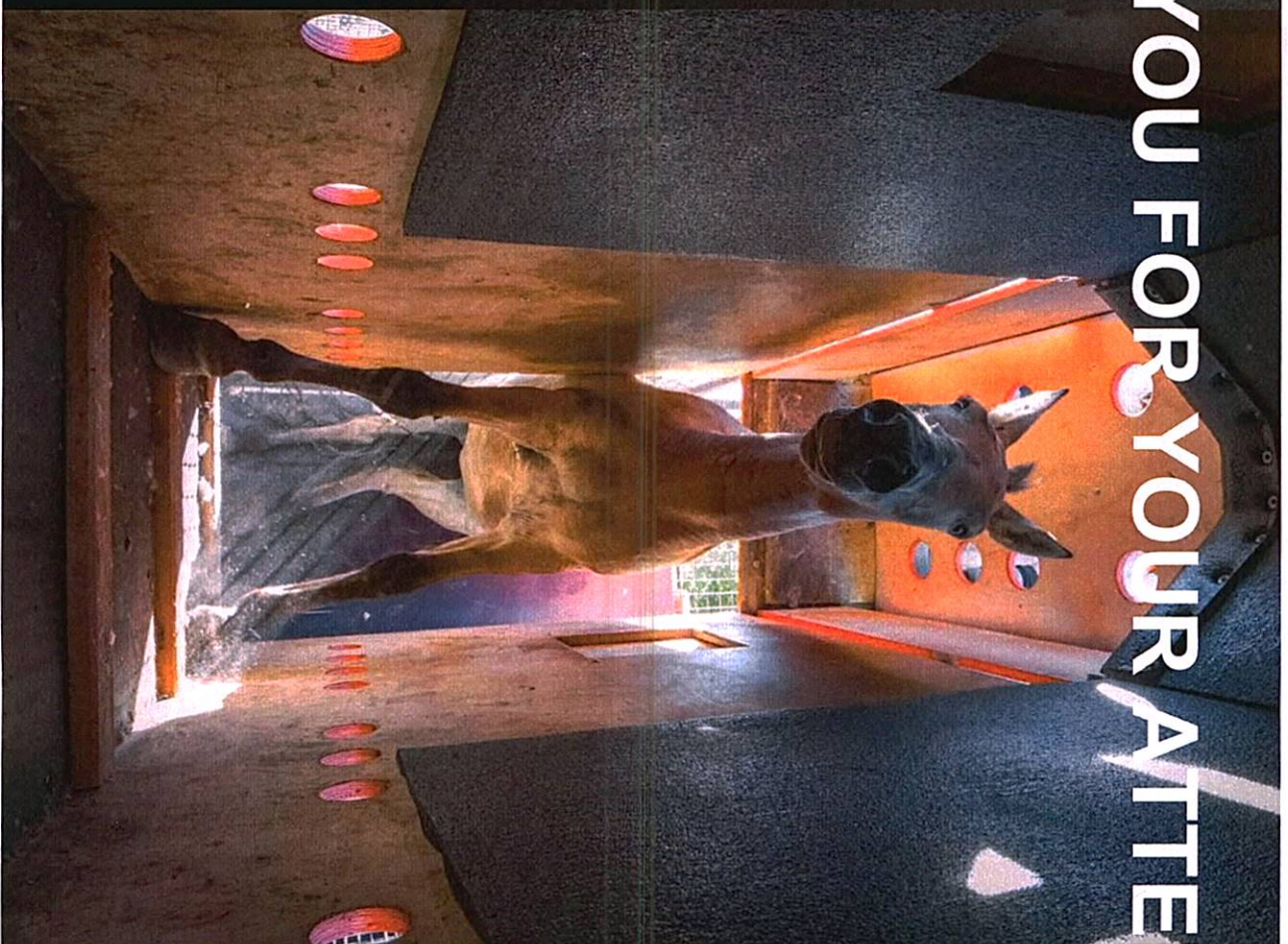
## PART II: CRATE DESIGN






Roof ventilation (9,5 cm)



THANK YOU FOR YOUR ATTENTION!





ОРИГИНАЛ / ORIGINAL					
<p>КОНВЕНЦИЯ О МЕЖДУНАРОДНОЙ ТОРГОВЛЕ ВИДАМИ ДИКОЙ ФАУНЫ И ФЛОРЫ, НАХОДЯЩИМИСЯ ПОД УГРОЗОЙ ИСЧЕЗНОВЕНИЯ (СИТЕС)</p> <p style="text-align: center;"></p> <p>CONVENTION ON INTERNATIONAL TRADE IN ENDANGERED SPECIES OF WILD FAUNA AND FLORA</p>	<input type="checkbox"/> ЭКСПОРТ EXPORT  <input checked="" type="checkbox"/> ИМПОРТ IMPORT  <input type="checkbox"/> РЕ-ЭКСПОРТ RE-EXPORT  <input type="checkbox"/> ПРОЧЕЕ OTHER	<p>РАЗРЕШЕНИЕ (PERMIT) № 19RU001068</p> <p>ЗАЩИТНАЯ МАРКА (SECURITY STAMP) №</p> <p>ДЕЙСТВИТЕЛЬНО ДО: (VALID UNTIL): 19.12.2020</p>	<p>ФЕДЕРАЛЬНАЯ СЛУЖБА ПО НАДЗОРУ В СФЕРЕ ПРИРОДОПОЛЬЗОВАНИЯ</p> <p style="text-align: center;"></p> <p>FEDERAL SERVICE FOR SUPERVISION OF NATURAL RESOURCES MANAGEMENT OF RUSSIAN FEDERATION</p> <p>ул. Б. Грузинская, 4/6 РОССИЯ, 125993, ГСП-3, Москва, Д-242 4/6 ul. B. Gruzinskaja, Moscow, D-242, GSP-3, 125993 RUSSIA</p>		
<p>Импортёр <b>РОССИЯ / RUSSIA</b></p> <p>ФГБУ «ЗАПОВЕДНИКИ ОРЕНБУРЖЬЯ» 460001, Г. ОРЕНБУРГ, УЛ. ДОНЕЦКАЯ, Д. 2/2</p> <p>FSFI ORENBURG RESERVES 460001, ORENBURG, DONETSKAYA STR., 2/2</p>		<p>Importer</p> <p>Особые условия</p> <p>Special conditions</p>			
<p>Экспортёр / Реэкспортёр <b>США / USA</b></p> <p>MINNESOTA ZOO 13000 ZOO BOULEVARD APPLE VALLEY, MINNESOTA, 55124</p>		<p>Exporter / Re-exporter</p>			
<p>Русское и латинское названия животного или растения Common russian and scientific name of animal or plant</p>	<p>Описание образцов, включая метки Description of specimens, including identifying marks or numbers</p>	<p>Приложение № Appendix №</p>	<p>Цель Purpose</p>	<p>Источник Source</p>	<p>Количество экземпляров или вес Quantity: number of specimens or weight</p>
<p><b>А</b> ЛОШАДЬ ПРЖЕВАЛЬСКОГО EQUUS PRZEWALSKII</p>	<p>ЖИВЫЕ / LIVE САМЦЫ / MALES МИКРОЧИПЫ / MICROCHIPS 00-07D4-5AC8 000780FE6D 00-07D4-0F78 933000220020897</p>	<p><b>I</b></p>	<p><b>B</b></p>	<p><b>C</b></p>	<p><b>4</b></p>
		<p>Страна происхождения Country of origin</p> <p><b>США / USA</b></p> <p>№ разрешения и дата Permit № and date</p>	<p>Страна предыдущего реэкспорта Country of last re-export</p> <p><b>XXXXXX</b></p> <p>№ разрешения и дата Permit № and date</p>		
<p><b>В</b> ЛОШАДЬ ПРЖЕВАЛЬСКОГО EQUUS PRZEWALSKII</p>	<p>ЖИВЫЕ / LIVE САМКИ / FEMALES МИКРОЧИПЫ / MICROCHIPS 0007BA2E11 00-07D4-160A 985112006694801 00-07D4-0DAE</p>	<p><b>I</b></p>	<p><b>B</b></p>	<p><b>C</b></p>	<p><b>4</b></p>
		<p>Страна происхождения Country of origin</p> <p><b>США / USA</b></p> <p>№ разрешения и дата Permit № and date</p>	<p>Страна предыдущего реэкспорта Country of last re-export</p> <p><b>XXXXXX</b></p> <p>№ разрешения и дата Permit № and date</p>		
<p>Настоящее разрешение выдано: This permit is issued by: Россия Москва Moscow Russia</p>		<p>19.12.2019</p> <p>Дата (Date)</p> <p style="text-align: center;"></p> <p>Заместитель РУКОВОДИТЕЛЯ А.М.АМИРХАНОВ</p> <p>DEPUTY DIRECTOR A.M.AMIRKHANOV</p>			
<p>Подтверждение вывоза (экспорта/реэкспорта)</p>		<p>Заполняется в пункте пересечения таможенной границы Российской Федерации</p>			
<p>Название образца</p>	<p>Количество</p>	<p>Пункт пропуска</p>			
<p><b>А</b></p>		<p>Дата</p>			
<p><b>В</b></p>		<p>Подпись должностного лица и печать</p>			
		<p>Номер коносамента/авианакладной</p>			
<p>Для живых животных данное разрешение действительно только, если условия транспортировки соответствуют рекомендациям СИТЕС. For live animals, this permit is only valid if the transport conditions conform to the CITES Guidelines for Transport of Live Animals or, in the case of air transport, to the IATA Live Animals Regulations</p>					
<p>Административный орган СИТЕС в России Management Authority of CITES in the Russian Federation</p>		<p>Для международной связи / For international contacts Тел./Tel.: 7(499) 254 73 22. Факс/Fax: 7(499) 254 73 22. Для связи внутри страны / For national contacts Тел./Tel.: (499) 254 73 22, 254 42 47. Факс/Fax: (499) 254 73 22.</p>			





МИНИСТЕРСТВО ПРИРОДНЫХ РЕСУРСОВ  
И ЭКОЛОГИИ РОССИЙСКОЙ ФЕДЕРАЦИИ

**ФЕДЕРАЛЬНАЯ СЛУЖБА  
ПО НАДЗОРУ В СФЕРЕ  
ПРИРОДОПОЛЬЗОВАНИЯ  
(Росприроднадзор)**

ул. Б. Грузинская, д. 4/6,  
Москва, ГСП-3, 125993  
тел. (499) 254-54-00, факс (499) 254-58-88  
сайт: www.rpn.gov.ru, e-mail: od@rpn.gov.ru

20.12.2019 № АА-10-03-32/36204  
на № 446/01 от 05.12.2019

О выдаче разрешения СИТЕС

Росприроднадзор в соответствии с заявлением ФГБУ «Заповедники Оренбуржья» (вх. № 69490/32 от 10.12.2019) и на основании пункта 5.3.7 Положения о Федеральной службе по надзору в сфере природопользования, утвержденного постановлением Правительства Российской Федерации от 30.07.2004 № 400, направляет разрешение (сертификат) СИТЕС 19RU001068 от 19.12.2019 на импорт восьми живых особей лошади Пржевальского.

Приложение: на 3 л.

Заместитель Руководителя

А.М. Амирханов

Сорокина Инна Олеговна  
(499) 766-23-09, вн.1142



## CITES Permit App 66472D

Cate, Emily B <emily\_cate@fws.gov>

Fri 6/12/2020 9:49 AM

To: Kokkeler, Laurie (MNZOO) <laurie.kokkeler@state.mn.us>

Dear Ms. Kokkeler,

I have your application dated 01/08/2020, received 01/17/2020, regarding the proposed export of 4.4 Przewalski's horses to the Orenburg Nature Reserve in Russia. I apologize for the delay in processing your application.

Please provide the following information so that I may continue to process your application:

1. In question 11 of the application, you stated that the Minnesota Zoo sent \$2,500 in 2004 to the Hustai Nuruu National Park in Mongolia and \$2,500 in 2006 to the Smithsonian Institute. Could you please provide receipts for these transactions and a statement from each organization as to where specifically this money went to enhance the conservation of the Przewalski's horse in the wild?
2. Also in question 11, you stated that staff from the Minnesota Zoo conducted studies in Hustai Nuruu National Park from 2017-2019. Can you please send a report and/or research proposal of the activities that occurred there? Is the study complete or ongoing and if ongoing, are staff from the Minnesota Zoo still involved? In addition, can you please provide documentation (e.g., a receipt) regarding the funding of the installation of a second water hole at the park?
3. Can you please provide the pedigree analysis referred to in the application which concludes that the genetic diversity of Orenburg would increase 12.5%? Is this part of the SSP for the species? Can you please provide an electronic copy of the AZA breeding and transfer plan for the species?

Please let me know if you have any questions or concerns.

In accordance with 50 CFR 13.11(e), if the requested information is not received by this office by **July 27, 2020**, your application will be abandoned and administratively closed. Once a file is closed you will need to submit a new application and all required fees for the Service to consider your proposed activity. Please refer to permit number 66472D in your correspondence.

Respectfully,  
Emily

**Emily Cate** | Permits Biologist  
U.S. Fish and Wildlife Service | International Affairs  
Division of Management Authority | Branch of Permits  
5275 Leesburg Pike, MS IA  
Falls Church, VA 22041-3803





[EXTERNAL] FW: CITES Permit App 66472D

Kokkeler, Laurie (MNZOO) <laurie.kokkeler@state.mn.us>

Tue 7/7/2020 3:50 PM

To: Cate, Emily B <emily\_cate@fws.gov>

📎 4 attachments (3 MB)

USA horse pedigrees.pdf; Phorse transfers to Orenburg.pdf; AZA -USA Asian Wild Horse For Russia 2020.pdf; 2020 AWHorse SSP plan draft.pdf;

This email has been received from outside of DOI - Use caution before clicking on links, opening attachments, or responding.

Hi Emily

I apologize for my delayed response getting back to you about our Asian wild horse application. Kevin Willis did the pedigree analysis and made the recommendations because he is an expert geneticist. Unfortunately he is no longer at the MN Zoo. (See Tony's email below)

We have had major lay-offs and re-organizing of our staff here due to the Covid pandemic. Because of our staffing levels and loss of gate revenues we have also had to post pone this export to the Fall of 2021. I am thinking that CITES permits are valid for 6 months once issued for endangered species. Am I correct? Or is it 12 months?

Can you please let me know what our options are to if this is granted and should expire before we can export?

Would I be able to request an extension?

I am also still working with Seth for your answers to question 1 and 2.

I will send him another reminder.

Thank you

Laurie

Laurie Kokkeler | Animal Registrar | [laurie.kokkeler@state.mn.us](mailto:laurie.kokkeler@state.mn.us)

o: 952.431.9271 | c: 651.528.1672 | [MNZOO.ORG](http://MNZOO.ORG)

13000 Zoo Boulevard Apple Valley MN 55124



*Connecting people, animals and the natural world to save wildlife.*

---

From: Fisher, Tony (MNZOO) <tony.fisher@state.mn.us>

Sent: Friday, June 12, 2020 10:54 AM

To: Kokkeler, Laurie (MNZOO) <laurie.kokkeler@state.mn.us>

Subject: RE: CITES Permit App 66472D

Hi Laurie,

Hopefully this will address the pedigree analysis part. I don't have the actual analysis part because Kevin did that and I don't think there is any documentation on that analysis. He used Poplink and PMx



software and I don't think anything can get saved from that. I also included the most recent SSP plan which shows the MK list.

I'll work with Seth to get the conservation funding reports.

Tony

**Tony Fisher** | Director of Animal Collections | [tony.fisher@state.mn.us](mailto:tony.fisher@state.mn.us)  
952.431.9275 [MNZOO.ORG](http://MNZOO.ORG)  
13000 Zoo Boulevard Apple Valley MN 55124



*Connecting people, animals and the natural world to save wildlife.*

---

**From:** Cate, Emily B <[emily\\_cate@fws.gov](mailto:emily_cate@fws.gov)>  
**Sent:** Friday, June 12, 2020 8:50 AM  
**To:** Kokkeler, Laurie (MNZOO) <[laurie.kokkeler@state.mn.us](mailto:laurie.kokkeler@state.mn.us)>  
**Subject:** CITES Permit App 66472D

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Respectfully,  
Emily

**Emily Cate** | Permits Biologist  
U.S. Fish and Wildlife Service | International Affairs  
Division of Management Authority | Branch of Permits  
5275 Leesburg Pike, MS:IA  
Falls Church, VA 22041 3803



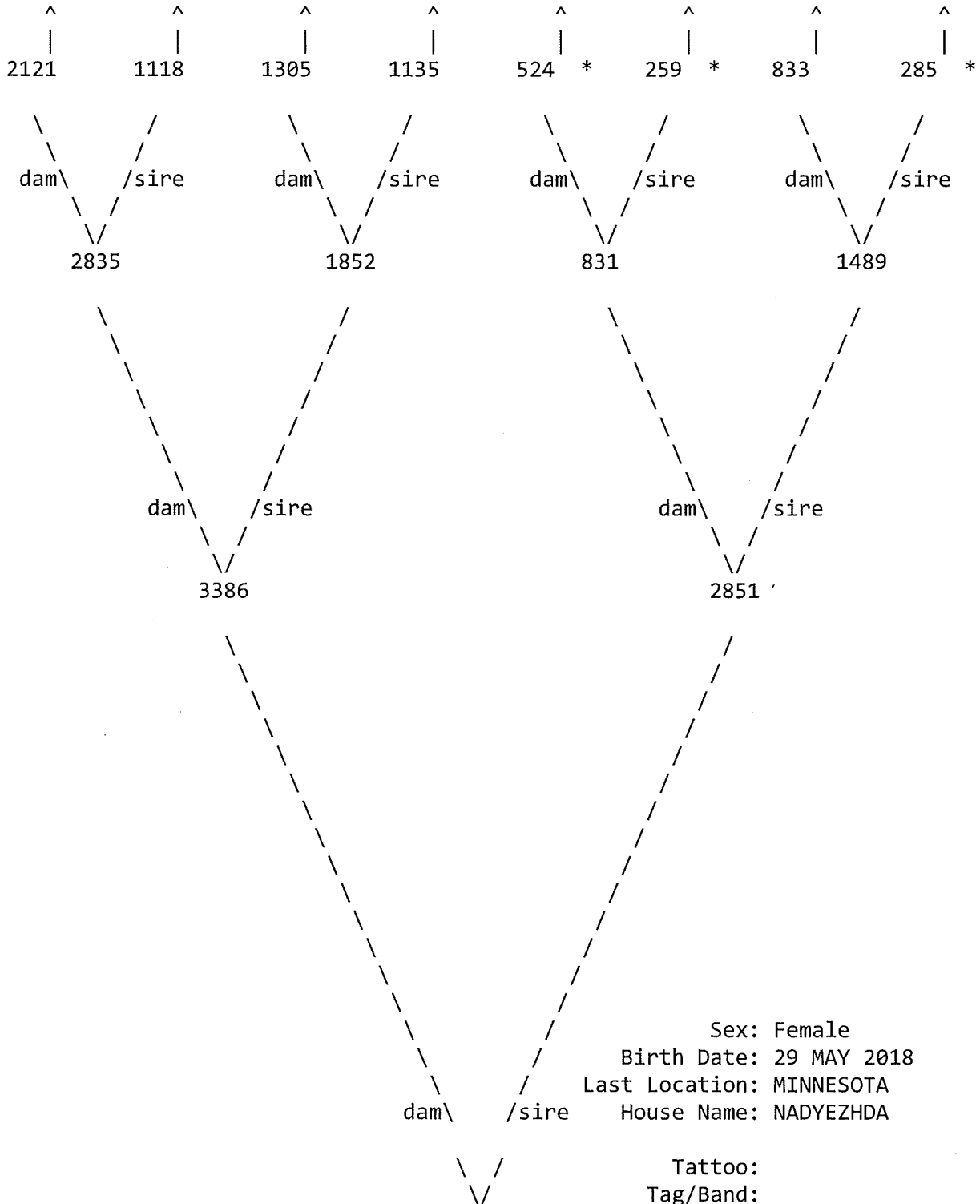


Pedigree Chart Report  
PRZEWALSKI'S HORSE Studbook

Page 1

Taxon Name: EQUUS FERUS PRZEWALSKII

Studbook Number: NEW003





NEW003

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^ Pedigree continues beyond top of page...

Compiled by: Dr. Waltraut Zimmermann thru Minnesota Zoological Garden

Data current thru: 18 Feb 2015 International

Printed on 1 Nov 2019 using Sparks v1.54

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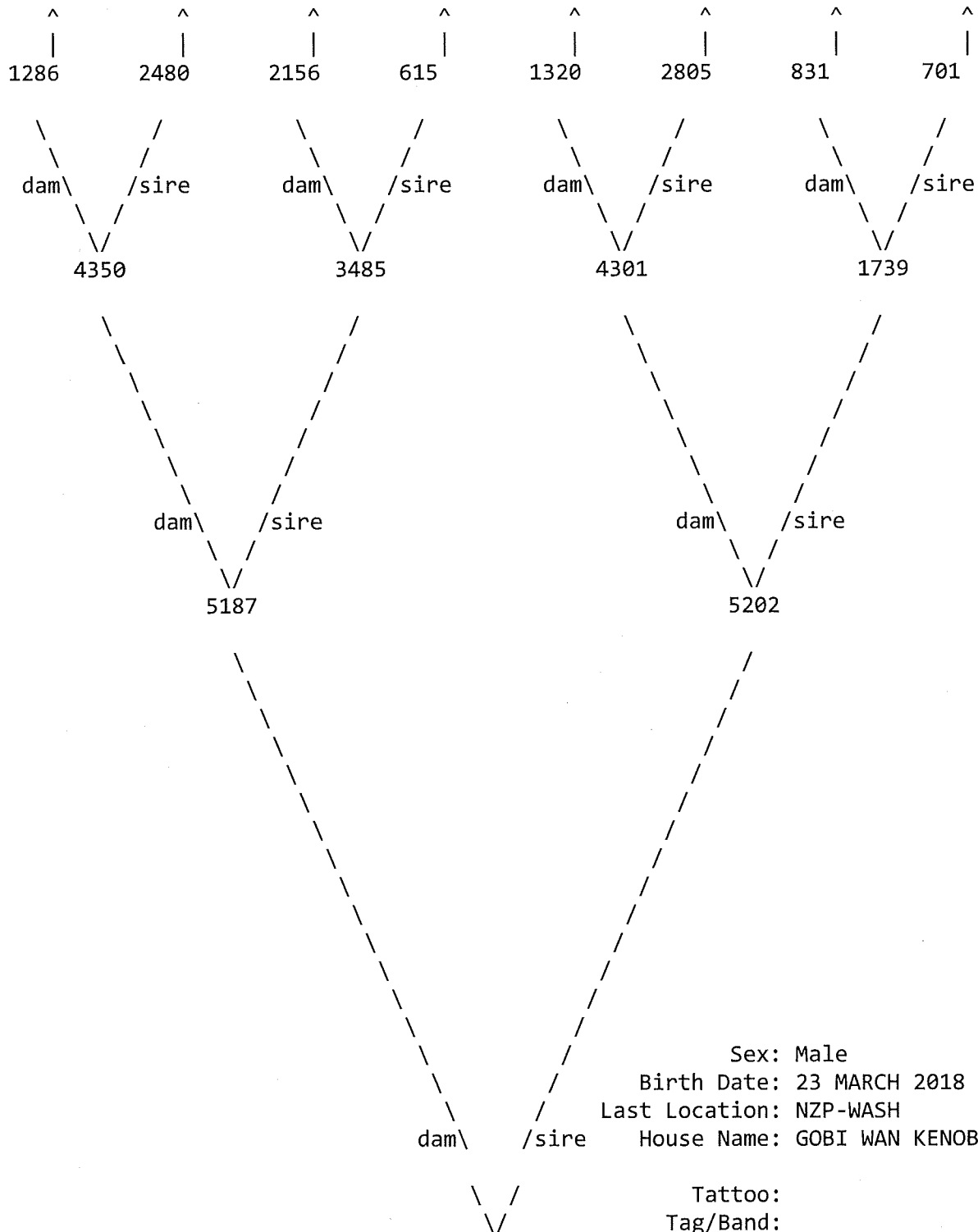


Pedigree Chart Report  
PRZEWALSKI'S HORSE Studbook

Page 1

Taxon Name: EQUUS FERUS PRZEWALSKII

Studbook Number: NEW004





NEW004

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Data current thru: 18 Feb 2015 International

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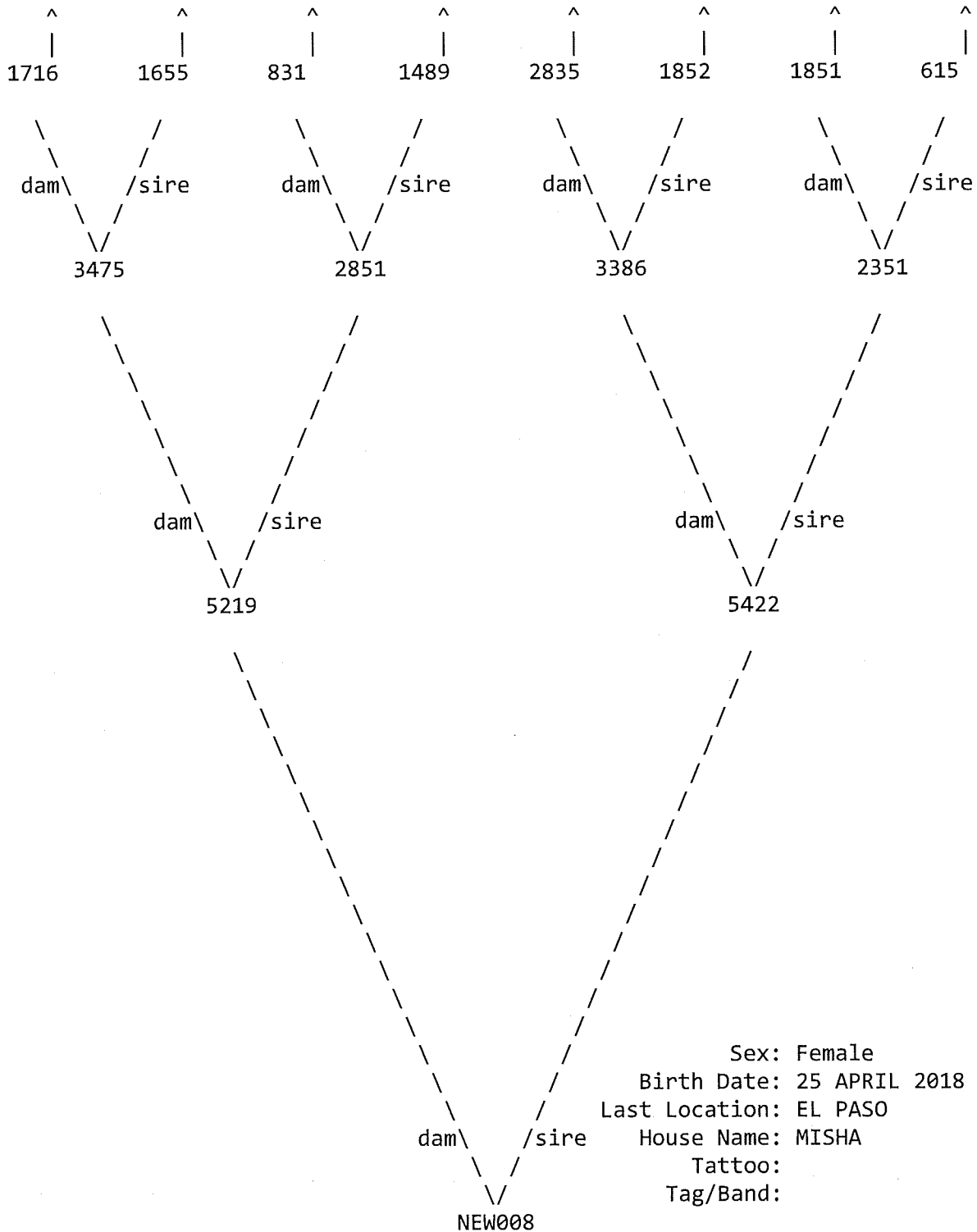


Pedigree Chart Report  
PRZEWALSKI'S HORSE Studbook

Page 1

Taxon Name: EQUUS FERUS PRZEWALSKII

Studbook Number: NEW008





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^ Pedigree continues beyond top of page...

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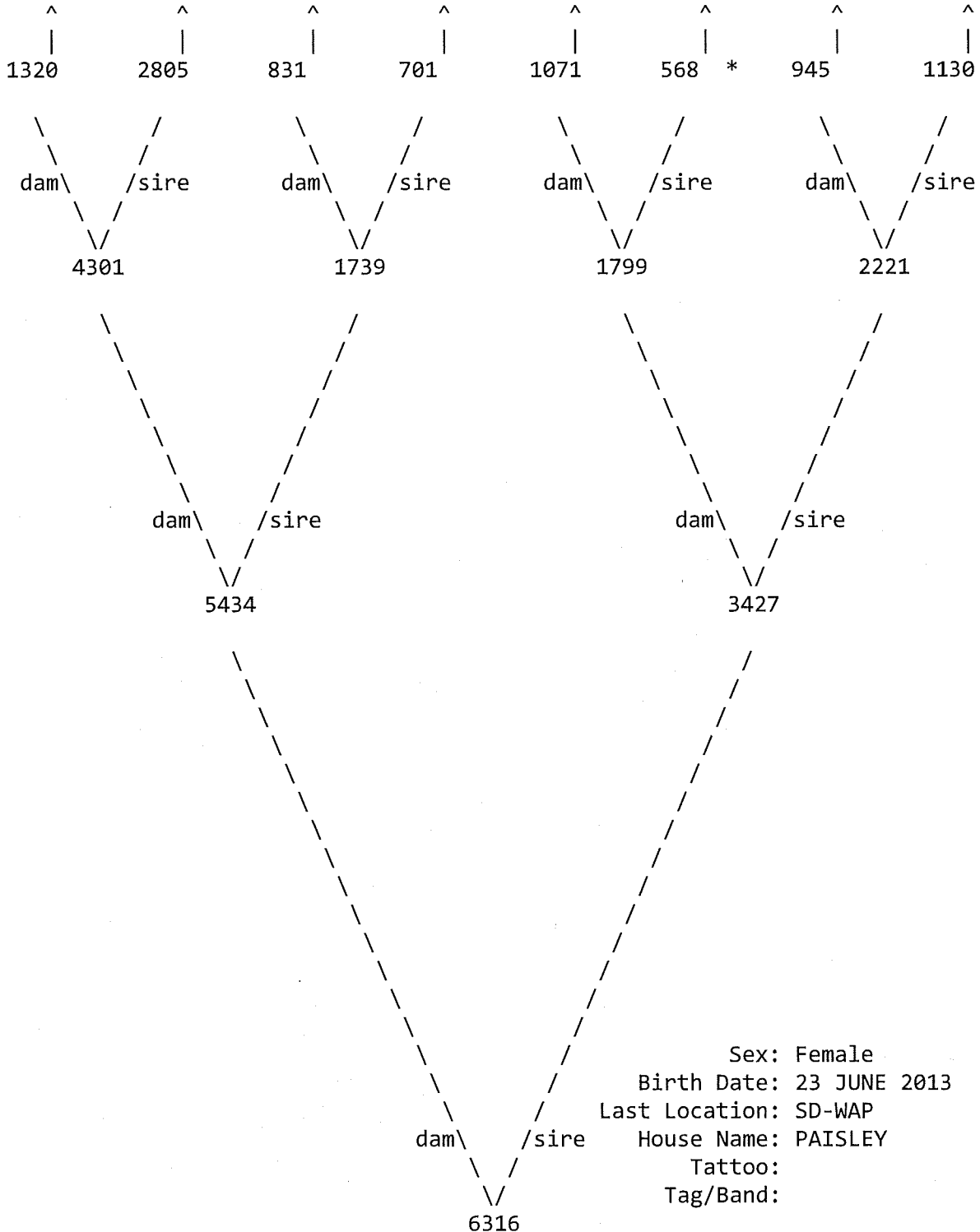


Pedigree Chart Report  
PRZEWALSKI'S HORSE Studbook

Page 1

Taxon Name: EQUUS FERUS PRZEWALSKII

Studbook Number: 6316





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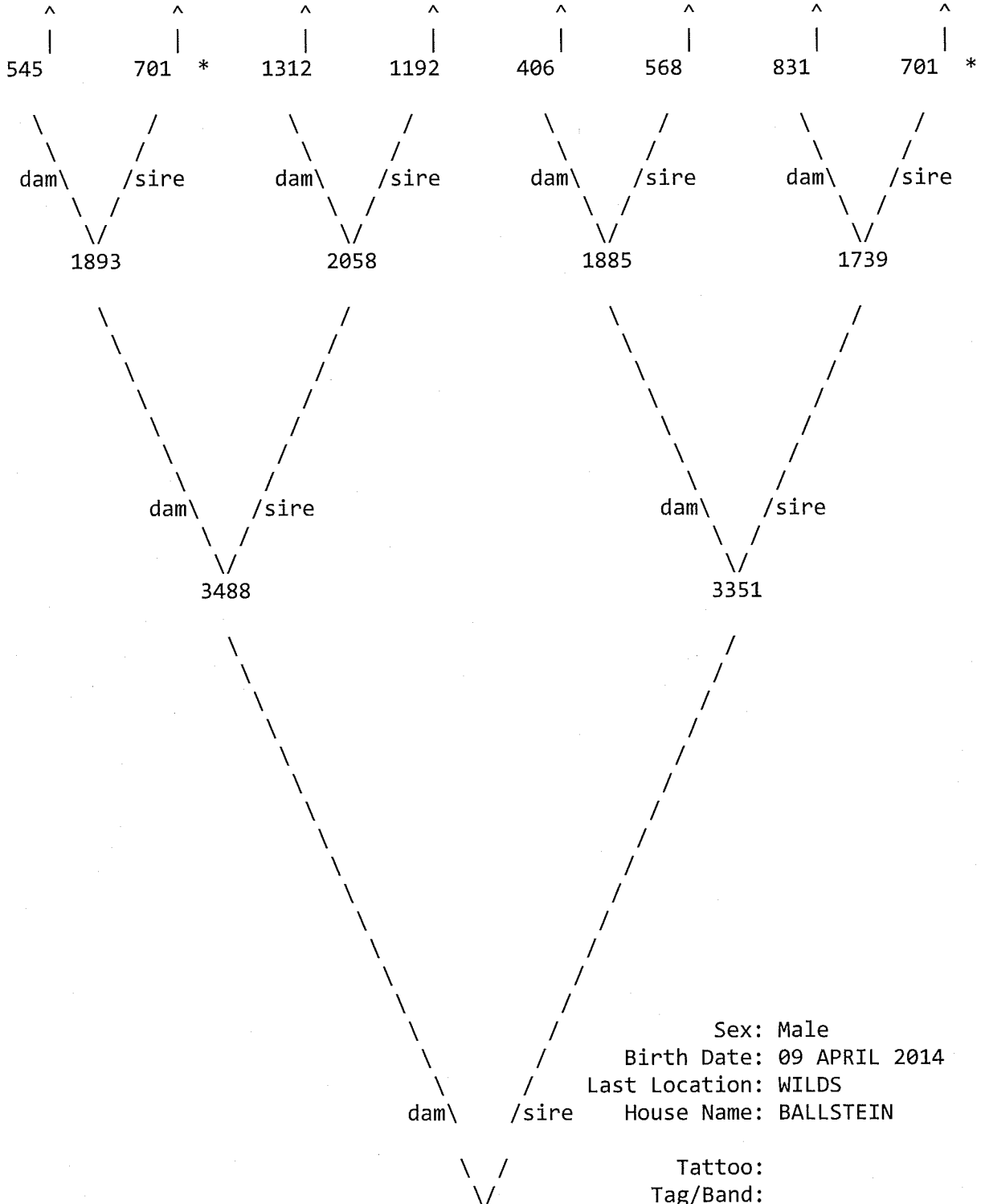


Pedigree Chart Report  
PRZEWALSKI'S HORSE Studbook

Page 1

Taxon Name: EQUUS FERUS PRZEWALSKII

Studbook Number: 6380





6380

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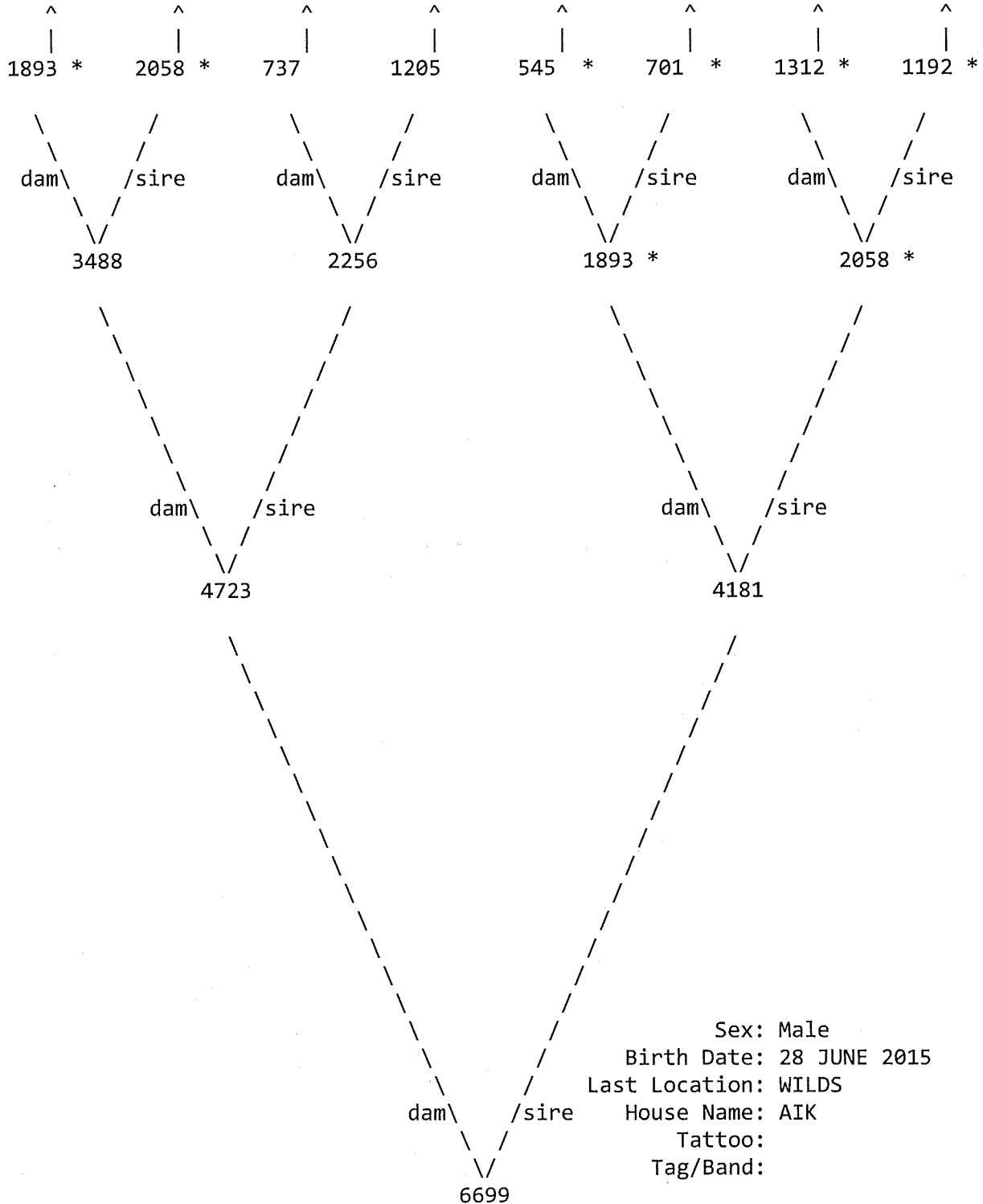


Pedigree Chart Report  
PRZEWALSKI'S HORSE Studbook

Page 1

Taxon Name: EQUUS FERUS PRZEWALSKII

Studbook Number: 6699





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Pedigree Chart Report  
PRZEWALSKI'S HORSE Studbook

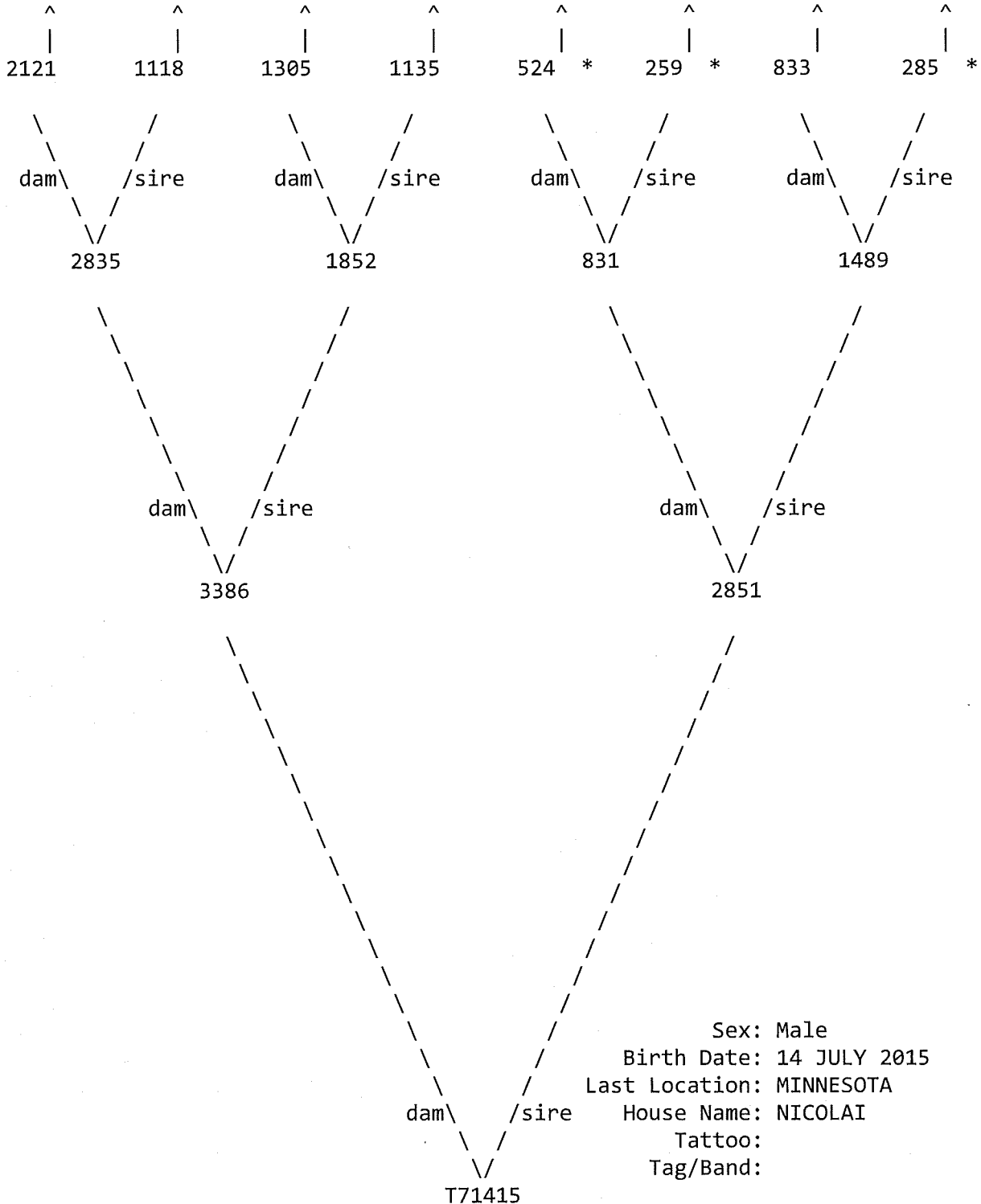
Page 1

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Taxon Name: EQUUS FERUS PRZEWALSKII

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Studbook Number: T71415





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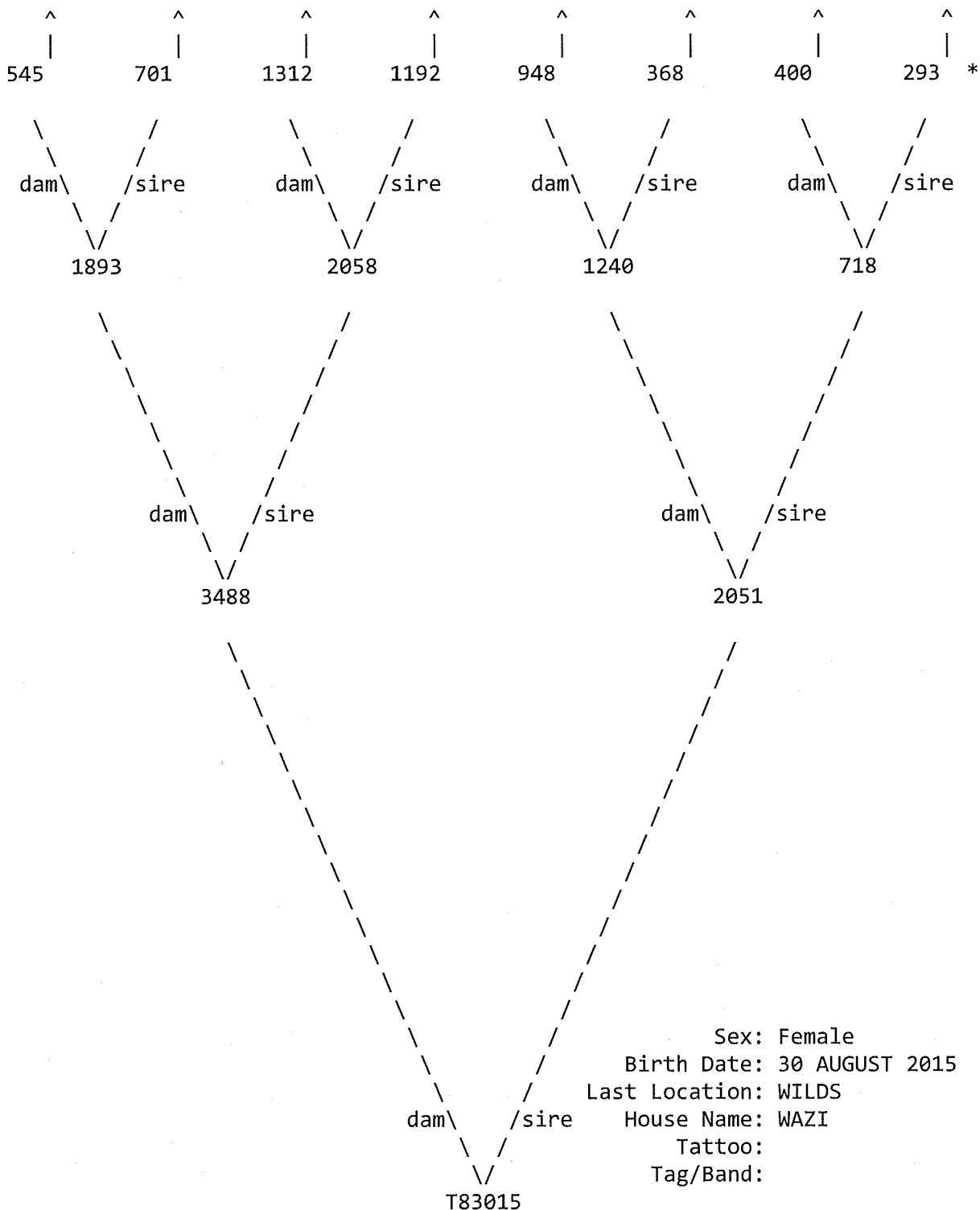


Pedigree Chart Report  
PRZEWALSKI'S HORSE Studbook

Page 1

Taxon Name: EQUUS FERUS PRZEWALSKII

Studbook Number: T83015





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Data current thru: 18 Feb 2015 International  
Printed on 1 Nov 2019 using Sparks v1.54  
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# Parentage of P-horses for Orenburg from TAKH

Name	Sex	Birth	Studbook No	Chip number	Sire, <i>Stb.№</i>	Dam	
Aven	M	20/06/2006	4904	250229600069037	3173 Bruant	<i>Stb.№</i>	<i>name</i>
Sangria	F	16/05/2011	5924	250229600068989	3173 Bruant	1922	Alice
Olive	F	26/05/2012	6607	250229600068186	3681 Altai	3468	Stipa
Lavande	F	30/04/2012	5956	250229600068185	3682 Casper	5682	Allumette
Selena	F	12/05/2008	5584	250229600068416	3173 Bruant	3658	Almira
Paprika	M	03/07/2014	6321	250229600068077	3173 Bruant	3661	Sublimee
						5584	Selena

## Przewalski horses transferred from Hungary to Orenburg Reserve on Nov 20, 2016

	Stb No	Name	Sex	Date of birth	Chip No	Brand	Sire	Dam
1.	5629	Makos	Male	19.05.2010	348094100110416	HT 5762	3831 F. Soós	3505 Dalma
2.	6256	Pehely	Female	30.05.2013	348094100110484	HT 6256	3876 Farkas	5453 Lelle
3.	6290	Padizsán	Female	10.06.2013	348094100110485	HT 6290	4539 Huba	5151 Kála
4.	6322	Plutó	Female	29.06.2013	348094100110486	HT 6322	3903 Fakó	4979 Joghurt
5.	6365	Puma	Female	29.08.2013	348094100110489	HT 6365	4761 Igar	5183 Kikerics
6.	6403	Ragyog	Female	09.05.2014	348094100065132	HT 6403	3903 Fakó	4583 Honorka
7.	6405	Rajzol	Female	09.05.2014	348094100110490	HT 6405	4518 Hetény	3769 Emese
8.	6452	Riza	Female	04.06.2014	348094100065140	HT 6452	4518 Hetény	5614 Múle
9.	6389	Rangos	Female	29.04.2014	348094100065138	HT 6389	3908 Fergeteg	3556 Dicsó
10.	5957	Opal	Male	02.05.2012	348094100065135	HT 5957	3838 Félix	5388 Lóhere
11.	5992	Origo	Male	20.05.2012	348094100110417	HT 5992	3831 F. Soós	4490 Helka
12.	6297	Pompas	Male	13.06.2013	348094100110420	HT 5965	4539 Huba	4697 Helena
13.	6344	Pompej	Male	30.07.2013	348094100110411	HT 6000	4518 Hetény	3378 Csenge
14.	6407	Regnum	Male	09.05.2014	348094100110413	HT 6297	4762 Inas?	4697 Helena

## Przewalski horses transferred from Hungary to Orenburg Reserve on Oct. 10, 2017

15.	6494	Regia	Female	09.09.2014	348094100065136	HT 6494	3844 Prinz	3924 Flóra
16.	6633	Suba	Male	02.05.2015	348098100179367	HT 6633	4762 Inas	5799 Nina
17.	6634	Szivar	Male	03.05.2015	348098100182669	HT 6634	3901 Fülöp	5376 Lilom
18.	6666	Sandro	Male	19.05.2015	348098100180331	HT 6641	5091 Jellem	5601 Mályva
19.	6729	Szamoca	Male	04.09.2015	348098100227309	HT 6729	3831 F. Soós	3766 Eper
20.	6672	Szaffi	Female	24.05.2015	348098100227203	HT 6672	4539 Huba	5151 Kála
21.	6613	Saba	Female	11.04.2015	348098100178598	HT 6613	3876 Farkas	5453 Lelle
22.	6616	Savanna	Female	19.04.2015	348098100178737	HT 6616	4761 Igar	5183 Kikerics
23.	6622	Szirom	Female	28.04.2015	348098100178757	HT 6622	3838 Félix	6001 Orchidea



24.	6635	Szonett	Female	04.05.2015	348098100182711	HT 6635	4993 Jakab	5959 Óda
25.	6636	Solyom	Female	04.05.2015	348098100183446	HT 6636	5138 Kereesen	6046 Onedin
26.	6638	Sofia	Female	05.05.2015	348098100182640	HT 6638	4762 Inas	5995 Odera
27.	6644	Szikra	Female	08.05.2015	348098100183086	HT 6644	4761 Igar	4569 Hanga
28.	6671	Szonja	Female	23.05.2015	348098100181876	HT 6671	3903 Fakó	5217 Kati
29.	6662	Salome	Female	18.05.2015	348098100228141	HT 6662	4993 Jakab	6005 Ofélia
30.	6712	Susi	Female	12.07.2015	348098100226912	HT 6712	4539 Huba	5132 Kincsó

## AZA Asian Wild Horse Release Candidates

### USA export to Russia in 2020

Increases Genetic Diversity (GD) in Orenburg from 0.7908 to 0.8109 (12.5% increase)

#### United States Group

<u>Studbook ID</u>	<u>Local ID</u>	<u>Sex</u>	<u>Birthdate</u>	<u>Location</u>	<u>Brand</u>	<u>Transponder</u>	<u>Name</u>
NEW 008	201942	Female	4/25/2018	El Paso	LK50 Left Hip	985 112 006 694 801 Base of left ear	Misha
NEW 003	15078	Female	5/29/2018	Minnesota	LK49 Left Hip	00-07D4-0DAE Base of right ear	Nadyezhda
T71415	14258	Male	7/14/2015	Minnesota	LK44 Left Hip	00-07D4-0F78 Base of right ear	Nicolai
NEW 004	115639	Male	3/23/2018	NZP-CRC	4 Left Hip	933000220020897 Base of right ear	Gobi Wan Kenobi
6316	613252	Female	6/23/2013	SD-WAP	LK51 Left Hip	0007BA2E11 Interscapular	Paisley
T83015	115062	Female	8/30/2015	WILDS	7 Right hip	00-07D4-160A Base of right ear	Wazi
6699	115049	Male	6/28/2015	WILDS	16 Right hip	000780FE6D Base right ear	Aik
6380	114024	Male	4/9/2014	WILDS	7 Left hip	00-07D4-5AC8 Base of right ear	Ballstein



**El Paso 2018 filly NEW008 "Misha"**



**MZG 2018 filly NEW003 "Nadyezhda"**



**MZG 2015 stallion T71415 "Nicolai"**

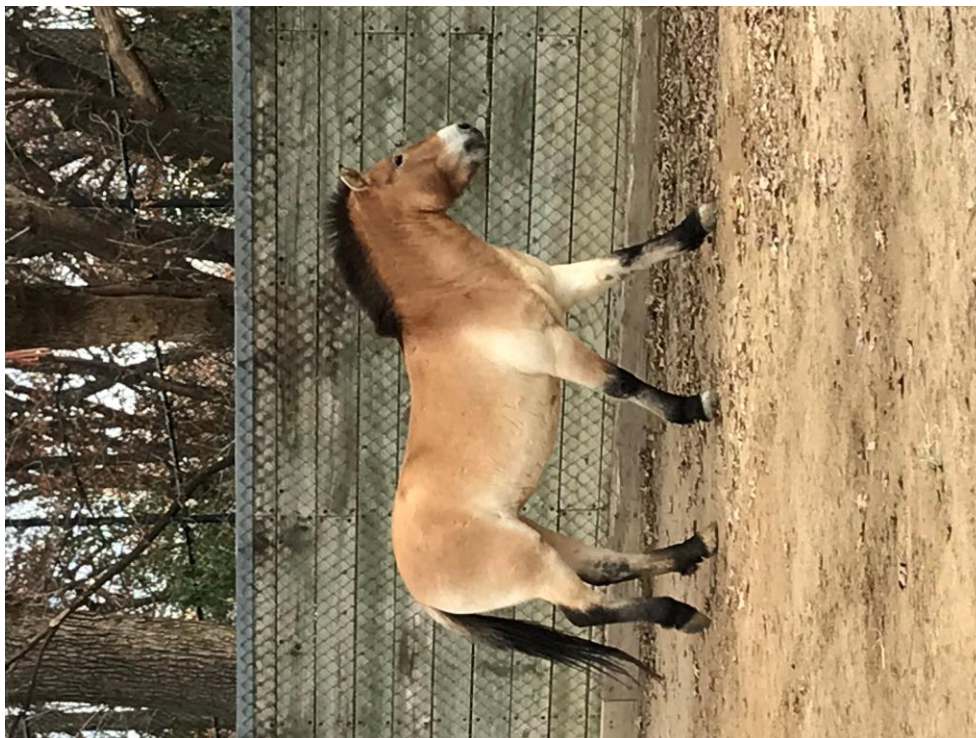




**NZP-CRC 2018 Stallion Colt NEW004 on left “Gobi Wan Kenobi”**



**SDWAP 2013 Mare 6316 “Paisley”**





**Wilds 2015 filly T83015 “Wazi”**



**Wilds 2014 stallion 6380 “Ballstein”**



**Wilds 2015 stallion 6699 “Aik”**



# Asian Wild Horse

*Equus ferus przewalskii*

## 2020 Draft Breeding and Transfer Plan



Asian Wild Horse harem in Orenburg Nature Reserve, Russia

### Species Survival Plan Program Coordinator

Tony Fisher, Minnesota Zoo

[tony.fisher@state.mn.us](mailto:tony.fisher@state.mn.us)

### North American Regional Studbook Keeper

Amanda Faliano, Denver Zoo

[AFaliano@denverzoo.org](mailto:AFaliano@denverzoo.org)

### Population Advisor

Kevin Willis, Minnesota Zoo

[kevin.willis@state.mn.us](mailto:kevin.willis@state.mn.us)

Data current to October 1, 2019



Recommendations proposed by Yellow SSP's are non-binding—participation is voluntary. Recommendations involving non-AZA institutions do not imply endorsement of the non-member by the AZA or the SPMAG Advisor.



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CALGARY Calgary Zoo, Garden and Prehistoric Park	12
CHICAGOBR Chicago Zoological Society	12
DENVER Denver Zoological Gardens	12
EL PASO El Paso Zoo	13
FOSSILRIM Fossil Rim Wildlife Center	13
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GRANBY Granby Zoo / Zoo de Granby	14
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## **Description of Population**

### Introduction

This population is descended from a total of 14 founders, most of which were collected from the wild from 1900-1910 (although one was collected in 1947). The species was thought to be extinct in the wild by 1969. The current gene diversity of the population is 0.7922 (an increase from 0.7878 in 2018), and there is no possibility of additional founders. Therefore, there is no possibility of attaining gene diversity of 0.90 let alone maintaining gene diversity at that level for 100 years. For this reason “Green” Species Survival Plan status is not possible for this species. The goals for this population are to maintain gene diversity at the highest level possible and to maintain a demographically stable population which retains the potential to produce surplus if and when animals are needed for reintroductions.

### Managed Population

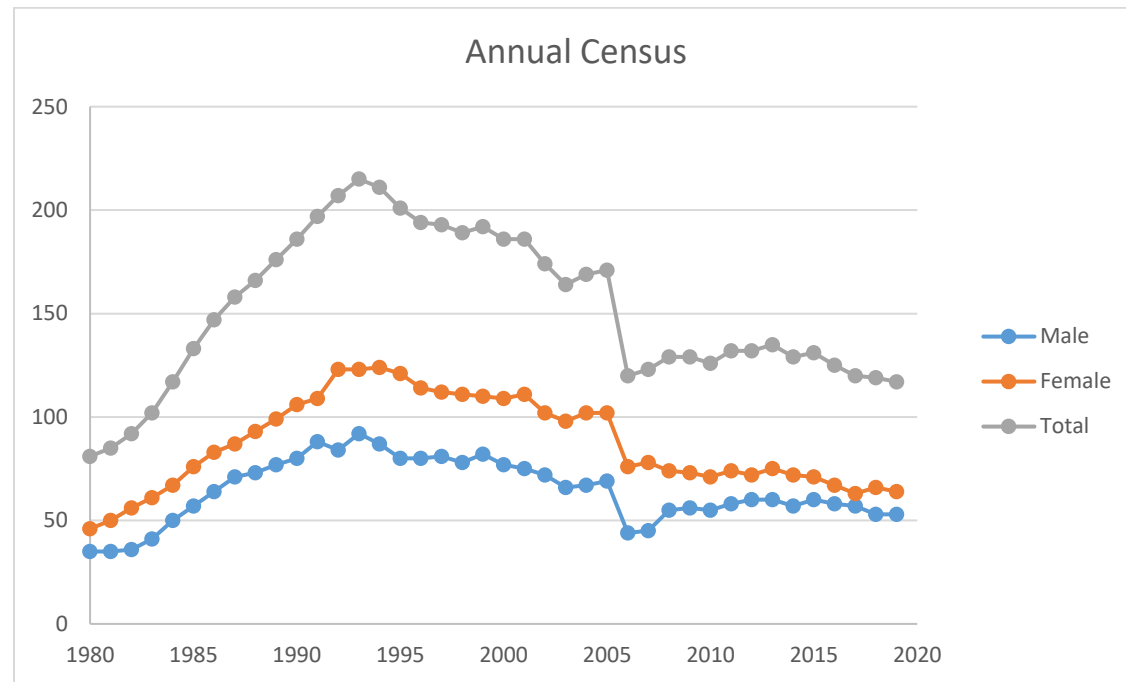
The population in North America consists of 117 (53.64) animals in 19 Institutions (17 AZA Members and 2 non-AZA Members). As compared to the 2018 Breeding and Transfer plan, this represents a reduction of 1 animal and 2 institutions. The AZA Equid Advisory Group has designated a target population of 150 animals for this species; however, that number is greater than the desired population size based on a survey of members. The demographic goal is to maintain the population at or slightly above its current size.

### Genetics

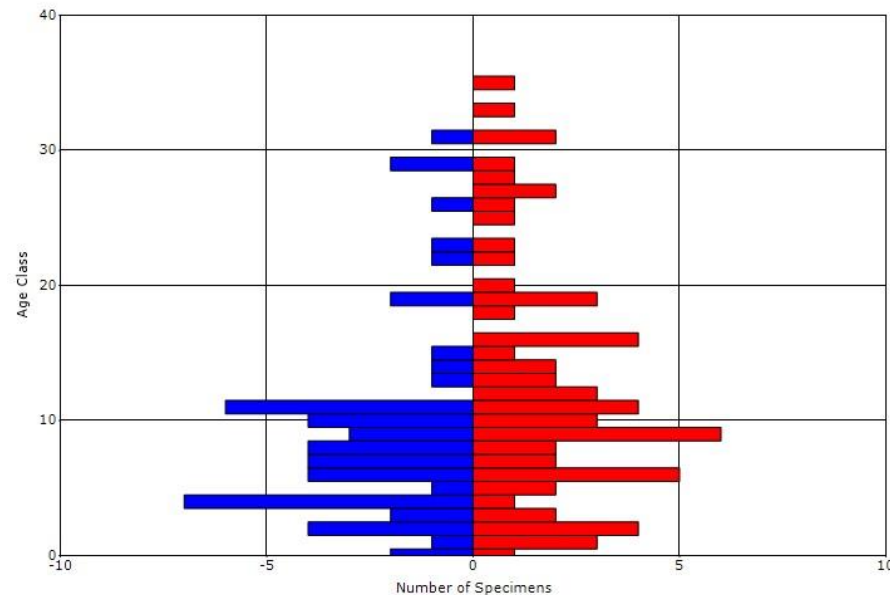
Although gene diversity slightly increased since the last Breeding and Transfer Plan; there is nothing that can be done to significantly increase the gene diversity of this population. No new founders exist, and with living horses as many as 14 generations removed from the wild caught ancestors the founder lines are so intermixed there is very little ability to change their relative frequencies. The rate of loss of gene diversity and the rate of increase in average inbreeding coefficients will be slowed to the extent possible by preferentially breeding animals with relatively low mean kinships. Currently the population average mean kinship is 0.2078 and the average inbreeding coefficient is 0.1966. For context, that level of inbreeding is a bit greater than the mid-point between half siblings (0.125) and full siblings (0.25). Despite the relatively high and increasing levels of inbreeding, there has not been a significant change in the infant mortality over the past 20 years.

## Demography

In contrast to genetics, from a demographic perspective this population can be considered relatively healthy. The population growth rate based on birth and death rates since 1 January 2000 is essentially 1.00 for both males and females indicating that the population could be sustained at the current level if the population had a stable age distribution. Based on the age pyramid, the population sex/age distribution is slightly younger than a stable age distribution indicating the population has at least a short-term greater potential for increase if that was the goal.







### Management Plan Strategy and Goals

The genetic management goal is to retain gene diversity by preferentially breeding animals with low mean kinships. Starting from the current level of gene diversity (0.7922) and projecting forward using a generation interval of 10.8 years and a genetically effective to actual population size ratio of 0.29, the level of gene diversity in 100 years will be approximately 0.70.

The demographic goal in this plan is to maintain the population at its current size. Although the target population size was set at 150 animals by the AZA Equid Advisory Group, the survey of institutions' wants and needs resulted in a combined desired population size of 120. In modeling the projected mortality, stabilizing the population at 120 animals would require production of 8 to 9 offspring per year under the assumption that the birth sex ratio is 50/50. If the birth sex ratio continues to be approximately 60/40, additional offspring will need to be produced. In this plan there are 20 recommended breedings.

All horses in this SSP are being managed in one population, regardless of previous A or B line designation. This decision was made by consensus of holders in an SSP masterplan meeting held at National Zoological Park's Conservation and Research Center (CRC) in Front Royal, Virginia on April 15, 2004. The gene diversity of this population has now increased from 74% to 79% since 2004 largely due to the new strategy of utilizing the entire population in one managed program (mixed line) without separate A and B lines. The Executive Summary from that meeting is attached as Appendix 4.

### Reintroduction in Russia

Eight horses from this SSP will be transferred to the Orenburg Nature Reserve in Russia. Initially this transfer was scheduled to happen in the fall of 2020. However, due to the COVID crisis in the USA and Russia, it will be postponed to the fall of 2021. Horse candidates for transfer were selected based upon age, sex, and relatedness to the current horse population in the 64 square mile reserve. Additionally, horses were tested and screened for the “fox” gene or red factor in coat color, as requested by reserve staff in Russia. The final group detailed below were selected from five different zoos and population analysis indicates they will increase the genetic diversity of their current population (n=38) from 0.798 to 0.8109 (12.5% increase). After approval, the candidate horses were transferred to the Minnesota Zoo in the fall of 2019 to acclimate to the cold winter conditions of Orenburg, Russia.

<u>Sex</u>	<u>Birthdate</u>	<u>Location</u>	<u>Brand</u>	<u>Transponder</u>	<u>Name</u>	<u>Studbook ID</u>
Female	4/25/2018	El Paso	LK50 Left Hip	985 112 006 694 801 Base of left ear	Misha	7569
Female	5/29/2018	Minnesota	LK49 Left Hip	00-07D4-0DAE Base of right ear	Nadyezhda	7316
Male	7/14/2015	Minnesota	LK44 Left Hip	00-07D4-0F78 Base of right ear	Nicolai	6713
Male	3/23/2018	NZP-CRC	4 Left Hip	933000220020897 Base of right ear	Gobi Wan Kenobi	7568
Female	6/23/2013	SD-WAP	LK51 Left Hip	0007BA2E11 Interscapular	Paisley	6316
Female	8/30/2015	WILDS	7 Right hip	00-07D4-160A Base of right ear	Wazi	6726
Male	6/28/2015	WILDS	16 Right hip	000780FE6D Base right ear	Aik	6699
Male	4/9/2014	WILDS	7 Left hip	00-07D4-5AC8 Base of right ear	Ballstein	6380



## Summary of Breeding and Transfer Recommendations

SB ID	Location	Local ID	Sex	AgeYears	Disposition	New Location	Breeding With
1310	GARDENCTY	116037	Female	35	Hold	DoNotBreed	
1510	NZP-WASH	107275	Female	33	Hold	DoNotBreed	
1713	BATTLE CR	M09009	Female	31	Hold	DoNotBreed	
1739	SD-WAP	694413	Male	31	Hold	DoNotBreed	OK to surplus
1738	SD-WAP	602372	Female	31	Hold	DoNotBreed	OK to surplus
2051	WILDS	107038	Male	30	Hold	DoNotBreed	
2052	NZP-CRC	109676	Male	29	Hold	DoNotBreed	
2156	CHICAGOBR	4772	Female	29	Hold	DoNotBreed	
2211	ST FELICI	B00295	Female	28	Hold	DoNotBreed	
2401	TORONTO	28012	Female	27	Hold	DoNotBreed	
2411	SD-WAP	693085	Female	27	Hold	DoNotBreed	
2490	TORONTO	40566	Male	26	Hold	DoNotBreed	
2639	WILDS	105058	Female	26	SendTo	NZP-WASH	DoNotBreed
2737	MONCTON	MH0025	Female	25	Hold	DoNotBreed	
2971	GARDENCTY	116036	Male	23	Hold	DoNotBreed	
2985	NY BRONX	M05200	Female	23	Hold	DoNotBreed	
3386	MINNESOTA	11961	Female	19	Hold	Breed	5917
3398	MINNESOTA	11962	Female	19	Hold	Breed	5917
3427	SD-WAP	600452	Male	19	Hold	DoNotBreed	OK to surplus
3472	BATTLE CR	99M19	Male	22	Hold	DoNotBreed	
3475	NY BRONX	M05199	Female	22	Hold	DoNotBreed	
3488	WILDS	990510	Female	20	SendTo	NZP-WASH	DoNotBreed
3495	CHICAGOBR	113067	Female	19	Hold	DoNotBreed	
3707	TORONTO	37554	Female	18	Hold	DoNotBreed	
3925	NZP-CRC	114187	Female	16	Hold	DoNotBreed	
3926	CALGARY	107208	Female	16	Hold	Breed	5915
4181	WILDS	MM0707	Male	19	Hold	DoNotBreed	
4301	SD-WAP	607187	Female	16	Hold	Breed	7179
4474	NY BRONX	M08153	Female	16	Hold	DoNotBreed	
4483	SD-WAP	604417	Male	15	Hold	DoNotBreed	OK to surplus
4494	DENVER	A06188	Female	15	Hold	DoNotBreed	
4677	TORONTO	40510	Female	14	Hold	DoNotBreed	
4722	DENVER	A08402	Male	14	Hold	DoNotBreed	

4723	WILDS	106019	Female	14	SendTo	NZP-WASH	DoNotBreed
4733	NY BRONX	M08071	Female	14	Hold	DoNotBreed	
4790	NZP-CRC	114844	Male	13	Hold	DoNotBreed	
4887	CHICAGOBR	7215	Female	13	Hold	DoNotBreed	
4953	GRANBY	M07008	Female	13	SendTo	BC Wildlife	DoNotBreed
5046	CALGARY	108568	Female	12	Hold	Breed	5915
5095	GARDENCTY	117001	Female	12	Hold	DoNotBreed	
5163	HEMMINGFD	M17163	Male	11	Hold	DoNotBreed	
5178	TORONTO	42654	Male	11	Hold	DoNotBreed	
5187	NZP-CRC	114335	Female	11	Hold	Breed	7186
5188	NZP-CRC	114547	Female	11	Hold	DoNotBreed	
5193	GRANBY	M08041	Male	11	SendTo	BC Wildlife	DoNotBreed
5195	BISMARCK	3131	Male	11	Hold	Breed	6319
5202	NZP-CRC	114545	Male	11	Hold	DoNotBreed	
5219	EL PASO	201824	Female	11	Hold	Breed	5422
5354	SD-WAP	608376	Male	11	Hold	DoNotBreed	OK to surplus
5366	WILDS	109011	Female	11	SendTo	NZP-WASH	DoNotBreed
5422	EL PASO	201080	Male	10	Hold	Breed	5219
5434	SD-WAP	609245	Female	10	Hold	Breed	7179
5438	NZP-CRC	114454	Male	10	Hold	DoNotBreed	
5445	SD-WAP	609272	Female	10	Hold	DoNotBreed	OK to surplus
5449	TORONTO	43715	Male	10	Hold	Breed	7177, 7178
5597	WINNIPEG	N00045	Male	10	Hold	DoNotBreed	
5602	TORONTO	46661	Female	10	Hold	DoNotBreed	
5605	WILDS	110025	Male	10	Hold	DoNotBreed	
5618	NY BRONX	M10068	Female	10	Hold	DoNotBreed	
5626	NY BRONX	M10074	Female	10	Hold	DoNotBreed	
5630	TORONTO	44777	Female	10	Hold	DoNotBreed	
5649	WILDS	110035	Male	9	Hold	DoNotBreed	
5664	NZP-CRC	114609	Female	9	Hold	Breed	7186
5669	WILDS	110072	Female	9	SendTo	NZP-Wash	DoNotBreed
5674	WINNIPEG	N00046	Male	9	Hold	DoNotBreed	
5913	NY BRONX	M11047	Female	9	Hold	DoNotBreed	
5914	ST FELICI	B14137	Female	9	Hold	DoNotBreed	
5915	CALGARY	109427	Male	8	Hold	Breed	5046, 3926
5917	MINNESOTA	14008	Male	8	Hold	Breed	3386, 3398, 5920, 6339
5918	WILDS	111041	Male	8	Hold	DoNotBreed	
5919	WILDS	111043	Male	8	Hold	DoNotBreed	



5920	MINNESOTA	13153	Female	8	Hold	Breed	5917
6032	FOSSILRIM	11307	Male	7	Hold	DoNotBreed	OK to Surplus
5941	FOSSILRIM	11308	Male	7	Hold	DoNotBreed	OK to Surplus
6072	NZP-CRC	114836	Female	7	Hold	Breed	7186
6086	NZP-CRC	114846	Male	7	Hold	Breed	7576, 7315, 7878
6160	FOSSILRIM	11309	Male	7	Hold	DoNotBreed	OK to surplus
6166	SD-WAP	613074	Female	7	Hold	DoNotBreed	OK to surplus
6245	FOSSILRIM	11310	Male	6	Hold	DoNotBreed	OK to surplus
6258	DENVER	A13107	Female	6	Hold	DoNotBreed	
6316	MINNESOTA	15411	Female	6	SendTo	Russia	Release in 2021
6319	BISMARCK	3144	Female	6	Hold	Breed	5195
6338	SD-WAP	613287	Male	6	Hold	DoNotBreed	OK to surplus
6339	MINNESOTA	13659	Female	6	Hold	Breed	5917
6341	NY BRONX	M18151	Male	6	Hold	Breed	7176, 7184
6370	SD-WAP	613380	Female	6	Hold	DoNotBreed	OK to surplus
6380	MINNESOTA	15426	Male	6	SendTo	Russia	Release in 2021
6468	SD-WAP	614304	Female	5	Hold	DoNotBreed	OK to surplus
6475	SD-WAP	614323	Male	5	Hold	DoNotBreed	OK to surplus
6493	SD-WAP	614439	Female	5	Hold	DoNotBreed	OK to surplus
6656	CALGARY	109414	Male	5	Hold	DoNotBreed	OK to neuter
6680	CALGARY	109430	Male	4	Hold	DoNotBreed	OK to neuter
6699	MINNESOTA	15427	Male	4	SendTo	Russia	Release in 2021
6704	WILDS	115050	Male	4	Hold	DoNotBreed	
6713	MINNESOTA	14258	Male	4	SendTo	Russia	Release in 2021
6714	WILDS	115054	Male	4	Hold	DoNotBreed	
6726	MINNESOTA	15421	Female	4	SendTo	Russia	Release in 2021
6733	DENVER	A15262	Male	4	Hold	DoNotBreed	
7172	MINNESOTA	14479	Male	4	Hold	DoNotBreed	
7176	NY BRONX	M18142	Female	3	Hold	Breed	6341
7177	TORONTO	50590	Female	3	Hold	Breed	5449
7178	TORONTO	50591	Female	3	Hold	Breed	5449
7179	NZP-CRC	115489	Male	3	SendTo	SDWAP	Breed 4301, 5434
7184	NY BRONX	M17094	Female	2	Hold	Breed	6341
7186	MINNESOTA	14781	Male	2	SendTo	NZP-CRC	Breed 5187, 6072, 5664
7576	CALGARY	109941	Female	2	SendTo	NZP-CRC	Breed 6086 in 2021
7315	CALGARY	109966	Female	1	SendTo	NZP-CRC	Breed 6086 in 2021
7316	MINNESOTA	15078	Female	1	SendTo	Russia	Release in 2021
7569	MINNESOTA	15404	Female	2	SendTo	Russia	Release in 2021

7878	CALGARY	110682	Female	0	SendTo	NZP-CRC	Breed 6086 in 2022
7880	CALGARY	110683	Male	0	Hold	DoNotBreed	
7567	NZP-CRC	115638	Female	2	Hold	DoNotBreed	
7568	MINNESOTA	15420	Male	2	SendTo	Russia	Release in 2021
7572	NZP-CRC	115654	Male	2	Hold	DoNotBreed	
7579	NZP-CRC	115670	Male	1	Hold	DoNotBreed	
7595	BISMARCK	3296	Male	1	Hold	DoNotBreed	



## Recommendations by Institution

### **BATTLE CR**

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Binder Park Zoo

7400 Division Dr., Battle Creek, MI 49014-9500, USA

Tel: +1.269.979.1351; ksippel@binderparkzoo.org

Contact: Kathryn Sippel

Animals currently at the institution:

1713	BATTLE CR	M09009	Female	32	Hold	DoNotBreed
3472	BATTLE CR	99M19	Male	22	Hold	DoNotBreed

### **BC WILDLIFE PARK**

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9077 Dallas Dr, Kamloops, BC Canada

Tel: +1.250.573.3242; tracy@bcwildlife.org

Contact: Tracy Reynolds

Animals currently at the institution:

Animals planned to be moved to this institution:

4953	From GRANDBY	M07008	Female	13	To	BCWILDLIFE	DoNotBreed
5193	From GRANDBY	M08041	Male	11	To	BCWILDLIFE	DoNotBreed

### **BISMARCK**

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Dakota Zoo

P.O. Box 711, Bismarck, ND 58502-0711, USA

Tel: +1.701.223.7543; director@dakotazoo.org

Contact: Terry Lincoln

Animals currently at the institution:

5195	BISMARCK	3131	Male	11	Hold	Breed 6319
6319	BISMARCK	3144	Female	6	Hold	Breed 5195
7595	BISMARCK	3296	Male	1	Hold	DoNotBreed

**CALGARY**

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Calgary Zoo, Garden & Prehistoric Pa  
1300 Zoo Road NE, Calgary, Alberta T2E 7V6, Canada  
Tel: +1.403.232.9300; colleenb@calgaryzoo.com  
Contact: Colleen Baird

Animals currently at the institution:

3926	CALGARY	107208	Female	16	Hold	Breed 5915	
5046	CALGARY	108568	Female	12	Hold	Breed 5915	
5915	CALGARY	109427	Male	8	Hold	Breed	5046, 3926
6656	CALGARY	109414	Male	5	Hold	DoNotBreed	OK to neuter
6680	CALGARY	109430	Male	4	Hold	DoNotBreed	OK to neuter
7576	CALGARY	109941	Female	2	SendTo	NZP-CRC	
7315	CALGARY	109966	Female	1	SendTo	NZP-CRC	
7878	CALGARY	110682	Female	0	SendTo	NZP-CRC	
7880	CALGARY	110683	Male	0	Hold	DoNotBreed	

**CHICAGOBR**

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Chicago Zoological Society  
3300 Golf Rd., Brookfield, IL 60513, USA  
Tel: +1.708.688.8400; joan.daniels-tantillo@czs.org  
Contact: Joan Daniels-Tantillo

Animals currently at the institution:

2156	CHICAGOBR	4772	Female	29	Hold	DoNotBreed
3495	CHICAGOBR	8448	Female	19	Hold	DoNotBreed
4887	CHICAGOBR	7215	Female	13	Hold	DoNotBreed

**DENVER**

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Denver Zoological Gardens  
City Park, Denver, CO 80205, USA  
Tel: +1.303.376.4800; vkunter@denverzoo.org  
Contact: Vicktoria Kunter



Animals currently at the institution:

4494	DENVER	A06188	Female	15	Hold	DoNotBreed
4722	DENVER	A08402	Male	14	Hold	DoNotBreed
6258	DENVER	A13107	Female	6	Hold	DoNotBreed
6733	DENVER	A15262	Male	4	Hold	DoNotBreed

## **EL PASO**

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El Paso Zoo

4001 East Paisano, El Paso, TX 79905-4223, USA

Tel: +1.915.521.1850; [sanchezay@elpasotexas.org](mailto:sanchezay@elpasotexas.org)

Contact: Abel Sanchez

Animals currently at the institution:

5219	EL PASO	201824	Female	11	Hold	Breed 5422
5422	EL PASO	201080	Male	10	Hold	Breed 5219

## **FOSSILRIM**

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Fossil Rim Wildlife Center

2155 County Road 2008, Glen Rose, TX 76043, USA

Tel: +1.254.897.2960; [adame@fossilrim.org](mailto:adame@fossilrim.org)

Contact: Adam Eyres

Animals currently at the institution:

5941	FOSSILRIM	11308	Male	7	Hold	DoNotBreed	OK to surplus
6032	FOSSILRIM	11307	Male	8	Hold	DoNotBreed	OK to surplus
6160	FOSSILRIM	11309	Male	7	Hold	DoNotBreed	OK to surplus
6245	FOSSILRIM	11310	Male	6	Hold	DoNotBreed	OK to surplus

**GARDENCTY**

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Lee Richardson Zoo  
312 Fynnup Drive, Garden City, KS 67846-0499, USA  
Tel: +1.620.276.1250; Kristi.newland@gardencityks.us  
Contact: Kristi Newland

Animals currently at the institution:

1310	GARDENCTY	116037	Female	35	Hold	DoNotBreed
2971	GARDENCTY	116036	Male	23	Hold	DoNotBreed
5095	GARDENCTY	117001	Female	12	Hold	DoNotBreed

**GRANBY**

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Granby Zoo / Zoo de Granby  
525 St. Hubert Street, Granby, Quebec J2G 5P3, Canada  
Tel: +1.450.372.9113; crouthier@zoodegranby.com  
Contact: Chantal Routhier

Animals currently at the institution:

4953	GRANBY	M07008	Female	13	SendTo	BC WILDLIFE
5193	GRANBY	M08041	Male	11	SendTo	BC WILDLIFE

**HEMMINGFD**

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Parc Safari / F.A.P.S.  
850, Route 202, Hemmingford, Quebec J0L 1H0, Canada  
Tel: +1.450.247.2727; rh@parcsafari.com  
Contact: Sophie Robidoux

Animals currently at the institution:

2737	HEMMINGFD	M18027	Female	25	Hold	DoNotBreed
5163	HEMMINGFD	M17163	Male	9	Hold	DoNotBreed



## **MADISON**

Henry Villas Zoo  
702 S Randall Ave, Madison, WI 53715  
Tel: +1.608.266.4732; Peccie.greg@countyofdane.com  
Contact: Greg Peccie

Animals planned to be moved to this institution:  
Receive 2.0 Surplus stallions from SDWAP

## **MINNESOTA**

Minnesota Zoological Garden  
13000 Zoo Blvd., Apple Valley, MN 55124-8199, USA  
Tel: +1.952.431.9275; tony.fisher@state.mn.us  
Contact: Tony Fisher

Animals currently at the institution:

3386	MINNESOTA	11961 Female	20	Hold	Breed 5917
3398	MINNESOTA	11962 Female	19	Hold	Breed 5917
5917	MINNESOTA	14008 Male	8	Hold	Breed 3386,3398,5920,6339
5920	MINNESOTA	13153 Female	8	Hold	Breed 5917
6316	MINNESOTA	15411 Female	6	SendTo	Russia in 2021
6339	MINNESOTA	13659 Female	6	Hold	Breed 5917
6380	MINNESOTA	15426 Male	6	SendTo	Russia in 2021
6699	MINNESOTA	15427 Male	4	SendTo	Russia in 2021
6713	MINNESOTA	14258 Male	4	SendTo	Russia in 2021
6726	MINNESOTA	15421 Female	4	SendTo	Russia in 2021
7172	MINNESOTA	14479 Male	4	Hold	DoNotBreed
7186	MINNESOTA	14781 Male	2	SendTo	NZP-CRC
7316	MINNESOTA	15078 Female	1	SendTo	Russia in 2021
7569	MINNESOTA	15404 Female	1	SendTo	Russia in 2021
7568	MINNESOTA	15420 Male	2	SendTo	Russia in 2021

**NY BRONX**

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Bronx Zoo/Wildlife Conservat'n Society  
2300 Southern Blvd., Bronx, NY 10460-1099, USA  
Tel: +1.718.220.5125; cmccann@wcs.org  
Contact: Colleen McCann

Animals currently at the institution:

2985	NY BRONX	M05200	Female	23	Hold	DoNotBreed
3475	NY BRONX	M05199	Female	22	Hold	DoNotBreed
4474	NY BRONX	M08153	Female	16	Hold	DoNotBreed
4733	NY BRONX	M08071	Female	14	Hold	DoNotBreed
5618	NY BRONX	M10068	Female	10	Hold	DoNotBreed
5626	NY BRONX	M10074	Female	10	Hold	DoNotBreed
5913	NY BRONX	M11047	Female	9	Hold	DoNotBreed
6341	NY BRONX	M18151	Male	6	Hold	Breed 7176, 7184
7176	NY BRONX	M18142	Female	3	Hold	Breed 6341
7184	NY BRONX	M17094	Female	2	Hold	Breed 6341

**NZP-CRC**

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Smithsonian Conservation Biology Inst  
1500 Remount Rd., Front Royal, VA 22630, USA  
Tel: +1.540.635.6500; reeddm@si.edu  
Contact: Dolores Reed

Animals currently at the institution:

2052	NZP-CRC	109676	Male	29	Hold	DoNotBreed
3925	NZP-CRC	114187	Female	16	Hold	DoNotBreed
4790	NZP-CRC	114844	Male	13	Hold	DoNotBreed
5187	NZP-CRC	114335	Female	11	Hold	Breed 7186
5188	NZP-CRC	114547	Female	11	Hold	DoNotBreed
5202	NZP-CRC	114545	Male	11	Hold	DoNotBreed
5438	NZP-CRC	114454	Male	10	Hold	DoNotBreed
5664	NZP-CRC	114609	Female	9	Hold	Breed 7186
6072	NZP-CRC	114836	Female	7	Hold	Breed 7186
6086	NZP-CRC	114846	Male	7	Hold	Breed 7576, 7315, 7878
7179	NZP-CRC	115489	Male	3	SendTo	SDWAP
7567	NZP-CRC	115638	Female	2	Hold	DoNotBreed



7572	NZP-CRC	115654	Male	2	Hold	DoNotBreed
7579	NZP-CRC	115670	Male	1	Hold	DoNotBreed

Animals planned to be moved to this institution:

7186	From	MINNESOTA	Male	2	To	NZP-CRC	Breed 5187, 6072, 5664
7576	From	CALGARY	Female	2	To	NZP-CRC	Breed 6086 in 2021
7315	From	CALGARY	Female	1	To	NZP-CRC	Breed 6086 in 2021
7878	From	CALGARY	Female	0	To	NZP-CRC	Breed 6086 in 2022

### **NZP-WASH**

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Smithsonian National Zoological Park  
 3001 Connecticut Avenue NW, Washington, DC 20008-2537, USA  
 Tel: +1.202.673.4717; sarro@si.edu  
 Contact: Steve Sarro

Animals currently at the institution:

Animals planned to be moved to this institution:

Receive 0.2 mares from Wilds (select from 3488, 4723, 2639, 5366, 5669)

### **SD-WAP**

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San Diego Zoo's Safari Park  
 15500 San Pasqual Valley Rd, Escondido, CA 92027, USA  
 Tel: +1.760.747.8702; smetzler@sandiegozoo.org  
 Contact: Steve Metzler

Animals currently at the institution:

1739	SD-WAP	694413	Male	31	Hold	DoNotBreed	
1738	SD-WAP	602372	Female	31	Hold	DoNotBreed	OK to surplus
2411	SD-WAP	693085	Female	27	Hold	DoNotBreed	
3427	SD-WAP	600452	Male	19	Hold	DoNotBreed	OK to surplus
4301	SD-WAP	607187	Female	16	Hold	Breed	7179
4483	SD-WAP	604417	Male	15	Hold	DoNotBreed	OK to surplus
5354	SD-WAP	608376	Male	11	Hold	DoNotBreed	OK to surplus

5434	SD-WAP	609245	Female	10	Hold	Breed	7179
5445	SD-WAP	609272	Female	10	Hold	DoNotBreed	OK to surplus
6166	SD-WAP	613074	Female	7	Hold	DoNotBreed	OK to surplus
6338	SD-WAP	613287	Male	6	Hold	DoNotBreed	OK to surplus
6370	SD-WAP	613380	Female	6	Hold	DoNotBreed	OK to surplus
6468	SD-WAP	614304	Female	5	Hold	DoNotBreed	OK to surplus
6475	SD-WAP	614323	Male	5	Hold	DoNotBreed	OK to surplus
6493	SD-WAP	614439	Female	5	Hold	DoNotBreed	OK to surplus

### **ST FELICI**

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Zoo Sauvage de St-Felicien  
 2230 boulevard du Jardin, St-Felicien, Quebec G8K 2P8, Canada  
 Tel: +1.418.679.0543; lauraine.gagnon@zoosauvage.com  
 Contact: Lauraine Gagnon

Animals currently at the institution:

2211	ST FELICI	B00295	Female	28	Hold	DoNotBreed
5914	ST FELICI	B14137	Female	9	Hold	DoNotBreed

### **TORONTO**

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Toronto Zoo  
 361A Old Finch Ave., Scarborough, Ontario M1B 5K7, Canada  
 Tel: +1.416.392.5900; bhuffman@torontozoo.ca  
 Contact: Brent Huffman

Animals currently at the institution:

2401	TORONTO	28012	Female	27	Hold	DoNotBreed	
2490	TORONTO	40566	Male	26	Hold	DoNotBreed	
3707	TORONTO	37554	Female	18	Hold	DoNotBreed	
4677	TORONTO	40510	Female	14	Hold	DoNotBreed	
5178	TORONTO	42654	Male	11	Hold	DoNotBreed	
5449	TORONTO	43715	Male	10	Hold	Breed	7177, 7178
5602	TORONTO	46661	Female	10	Hold	DoNotBreed	
5630	TORONTO	44777	Female	10	Hold	DoNotBreed	
7177	TORONTO	50590	Female	3	Hold	Breed	5449



7178 TORONTO 50591 Female 3 Hold Breed 5449

### **WILDS**

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The Wilds  
14000 International Rd., Cumberland, OH 43732, USA  
Tel: +1.740.638.5030; dbeetem@thewilds.org  
Contact: Dan Beetem

Animals currently at the institution:

2051	WILDS 107038	Male	30	Hold	DoNotBreed
2639	WILDS 105058	Female	26	Hold	DoNotBreed
3488	WILDS 990510	Female	21	Hold	DoNotBreed
4181	WILDS MM0707	Male	19	Hold	DoNotBreed
4723	WILDS 106019	Female	14	Hold	DoNotBreed
5366	WILDS 109011	Female	11	Hold	DoNotBreed
5605	WILDS 110025	Male	10	Hold	DoNotBreed
5649	WILDS 110035	Male	9	Hold	DoNotBreed
5669	WILDS 110072	Female	9	Hold	DoNotBreed
5918	WILDS 111041	Male	8	Hold	DoNotBreed
5919	WILDS 111043	Male	8	Hold	DoNotBreed
6704	WILDS 115050	Male	4	Hold	DoNotBreed
6714	WILDS 115054	Male	4	Hold	DoNotBreed

Send 0.2 mares to NZP-WASH (select from 3488, 4723, 2639, 5366, 5669)

### **WINNIPEG**

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Assiniboine Park Zoo  
460 Assiniboine Park Dr., Winnipeg, Manitoba R3P 2N7, Canada  
Tel: +1.204.927.8012; pwoerner@assiniboinepark.ca  
Contact: Paul Woerner

Animals currently at the institution:

5597	WINNIPEG	N00045	Male	10	Hold	DoNotBreed
5674	WINNIPEG	N00046	Male	9	Hold	DoNotBreed

Animals currently at the institution:

Potential import of 4.0 surplus males from Fossil Rim (5941, 6032, 6160, 6245)

#### APPENDIX 1: Assumptions required for SSP analysis.

HYP1 Hypothetical Mare by male 146 and a domestic horse, dam of felames 524 and 601

HORSE Hypothetical domestic horse mare, dam of HYP1

The assumptions regarding the parentage and hypothetical dams is based on the research in: Bowling, A.T., W. Zimmermann, O. Ryder, C. Penado, S. Peto, L. Chemnick, N. Yasinetskaya, and T. Zharkikh. 2003. Genetic variation on Przewalski's horses, with special focus on the last wild caught mare, 231 Orlitza III. Cytogenet Genome Res. 101:226-234

#### APPENDIX 2: Animals excluded from Genetic analysis

The following animals were either assumed to be post-reproductive and/or are neutered and were therefore excluded from genetic analysis:

1310; 1713; 1738; 2156; 2211; 2401; 2411; 2490; 2639; 2737; 2971; 2985; 3386; 3398; 3472; 3475



### APPENDIX 3: Mean Kinship by Sex

#### Males

6086	0.172	93.8	8	NZP-CRC
6341	0.185	91.3	7	NY BRONX
5195	0.187	90.9	12	BISMARCK
5422	0.188	90.9	11	EL PASO
7186	0.190	88.9	3	MINNESOTA
7171	0.191	90.2	4	WILDS
7568	0.192	92.7	2	MINNESOTA
7179	0.192	97.4	3	NZP-CRC
7172	0.192	88.5	4	MINNESOTA
6713	0.192	88.5	5	MINNESOTA
5915	0.193	90.9	9	CALGARY
5438	0.193	97.8	11	NZP-CRC
5449	0.195	95.7	11	TORONTO
7572	0.197	95.7	2	NZP-CRC
5193	0.202	96.5	12	GRANBY
7880	0.203	93.5	1	CALGARY
5163	0.203	96.1	12	HEMMINGFD
7579	0.204	94.3	2	NZP-CRC
5202	0.205	91.6	12	NZP-CRC
5917	0.208	90.3	9	MINNESOTA
4790	0.208	97.7	14	NZP-CRC
5674	0.210	94.8	9	WINNIPEG
4722	0.214	94.2	14	DENVER
6704	0.218	97.4	5	WILDS
5919	0.218	97.8	9	WILDS
5605	0.218	97.8	10	WILDS
5597	0.219	95.2	10	WINNIPEG
6656	0.220	95.4	5	CALGARY
5918	0.220	97.8	9	WILDS
5649	0.220	97.8	10	WILDS
6680	0.221	95.2	5	CALGARY
6714	0.223	97.7	5	WILDS
4181	0.223	97.7	20	WILDS
6699	0.225	97.7	5	MINNESOTA
6475	0.228	98.4	6	SD-WAP
6245	0.228	98.4	7	FOSSILRIM
6380	0.229	95.4	6	MINNESOTA

#### Females

5187	0.175	93.8	12	NZP-CRC
6072	0.179	93.8	8	NZP-CRC
5664	0.180	93.8	10	NZP-CRC
4301	0.184	96.9	16	SD-WAP
5920	0.185	91.3	9	MINNESOTA
5188	0.186	91.3	12	NZP-CRC
7184	0.188	88.6	3	NY BRONX
6339	0.188	90.9	7	MINNESOTA
2985	0.189	88.5	23	NY BRONX
7316	0.192	88.5	2	MINNESOTA
7176	0.192	88.5	3	NY BRONX
6319	0.192	92.7	7	BISMARCK
3398	0.193	91.4	20	MINNESOTA
7569	0.195	91.2	2	MINNESOTA
3386	0.196	90.6	20	MINNESOTA
7567	0.198	91.5	2	NZP-CRC
5913	0.198	91.4	9	NY BRONX
5219	0.199	91.4	11	EL PASO
3925	0.199	97.1	16	NZP-CRC
7878	0.202	93.7	1	CALGARY
7315	0.202	93.7	2	CALGARY
7178	0.202	93.7	3	TORONTO
7576	0.203	93.5	2	CALGARY
7177	0.203	93.5	3	TORONTO
5434	0.203	91.6	11	SD-WAP
4953	0.203	96.1	13	GRANBY
5618	0.205	89.2	10	NY BRONX
4677	0.205	96.1	14	TORONTO
3707	0.205	96.1	18	TORONTO
3475	0.206	96.5	22	NY BRONX
5046	0.207	96.5	13	CALGARY
5626	0.208	90.3	10	NY BRONX
2737	0.208	96.3	26	HEMMINGFD
5669	0.209	97.2	10	WILDS
3926	0.209	96.1	16	CALGARY
5630	0.219	95.2	10	TORONTO
5366	0.219	97.8	11	WILDS

6032	0.238	95.8	8	FOSSILRIM	6726	0.220	97.8	5	MINNESOTA
5354	0.238	93.2	11	SD-WAP	5914	0.220	95.4	9	ST FELICI
6160	0.244	98.8	7	FOSSILRIM	4733	0.220	92.0	14	NY BRONX
6338	0.254	96.6	7	SD-WAP	2639	0.220	97.7	26	WILDS
4483	0.254	100.0	15	SD-WAP	5602	0.221	95.2	10	TORONTO
5941	0.262	100.0	8	FOSSILRIM	4723	0.222	97.7	14	WILDS
3427	0.266	100.0	20	SD-WAP	6258	0.225	94.2	7	DENVER
					4474	0.226	94.2	16	NY BRONX
					3488	0.226	97.7	21	WILDS
					5095	0.229	93.2	13	GARDENCTY
					3495	0.229	93.2	19	CHICAGOBR
					4494	0.232	94.2	15	DENVER
					5445	0.237	93.2	11	SD-WAP
					6316	0.238	95.8	7	MINNESOTA
					6468	0.254	100.0	6	SD-WAP
					6166	0.254	100.0	7	SD-WAP
					6493	0.262	100.0	6	SD-WAP
					6370	0.262	100.0	7	SD-WAP
					4887	0.500	0.0	14	CHICAGOBR



#### APPENDIX 4: Executive Summary, 2004 Przewalski's Horse SSP Masterplan meeting

A Master Planning meeting for the Asian wild horse, or Przewalski's horse, was held 14-15 April, 2004 at the National Zoological Park's Conservation and Research Center (CRC) in Front Royal, Virginia. The overall objectives of the meeting were to 1) develop a strategy to maximize genetic diversity and improve demographics, 2) make specific breeding recommendations, 3) establish *ex situ* research priorities, and 4) discuss strategies for ensuring that the North American herd contributes to the global managed population, as well as ongoing *in situ* conservation programs. Of particular importance were discussions focused on whether to continue managing the North American herd as two separate bloodlines – the A- and B-lines- or to manage the entire population using an M-line, or mixed-line strategy, designed to maximize founder representation and genetic diversity. The Equid Taxon Advisory Group has currently designated a target population of 150 specimens for this species. The current SSP population is 154 individuals distributed among 18 institutions (15 AZA, 3 non-AZA), of which San Diego Zoo, the Wilds, Minnesota Zoo, Calgary Zoo, the Wildlife Conservation Society/Bronx Zoo and the National Zoological Park were represented at the Master Planning meeting.

When gene diversity falls below 90% of that in the founding population, reproduction may be increasingly compromised by, among other factors, lower birth weights, smaller litter sizes, and greater neonatal mortality.

RE: [EXTERNAL] FW: CITES Permit App 66472D

Kokkeler, Laurie (MNZOO) <laurie.kokkeler@state.mn.us>

Thu 7/9/2020 6:40 PM

To: Cate, Emily B <emily\_cate@fws.gov>

7 attachments (12 MB)

Asian Horse GPS Collar Proposal 2014\_fundraise.pdf; TripReport\_Mongolia\_Oct2015\_Jenks.pdf; Muntifering\_Phorse Xinjiang Trip Report September 2013.pdf; WildHorseUpdate\_SSP\_May16.pdf; TripReport\_Mongolia\_Combined\_27Oct\_2017.pdf; Phorse 2017 Program Summary\_8 Nov16.pdf; TripReport\_Mongolia\_Sep2013 Kate Jenks.pdf;

Hi Emily

Thank you for your advice as to what I need to do if I should have to renew a CITES permit. I hope I will not have to make that request.

I attached some reports about our staff trips to Mongolia for P. Horse conservation work for your review.

Please let me know if you have question about any of the activities.

Thank you

Laurie

Laurie Kokkeler | Animal Registrar | [laurie.kokkeler@state.mn.us](mailto:laurie.kokkeler@state.mn.us)

o: 952.431.9271 | c: 651.528.1672 | [MNZOO.ORG](http://MNZOO.ORG)

13000 Zoo Boulevard Apple Valley MN 55124



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---

From: Cate, Emily B <emily\_cate@fws.gov>

Sent: Thursday, July 9, 2020 1:45 PM

To: Kokkeler, Laurie (MNZOO) <laurie.kokkeler@state.mn.us>

Subject: Re: [EXTERNAL] FW: CITES Permit App 66472D

Hi Laurie,

No problem at all, thank you for providing this additional information. I will be out of the office next week, but will review it upon my return.

You are correct, export permits are valid for 6 months. Import permits are valid for one year. After permit issuance, you may apply to renew it in the event that you are unable to do the export before it expires. You would make this request using form [3-200-52](#). This renewal request would not need to be republished in the Federal Register unless the Federal Register notice is over approximately five years old (it will depend on if the "new" permit expiration date would exceed five years from when the original notice was published).

Please let me know if you have any questions or concerns.



Best,  
Emily

---

**From:** Kokkeler, Laurie (MNZOO) <[laurie.kokkeler@state.mn.us](mailto:laurie.kokkeler@state.mn.us)>  
**Sent:** Tuesday, July 7, 2020 3:49 PM  
**To:** Cate, Emily B <[emily\\_cate@fws.gov](mailto:emily_cate@fws.gov)>  
**Subject:** [EXTERNAL] FW: CITES Permit App 66472D

This email has been received from outside of DOI - Use caution before clicking on links, opening attachments, or responding.

Hi Emily

I apologize for my delayed response getting back to you about our Asian wild horse application. Kevin Willis did the pedigree analysis and made the recommendations because he is an expert geneticist. Unfortunately he is no longer at the MN Zoo. (See Tony's email below)

We have had major lay-offs and re-organizing of our staff here due to the Covid pandemic. Because of our staffing levels and loss of gate revenues we have also had to post pone this export to the Fall of 2021. I am thinking that CITES permits are valid for 6 months once issued for endangered species. Am I correct? Or is it 12 months? Can you please let me know what our options are to if this is granted and should expire before we can export? Would I be able to request an extension?

I am also still working with Seth for your answers to question 1 and 2.  
I will send him another reminder.

Thank you  
Laurie

**Laurie Kokkeler** | Animal Registrar | [laurie.kokkeler@state.mn.us](mailto:laurie.kokkeler@state.mn.us)  
o: 952.431.9271 | c: 651.528.1672 | [MNZOO.ORG](http://MNZOO.ORG)  
13000 Zoo Boulevard Apple Valley MN 55124



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---

**From:** Fisher, Tony (MNZOO) <[tony.fisher@state.mn.us](mailto:tony.fisher@state.mn.us)>  
**Sent:** Friday, June 12, 2020 10:54 AM  
**To:** Kokkeler, Laurie (MNZOO) <[laurie.kokkeler@state.mn.us](mailto:laurie.kokkeler@state.mn.us)>  
**Subject:** RE: CITES Permit App 66472D

Hi Laurie,

Hopefully this will address the pedigree analysis part. I don't have the actual analysis part because Kevin did that and I don't think there is any documentation on that analysis. He used Poplink and PMx software and I don't think anything can get saved from that. I also included the most recent SSP plan which shows the MK list.

I'll work with Seth to get the conservation funding reports.

Tony

**Tony Fisher** | Director of Animal Collections | [tony.fisher@state.mn.us](mailto:tony.fisher@state.mn.us)  
952.431.9275 [MNZOO.ORG](http://MNZOO.ORG)  
13000 Zoo Boulevard Apple Valley MN 55124



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**From:** Cate, Emily B <[emily\\_cate@fws.gov](mailto:emily_cate@fws.gov)>  
**Sent:** Friday, June 12, 2020 8:50 AM  
**To:** Kokkeler, Laurie (MNZOO) <[laurie.kokkeler@state.mn.us](mailto:laurie.kokkeler@state.mn.us)>  
**Subject:** CITES Permit App 66472D

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Dear Ms. Kokkeler,

I have your application dated 01/08/2020, received 01/17/2020, regarding the proposed export of 4.4 Przewalski's horses to the Orenburg Nature Reserve in Russia. I apologize for the delay in processing your application.

Please provide the following information so that I may continue to process your application:

1. In question 11 of the application, you stated that the Minnesota Zoo sent \$2,500 in 2004 to the Hustai Nuruu National Park in Mongolia and \$2,500 in 2006 to the Smithsonian Institute. Could you please provide receipts for these transactions and a statement from each organization as to where specifically this money went to enhance the conservation of the Przewalski's horse in the wild?
2. Also in question 11, you stated that staff from the Minnesota Zoo conducted studies in Hustai Nuruu National Park from 2017-2019. Can you please send a report and/or research proposal of the activities that occurred there? Is the study complete or ongoing and if ongoing, are staff from the Minnesota Zoo still involved? In addition, can you please provide documentation (e.g., a receipt) regarding the funding of the installation of a second water hole at the park?
3. Can you please provide the pedigree analysis referred to in the application which concludes that the genetic diversity of Orenburg would increase 12.5%? Is this part of the SSP for the species? Can you please provide an electronic copy of the AZA breeding and transfer plan for the species?

Please let me know if you have any questions or concerns.

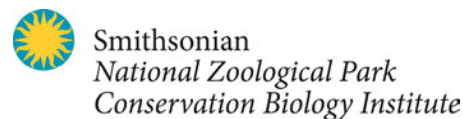
In accordance with 50 CFR 13.11(e), if the requested information is not received by this office by **July 27, 2020**, your application will be abandoned and administratively closed. Once a file is closed you will need to submit a new application and all required fees for the Service to consider your proposed activity. Please refer to permit number 66472D in your correspondence.



Respectfully,  
Emily

**Emily Cate** | Permits Biologist  
U.S. Fish and Wildlife Service | International Affairs  
Division of Management Authority | Branch of Permits  
5275 Leesburg Pike, MS:IA  
Falls Church, VA 22041-3803





## Asian Wild Horse Conservation Project, 2014



### Executive Summary:

The Minnesota Zoo and the Smithsonian Conservation Biology Institute (SCBI) are inviting others to join efforts in conserving the Asian wild horse in Hustai Nuruu National Park (HNNP), Mongolia. The Asian wild horse is the only truly wild horse species remaining in the world, but went completely extinct in the wild in the 1960's. Thankfully, zoos throughout the world were able to rescue this species, breed them in captivity, and eventually release them back into the wild. HNNP was the first site to receive this endangered species back into the wild in 1992, and currently holds an approximate population of 300 horses. Yet, the potential exists to greatly increase these numbers to a much higher and more secure level that can withstand the normal environmental pressures of severe winters and predation within HNNP. This conservation project in 2014 will be the initial phase to lay the scientific groundwork necessary to enhance this population. Five global positioning system (GPS) satellite collars will be placed on horses from five different harems within key locations of HNNP. The data recorded from these collars over the next winter and spring will be analyzed to determine the extent of current grassland and water resources used by this species and help define where future habitat enhancement efforts should be directed within this national park. For example, these data may help inform possible locations for artificial water holes if they are deemed to be feasible and beneficial. The long-term goal will be to track all 25 breeding groups in the park.

This project is an expansion of Asian wild horse conservation efforts being conducted in Asia and supported by zoos that are accredited by the Association of Zoos and Aquariums (AZA), the AZA Asian Wild Horse Species Survival Plan® (SSP), and the AZA Equid Taxon Advisory Group (TAG). Scientists at SCBI have been working in the Kalameili Nature Reserve (KNR) of China since 2005 to monitor released horses, train ranger staff, and identify conflict solutions with local Kazakh nomads. The ultimate objective is to realize an expanded and stable wild horse population that will secure a future in their native habitat of Mongolia and China.

### Methods:

In order to monitor movement patterns and habitat use of Asian wild horse, we plan to capture five individuals and equip them with GPS-Iridium satellite collars in HNNP. The collars function continuously on a 24-hr cycle which allows for fine detail data collection. Each Asian wild horse herd has a different temperament and in some cases they may flee in presence of a vehicle. We may employ multiple techniques to safely immobilize this species in the wild. Some of the herds are approachable on foot and we plan to set up a hide 30 to 80 meters from a grazing area, or food bait and dart the animals with a CO<sub>2</sub> powered dart rifle. We will also investigate the possibility of utilizing a video-enabled remote controlled CO<sub>2</sub> powered dart rifle for herds that are more difficult to dart. This method has been used previously with Asian wild horses in Mongolia (Walzer & Boegel 2003). Staff from HNNP trained in wildlife immobilization will dart the horses with assistance from an attending veterinarian. This fall Dr. Rasmussen,



senior veterinarian at the Minnesota Zoo, will assist with immobilizations. He has over 20 years of experience immobilizing Asian wild horses in a captive environment.

All Asian wild horses will be anesthetized with thiafentanil, medetomidine and ketamine placed in PneuDarts and delivered by dart rifle. Following collaring and collection of biological samples, the horses will be reversed with naltrexone and atipamazole and/or tolazoline. During the procedure animals will have vital signs regularly monitored by physical observation as well as pulse oximetry. Blood samples will be collected for assessment of anesthesia during the procedure as well as for CBC's, chemistry analysis, mineral analysis, genetic determination, and serum banking. Hair samples will also be collected for possible future analysis. Everyone involved with the field work will be trained in emergency treatment of a person receiving accidental exposure to the anesthetizing agents. A human first aid kit including reversal drugs will be available anytime a person is working with the anesthetic agents. Oxygen tanks with a regulator and a demand valve will be available to supplement oxygen to the anesthetized horses during the procedures. Reversals for the anesthetic drugs will be drawn up and will be available prior to any animal being immobilized in case of anesthetic problems which require immediate reversal.

Location data from collared horses will be remotely downloaded and analyzed, in association with habitat maps, using a Geographic Information System (GIS). SCBI, Minnesota Zoo, and HNNP staff associated with this project are experienced in using GIS to study wild animal habitat usage. A graduate student from the National University of Mongolia has been selected and will also be trained at SCBI to learn computer mapping skills to assist in the analysis of collar data and wildlife record information that the park has collected since 1992.

#### Timeline:

##### March 2014

- Connected with HNNP staff to discuss research directions
- Rolled out Asian Wild Horse fundraising and awareness campaign, "True Wild Horse: Forever Free" to the North American zoo community at AZA mid-year meeting

##### April-August 2014

- Solidify plans for deploying satellite collars
- Actively seek funds to support fieldwork activities

##### Fall 2014

- Travel to Mongolia to capture Asian wild horse and deploy satellite collars
- Begin support of local scholarship student who can participate in field activities and be mentored in data collection, analysis, and English report writing

##### Winter 2014/Spring 2015

- Monitor collared horses
- Prepare progress reports for funders and AZA community

Note: Formal data analysis will occur in 2015

#### Budget:

<b>Item</b>	<b>Cost (US Dollars)</b>
Satellite collars (5 x \$4,500)	\$22,500
Annual data download satellite costs (5 x \$1,000)	\$5,000
Collar VHF receiver (2 x \$1,000)	\$2,000

Computer for HNNP biologists to save data for a nationwide Asian wild horse research database	\$1,000
Dart gun	\$4,000
Darts	\$150
Oxygen tank	\$750
Pulse oximeter (to measure oxygen levels)	\$750
Anesthetic drugs and reversals	
2-bottles thiafentanil	\$1,080
4-naltrexone	\$1,286
2-tolazoline	\$86
2-medetomidine	\$968
3-atipamazole	\$810
3-ketamine	\$164
Human first aid kit	\$100
Centrifuge	\$900
Littman stethoscope	\$100
Miscellaneous lab supplies	\$400
Miscellaneous fieldwork supplies	\$500
Airline approved travel cases for equipment	\$500
Airline excess baggage fees	\$600
Yearly support for Mongolian research fellow	\$7,200
Roundtrip flights to Mongolia	
Veterinarian and Project Coordinator (2 x \$2,500)	\$5,000
Minnesota Zoo/SCBI staff (2 x \$2,500)	\$5,000
Trip expenses for project staff in Mongolia (4 x \$1,500)	\$6,000
<b>Total:</b>	<b>\$66,844</b>

Minnesota Zoo and SCBI staff costs

Minnesota Zoo Biologist – Project Coordinator	
25% Full-time employee	\$15,875
Minnesota Zoo Manager (Asian Horse SSP Coordinator)	
10% Full-time salary	\$8,500



Minnesota Zoo Veterinarian –

1% Full-time salary	\$4,688
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Minnesota Zoo Fundraising Campaign Coordinator

10% Full-time salary	\$5,615
----------------------	---------

Smithsonian Biologist – Project Coordinator

60% Post-doc	\$24,000
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<b>Total:</b>	<b>\$58,678</b>
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#### Budget Justification

We aim to purchase five satellite collars. The pricing is based on equipment previously purchased for deploying collars on Asian wild horse in China that was conducted with the assistance of staff from the Smithsonian Conservation Biology Institute. The dart gun will be donated to HNNP and will be used for future animal immobilizations.

#### Making a contribution

Checks should be payable to “Minnesota Zoo Foundation”, which manages the Asian Wild Horse SSP’s dedicated fund. The memo line or accompanying letter should state that the funds are for Asian wild horse conservation. Checks can be mailed to: Minnesota Zoo Foundation, 13000 Zoo Blvd., Apple Valley, MN 55124.

You can also learn more about Asian wild horses or make a contribution by going to the website, [truewildhorse.org](http://truewildhorse.org)

#### Questions?

Questions about this proposal can be directed to Tony Fisher, Asian Wild Horse SSP Coordinator and Minnesota Zoo Collections Manager, at [tony.fisher@state.mn.us](mailto:tony.fisher@state.mn.us).



# Przewalski's Horse Recovery Program, Xinjiang, China

*Trip Report: 15 August – 2 September 2013*



***Submitted to the Minnesota Zoo Foundation***

Jeff Muntifering, Conservation Biologist, Minnesota Zoo



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## Background

China's State Forestry Administration (SFA) has spearheaded efforts to re-establish a free-ranging population of Przewalski's Horse in Xinjiang Province. A critical goal and success measure for the program is continued range expansion and associated increases in population abundance and viability. However, re-introduced horse population expansion may result in direct conflict with local Kazak nomads who maintain seasonal migration patterns across parts of the range. Recently, local Kazak herdsmen voiced their interest in collaborating with SFA and other parties in the recovery program and requested various incentive-based options be developed to help mitigate land use conflict and support further engagement opportunities. Although eco-tourism has been suggested as a potential mechanism, identifying and structuring the most suitable incentive-based instruments would benefit from further examination of the social context.

## Key Objectives

A series of upcoming stakeholder meetings would provide an ideal opportunity to (1) develop a social context 'map' (e.g. identifying participants, and their respective perspectives, demands, values, sought outcomes and strategies) of the Przewalski's Horse based on a policy science framework, (2) provide additional knowledge and information exchange through presentations regarding our incentive-based approach in Namibia such as supporting local community monitoring teams and linkages with



conservation tourism enterprises, (3) if appropriate, begin developing and piloting desired feasibility assessment tools which may include questionnaires. Other peripheral benefits would be the face-to-face interactions with key decision-makers and community members from the onset of this exciting program.

## Timeline

The field trip took place between 15 August – 2 September 2013. A daily location – activity description is provided below.

<b>China Itinerary 16 August - 2 September 2013</b>		
<b>Date</b>	<b>Place</b>	<b>Main Activity</b>
16-Aug	Arrive Beijing	Transit to Beijing
17-Aug	Beijing	Meet with Prof. Hu Defu, current Chinese PI on the program to discuss trip objectives.
18-Aug	Beijing - Urumqi	Transit to Xinjiang Province
19-Aug	Urumqi	Meet with key Xinjiang SFA staff in Urumqi, Mr. Cao Jie. Purchase field supplies.
20-Aug	Kalameili	Transit from Urumqi to Kalameili Reserve Headquarters
21-Aug	Kalameili	Meet with reserve staff to discuss trip objectives and local herdsman program
22-Aug	Kalameili	Visit first release site and collect dung / plant samples
23-Aug	Kalameili	Visit second release site and collect dung / plant samples
24-Aug	Kalameili	Attend local Kazak workshop. Complete local herdsman data forms and GPS manual.
25-Aug	Kalameili - Altay	Transit to Altay City.
26-Aug	Altay - Kanas	Meet with local travel agent. Transit to Kanas National Park.
27-Aug	Kanas- Altay	Visit high-end tourism lodge in park, meet with manager. Transit to Altay.
28-Aug	Altay - Urumqi	Discuss conservation tourism principles, Namibia examples and China context with Dr. Chu
29-Aug	Urumqi	Discuss conservation tourism principles, Namibia examples and China context with Prof. Huang
30-Aug	Urumqi - Beijing	Transit to Beijing
31-	Beijing	Meet with TNC Asia Science Director to discuss possible

Aug		collaboration in Xinjiang.
1-Sep	Depart Beijing - Arrive South Africa	Transit to SA
2-Sep	Depart SA - Arrive Namibia	Transit to Namibia

## Original Measures

1. *A draft report to partners that specifically focuses on social context mapping outputs and incentive recommendations*

Due to many local Kazak families not being available for workshops only 1 non-interactive presentation was held with a small group (12) of local Kazak community members and forestry officials. Prof. Dan Rubenstein, Princeton University, presented his long-term efforts and results in Kenya with engaging local communities in monitoring and managing Grevy's zebra. Since the meeting was set up primarily to provide an opportunity for Kazak herdsman to simply hear more about other similar initiatives, no opportunity was made available to discuss incentive options in any detail or explore further issues. Moreover, in my discussions with Dr. Chu Hongjun, director of the Altay District Forestry Bureau, prior to the meeting, it was clear that much more conceptual planning would be required with SFA before any in depth discussion on incentives (e.g. tourism) with the local Kazak should be presented. Therefore, it seemed premature to introduce the concept at this time to the community members.

2. *A series of presentations to SFA and local Kazak communities on our incentive-based approach in Namibia*

Due to the lack of opportunities to engage with the local Kazak on this trip, every effort was made to reach out to Chinese officials to discuss our rhino tourism approach in Namibia. Detailed presentations were provided to four key individuals: Prof. Hu Defu, Beijing Forestry University, Dr. Chu, Mr. Cao Jie, director of Wild Horse Breeding Center and Prof. Huang, Xinjiang Normal University, Geography and Tourism Department. All individuals, who represent both academic (biology and tourism) and government institutions, were very supportive and suggested further work be conducted as soon as possible to explore the feasibility for developing this type of conservation tourism in Xinjiang. More specifically, a short workshop should be provided on my next trip to expose various key government officials, in particular the director of Xinjiang Forestry Department and Xinjiang Tourism Bureau, to the key principles and best practices for conservation tourism, examples from elsewhere especially the arid rangelands of Namibia and the challenges and opportunities within the Xinjiang / Chinese context.

3. *If appropriate, the development and piloting of desired survey instruments to assess the feasibility of the demanded incentive mechanism*



Due to the short time frame and obvious need for further discussion with SFA, this objective was postponed until next year, pending approvals from SFA. However, Prof. Huang at Xinjiang Normal University offered to partner on developing such a study with his students within the Geography and Tourism Department. I provided him with a copy of our rhino tourism expansion feasibility questionnaire and we agreed to remain in touch. He suggested I make a formal presentation to the department in May 2014 with the goal to also identify possible students to assist with questionnaire design and work plan for August – Sept 2014 to administer the survey.

### **Adjusted Measures**

#### *1. Support the development of SFA's emerging local Kazak scout program*

- a) Adapt a GPS training manual for future Kazak scouts: a GPS training manual was adapted from a previously created version for rhino in Namibia. The original document was provided to Cao Qing, Princeton Ph.D. student, who will pass it on to the Kazak coordinator to translate into Kazak and further adapt as needed (Appendix 1).
- b) Assist with the development of standardized data forms: I assisted Prof. Dan Rubenstein with amending his Grevy's zebra monitoring form for the local Kazak herdsman monitoring program (Appendix 2).
- c) Assist with ongoing field work: I assisted with a new study on released Przewalski Horse diet by collecting fresh dung from the horses and sampling local plant specimens. The dung was immediately processed in the field using various storage agents and plant DNA will be extracted from the samples to ascertain the diet composition using a new 'DNA bar coding' technique.

Note: for our zebra study in Namibia, it may be interesting to explore collaborative research with Cao Qing should the bar-code analysis be successful. Very little is known about zebra diet and what levels of competition actually do occur between their feeding habits and livestock. Prof. Rubenstein also shared some information about their 'Hotspotter' program which has recently been upgraded and successfully validated to provide unique identification of zebras from photographs.

#### *2. Promote the need for and propose a solution to enhance collaborative arrangements*

During one-on-one meetings with both Dr. Chu and Mr. Cao Jie, I re-stated the interest and potential applicability of engaging with the IUCN Conservation Breeding Specialist Group (CBSG) to assist with facilitating a strategic planning workshop for the Przewalski Horse Program. Both were very supportive and Mr. Cao would add this initiative to his list of critical needs for the program. Once this list is compiled, he would send along to Melissa and other stakeholders for review before submitting to his director for final approval. I agreed to send them a brief outline of CBSG.

#### *3. Conduct a scoping exercise for conservation tourism opportunities*

The second half of my trip focused more on introducing in more detail and undertaking some very crude conservation tourism scoping work in the region of Kalameili. As mentioned earlier, much effort was directed towards providing detailed one-on-one discussion-based presentations to key government and academic Chinese officials. It was clear that this type of tourism (high-end, low impact with priority given to conservation outcomes) is very new to China and especially the Altay region – although tourism and even some forms of ‘eco-tourism’ certainly are not. In addition to the abovementioned presentations, I met with 3 tourism professionals working in the region: 1 travel agent from Altay City, 1 tourism and marketing director for a development company near Kanas National Park and 1 manager for the Kanitas Villa – a high end lodge on Kanas Lake. Main findings are summarized below:

- In 2012, tourist arrivals in Xinjiang totaled 48.5 million people totaling 57.6 billion yuan (9.3 billion US\$).
- In the first half of 2013 (despite the violent outbreaks) numbers increased by 28% from 2012 with the vast majority (97%) being domestic tourists. 70% of the foreign tourists were from neighboring Kazakhstan.
- Kanas Lake and the surrounding National Park in the Altay district is one of the leading tourist attractions in Xinjiang. It is also only about 300 km from Kalameili by air.
- Most tourists spend around 1,000 RMB (US\$ 161) per day but a percentage of wealthy Chinese will spend up to 10,000 RMB (US\$1612) per day.
- Most of the wealthy tourists (who spend between \$1000 - \$1612 per day) are from Beijing, Guanzhou/Guogdong, Hong Kong, Macau and Taiwan.
- Most of them fly to their chosen sites, travel in groups of 2-4 and stay in expensive and exclusive hotels (such as the Kanas Villas)
- During the peak summer season (June – September), all of Kanas Villas’ 100 rooms and suites are fully booked. Their standard room rate is 2990 RMB (US\$480) per night up to the deluxe 8,880 RMB (US\$1,432) per night. That equates to roughly 6,000 guests per month (assuming 2 per room) or 24,000 over the peak period.
- When asked whether their clients would be interested in a ‘safari’ style luxury camp in the desert to go view the Asian wild horses on foot, the manager’s response was ‘yes, but maybe only 30% of their clients’. This still is a massive number of 1,800 guests per month or 60 per day, which would very likely be too much. Desert Rhino Camp operates, and makes decent profit, off of roughly 110 guests per month staying on average 2 nights (approx. 40% occupancy in a 16 bed safari camp). To reach this figure we would need to attract only 1.8% of the Kanas Villa’s clients.



- When asked what they would expect for an average daily rate (\$1000 - \$1612) fee, the manager's response was 'they really just want to feel at home with all the usual luxuries and comforts. Good food is important and service.'

I also met with a young (22 years) Chinese lady who was studying in Canada but home to Xinjiang with her family (her father is the chairman of the Kanas Villa board). She has been coming back to the Kanas Villa Lodge for many years. She strongly believed that our safari/conservation tourism model would be very attractive to wealthy Chinese tourists since many are becoming more and more interested in Africa safaris (esp. Kenya) and that most would appreciate experiencing something different and truly remote and exclusive but with top service and comfort. She also believed many more Chinese, especially the younger businessmen are becoming more interested in environmental issues and conservation and would be very keen to pay for exclusive wildlife viewing opportunities to help save and protect rare species.

Further notes:

- Although these are obviously very crude and incomplete descriptive survey records, there appears to be a pretty strong, robust high-end tourism market already in existence in the region. Further work would need to determine more precisely the level of demand for this unique conservation tourism activity, what they would be willing to pay for it and what they would expect for their money.
- During the field research (first week of the trip) I was very impressed with the viewing experience that we could achieve with the released horses (see cover page photo) under the guidance of the local Kazak herdsman that was hired by the reserve to monitor the horses. Based on my 11 years taking high-paying tourists to view rhino in Namibia, I firmly believe tourists would pay for this experience in this setting.
- The Xinjiang Tourism Bureau has detailed descriptive statistics on tourism in the province and would also need to approve any new tourism activity such as this.
- It was advised to develop and promote a new tourism route that would include Kanas, Kalameili and maybe one additional cultural site (e.g. many tourists like to book packages that include multiple stops).
- Additional critical issues would be investigating the feasibility of developing air transport from Kanas regional airport to the Kalameili reserve. Dr. Chu informed me that the government was in the process of (or had already done so) legalizing private aircraft ownership and flight zones below 1000m. He did not seem to believe that developing a remote landing strip in the reserve would be problematic.

- Site selection would need to be carefully considered and would likely entail developing a model for evaluating candidate sites based on: access to released horses, presence of other desert wildlife (e.g. Kulan, gazelle, wolves), water, scenery, etc.

Following my rapid tour of the Kanas Lake area and chatting with tourism professionals, Dr. Chu and I worked on developing a more detailed decision process framework for developing a new Conservation Tourism Model for Xinjiang (Appendix 3). He also requested that I prepare and send him a very basic introduction to the conservation tourism concept and some examples from Namibia for him to present to his superiors in preparation for a larger workshop next year to move the idea forward. He requested that I consider running a 1-2 day workshop in May next year to introduce the idea fully to key individuals as the next step.

Upon my return to Beijing, I also held a short discussion with TNC's Asia Science Director, Dr. Matt Durnin. He also believed our tourism as a conservation tool approach in Xinjiang could work well. I told him that we had a long way to go but if the 2014 meetings go well and the green light for development is provided, we may re-connect to discuss possible investors and collaboration opportunities with TNC China.





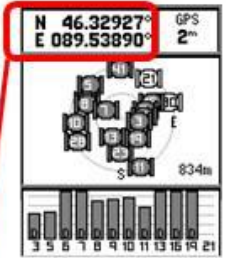
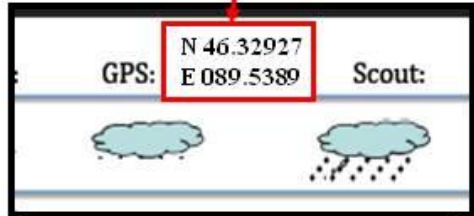
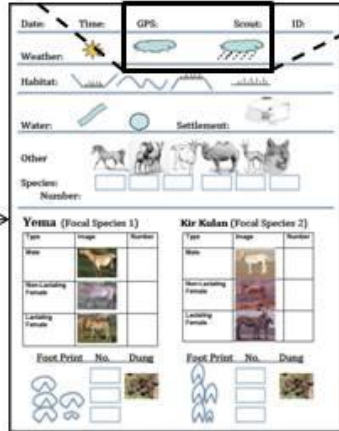
**Photo 1: Tourism informant surveys – manager at Kanasi Villas, Kanas Lake's high-end tourism lodge**



Appendix 1: Example of GPS Training Cards for Kazakh scout team(s)

## GPS TASK 1

### Recording the GPS Location of the Sampling Site on your Data Form

STEP	DESCRIPTION	ACTION	SCREEN
1	Turn on your GPS by pressing the 'light' button for 1 second on the left side of the GPS. It will automatically display the main menu screen. <b>Move the click-stick</b> to make the Satellite box black	 Light button	
2	With the Satellite box black, <b>press the click-stick</b> . You will now see the Satellite page. Wait a few moments for at least 3 bars to be displayed under the Satellite map. The GPS location will then be displayed at the top (see red square to right)	Wait	
STEP	DESCRIPTION	ACTION (ID Form)	
3	Before you record the GPS coordinates, fill in the appropriate data sheet information as you were trained. (for safety, also write the GPS coordinates on the backside of the data form)	 	

Data Form

Appendix 2: Adapted data form for Kazakh scouts monitoring program

Date:	Time:	GPS:	Scout:	ID:
Weather:				
Habitat:				
Water:                                    Settlement:				
Other:				
Species:		<input type="text"/>	<input type="text"/>	<input type="text"/>
Number:		<input type="text"/>	<input type="text"/>	<input type="text"/>

Yema			Kir Kulan		
	HEADING	DISTANCE (meters)		HEADING	DISTANCE (meters)
Type	Image	Number	Type	Image	Number
Male		<input type="text"/>	Male		<input type="text"/>
Non-Lactating Female		<input type="text"/>	Non-Lactating Female		<input type="text"/>
Lactating Female		<input type="text"/>	Lactating Female		<input type="text"/>

Foot Print	No.	Dung
	<input type="text"/>	
	<input type="text"/>	
	<input type="text"/>	
	<input type="text"/>	
	<input type="text"/>	
	<input type="text"/>	



**Appendix 3: A Simplified Decision Framework for Emerging Conservation Tourism Opportunity in Altay District, Xinjiang: 3 Year Action Plan**

STAGE	DESCRIPTIONS	ACTION/OUTPUT	OUTCOME
<p>CONCEPT STRATEGY</p> <p>2013 - 2014</p>	<ul style="list-style-type: none"> <li>Review Conservation Tourism best practices and principles with global examples from Africa, America and Asia (proof of concept)</li> <li>Document and discuss within the current context in China including: <ul style="list-style-type: none"> <li>✓ Alignment with conservation program goals especially Przewalski's Horse,</li> <li>✓ Problem definition(s),</li> <li>✓ State of knowledge (conservation &amp; tourism),</li> <li>✓ Potential barriers and opportunities for tourism to contribute towards solutions including key assumptions to test</li> </ul> </li> </ul>	<ol style="list-style-type: none"> <li>Draft the Kalameili Conservation Tourism Concept Document</li> <li>Provide a detailed presentation to SFA, key Kazak community leaders and Tourism Agencies / Operators for feedback</li> </ol>	<p><b>Final concept is developed and accepted by SFA</b></p>
<p>FEASIBILITY ASSESSMENT</p> <p>2014</p>	<ul style="list-style-type: none"> <li>Kalameili desert wildlife and landscape ecology: identify key habitat and areas of unique scenic beauty</li> <li>Social Process Mapping: document values desired by key participants including SFA and Kazak communities, and potential tour operators/tourists</li> <li>Market Demand Analysis: assess interest, especially in Chinese tourists, for this type of tourism experience</li> </ul>	<ol style="list-style-type: none"> <li>Draft conservation tourism assessment document for circulation</li> <li>Provide a detailed presentation to SFA, key Kazak community leaders and Tourism Agencies / Operators for feedback.</li> </ol>	<p><b>SFA accepts results or requests further inquiry. Approval is either provided to proceed with business plan or alternative option(s) considered.</b></p>
<p>BUSINESS PLAN &amp; MARKETING</p> <p>2014 – 2015</p>	<ul style="list-style-type: none"> <li>Develop business plan <ul style="list-style-type: none"> <li>✓ Final concept model</li> <li>✓ Business structure including staffing and infrastructure</li> </ul> </li> </ul>	<ol style="list-style-type: none"> <li>Business plan is drafted</li> <li>Business plan is marketed to potential investors</li> <li>Tenders for business</li> </ol>	<p><b>SFA accepts or rejects potential business partners</b></p>

	<ul style="list-style-type: none"> <li>✓ Income – expenditure analysis</li> <li>✓ Financial distribution plan</li> <li>• Tender business plan to preferred or public operators / investors</li> </ul>	partnerships are requested and reviewed	
IMPLEMENTATION	<ul style="list-style-type: none"> <li>• Camp development: buildings, airstrip, roads, vehicles</li> <li>• Staff recruitment / specialist training</li> <li>• Marketing plan development <ul style="list-style-type: none"> <li>✓ Promotional packages are offered to attract interest</li> <li>✓ Promotional video is created</li> <li>✓ Journalists and TV media are approached to publicize</li> </ul> </li> </ul>	<ol style="list-style-type: none"> <li>1. Construction begins on camp infrastructure</li> <li>2. Staff is hired and training provided</li> <li>3. Marketing plan is developed and initiated</li> </ol>	<b>Camp opens and new revenue from tourism is captured and distributed according to plan</b>



# ASIAN WILD HORSE CONSERVATION, MONGOLIA



Smithsonian  
National Zoological Park  
Conservation Biology Institute



## Overall Goals

Our primary goal is to advance Asian wild horse reintroduction and conservation through critical and comparative research on habitat use; habitat enhancement to promote population growth; and capacity building of local staff.

## Rationale

The Asian wild horse is a flagship species for the conservation importance of zoos. After going extinct in the wild during the late 1960s, the species thrived in breeding programs and in recent decades has been restored to the wild through reintroduction programs in Mongolia, China, Russia, and Ukraine. Worldwide, the wild population of Asian wild horses stands at ~500.

In Mongolia, we are focusing conservation research efforts in Hustai National Park, where the world's largest reintroduced population of 330 horses continues to face challenges, including extreme winters that can decimate numbers in one season; livestock encroachment and disease; and the risk of inbreeding with domestic horses. Furthermore, the population is only occupying 35% of the park and remains a conservation-dependent species requiring close management.

Our work in Mongolia is aligned with the Minnesota Zoo's vision to be a leader in saving wildlife through engagement, inspiration, and action. It also provides a direct connection to one of the Zoo's flagship collection species. The Minnesota Zoo has been involved in Asian Wild Horse population management since our founding in 1978. In 1990, the Minnesota Zoo sent a stallion named "Amraa" to the Netherlands to participate in a breeding program for a population of Asian wild horses to be reintroduced to the wild. It is estimated that 82 of his descendants are alive today in Hustai National Park. The Minnesota Zoo's Director of Animal Collections Tony Fisher currently coordinates the Species Survival Plan for this endangered species.

## Project History and Major Accomplishments

Our Asian wild horse field conservation projects grew out of a partnership with the Smithsonian Conservation Biology Institute (SCBI) and their work at the Asian wild horse reintroduction site in China. In 2013, we began a formal partnership with SCBI and signed a five-year MOU with them and partners in Mongolia. In 2014, we launched the True Wild Horse campaign ([www.truewildhorse.org](http://www.truewildhorse.org)) to raise awareness about the species and funding for their conservation.

Recently in Mongolia, we have worked with Hustai biologists to deploy GPS tracking collars on eight mares and set up 10 camera traps in the park to monitor water resources (nine natural and one artificial water holes). This is important to better understand current usage of water resources and the potential impact of adding artificial water sources.

## 2017 Objectives and Future Directions

- Continue satellite GPS tracking of Asian wild horses through October 2018 to assess movement patterns and resource use in Hustai National Park and produce habitat improvement management plan
- Analyze one year of camera trap data to evaluate how water resources are used by wildlife and livestock across Hustai National Park and produce potential water improvement management plan
- Construct an artificial water hole in a location that will encourage the expansion of Asian wild horses into an area of the park where they are currently not establishing harems
- Assess movement patterns of wolves in Hustai National Park to identify areas of greatest risk to Asian wild horse foals
- Train Hustai biologists in data analysis methods

## Key Partners

Smithsonian Conservation Biology Institute and Hustai National Park Trust

## Annual Non-payroll Project Expenses and Funding Sources

All funding is dependent on outside grants that fluctuate annually. The Minnesota Zoo Foundation has historically committed \$10,000 a year in support of this project, however, project plans are heavily based on whether we secure additional funding. The table below shows our estimated budget for 2017.

Budget Category	MNZoo Foundation (Private Donations)	Smithsonian (Outside Grants)	Funds Needed
Travel	\$5,440	\$2,000	
Supplies & Equipment	\$1,000	\$500	
GPS collar data download	\$3,000 (horses)	\$3,000 (wolves)	
Wolf capture and collaring services		\$5,520	
Boring a new artificial water hole			\$11,650
Installing a solar panel water pump at artificial water hole			\$9,400
Total (\$41,510)	\$9,440	\$11,020	\$21,050





**Asian Wild Horse Conservation, Mongolia**  
**2017 Trip Report: 25 May – 17 June | 10 Aug – 18 Sept**

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Submitted to the Minnesota Zoo Foundation and Smithsonian Conservation Biology Institute  
Dr. Kate Jenks, Conservation Biologist, Minnesota Zoo



*Kate taking body measurements of an anesthetized wolf. Photo by Nandintsetseg Dejid*

### **The Problem**

Once considered “extinct in the wild,” Asian wild horses were reintroduced into Mongolia and China from a captive breeding program. The largest population of Asian wild horses (currently ~320 individuals) is at Hustai Nuruu National Park (HNNP), Mongolia. Their population remains low, but numbers might grow more rapidly if they expand their range.

***Why do they only use 35% of the 500km<sup>2</sup> park?***

***Do Asian wild horses avoid areas due to predation?*** On average, 40% of mortalities of Asian wild horse foals every year are attributed to attacks by wolves. This high mortality rate is a matter of great concern to the management of HNNP.

***Are Asian wild horses limited by water availability?*** Year-round water availability may be a critical factor in determining where horses settle, so strategically placed artificial water holes could provide incentive for the horses to expand their ranges. Thanks to the Minnesota Zoo Foundation and Columbus Zoo and Aquarium we were able to pay for the construction of an artificial water hole in Khuurai Valley-- a central region of Hustai National Park that is currently not utilized by the horses. Will this benefit the horses or cause additional problems with overgrazing and disease transfer from domestic animals?

## **25 May – 17 June Objectives**

- (1) Deploy GPS tracking collars on 3 individual wolves from different packs. The areas of overlap between wolves and horses will help clarify the degree to which wolves are a threat to adult Asian wild horses, whether they force them to adapt their activity/areas of use, and how their movements are related.
- (2) Oversee the completion of an artificial water hole by June 2017 to give us 6 months of post-monitoring this year. The work involves boring a new well, molding a concrete water basin, and installing a solar powered pump to move water from the well to the basin.

## **25 May – 17 June Team**

Dr. Kate Jenks, Conservation Biologist, Minnesota Zoo

Ben Sutton, Northern Trail Keeper, Ulysses S. Seal grant recipient, Minnesota Zoo

Dr. John McEvoy, Post-Doctoral Fellow, Smithsonian Conservation Biology Institute

Jack Whitman, retired from Alaska Department of Fish and Game.

Research biologist, Idaho Fish and Game. Experienced wolf trapper.

Thanks to support from the Minnesota Zoo Foundation, we were able to purchase field and veterinary supplies, pay Jack a consultant fee, and cover travel costs for Kate and Ben.

Thanks to the Minnesota Zoo Foundation and Columbus Zoo and Aquarium we were able to pay for the construction of an artificial water hole.

Thanks to the Smithsonian Conservation Biology Institute for covering travel costs for John and Jack.

## **25 May – 17 June Outcomes**

- 25 trap sites established for a total of 133 trap nights. This effort resulted in only one capture, that of a young-of-the-year wolf that was too young to collar. We were not able to deploy any GPS tracking collars.
- The apparent density of wolves in Hustai National Park was strikingly high. In discussions with park rangers and biologists and through our own searches, we located at least 4, and possibly 5, different litters of wolf pups.
- A different season may be advantageous. Possibly autumn trapping rather than early summer, as wolves may react different to olfactory lures. Also, trapping during autumn there will be less abundant natural prey available.

## **25 May – 17 June Challenges**

- Wolves seemed blatantly uninterested in the three scent lures we used for attracting wolves.
- In three cases, we found fresh kill sites of red deer and these are usually very productive trapping sites. In North America, wolf predation on a large prey animal normally results in multiple feeding bouts by members of a pack over a several-day period. However, there was no evidence that wolves returned to these sites in Hustai.
- There was little scat or footprint sign to help us locate wolves.
- The timeline for completion of the artificial water hole was delayed because the well was deeper than expected and this resulted in a need to redesign the pump and modify the size of the solar panel display.





*Location of Hustai National Park*

*Copyright: New York Times Company 2005*



*Wolf research team in front of our trusty Russian van: Jack, Togo, Ben, Kate, John, Uugan.  
Photo by John McEvoy*



*John and Jack setting off in Hustai National Park to check whether we were lucky to attract a wolf.  
Photo by Kate Jenks*





*Ben concentrating on his target practice to discharge a dart from a blow pipe that could be used to deliver immobilization drugs to a wolf. Photo by Kate Jenks*



*Kate's hand next to a Mongolian wolf print. Photo by Kate Jenks*

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### **10 Aug – 18 Sept Objectives**

- (1) Deploy GPS tracking collars on 3 individual wolves from different packs. The areas of overlap between wolves and horses will help clarify the degree to which wolves are a threat to adult Asian wild horses, whether they force them to adapt their activity/areas of use, and how their movements are related.
- (2) Oversee the completion of an artificial water hole by the end of 2017.
- (3) Deploy GPS tracking collars on 10 individual Asian wild horses from different harems. Location data collected every hour will provide a picture of the horse's movement and water source use "before" and "after" the installment of the artificial water hole. We hope the data will document some harems exploring the new water hole in an area of the park that was previously unused. We will use our findings to draft a habitat improvement plan and assess the application of artificial water as a management tool.

### **10 Aug – 18 Sept Team**

Dr. Kate Jenks, Conservation Biologist, Minnesota Zoo

Dr. Jim Rasmussen, Lead Veterinarian, Minnesota Zoo

Bridget Smith, Close Encounters Naturalist, Ulysses S. Seal grant recipient, Minnesota Zoo

John Hart, District Supervisor, Wildlife Biologist, USDA-APHIS-Wildlife Services

Nandintsetseg Dejid, Ph.D. Candidate, Senckenberg Biodiversity Climate Research Centre

Dr. John McEvoy, Post-Doctoral Fellow, Smithsonian Conservation Biology Institute

Thanks to the Minnesota Zoo Foundation for supporting Kate, Jim, Bridget, and John H.'s travel costs, field and veterinary supplies, and ongoing satellite service fees for 8 GPS tracking collars on Asian wild horses.

Thanks to the Smithsonian Conservation Biology Institute for purchasing 8 additional GPS tracking collars for Asian wild horses, covering the service fees for 8 horse collars, 3 wolf collars, and travel costs for John M.

### **10 Aug – 18 Sept Outcomes**

- We deployed GPS tracking collars on 3 wolves. One adult female and two adult males.
- We deployed GPS tracking collars on 10 additional Asian wild horse mares. We now have 15 different harems (nearly 50% of the harems in the park) being monitored via GPS collars.
- The artificial water hole was completed at the end of September, 2017. We believe we are on target to improve the water availability for Asian wild horses in Hustai National Park. The next step is to evaluate the impacts. If the horses do not discover the artificial water hole on their own, park rangers might gently herd some of the harems into the area.
- Since October 2015, we have been collecting camera trap data on watering hole use of Asian wild horses and other animals in the park. There is also a camera trap at the new artificial water hole site. Data collection will continue throughout 2017 and 2018. From the photos we can learn how often wildlife and livestock visit the water and what time of day (or night). This is important to document to better understand the impact of adding artificial water sources.



### **10 Aug – 18 Sept Challenges**

- Heavy, cold rain the first two weeks when we were setting up for wolf trapping.
- Asian wild horse harems were more difficult to approach than the last trip because they were in a higher elevation/rockier area of the park.
- Collar removed from one horse was broken and needs to be refurbished.
- The artificial water hole will not be filled with water until spring 2018. The park management decided not to leave the pump active this late in the year because of concern that freezing temperatures would damage the pump. This has delayed our ability to assess the impacts of the constructed water hole and evaluate the effectiveness of an artificial water hole in comparison to natural water sources.

### **Next Steps**

- Continue volunteer photo date entry from camera traps throughout 2017 and 2018. Kate will analyze animal activity times and species composition across the park.
- Before vs after study for new artificial waterhole looking at how species composition and horse movement changes (particularly if they are being moved by park staff). How long does it take for community structure at the new waterhole to match that of the old ones?
- Obtain import/export permits for Asian wild horse blood and hair samples to be analyzed by Dr. Tim Smyser at Purdue to explore:
  - Loss of diversity through inbreeding
  - Variation in reproductive success/pedigree reconstruction
  - Introgression between Asian wild horses and domestic horses
- Explore feasibility of using satellite imagery or aerostat (blimps) to estimate livestock numbers in HNNP.

**See photos below.**



*Checking an anesthetized wolf for injuries and body condition. John, Kate, Nandia. Photo by Uuganbayer Ganbold*



*GPS tracking collar deployed on a female wolf in Hustai National Park. Photo by Nandintsetseg Dejid*





*Asian wild horses, known as Takhi in Mongolia, are the focus of our conservation research.  
Photo by John Hart*



*Our team visited Mongolia in April 2016 and September 2017 to deploy GPS tracking collars on Asian wild horses in Hustai National Park. Photo by Uuganbayer Ganbold*



*Takhi mare with a GPS tracking collar. We now have 15 collared mares in Hustai National Park. Photo by John McEvoy*



*Asian wild horses are potentially limited by water resources in Hustai National Park, Mongolia. Photo by Kate Jenks*





*Usukhjargal Dorj, Director of Research at Hustai National Park, working on the concrete base of a building to protect the new well and pump for an artificial water hole. Photo by Kate Jenks*



*Solar panel array to power a pump that provides water to an artificial water hole for Asian wild horses. Photo by Usukhjargal Dorj*



*Artificial water hole basin to support Asian wild horses.  
Photo by Usukhjargal Dorj*



**Asian Wild Horse Conservation, Mongolia**  
**Trip Report: 6-22 October 2015**

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Submitted to the Minnesota Zoo Foundation and Smithsonian Conservation Biology Institute  
Dr. Kate Jenks, Conservation Biologist, Minnesota Zoo



*Asian wild horses in Hustai National Park*

**Background**

The Minnesota Zoo has been involved in Asian wild horse (Takhi; Przewalski's horse) population management since our institution began breeding horses in 1978. In 1990 the Zoo sent a stallion to the Netherlands to be included as a breeding founder for a population of horses to be reintroduced into the wild. It is estimated that he had 196 descendants and 82 of those are still alive in Hustai Nuruu National Park, Mongolia. Through our Ulysses S. Seal Conservation Grant Program we have also monetarily supported Przewalski's horse conservation in 2004 in Mongolia and in 2006 and 2012 in China.

In 2012, Tony Fisher at the Minnesota Zoo took over coordinating the Asian Wild Horse Species Survival Plan. This in part has motivated the Zoo to become more active and a larger player in *in-situ* conservation efforts for the species.

In fall 2013, Kate Jenks travelled to Mongolia to survey each of the reintroduction sites (Hustai Nuruu National Park, Great Gobi B Strictly Protected Area (Takin Tal), and Khomiin Tal). We signed an MOU with Hustai National Park and the Smithsonian Conservation Biology Institute (SCBI). We have since fulfilled some of our tasks outlined in the MOU including holding a GIS workshop in Mongolia (March 2014) and funding Byamba, a staff member from Hustai, to intern at the SCBI GIS lab (fall 2014).

## Key Objectives

Our long-term goal is to develop a Minnesota Zoo – Smithsonian Conservation Biology Institute joint project that addresses an important conservation need for reintroduced Asian wild horses. The objectives of this trip were to

- (1) Meet the new Director of Hustai and confirm our continued partnership
- (2) Discuss logistics involved with deploying GPS tracking collars on Asian wild horses and wolves in Spring 2016
- (3) Work with Byamba, staff member at Hustai, to move forward on data analysis that was started at the SCBI's GIS lab
- (4) Setup camera trap monitoring at 10 water sites
- (5) Scope options and obtain contact information for local handmade products that could be sold at the Minnesota Zoo gift store

## Timeline

The field trip took place from 6-22 October 2015.

A daily location and activity description is provided below.

| DATE      | PLACE                           | MAIN ACTIVITY                                                                                                                                                  |
|-----------|---------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 6 Oct 15  | In Transit from USA to Mongolia | Travel                                                                                                                                                         |
| 7 Oct 15  | In Transit from USA to Mongolia | Travel                                                                                                                                                         |
| 8 Oct 15  | Ulaanbaatar                     | Met contact (Nandia) for planning; exchanged money; prepared presentation for Park                                                                             |
| 9 Oct 15  | Hustai                          | Travel to Hustai National Park<br>Presentation for senior park staff<br>Meeting to discuss logistics for Spring research                                       |
| 10 Oct 15 | Hustai                          | Met biologists to discuss camera trap research<br>Scouted locations for camera traps<br>Set up 3 camera traps                                                  |
| 11 Oct 15 | Hustai                          | Met with Byamba to review data analysis                                                                                                                        |
| 12 Oct 15 | Hustai                          | Set up 6 camera traps                                                                                                                                          |
| 13 Oct 15 | Hustai                          | Worked with Byamba and Uuganaa in office (mapped location of cameras, reviewed GIS files, discussed research and data collection methods)                      |
| 14 Oct 15 | Hustai                          | Worked with Byamba in office on red deer analysis                                                                                                              |
| 15 Oct 15 | Hustai                          | Transect data collection with Uuganaa<br>Transect data meeting with park rangers<br>Presentation for park rangers<br>Set up one camera and checked two cameras |
| 16 Oct 15 | Hustai                          | Worked in office on trip report<br>Meeting with park staff to discuss equipment needs                                                                          |
| 17 Oct 15 | Hustai                          | Travel to meet with nomadic family and discuss handmade felt products                                                                                          |
| 18 Oct 15 | Hustai                          | Met with Kirk Olson<br>Travel to Ulaanbaatar                                                                                                                   |
| 19 Oct 15 | Ulaanbaatar                     | Meeting at Snow Leopard Conservation Foundation                                                                                                                |
| 20 Oct 15 | Ulaanbaatar                     | Day off                                                                                                                                                        |
| 21 Oct 15 | In Transit from Mongolia to USA | Travel                                                                                                                                                         |
| 22 Oct 15 | In Transit from Mongolia to USA | Travel                                                                                                                                                         |



### Location of Hustai National Park



Map Base Layer Credit: Riccardo Pravettoni, GRID-Arendal  
[http://www.grida.no/graphicslib/detail/mongolia\\_a126](http://www.grida.no/graphicslib/detail/mongolia_a126)

### 9 Oct. 2015 Meeting at Hustai National Park

#### Attendees:

Dashpurev Tserendeleg (Puje), Director of Hustai  
takhi@hustai.mn  
Usukhjargal. D (Usukhuu), Research Manager  
usukhjargal2001@yahoo.com  
Batbyamba Khanakhuu (Byamba), IT staff trained at SCBI  
Batbyamba.kh@gmail.com  
Uuganbayar Ganbold (Uuganaa), Wildlife Biologist  
Uugan.wildlife@gmail.com  
(Togy), Protection Manager  
Nandintsetseg Dejid (Nandia), Translator and Coordinator



*Left to right: Nandia, Byamba, Togy, Usukhuu, Puje*

I gave a presentation on the background of Minnesota Zoo and the Smithsonian Conservation Biology Institute, our previous involvement with Asian wild horse, and our partnership and research goals for the Asian Wild Horse conservation project. Puje, the new Director of Hustai, used to be the Park's Tourism Manager. I met him during my last trip and he worked with the Minnesota Zoo Foundation to set up a trip to the park as a silent auction item for a fundraiser. We already have a good relationship with him and he speaks English very well. We reviewed key points of the MOU and agreed that no changes were needed. We also reviewed the budget for the project and spent four hours discussing questions around the logistics for collaring Asian wild horse and wolves. Some key points from this discussion:

- Regarding the logistics for next spring's horse collaring, we will determine which groups to target by looking at past ranger data on group distributions. We will choose groups that have the potential to move into the central section of the park and/or groups that have potential to use the current artificial water hole. The final selection will be made in April after visiting the harems with the rangers and determining the horses' health/strength after the winter. Target harems include: Zerleg, Burged, Bolor, Argada, and Naranbaatar. We can approach between 5-50m from the horses. The rangers and biologists do not think that a blind is needed. They agree that April is the best time to deploy the collars. A challenge at this time of year will be drugs freezing in the dart needles, but waiting longer runs into the birthing season.
- The Park can receive any equipment or veterinary drugs shipped through customs. The process is for us to first send the items. Once they arrive at customs, then the Park can work with the Ministry of Environment, Ministry of Finance, and Head of the Customs Office. This process cannot be started before the item is at customs. It is a long time-consuming process that does not have a clear protocol. This is a known frustration and Park staff discussed the need for a streamlined process with the Ministry during a Protected Areas Meeting on Oct. 12<sup>th</sup>. We will



need to ship as soon as possible veterinary drugs and CO<sub>2</sub> canisters for the dart rifle. We should hand-carry and not declare GPS tracking collars.

- Park staff are very eager to study wolves, however, we decided to start with two wolf collars (down from an original plan of five) because the group consensus was that it is going to be very difficult to trap adult wolves. They also worry that they will be quickly shot by herders. We plan to hire a local hunter to help us decide where to place traps. The money saved not buying 3 collars will be used to cover trapping equipment costs that we did not have money for before. This will enable us to move forward with wolf trapping even if no additional grants are received.
- Yaks are not attacked by wolves and therefore herders allow them to wander freely. They are becoming a huge problem in the Park.
- Usukhuu gave a progress update on the Takhi Country-wide database (for which Minnesota Zoo supplied money for a computer server): data from 1999-2011 from Hustai has been imported and they are in the process of entering new data. Hustai staff are troubleshooting the software and then other parks will be asked to contribute their data. The server is housed at the Hustai office in Ulaanbaatar.
- In June 2014, the rangers began collecting opportunistic data on livestock and hunter presence in the park. The rangers work in 12 park zones and patrol their zone every few days. So, the park has monthly presence/count data for livestock that the biologist, Uuganaa, enters into the computer and GIS.
- Their biggest financial need is support for ranger salaries and fuel.
- The artificial water hole they installed is not year-round. Would we be able to work with them to construct a system that does not freeze in the winter?

### **Camera Traps**

- Byamba, Uuganaa, and I set up cameras at 10 water source locations. We did not place a camera at the artificial water hole because it is currently closed for the winter. Uuganaa is in charge of changing SD cards every two weeks, monitoring batteries, and uploading the photos to my cloud storage. This will be considered part of his regular tasks and we will not pay him additional money. I hope to recruit Zoo volunteers to review the photos and enter information into an excel spreadsheet for analysis.

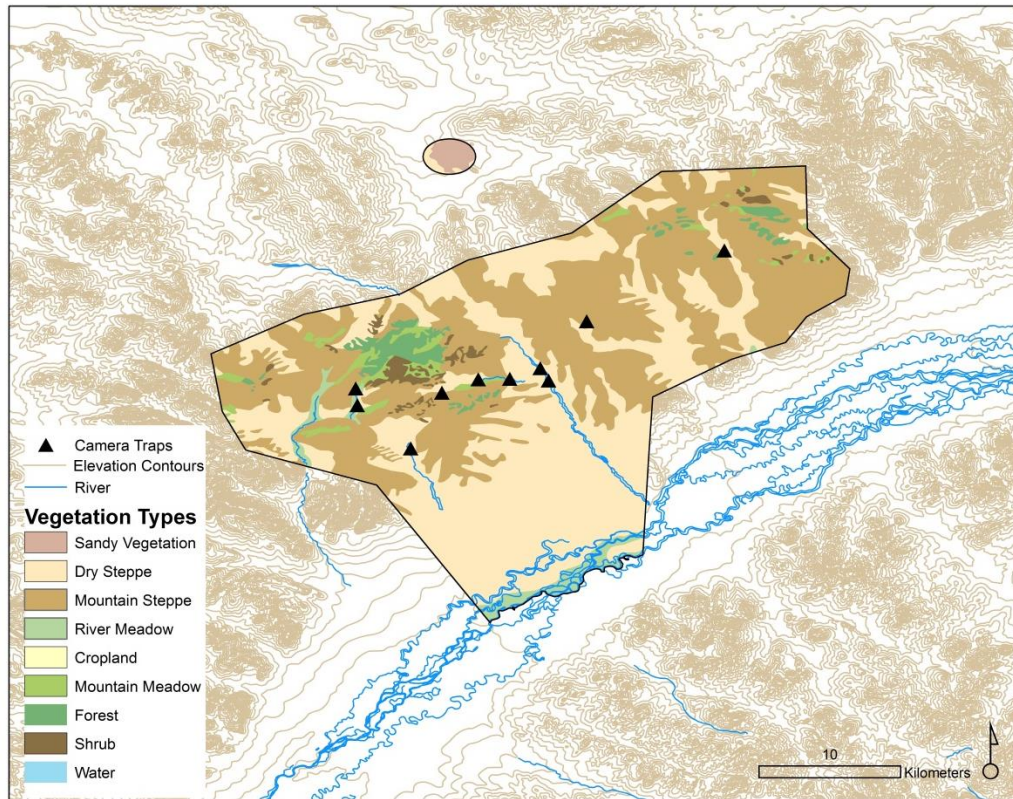


*Nandia and Uuganaa setting up a camera trap at a water source site in Hustai National Park to monitor wildlife and livestock use.*



*Byamba and Uuganaa setting up a camera trap at a water source site in Hustai National Park to monitor wildlife and livestock use.*





*Camera trap locations at Hustai National Park within the core area of the park.*

### **Byamba's Data Analysis**

Nandia and I reviewed with Byamba the data analysis he started while he was an intern at the SCBI's GIS lab. In January 2015 he presented his work to the Hustai Scientific Council and he sent me an email saying that they told him he used incorrect models for the size of the park. I misinterpreted this email. It seems that they commented not on the model type, but suggested he use additional variables such as slope, aspect, temperature, and precipitation.

During his time at the GIS lab, Byamba calculated the distance from red deer data from each transect line and plotted a histogram to determine that 95% of the red deer detections were within 1300m of a transect line. He then created a buffer of 1300m around 13 transects to identify the survey area from which to pull presence/absence points for modeling red deer distribution. Presence/absence points were assigned to a grid fishnet of 500m x 500m. He prepared environmental data layers (rasters with a 10m x 10m resolution): vegetation classes, distance to roads, distance to water, distance to the park boundary, distance to forest, distance to winter camps, distance to ranger stations, and distance to nearest wolf den/detection. Byamba then ran models to map the distribution of red deer for 2014 using GLM, random forest, and GAM models. Since his time at SCBI, he did no further work on the analysis.

It seemed that he had a viable 2013 model for red deer and I thought that I would be working with him to create distribution maps for years 2003-2013 and then comparing the maps among years. However, Nandia, does not trust the way he extracted the environmental variables. Basically, we need to start over to make sure the data going into the model are correct. Additionally, she does not like the idea of looking at yearly data because this would involve using a yearly average for the Normalized Difference Vegetation Index (NDVI) variable. A yearly average NDVI may not be accurate because snow in the winter months might cause inflated NDVI values. It would be better to separately look at three seasons: Spring (March, April, May), Summer (June, July, August, Sept.), and Winter (Nov., Dec., Jan., Feb.). Right now, Byamba's data is not setup to analyze by season.

Nandia decided it would be best to start from the beginning and have Byamba focus this week on extracting presence/absence points for red deer for each transect group we plan to model. We decided to first focus on Summer and Winter maps for 2004, 2009, and 2014. Then, she will plan a Skype call with Peter to clarify a resolution for extracting the environmental variables. Nandia would like to meet with Byamba in person in December, during school winter break, to work on next steps. She is the best person to help him with the data because she did the exact same modeling work for her Master's thesis and she uses R daily for data analysis work as a graduate student. It would be ideal if we can use some of our general "Conservation bucket" money to pay for Nandia to travel from Germany to Mongolia in December.

## **Miscellaneous Trip Notes**

### Prague Zoo and Transport of Takhi from Hustai to Takin Tal

On the 10<sup>th</sup> of October I briefly met with Miroslav Bobek, the Director of Prague Zoo. Prague Zoo plans to transfer four horses from Europe to Takin Tal in July 2014. Then, they plan to use the same plane to transfer four mares from Hustai to Takin Tal. Hustai staff plan to build a fence to house the mares prior to transport and this fence will be built in the center of the park where it might serve a second purpose in the future of relocating a harem within the park to encourage them to adapt to a new area. The fence is near the location of the artificial water hole. They do not have all of the funding (cost of \$25,000 US) needed to transport the horses to Takin Tal because the plan is contingent upon receiving government funding. I thought there could be an opportunity if the Minnesota Zoo is interested in financially supporting this effort. However, in a later conversation with Uuskhuu, he said that we do not need to look for funding because he wants to force the government to participate. Bobek's assistant, Jenny, has my email and will contact me for further discussion. Bobek did not want to spent time to talk with me while he was at Hustai.



## Wildlife Disease

Uuganaa, the park wildlife biologist, is collecting data on diseases of the livestock and red deer in Hustai. They have seen an increase in what he calls “mad staggers” in sheep (symptoms he described seemed similar to mad cow?). They hypothesize that it was introduced to the sheep from the wolves. This seems unlikely to me, but I would have to read more about the disease. Uuganaa would like advice on how to collect samples and what he can do to track the spread of the disease. They do not have access to a lab for analyzing samples. It would be helpful if Dr. Jim Rasmussen could come prepared to discuss this disease with Uuganaa and ideas for studying it. For example, what type of lab equipment would they need to identify the disease and what type of samples (blood, tissue?) are required? How should the samples be collected and stored?

## Traditional Nomadic Herders and Felt Products

The assistant camp manager, Batzaya.B ([bzaya\\_10@yahoo.com](mailto:bzaya_10@yahoo.com)), took me to meet his family (traditional nomadic herders) on October 17<sup>th</sup>. Batzaya is a good contact to discuss options for items that we can sell at the Minnesota Zoo gift store. He is trained in tourism and has aspirations to be the tourism manager at the Park. His family runs a home-stay tourism operation and organizes local women in making felt products. They seem very established and have even been visited by the Secretary-General of the United Nations, Ban Ki-moon. They showed me a number of example products that included chair cushions, hot-pads, small bags with knuckle-bones (a game), and felt slippers. Any of the products can be customized with a horse image and they have the resources to reach out to the community and produce a high number of items if needed.



*Handmade felt chair cushions, hot-pad, and slippers*



*Demonstration of how to make rope from horse hair*

#### Snow Leopard Conservation Foundation

I met with Bayarjargal Agvaantseren (bayarjargal@snowleopard.org), the Executive Director of the Snow Leopard Conservation Foundation on October 19<sup>th</sup>. The group was established in 2000 and they conduct snow leopard research (have collared nearly 20 snow leopards) as well as engage communities in livestock insurance schemes and alternative livelihood activities. They partner with the Snow Leopard Trust (run out of Seattle) who works with many zoos to sell handmade Mongolian products. They focus on Western Mongolia and artists who work with them sign a “Conservation Contract” where the community agrees not to hunt wildlife in the area. If there are no reported illegal activities, they receive a 20% bonus above the normal amount paid for the products. This Foundation has already dealt successfully with hurdles such as maintaining high quality across all products and creating items that sell well in Western Zoos. We could work with the Snow Leopard Trust to sell items at our gift store (the most immediate route), but it would not directly connect with the herders living around Hustai National Park. If we want to pursue a closer connection with Hustai, the Snow Leopard Conservation Foundation could be helpful because they can facilitate basic and advanced training for felt products. For example, they could teach women how to dye colors and have professional designers who could help incorporate a horse theme.





*The entrance to Hustai National Park*



*Park rangers discussing transect data sheets.*



*Yaks grazing in Hustai National Park*



*Panoramic view of Hustai National Park*





*Red deer in Hustai National Park are increasing in numbers and biologists think they may be harming the birch forests*

**Przewalski's Horse Conservation, Mongolia**  
**Trip Report: 11 September – 7 October 2013**

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Submitted to the Minnesota Zoo Foundation and Smithsonian Conservation Biology Institute  
Dr. Kate Jenks, Conservation Biologist, Minnesota Zoo



*Przewalski's harem in TakinTal*

**Background**

The Minnesota Zoo has been involved in Przewalski's horse (Takhi; Asian wild horse) population management since our institution began breeding horses in 1978. We currently house seven horses at the Zoo. In 1990 the Zoo sent a stallion to the Netherlands to be included as a breeding founder for a population of horses to be reintroduced into the wild. It is estimated that he had 196 descendants and 82 of those are still alive in Hustai Nuruu National Park, Mongolia. Through our Ulysses S. Seal Conservation Grant Program we have also monetarily supported Przewalski's horse conservation in 2004 in Mongolia and in 2006 and 2012 in China.

In 2012, Tony Fisher at the Minnesota Zoo took over coordinating the Asian Wild Horse Species Survival Plan. This in part has motivated the Zoo to become more active and a larger player in *in-situ* conservation efforts for the species.

**Key Objectives**

Our long-term objective is to develop a Minnesota Zoo – Smithsonian Conservation Biology Institute joint project that addresses an important conservation need for wild Przewalski's horses.

To do this we need to

- (1) Review existing conservation efforts in Mongolia
- (2) Consult with relevant organizations and individuals involved in Przewalski's horse research
- (3) Identify any current gaps in Przewalski's horse *in-situ* conservation efforts
- (4) Identify links and opportunities where we have skills that can add value to complementary conservation activities
- (5) Establish a foundation for partnerships in-country



## Timeline

The field trip took place from 11 September – 7 October 2013.

A daily location and activity description is provided below.

| DATE      | PLACE                           | MAIN ACTIVITY                                                                                                  |
|-----------|---------------------------------|----------------------------------------------------------------------------------------------------------------|
| 11-Sep-13 | In Transit from USA to Mongolia | Travel day. Left for MSP at 5am                                                                                |
| 12-Sep-13 | In Transit from USA to Mongolia | Travel day. Arrived in Ulaanbatar at 2am                                                                       |
| 13-Sep-13 | Ulaanbatar (UB)                 | Met contact (Nandia) at University; exchanged money; purchased SIM card                                        |
| 14-Sep-13 | Ulaanbatar                      | Recovery day; work: reading in preparation for Husai visit; shopping warm field gear                           |
| 15-Sep-13 | Travel to Hustai National Park  | Travel day                                                                                                     |
| 16-Sep-13 | Hustai NP                       | Discussions with park biologists about methods and Przewalski's horse status; hiking to see Przewalski's horse |
| 17-Sep-13 | Hustai NP                       | Driving tour of park; discussions with protection rangers; caught 3 poachers                                   |
| 18-Sep-13 | Hustai NP travel to UB          | Travel day; meeting with Petra Kaczensky, researcher at Univ. of Vienna                                        |
| 19-Sep-13 | Ulaanbatar                      | Laundry, purchased road maps; preparation for field trip                                                       |
| 20-Sep-13 | Travel to TakinTal              | Flight from UB to Altai; food shopping; 10hr. Drive                                                            |
| 21-Sep-13 | TakinTal                        | Driving in protected area to search for Przewalski's horse                                                     |
| 22-Sep-13 | TakinTal                        | Driving in protected area to search for Przewalski's horse; meeting with head of protected area (PA)           |
| 23-Sep-13 | TakinTal                        | Driving 12 hrs. in PA to search for Przewalski's horse; discussion with military ranger                        |
| 24-Sep-13 | TakinTal                        | Visit to local elementary school; discussions with teachers                                                    |
| 25-Sep-13 | Travel to Homintal              | Travel day; 13 hrs. driving                                                                                    |
| 26-Sep-13 | Homintal                        | Driving with ranger to conduct Przewalski's horse behavior monitoring; discussions with rangers                |
| 27-Sep-13 | Homintal to Khovd               | Travel day; driving 9 hrs.                                                                                     |
| 28-Sep-13 | Khovd to UB                     | Meeting with community organizer from Homintal Takhi project; Travel day                                       |
| 29-Sep-13 | Ulaanbatar                      | Day off                                                                                                        |
| 30-Sep-13 | Ulaanbatar                      | Trip report, blog writing, organization of receipts, edits to letter of agreement                              |
| 1-Oct-13  | Ulaanbatar                      | Meeting preparation with Nandia                                                                                |
| 2-Oct-13  | Ulaanbatar                      | Meeting at Ministry of Environment; Meeting with Hustai research manager                                       |
| 3-Oct-13  | Ulaanbatar                      | Meeting staff at WCS-Mongolia                                                                                  |
| 4-Oct-13  | Ulaanbatar                      | Meeting at International Takhi Group                                                                           |
| 5-Oct-13  | Ulaanbatar                      | Day off                                                                                                        |
| 6-Oct-13  | Ulaanbatar                      | Planning with Nandia                                                                                           |
| 7-Oct-13  | Travel to USA                   | Travel to US; arrive 10pm                                                                                      |



Capital: Ulaanbaatar (represented by a star)

Map Base Layer Credit: Riccardo Pravettoni, GRID-Arendal

[http://www.grida.no/graphicslib/detail/mongolia\\_a126](http://www.grida.no/graphicslib/detail/mongolia_a126)



## Hustai National Park



*Main tourist camp at Hustai National Park, a two hour drive from Ulaanbatar*



*Ideal habitat at Hustai National Park, but used by both Przewalski's horse and domestic livestock*

## TakinTal



*Research office and living gers at TakinTal*



*Desert Environment of TakinTal*



## Homintal



*Research camp at Homintal (Summer location)*



*Habitat at Homintal is predominantly sand*

## Przewalski's Horse Research Site Comparison

|                                      | Hustai National Park                                                                                                                                                                                       | TakinTal                                                                                                                                                                                                                                                                         | Homintal                                                                                                                                                                                                 |
|--------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Size</b>                          | 500 km <sup>2</sup>                                                                                                                                                                                        | 9,000 km <sup>2</sup>                                                                                                                                                                                                                                                            | 140 km <sup>2</sup> and fenced                                                                                                                                                                           |
| <b>Number of Horses</b>              | ~300                                                                                                                                                                                                       | ~90                                                                                                                                                                                                                                                                              | ~40                                                                                                                                                                                                      |
| <b>Level of Horse Monitoring</b>     | Rangers check and record group locations daily and biologists always have a good idea of all groups based on tourist/field encounters;<br>dedicated horse biologist;<br>Extensive data on demography       | 5 horses collared by Petra<br>Rangers find groups ~ 1x/week                                                                                                                                                                                                                      | Each harem observed twice a day by rangers or volunteer; horses are completely habituated and tame                                                                                                       |
| <b>People I've Met</b>               | Puujee, manager for tourism<br>Usukhuu, horse researcher<br>Uuganaa, wildlife researcher<br>Gunjee, veg. researcher<br>Derjsuren, ranger                                                                   | Gumba, head of TakinTal<br>Petra Kaczensky, researcher at Univ. of Vienna<br>Martina Burnik Sturm, Petra's Postdoc<br>Miroslav Bobek, director of Prague Zoo<br>Enkhsaikhan Namtar, project manager ITG<br>Baast, ranger<br>Military checkpoint ranger<br>Protected area rangers | French research volunteer<br>3 horse rangers<br>Tsevelmaa Begz, head of community work under Takhi project                                                                                               |
| <b>Other Background/Observations</b> | Dutch NGO started reintroduction and supported for 20 yrs.; support ended June 2013<br>60% of budget from tourism (9,000 foreign tourists per year)<br>All staff local people<br>Park run by Mongolian NGO | All projects would need to be coordinated with the International Takhi Group (ITG) (Swiss NGO)<br>Site dominated by Prague Zoo and Czech Development Agency<br>3 military points inside PA collect their own wildlife data and no interest to collaborate                        | Site implemented and maintained by French support initiated by Claudia Feh under TAKH Association<br>Trying to update status to PA<br>Rangers feel isolated and job retention seems low despite high pay |



|                                        |                                                                                                                                                                            |                                                                                                                                                                                                                                                                             |                                                                                                                                                                                |
|----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                        |                                                                                                                                                                            | Takhi monitoring is needed, but no staff to do it<br>Swamp areas are a key resource                                                                                                                                                                                         |                                                                                                                                                                                |
| <b>Research Potential</b>              | Any topic would be approved                                                                                                                                                | Prefer us to study other wildlife<br>No one on the ground to monitor/assist with data collection                                                                                                                                                                            | The site is a personal zoo for Claudia                                                                                                                                         |
| <b>Community Development Potential</b> | Would like to develop winter tourism; base camp needs some facilities to be updated to help tourism potential; already have a gift shop that could be expanded             | Schools in buffer zone well supported by Czech and ITG<br>Passionate teachers know specifically what additional support they need (irrigation system, support for ecology room, playground equipment)<br>Women's group already making and selling felt products through ITG | Passionate community organizer has many ideas about developing programs for women's groups to market their crafts (this is already supported by Takhi project)                 |
| <b>Horse Reintroduction Potential</b>  | Their goal is 500 horses, but probably low need for new horses                                                                                                             | Need more horses<br>High potential<br>Current head of PA very experienced with reintroductions                                                                                                                                                                              | Poor habitat, no one on-site to manage reintroduction<br>Logistics of transport a nightmare                                                                                    |
| <b>What They Listed as Priority</b>    | Support for protection unit (ranger salaries, petrol)<br>Data analysis assistance<br>Info. on artificial water sources<br>Research on wolves                               | Salary for dedicated research staff<br>Support for PhD student<br>High interest in GIS course<br>Money for petrol                                                                                                                                                           | Help to find international markets to sell livestock products<br>Ranger exchange program with other reintroduction sites<br>Garage for cars in winter camp<br>Money for petrol |
| <b>Pros</b>                            | Great habitat for horses<br>Any research option welcomed<br>Assistance on how to expand tourism welcomed<br>Researchers open to collaboration<br>Eng. speaking researchers | Greater potential for horse reintroduction<br>Prague Zoo is actively sending at least 4 horses a year<br>PA may be expanded to the West<br>PA so large for horses that there is                                                                                             | 5 rangers; 3 focus only on Phorse<br>Passionate community organizer working for 11 years on project<br>Project manager Eng. speaking                                           |

|             |                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|             | <p>Manager for tourism speaks Eng.</p> <p>Willingness to share data</p> <p>Rangers (12) passionate to assist</p> <p>Eco-volunteer program in the past for data collection help</p> <p>Easy to work with NGO vs. gov.</p> <p>2 hrs. from Ulaanbaatar</p> <p>Facilities for research</p> <p>No other foreign “presence”</p> <p>Nice accommodations to bring potential donors/volunteers</p> | <p>little contact with livestock/people</p> <p>There is a full ecosystem with many options for research</p> <p>Head of PA Eng. speaking</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Cons</b> | <p>Tiny protected area with no option to expand</p> <p>Livestock present in park</p> <p>Low horse reintroduction potential</p>                                                                                                                                                                                                                                                            | <p>2 different Amak (province) government stakes</p> <p>Only 7 rangers for huge area</p> <p>Rangers paid extra salary by ITG, but do not seem motivated</p> <p>No biologists</p> <p>Phorse harems are skittish after collaring and difficult to observe</p> <p>PA Head is overworked and no time for research</p> <p>All projects would need to be coordinated with the International Takhi Group (ITG) (Swiss NGO)</p> <p>Site dominated by extensive Prague Zoo and Czech Development Agency Support</p> <p>Prague Zoo not interested in Collaboration</p> <p>Prague Zoo and Petra are at odds</p> <p>Herder camps inside PA</p> | <p>Munkhtuya, manger of research site was given advance notice of our visit and chose to be away and make no preparations for our stay (left us locked out in the cold)</p> <p>Isolated area</p> <p>Sand, sand, sand</p> <p>No other large wildlife inside of fence (no competitors, no predators)</p> <p>Head of NGO for women’s community group (salary paid by Takhi project) has disappeared and not doing her job</p> <p>Claudia and Nandia have a negative history and I think she would be uncomfortable as a liaison to start research here</p> |



Illegal mining for gold inside PA

Not many water resources

Did I mention the sand?

Rangers are gov. employees so  
any wildlife work is additional  
for them and low priority

Contract with government  
needed for any  
research/support

Deep snow during winters; harsh  
winters difficult for horses

## **Oct. 2<sup>nd</sup> Meeting at Ministry of the Environment**

I attended a meeting at the Ministry of the Environment along with several directors of Przewalski's horse protected areas. Homintal was the only horse reintroduction site that was not represented at the meeting. The aim of the meeting was for representatives from each area to present the current status of Przewalski's horse and discuss any issues related to reintroduction. I gave a presentation about background of the Minnesota Zoo and Smithsonian Conservation Biology Institute and our interest in participating in Przewalski's horse conservation efforts. A TV crew recorded video at the end and the Ministry of the Environment planned to issue a formal press release summarizing the meeting. I did not see a final version and am not clear if it mentioned Minnesota Zoo or Smithsonian.

Main meeting agenda points:

1. National Database for Przewalski's horse Data
  - a. This has been discussed before, but development was halted because of no participation by Homintal
  - b. Attendees suggested writing a letter to reach out to Claudia again for collaboration
  - c. Ministry will help fund the database for 9 million Tugrik (~\$5,300 US dollars)
  - d. 3 Reintroduction sites have to decide who will manage it
  - e. Will be based at computer server in Hustai
  - f. Need funding to support someone to learn data management and oversee data entry
  - g. Nandia was tasked with writing up a proposal to submit to the Ministry to receive funding
2. Creation of a National Reintroduction Action Plan
  - a. Everyone agreed that someone at the Ministry should be chosen to lead this, but no one named
  - b. Include guidelines for dealing with hybrid foals and on who is the governor of horses
  - c. Kate will look for documents on horse reintroduction and contact Equid Specialist Group
  - d. Hustai horse biologist will do a literature review
3. Upgrade the Status of Homintal to a National Protected Area
  - a. There are two options: expand the national park to the direct west to encompass Homintal or make it its own protected area
4. New Reintroduction Sites?
  - a. There was some confusion over WWF's plans. They are leading the management of Khar Yamaat Nature Reserve, but do not have plans for reintroduction as the site is too small and has too many livestock
5. Extension of Great Golbi B Strictly Protected Area to the West
  - a. (Note: Great Golbi B Strictly Protected Area is the official name of the protected area, but it is used interchangeably with the local term for the area: TakinTal)
  - b. Problem because there are current mining licenses in the area
  - c. Could cancel licenses if they study the water table



Identified during the meeting as priorities for Przewalski's horse:

1. Collaboration between sites and the Ministry; note Homintal is not easy to work with
2. Support international collaboration and fundraising
3. Each protected area needs funding for emergencies like harsh winters
  - a. They need to request funds from the Mongolian government now to allow for processing time, not wait until winter
4. TakinTal needs more staff and especially one person to focus only on horses
  - a. Head of TakinTal needs to write a letter to the government as the first step
5. Increase involvement of Ministry with reintroductions
6. Draft law that covers what to do with hybrid foals; need data on prevalence first
7. Develop a network for all equid projects and identify a spokesperson for Przewalski's horse
8. Develop local fundraising ideas so not relying on foreign assistance
9. Register Przewalski's horse culture/reintroduction experience with UNESCO
10. National Przewalski's horse Day

Overall, the meeting had a friendly tone and all parties are willing to collaborate. There was no representative present from Homintal. Bandi, the head of Hustai National Park, signed our MoU between Hustai, Minnesota Zoo, and the Smithsonian that outlines a partnership agreement for Przewalski's horse conservation. The representatives from Hustai were most happy that the agreement included the training of their park biologists to analyze data and write scientific papers. As a follow-up, I had a three-hour meeting with Munkhbat, the manager of research at Hustai. We discussed some additional points that he would have liked to have seen included. I think they are all valid points, but I made no promises that we would deliver on the points or on funding.

Points discussed with Munkhbat, manager of research at Hustai N.P., related to the MoU:

1. It would be nice to include something about community-development work
2. The location for the yearly meeting to discuss the partnership should swap between USA and Mongolia. He would like us to pay expenses for someone from Hustai to travel to USA
3. Because they lost their support from the Dutch government, they have just started a \$1,000 research fee per year. There may be room to negotiate this depending on how we work the partnership.
4. Would like information on trap design for red deer
5. It would be nice if we could support a scholarship for a student to work at Hustai \$300/month (they have this program in place but can only afford to do it every 2 years)
6. They are still interested in a snowmobile, but they are too expensive to purchase in Mongolia. They work with an LA shipping company and can pay all shipping fees if we can find a used/donated machine.
7. Would like to write up a specific detailed Agreement for each research project separately
8. Any equipment purchased for a joint project should be donated to Hustai at the end of the project.
9. Goal of one Przewalski's horse and one general wildlife topic publication per year

### **Oct. 3<sup>rd</sup> Meeting with WCS-Mongolia**

Wildlife Conservation Society (WCS) is working in Southeastern Mongolia. There are recent mining activities (gold and copper) in Mongolia and there is a law that mining companies must pay a conservation offset. This is usually in the form of money supporting environmental projects or restoration. WCS has a big grant under this offset program from South Golbi Sands Mining Company to monitor all wildlife in the area affected by their mining. WCS is conducting wildlife transects and wild ass (khulan) research. They are not directly involved in Takhi reintroductions or research.

### **Oct. 4<sup>th</sup> Meeting with International Takhi Group (ITG)**

ITG is the NGO overseeing the management and direction of funding for the Przewalski's horse project in the Golbi. I met with Enkhsaikhan Namtar, project manager and board member.

ITG Member Institutions:

Stiftung Wildnispark Zurich (Switzerland)  
Zoo of Salzburg (Austria)  
Wildlifepark Bruderhaus, Winterthur (Switzerland)  
The Prague Zoo (Czech Republic)  
Animal Park of the town of Nurnberg (Germany)  
Zoo of Karlsruhe (Germany)  
A Japanese University may be joining soon

Enkhsaikhan was welcoming and indicated a strong desire for us to join ITG. This would be a necessary step for any work in the Golbi. He thinks the priorities in TakinTal are camera-trapping of mountain ungulates, wolf tracking, construction of an observation tower, and support of graduate students. Their next meeting will be in December. We should contact the head of ITG with a formal letter asking to join. Someone from MNZoo or SCBI should agree to act as a board member.

### **Next Steps**

I think a GIS/data analysis workshop should be our first priority to show some action on our end. This would strengthen partnerships with all reintroduction sites. Winter is the best time to schedule because it is the non-fieldwork season and more people could attend. The University of Mongolia is the best venue because of lab space and computer and internet access. Nandia will contact the head of the Science Department to learn what we need to do to move forward. Nandia agreed to translate the SCBI Open-Source GIS manual with help from Buuvei (WCS Mongolia). The biggest cost would be international airfare for GIS instructors. It would be nice to also raise funds for compensation for the translators.

- Obtain funding for GIS course
- Request membership in ITG with formal letter
- Review data from Hustai and explore data analysis options
- Decide on our priorities for topic of research and/or other support
- Obtain official title for Nandia at SCBI





*Wild Przewalski's Horse, Homintal, Mongolia.*

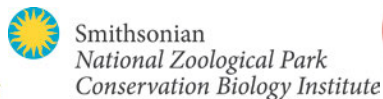


*Przewalski's Horse Harem, TakinTal, Mongolia.*

## Strengthening Asian Wild Horse Populations in Hustai Nuruu National Park, Mongolia



*We are studying Asian wild horses in Hustai National Park, Mongolia, to understand current horse habitat use and resource needs. Photo by Uuganbayar Ganbold*



### Background

In 2013, the Minnesota Zoo partnered with Hustai Nuruu National Park (Hustai) and the Smithsonian Conservation Biology Institute (SCBI) to develop the True Wild Horse campaign ([www.truewildhorse.org](http://www.truewildhorse.org)) to fund efforts to secure a future for Asian wild horses. **The long-term outcome we aim to achieve with this project is a healthier, more viable population of Asian wild horses at Hustai National Park.**

We chose to focus our efforts in Hustai National Park in Mongolia because it was one of the earliest and most successful reintroduction sites and currently supports the largest wild population of Asian wild horses (now over 300). However, the Asian wild horse remains endangered and more work needs to be done to ensure its survival. The horses use only 35% of the 500 km<sup>2</sup> park and require close management. Several factors inhibit the expansion of the horse population in Hustai. Livestock forage within the park and compete with the Asian wild horses for water and pasture. Contact with domestic horses also increases risk for disease transmission as well as hybridization. Finally, Asian wild horses at Hustai rarely leave the area surrounding their original release sites, resulting in effective isolation of two different groupings in the east and west areas of the park. Currently no harems have permanent residence in the park's central portion.



**Our main objective is to support the current Asian wild horse population to expand to other parts of Hustai Nuruu National Park**, starting with the central valley. We are engaged in discussions with Hustai management to work with herders to determine how to address the livestock and domestic horse presence inside the park and ultimately reduce these numbers. At the same time, Hustai biologists asked for our assistance in evaluating habitat improvements that could encourage growth of the Asian wild horse population numbers. Water availability is likely a critical factor that would allow the horses to expand into more of Hustai's area. Development of strategically-placed artificial water holes could provide for increased water availability and help the horses to expand their ranges. Range expansion should lead to growth in population numbers that will benefit their conservation and promote long-term population stability.

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### QUICK FACTS

#### **Przewalski's Horse (*Equus ferus*)**

**Status:** 2011 Endangered

2008 Critically Endangered

1996 Extinct in the Wild

**Reintroduced:**

Mongolia, China, Russia, Ukraine

**Estimated wild population size:** 500

To inform development of habitat enhancements, we first need to understand how the horses are currently using their habitat, and what may be limiting their expansion. We will also evaluate the effectiveness and impacts of an artificial water hole. We have begun research to obtain critical data needed to increase our knowledge about Asian wild horse habitat use and to assess the impact of artificial water holes.

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### 2016 Activities

We continue to collect data from ten camera traps set up in Hustai National Park in October 2015 to monitor water resources. From the camera trap photos we can learn how often wildlife and livestock visit the water and what time of day (or night). This is important to document to better understand the potential impact of adding artificial water sources.

In April 2016, we deployed 7 GPS tracking collars on Asian wild horse mares from 7 different harems. The collars collect information on the location of each horse every hour and help us monitor their movements. The harems were chosen because they could be approached within 30 meters and their home ranges are near our target area of study. The target harems are also from two different groupings within the park. The groupings have core home range areas to east and west of the central portion of the park. We hope to gain information that will help us encourage the horses to expand into the central valley.

*We are grateful for the generous funding we have received from several zoos, foundations, and individuals. We will continue to need support for this important work.*

Learn more: [www.truewildhorse.org](http://www.truewildhorse.org)

#### **Funding:**

Cedar Hill Foundation



Smithsonian  
National Zoological Park  
Conservation Biology Institute





*Location of Hustai National Park*

*Copyright: New York Times Company 2005*



*Our Minnesota Zoo team visited Mongolia in April 2016 to deploy GPS tracking collars on Asian wild horses in Hustai National Park, Mongolia. From left to right: Tim Hill, Dr. Kate Jenks, Taylor Steger, and Dr. Jim Rasmussen. Photo by Marion Stentz*

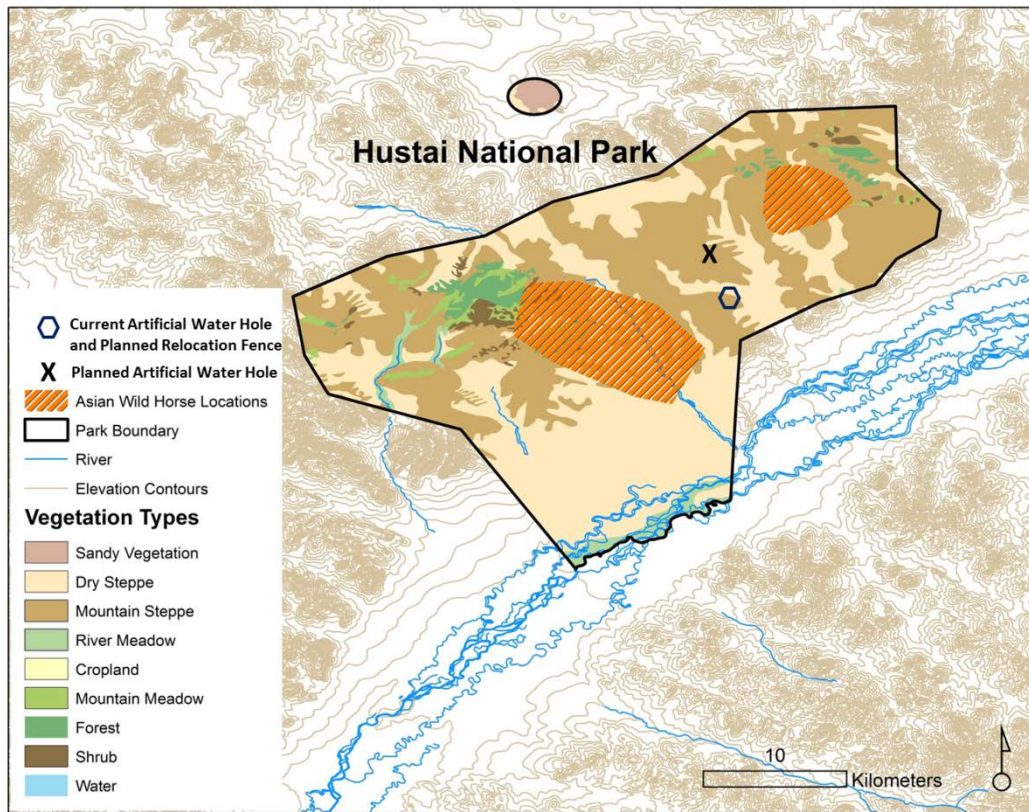




*Drs. Kate Jenks (MNZoo) and Melissa Songer (SCBI) working on an anesthetized Asian wild horse.  
Photo by James Murdoch*



*GPS satellite tracking collar deployed on an Asian wild horse in Hustai National Park, Mongolia.  
Photo by Uuganbayar Ganbold*



*Map of current and planned artificial water hole locations. The Asian wild horse locations in orange are core home ranges and horses do spend some time in the area of the current and planned artificial water holes. However, there are no harems with permanent core home ranges in this central area.*



*The current artificial water hole in Hustai National Park is a concrete basin with a solar powered well pump. In this picture the solar panels are not out and the well is closed until the ground becomes unfrozen.*





*A previously build catchment system that never collected water. This is one possible location for drilling a second well for an artificial water hole.*



*Uugana, Wildlife Biologist at Hustai National Park, works to maintain ten camera traps at water source locations. Photo by Marion Stentz*





*Hustai National Park rangers and biologists who helped with Asian wild horse immobilizations.  
Photo by Jim Rasmussen*



*Dr. Jenks placing a GPS tracking collar on an Asian wild horse. Photo by Marion Stentz*





*The team working up an anesthetized Asian wild horse. Photo by Uuganbayar Ganbold*



*Snow peppered mountains, a stunning backdrop to a harem of Asian wild horses at Hustai National Park, Mongolia. Photo by Taylor Steger*

[EXTERNAL] RE: CITES Permit App 66472D

Kokkeler, Laurie (MNZOO) <laurie.kokkeler@state.mn.us>

Tue 7/21/2020 11:46 AM

To: Cate, Emily B <emily\_cate@fws.gov>

2 attachments (1 MB)

Hustai Waterhole Funds Award Letter 4-28-17.pdf; ArtificialWaterhole\_HustaiReport\_27Oct\_2017.pdf;

**This email has been received from outside of DOI - Use caution before clicking on links, opening attachments, or responding.**

Hi Emily

Attached is the award letter associated with the Hustai National Park artificial watering hole, along with the associated report. I hope this will aid to answer question #2 of your requests.

I have to apologize as I am unable to acquire the receipts you ask for in question #1. Our foundation doesn't retain invoices that long. In hindsight I see that I should not have included it in our application as that was 13 years ago. I hope UFWS can see without it that the Minnesota Zoo has been actively supporting and working toward the conservation of the Przewalski's Asian wild horse.

If you have any other questions or need anything else please don't hesitate to contact me.

Thank you for your consideration.

Laurie

Laurie Kokkeler | Animal Registrar | [laurie.kokkeler@state.mn.us](mailto:laurie.kokkeler@state.mn.us)

o: 952.431.9271 | c: 651.528.1672 | [MNZOO.ORG](http://MNZOO.ORG)

13000 Zoo Boulevard Apple Valley MN 55124



**WELCOME BACK**  
The Zoo is re-opening. We can't wait to see you soon.

*Connecting people, animals and the natural world to save wildlife.*

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From: Cate, Emily B <emily\_cate@fws.gov>

Sent: Friday, June 12, 2020 8:50 AM

To: Kokkeler, Laurie (MNZOO) <laurie.kokkeler@state.mn.us>

Subject: CITES Permit App 66472D

**This message may be from an external email source.**

Do not select links or open attachments unless verified. Report all suspicious emails to Minnesota IT Services Security Operations Center.

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Dear Ms. Kokkeler,



I have your application dated 01/08/2020, received 01/17/2020, regarding the proposed export of 4.4 Przewalski's horses to the Orenburg Nature Reserve in Russia. I apologize for the delay in processing your application.

Please provide the following information so that I may continue to process your application:

1. In question 11 of the application, you stated that the Minnesota Zoo sent \$2,500 in 2004 to the Hustai Nuruu National Park in Mongolia and \$2,500 in 2006 to the Smithsonian Institute. Could you please provide receipts for these transactions and a statement from each organization as to where specifically this money went to enhance the conservation of the Przewalski's horse in the wild?
2. Also in question 11, you stated that staff from the Minnesota Zoo conducted studies in Hustai Nuruu National Park from 2017-2019. Can you please send a report and/or research proposal of the activities that occurred there? Is the study complete or ongoing and if ongoing, are staff from the Minnesota Zoo still involved? In addition, can you please provide documentation (e.g., a receipt) regarding the funding of the installation of a second water hole at the park?
3. Can you please provide the pedigree analysis referred to in the application which concludes that the genetic diversity of Orenburg would increase 12.5%? Is this part of the SSP for the species? Can you please provide an electronic copy of the AZA breeding and transfer plan for the species?

Please let me know if you have any questions or concerns.

In accordance with 50 CFR 13.11(e), if the requested information is not received by this office by **July 27, 2020**, your application will be abandoned and administratively closed. Once a file is closed you will need to submit a new application and all required fees for the Service to consider your proposed activity. Please refer to permit number 66472D in your correspondence.

Respectfully,  
Emily

**Emily Cate** | Permits Biologist  
U.S. Fish and Wildlife Service | International Affairs  
Division of Management Authority | Branch of Permits  
5275 Leesburg Pike, MS:IA  
Falls Church, VA 22041-3803





Dashpurev Tserendeleg  
Director of Hustai National Park  
Hustai National Park  
P.O. Box 1160  
Ulaanbaatar 13, Mongolia

28 April 2017

Dear Dashpurev,

Congratulations! The Minnesota Zoo Foundation is happy to inform you that Hustai National Park Trust has been chosen to receive a grant for Asian wild horse conservation. We are pleased to support your work to save endangered Asian wild horses.

The Minnesota Zoo Foundation requires a signed grant agreement in order to provide you with the approved grant in the amount of \$24,550. These funds are for services and materials associated with building an artificial water hole for Asian wild horses at Khuurai Valley in Hustai National Park, Mongolia.

We will transfer the grant in two payments. \$15,500 is to be paid in May 2017 to be used for planning and labor, boring a new well, and construction costs of a concrete basin or renovation of the old dam. \$9,050 is to be paid when we receive documentation from you that the following items have been completed:

- (1) Drilling of new well at Khuurai Valley
- (2) Purchase of materials and construction of basin system
- (3) Detailed outline of water pump, solar panel costs, and materials for protection fence

The \$9,050 will be used exclusively for purchasing equipment related to the water pump, solar panels, protection fence (surrounding the pump), and labor associated with installing them. The target date for these funds to be spent is by September 2017. Any additional costs that arise in order to make the water hole operational, including repairs to the items we are funding, will be borne by Hustai National Park.

Hustai National Park agrees to notify Minnesota Zoo of any changes or difficulties with the artificial water hole construction within one month of this becoming apparent. Hustai National Park also agrees to ensure that the water hole is operational and working properly for a minimum of three years. If the project fails to proceed, for any reason, then Hustai National Park will refund unexpended funds to the Minnesota Zoo Foundation.





Please review the enclosed grant agreement and return a signed PDF via email or hard copy to Melinda Conness, Director of Finance & Administration ([melinda.conness@mnzoo.org](mailto:melinda.conness@mnzoo.org); 13000 Zoo Blvd., Apple Valley, MN 55124). Should you choose not to return the grant agreement within 90 days, the award will be forfeited.

We wish you success in your conservation efforts.

Regards,

John Frawley  
President  
Minnesota Zoo Foundation  
[john.frawley@state.mn.us](mailto:john.frawley@state.mn.us)

Tara Harris, Ph.D.  
Vice President for Conservation  
Minnesota Zoo  
[tara.harris@state.mn.us](mailto:tara.harris@state.mn.us)

## Asian Wild Horse Conservation, Mongolia September 2017

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Submitted to the Minnesota Zoo Foundation  
Dr. Kate Jenks, Conservation Biologist, Minnesota Zoo

### The Problem

Once considered “extinct in the wild,” Asian wild horses were reintroduced into Mongolia and China from a captive breeding program. The largest population of Asian wild horses (currently ~320 individuals) is at Hustai Nuruu National Park (HNNP), Mongolia. Their population remains low, but numbers might grow more rapidly if they expand their range.

***Why do they only use 35% of the 500km<sup>2</sup> park?***

***Are Asian wild horses limited by water availability?*** Year-round water availability may be a critical factor in determining where horses settle, so strategically placed artificial water holes could provide incentive for the horses to expand their ranges. Thanks to the Minnesota Zoo Foundation and Columbus Zoo and Aquarium we were able to pay for the construction of an artificial water hole in Khuurai Valley--a central region of Hustai National Park that is currently not utilized by the horses. Will this benefit the horses or cause additional problems with overgrazing and disease transfer from domestic animals?

### Construction of an artificial water hole

- The artificial water hole was completed at the end of September, 2017. We believe we are on target to improve the water availability for Asian wild horses in Hustai National Park. The next step is to evaluate the impacts. If the horses do not discover the artificial water hole on their own, park rangers might gently herd some of the harems into the area.
- Since October 2015, we have been collecting camera trap data on watering hole use of Asian wild horses and other animals in the park. There is also a camera trap at the new artificial water hole site. Data collection will continue throughout 2017 and 2018. From the photos we can learn how often wildlife and livestock visit the water and what time of day (or night). This is important to document to better understand the impact of adding artificial water sources.
- The artificial water hole will not be filled with water until spring 2018. The park management decided not to leave the pump active this late in the year because of concern that freezing temperatures would damage the pump. This has delayed our ability to assess the impacts of the constructed water hole and evaluate the effectiveness of an artificial water hole in comparison to natural water sources.

### Next Steps

- Before vs after study for new artificial waterhole looking at how species composition and horse movement changes (particularly if they are being moved by park staff). How long does it take for community structure at the new waterhole to match that of the old ones?





*Asian wild horses are potentially limited by water resources in Hustai National Park, Mongolia.  
Photo by Kate Jenks*



*Usukhjargal Dorj, Director of Research at Hustai National Park, working on the concrete base of a building to protect the new well and pump for an artificial water hole. Photo by Kate Jenks*





*Solar panel array to power a pump that provides water to an artificial water hole for Asian wild horses.  
Photo by Usukhjargal Dorj*



*Artificial water hole basin to support Asian wild horses.  
Photo by Usukhjargal Dorj*