



Managing Hoof Stock Collections with **PORTABLE** Handling systems - Fauna Research Inc.

ABSTRACT

One of the greatest challenges facing any progressive zoological collection is the safe and rapid restraint of their animals. Large hoof stock in particular have historically proven difficult to restrain without the use of chemical agents. This challenge is often compounded in the traditional, urban zoo by the limited or sometimes complete lack of off-exhibit animal management areas. In order to help resolve this problem, portable and modular handling facilities have been developed so they can be placed inside off-exhibit areas and connected to existing corrals and stalls (MacNamara and Blue, 2007). These portable systems can be set up quickly and easily in relatively small spaces allowing animals to be restrained rapidly and safely for repeated, routine healthcare and animal management issues.

WHIPSNADE ZOO, UK

The Challenge:

Move a group of sititunga from winter quarters to summer pasture 500 meters away.

Existing Facilities:

A small heated barn with several interconnecting stalls, each stall with access to an adjacent outdoor pen.

The Solution:

Erect a portable sorting and push alleyway, connecting an indoor stall with the TAMER™ II and loading chutes.

The Results:

The group of 8 animals were successfully moved to summer pasture without injury. Each animal was individually put through the TAMER™ II where they were weighed, received a health exam, hoof exam, dewormer, vaccinations, blood draws, and were each loaded into a crate for transport.

The Challenge:

Move a large herd (65 animals) of Beisa oryx into several holding corrals and individually sort, restrain in TAMER™ and identify, tag, perform health exams, hoof exams, blood draws and vaccinate.

Existing Facilities:

2 large and several smaller chain link fenced holding corrals.

The Solution:

Erect a portable catch area connected to a portable sorting alley and TAMER™ for restraint of individual animals.

The Results:

65 animals were successfully caught in holding pens and individually sorted and moved through the TAMER™ for procedures listed above, and released back into the herd in less than 6 hours.

AL AIN ZOO, UAE

KEY FACTORS

1. The restraint equipment, corrals, and alleyways must be simple and easy to use.
2. The equipment should be species appropriate, lightweight, easily transportable and easily erected under a variety of conditions.
3. The containment panels need to be designed so they can be readily incorporated into existing facilities.
4. Animal management procedures requiring portable handling equipment need to be pre-planned, well thought out, and set up in advance.
5. There should be a designated team of individuals specially trained to erect and use the corrals and management equipment effectively and efficiently.

BRONX ZOO, USA

The Challenge:

Separate a group of Barasingha deer to individually restrain each deer for routine animal management and health care procedures.

Existing Facilities:

Large solid walled holding corrals with run-in sheds.

The Solution:

Erect several portable catch pens, isolation pens and connect to a short alley and TAMER™.

The Results:

12 individuals of mixed sex and ages were separated from the main herd. Each animal was isolated and moved into the TAMER™ and restrained for various health and husbandry procedures and then released back into the herd.

The Challenge:

Take inventory of the captive deer herds in the state of Massachusetts with minimal chemical immobilizations.

Existing Facilities:

Most Massachusetts deer farms consist of large fenced areas with minimal holding pens and no deer arrangement facilities.

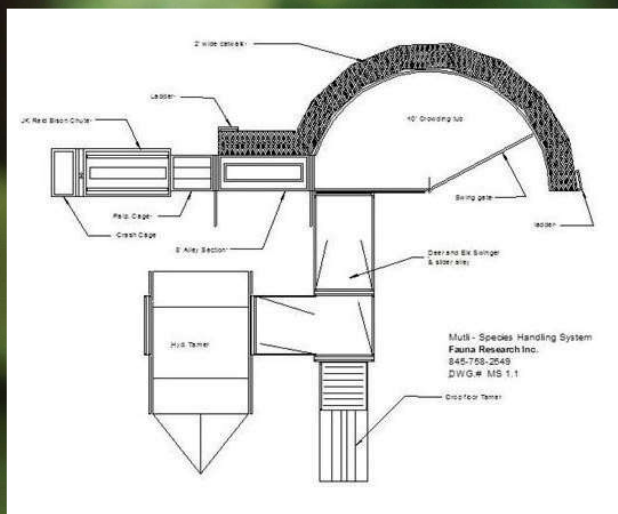
The Solution:

Use a portable capture and management system that can be brought to each farm. The portable system is set up on each farm the deer are caught in the catch pen and moved through the TAMER™, identified and inventoried.

The Results:

Several deer farms have been inventoried to date.

D.F.W. USA



Location: Pioneer Park Nature Center, Lincoln, Nebraska

Species: Bison, Roosevelt Elk, Whitetail Deer

Equipment: Multi species handling system consisting of: 3 TAMER™, TAMER™ II, drop floor chute, Hydraulic TAMER™, Bovine TAMER™, all connected to a 10' diameter half round steel tub with a push panel.

Notes:

The nature center consists of 668 acres of which 468 are virgin prairie and are home to a herd of bison. The elk and whitetail deer inhabit a 20 acre exhibit area. All animals are run through the handling system on a regular basis for tagging, TB testing, and preventative veterinary care.



For more information about the TAMERS™ at this location, contact Mark MacNamara at faunaresearch@gmail.com



Agriculture and Markets

Location: New York State Deer Farms

Species: Fallow Deer, Red Deer, Whitetail Deer, Sika Deer, Axis Deer, and Reindeer

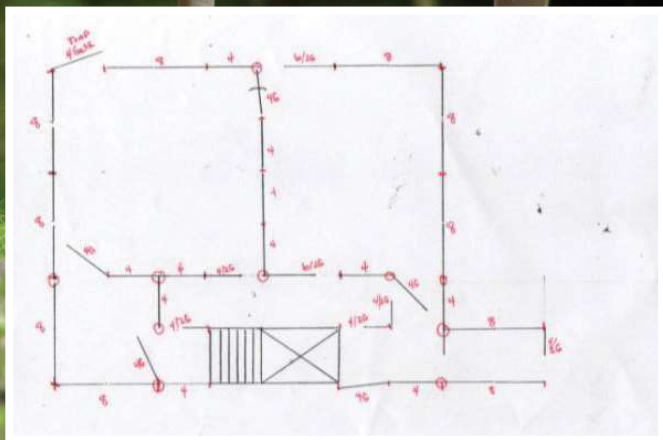
Equipment: Portable capture and management pens, with a TAMER™ II and a transport trailer for moving both equipment and deer.

Notes:

A mobile testing facility, designed and built by Fauna Research, has been used by the NYS Department of Agriculture and Markets for statewide TB testing of captive deer. The facility is transported in a specially modified stock trailer. The pens are set up on each farm and the animals captured. The deer to be tested are sorted into smaller groups and then individually immobilized in the TAMER™ for TB testing. Tested deer were then confined to a holding pen for 72 hours and the process is repeated and the test read. *There was no need for chemical immobilization.* In a 2 year period 8,323 deer on 279 farms were successfully TB tested. The Massachusetts Division of Fish & Wildlife using a similar, Fauna designed, mobile testing facility plans to begin TB testing captive deer herds in March of 2009.



Loading a TAMER™ II into the transport trailer



Footprint of a typical portable testing facility



TB testing a Red Deer stag in a TAMER™ II

For more information about the TAMERS™ at this location, contact Mark MacNamara at faunaresearch@gmail.com

The use of CORRAL SYSTEMS & TAMER™'s in the Management of Captive and Free-Range Hoof Stock

ABSTRACT

CORRALS

JR. TAMER™

The responsible management of captive collections of exotic hoof stock begins with properly identifying each animal and then tracking that animal and providing preventative veterinary care and making informed management decisions based on the individual animals biological history. Essential equipment in this effort include portable capture, sorting and holding corrals and TAMER™'s, and restraint devices for individual animal handling. The TAMER™ is designed so that each animal can be physically and safely restrained without the use of immobilizing drugs. TAMER™'s are adjustable in size to accommodate a variety of species. Furthermore, TAMER™ systems are easily transportable to allow capture over expansive areas, often hundreds of hectares, where animals may be found. This mobility allows collection managers to bring the equipment to the animals, rather than moving animals to established facilities that may be hundreds of kilometers away.

The modular corrals can be used to hold, sort, and move individual animals into the TAMER™ (Figure 1). They feature swing and slide doors as well as alleyway push-boards that facilitate the movement of animals. They are easily transported and can be erected quickly and with ease.

The Jr. TAMER™ is a lightweight (225kg) drop-floor chute. It is designed to restrain small hoof stock (up to 150kg), allowing unrestricted access for veterinary and management procedures. The sides swing out to give easy exit to the animals, and the sides can be made of special plastic sheeting for easy cleaning. The Jr. TAMER™ also comes with a removable solid top.



FIGURE 1

The corrals leading to the Jr. TAMER™ were set up in the morning and the animals were worked in the afternoon.



FIGURE 2

The Jr. TAMER™ and TAMER™ II are easy to transport, making them ideal equipment for work in natural and remote locations to be worked in the fields.

TAMER™ II

NOTES FROM THE FIELD - EWBCC

The TAMER™ II is a large drop-floor chute, approximately 2.44m long by 1.83m wide and 2.44m high. The TAMER™ II can safely restrain larger more aggressive hoof stock such as roan antelope, kudu, waterbuck, and oryx. At the Endangered Wildlife Breeding and Conservation Center it was used to handle, sable, marhkor, impala, springbok, and Cretian goats. The TAMER™ II is equipped with over-the-road tires and can be towed by a tractor, truck or ATV (Figure 2).

DAY 1

At the EWBCC facility in Al Ain, the Jr. TAMER™ was used to handle nubian ibex, urials, and Cretian goats. Portable panels were put together to form a small catch pen, where the animals were sorted and separated and individually run into the Jr. TAMER™. While immobilized, each animal was given a regiment of several medications and vaccinations, each animal was simultaneously weighed, tagged with electronic ear tags, and were given a typical health exam and if required, a hoof trim, horn trim, or other veterinary procedure, including minor surgery.

DAY 2

A 30m long by 1.2m wide alleyway was constructed and of the portable panels in order to move a herd of 65 urials across a paved road that was separating 2 enclosures. A team of 5 erected the alleyway in less than 1.5 hours and safely moved the urials across the road. Once across the road, they were worked into the Jr. TAMER™ and treated the same way as the day before.

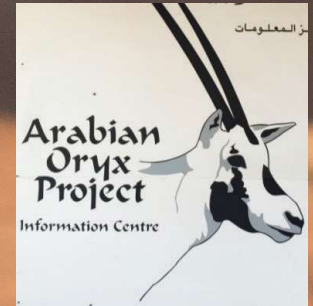
We thank Tim Bouts and his staff at the EWBCC for their help and support during this project.

For more, proceed to pg. 9





Al Wusta TAMER™ Team, an international group of instructors with Omni biologists, keepers and veterinarians.



Location: Al Wusta Wildlife Nature Reserve

Species: Arabian Oryx (561 captive individuals), & Sand and Reem Gazelles (453 captive)

Equipment: TAMER™ II with a portable catch pen, sorting alleyway including sweep slide doors and a weighing platform.

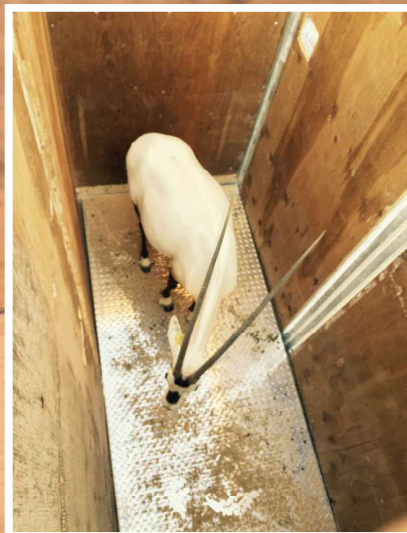
Notes:

Located on a 2084 square km protected area of desert and gravel plains, located in the central region of the Sultanate of Oman.

Day 1: The TAMER™ II system, consisting of a catch pen, a series of 3 sorting pens, and a weighing pen was erected in the main enclosure adjacent to 4 holding pens connected by runways.

Day 2 & 3: Training sessions for the keeper staff, biologists and veterinarians, followed by 2 capture episodes and the "TAMERING" of 38 Arabian oryx. Each animal was weighed and moved to the TAMER™ for a physical exam, ID tag (if necessary), ecoparasite exam, fecal collection, blood draw, and finally released back to the main enclosure.

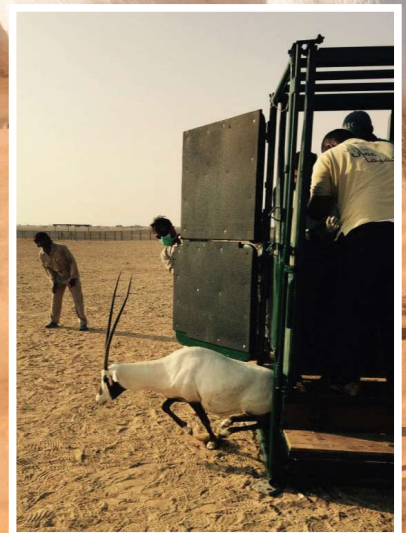
Future Plans: Both the Arabian oryx and sand gazelle projects will employ the TAMER™ system for routine health and animal management procedures on captive herds at Al Wusta and also for restraining animals while fitting them with radio collars prior to release into protected wild zones.



Arabian oryx on weigh scale platform



Placing horn guards on oryx in TAMER™



Rejoining the herd

For more information about these projects, contact Dr. Mansoor Hamed Mansoor Al Jahdhami at mhjahdhami@gmail.com
Or Metab Khalaf Salim Al Ghafri alghafirimksa@gmail.com

For more information about the TAMERS™ at this location, contact Mark MacNamara at faunaresearch@gmail.com



هيئة البيئة - أبوظبي
Environment Agency - ABU DHABI

UPDATE FROM ABU DHABI

Location: Environmental Agency Abu Dhabi

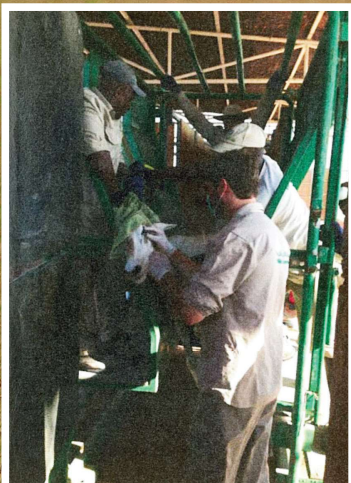
Species: Scimitar Horned Oryx

Equipment: TAMER™ II and a portable alley system consisting of sorting pens, slide gates, and sweep gates.

Notes:

The Environmental Agency of Abu Dhabi (EAD) is currently implementing a reintroduction of the critically endangered Scimitar Horned Oryx (*Oryx dammah*) into the central African country of Chad. In an effort to increase the genetic diversity in the source population for this reintroduction, Justin Chuen and Ricardo Pusey of EAD have recently completed the successful relocation of over 750 Oryx from seven different locations within UAE. A TAMER™ II and a portable alley system consisting of sorting pens, slide gates, and sweep gates were utilized to help sort individually, load animals into crates or trailers for relocation, and allowed for EAD veterinarians Dr. Louis Lignereux and Dr. Carlos Rojo Solis to perform vaccinations and health screenings.

The TAMER™ equipment is portable and easily transported via flatbed trailer, enabling the management of animals at various locations in UAE. It provides an efficient and safe handling system for identifying, sorting, loading, and moving large numbers of animals in a short period of time, and play a vital role in the ongoing efforts to exchange animals between various collections there by increasing the genetic diversity and long term sustainability of these rare species.



Scimitar Horned Oryx being examined while manually restrained in a TAMER™ II



Fauna's specially designed sorting gates and alleyways provide safe and sure operation under harsh desert conditions.



TAMER™ system being transported via flatbed trailer

Location: Zoo Miami

Species: Addax and Arabian Oryx

Equipment: Portable TAMER™ II with ramp and sorting alleyways equipped with roller gates for separating individuals and sweep gates for moving animals to the TAMER™.

Notes:

The TAMER™ system was set up between the oryx and addax holding pens. Animals were sorted in the alley and then individually moved into the TAMER™, where they were restrained and treated for parasites, given a physical exam and any necessary vaccinations, TB tested and a blood draw if needed. After being treated, each animal was released and rejoined with the herd with no recovery time.

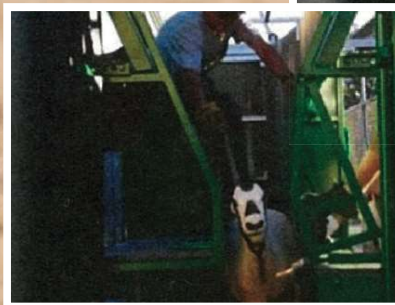
Why use a TAMER™?

TAMERS™ are cost effective, efficient and safe for both animals and staff. Some advantages include:

- Darts or immobilizing drugs are not needed
- No chance of adverse drug reaction
- Animal fasting is not necessary
- Limited or no recovery time is needed

Future Plans:

In addition to using the portable TAMER™ system in the park, it will also be incorporated into the shipping pen area for pre-shipment and post-quarantine procedures.



Arabian oryx being released from the TAMER™ after a parasite treatment and health exam

For more information about Zoo Miami hoof stock management programs, contact Terry Webb at webbt@miamidade.gov
For more information about the TAMERS™ at this location, contact Mark MacNamara at faunaresearch@gmail.com

Arabian Oryx Research Project

Location: Wadi Al Safa Wildlife Center, Dubai UAE

Species: Arabian Oryx

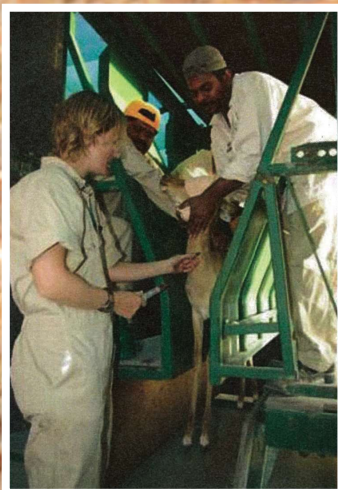
Equipment: Junior TAMER™, TAMER™ II, several portable catch pens, sorting pens, chutes and alleys.

Notes:

A total of 22 capture episodes in a 12 month period were completed at 8 different sites, resulting in the restraint of 263 Arabian oryx in the TAMER™ II.

Research data collected included blood sampling, morphometric measurements of chest girth, length, and height and weight of animal, general exams, rectal temperatures, fecal collection, hoof exams, and any remedial work required on the hooves.

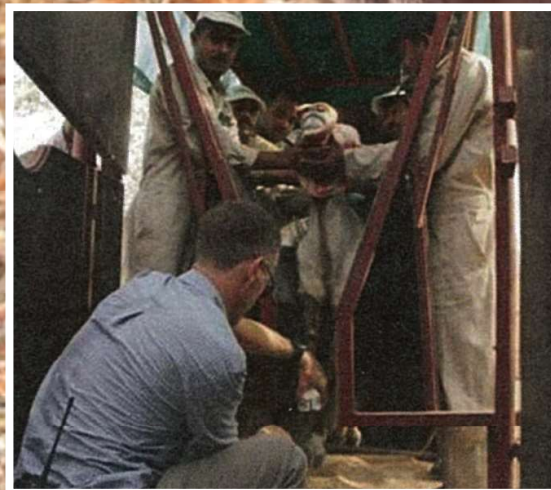
TAMER™'s are also being used extensively by the EAD Environmental Agency - Abu Dhabi UAE, for managing large herds of native antelope, wild sheep and goats, the Al Ain Zoo (Al Ain, UAE), and the Al Bustan Zoo (Sharjah, UAE).



Taking a blood sample



TAMER™ in action in UAE



Hoof trimming in a Junior TAMER™

For more information about the TAMERS™ at this location, contact Mark MacNamara at faunaresearch@gmail.com

ZSL WHIPSNADE ZOO

Location: ZSL Whipsnade Zoo, Bedfordshire England

Species: Sitatunga, Scimitar Horned Oryx, Nile Lechwe

Equipment: Portable capture and management pens with a TAMER™ II, digital weigh scale, and pushboard alleyway.

Notes:

The equipment arrived at Whipsnade in May 2010 and was immediately put to use.

Day 1: The TAMER™ II was set up outside the sitatunga barn in about 3 hours. 6 animals were restrained, dewormed, weighed, had blood drawn, had hooves trimmed, and were then crated and moved to their summer exhibit.

Day 2: A TAMER™ II was set up in a quarantine area in order to TB test and administer a routine health exam to several oryx.

Day 3 & 4: A portable trap corral with management pens and portable push alleyway were set up to capture and sort a herd of Nile lechwe in the coming weeks.

Day 5: Restrained oryx in the TAMER™ II to read the TB test.



Blood draw in the TAMER™ II



Portable alleyway with TAMER™ II



Nile Lechwe portable catch pen



Male sitatunga

For more information about the TAMERS™ at this location, contact Mark MacNamara at faunaresearch@gmail.com



Oryx #34 exiting the TAMER® after being fitted with a collar and receiving a complete physical and health exam



Oryx #26 ready to be released to the wild



Location: Base Camp, at Oaudi Rime-Ouadi Achim Game Reserve, Chad
Species: Scimitar Horned Oryx
Equipment: TAMER Jr.® and a portable sorting alley

The Oryx Reintroduction Programme in Chad is a joint initiative of the Government of Chad and the Environment Agency, Abu Dhabi. Under the overall leadership and management of the Environment Agency, Abu Dhabi, on the ground implementation is carried out by the Sahara Conservation Fund. It is undoubtedly one of the World's most ambitious large mammal reintroduction efforts ever attempted. The five year goal from first shipment of oryx is to attain a population of 500 free-ranging oryx inhabiting the reserve.

A TAMER® Jr. was shipped to the base camp in Chad along with the first animals chosen for reintroduction to the wild. The TAMER® Jr. has enabled EAD and partners to give stress-free, complete health exams and affix satellite tracking collars to each animal. The tracking collars are essential in monitoring the released animals.



Smile! The TAMER® Jr. helping to make handling the animals a little easier, drug free and safer.

*For more information about TAMER® Jr. and sorting alleys, contact: Mark MacNamara
 faunaresearch@gmail.com
 or visit www.faunaresearch.com*

*Location: Northeast Zoo & Game Parks
Equipment: TAMER Jr.® sorting alley, transport truck and trailer.*

Jonathan Bergmann, DVM, veterinarian for the Turtle Back Zoo and a consulting vet for many game parks and zoos, uses the portable TAMER® system on larger herds for annual exams, hoof trims, vaccinations, sorting individuals as well as loading and unloading animals. For all of these procedures SAFETY and EFFICIENCY are key! The TAMER® system saves time and money by providing a safe work environment and eliminating the need for chemical immobilizations and reducing capture related risks. A complete TAMER® system is easily transported via truck and trailer allowing for the management of animals at various and numerous locations.



Stackable panels and gates and the TAMER® are easily loaded and transported on a standard trailer.



Simple design allows for quick and easy set up in most locations.



Portable catch pens can be set up just about anywhere animals roam



Sorting alley leading up to the TAMER®

For more information about TAMER® Jr. and sorting alleys, contact: Mark MacNamara
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or visit www.faunaresearch.com

مملكة الأردن Wild Jordan



Location: Shaumari Wildlife Reserve, Azraq Jordan

Species: Arabian Oryx

Equipment: Junior TAMER™ and a Modular portable alley.

Notes:

Shaumari Wildlife Reserve is a 22km² protected wildlife preserve created in 1975 by the Royal Society for the Conservation of Nature. The RSCN, the Pheonix Zoo, and the US Forest Service are working together to maintain a breeding herd of endangered and locally extinct Arabian oryx at the preserve.

The RSCN plans to use the Junior TAMER™ to individually identify and tag each animal and regularly perform routine health exams and veterinary procedures such as deworming, blood draws, foot care and vaccinations.

About the Junior TAMER™

The Junior TAMER™ is a lightweight (225kg) drop-floor chute designed to restrain small hoof stock up to 200kg. It is constructed of a tube steel frame and plywood or bamboo sheeting. It is adjustable and can handle body sizes ranging from 10kg - 200kg. It is easily operated and allows for unrestricted access to restrained animals for veterinary and management procedures.



Shaumari Reserve Rangers & Pheonix Zoo Staff



Oryx in the Junior TAMER™



Junior TAMER™ ready to be used



For more information about the TAMERS™ at this location, contact Mark MacNamara at faunaresearch@gmail.com



HIGHLAND WILDLIFE PARK

Location: Highland Wildlife Park, Kincaid Scotland UK

Species: Kiang, Yak, Forest Reindeer, Tundra Reindeer, Wisent, Buhkara, Moose, and Przewalski Horses.

Equipment: Portable TAMER™ II, pushboard alleyway, and a portable catch and sorting pen.

Notes:

The Highland Wildlife Park features a large 800 acre main reserve where many of the species including: kiang, yak, forest reindeer, tundra reindeer, wisent, buhkara, moose, and Przewalski horses roam free. They also have the largest herd of Mishmi Takin in Europe and a group of Bactrian camels.

Day 1: A portable corral, pushboard alleyway, and TAMER™ II were moved on site and set up in the main reserve.

Day 2: A group of tundra reindeer were quickly caught in the portable corral, and were individually sorted, moved and restrained in the TAMER™ II via the pushboard alleyway.

The plan was to work all the various herds through the handling system, in order to individually identify and tag each animal and perform regular routine health exams and veterinary procedures such as deworming, blood draws, foot care and vaccinations.



Handling reindeer in the TAMER™ II



TAMER™ II and crew



For more information about the TAMERS™ at this location, contact Mark MacNamara at faunaresearch@gmail.com



HOOFSTOCK HANDLING EQUIPMENT

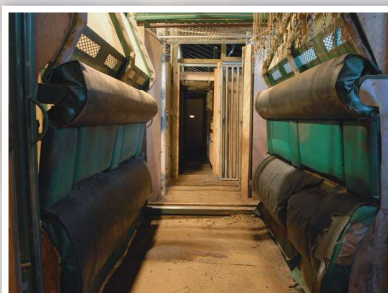
"The Most Trusted Name in Animal Restraints - Specialized in hard to find handling equipment for non-domestic hoofstock."

Fauna Research Inc.

30 YEARS EXPERIENCE WITH EXOTIC HOOFSTOCK SYSTEMS

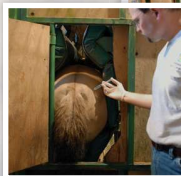
Hydraulic TAMER™

- Hydraulic controls on stationary or moving side
- Two doors on both sides to access neck or body in squeeze position
- Steel sliding panels for security and access to the animal
- Pressure control and gauge on squeeze cylinder
- Catwalk on both sides
- Vertical lift is 24"
- Travels 72" on squeeze side, allows for 6' wide unobstructed opening to prevent velvet damage
- 4' high-density foam pads with heavy vinyl
- Side curtains prevent animals view while allowing easy movement to access the restrained animal
- Hydraulic head restraining pads for maximum head control when handling zebra, wild horses and onagers



OTHER OPTIONS

- Double speed travel
- Hydraulic head restraining pads
- Long life, tear resistant padding
- Curtains behind operator
- Semen collection door
- Front and back roller doors
- 2" padding between top and bottom pads
- Sliding steel doors in place of vinyl curtains
- Stationary or portable models available

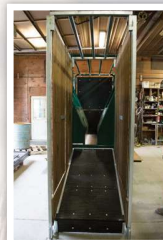


TAMER™ Jr. & TAMER™ II

- Fully adjustable for large antelope and deer
- Quick release floor
- Heavy duty for years of service
- Self locking sliding side panels

OTHER OPTIONS

- Ramp
- Wheels
- Kick pads
- Jack for tongue
- Plywood on bottom of adjustable side



For more information about TAMERS™, contact Mark MacNamara at faunaresearch@gmail.com