

IMPORTATION AND INTRODUCTION OF 1.10 WHITE RHINO

(*CERATOTHERIUM SIMUM SIMUM*)

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In December of 2017, White Oak Conservation Foundation imported a group of 1.10 southern white rhinos (*Ceratotherium simum simum*) from South Africa (S.A.). This import stands as one of the largest groups of white rhinos to a single institution in the United States. White Oak had recently imported groups of southern white rhinos from S.A. in 2014 and 2015. The most recently imported rhinos came from 4 different facilities in S.A. Some of the rhinos were introduced and housed together before shipment to the U.S., while others had never been put together. The imported group will be divided into two separate herds; one joining an existing herd at White Oak and another becoming a new breeding herd in a mixed species enclosure with Roan antelope (*Hippotragus equinus*). This additional group of rhinos has provided challenges to those caring for them; challenges that were anticipated and some that were not. Importing this large number involved and continues to involve, many introductions between the new rhinos, and conditioning of the rhinos to their new enclosures. Standing sedations were performed on the majority of the individuals to conduct blood draws, ear notches, tuberculosis tests, and vaccinations. Some individuals could be conditioned in a short period of time to prevent a necessity for sedation. While a significant amount of time was not spent with each individual, some were more habituated to human contact, allowing keepers and veterinary staff to complete quarantine exams without sedation.

Introductions of the rhinos to one another have begun according to their placement plan within White Oak facilities. While none of the new individuals have been introduced to White Oak rhinos, five will join an existing herd as soon as the last standing sedation is complete. The imported rhinos will play a large role in White Oak's approach to expanded rhino management and sustainable populations.

Currently, the newly imported rhinos, along with the rest of White Oak's white rhino population are part of a genetic study. This study compares DNA of all White Oak rhinos and hopefully other captive U.S. populations to determine relatedness. This will allow for breeding recommendations based on actual DNA evidence instead of assumed relatedness.

CLOSTRIDIUM: ACUTE DEATH AND RESPONSE IN SOUTHERN WHITE RHINOCEROS (CERATOTHERIUM SIMUM SIMUM)

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Between January and April 2016, White Oak Conservation Foundation experienced the unexpected deaths of three female southern white rhinoceros (*Ceratotherium simum simum*) ranging in age from 3 to 10 years old. In all three cases, no apparent clinical signs of illness were seen prior to death. The first female, a 10 year old with a 43-day-old calf, was seen eating 45 minutes before death. While waiting for diagnostics to determine cause of death in the three rhinos, the rhino herd was placed under quarantine and 24-hour monitoring. As the origin of the deaths was still unknown, it was decided to modify the environment. The herd was kept in corrals while the 7-acre enclosure was restructured, to include wallows filled and dug in new locations, and new grass planted. *Clostridium perfringens* enterotoxemia was determined to be the most likely cause of the rhino deaths.

Clostridium perfringens, a Gram-positive, anaerobic bacteria, is typically a component of the normal gut microbiome in rhinos. *Clostridium perfringens* becomes problematic when a toxigenic strain is introduced into a population or other health or environmental stressors provide a favorable growth environment, resulting in the production of potent toxins¹. The deaths prompted the development of a new vaccination protocol for the southern white rhinos, and eventually all rhinos housed at White Oak. A *Clostridium perfringens* type A genotype was determined to be prevalent in the three rhinos. In order to get broad coverage, vaccination with *Clostridium perfringens* Type A, C, and D toxoids was initiated in response to the deaths. All white rhinos were vaccinated subcutaneously with *C. perfringens* type A (right antebrachium) and types C/D (left antebrachium) toxoid vaccines. Titers were quantified for each rhino before the first vaccines and after the booster vaccinations, approximately 6 weeks later. The quarantine was lifted shortly after all vaccinations were completed. Operating under quarantine restrictions with a small keeper team was challenging, but veterinary, keeper and facility maintenance teams worked together to adapt management techniques and facilities and learned much from the response process.

IMPORTATION AND INTRODUCTION OF 1.10 SOUTHERN WHITE RHINO

WHITE OAK CONSERVATION
YARAILA RODRIGUEZ
ANIMAL CARE SPECIALIST





WHITE OAK CONSERVATION

- Spans over 13,000 acres of pine, hardwood forest, and wetlands in NE Florida
- White Oak is a wildlife breeding, education, and training facility

- Misson

Save endangered wildlife and habitats through sustainable conservation breeding, education and responsible land stewardship.

ANIMAL COLLECTION



Cheetah



Giraffe



Mississippi Sandhill Crane



Grevy's Zebra



DEER



Somali Wild Ass



RHINOS



Bongo Antelope



Maned Wolf



Okapi



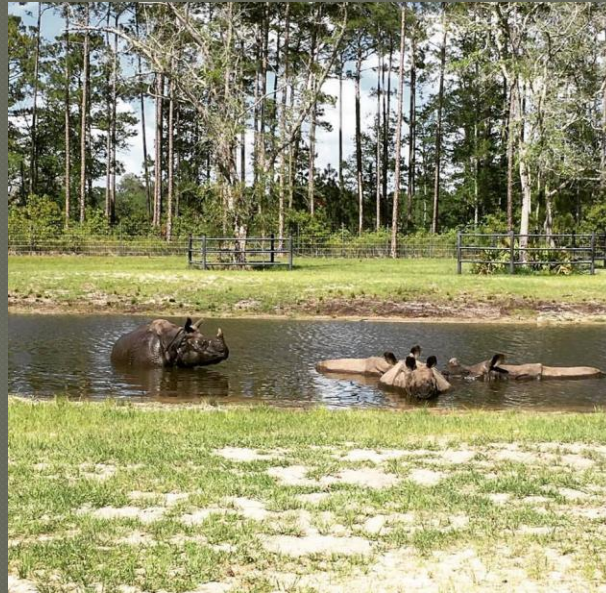
SWINE



Cassowary

RHINOS AT WHITE OAK

- 3 SPECIES OF RHINO
 - SOUTHERN BLACK RHINO
 - GREATER ONE-HORNED RHINO
 - SOUTHERN WHITE RHINO



Southern White Rhino Import

- December 7th 2016 White Oak received one of the largest imports to a single institution
- Largest import in White Oak history
- Two previous SWR imports in 2014 and 2015

Southern White Rhino Import

Ear tag	Sex	Class	Origin	Pregnancy status	Comment
40	Female	Mature	Malan	NIC	Had small calves at foot at the time of capture which have been weaned
41	Female	Mature	Malan	NIC	Had small calves at foot at the time of capture which have been weaned
52	Male	Mature	Zanna	-	Mature breeding bull
56	Female	Mature	Zanna	9-12 mths	
57	Female	Mature	Zanna	NIC	
58	Female	Mature	E.Cape	9-12 months	
59	Female	Mature	E.Cape	NIC	
61	Female	Mature	E.Cape	NIC	
62	Female	Mature	E.Cape	NIC	
63	Female	Young adult	Claudia	NIC	
65	Female	Sub Adult	E.Cape	-	Calf of 58 - weanable age

Preparations

- 1.6 new herd in mixed species exhibit
- 14 acres

- 0.4.2 to existing rhino crash
- 14 acres



Preparations

- “Baby proofing”



Preparations

- New gates for safer shifting (both for keepers and rhinos)



Arrival to White Oak



- 1.10 from Miami Florida
- Plantation wide collaboration
- Duties assigned to teams ahead of time
- Long Day!!

Arrival to White Oak

QUARANTINE RHINO CORRALS



SATELLITE VIEW OF CORRALS



Arrival to White Oak



Crate Unloading



State Veterinarian-Rhino inspections

Arrival to White Oak



Rhino Release

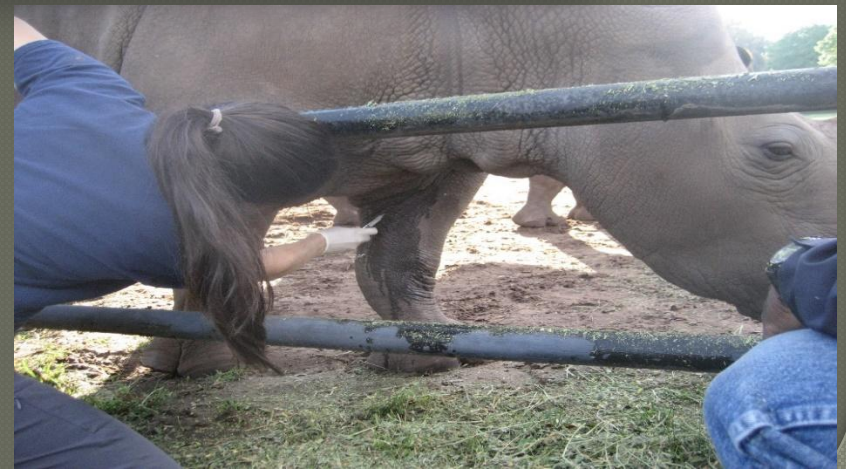


Split Door Crate

Husbandry: Quarantine Examinations

- Small keeper team
 - 10:1 rhinos to keepers
- Quarantine Exams
 - Voluntary
 - Ear notching
 - Tag removal
 - Blood draws
 - Vaccines

Venipuncture Blood collection



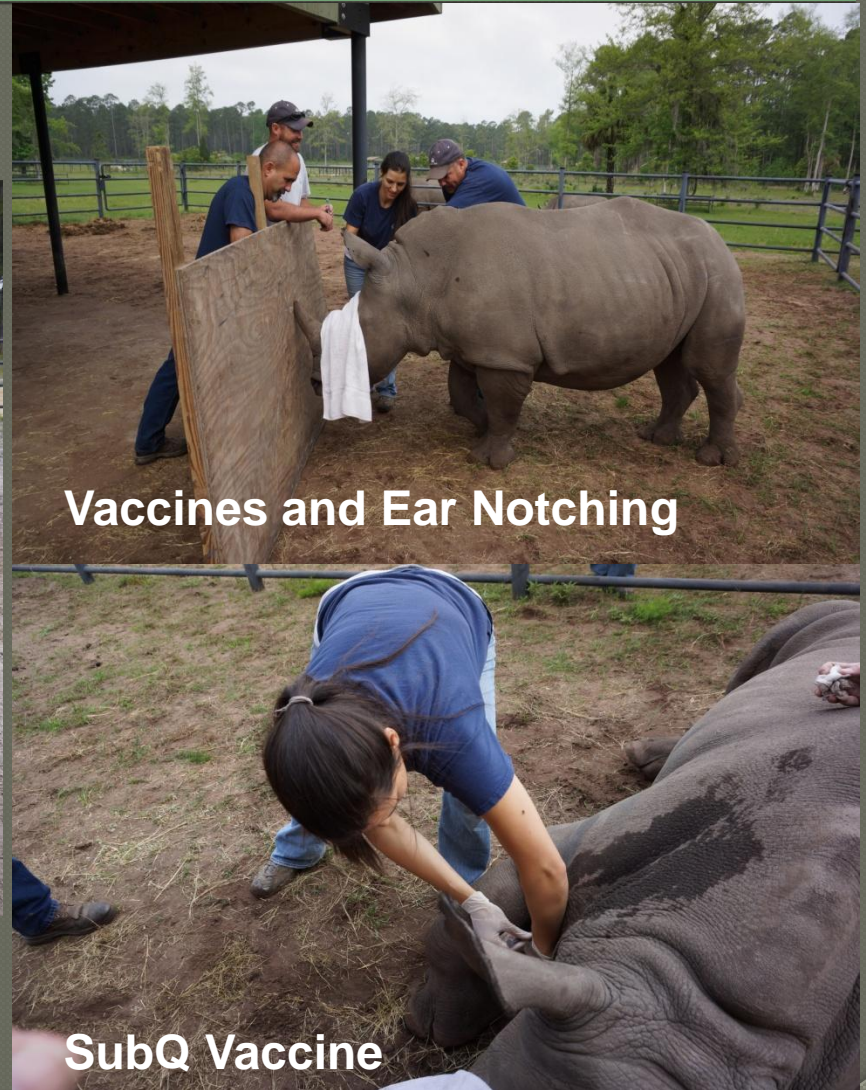
Subcutaneous Vaccines

Husbandry: Quarantine Examinations

- Standing Sedations



IM Vaccines



Vaccines and Ear Notching

SubQ Vaccine

Husbandry: Introductions

- To existing rhino crash of 1.6
- Introductions went smoothly
- March 2017 one combined herd



Temporary Alleyway



Shifting into new enclosure



Enclosure Connection

Husbandry: Introductions

○ Introductions to new mixed species pen



- Longer Introduction Process
- 0.5 Introduced to main enclosure May 2017
- 1.0 Introduced late June 2017
- Successful breeding seen!

Role of rhinos in WO Conservation and Sustainability plans

- Part of Genetic Study to assess relatedness and diversity among White Oak Rhinos
- Future goal: Establish relatedness among North American White Rhino populations to better establish SSP recommendations