

# Management Discoveries for Lowland Anoa in a Zoological Setting

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# Zoo Miami Housed 4.3 Lowland Anoa 2017- 2019

- Dam, calf, and unrelated male
- Breeding pairs
- Adult male, juvenile female, dam and calf in an area
- Adult male, dam, and calf in an area
  
- Through these different pairings, we have made some observations about housing anoas in a zoological setting consisting of holding pens and limited space (not managing them in a C2S2 like setting)
- Naturally, anoa are largely solitary but sometimes found in small groups or pairs

# Breeding Anoa Housing

1.2 Had  
Access to  
Both Holding  
During  
Breeding  
and Before  
Birth

- Animals shifted well
- No aggression between male and female

Dromedary  
Camel  
Holding

- Anoa do not seem to mind their camel neighbor



- We have found shade to be an important factor in housing anoas and have worked to plant trees and provide shade structures for them.
- They spend the majority of their time in these areas, which makes sense for a forest dwelling species.

1.0 Holding

Dam and calf  
Holding

Anoa Holding  
after Birth

Dromedary  
Camel  
Holding

# Preparing for Birth



- The male was separated from the female once she had large udder development about a week before birth.
- Starboard panels were put up along the fence line between male and female's pen

# Challenges We Encountered After the Birth



- Male working himself up during cycling and becoming lame
- Management issue was resolved by removing male from the area to a larger quarantine pen and eventually shipped out of our facility

# Cycling Provides Difficulties in Managing



video

- On our other set of anoa, we have found the most success in our current set up by placing the adult female farthest away from the adult male when not in a breeding situation.
- Difficulty shifting animals during cycling when male and female are in too close of proximity to each other



# Cycling Provides Difficulties in Managing



- Male managed to get past previous barriers that we had made in our hallway to get to female while she cycled
- Females will heavily vocalize and have a swollen vulva during cycling
- May run into issues with our current set up when our juvenile female reaches maturity

Our Current Anoa Area that has  
been successful

1.0  
Exhibit

Hallway

Dam and calf  
Holding

0.1 Juvenile  
Holding

# One Big Happy Family?



- Previously, we housed dam, calf, and unrelated male.

# How Unrelated male, dam, and calf were housed

1.2  
Exhibit  
during day

Hallway

Empty

1.2  
Holding at  
night

# The Story of Medford (Our most uniquely managed anoa)



Born on September 8, 2017

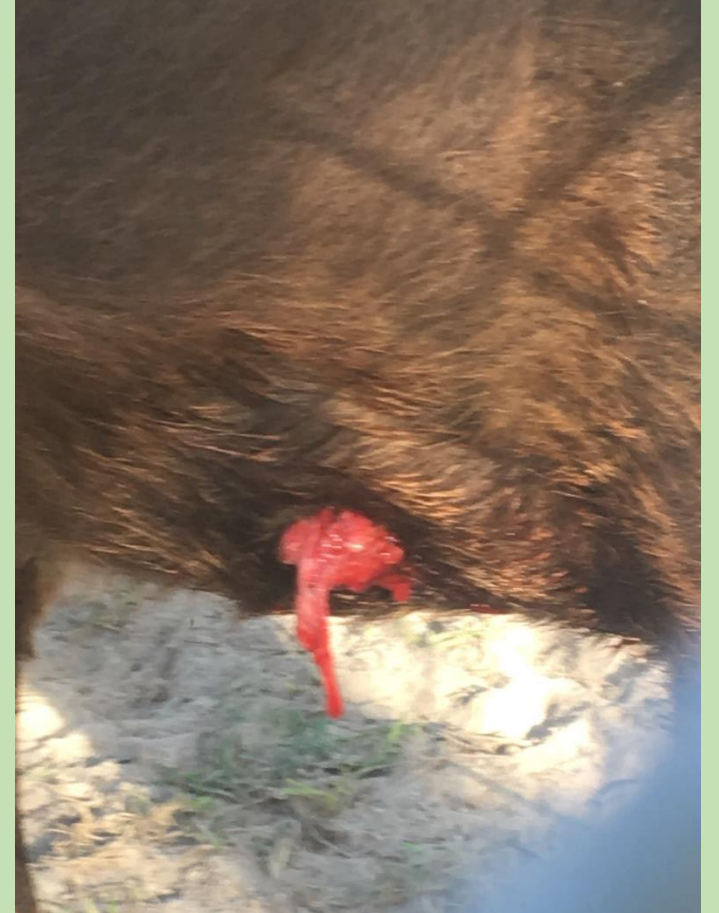


# Late 2017- Early 2018



- Calf would spend the majority of her time with the male, not the dam.
- Occasional sparring was seen between the two but overall, management seemed to be going well.

February 9, 2018 (5 months old)





# February 10, 2018



- We believe dam was cycling and calf got in the way of breeding.
- Stomach chamber was punctured and calf had surgery and was housed at the hospital alone post surgery.

# February 15, 2018



- First time interacting free contact with animal, while she was at the hospital, assuring she was eating.

# February 18, 2018



- Reunited to dam after 9 days separated
- Reintroduction went well with no aggression or issues

# February 24, 2018



- Did not continue free contact with animal once reunited to dam, but she began to interact with us more

# Calf 5- 8 months



- Calf began to engage in training sessions

video

Beginning in April, the calf (7 months) would shift onto exhibit and the dam would not and would stay in holding, they still had access to each other but seemed to naturally separate.



- On May 23, there was aggression towards the calf (8 months old) from dam while dam was cycling
- On May 24, calf was separated from dam, after this they were always housed separate

# June 2, 2018



- We made a safety protocol for working in with our young anoa
- Talked about reading behaviors and signs to look for of aggression or stress
- Never touched on her head or horns, never engaged in “play”
- Always go in with two keepers
- If your facility considers this, you can also consider capping the horns, as some facilities do with their anoa for added safety



# Medford's Plan

## Free contact plan for 17M070 0.1 Anoa

There should always be two keepers present when working in with 17M070.

Before going in, please realize the danger potential that this animal has. Medford is young and cute but there is the potential for danger when working in with her and we will need to be especially vigilant as she matures. The most dangerous part of this animal is the horns so always be aware of where her horns are. Please avoid placing your face anywhere near her horns or sitting down in a position that you cannot quickly stand up. By following the below protocol, keepers can remain safe while working in with 17M070 and the anoa may benefit from some training potentials of free contact.

Please always know your exit options before entering holding and have exit doors unlocked so in an emergency you do not have to fumble with the locks. Please avoid reinforcing animal by the exit gates so that these areas do not become reinforcing. In the pen, you have two exit gates on opposite sides of the pen. On exhibit, you have the exhibit door and, in an emergency, you may jump in the moat or climb rockwork.

A wheelbarrow should always be brought in with the keepers and is to be used in an emergency as a barrier between the keeper and the anoa. Please avoid reinforcing the anoa around the wheelbarrow so that it does not become reinforcing. In an event that the anoa shows aggression, place yourself behind the wheelbarrow and exit the pen, walking backwards so that you maintain eyes on the animal.

When working in with the anoa, always keep eyes on her. You may wish to have one keeper work while the other maintains eyes on her or work with backs to each other to cover all points of view. Keepers should be in good communication with each other about what the anoa is doing.

Watch for any signs of stress or aggression. This anoa has not shown any aggression signs before but this could easily change in a flight or fight situation or as she reaches maturity. If any signs of stress or aggression are noticed, immediately place the wheelbarrow between yourself and the anoa and back away, giving the anoa space.

Signs of aggression in cattle include...

Signs of aggression in cattle include...

- Ears pushed back against the head
- Eyes wide and focused on target
- Flared nostrils
- A drooped head
- A raised tail
- Swinging head
- Lift front feet off the ground or stomping hard
- Lower the head and hunch the shoulders
- Flatten ears
- Turn to show flank
- Raise hackles

- Shaking the head

If any signs of aggression are seen, please exit the pen quickly and safely as described above and please notify supervisor. At this point, our plan will be reevaluated.

# June 9, 2018



- We began to go in with Medford for training sessions

# Hoof Care Training



video

# Hoof Care Training



video

# Ultrasound Training



video

# Injection Training



video

# Blood Draw



video

# Transferring Behaviors to Protected Contact



video



# Protected Contact Weights



# Medford's Future



- Transfer behaviors over to protected contact before maturity (2 years old) We are in this stage now at a year and a half
- Utilize her for tours and guest education to get people interested in anoa and Asian cattle species

# Potential Management of Anoa in Zoo Setting

- She provided us with an interesting thought that there may be a window of time that allows the anoa (or possibly other “aggressive” Hoofstock) to be parent reared (to avoid non desired hand rear traits) then trained free contact to obtain medical behaviors before the risk of horns becomes too great then switched back to protected contact
- If we were to do it again, probably start around the age they are naturally separating from dam (6-7 months) and probably until they are a year before switching them over to full PC
- Again, for added safety if your facility considers this, horns could be capped

# Dam and Calf Relationships



- Calf born September 8, 2017
  - April 2018 (7 months), started to see dam separate herself from calf
- Calf born September 28, 2018
  - March 2019 (6 months), Starting to see aggression from dam to calf and starting to see dam naturally separating away from calf – we are looking to separate them soon
- Calves separate from dam supposedly 6-9 months, which we have seen to be true

# Training With Our Adult Anoa



- Training with our other anoas has been slower, as they provide a challenge of short attention span and take a while to build a relationship, but has been possible with patience
- Figuring out what worked for Medford and how to transfer this to protected contact adults already in our care

# Weights



# Adult Male Injection



video

# Summary

- In order to maintain the lowland anoa population, the number of holding institutions needs to increase.
- A few holding areas will be required if breeding, but anoa can make great animals within a zoo setting. Our anoa exhibits pretty well to the public.
- Anoa can be trained for easy medical care, which aligns with most zoo's goals for their collections.
- A well trained anoa may even be able to be utilized as an ambassador on tours for their species and Asian cattle.
- Anoa are worth looking into for your institution.



# Special Thanks

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# Questions



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