

Reintroduction of orphaned white rhino (*Ceratotherium simum simum*) calves

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Abstract

In early 2016 White Oak Conservation Holdings LLC was presented with two orphaned Southern white rhino (*Ceratotherium simum simum*) calves that required hand rearing. These calves had minimal human interaction prior to their hand rearing which added additional challenges from a husbandry standpoint. These challenges included getting the calves on the bottles, desensitization training for routine venipuncture, vaccinations, and transport within the facility. The hand rearing protocol used was based off of an established protocol for raising white rhinos.¹ The large size and associated herd management provided a unique situation when reintroducing these calves back to the crash. Several introduction scenarios were attempted until the most suitable situation was achieved. These introductions included placing one calf with an existing cow and calf pair, introducing a calf to two juvenile females, followed by reintroduction to the original herd. After many efforts, the two young calves are now housed with a juvenile surrogate and doing well together. Based on current herd dynamics, this trio is scheduled for introduction to a new herd in August 2016.

Introduction

White Oak Conservation Holdings LLC is a 13,500-acre conservation facility in northeast Florida. Currently an AZA affiliate member and active Conservation Center for Species Survival (C2S2) member, White Oak runs as a semi-private organization to the public. Currently White Oak houses 37 rhinos, 27 of those being white rhinos. We are pachyderm heavy to say the least. With our increasing number of rhinos, comes the potential for bumps along the way.

Our minimal staffing in comparison with many other facilities requires a wide range of knowledge from the keepers. From dietary changes and nursery care to landscaping and routine animal care, the animal management staff has a vast range of responsibility. On top of all our other responsibilities, our team is now accountable for ensuring over 120 gallons of rhino formula is made per week. The past six months have provided for unforeseen challenges, yet resulted in an extremely rewarding experience for our team.

In early 2016, three female white rhinos were lost due to a clostridium outbreak and left the staff with two young white rhino calves to hand raise. The main goal of hand rearing these individuals being to (re) introduce them to one of the crash at White Oak.

The Passing of Rhino Dams

On January 09, 2016 "Kelly", a 10-year-old female white rhino was discovered dead in a corral during a routine afternoon animal check. At the time, her male calf was 43 days old. On March 21, 2016 "Annie", a 9-year-old female white rhino was found early in the morning, her calf being 51 days old at the time. Nine days later a 3-year-old juvenile female was also lost. Currently, clostridium is suspected to be the cause for the white rhino deaths. Full necropsies were conducted on site by the veterinary and wildlife staff. The similarities between the two dam situations are alarming, yet significance beyond the timing has yet to be found. It is important to note that all three of the rhinos lost were held in the same 13-acre pasture and all on the same diet. In response to the believed cause of death, all rhinos at White Oak have been given clostridium vaccines and the titer results are pending at this time.

Calves Transported to Nursery

The two calves were transported to the nursery in rather different situations. These differences arose due to the variation in deaths of the dams. The first female, Kelly, was discovered in a corral. The somewhat confined space allowed animal staff to hand grab 2 month old “Jack” and push him into a crate, which he was then transported to the Animal Science Building (ASB) in. This hands on, no-sedation technique resulted in an angry and upset little rhino.

“Ophelia” had a different move to ASB. Since her dam was found in an open 6-acre pasture, the obvious choice was to dart the calf in order to guide her into a crate. Once darted, minimal running occurred and animal staff was able to push her into a crate with little to no resistance. She was reversed once in a treatment stall in ASB, and was relatively sedate.

Both calves had someone sit with them for the first day, since Jack was brought to ASB in the early evening, he was left alone for the first night.

On The Bottle

The time it took to get both rhinos on bottles was pretty similar, regardless of what contraption was used, both rhinos started on the bottle after approximately 48 to 72 hours. So in this case it wasn’t an ingenious apparatus but more both calves getting to a point where they were at a hunger level that allowed for them to be willing to feed from something other than their dam. While we wanted them to trust us in order to get them on the bottle the idea wasn’t to “hand raise” them in the classic sense, but more just them to understand we bring them food much like the rest of our animals recognize. The end goal remained to introduce them to a rhino herd, so we wanted them imprinted as minimal as possible. Jack was in the hospital for 41 days and although we wanted to get Ophelia out of the hospital as quickly as possible her time line was delayed due to the fact both the veterinary and wildlife staff wanted to her to receive her initial clostridium vaccine along with her 30-day booster. Ophelia was introduced to Mae and Jack outside 35 days after the passing of her dam.

Reintroduction

Both Jack and Ophelia were given a dose of butorphanol in order to induce a standing sedation for a relaxed move back out into the corrals where they would eventually rejoin their original crash.

The first idea we had for this reintroduction was to pair “Jack” up with a dam/calf pair. Although this seemed like a great idea at first, it turned out to be a little more challenging but for a reason we did not foresee.

We brought Jack out and joined him up with Lucy, a dam who had “adopted” an orphaned calf in the past only this time she already had her own calf with her that was 6 months old (BamBam). Due to the fact that BamBam was more than two months older than Jack we didn’t think he would be kicked off his dam by the younger rhino calf Jack. However, that is exactly what happened. Jack was getting his bottles from us and when we weren’t around he was also nursing from Lucy. This was discovered by one of the team members who drove by while both Jack and BamBam were nursing at the same time. As we let this play out Jack ended up completely kicking BamBam off of his dam. We realized this situation was not going to work and Jack had only been with Lucy and BamBam for less than two days. Jack was separated from Lucy and her calf BamBam.

Once we pulled Jack from Lucy and BamBam we put him with two adolescent three year olds. Mae, was born at White Oak and is very tactile, along with Peanut who was imported from South Africa in 2014. Both young female rhinos took very well to Jack. The trio were kept in corrals together for 13 days. Jack continued to be bottle fed 6 times a day while living with the two girls. Since the goal was to get him back in a herd environment for socialization, time locked in the corrals was minimized as much as possible. The trio was released into two connected pastures totaling 13 acres, with the remaining 1.6 of the crash. This required feeding Jack at whatever location he happened to be at. Luckily, he figured out within a couple days to come up to the fence lines for bottles. Not only did Jack figure this out, but also the rest of the herd. This resulted in lots of alfalfa treats being fed to keep the other rhinos away from Jack as he took his bottles. Unfortunately, 29 days after being released with the herd, another rhino was discovered dead in the morning. Peanut was believed to have succumbed to a clostridium overload. To say this third rhino death

hit the team hard would be an understatement, however this was not something to dwell on, as we still had two orphaned rhinos to hand rear. Following Peanut's death, all rhinos from the herd were placed under a quarantine situation.

Plans had been to move Ophelia outside as soon as possible; to minimize the amount of time she was isolated in ASB for. However, the death of Peanut stalled this process as we addressed the severity of the clostridium. Days after Peanut's death, all white rhinos were vaccinated with Clostridium A and C/D vaccines. Ophelia was given her initial clostridium vaccines 11 days before being put back outside. Before transporting Ophelia outside, another adolescent rhino was introduced to Mae and Jack in an attempt to take some of the burden of the calves off of Mae. Introducing Libby to Jack and Mae was unsuccessful. Although just across the road from the crash, the stress of being separated was too much for Libby and she was moved back with the rest of the crash within 24 hours. Mae would have to bear the weight of dealing with two rhino calves under 4 months old on her own. For the move, Ophelia was sedated just as Jack had been to move her out to the corrals. Ophelia was introduced to the two, and they surprisingly paid minimal attention at first. Ophelia was a little nervous being back outside, but also adjusted quickly.

Feeding two calves at the same time was initially done by two animal keeper staff, or a staff member and intern. Whilst Mae occasionally gets pushy, she continues to do extremely well with the two calves at feedings, not requiring any alfalfa or other form of distraction. Once this routine was down, we dropped the extra person and went to one individual staff member per feeding. This provided for some challenges, i.e. how to juggle two bottles and two hungry rhino calves that drink at different rates and different amounts. We have altered some of the suggested formula ratios¹ to accommodate the two rhinos living together. Jack has remained on the suggested formula solution for the younger calf, Ophelia. After consulting with our veterinary staff, it was decided that maintaining Jack on a formula mixture for a slightly younger calf would not have any detrimental effects on his growth rate. Rice cereal was also added to formula for each feeding to provide additional substance without having to significantly increase liquid volume intake. As the calves have grown we have also introduced grain mash (ADF16 soaked in formula) feedings at the first and last feedings of the day. This has allowed for a smooth transition closer to what will become their routine diet of ADF16 cubes and hay.

Conclusion

With every "hand raised" animal a facility faces different struggles. Due to the nature of our resources, staff manning and our greater goal of returning the rhinos to a herd environment, traditional and intensive hand rearing these two calves was not an option. Instead we took the approach of instilling in the calves that we were there for food but the rest of the crash would raise and guide them to "rhinohood". Considering the circumstances the best possible option was found and to this point has been a successful journey. It has absolutely been a learning experience for the team, and something we are grateful to the help of our veterinary staff, amazing interns and the rest of the staff at White Oak. It truly takes a village to raise two white rhino calves!

References

1. Blakeslee T, Zuba JR. Rhinoceros. In: Gage Laurie J. Hand-Rearing Wild and Domestic Mammals. Iowa State Press: Blackwell Publishing; 2002. p. 236-242