

With behaviors of this nature, safety for the animals and the staff are paramount. We pay close attention to any changes in body language and listen acutely for any sounds of frustration/anxiousness from the rhinos. Both are usually precursors to any charges and changes in body positioning, etc. We also always utilize two staff when drawing blood and know our escape routes. We always have a vertical pipe between us and the rhino's horn just in case they choose to turn on the person drawing the blood. We also try to set them and us up for success. As mentioned earlier, we try to keep this behavior strong and established with those who know the animals best as well as who the animals know best. Also, if a vein is not noticeable or we are not able to get a vein to stand up, we do not attempt drawing blood and instead wait until another date and time.

Successfully drawing blood from our rhinos has been a great husbandry component of rhino management. On multiple occasions we have sent blood away when our rhinos were acting "off". We routinely collect blood from our rhinos for banking purposes and our veterinary services department analyzes samples at least twice per year. We have also been able to participate in any and all research related to rhinos requesting blood. Conditioned blood draws are also great behaviors to help build rapport between rhinos and staff as well as boosting confidence levels with staff when they are able to reach milestones such as this with the animals they care for. Buzbie and Jeannie have and continue to teach us a lot and we are thankful for the opportunities they provide us with.



1.1 Southern White Rhino Training Protocol -- Voluntary blood collection from inner front leg without a chute - by Carly Barron, Maryland Zoo

Number of trainers: 2

2° trainer: Veterinarian

Bridge: Clicker

Reinforcers: Alfalfa cubes, hay, tactile (brushing, horn filing)

Training Materials: bucket (with nolvasan solution), sponge, blunt needle, target, clicker, alfalfa cubes, brush, file/rasp

Medical Materials: 21 3/4 gauge butterfly needle, 5-8 collection tubes, dilute nolvasan solution

1. Use "target" and "move up" (hand target) behaviors to position rhino parallel to pen bars with left side to bars.
2. Use "target" and "move up" to encourage rhino to position front left leg ahead of front right (allowing for access to inner front right leg.)
3. Utilize "steady" behavior to keep rhino still throughout collection.
4. Begin desensitization process with 1° trainer at head and 2° trainer at front legs. Position rhino properly at pen bars with all materials in place in keeper aisle way. Repeat throughout multiple sessions until positioning reliably.
5. With 1° trainer at head keeping animal still*, 2° trainer begins desensitization to washing leg with sponge and nolvasan solution. 1° trainer reinforces rhino for standing still (no steps backward or forward or breaking away from session.)
6. Over subsequent sessions, 2° trainer begins lightly poking inner right leg with finger(s), feeling for vein.
7. Using small approximations over multiple sessions, light finger palpations gradually increase to a single centralized, forceful finger poke. 1° trainer reinforces rhino for remaining still.
8. Once comfortable with previous step, begin to follow finger palpation (to find vein and best spot for collection) with light blunt needle pokes (replacing single finger poke), building up over multiple sessions to hard sticks reminiscent of real stick. 1° trainer continues to reinforce non-movement.
9. Once rhino consistently remains steady for fake sticks with blunt needle, blood collection is attempted using butterfly needle.
10. Final behavior consists of the rhino standing still for washing of the inner front right leg with sponge and nolvasan solution, feeling for best collection site with finger, and collection using butterfly needle.



11. Rhinos are most reactive to initial stick, and are selectively tolerant of repositioning of needle if blood is not hit on the first try. Once blood is hit, 1° trainer is responsible for keeping the rhino occupied (through training or food/tactile reinforcement) for full collection (typically about 5 tubes) and holding off of the vein following collection.

***Individual rhino characteristics:**

-1.0 White Rhino “Stubby” is fairly easy to position for blood draw, but is very reactive. He requires distraction through the use of other behaviors (“up,” “open,” “move up,” etc.) to keep him focused and to deter him from taking a step forward or back, or breaking away from session. Use of “steady” is effective.

-0.1 White Rhino “Daisy” requires less constant attention to ensure that she stands still during collection. However, she is much more challenging to get into initial position. She is very smart and fairly suspicious, refusing to step with the proper foot to allow for access of inner right leg. Once in proper position, she stands solidly if given hay or alfalfa cubes, is brushed, or has her horn filed.



Conservation Corner: The Land of Narayani: Dave Johnson, Denver Zoo



In November of last year I led a group of excited animal nerds back to a place that I have become quite fond of. This was my fifth trip to the wonderful land of Nepal. With me, I had zoo volunteers, zookeepers, interns, and other Denver community members. There were sixteen of us, including a three person documentary team working on a rhino film. We were thrown together on a mission of passion, and spent two weeks together experiencing all that this country, culture, and wildlife had to offer.

“Team Nepalorado”, and just as the name is a fusion of our two countries, we consider our mission a fusion of cultures in the name of conservation. We wanted to highlight the creation of a new Asian area in Denver. This exhibit would house Asian elephant and Greater one-horned rhino. The latter would be living in Denver for the first time in our history. Our new pachyderm exhibit at the zoo was opened in 2012, and was named Toyota Elephant Passage. Our team created some excitement about a new home for pachyderms, and continues to take our people on incredible journeys to unite them with conservation practices on a global scale. Our partnership does not seem to be slowing down any, but instead is gaining popularity and adding excitement to our zoo.

We got to see fourteen wild rhino this year, a few wild elephant, and a leopard, plus the amazing supporting cast of animals that abound in the terai. One of the rhinos actually swam across the boundary river to the national park and was grazing behind our lodge restaurant in Sauraha. We got to sit and watch him for hours as we drank our Everest beer and basked in our good fortune. Instead of leaving us after a few days and heading to India, the documentary film team stayed with us for the entire two weeks. The ninety minute film is due out sometime late summer and is called “The Price”. Our portion of the story is a feel good look at rhino conservation and the positive direction that we can head together. After two years of filming in Africa and documenting the struggles with rhino poaching as it escalates there, it was a nice change of pace for their team to be with us in Nepal. The energy and enthusiasm were contagious and continues on today. Just last month it was worldly recognized that Nepal had another year free from poaching. We were so excited for our global teammates. At a time when South Africa was losing 1004 rhino, Nepal was protecting all of their rhino, elephant, and tiger populations. Other countries should take notice.

