

## **Working Against Nature: Overcoming Challenges with Training Captive Desert Bighorn Sheep (*Ovis canadensis mexicana*)**

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### ***Abstract***

*When beginning a new training program with animals, challenges arise that are expected and unexpected. Despite the vast information on training captive wild animals, little is ever discussed on how these difficulties are dealt with & overcome. Over the last year, The Phoenix Zoo has been working on the following challenges that arose while shift-training the bighorn sheep herd: 1. gaining the trust of the animals; 2. problems associated with the size of the exhibit; 3. the animals' reluctance to enter the holding yards; 4. disturbance from outside stimuli. The trust issue was addressed first, which has aided in resolving the remaining challenges.*

*The staff has been able to successfully separate & immobilize numerous sheep for medical treatment & transfers without causing much added stress. Our biggest training success has been with our breeding male who is currently involved in a target-training and injection-training program. Although the challenges have diminished significantly, the keepers have recently encountered setbacks with the herd, which resulted in having to start at step one again. These challenges are indicative of what many keepers face on a daily basis, in one way or another. This paper will present the steps taken to overcome the above mentioned challenges & what is being done to ensure continued conditioning of the Bighorn Sheep herd.*

### ***Introduction***

For many animals in zoos, shifting into side yards or night houses is a regular occurrence. However, The Phoenix Zoo's Bighorn Sheep exhibit is a large fenced enclosure containing natural buttes where the sheep can roam freely. There are holding yards, but aside from the breeding male, the animals were rarely shifted into holding. One of our yearling Desert Bighorn Sheep (*Ovis canadensis mexicana*) was scheduled to be shipped out to another facility. We needed to acclimate him, along with the rest of the herd, to shift consistently into the two back holding yards in order to safely transfer him to the Animal Care Clinic to prepare him for the move. We had to quickly habituate the herd to the yards and attempt to change negative associations into positive associations. We began conditioning for new behaviors and different associations in late 2006.

The typical behavior of Bighorn sheep is to avoid people and in this enclosure they are able to run up steep cliffs & stay away from people. In the past, because of the size of the enclosure, to perform any medical procedures, we would have a group of keepers and veterinarian staff climbing the buttes, making the passageways smaller and smaller for the herd. Then staff would close in on the herds, in order for the sheep to be darted, anesthetized, and carried away. The sheep that did run into the holding yards were still

darted, creating negative associations with those yards. This method created stress, made the sheep even more apprehensive toward people, and animal injuries could result. A safer way needed to be found.

It became obvious that there would be four main challenges that would have to be overcome in order to succeed. The first and most important issue was gaining the herd's trust. Second, we had to develop a method to encourage them to stay down low when they have a choice to stay up high in the large exhibit. Third, was to desensitize the herd so that they were not apprehensive of the holding yards. Lastly, was to deal with outside stimuli changing their perceptions and increasing their anxiety.

### *Gaining "the herd's" Trust*

In 2006 the collection consisted of three males and three females (3.3) located on the breeding butte and one male (1.0) on the bachelor butte. We focused on conditioning the herd on the breeding butte to be more comfortable in the holding yards since that was the enclosure where the yearling that needed to be shipped was located.

The breeding butte has two holding yards (yard 1 & yard 2) where the breeding ram "Truman" is shifted to daily. He was mother reared but imprinted by people at an early age; as a result, at 2 years of age he became too dangerous to go in with and therefore was trained to shift into holding yard 2 as part of the servicing routine. The remainder of the herd was hesitant about entering the holding yards and tended to keep their distance from people. The definition of herd includes all sheep excluding the male "Truman". His training will be discussed later.

"The herd" (in 2006) consisted of two breeding ewes, 2 juvenile rams, and 1 juvenile ewe. The youngest ram "Jerome" lost his mother when he was only 1 month old and he was the young ram to be relocated. Due to his mother's death, he was conditioned to approach the primary keeper daily for food so that accurate health observations could be made. He associated me with receiving food and a small level of trust formed. There was also an adult ewe, "Sonora" & her offspring "Sierra" that tolerated people being near them and were always eager to eat when we entered the exhibit.

The focus was on these three sheep in order to gain the trust of the herd. Prior to conditioning, the daily hay and grain rations were fed at two feeding areas on exhibit. Since the goal was to have the herd shift into holding yard 1, the plan was to begin walking them through the exhibit to the back holding yards while hand feeding the three most social sheep. We used the same white bucket daily so the animals learn to approach the keepers with the bucket and view the bucket as containing something positive. The procedure was to start near their normal feeding area and slowly walk with them; within a couple of days, the entire herd was following the social ewes, the social young ram, and therefore the primary keeper. Although the more hesitant bighorn followed at a distance, the entire group followed us all the way to the back holding yards by the 3<sup>rd</sup> day. It was necessary to sit with the herd as they ate their grain and talk to and around them so they became desensitized to routine sounds (i.e., radio traffic, voices, cell phones, etc...). Since the immediate goal was to lock the youngest ram in the holding yards, we concentrated on his progress the most. The two younger animals were continuously hand-fed and became very social very quickly inside holding yard 1. The adult ewes ate directly outside the yard, while the other juvenile ram ate inside the yard yet close to the

entryway. By the end of week 2, when “Jerome” needed to be separated from the herd, we were able to calmly close the gate behind him and lock him in holding yard 1. “Truman”, still in holding yard 2, was given access to yard 1 in order to keep his offspring company and calm. After two days in the holding yards, young “Jerome” was successfully anesthetized without much added stress, transported to ACC (Animal Care Center), where he resided until shipment. Within one month he was successfully driven to his new residence. Success!

We continued with the routine of feeding the grain rations in yard 1 and encouraging the sheep to follow the keepers for their diet. The trust continued to develop with “Sonora” and “Sierra”. Two months had past when the herd began waiting at the yard’s entryway for the grain. The animals did not have to be walked through the exhibit; they were ready and willing to enter the holding yard on their own - by choice, not force. We started to toss the grain over the fence; gaining some time to service the exhibit, time to strengthen the relationship with the two social females, and giving time to the more nervous bighorns to eat quietly in the yard.

### *Dealing with large Exhibits*

The holding yards started to become a positive place and a basis of trust had been formed between keepers and the herd. In the 2007 birthing season we were able to monitor their pregnancies and determine exactly when the dams were going to give birth. Not an easy task when the breeding butte has a natural butte that is ~200 ft high and an exhibit area of 113,361 sq ft; the bachelor butte also has a natural butte about the same height with an exhibit area of 68,035 sq ft. The ewes knew to hide during labor and their lambs were often born in caves on the butte. For our safety and theirs, the lambs had to be found before they were more than twenty-four hours old in order to catch them to perform neonatal exams. Once the thirty-six hour mark had past, the lambs would be able to skillfully climb the buttes and it was too dangerous for us to try and catch them and they may be injured in the process as well. Right after birth, the ewes would not come down off the butte for days, even weeks, while keepers were present. When the adults did not come off the butte, the juveniles were leery of shifting alone. Using the already established relationship with each individual (some stronger than others), we were able to call for them, showed the white bucket and waited patiently for anyone to follow. Usually, once one bighorn started eating grain, the rest would follow. The dams are a different situation. Grain was never withheld from dams if they didn’t shift, we would walk the exhibit and try to find the dams in order to leave grain for them. Usually they would make their way down the butte midday to eat hay once the lambs were older than three days of age. Depending on the female, each behaved differently with regards to their lambs. The social adult brought her lamb down after only a few days; the social young ewe brought her lamb down starting at day one, even stayed during the neonatal exam; and the apprehensive ewe wouldn’t allow her lamb down for about a month. In order to obtain visuals on each member of the herd, we would walk the exhibit, calling for them and show them the white bucket. At times, the dams would run down to quickly eat but the lambs would stay tucked away on the butte. Binoculars were used to see the lambs and their body conditions. Luckily, no major issues developed with the lambs and they became strong bighorn. The dams started bringing the lambs, at one month old, to

the back holding yards, training them that grain is offered there. After trust had been built & the herd knew to come down off the butte to eat, the focus shifted to our adult females feeling comfortable inside yard 1, which was a major hurdle for them to overcome.

### *Apprehension toward Holding Yards*

Keeping the herd feeling safe in the holding yards is not easy when a city park is adjacent to the buttes – people, dogs, horses, vehicles, etc... can potentially scare them, let alone the past instances where they were forced into the being confined. The herd had become acclimated to many of the above mentioned stimuli, and yet daily they chose which threats were too much of a risk for them. Unfortunately, due to each year having more lambs, the ewes were still very cautious in yard 1 and were always looking for an escape route. In addition to the safety of the lambs, these females were part of the “old style” catch-ups and panicked if the gate was shut on them. Only if needed for emergency medical issues, would an adult ewe, at this time, be locked in any yard. Although the herd can now be shifted into both yards, staying there to eat grain is still a challenge for the animals. The adult ewes are becoming less stressed in the yards and stay for much longer periods of time than initially.

As of spring 2008, we have 6.2 on the breeding butte & 2.2 on the bachelor butte. We have successfully shifted & locked in numerous bighorn since late 2006; we relocated 1 ram, castrated 2 rams so they could stay with the herd, transferred 2 ewes to the bachelor butte, and medically treated ill/injured sheep without much added stress. The two ewes that were transferred to the bachelor butte are settling in with our older castrated ram. Before the move, the older ram was very apprehensive towards staff. Since the females’ move, he has started to come down off the butte daily for food.

On the breeding butte, the two male yearlings are being locked in yard 2 with Truman; and then the remaining animals are shifted into yard 1 to eat grain. The more social adult ewe will enter yard 1 but prefers to eat with keepers on exhibit or by hand in yard 1. Developing a trust with the herd has helped manage the sheep in this very large enclosure. We are able to call them down from their preferred areas up high on the buttes. They are now calm and comfortable feeding in the holding yards where before they were very uncomfortable and uneasy about being in a closed area.

### *Outside Stimuli*

Due to living on a natural butte, different noises and visuals can interfere with their new routine at times. Loud machines, cranes, fires, noises from the park adjacent to their exhibit, would all keep the herd (including Truman) high on the butte. During these times patience and perseverance were needed. As long as Truman shifted, we called for the herd, sometimes climbed the butte and one by one walked each bighorn to the holding yard. If Truman chose not to shift (usually due to rut season or some external stimulus that he needed to protect the herd from), we would either come back at another time to try to shift again, or the hay & grain was thrown over their fence line for that day and no one was shifted. There were times that the herd walked to the back yards, ate for a couple of minutes, then ran off to gain a better view on top of the butte. They have learned to go

back to the yards later for the grain, but if they don't, they do have their hay on exhibit. They also had the choice to stay near the keepers on exhibit. Outside stimuli sometimes sent them running up the butte while they were with us in the exhibit. We would finish servicing the exhibit and release Truman so he could take charge of the herd and determine if the area was safe.

### *Breeding Male "Truman's" Training*

Last spring I approached our Behavioral Management Coordinator, Hilda Tresz, asking for her assistance in developing a training program for our breeding ram, "Truman". We developed a training plan to train him to target and station upon command. Truman was a good candidate for training because he was imprinted by people, he shifted easily, and was already tolerant of tactile stimulation.

Once released from his primary holding yard (yard 2) into yard 1, he was asked to "station" to a target repeatedly. His initial target was a tennis ball on a broom stick; his reward was tactile reinforcement. As he progressed, more mobility was needed in order to manipulate his body and his reward needed some food element (as well as tactile). A tennis ball on a hook was introduced as the target and leaf-eater biscuits as the food reward. The hook-able tennis ball freed both hands for providing reward and the biscuits kept his attention longer. The biscuits proved to be too rich for his digestive system so the food reward switched to 1/3 cup sliced carrots. He was able to learn to present his face, side, hooves, and rump. He has learned verbal cues "face" and "up".

His personality is much different than most bighorn sheep and he has been this way since a lamb. He shows off for zoo visitors as well as visitors we bring up to the buttes. Due to his tendency to be overly zealous at times, he was rewarded for being calm. If he started to ram at the gates/fences, training stopped until he focused again. If he was too excitable, we would call him over to the fence line, reward him for stationing at least once and then end the session.

In March 08 he started to be agitated and excitable every day; making training nearly impossible. After watching the dynamics of the herd, it seemed this change was possibly due to his second oldest son turning a year old. Truman was displaying a lot around him and not wanting to focus on people as much, unless it was to show off his ramming talents. His eldest son, now 2 yrs old, was allowed to grow up and possibly even reproduce with one of Truman's daughters, before we castrated the young ram. We castrated his 1 yr old son in the beginning of April and Truman's behavior has gone back to normal. He was successfully training again.

He sometimes got distracted from outside stimuli at times, but generally he stayed focused long enough to obtain a few behaviors from him. As long as he was not in rut, he was very willing to train and be reinforced. He tolerated poking his skin with pseudo-needles & blunt needles. He did not mind the odor of rubbing alcohol, nor the pulling of his skin. The next steps for his training are vaccinations and blood draws. Besides his own training, he was an integral part of keeping members of his herd calm while being locked in the holding yards.

### *A Setback with the Herd*

The herd always had choice; the choice to shift, the choice to trust, & the choice to stay in the yard since some of them are not locked in. In late 2007 a setback occurred due to reasons still unknown. None of the bighorn, including Truman, was interested in coming near the holding yards. Truman began shifting after day two, but for two weeks, the herd was inconsistent about coming down the butte – this was devastating since it had been exactly a year from when conditioning had started. Each day I had to call for them and walk them individually to the back. They were not afraid of me, but afraid of getting near the back of the exhibit. For two weeks they had to be walked, like in the beginning, until they felt comfortable again to approach the yards on their own.

### *Conclusion*

It is difficult to work with a herd that has an extremely large natural exhibit, especially since they are reluctant to approach people, and do not want to be in a confined area. This year's lambs are already watching Truman and his older offspring as they shift between yards. Members of the herd have been gated, separated, and medically treated without much added stress, and more importantly some without immobilization. It took a lot of patience to get where we are today and there is still so much to gain with the herd. Trusting in one another is challenged often; each time a lamb is taken for a neonatal exam; each time a sheep needs to be separated for a medical procedure; each time something alerts them to run. They could in fact charge and ram at us at any given time, while we are servicing the exhibits, but they don't. The essential factor is that a trust has been built and it must be continuously reinforced every time we work with the bighorn sheep.

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