

USE OF MIRRORS TO STIMULATE CHEETAH BREEDING INTEREST AT THE BALTIMORE ZOO

The Baltimore Zoo opened a new cheetah exhibit in June of 1998 with two residents: a female, Wandu, from the National Zoo (NZZ) and a male, Murani, from White Oak. Neither of these cats had reproduced before, and we were delighted to receive notice from the SSP in November of 1999 that our two cats were recommended for breeding. We incorporated the 3 Step Management Program that was in use at the Cheetah Conservation Station (CCS) at the National Zoo in order to increase our chances for success.



We immediately initiated Step 1, which was allowing our male, Murani, to establish a territory. Up until this time our two cats, which were housed separately, switched yards on a 2 week rotating schedule. This was done mostly to keep things interesting for the cheetahs. We selected the larger yard to become Murani's territory, and left him in this yard for an ex-

tended period of time. He began to mark his territory after 3-4 weeks by treading and defecation at the perimeter of the yard, but we were not seeing the strong behaviors that we were hoping for. He showed little interest in the female, and at this point, she showed little interest in him.

Our original thought was that we would have to skip Step 2 of the program. This step involves the stimulation caused by a territorial challenge. The program calls for the breeding male to be moved to an adjacent yard and the introduction of a new male, or coalition of males, into his territory. Since we only had one male, it seemed unlikely that we would be able to set up a territorial challenge for him. Just as we were thinking about what we could do, Nadja Wielebnowski published Behavioral Differences as

Predictors of Breeding Status in Captive Cheetahs in *Zoo Biology* (18:334-349). As part of the study, she used mirror-image stimulation to access some aspects of behavioral variation. We thought that it might be worth a try to use a mirror to simulate the challenge from another male.

We obtained a large mirror (5' high x 2' wide) from another part of the zoo, and in order to increase its effectiveness, we made an audiotape of vocalizations from the cheetahs at the Cheetah Conservation Station at NZZ. We took the mirror and attached it to the outside of the fencing on Murani's enclosure using bungee cords. At the same time, we began to play the tape, which we placed behind the mirror so that the sound appeared to be coming from the image. Murani took immediate notice and came down to investigate the mirror image. He investigated it several times, and even tried to look around the mirror to see where the "new" cat was. He began to walk his territory much more actively. Before we began, he was resting. Although Murani took notice, the real effect seemed to be on our female cheetah Wandu. The minute we began playing the tape, she got extremely excited. She ran the fence line closest to the mirror and tape as if she wanted to get closer. It was after this point in time that we began to get increased solicitive behaviors from her. She would rub at the fence and roll whenever Murani would walk by. We did not see any of these behaviors until after we introduced the mirror and tape.

We had planned to introduce some stool from another male cheetah (which the staff at the CCS graciously offered to donate) into our male's territory. Unfortunately, we lost Murani quite suddenly at age 11 before we could continue our breeding plans. We did not get to see if our rather unusual territorial challenge would result in a breeding. We did see enough response for us to consider using this technique again.

Although having males in a coalition, or having several males to work with, may be the ideal situation for stimulating breeding in cheetahs, there are always going to be singleton males. Whether alone because they were born without any brothers, or due to the death of a coalition mate, these males are still important. Anything we can do to increase their chances of successfully reproducing can only help the captive cheetah population.

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