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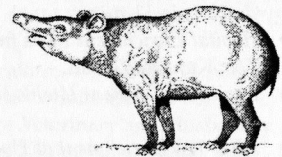
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THE SHAPE OF ENRICHMENT



Contents: Volume 19, No. 1&2 February and May 2010

- | | | |
|----------|----|--|
| Features | 1 | Reach Out and Touch: Tactile Enrichment for a Brazilian Lowland Tapir
<i>by Sheila Wojciechowski</i> |
| | 3 | Enrichment for Indian Giant Squirrels
<i>by Lakshminarasimha R and Anil Garg</i> |
| | 5 | And Now for Something "Otterly" Different
<i>by Tony Dobbs</i> |
| | 6 | Encouraging Foraging Behavior for a Black Rhino
<i>by T.W. Mulaudzi, J. Mokgalaka, E.M. Pitse, L.K. Nengoothela, and R. Ingle-Moller</i> |
| | 8 | Soccer Influences Enrichment at Johannesburg Zoo
<i>by Lorna Fuller</i> |
| | 9 | Enrichment Adventures: Taking the Initiative—Creating a Program that Works
<i>by Kimberly A. Wasko</i> |
| | 11 | Developing More Enrichment at Assiniboine Park Zoo
<i>by Jenith Dock</i> |
| | 12 | How Enriching Is Training?
<i>by Wanda McCormick</i> |

Video Library 15



Encouraging Foraging Behavior for a Black Rhino

By T.W. Mulaudzi, J. Mokgalaka, E.M. Pitse, L.K. Nengovhela, R. Ingle-Moller, National Zoological Gardens of South Africa, Pretoria

Our male black rhino at the Pretoria Zoo was not showing a diversity of behavior, especially in foraging for food, and we determined that our management was not encouraging demonstration of natural behaviors.

Pretoria Zoo



When we let him out into his enclosure each day, he went immediately to the feeding

trough where we put his food, and during the day, he spent most of his time hanging around near the trough. We decided to make some

changes to encourage foraging behavior and greater use of the enclosure space.

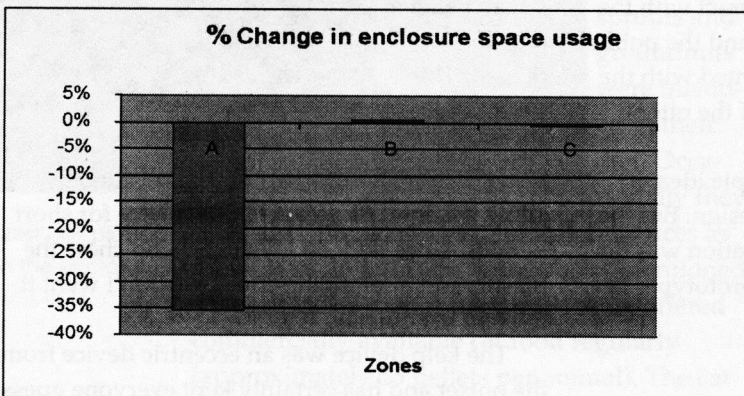
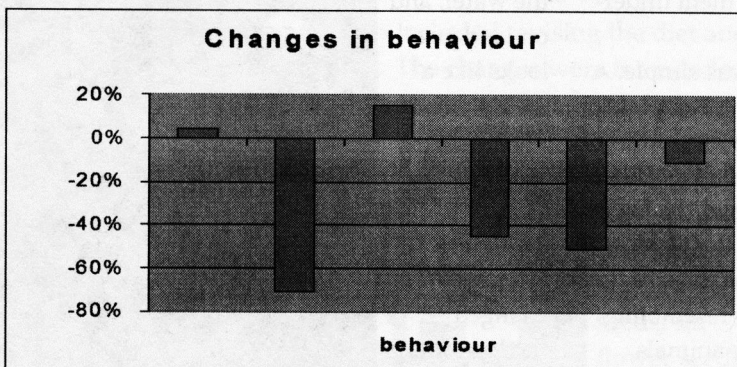
For optimal feeding care of rhinos, unpredictable temporal and spatial feeding are advised, administered in a way that the animal will have to work for the food. This introduces an element of novelty that the animal would encounter finding food in the wild.

The enclosure was demarcated into three zones (A, B and C) of relatively equal size. In order to introduce novelty, we moved the normal food quota 10m away from the feeding trough in four directions, placed on metal feeding slabs. To increase space usage, we hung branches of *Rhus caree* at three points along the sides of the enclosure with chain.

We recorded data using an ethogram of feeding behaviors: searching for food, finding food, sniffing food, eating food, playing with food, and ignoring food. For a baseline, we used the same ethogram but without manipulating the presentation of the food. The normal food quota was presented at the feeding trough while browse was thrown in the enclosure at the western side of the enclosure (Zone C).

We compared the frequencies of feeding behavior between the enrichment program and the baseline study. We did the same with the zones to see if there are different trends between enrichment and baseline.

Increasing the behavior of food searching by 4% reduced the repetitive pattern of moving straight from the night room to the feeding trough, where food would normally be placed. With the poor eyesight of the rhino, having a structure other than the enclosure furniture that he is used to in the enclosure triggered charging, curiosity and alertness. The increment of the food sniffing behavior by 15% after enrichment signaled weary. The rhino was not sure if this heap is his food. He would charge at the heap not knowing what it is, try to kick the food with front legs more a case why



Above: Change in foraging behavior after enrichment; Below: Change in enclosure use.



should food be here, I can't investigate head first rather feet and sniff and realize it food. He would then feed but not too comfortably.

Eating continuously was reduced drastically.

Under normal circumstances the animal would eat for a longer period continuously and rest for a longer period. During enrichment we notice that he fed for shorter bouts and engage in other activities like sniffing, charging at the food,

marking territory because now he does not feel all comfortable. With the browse hanged on the metal bars on the sides of the enclosure, the vibrating sound of the bars while the animal

pulled the branches seemed to excite him as well.

At the normal feeding station, ignoring and playing with food were more frequent because of the

comfort zone the feeding station has become for the rhino through the years. We found these two behaviours reduced as a result of the novelty element that we introduced. If the rhino is not eating he would engaging in activities other than just standing next to the food ignoring it or playing with it because it seemed he wasn't entirely sure about the food.

Observation showed that during the feeding times, mostly the area around where the food is would be utilized. The enrichment programme increased the space usage of the

enclosure by reducing the use of zone A and increasing the use of zone B and zone C.

The project had two beneficiaries, the animal and its keepers. During the browse hanging experiments, the animal had a chance of from a height like rhinos do in the wild than grazing leaves from the ground. We have noticed the rhino trying to stretch to get to the browse above his head. Curiosity and alertness was brought into play by the element of novelty when feeding away from the feeding trough. We also observe him marking the traditional feeding trough when food is not served there. This we think is reminding whoever he thinks ate his food, because he probably would think there food at the feeding trough and some other rhino had it. ♦

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