

**Editors:**

Karen E. Worley

Valerie J. Hare

Editorial Advisor:

David Shepherdson, Ph.D.

Oregon Zoo, Oregon

Editorial Reviewers:

Mollie Bloomsmith, Ph.D.

Yerkes Primate Center, Georgia

Kathy Carlstead, Ph.D.

Honolulu Zoo, Hawaii

Amy Cutting, Ph.D.

Oregon Zoo, Oregon

Vicky Melfi, Ph.D.

Paignton Zoo, U.K.

Challenges Coordinator:

Else Poulsen

Video Library Coordinators:

Beth Rich

Yvette Kemp

Harald Schwammer

Cynthia Cipreste

Jo Walker

THE SHAPE OF ENRICHMENT is dedicated to sharing ideas, inspirations, and practical knowledge of enrichment strategies among those working in the field of animal care. It is an open forum for keepers, trainers, curators, researchers, exhibit designers, administrators, volunteers, and anyone else interested in approaches to enrichment. All of our staff are volunteers. We are always looking for new submissions, from feature-length articles to short blurbs. We accept submissions in any form, polished or not. Let us, and your colleagues, hear from you!

THE SHAPE OF ENRICHMENT presents enrichment ideas of all kinds from a variety of sources. We urge you to consider, assess, and evaluate any idea carefully before applying it to your own animals and exhibits. If you have concerns or opposing views, we are happy to accept letters and articles that express them. As the editors, we present these ideas for your consideration only; we do not take responsibility for their effectiveness or feasibility.

THE SHAPE OF ENRICHMENT, ISSN 1088-8152, is published quarterly by the non-profit The Shape of Enrichment, Inc. Subscriptions are \$18 per calendar year, payable in U.S. funds only, drawn on a U.S. bank or by credit card on www.enrichment.org. Domestic and foreign air mail postage is included. Mid-year subscriptions are prorated. Back issues are available for \$5 each. Send all subscription requests, article submissions, letters, comments, and questions to 1650 Minden Dr., San Diego, CA 92111-7124. Phone: (858) 279-4273. E-mail: shape@enrichment.org.

Please share and photocopy any part of this newsletter, as long as you credit the source, its editors, and the authors. This publication is NOT FOR RESALE.

Visit our website at www.enrichment.org!

Downloadable Subscriptions In 2010!

The Shape of Enrichment is now offering downloadable subscriptions. We strongly encourage you to consider requesting this "green" option! Subscribers to the downloadable version of *The Shape of Enrichment* will enjoy many benefits:

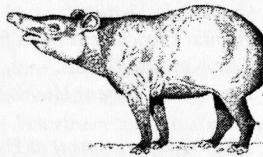
- E-mail notification when each issue is published and ready to download — no more waiting for the postal service!
- No price increase
- Store your issues on your hard drive — no more lost or torn issues!
- Print only what you need; re-print whenever you like

To take advantage of our downloadable subscriptions, you MUST be a registered user on our new website. To register, go to www.enrichment.org, click on Register, and complete the form. Be sure to make a note of your user name and password — you will need these when you log on! Also, if your contact information changes — especially your e-mail — remember to update your user account.

Complimentary subscriptions will only be downloadable; hard copies will no longer be available. Hard copies of *The Shape of Enrichment* will still be available for purchase; but increased postage fees will be reflected in the cost of the subscription and back issues.

Very soon, all *The Shape of Enrichment* back issues and some of the International Conference on Environmental Enrichment (ICEE) Proceedings will also be available through our Publication Download feature. Register now to be notified when these become available!

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



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 deter-



Pretoria Zoo

mined that our management was not encouraging demonstration of natural behaviors. 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.

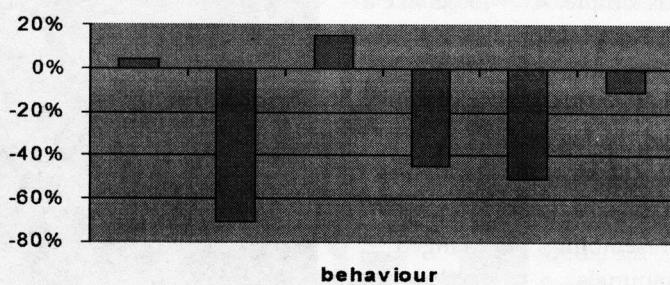
The enclosure was demarcated into three zones (A, B and C) of relatively equal size. In order to introduce novelty, we moved the normal food quota 10m away from the feeding trough in four directions, placed on metal feeding slabs. To increase space usage, we hung branches of *Rhus carye* at three points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

Changes in behaviour





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 engage 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. ♦

Acknowledgements

- D-SECTION (keepers): everybody in our antelope section gave us different kind support at different stages of this work.
- Robbyn Ingle (environmental enrichment officer): coordinated very well with us.
- Caroline Morake (intern student): captured our data for us.
- Research Department: the incentives that made us work harder.

