

Rhino Training and Enrichment at Disney's Animal Kingdom

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Introduction

At Disney's Animal Kingdom, training and enrichment are as fully integrated into our rhino management program as other basic husbandry practices such as exhibit cleaning and maintenance, nutrition, health and propagation. It is an expectation of keepers in all areas that they be involved in both the training and enrichment of the species that they work with. The focus of the training program is to use operant conditioning techniques and positive reinforcement to train rhinos to shift on and off display and between stalls and yards and the training of routine husbandry behaviors. The focus of the enrichment program is to promote species-appropriate behaviors. We believe that all interactions with animals are opportunities to affect the animal's behavior in a positive way.

Program Support

There is strong program support for both training and enrichment efforts from all members of the animal management team, including Keepers, Zoological Managers, Curators and Veterinarians. Our Curator of Behavioral Husbandry, who serves as a resource property-wide for training and enrichment, oversees staff development. Within four months of hire, each Keeper is required to complete a Husbandry Training Methods Class. Basic training terminology and operant conditioning concepts are taught, as well as trouble-shooting and problem-solving techniques. Keepers are presented with real-life training challenges to solve, focusing on the process and skills necessary to problem-solving as a team. After attending this class, Keepers are gradually inserted into the training process in their work areas by going through a new trainer integration plan. New trainers participate in a "train-the-trainer" program that is fostered by the Curator of Behavioral Husbandry, their Zoological Manager and other Keepers already established

as trainers. They begin by first observing a number of training sessions being conducted by other Keepers. From there, they partner with an experienced trainer to do sessions with animals on previously learned behaviors. After many such sessions, they are allowed to begin training new behaviors on their assigned animals. All trainers have sessions regularly reviewed by Zoological Managers, co-workers and Veterinarians. A sub-set of the Zoological Managers, representing most of the taxa at Disney's Animal Kingdom, have formed an advanced training group that meets regularly to brainstorm new ideas, trouble-shoot problem areas and share best practices. Often times, techniques and solutions for one species or taxa can be just as applicable to another.

Training Program Framework

The training program framework consists of six steps: goal setting, planning, implementing, documenting, evaluating and re-adjusting.

Goal-setting and Planning

The initial goals of the rhino training program were the basic ones of getting the animals to shift between stalls and yards within the barn complex and getting them on and off exhibit on cue. From there, the animal management team (Keepers, Zoological Managers, Curators and Veterinarians) collectively set husbandry goals such as:

- Target training
- Stationing/steady
- Scale training
- Tactile desensitization/complete body inspection
- Voluntary blood draws and injections
- Foot present
- Mouth open/oral exams
- Desensitization to rectal palpations/transrectal ultrasonography

- Chute training/scale training
- Other husbandry behaviors as identified by animal management and veterinary staff

The black rhino and white rhino training programs have been developed in parallel with only a few species-specific variations. Although we have not had the opportunity to work with other rhino species here at Disney's Animal Kingdom, we feel the program framework and training steps are easily transferable to other species, including other types of rhinos.

Planning is the next step in the training program. There is an approval process that is initiated by the Keeper. A training proposal is submitted which identifies which animal is going to be trained which behavior and why and the training steps or approximations that will be used. The Zoological Manager, area Curator and Veterinary Staff all comment on and approve the proposal. A Veterinarian is assigned to act as an advisor for each species of animals and participates in each phase of the training program. Next, all members of the training staff collaborate on setting cues and criteria for each of the behaviors to be trained. This helps to ensure consistency and to avoid confusion or frustration for either the animal or the trainer. The AZA Rhinoceros Husbandry Resource Manual includes suggestions and definitions of some standard training commands.

Disney's Animal Kingdom Cues and Criteria for Rhinos

- Behavior: Come
 - ⇒ Verbal cue: "Come"
 - ⇒ Criteria: Animal begins to approach trainer's position immediately and positions itself in front of the trainer

- Behavior: Target
 - ⇒ Verbal cue: "Target"
 - ⇒ Visual cue: Presentation of object used as target
 - ⇒ Criteria: Animal touches object or area specified by trainer with muzzle, keeping mouth closed

- Behavior: Steady
 - ⇒ Verbal cue: "Steady"
 - ⇒ Physical cue: Pressure/touch on muzzle with hand
 - ⇒ Criteria: Animal remains in position and relaxed

- Behavior: Back
 - ⇒ Verbal cue: "Back"
 - ⇒ Physical cue: Pressure/touch on shoulder area
 - ⇒ Criteria: Animal locomotes backward in a straight line, moving each foot back one step

- Behavior: Over left/Over right
 - ⇒ Verbal cue: "Left" or "Right"
 - ⇒ Criteria: Animal pivots on front legs, moving hindquarters one complete step in direction indicated by trainer

- Behavior: Foot (front)
 - ⇒ Verbal cue: "Foot"
 - ⇒ Physical cue: Pressure on back of wrist/pressure to front of foot above toes
 - ⇒ Criteria: Animal lifts and positions foot as guided by trainer

- Behavior: Down
 - ⇒ Verbal cue: “Down”
 - ⇒ Visual/physical cues: To be developed
 - ⇒ Criteria: Animal lies in partial lateral position on side indicated by trainer

- Behavior: Open (mouth)
 - ⇒ Verbal cue: “Open”
 - ⇒ Physical cue: Pressure/touch on upper and lower lips at corners of mouth
 - ⇒ Criteria: Animal opens mouth by dropping lower jaw and keeping upper lip elevated, with little to no head movement

- Behavior: End Session
 - ⇒ Verbal cue: “All Right”
 - ⇒ Physical cue: Three pats on the muzzle
 - ⇒ Criteria: Animal is released from session

Documentation and Evaluation

It is critical to record the results of training sessions, in order to document the progress of both the animal and the trainer. Disney’s Animal Kingdom utilizes a computerized record-keeping system, which has been tailored to our training program and refined over time. On the training form, Keepers identify the trainer, animal and behavior that was trained. They also note and describe any occurrences of aggression and rate the animal’s response to the training session on a 1-5 scale. The rating is based on how focused the animal was on the session and how well the animal performed the behavior. The animal’s overall progress towards learning the behavior is tracked on a scale of 0-100%. This data can be graphed to produce a visual display of an animal’s progress. When a behavior is complete with both primary and secondary trainers, it can then be turned over to other trainers and is considered to be in the maintenance phase rather than the learning phase.

Evaluation is the next basic program element. Zoological Managers, Veterinarians and other Keepers observe training sessions regularly and offer input and constructive criticism. Sessions are also videotaped periodically for review. A videocassette is designated for each individual rhino and training footage is added to the tape over time. In this way, a video chronicle of each animal's training history is created. The staff routinely discusses progress towards training goals and looks for trends in the data as part of the evaluation process. Trends in the training data can identify how an animal's performance is scored over time, how long it takes to train a particular behavior, whether or not training success is associated with an individual trainer, any increases or decreases in aggression and whether or not it is associated with an individual trainer or behavior. This information could potentially be linked to where an animal is in its reproductive cycle, based on available serum or fecal hormone enzyme immunoassay results. Studying trends in the data can help to establish training consistency and will assist in determining if and when adjustments are necessary.

Good communication in every phase of the training program is critical. Regular team meetings and regular review of training sessions can promote effective communication. Each rhino barn is equipped with a dry/erase training board, which tracks animals, trainers and behaviors at a glance. While a behavior is in the learning phase, it is listed in red marker. Once a behavior has been completed, it is listed in green marker. This is a signal that new trainers can come in behind the primary and secondary trainers and work the rhino on behaviors in the maintenance phase. Besides communication, some of the other challenges in the training program include finding time to train, working around trainers' schedules and establishing consistency with multiple trainers. Working around the animals' schedules is also a consideration, as the rhinos are required to be out "on show" from 45 minutes after sunrise until 45 minutes after sunset. Training sessions are basically restricted to very early in the morning or very late in the day. Subjectively, the morning sessions seem to be more successful, as the animals appear to be more focused on the training than in the evenings, when they are more focused on coming into the barn to receive their diets.

Training Successes

Although we still consider the rhino training program to be fairly new, we have enjoyed several successes. All rhinos shift between their exhibits and holding areas on an audio cue. All rhinos are target-trained. All of the rhinos are scale-trained so that we can obtain regular weights on them. All of the black rhinos and some of the white rhinos are trained to stand for voluntary blood draws and injections. All of the black rhinos are chute-trained and have been desensitized for rectal palpation. All rhinos are in various stages of learning other husbandry behaviors.

Enrichment Program Framework

The framework for the enrichment program at Disney's Animal Kingdom includes the same steps as the training program: goal-setting, planning, implementing, documenting, evaluating and re-adjusting.

Goal-setting and Planning

The primary goal of the enrichment program is to promote opportunities for the expression of species-appropriate behaviors. For rhinos, these include, among other things, opportunities for foraging, wallowing, scratching, olfactory investigation, interacting with their environment, and manipulating items with their horns. A secondary goal of enrichment is to decrease or eliminate undesirable behaviors.

The planning phase begins with the brainstorming of enrichment ideas. This can be done in a variety of forums including team meetings or informal keeper discussions. Additionally, a group of interested parties from all areas and representing all taxa of Disney's Animal Kingdom has been formed, the B.E.E.R group (Behavioral Environmental Enrichment Rendezvous). This group meets on a regular basis to share best practices from both within our organization and from other zoological institutions, to

trouble-shoot, problem-solve and share enrichment resources. While enrichment is most often thought of as being the addition of novel objects, such as boomer balls, scents and food items, the concept of enrichment is much broader and can include such things as keeper interactions, husbandry training, exhibit utilization and modification, and both intra- and inter-specific social interactions. The Keepers initiate the enrichment approval process by submitting a proposal that identifies the animal to be enriched and the behaviors that the enrichment is meant to promote, describes the enrichment and identifies any necessary resources. The Zoological Manager, the Curator of Behavioral Husbandry, the Area Curator and the Veterinary staff must approve the proposal. If food items are involved, the proposal is also submitted to the Forage Warehouse Manager for approval and to initiate the procurement and delivery process of the forage items. Keepers advance-plan the delivery of the enrichment items on a computerized calendar system.

Documentation and Evaluation

The results of the enrichment are documented in a computerized record-keeping system in which the animal(s) and the enrichment provided are recorded. The animal's response to the enrichment is rated and recorded on a 1-5 scale, from showing no interest at all to spending a substantial amount of time interacting with the enrichment item. Keepers also make comments on the specific behaviors observed or any other items of note. The evaluation process includes routinely discussing progress towards the enrichment goals, looking for trends in the data and making adjustments when necessary. Some of the trends that can be established from the documentation data include the frequency of delivery of a particular enrichment item, the animal's response to an enrichment item over time and the relative "success" of particular items. The scheduling, documenting and evaluating of an enrichment item does not require a complex record-keeping system, but can all be accomplished on one simple paper form. Keeping records on the computer can offer more possibilities, such as graphing animals' responses to enrichment over time or retrieving specific types of data.

Additional Enrichment Efforts

At Disney's Animal Kingdom, a long-term browse/vegetation study is underway. Data is systematically recorded on the amount of time animals spend consuming the planted landscape versus provided browse. From this data, decisions can be made to increase the amount of cut browse offered to the animals in order to decrease the negative impact on the landscape by the animals. There is also a long-term animal visibility study that the Keepers participate in to view the animals from the Guest perspective. Keepers measure animal visibility four times a day from the safari ride vehicle. They record what species they see, how many of each species they see, and plot the animals' locations on a polygon map. These measurements can be correlated with and affected by the timed addition of enrichment items. Thus the enrichment program can be used not only to enrich the animals' lives but also to enrich the Guest experience.

Conclusion

In conclusion, training and enrichment should be integral to all rhino management programs. Training enables the Keepers to provide a better quality of care for their rhinos and can prove invaluable in treating illness or injury or in reproductive and research efforts. Every zoological institution should train their animals to the extent their facility and manpower will allow. Similarly, enrichment should be considered just as basic to every animal management program as other husbandry practices. Not only will the lives of the rhinos be enhanced, but also the Keeper staff will be richly rewarded and the Guests will be provided with a satisfying and more educational experience.

Suggested Readings

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