

CHUTES: MULTIPLE APPLICATIONS TO IMPROVE THE DAILY LIVES OF GROUP HOUSED MACAQUES

ABSTRACT

There are many benefits to group housing non-human primates, but there are also some difficulties that can arise due to this type of housing. By adding chutes to a group housing unit, it is possible to address and even eliminate some of these issues. There are approximately 1200-1500 macaques (Macaca fasicularis and Macaca mulatta) in groups of 6-30 animals at Panther Tracks Learning Center of Primate Products, Inc. Chutes were designed to address the following issues: removing animals during daily cleaning; providing a means of closer observation of animals; and allowing easy capture of animals in transport boxes inside the chutes without the use of nets and catch gloves. Once the chutes were installed, it was apparent that they provided and improved not only what they were intended for but also a few other applications were discovered. By leaving the chute doors open during new group formations, aggression between conspecifics has decreased. Animals have also been easily pole and collar trained from inside of the chutes to participate in procedures in the restraint chair or to relocate to a nearby housing unit. The simple addition of purposely designed chutes has made significant improvements to various tasks at this primate facility.

INTRODUCTION

Approximately 98% of the animals at Panther Tracks Learning Center are kept in outdoor group house units for majority of their time at this facility. They are typically only brought into single or pair house cages for situations such as injury and illness, acclimation period prior to outgoing shipments, and observation period upon animals' arrival to the facility before being placed into a group. Additionally, many of the animals that are being group housed have various issues to consider including: age, sex, previous social housing experience, animal's purpose, and duration of expected stay in the group. All of these aspects can make group formations very difficult. It can also make every day tasks such as cleaning and animal observations somewhat challenging. Devising ways to increase efficiency and safety in cleaning the enclosure, animal observations, and animal relocation is important, but discovering that these ways can also increase group success and provide opportunities for training is incredible.

METHODS

There are 25 centiquads at Panther Tracks Learning Center. Each centiquad has 4 quads, and each quad houses 6 -30 animals. Each quad has a chute that runs the length of the quad on the interior side (see Figure 1). Each chute has 4 doors that go into the quad, and additional doors that allow the chute to be split a various intervals (see Figure 2). Additionally there are 2 areas on each chute that open up, and allow 6 transport boxes (3 in each area) to be placed inside of the chute (see Figure 3), this is also where pole and collar training can be done.

A chute training SOP was designed to ensure that any staff member can put any group of monkeys into the chute at any time. The training begins by leaving the 2 end chute doors open during cleaning each day to allow the animals to explore the chute while consuming foraging mix within the chute. Then the animals are given the cue "Everyone In", and the far end chute door is opened to allow the animals to enter (see Figure 4). The animals are given 1 minute to enter, and if they do they are rewarded with foraging mix. If not, the technician enters the chute, and shuts the animals on the back half of the quad while encouraging the animals to enter the chute. After 1 minute the chute door is closed, and any animals that have entered are rewarded with foraging mix or another treat. Additionally, all animals receive produce regularly in the chute, which assists in making the chute a place they want to be in. After time and patience, all animals eventually go into the chute on cue for any staff member at any

The following tasks were evaluated with the addition of chutes:

- 1. Daily Cleaning
- 2. Animal Observations
- 3. Animal Movements
- 4. Animal Introductions
- 5. Pole and Collar Training

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Figure 1: Interior view of a chute attached to the quad.



Figure 2: Chute with additional doors that are utilized to split off a monkey in the far left end of the chute.



Figure 3: A transport box inside of the chute, which allows animals to be captured and relocated without catch gloves and nets.



Aims: None Outcomes: Animals can be easily pole and collar trained from with the chute, they can also be relocated with this method (see Figure 4).

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Figure 4: A male Macaca fasicularis cooperating as a "willing worker" during pole and collar training from the chute. See the progression of attaching the pole to the collar, opening the top door of the chute, and walking the macaque out of the chute (pictures go from left to right).

RESULTS

1.) Daily Cleaning

✤ Aims: To improve the safety for animals and staff, and to make daily cleaning more efficient.

• Outcomes: As soon as the animal care technician cues the monkeys to enter the chute, like clockwork they immediately enter the chute, and the technician is able to safely and efficiently clean this area (see Figure 5). Maintenance staff also takes advantage of this time to fix anything in the quad.

2.) Animal Observations

Aims: To allow all staff to have the opportunity to observe the imals closely without catching the animals.

Outcomes: In many cases, staff have been able to notice and report injury or illness to the veterinary staff sooner, and they, in turn, are able to more easily evaluate and treat the animals while they are still in the

3.) Animal Movements

Aims: To relocate animals safely and efficiently without the use of catch gloves or nets.

✤ Outcomes: Animals are quickly cued into the chute, divided within chute, and placed into transport boxes. Release of animals into the group is done similarly.

4.) Animal Introductions

Aims: None

✤ Outcomes: By leaving all 4 chute doors open during introductions, there has been a noticeable decrease in aggression and injuries. The chute **ACKNOWLEDGEMENTS** and opening multiple access points provide extra barriers to the animals.

5.) Pole and Collar Training

DISCUSSION

There are many facets of any animal facility, and facility design, including caging and equipment, can significantly help or hinder overall tasks. In this situation, the chutes, simple additions to the animal housing units, were designed for particular reasons, but ended up being far more useful and valuable than was anticipated. The chutes not only make tasks like daily cleaning, animal observations, and animal movements more efficient and safe but also they increase the success of group introductions, and allow for the training of willing workers to be easily accomplished without removing the animals from their groups. In the future, it is likely that other ways of utilizing the chutes to assist with a variety of tasks will be discovered.



Figure 5: Four male Macaca mulatta lining up outside of the chute entrance door waiting for the their cue to enter. (picture on the left). A group of male Macaca fasicularis entering the chute when cued (picture on the right).

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