



# Impact Of Zoo Residence On Gelada Social Life

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## Introduction

The gelada baboon (*Theropithecus gelada*), also known as the bleeding-heart monkey, is a species of monkey found in the Ethiopian Highlands. Geladas live in a complex multilevel society similar to that of the hamadryas baboon. Their average life span in the wild is about 20 years. Body size in geladas is sexually dimorphic with a male to female body weight ratio of 1.7; females average between 25-45lb and males 65-80lb. Geladas live in one male units of about 9 individuals in which the female members are related. Relationships in the group are maintained through grooming, coalitions that increase individual and group dominance are common. Female members rarely leave the group this leads to high level of relatedness between individuals. Males disperse in this species to avoid inbreeding. Geladas use as many as 25 different calls to communicate and facial mimicry to display social affiliation. They use playful facial displays to fine-tune their playful interactions. The play face is when the baboons mouth is open with only its lower teeth exposed. Other facial expressions such as flipping the lip to show all teeth is a sign of aggression.

## Objectives

The purpose of this study was to develop an ethogram of gelada behavior in two settings:

1. In captivity and
2. In the wild.

Then to compare the two ethograms to determine the impact of captivity on individual gelada and their behavior.

## Methods

- Collected literature research (internet) about Gelada social life in their natural habitat.
- A captive gelada group that resides at the Bronx Zoo was observed for 2 hours.
- Compared behavior from literature research to observation at Bronx Zoo

## Ethogram for Gelada in Captivity

Behavior	Definition
Alert/Head Up	Two Gelada's (one female/one dominant male) sitting on big rocks; heads up looking around at visitors and preserve
Forage	Two Gelada females; stationary or walking; actively searching for food using hands to pick and eat grass
Scratch/Groom	Male Gelada sits down on rocks (other two have left); begins to pick through fur with hands
Rest	After grooming Gelada lies down on his side to rest
Aggression	One Gelada male; sitting on rocks looking/staring directly at visitors yawning and showing teeth; direct eye contact is an act of hostility



## Observations

While observing a group of Gelada baboons (2 males/3 females) at the Bronx Zoo their behavior and interaction patterns were very similar to that of their social life in the wild. There was one dominant male in the group, whose chest was brighter than the other, and he was the only male interacting with the other females. The other male kept to himself. The females were foraging for food; walking and stopping to pick and eat grass. Only one of the females was interacting with the dominant male baboon. This type of behavior is similar to their reproductive units in the wild. The dominant male baboon also displayed signs of aggression. As visitors came up to the glass the male starred directly at them and was flipping his lip to show his teeth.

## References

- Dunbar, R. (2014). *Reproductive decisions: an economic analysis of gelada baboon social strategies*. Princeton University Press.
- Bergman, T. J., Ho, L., & Beehner, J. C. (2009). Chest color and social status in male geladas (*Theropithecus gelada*). *International Journal of Primatology*, 30(6), 791-806.

## Discussion

The purpose of this study was to determine if captivity has an impact on the behavior and social life of Gelada. In their natural habitat, the baboon social group brings individuals together as breeding, foraging and ecological units. Geladas are a polygynous family unit, which creates both mating skew and unattached bachelors. The most basic groups are the reproductive units, which are made up of one to twelve females, their young and one to four males, and the all-male units, which are made up of two to fifteen males. When more than one male is in a unit, only one of them can mate with the females. The unattached males form bonds with one another and associate in small all-male groups. Geladas have a bright patch of skin on their chest and utilize the patches to convey messages. In the reproductive group, the breeding male's chest turns a darker red to communicate his status. Also, when a female is in estrus, her patch will brighten, and a "necklace" of fluid-filled blisters forms on the patch. I did not observe estrus at the zoo but I did observe the dominant male patch.