

RESEARCH POSTER

How Different Forms of Environmental Enrichment Impact Foraging and Activity Levels in Gorillas

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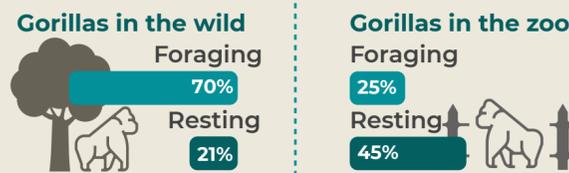


Abstract

The maintenance of species-specific behaviors for animals in zoological institutions is of top priority, as this can help ensure high levels of animal welfare. Strict feeding schedules within institutions can often impact natural foraging behaviors of animals, as they are no longer required to seek out or manipulate food items. In the wild, western lowland gorillas would spend a majority of their time foraging. The goal of the current study was to examine the impact of different forms of environmental enrichment on activity and foraging levels in gorillas at the Brookfield Zoo. Results suggest that automatic belt feeders that can feed at randomized times, will have the largest impact on behavior of all enrichment tested. However, there were individual differences observed between animals and the level of impact on their behavior. Using enrichment to increase the amount of time that zoo-housed gorillas spend searching for, acquiring, and consuming food can increase their overall activity levels and shift their behavior towards a more naturalistic direction.

Introduction

Gorillas in zoos have different behavioral traits from the ones in their natural habitat.



To ensure animal welfare, maintenance of species-specific behaviors for animals in zoological institutions is important.

Strict feeding schedules often impact natural foraging behavior of animals, as they do not need to seek out food.

Study question

Is there an impact of environmental enrichment on activity and foraging levels in gorillas?

Methods

Four gorillas were observed:

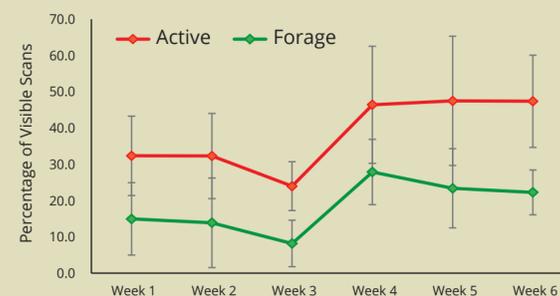


Enrichment modification for 6 weeks



Results

Over the course of 6 weeks



- Activity levels were highest with automatic belt feeders, additional tubes and scents, and bark-boards.
- Foraging levels were highest with automatic belt feeders, additional tubes and scents, and bark-boards.



- G1 Showed the largest increase in foraging with a peak at 29.0% (18.0% increase) with automatic belt feeders
- G2 Showed the lowest change in foraging with a peak of 25.2% (9.9% increase)
- G3 Activity levels reached a high of 69.19% (25.6% increase) with automatic belt feeders with additional tubes and scents
- G4 Activity levels peaked at 46.9% (27.4% increase) with bark-boards

Conclusions

In zoos, modifying feeding methods by using randomized strategies can increase activity levels, which represents a significant behavior shift toward a naturalistic direction. This allows for a healthier environment for the animals.

References

1. Altmann, J. (1974). Behaviour, 49, 227-266.
2. Hosey, G. R. (2005). Applied Animal Behaviour Science, 90, 107-129.
3. Hosey, G. R. (2005). Applied Animal Behaviour Science, 90, 107-129.

Publication

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Aknowledgements

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Institution



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**VISUAL RESEARCH
SUMMARY/INFOGRAPHIC**

How Different Forms of Environmental Enrichment Impact Foraging and Activity Levels in Gorillas

Gorillas in zoos have different behavioral traits from the ones in their natural habitat

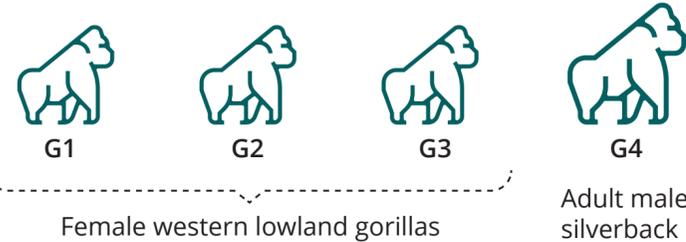


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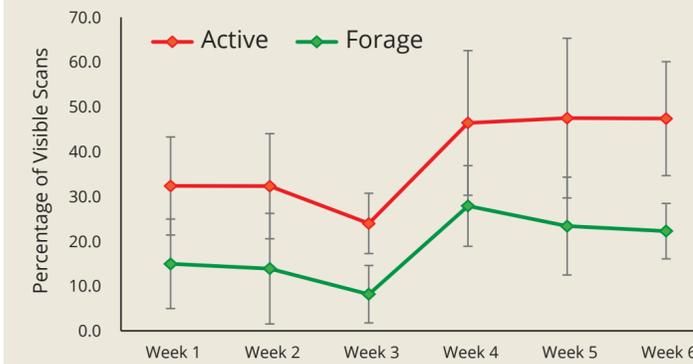
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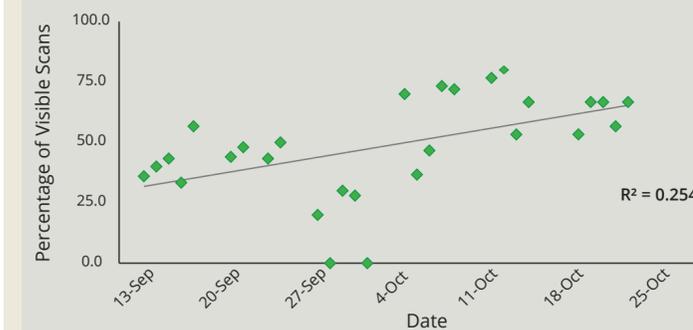
Enrichment modification for 6 weeks



Results



- Activity levels were highest with automatic belt feeders, additional tubes and scents, and bark-boards.
- Foraging levels were highest with automatic belt feeders, additional tubes and scents, and bark-boards.



- Daily activity levels of G1 as an example of gorillas daily activity throughout the study



Largest increase in the activity and foraging levels

Enrichment techniques can positively impact the behavior of animals in zoos, ensuring their welfare

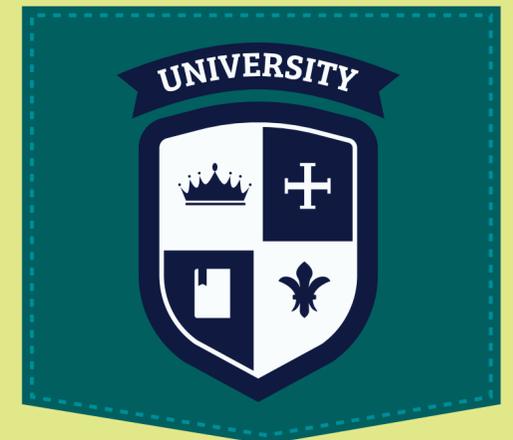


POWERPOINT PRESENTATION

How Different Forms of Environmental Enrichment Impact Foraging and Activity Levels in Gorillas

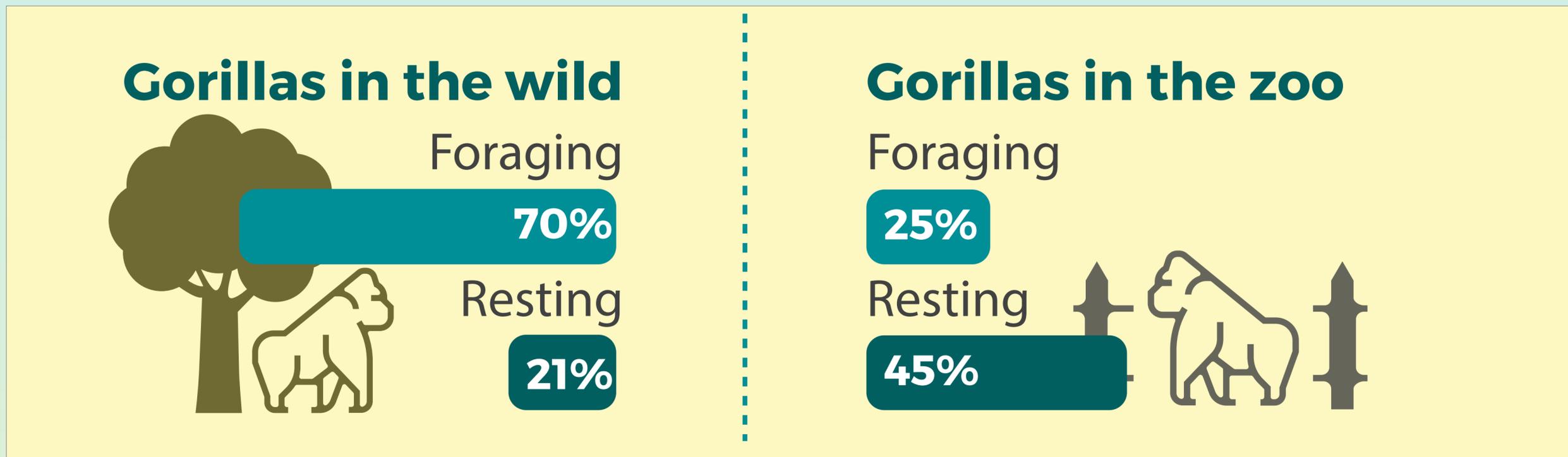
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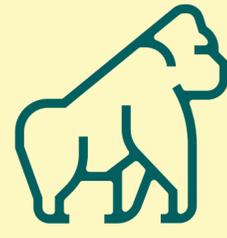
G1



G2



G3



G4

Female western lowland
gorillas

Adult male
silverback

Enrichment modification for 6 weeks

Week 1: Time-released treats



Week 2: Feeding time modification



Week 3: Additional training session



Week 4: Automatic belt feeders



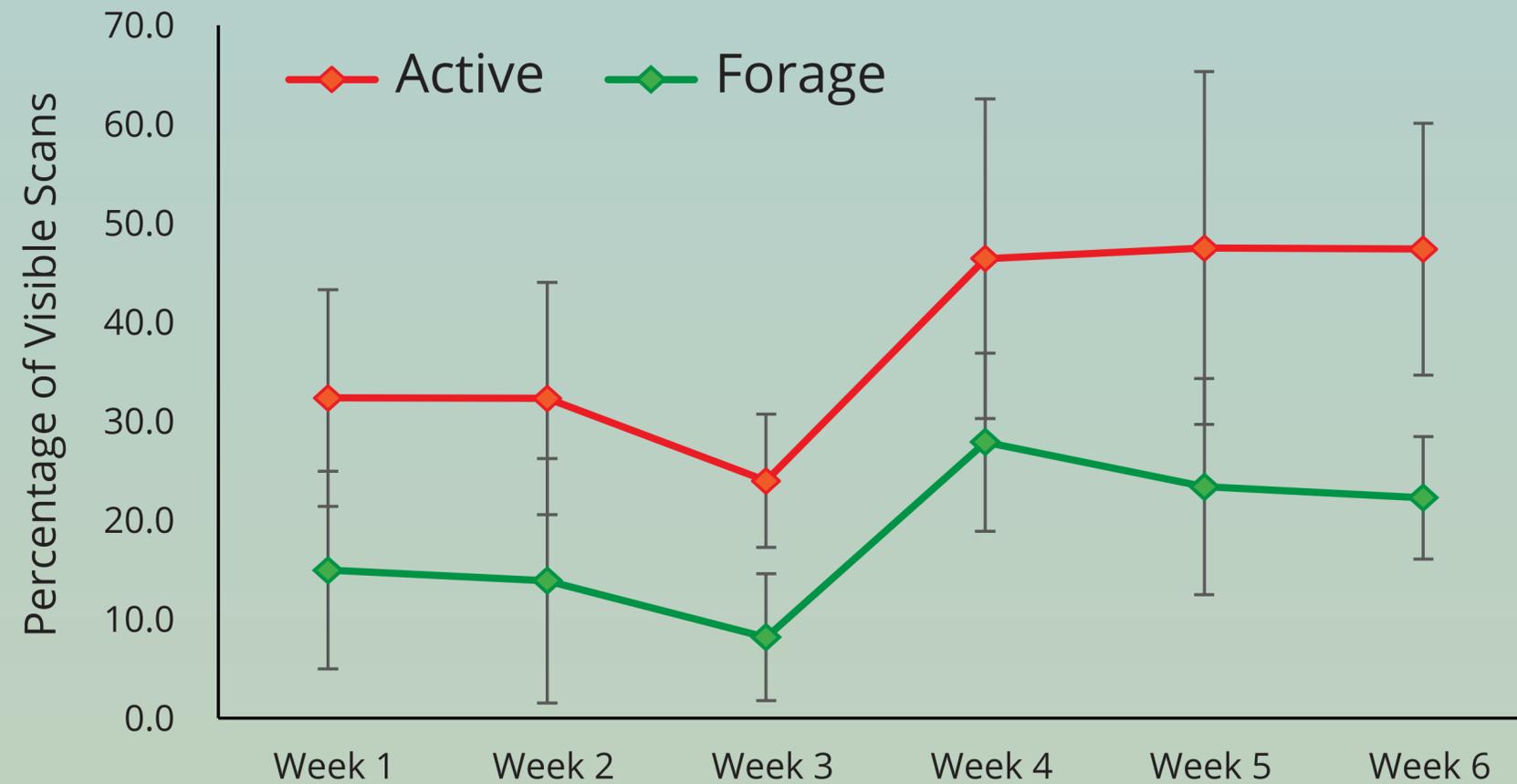
Week 5: Additional tubes added to automatic belt feeder



Week 6: Plastic bark-boards

Results

Over the course of 6 weeks

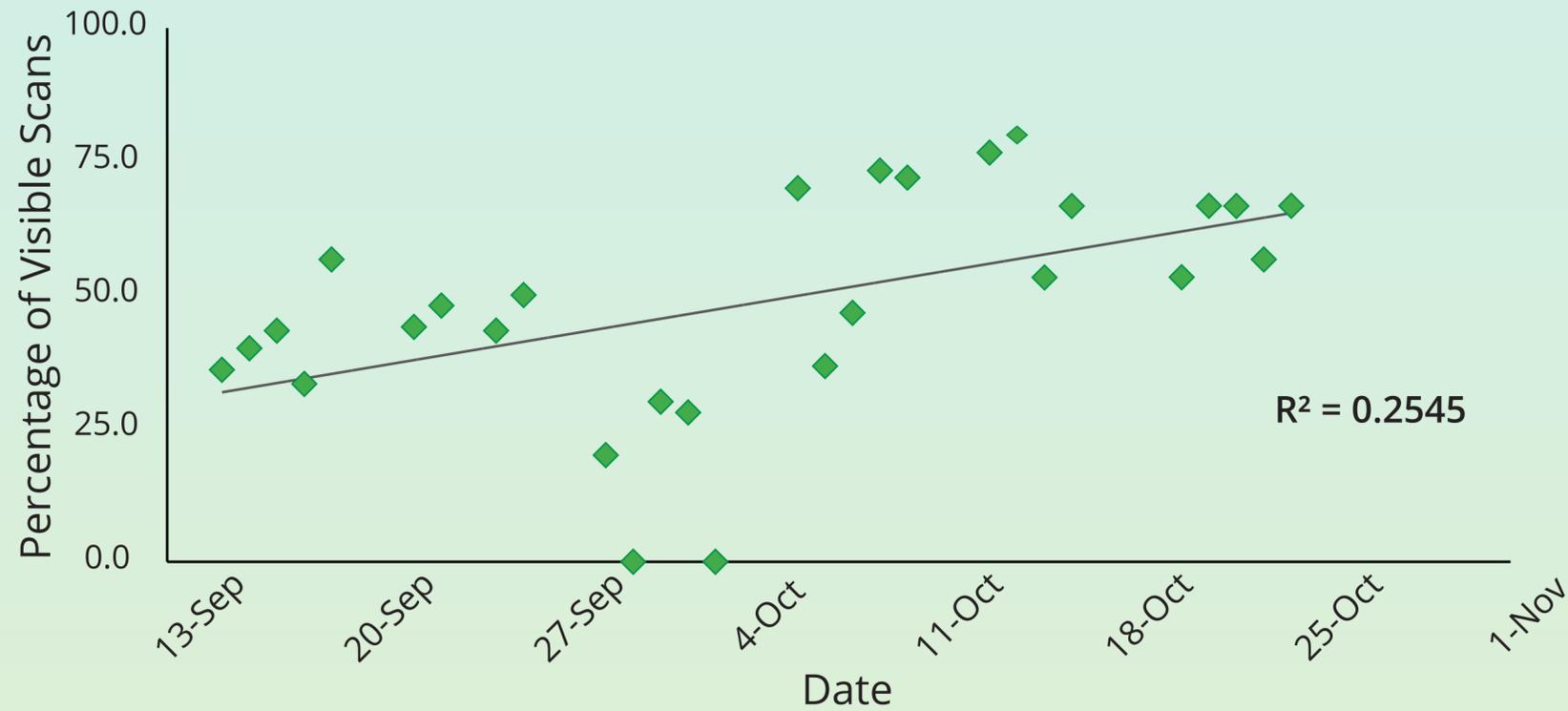


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Results



◆ Daily activity levels of G1 as an example of gorillas daily activity throughout the stud



G1

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G2

Showed the lowest change in foraging with a peak of 25.2% (9.9% increase)



G3

Activity levels reached a high of 69.19% (25.6% increase) with automatic belt feeders with additional tubes and scents

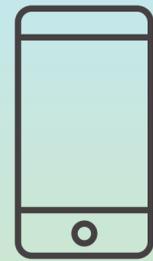


G4

Activity levels peaked at 46.9% (27.4% increase) with bark-boards

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In zoos, modifying feeding methods by using randomized strategies can increase activity levels, which represents a significant behavior shift toward a naturalistic direction. This allows for a healthier environment for the animals.



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Animal Behavior and Cognition

