

A Study of Enclosure Effect on the Behaviour of the Alaotran Gentle Lemur (*Hapalemur griseus alaotrensis*) at Jersey Zoo and Implications for Captive Management and Welfare



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Introduction

- **Gentle lemurs** are endemic to Lac Alaotra in eastern Madagascar (Fig. 1) and are **critically endangered**; listed in the top 25 most endangered primate species in the world (IUCN; Schwitzer et al, 2015).
- The **ex situ conservation** work of zoos has become increasingly important to maintain populations viable for release into the wild, such as the gentle lemur breeding programme at Durrell. **Animal welfare** is also of imperative ethical importance.
- **Enclosure design** is important to maintain the **welfare** and **natural behavioural repertoire** within a captive species.
- Assessing behaviour is important to assess the **suitability** of a captive enclosure (Dawkins, 2004) so that it enables **species-specific behaviour** and prevents **stereotypies** (abnormal repetitive behaviours).



Fig. 1. Location of Lac Alaotra in north east Madagascar.

Aim

- To contribute to the understanding of enclosure effect on natural behaviour in captive populations for increased enclosure **suitability** and success of breeding and reintroduction programmes.

Methods

The behaviour of seven gentle lemurs housed in four different enclosures at Jersey Zoo was observed for 100 hours. Each animal was observed for 1 hour every day. **Instantaneous focal sampling** was used. The activity of the animal (feeding, drinking, resting, grooming, socialising), substrate use, locomotion type, food type, height use, proximity to other animals, number of visitors, and location within the enclosure were measured at 30 second intervals.

Statistical analysis was carried out to test the significance of the results.

Results

- Enclosure type had a **significant** effect on behaviour
- The behaviour and activity budget of animals in more naturalistic enclosures more closely matched their wild counterparts.

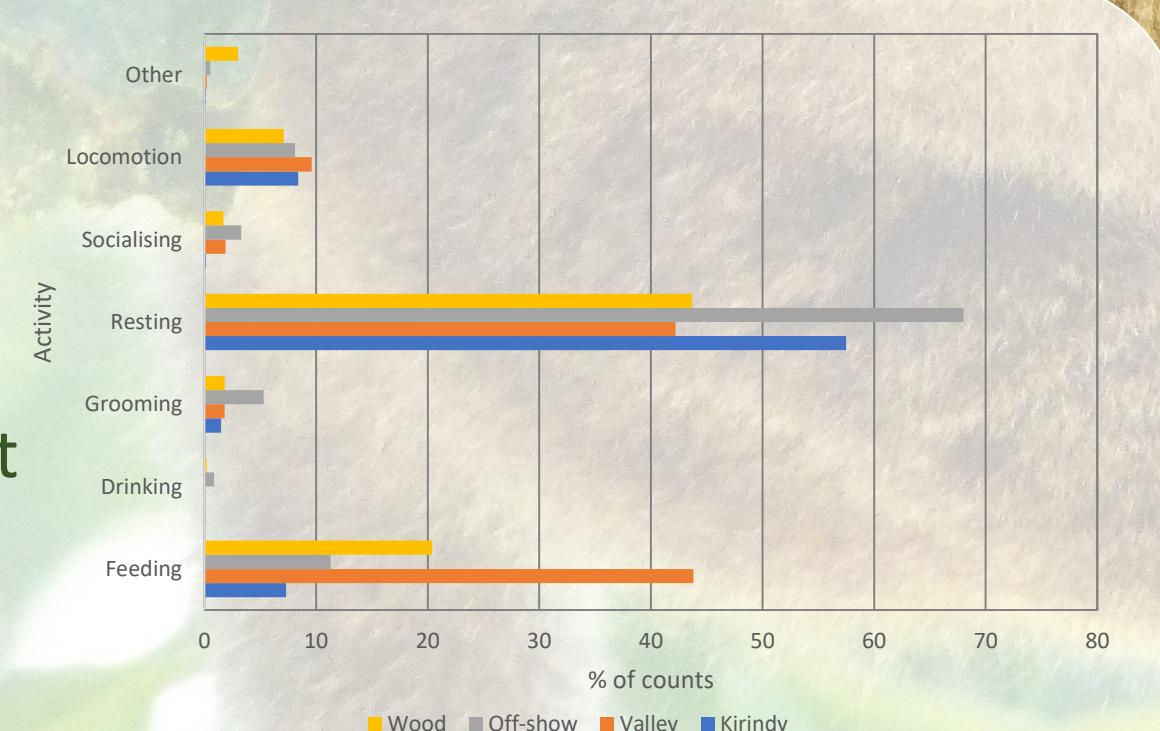


Fig. 2. Graph showing activity budget between enclosures

Discussion & Conclusion

- Lack of literature to inform captive management
- Enclosure design effects the behaviour of gentle lemurs
- Welfare is improved in naturalistic, complex enclosures
- Congruent with similar primate studies
- Vertical climbing substrate should be incorporated in captive gentle lemur enclosures
- Gentle lemurs should be housed with their own species.

Outlook

- Gentle lemurs seem able to adapt to different habitats. This requires further research as their Lac Alaotra home disappears.
- Study of vocalisation should be carried out as this varied in each enclosure. There is currently no literature.
- It was recommended that vertical climbing substrates be made a common feature of gentle lemur enclosures to enable natural **locomotion** and **feeding** behaviour, and that they be housed with their own species to reduce stress and **improve welfare**



References

- Dawkins, M. S. (2004) 'Using behaviour to assess animal welfare' *Animal Welfare*, 13, pp. 3-7.
- IUCN (2014) The IUCN Red List of Threatened Species. Version 2014.1. *Hapalemur alaotrensis*. Available at <http://www.iucnredlist.org/details/9676/0>.
- Schwitzer et al. (2015) *Primates in Peril: The World's 25 Most Endangered Primates 2014-2016*. Arlington: IUCN SSC Primate Specialist Group (PSG), International Primate Society, (IPS), Conservation International (CI) and Bristol Zoological Society.