

# Material and method

Subjects of the study were two female Asian elephants, Bua and Saonoi, housed at Kolmården Wildlife Park.

Two linked human weight lifting machines, placed on the hay loft in the elephant house, were used to measure the maximum price paid. The elephants had to lift weights, by pulling a rope, to get access to the EE, i.e. to switch on the shower.



The test was repeated once a day, with increased weights, until the elephant had reached her maximum price paid. As the comparator reward, 5 kg of hay was used.



## Contact

Karolina Bördin

karolina.bordin@gmail.com

[http://cms.ifm.liu.se/edu/biology/master\\_projects/2008/presentation-of-master-th/web-pages/bordin-karolina/](http://cms.ifm.liu.se/edu/biology/master_projects/2008/presentation-of-master-th/web-pages/bordin-karolina/)

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# Assessment of environmental enrichment for Asian elephants (*Elephas maximus*) in zoos



Karolina Bördin

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# Introduction

Environmental enrichment (EE) is used to improve the welfare of zoo animals. It aims at increasing the animals' natural behaviours, by providing some biological relevant resource.

The maximum price paid concept can be used to evaluate the effectiveness of EE. Maximum price paid is the highest price an animal is willing to pay for a single access to a specific amount of a resource.



# Conclusion

Maximum price paid can be used to assess EE, but there might be a bias if the animals work without using the EE.

The elephants showed low or moderate motivation for access to the shower. However, Saonoi's high usage indicates that it might be a meaningful EE for some elephants anyhow.



# Result

Bua lifted a maximum of 381 kg for access to 5 kg of hay and 236 kg for access to the shower, i.e. she paid 1.61 more for the hay.

Also Saonoi lifted heavier weights for access to 5 kg of hay; 454 kg compared to 309 kg for access to the shower. The difference was a bit smaller than for Bua though, Saonoi paid 1.47 times more for the hay.

Whereas Bua's usage of the shower was rather low, between 0 and 34 % of the time the shower was on, Saonoi used the shower to a much larger extent; between 63 and 98 % of the time.

# Aim

Wild elephants spend a lot of time bathing and spraying themselves with water. The aim of this study was to provide a shower for two Asian elephants at Kolmården Wildlife Park and to assess the value of this EE, using the maximum price paid approach.