

The Effect of Temperature on Active, Inactive, and Stereotypical Behaviours in Captive Polar Bears (*Ursus maritimus*)

Michael Monteleone

Department of Psychology, PSYC 4290, York University, Toronto, Ontario M3J 1P3

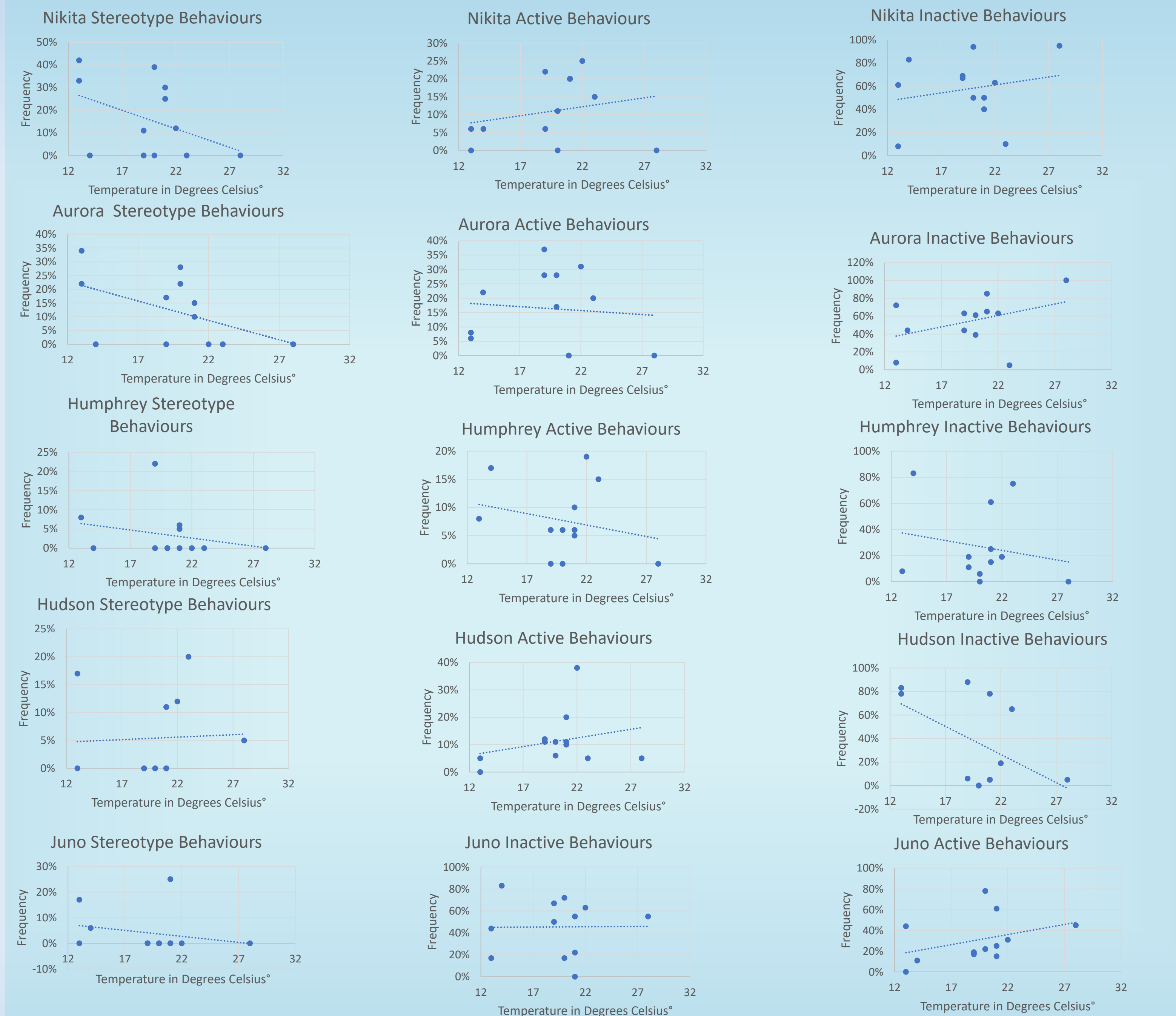
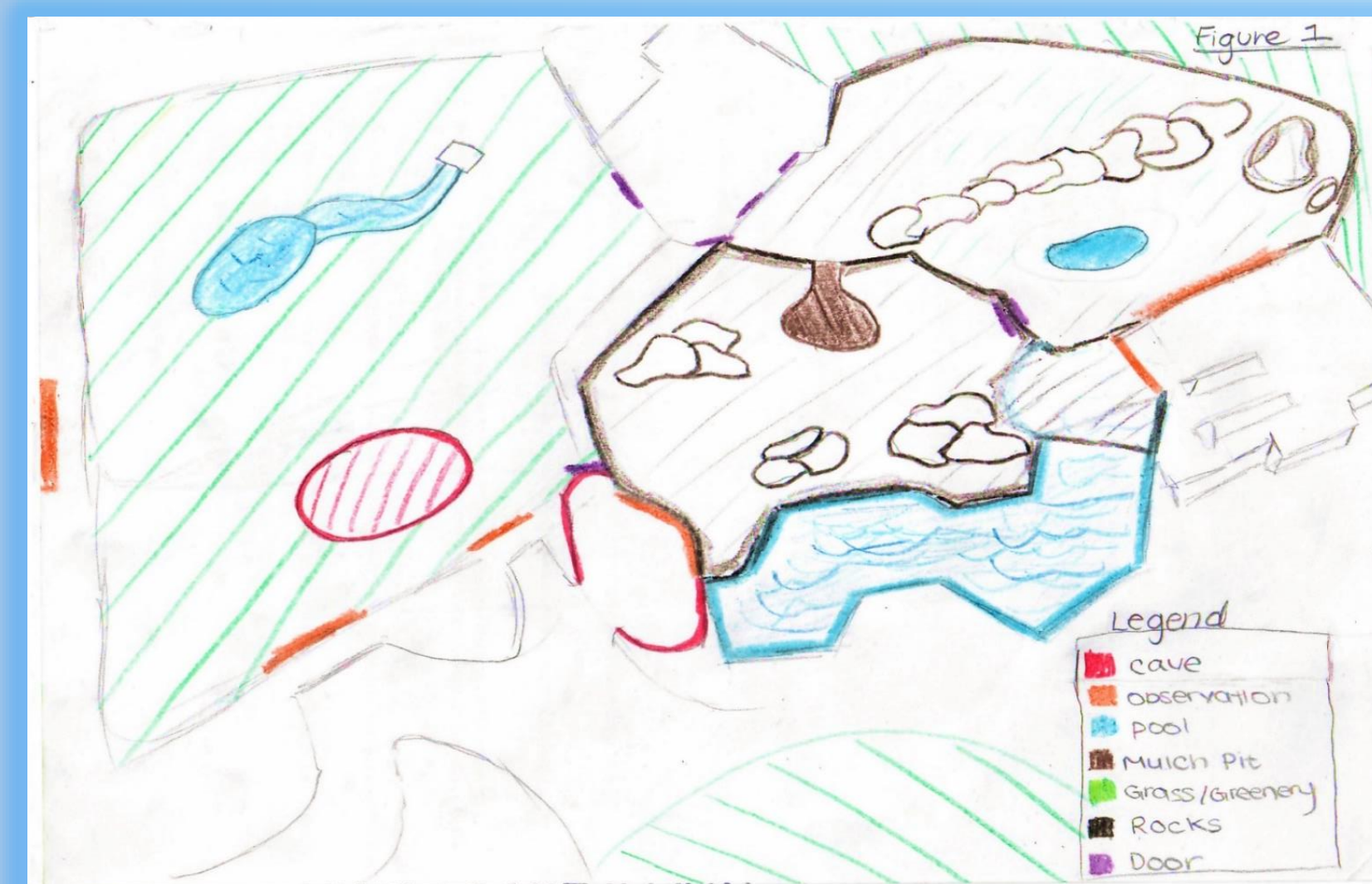
Abstract

1. Polar bears (*Ursus maritimus*) are one of many species that climate change is affecting in a big way.
2. Captive polar bears can give a unique look into the best way to help their wild counterparts deal with rising temperatures.
3. I hypothesize that inactive and stereotypical behaviours will increase in hotter temperatures and active behaviours will decrease in hotter temperatures.

Methods



1. A total of 58 hours of observation were conducted. All five polar bears were observed from May 28th to June 26th, 2019, from 11:30am-4:30 pm.
2. Behaviours were recorded with scan samples that were done every fifteen minutes recording where the bears were what they were doing; temperature and weather were also recorded every hour.
3. Behaviours were sorted into five categories active, inactive, stereotypical, keeper interaction, and out of sight

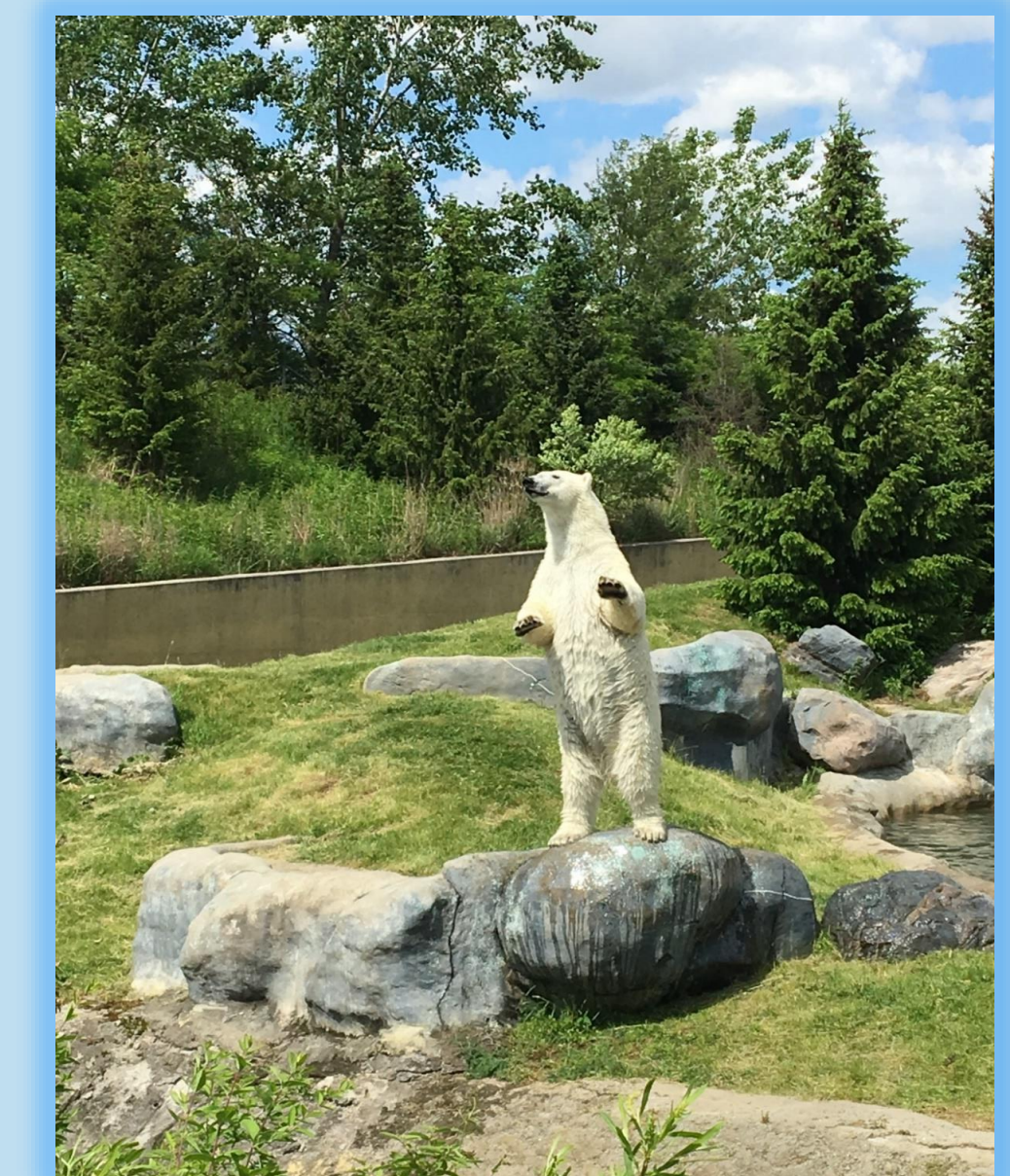


Results

1. For active behaviour Nikita, Hudson, and Juno trend up while Aurora and Humphrey trend down
2. For Inactive Behaviour Overall Aurora, Nikita, and Juno trend upward and Hudson and Humphrey trend downward
3. For stereotypical behaviour Aurora, Nikita, Humphrey, and Juno trend down and Hudson trended up

Conclusion

1. The results show that as the temperatures rise, the bears find different ways to cope. With some spending more time with active behaviours and others spending more time inactive, with the one outlier Hudson whose stereotypical behaviours increase
2. The lack of stereotypical behaviours can be linked to having a healthy amount of enrichment available for the bears.



Acknowledgments

1. Special thanks to Dr. Suzanne MacDonald for all the help and guidance, Rubina Basra for providing 8 extra hours of data collection.
2. Special thanks to everyone at the Toronto zoo for all the information they provided.

