

Research Activity Report
Supported by “Leading Graduate Program in Primatology and Wildlife Science”
 (Please be sure to submit this report after the trip that supported by PWS.)

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| | 24 April 2018 |
| Affiliation/Position | Primate Research Institute/M2 |
| Name | Nelson Broche |

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| 1. Country/location of visit |
| U.S.A. |
| 2. Research project |
| Attend CO3 + meetings on animal welfare & enrichment practices at zoos |
| 3. Date (departing from/returning to Japan) |
| 2 Apr 2018 – 17 Apr 2018 (15 days) |
| 4. Main host researcher and affiliation |
| Dr. Debra Durham, director at Save the Chimps (NPO); Ms. Laurie Trechsel, curator at Minnesota Zoo |
| 5. Progress and results of your research/activity (You can attach extra pages if needed) |
| Please insert one or more pictures (to be publicly released). Below each picture, please provide a brief description. |
| <p>Schedule: April 2nd ~ 3rd = travel April 3rd ~ 8th = CO3 in Melbourne, FL April 8th ~ 9th = Save the Chimps (NPO), Ft. Pierce, FL April 9th ~ 11th = Zoo Miami, Miami, FL April 11th ~ 16th = animal enrichment meetings at Minnesota Zoo, Minnesota, MN April 17th = depart U.S. for Inuyama</p> <p>This trip was originally planned in order to gain a greater perspective on current animal welfare, housing, and enrichment practices. Additionally, I was able to attend 25th International Conference on Comparative Cognition (CO3), which was a 4-day conference held in Melbourne, FL (US). I traveled in the company of Yuri Kawaguchi (D1/L3) and Gao Jie (D1/L3) in order to facilitate their trip to Florida.</p> <p>My masters thesis concerns validating salivary alpha-amylase (sAA) enzyme as a non-invasive biomarker of acute stress response via the sympathetic nervous system pathway in Japanese macaques (<i>Macaca fuscata</i>). In order to collect saliva, I use positive reinforcement training techniques. CO3 conference was primarily targeted for cognition studies across mammals, reptiles, and birds. Several studies concerning non-human primates used rhesus macaques (<i>Macaca mulatta</i>), which are phylogenetically closely related to my own study subject, the Japanese macaque. Although not the primary focus of the conference I was still able to learn about similar studies related to my own masters study, such as training, saliva collection, and the potential use of salivary analytes such as oxytocin. However, the details of each presentation were limited in explanation due to high quantity of presentations (or approximately 90 ten-minute oral presentations) over the 4-day period, which left room for 1 – 2 questions during the Q&A session. There were also two poster presentation sessions.</p> <p>Save the Chimps is a non-profit organization located in Fort Pierce, Florida (U.S.), which houses and provides a sanctuary for more than 240 chimpanzees who have been retired from research, zoos, and rescued as pets. The Save the Chimps facility covers a 150-acre property that utilizes 12 three-acre moated islands, where individual chimpanzees are integrated into social groups and free to live in a semi-natural habitat. Dr. Debra Durham, Director of Behavior and Research, and enrichment technician Ms. Whitney Mann kindly toured our group throughout the facility explaining food preparation, health management, social integration, as well as a variety of enrichment tools used for the care of the chimpanzees. In particular, I was especially It was very impressive to see, despite this facility’s expansive size, how the high-quality care and each individual rescued chimpanzee’s needs are met and managed. It is also interesting to note that Save the Chimps is entirely supported by donations.</p> |

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Further information can be found at their website link:

<http://www.savethechimps.org/>

Zoo Miami (formerly Miami Metro Zoo) is located in southern Miami, Florida and exhibits over 500 species of animals. Zoo Miami is Florida’s largest zoo covering more than 700 acres and is perhaps well-known in south Florida, but in my opinion is not particularly famous nation-wide among zoos in the U.S. Despite this point, I feel Zoo Miami smartly utilizes its wide land area by exhibiting animals in moated islands for visitors, avoiding cages. This system attempts to naturalize their environment by providing an open free-roaming space imitating each species’ natural habitat. Most may agree that there are more ethical and less ethical ways of exhibiting animals, if we are to maintain captive wild or semi-wild animals at all. Certainly, we should be more creative in our approaches of maintaining animals in captivity for research purposes or exhibition. While there is no one perfect solution, I think Zoo Miami provides one tangible avenue of approach. It is for this reason I recommended a visit to this zoo to Yuri Kawaguchi, fellow PWS student.

Minnesota Zoo

Due to my recent experiences working with Japanese macaques I have gained interest in learning more concretely about enrichment for this species in captivity. In the wild, Japanese macaques spend a large proportion of their day foraging for food in order to meet their daily caloric needs. In contrast, captive Japanese macaques have their daily caloric needs met with daily provisioned monkey chow, which leaves significant free time for the monkey. I believe such lack of stimulation has negative psychological and physiological health consequences for captive monkeys, which is why enrichment is necessary.

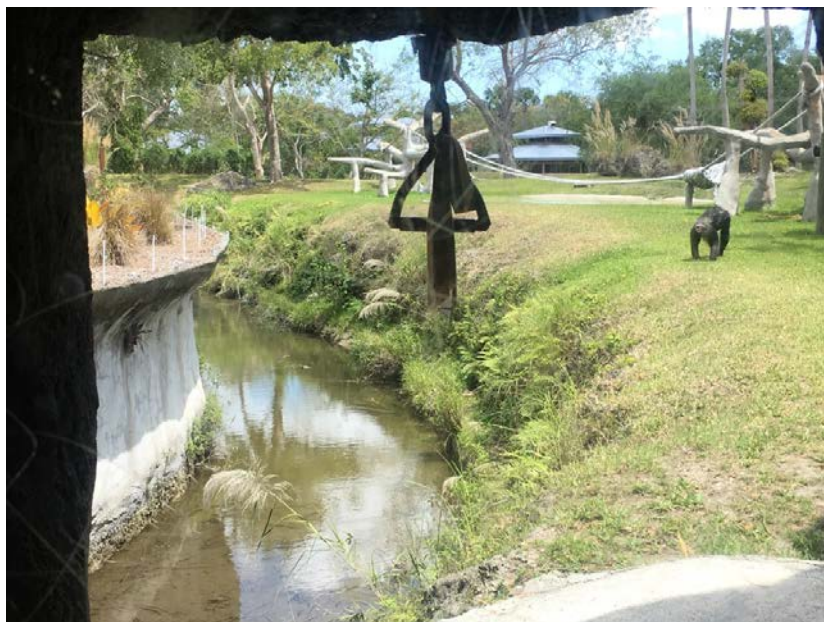
Minnesota Zoo covers a 485-acre property and exhibits over 500 species, including one troop of Japanese macaques. I was in communication with assistant curator Ms. Laurie Treschel who facilitated my visit in order to speak with various staff concerning the care and enrichment activities used for the zoo’s animals, particularly primate species. By the second day of my visit, however, the Minnesota area experienced a record-breaking snow storm with snow accumulating up to 37 centimeters over a three-day period, which I heard was unusual for this time of year. The inclement weather conditions severely limited my ability to return to the zoo as initially planned. However, I still had the opportunity to meet with Ms. Treschel who toured me through the “backyard” where I was able to learn about food and nutrition preparation, training, social management of the troop population, and practical enrichment activities. The zoo manages 24 Japanese macaques, which are separated into 3 groups depending on inter-specific social relations. Ms. Kelli Gabrielson, caretaker of the Japanese macaque troop, generously explained and performed a training session where trained behaviors are utilized for health checkups. Furthermore, I was able to see a variety of materials used for enrichment where monkeys can “forage” for food items. Both Ms. Treschel and Ms. Gabrielson shared a considerable amount of information and I am grateful to them for taking the time to tour me through their facilities.

Overall, these experiences provided not only food for thought but also concrete examples for further developing my own enrichment interventions. I have a few research hypotheses related to the above topics (primarily concerning visual, olfactory, and tactile enrichment stimulation), which I hope in the future to test and that may positively benefit captive animals.

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The 12 islands at Save the Chimps (NPO) can easily be seen from this aerial picture on the back of a truck used at the facility.



Cages are avoided at Zoo Miami and instead the zoo uses a moated habitat to create a more natural living environment for the animals. Visitors can view this chimpanzee enclosure from the left side of the picture.

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Ms. Treschel (curator, Minn. Zoo) shows an inter-changeable enrichment station



Ms. Gabrielson (caretaker, Minn. Zoo) explains an enrichment device which can be attached to an enclosure

6. Others

I would like to thank all those individuals during this trip who gave a warm reception while touring us through their facilities. Lastly, this trip would not have been possible without the financial assistance of PWS. Thank you.