

ANIMAL WELFARE SCIENCE PROGRAM



Maria Franke, Manager of Welfare Science

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Welfare Manifesto

AUGUST 2021



WELFARE STATEMENT

*At your Toronto Zoo, we care
about animals; they are the basis
of our wildlife conservation and
public education efforts and
their well-being is our priority.*



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OUR MISSION

The Animal Welfare Science Program supports the Toronto Zoo Mission - *Connecting people, animals and conservation science to fight extinction.*

This is achieved by:

Providing an integrated, comprehensive, and continually evolving science based welfare program to ensure the well-being of all animals in our care.



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ANIMAL WELFARE

An animal's welfare state at any given time is dependent on a combination of factors that encompass physical, behavioural and emotional well-being. Animal welfare is not only an animal's well-being at a point in time but over its entire existence. Planning for optimal welfare begins before an animal's birth, hatch, or acquisition and continues throughout their lifetime.

According to the Association of Zoos and Aquariums (AZA) and the World Association of Zoos and Aquariums (WAZA), accredited facilities operate based on three core principles: animal welfare, safety, and guest engagement. Although conservation of wildlife is the core purpose of leading zoos and aquariums, achievement of positive animal welfare states is a core activity. Excellence in animal welfare is the underlying foundation on which all standards and practices are premised and developed.



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OUR COMMITMENT

Your Zoo is committed to the highest animal welfare standards and will continue evolving the welfare science program to ensure the overall well-being of all animals in our care.

In line with the 4-cares framework of the Toronto Zoo 2020 Strategic Plan (our animals, our team, our guests, our community), and part of the Saving Wildlife priority 'providing excellent animal care', your Zoo affirms that the welfare of the animals is afforded the utmost precedence throughout the institution and in all operations.

As we continue to learn about the importance of the individual animal's experiences, physical health, behavioural health, and overall environment, we strive to develop and improve methods to assess the comprehensive welfare of animals on a consistent basis and ensure that animals residing in our care are given every opportunity to thrive.



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OUR CODE

Your Toronto Zoo is a recognized centre of excellence for animal care and positions itself as a leader in animal welfare science.

Your Zoo will:

- conduct welfare & quality of life assessments to understand individual animal needs and overall well-being
- provide excellence in behavioural husbandry through species appropriate training and enrichment to maintain highest standards of animal care and welfare
- ensure animals in our care comprise only those species that satisfy the requirements of our Strategic Plan and Animal Lives with Purpose Plan and for which we can properly provide
- collaborate with academic, research, recovery teams, and other zoological institutions to improve animal welfare understanding and promote positive welfare states in all species
- link *ex situ* and *in situ* welfare parameters for overall species recovery
- carry out animal welfare science research
- ensure compliance with all government and industry legislation to support individual animal well-being



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Using the Five Welfare Domains/Five Opportunities to Thrive as our model



Your Zoo will provide:

- Nutrition** – a species suitable diet provided in a way that ensures physical and mental health
- Environment** – opportunities to self-maintain and promote comfort
- Physical Health** – access to a wellness program, rapid diagnosis, and treatment
- Behaviour** – social opportunities and provision for species appropriate and diverse behaviours
- Mental Domains** – choice and control



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Nutrition – a species suitable diet provided in a way that ensures physical and mental health

Environment – opportunities to self-maintain and promote comfort

Physical Health – access to a wellness program, rapid diagnosis and treatment

Behaviour – social opportunities and provision for species appropriate and diverse behaviours

Mental Domains – choice and control

OUR TEAM

*Our staff and volunteers are our
pillars of strength.*

Your Zoo ensures staff and volunteers have the resources, training & expertise, along with an understanding of the importance and complexity of animal welfare, and their role in maintaining the necessary welfare standards for all of the animals. We are focused on a culture of welfare advocacy.

We want to extend this culture to our partners, guests, and the community so we all support compassion and respect for wildlife.



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Your Toronto Zoo Animal Welfare Science Program demonstrates our commitment to the animals we care so much about.

By showcasing this care, we are sharing stories and creating memories for our guests that will underpin their commitment to conservation so they join our efforts in saving species from extinction.



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Where are we now....

Key Highlights

Welfare Science Team:

- Dedicated Manager of Welfare Science – Maria Franke
- Dedicated Supervisor of Behavioural Husbandry – Hollie Ross

Policies and Procedures:

- Toronto Zoo Animal Welfare Policy – A&P-016
- Welfare training across site with all Zoo staff and volunteers
- Animal Welfare Concern Reporting Process – Transparency
- Quality of Life Assessment Process
- Formal Animal Welfare Assessment Process

Research:

- Various welfare research projects underway



Welfare Assessments

- **Annual** site wide assessments with all taxa!
- Quality of Life Assessments (carried out on animals who have reached ~ 80% species life span – performed every **6 months or weekly** dependent on the individual animal needs)

Massive team effort & time investment!

Involves all W&S staff (Welfare team, Veterinarians, Nutrition team, Wildlife Care team)

2021 Completed annual assessments:

- 340 species
- 4265 animals
- 576 animal habitats/enclosures

Next steps:

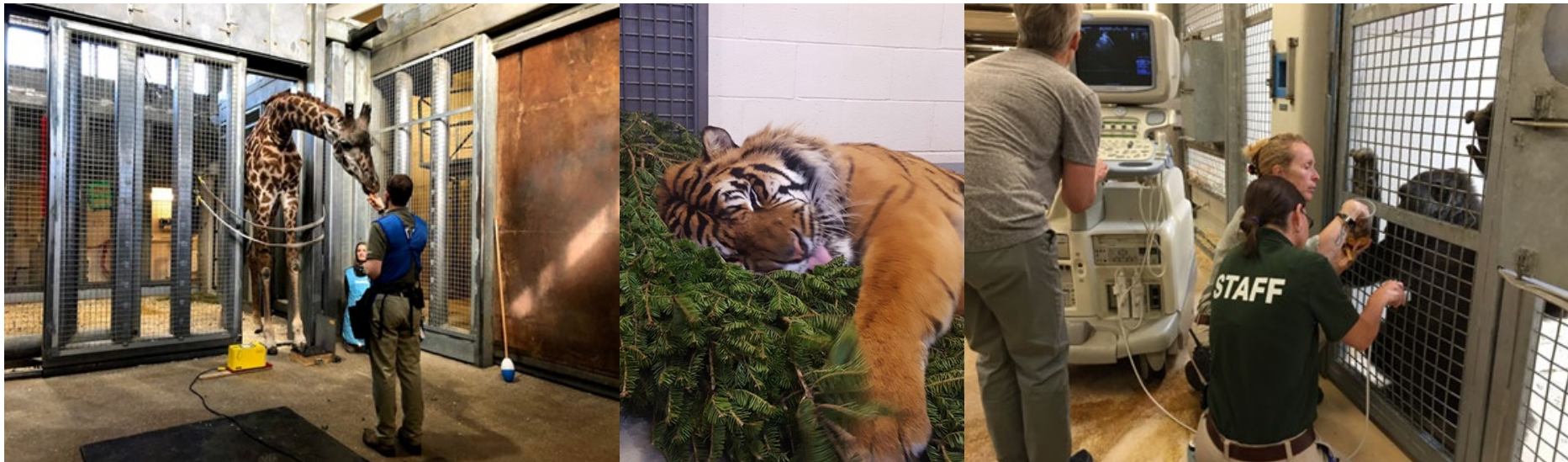
- Data analysis (very large data set)
- Recommendations/solutions (high priority concerns – solutions implemented ASAP)



Welfare Science Research

Many welfare outputs have not yet been scientifically validated; much of welfare assessments in zoos and aquariums are more qualitative than quantitative.

We need to apply more scientific evidence for various welfare variables.



Informal Research

- Staff monitoring
 - Species & individual animal monitoring
 - Monitoring during various events (construction, guest events, after hours events etc.)
 - Lumina and its effects on overall animal welfare
- Volunteer Guides
 - Individual animal monitoring
 - Animal acclimation: Lockdown – habituation – reopening during COVID 19

*We need more time and staff resources to analyze this ever growing data base.



Orangutan Behavioural Research



- **Toronto Zoo & York University Collaboration:**
 - **York University** (Ezekiel Gading, MA Candidate & Dr. Suzanne MacDonald)
 - **Toronto Zoo Welfare Science Program**

Research Project: Animal Welfare Monitoring and Guest Animal Welfare Evaluation of Sumatran Orangutans in a New Outdoor Habitat at the Toronto Zoo (2 yr. MA).

Summer 2021 – Welfare Research Assistant

- Effects of Human Interaction and Environment On Zoo-Housed Orangutan Welfare (C19 lockdown, habituation, reopening). Data still being analyzed



The AI Project: Overview



Collaboration:

- **Mitacs & Toronto Zoo Wildlife Conservancy**
- **York University** (Dr. Jenna Congdon - postdoc & Dr. Suzanne MacDonald)
- **Toronto Zoo Welfare Science Program**
- **EAIGLE Inc.** tech company (Dr. Mina Hosseini – postdoc & Dr. Suzanne MacDonald)
- Artificial Intelligence (AI) capable of mass data collection
 - 24/7 monitor of animals in our care so we can improve their overall well-being



The Origin of EAIGLE Inc.'s AI





The Primary Deliverable: AI



- **Location of each orangutan**
 - Potential enrichment benefits and habitat modifications
- **Temperature**
 - Monitoring overall health
- **Limb position**
 - Monitoring individual limb health
- **Species specific behaviours**
 - Investigating daily activity budgets

**Understand more about the species =
Improving animal welfare outcomes.**



The Future of AI at Toronto Zoo

- Extend this work to additional species!
 - *Polar bears*
 - *Sumatran tigers*



The Future of the Animal Welfare Science Program

Huge potential to grow the program and become leaders in welfare science by diversifying research and investigate/implement advanced technologies to monitor animals.



Questions?