

The Impact of COVID-19 on Canada's Accredited Zoos and Aquariums (CAZA) May 8, 2020

1) What is CAZA and what is accreditation?

Canada's Accredited Zoos and Aquariums (CAZA) is a self-governing charitable organization that represents the leading zoos and aquariums in Canada. Zoos and aquariums that are accredited by CAZA have met established industry-leading zoo standards in areas of animal welfare (veterinary care, health and husbandry, nutrition, enrichment, reproductive management), conservation, education, research, physical facilities, safety and security, financial stability, and governance. These institutions are expected to follow [CAZA's Code of Professional Ethics](#). Maintenance of accreditation is achieved through regular site accreditation inspection visits and annual self-attestation. Recognized for their expertise and high standard of animal care, CAZA and its members institutions are called upon by government and animal welfare agencies to provide training as well as assistance in related investigations and in the rehoming of exotic animals.

2) How many zoos and aquariums are accredited by CAZA in Canada?

Currently, there are only 31 zoos and aquariums in Canada that are accredited by CAZA. There are many more "zoos/ animal parks" across Canada that do not meet the CAZA standards. For more information on CAZA please visit www.caza.ca

3) What is the inside story behind the COVID-19 positive Bronx Zoo tiger and other big cats?

In late March 2020, a Malayan tiger at the Bronx Zoo started developing upper respiratory symptoms of a dry cough, without nasal or ocular discharge, that was non-responsive to antibiotics. A few days later, another tiger in the same building presented the same syndrome, then later an Amur tiger and three lions in a different building. Owing to the extremely high number of COVID-19 human cases in New York, the Bronx Zoo proceeded to test the initial Malayan tiger "Nadia" for COVID-19 on April 2nd, which yielded a positive result by PCR. As upper and lower respiratory tract sampling was required, and large felids require general anesthesia for such sampling, only this tiger was initially tested and the other big cats only had presumptive diagnosis based on similar clinical signs and history. Most recently, the Bronx zoo has since proceeded to test the other felids through fecal samples (henceforth not requiring any form of immobilization) and four more tigers and three lions tested positive for COVID-19. It is unclear at present whether all of these big cats were demonstrating clinical signs, so these results were interpreted with more caution. The Bronx zoo has been closed since March 16th, 2020 and all sick zookeepers were asked to stay home. Transmission from an infected but asymptomatic zookeeper is the most probable hypothesis according to their Chief Veterinarian. It is important to note that in all infected cats the clinical signs were mild, and all are recovering well.

4) How can a zookeeper be in such close proximity to a dangerous animal to allow for the transmission of the virus?

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During training sessions, where keepers use positive operant conditioning for behaviour modulation, it is quite routine for the keeper to be very close to the animal separated only by the cage mesh and a few inches separating the two. Furthermore, the use of whistles as a bridge is very common in training. The droplets and aerosol generated by this whistle blowing could accentuate virus transmission. In addition, there is the possibility of transfer on fomites such as food bowls or containers, and enrichment devices such as toys or puzzle feeders.

5) What are CAZA accredited zoos and aquariums doing to protect their animals?

All accredited zoos and aquariums across Canada are currently closed to the public. There is currently no evidence that animals can spread the novel coronavirus to people, rather it is a spillover from humans to animals (anthroozoonosis or reverse zoonosis). Based on initial research on COVID-19, zoos and aquariums anticipated that primates, bats, and some carnivores, such as felids and mustelids (e.g. ferrets and mink), would be the most susceptible to infection by the SARS-COV-2 virus. However, there is still much unknown about infection risks especially with marine mammals and other mammalian taxa. Based on this, there have been modifications to working and training routines to help mitigate potential risks. This includes implementation of "physical distancing" (minimum 2 metres) as much as possible from the animals during training, shifting and feeding, enhanced personal protective equipment (PPE) usage (e.g. facemasks, disposable gloves) by animal care and veterinary staff when in close proximity to primates and carnivores, and ensuring proper disinfection of potential fomites such as food bowls and containers, enrichment devices, and habitat furniture. Animal care teams have often been divided into consistent sub-teams to cover the week or have staggered start and break times to maintain physical distancing. Non-essential personnel are not permitted in back of house areas, and if they need to access an area, then must don PPE and ensure they use the footbaths in place in these areas. In addition, accredited zoos are being proactive with evaluation of staff needs and training to ensure safe working environments should a staff member become ill with the virus and need to self-isolate at home.

6) How can zoos and aquariums test for COVID-19 for non-domestic species that have clinical signs?

Currently, routine testing for COVID-19 is not recommended. As COVID-19 is a reportable disease to the World Organization for Animal Health (OIE), any testing should be discussed with provincial and federal veterinary authorities. IDEXX Canada and some universities have developed PCR tests that are now in use on respiratory samples or fecal samples. As with all PCR testing, a positive result means the virus is present in the sample, but this needs to be interpreted in light of clinical signs, as the virus may be a contaminant or is transient without causing clinical disease.

7) There have been a number of news stories in the media regarding the financial crisis in zoological and aquariological institutions. Is the threat real? How will it impact animal welfare?

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There are many financial models that exist in CAZA zoos and aquariums. Some are government-based, whilst the majority are non-profit organizations, and some are privately owned. The latter two rely heavily on visitor attendance for revenue, and with the current pandemic lockdown closure of all sporting, cultural, and scientific institutions this revenue has ceased while expenses continue to flow in order to provide consistent high quality care and food to all of the animals in the facilities. As part of the accreditation standards, all CAZA zoos and aquariums are assessed for financial stability and sustainability. Currently, all accredited institutions are analyzing contingency plans and establishing financial scenarios and impacts to the governmental lockdown. A recent CAZA survey revealed that almost two-thirds of Canada's accredited zoos and aquariums have made use of government assistance. Some zoos have initiated fundraising campaigns which have garnered strong public support. More institutions will likely need ongoing government assistance should the lockdown persist for an extended period. Accredited zoos and aquariums allocate a substantial amount of their annual budget not only to animal care, but also to *in-situ* conservation efforts of endangered species and habitat restoration, and to scientific research to support these important endeavours.

8) What are the operational impacts of the pandemic on staffing? Animal shipments?

All zoos and aquariums have had to lay-off non-essential staff (e.g. guest services, food services, educators, etc.; each institution has tailored their particular essential services). These people have been directed to seek the COVID-19 related unemployment funding established by the Canadian government. Many staff in roles that do not require them to be at the zoo are working remotely from home.

Most institutions have ceased all interprovincial or international animal shipment since mid-March in order to respect governmental decrees on non-essential travel. A small number of local intraprovincial animal shipments have occurred when they were needed to improve animal welfare.

9) How are accredited zoos and aquariums maintaining good animal welfare?

CAZA accredited zoos have maintained their full-time permanent staff dedicated to animal care and welfare. All the standards for animal care and welfare (enrichment programs, nutritional and feeding programs, veterinary care programs, etc.) continue to be maintained in accredited facilities. Though CAZA has postponed accreditation inspections and self-assessments of standard maintenance until 2021, they are in constant communication with their member organizations to ensure there is no evidence of a breach in these standards. As animal welfare is the underpinning of the accreditation process, it is likely that a comprehensive self-assessment of animal care and welfare will take place in every accredited institution 3 to 4 months into the pandemic to ascertain the maintenance of high quality animal care and welfare.

10) How is veterinary care maintained?

Approximately one-third of CAZA accredited zoos and aquariums have full time veterinary staff. The other accredited facilities, as part of the accreditation process,

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have mandatory contracts with local veterinary clinics for the provision of veterinary services. It is important during the pandemic that very good lines of communication continue between the zoos/aquariums and these veterinary clinics to ensure there is no decrease in the quality or availability of proper veterinary care for the animals.

11) What happens to animals in non-accredited facilities?

Animal care and welfare in non-accredited zoos and aquariums is largely dependent on the values, beliefs, and finances of the facility's owner(s). Unfortunately, there is a wide range of animal care standards in such facilities, with the lower extremes being evidently and empirically substandard. Many of these facilities provide inconsistent animal care, feeding, and enrichment to their animals, and veterinary care is minimal or lacking. We know that the COVID-19 situation is having a significant financial impact on accredited institutions; animals in non-accredited facilities may be subjected to a wide spectrum of scenarios from ensuring adequate welfare to profound suffering.

There is inconsistent provincial animal welfare legislation in Canada, placing some animals at greater risk in some jurisdictions. This underscores the importance of CAZA accreditation in all jurisdictions as it ensures a high standard of care for animals held in all types of zoo and aquarium facilities in Canada.