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**Considerations on the potential reverse zoonotic transmission of SARS-CoV-2 and research and management involving handling of free-ranging and captive bears during COVID-19 pandemic from [The International Association for Bear Research and Management](#).**

19 May 2020

Dear IBA Member,

Given the extraordinary circumstances and uncertainty surrounding the COVID-19 pandemic and health crisis, a team of IBA member scientists have prepared general precautionary considerations collated from various resources. They are intended to emphasize the importance of using proper biosecurity measures when handling bears.

We draw your attention to the following points:

1. As SARS-CoV-2 (the virus that causes COVID-19) infections are now widely distributed in the human population, a possibility exists for animals to become infected through close contact with infected humans. Confirmed cases of disease in non-domestic species in human care have been reported for tigers, African lions, mink, as well as domestic cats; infection has been documented in dogs. In an analysis of a broad host range among vertebrates based on ACE2 receptor homology, non-human primates, cows, sheep, and Chinese/Syrian hamsters are suspected to be most susceptible to viral entry ([Damas et al. 2020](#)). It is predicted that civet, swine, pangolin, cat, cow, buffalo, goat, sheep, and pigeon can potentially serve as intermediate hosts for SARS-CoV-2 ([Yu et al. 2020](#)). To date, preliminary findings from studies suggest that poultry and pigs are not susceptible to SARS-CoV-2 infection.
2. Studies are underway to better understand the susceptibility of different species to SARS-CoV-2 and to assess infection dynamics in susceptible animals, but if and how the virus affects various animal species is still largely unknown. Many among hundreds of research papers being generated during this crisis have not yet undergone peer review to determine validity of results, therefore their findings must be interpreted with caution.
3. So far there is no evidence of SARS-CoV-2 infection in ursids. Nevertheless, the potential for reverse zoonotic transmission from humans while handling bears should be taken into account, as it may have serious implications for animal health and welfare, and for wildlife conservation.

Many aspects associated with this virus and its spread remain unknown. Applying the precautionary principle, we therefore urge our members to:

1. Enhance biosecurity measures when handling bears, as well as in other types of bear care and management actions;
2. Wear gloves and a face mask, and properly dispose of them after use. You not only protect colleagues and members of the public, but reduce risk of reverse transmission;
3. Disinfect hands and equipment before and after the contact with animals;
4. Stay up to date with information and recommendations from responsible agencies (e.g., see OIE World Organization for Animal Health information below).

**OIE World Organization for Animal Health:**

"When handling (and caring for all) animals, basic hygiene measures should always be implemented. This includes hand washing before and after being around or handling animals (...). People who are suspected or confirmed to be infected with SARS-CoV-2 should minimise close direct contact with animals, including (farm animals, zoo animals, other captive animals, and) wildlife; particularly species which have demonstrated to be susceptible to infection with SARS-CoV-2. As good practice, appropriate and effective biosecurity measures should always be practiced when people have contact with (groups of) animals (...)."

<https://www.oie.int/scientific-expertise/specific-information-and-recommendations/questions-and-answers-on-2019novel-coronavirus/>

**Resources**

1. [USDA's website](#) with a list of confirmed cases of SARS-CoV-2 in animals within the US.
2. [OIE's website](#) with additional information on cases worldwide.
3. Research on Species Susceptibility to SARS-CoV-2  
<https://www.biorxiv.org/content/10.1101/2020.04.16.045302v1>
4. Wildlife Diseases Association's website with updated "[COVID-19 information](#)"
5. COVID-19 resources for zoos and aquariums from [Zoo and Aquarium All Hazards Preparedness, Response and Recovery \(ZAHP\) Fusion Center](#)
6. [CDC guidance](#)
7. [European Association of Zoo and Wildlife Veterinarians](#)

If you would like a PDF of this information, you can download it here.

We hope you are all staying safe and healthy.

*All the best-*

*The International Association for Bear Research and Management*