

# COVID-19 Pandemic and INDIA

- Editors -

**Mukundraj B. Patil**  
**Vikas D. Ragole**



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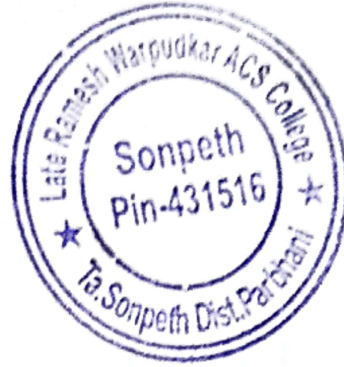
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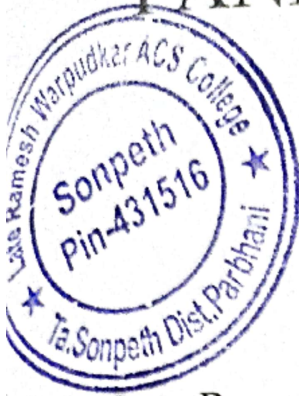
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# IMPACT OF COVID-19 PANDEMIC ON ANIMAL LIFE



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\* \* \*

**Introduction :** Outbreak of COVID-19, the biggest pandemic in world <sup>[1]</sup>. The virus is thought to be natural and of an animal origin, <sup>[2]</sup> through spillover infection. <sup>[3]</sup> There are several theories about where the first case (the so-called patient zero) originated. <sup>[4]</sup>

Humans appear to be capable of spreading the virus to some other animals, a type of disease transmission referred to as zoonanthroponosis. Some pets, especially cats and ferrets, can catch this virus from infected humans. Symptoms in cats include respiratory (such as a cough) and digestive symptoms. <sup>[5]</sup> Cats can spread the virus to other cats, and may be able to spread the virus to humans, but cat-to-human transmission of SARS-CoV-2 has not been proven. Compared to cats, dogs are less susceptible to this infection. Behaviors which increase the risk of transmission include kissing, licking, and petting the animal. <sup>[6]</sup>

The virus does not appear to be able to infect pigs, ducks, or chickens at all. Mice, rats, and rabbits, if they can be infected at all, are unlikely to be involved in spreading the virus.

Tigers and lions in zoos have become infected as a result of contact with infected humans. As expected, monkeys and great ape species such as orangutans can also be infected with the COVID-19 virus.

Minks, which are in the same family as ferrets, have been infected. Minks may be asymptomatic, and can also spread the virus to humans. Multiple countries have identified infected animals in mink farms. Denmark, a major producer of mink pelts, ordered the slaughter of all minks over fears of viral mutations. A vaccine for mink and other animals is being researched.<sup>[7]</sup>

This crisis has also had a deep impact on wildlife. There is need to improve our understanding of human-wildlife interactions, with benefits for all and integrate results from a wide variety of animals, including fish, birds and mammals, in an attempt to build a global picture of Covid 19 pandemic effects.

### **Result and Discussion:**

There were related research articles stated that Experiences and research over the last year have identified some animal species with varying susceptibility to infection with COVID-19. Mustelids, such as mink, appear most susceptible and infection can result in severe clinical symptoms and death, as evidenced by outbreaks on mink farms in a number of countries. The mink outbreaks have resulted in infection in several people, which is the only documented evidence of animal-to-human transmission of the virus. Felines, such as house cats and tigers, are also susceptible to infection; most seem to be asymptomatic although cases of comparatively mild clinical symptoms have been identified. The virus will transmit among feline populations but



is not known to spread from cats to humans. Infection in dogs, while not as frequent as in cats, is not uncommon in households where at least one person has COVID-19 but there is no evidence of spread between animals.

It is now known that SARS-CoV-2 can affect not only humans but also pets and other domestic and wild animals, making it a one health global problem. Several published scientific evidence has shown that bats are the initial reservoir hosts of SARS-CoV-2, and pangolins are suggested as an intermediate hosts. So far, little is known concerning the role of pets and other animals in the transmission of COVID-19.<sup>[8]</sup> In April, Nadia, a four-year-old tiger at New York's Bronx Zoo, became the first non-domesticated animal in the world reported positive for the virus. Four other tigers at the zoo later tested positive. The tigers had coughs; that and wheezing were common animal symptoms. Three lions at the Bronx Zoo also tested positive. Veterinary labs at Cornell University, the University of Illinois, and a federal lab confirmed the results by testing fecal samples. All eight lions and tigers are believed to have been infected by an asymptomatic zoo worker and have recovered.<sup>[9]</sup> A small number of pet cats and dogs have been reported to be infected with SARS-CoV-2 in several countries, including the United States. One ferret was reported positive for SARS-CoV-2 in Slovenia. Most of these pets became sick after contact with people with COVID-19.<sup>[10]</sup> Due to the reduction in air and noise pollution pursuant to the imposition of the nationwide lockdown to fight the Covid-19 outbreak, the population of birds and butterflies has surged significantly across the country.<sup>[11]</sup> Animals are infected by the COVID-19 having symptoms with dry cough, loss of appetite.<sup>[12]</sup> In addition to the considerable COVID-19 cases, hospitalizations, and deaths in humans, several cases of SARS-CoV-2 infections in animal hosts (dog, cat, tiger, lion, and mink) have been reported. Thus, the concern of pet owners is increasing. Moreover, the dynamics of the disease



requires further explanation, mainly concerning the transmission of the virus from humans to animals and vice versa.

There are huge negative impacts of noise pollution on birds' life. So the silence lockdown appears to have peaceful living of birds. Typical changes in behaviour of partial migratory birds are observed and staying in sanctuaries a bit longer. The birds species like open bill stork, painted stork, grey heron, spoonbill, spot-billed pelican and ibis generally leave here by March. But in this year, they have extended their staying that may due to less human activity and less noise pollution in lockdown period.<sup>[13]</sup>

The animal health will likely be impacted by COVID-19 through the immediate consequences of lockdown. In the short term, some of the veterinary activities regarding preventative vaccination against pre-existing diseases would be suppressed during the lockdown.<sup>[14]</sup> In addition with this, the indirect effects such as increased wildlife-livestock contacts, no population control or extended on-farm stays of stock will trigger the incidence of transmissible animal pre-diseases like African swine fever (ASF).<sup>[15]</sup> The long-term consequences of COVID-19 on animal health will be related to economic crisis on farmer livelihoods and veterinary service capacities.

The outbreak of coronavirus and the infectious disease it causes (COVID-19) have taken different paths around the world, with countries experiencing different rates of infection, case prevalence and mortality. Many countries around the world went into lockdown to control the spread of COVID-19. Brought about by the most tragic circumstances, this period of unusually reduced human mobility. COVID-19 cases has risen in human society. In this situation animal cases to be much more ignored. We can count the affected species of animals like lions, tigers and various domestic animals. There is few evidences that animals can pass the virus to humans, but there is also no widespread animal testing. This global pandemic has set off a



ripple effect across nations, and life as we know it has descended into rather dark times.<sup>[16]</sup> COVID-19 lockdown moves forward the healthy water environment and aquatic life. A rare sighting of Eagle rays watering at Dubai Marina while very few people were at port. As beaches closed in lock down situation, turtles found nesting in peace at Florida<sup>[17]</sup>. After nearly three decades, a south Asian river dolphin which is known as 'Ganges Dolphin' was back at Kolkata, India. A family of lions takes a midday nap in the middle of a road in South Africa's Kruger National Park. On a nearby golf course, a lioness sips water from a pond while spotted hyenas and African wild dogs play wrestle on the grass. Halfway around the world, a herd of wild goats feasts on a Welsh town's manicured lawns and hedges. And in California, black bears wander through empty campgrounds. With so many humans cooped up at home during the coronavirus pandemic.<sup>[18]</sup> Generally local street dogs, cats, monkeys, crows and free birds depend upon the foods of tourist and domestic persons. During lockdown, they are in crisis of food, sometimes fighting with each other in the process. Afterward Govt. and few NGOs are arranging the 'natural restaurants' for animals. The roaming of the wild animals at residential area may be due to the shorted in the food. Such that, the deer in Nara Park, Japan are usually fed by visitors, but at lockdown period, that food dried up. It may be that they have left the park and taken to the streets of the city to look for food.

Based on currently available information and with the support of expert advisory groups does not recommend the implementation of any COVID-19 related sanitary measure to the international movement of live animals or animal products without a justifying risk analysis. Evidence-based risk management principles should be applied to international movement of live animals and product from species susceptible to infection with COVID-19. The current coronavirus (COVID-19) pandemic represents a significant international challenge due to a lack of



existing innate immunity or availability of an effective vaccine.  
[19]

### Conclusion :

There are concerns about the establishment of Coronavirus reservoirs in animals, which could pose a continued public health risk and lead to future. Consequently, susceptible animal populations in close contact with humans should be closely monitored. The virus introduction to a new animal species might accelerate it's evolution, which could potentially impact on surveillance and control strategies. Additionally, the conservation efforts might be undetermined with the introduction of the virus to susceptible endangered animal populations, leading to biodiversity loss. Further investigation is needed to fully understand these risks.

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