



Published Date: 2021-12-02 16:20:44 CET

Subject: PRO/AH/EDR> COVID-19 update (413): animal, Canada, wild deer

Archive Number: 20211202.8700020

CORONAVIRUS DISEASE 2019 UPDATE (413): ANIMAL, CANADA, WILD DEER

\*\*\*\*\*

A ProMED-mail post

<http://www.promedmail.org>

ProMED-mail is a program of the

International Society for Infectious Diseases

<http://www.isid.org>

Date: Wed 1 Dec 2021 4:41 PM ET

Source: CBC (Canadian Broadcasting Corporation) News [edited]

<https://www.cbc.ca/news/science/covid-white-tailed-deer-quebec-1.6269947>

The virus that causes COVID-19 has for the 1st time been found in wildlife in Canada.

SARS-CoV-2 was found in 3 white-tailed deer after samples were taken between [6-8 Nov 2021] in the Eastern Townships region in Quebec, Environment and Climate Change Canada said in a news release on Wednesday [1 Dec 2021].

They are the only samples in which the virus was detected out of 156 samples analyzed from Quebec so far.

While Quebec was the 1st province to collect and submit samples for analysis, the work is continuing across Canada in an effort to monitor the spread of the virus.

Catherine Soos, a specialist in wildlife health with Environment and Climate Change Canada, said the department is anticipating receiving up to 2700 samples from deer and other cervids in Canada.

"Our objective of initiating this Canada-wide surveillance of SARS-CoV-2 was to see if it spreads from human to wildlife and if it does, what are the impacts on wildlife populations," Soos said, pointing to concerns about whether wildlife could become reservoirs for the virus. "Will they be susceptible? If it does start circulating in wildlife, what does that mean?"

The deer samples were taken from animals that appeared to be healthy and showed no signs of the disease, Soos said. The deer may be able to carry the virus without showing symptoms, much like how some humans can carry the virus and remain asymptomatic.

"They tend not to be impacted by this virus, but if it is now circulating in wildlife populations, what does that mean for other species that share their habitat? What about other cervids? What about their predators? We don't have that information as of yet," Soos said.

This is the 1st time the virus has been found in wild animals in Canada, though globally it has already infected various species that are domesticated or kept in captivity, including farmed mink, cats, and dogs, and animals in zoos such as tigers, gorillas, cougars, and otters.

The virus has already been detected in deer in the United States, and a study published earlier this month [Nov 2021] showed SARS-CoV-2 antibodies in 40 per cent of blood samples collected from deer in Illinois, Michigan, New York, and Pennsylvania in 2021.

Soos and her colleagues are also working with provinces and partner labs to collect and analyze samples from other potentially susceptible species, including wild martin, weasels, otters, raccoons, and skunks.

She said out of 900 samples analyzed so far from those species, none was found to have the virus.

The significance of detecting the virus in deer comes down to how the virus behaves and what happens next.

"We kind of assumed there was a good chance it was going to be present in deer in Canada, but we really didn't know," said Scott Weese, an infectious disease veterinarian from the Ontario Veterinary College at the University of Guelph.

Weese said it's one thing if SARS-CoV-2 spreads among a few deer and eventually dies off after a few weeks.

But another, more concerning scenario, is that it could continue to spread to other deer and other species, becoming a possible source of infection for humans, and a source of more variants.

"That's what we're worried about, because if that's the situation then you can have this animal reservoir that we can get exposed to regardless of what's going on with regards to control in people," Weese said.

"Ultimately we just want this to be a human infection because if it's just a human infection all we need to do is control it in people, which obviously isn't easy -- but it's easier to control it in one species than many species."

He said if the virus has been found in three deer in Quebec, that's probably just the tip of the iceberg and there are likely many more infected deer in the population.

It's not yet clear how the virus spread to deer in Canada in the 1st place, though experts will be studying that.

Weese said it's another reminder for people to keep wildlife wild, and keep their distance from deer.

Hunters should also take note that, as an added precaution, Environment and Climate Change Canada is warning people to wear a mask if they handle respiratory tissues and fluids from deer, and avoid splashing and spraying any fluids from those tissues.

Weese said it's still safe to eat and handle deer meat, but people should be cautious if handling the animal or a carcass.

--

Communicated by:

ProMED

<promed@promedmail.org>

[White-tailed deer (*Odocoileus virginianus*) is the cervid most widely distributed east of the Rocky Mountains. The ACE2 receptor (where SARS-CoV-2 binds to enter the cell) of white-tailed deer is very similar to that of humans. An experimental study (<https://journals.asm.org/doi/10.1128/JVI.00083-21>) showed that this species, after intranasal inoculation, becomes infected by SARS-CoV-2, sheds the virus, and transmits it to non-inoculated contact deer.

01.02.22, 19:23

Promed Post - ProMED-mail

A report by the USGS in July 2021 stated that approximately 30% of free-ranging white-tailed deer sampled had antibodies against SARS-CoV-2, which strongly suggested that transmission is occurring among deer, as it would be very unlikely that 30% of wild deer come in close contact to acquire the infection from humans. A recent report showed high prevalences (>30%) in samples collected from free-living and captive white-tailed deer in Iowa, USA (see ProMED post 20211102.8699412).

It is crucial that surveillance and more research is conducted in this species to prevent that the virus finds in deer a niche where to be maintained and evolve circulating endemically as immunity in people builds up globally due to natural infection and vaccination. - Mod.PMB

HealthMap/ProMED map:  
Quebec Province, Canada: <https://promedmail.org/promed-post?place=8700020,268>

## See Also

- COVID-19 update (373): animal, USA, wild deer, transmission 20211102.8699412
- COVID-19 update (260): animal, USA, wild deer, exposure, RFI 20210729.8554149
- 16 Jan 2021 COVID-19 update (20): animal, deer, experimental infection 2020
- 
- COVID-19 update (536): animal, USA (UT) wild mink, 1st case 20201213.8015608
- .....pmb/mj/jh



