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Critically endangered Amur leopard faces new threat

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Amur leopards in eastern Russia are extremely rare, making threat from disease potentially devastating for the species. Image: An Amur leopard surveys the terrain. Photo courtesy of Land of the Leopard National Park.

A new paper in the *Journal of Wildlife Diseases* describes the first documented case of canine distemper virus in a wild Amur leopard after a two year-old female was found on the side of the road exhibiting severe neurological symptoms.

Amur leopards are critically endangered, with only 80 estimated left in the wild. Most of the population lives in the Land of the Leopard National Park in eastern Russia, where the two year-old female was originally found in 2015.

“As carnivore numbers decline, they face a greater risk from chance events like outbreaks of disease,” said Martin Gilbert, a [Wildlife Health Cornell](#) carnivore specialist at the Cornell University College of Veterinary Medicine and joint lead author on the new paper.

Canine distemper virus (CDV) is well known in domestic dogs. It infects the respiratory system and causes intestinal problems, and in some cases will progress to severe neurological issues like increased tactile sensitivity, convulsions and seizures. The fatality rate is high but varies depending on the species, and survivors often have painful lifelong side effects.

The leopard likely contracted the virus from domestic dogs or wild carnivores in the area, such as foxes or raccoon dogs, as there are too few leopards left to maintain the circulation of CDV themselves, write Gilbert and his co-authors. Infections are known to spread quickly among social species like lions, with an outbreak in 1994 linked to the death of over 1,000 lions in Serengeti National Park in Tanzania. Although the virus may spread more slowly between solitary species like leopards, [modeling has shown](#) that even low rates of transmission greatly increase the likelihood of extinction of the ecologically similar Amur tiger.

“With such a limited breeding population, even a small number of deaths from disease can be the difference between the survival of a population or extinction,” said Gilbert.

The Amur leopard already faces habitat loss and prey depletion. The paper suggests that currently the most effective way to combat CDV is to employ traditional conservation approaches like protecting their habitat, establishing additional populations elsewhere and reducing hunting of the big cats in general. In the future as Gilbert and his colleagues learn more about the ecology of CDV, they intend to address whether approaches like vaccination may also play a role.

Gilbert conducted this research with the Wildlife Conservation Society, which is based in the Bronx Zoo, and Land of the Leopard National Park. Land of the Leopard National Park is a 650,000-acre national park in Primorskii Krai, Russia that accounts for approximately 70 percent of the big cat’s natural habitat. The Amur tiger, lynx and leopard cat also live there.

The paper, “Canine distemper virus in a wild Far Eastern leopard (*Panthera pardus orientalis*),” [can be read in full online](#).

By Melanie Greaver Cordova

Martin Gilbert also conducts fieldwork with Wildlife Health Cornell aimed at conserving highly threatened populations of wild snow leopards. You can assist this research by helping fund a trip to Kyrgyzstan or Tajikistan. Using a One Health approach, Gilbert not only studies the snow leopards themselves but works to improve the health of the species upon which they depend.

