Cornell University

Wildlife Health Cornell

A College of Veterinary Medicine Center of Excellence

WILD CARNIVORE HEALTH

BIG CATS, WILD DOGS AT RISK

Placed at the top of global food webs, large carnivores include some of the most iconic and threatened mammals on Earth. With most species requiring vast spaces and bountiful prey, these predators represent the pinnacle of their respective ecosystems. Yet these requirements for space and food, coupled with their prowess as hunters, lead to competition and conflict with people. As wild carnivore populations become smaller and more fragmented, infectious diseases and other health threats are increasingly likely to tip that last domino toward extinction. The Wildlife Health Cornell program is committed to understanding the health threats facing wild carnivore populations, and to developing locally relevant interventions to address them.

DISEASE DYNAMICS

As carnivore populations decrease in size, losses of genetic variability combine with geographic isolation to reduce their capacity to resist outbreaks of infectious disease. Several pathogens, particularly rabies and canine distemper, can infect a wide range of hosts – including domestic dogs and cats as well as small wild carnivores, which help maintain such viruses in circulation as an ongoing threat to endangered wildlife. We are building deeper understanding of the processes and species involved in pathogen maintenance, and are developing innovative solutions such as targeted vaccination of key hosts to ensure the long-term survival of affected big cat and canid populations.

HEALTHY PREY

The potential size of a carnivore population relates directly to the availability of prey species. However, prey populations are rarely static, and infectious diseases can lead to wide fluctuations in their numbers. From the central Asian mountain haunts of the snow leopard, to the temperate forests that support Amur tigers in the Russian Far East, we are researching the pathogens that drive these prey cycles. Our work will inform natural resource managers by identifying ways to stabilize game populations for the benefit of people and wild carnivores alike.

PREDATOR POISONING

In many countries, preemptive and retaliatory killings of predators are increasingly common due to the perceived and actual threat that large wild carnivores pose to people and livestock. The illegal use of poisons (such as the pesticide carbofuran) has had devastating consequences for a whole range of predators and scavengers in Africa, including lions, vultures and hyenas, with far-reaching impacts on entire ecosystems. The economic losses caused by predation of livestock can be significant, yet are dwarfed by the impacts preventable and/or treatable animal diseases have on livestock productivity. We can address this head-on by introducing basic veterinary care. In addition, by encouraging farmers to use predator-proof livestock pens at night and working to make wildlife-based tourism more directly beneficial to local economies, incentives for retaliatory killings can be reduced.

APPLIED SOLUTIONS

Cornell University's College of Veterinary Medicine has long been a global leader in carnivore health, based on a solid foundation of veterinary research informing best practices. We recognize the role of the human dimension in many wild carnivore health challenges, and draw on Cornell's diverse expertise in social science and policy to build multidisciplinary teams that assess situations on the ground and craft innovative 'win-win' solutions for the benefit of wild carnivores and local communities – the very people who are the frontline stewards of what remains of wild nature.

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