Economics trump environment to save large carnivores, say ecologists

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Rapid economic growth has pushed rare species of big carnivores to the brink of extinction, but ecologists have suggested our appetite to once again live alongside big cats is increasing.

Scientists at the University of Reading studied the relative fortunes of 50 species of large carnivores worldwide over the past fifty years. They found social and economic factors, such as quality of life, were more closely associated with declines of large carnivore species, than purely environmental features like habitat loss.

The first-of-its-kind study suggests that the best way to save carnivores, such as lynx, bears and lions, is to encourage a sustainable model of social and economic development, rather than focusing only on issues such as climate change. As people get richer, their tolerance for big cats and other carnivores increases.

Rapid declines

Dr. Thomas Frederick Johnson, who led the study while based at Reading, said, "Our habitat and climate has become degraded and chaotic to make-way for rapid economic development. We know this has driven biodiversity declines, but our research found that this economic development is causing far more extreme declines than anyone expected and imagined.

"In the midst of rapid development, people appear to become less tolerant of carnivores, conflicts explode, and we suspect that incidences of poaching and persecution rocket.

"The decline of large carnivores is stark. Lions and tigers are already absent from more than 90% of their historic range. At home, many of the U.K. carnivore species, such as lynx, wolf and bear have already been hunted into extinction."

'Turning point'

The study, published in *Nature Communications* in partnership with the UK Centre for Ecology & Hydrology and the Argentinian Instituto de Biología Subtropical, involved the research team examining how changes to the social and economic system could promote carnivore recoveries.

While rapid economic development pushes species to the brink of extinction, it has also delivered enormous improvements in our quality of life. However, analysis from Dr. Johnson and his fellow ecologists suggests that once people achieve a high quality of life and economic development slows, a turning point is reached and persecuted species have an opportunity to recover.

The researchers suggest the recovery is partly linked to improved habitat protection in advanced economies, but also a more harmonious relationship between people and carnivores. What would once have been considered a dangerous pest is now being recognized as an important component of our ecosystems and culture.

The resurgence of large carnivores can already be seen in western Europe, where an improved quality of life and slower economic development has allowed populations of gray wolves to rocket 1,800% since the 1960s.

Dr. Johnson said, "This gives us hope that we can restore our lost ecosystems and we could one day see lost carnivores return to British shores. But we also need to think about how we can save wildlife in countries currently experiencing rapid growth, where species extinctions are likely.

"Our results suggest that a slower, more sustainable, economic model can protect carnivore populations, but this also risks locking people into poverty for longer. We urgently need to develop solutions that can support both biodiversity and people, and perhaps the world's advanced

economies need to offer more financial aid to protect our global biodiversity."

More information: Thomas Johnson, Socioeconomic factors predict population changes of large carnivores better than climate change or habitat loss, *Nature Communications* (2023). DOI: 10.1038/s41467-022-35665-9. www.nature.com/articles/s41467-022-35665-9

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