Groundbreaking Jaguar Density Study in Colombia’s Unprotected Areas Highlights Possibilities for Long Term Conservation of the Species

New camera trap data from Panthera show that jaguars can survive in presence of livestock, sustainable agriculture and development

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May 5, 2016

NEW YORK, NY-- A new paper from Panthera, the global wild cat conservation organization, and the Durrell Institute of Conservation and Ecology, reveals for the first time the densities of jaguar populations living in vast cattle ranches in llanos (plains) and in a mixed agricultural landscape in the Inter-Andean Valleys of Colombia, showing that jaguars can survive in the presence of livestock and sustainable agriculture and development. The paper, titled “Jaguar Densities Across Human-Dominated Landscapes in Colombia: the Contribution of Unprotected Areas to Long Term Conservation,” was published Wednesday in the scientific open-access journal PLOS One.

Co-authors Valeria Boron¹, an Italian PhD student from the University of Kent, and Dr. Esteban Payán, Colombia’s leading jaguar conservationist and Panthera Colombia director, spent months placing camera traps across 150 square kilometers (15,000 ha) of previously uncharted territory in the vast savannas of the llanos and in the Magdalena rainforests to obtain the data. The study estimated jaguar density at three animals in 100 square kilometers (equal 10,000 ha)², the first such estimates in Colombia, outside of the Amazon.

The principal author, Valeria Boron, said, “Obtaining reliable and comparable density estimates is key to monitoring wildlife populations across space and time. For the first time in Colombia, we have the data to accurately detect jaguar population declines, estimate threats, and implement the appropriate conservation interventions before it is too late.”

The main threat to jaguars’ survival is habitat destruction for extensive agricultural crops like palm oil, soy, sugar cane and other commodities. Large carnivores are particularly vulnerable to habitat loss and extinction because they occur at low densities, have slow population growth rates, require large areas and sufficient prey.

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Density values with the most robust methods of estimation were 3.04±1.02 - 3.15±1.08 adults/100 km2 in the Magdalena watershed (10 individuals), whereas 1.88±0.87 - 2.19±0.99 adults/100 km2 in the llanos (6 individuals).
The study showed that jaguars can survive in the presence of certain types of development, including, surprisingly, around oil palm plantations, but only if they occur in a mixed landscape with wetlands and native lowland forest.

Dr. Payán stated, “Our results at both sites show that productive areas with extensive cattle ranching and oil palm cultivation display lower jaguar densities than natural areas such as the Belizean jungles and Brazilian Pantanal, however, they can still have resident jaguar populations.”

As agriculture and oil palm cultivation continue to expand across the tropics, they need to be integrated into range-wide jaguar conservation strategies. For long-term jaguar conservation it is key to engage landowners, implement land-use plans in both study site regions to maintain natural habitats in the landscape, and establish further oil palm plantations in already disturbed areas as other data recommends. Across cattle ranching regions, it is also crucial to adopt optimal livestock management practices to ensure low levels of human-jaguar conflict and jaguar killing.

“In large cat conservation, we want to achieve coexistence between wild cats and local people,” added Boron.

Long-term jaguar conservation requires a landscape approach with both protected and human use lands integrated into wider connectivity landscapes, the principle behind Panthera’s Jaguar Corridor Initiative. Therefore it is crucial to obtain jaguar population and density estimates across such human use/agricultural areas.

Dr. Payán continued, “A working number of three adult jaguars in 100 km2 is important because we can plan their conservation from this scientific fact. For example, we now know that only Chiribiquete National Park, out of all the Colombian national parks, can harbor jaguar populations large enough to survive in the long term (meaning for the next 300 years).”

“This implies,” he continued, “that protected areas alone are not enough to save this large carnivore. We need to maintain a hospitable environment for jaguars in the surrounding unprotected areas and create seamless links between these private lands and protected parks across jaguar range.”

Dr. George Schaller, Vice President of Panthera and a co-author of the study, noted, “Jaguars are a species of conservation concern because they are suffering population declines and are keystone species in their ecosystems. Their presence ensures that their associated biodiversity is being conserved.”

About Jaguars
The jaguar, Panthera onca, is the largest felid species in the Americas, it ranges from Mexico to Argentina but it has disappeared from 54% of its historic range. Jaguars are considered Near Threatened by the International Union for Conservation of Nature (IUCN) and they are continuously declining because they are particularly vulnerable to habitat loss due to their large area requirements, low densities, and slow population growth rates. They are also vulnerable to persecution, predominantly in the form of retaliatory killing following predation of livestock since the trade in jaguars skin declined drastically after the mid-1970s, when CITES regulations were enforced.

About Panthera
Panthera, founded in 2006, is devoted exclusively to preserving wild cats and their critical role in the world’s ecosystems. Panthera’s team of leading biologists, law enforcement experts and wild cat advocates develop innovative strategies based on the best available science to protect cheetahs, jaguars, leopards, lions, pumas, snow leopards and tigers and their vast landscapes. In 50 countries around the world, Panthera works with a wide variety of stakeholders to reduce or eliminate the most pressing threats to wild cats—securing their future, and ours. For more information, visit Panthera.org.