Public Abstract

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Title:CARNIVORE ECOLOGY AND CONSERVATION: IMPLICATIONS FOR TIGER CONSERVATION AND MANAGEMENT IN NEPAL

In human-dominated landscapes, conservation and management of large carnivores has been a formidable challenge due to habitat fragmentation, degradation and loss, wildlife persecution, and poaching. Consequently, wide-ranging species like tigers are now relegated to small protected areas. I evaluated factors influencing occupancy of tiger at a fine spatial-scale, developed a novel model to estimate prey abundance, assessed intraguild interaction between tigers and leopards in response to prey and disturbance factors, and evaluated sustainable financing mechanisms for tiger conservation programs. The success of carnivore conservation relies on better understanding their habitat use and prey availability, the community structure of competing species, and the financial ability to sustain monitoring and conservation programs. I collected field data through camera trap survey in Chitwan National Park and found that tiger occurrence was influenced by fine-scale habitat factors including prey availability. I concluded that in small protected areas wide-ranging carnivores may persist at high population densities by intensively focusing their activity on small portions of their home ranges. Furthermore, prey abundance, key to carnivore persistence, can be reliably estimated from camera trapping data using binomial mixture models. Further, prey abundances in conjunction with human and livestock presence in the park modulate intraguild interactions between tigers and leopards. Collectively, these findings should provide useful information for biologists, conservationists, and managers on how to successfully conserve and manage large carnivores.