

Incidental discovery of non-focal carnivore species during genetic study of Bengal tiger (*Panthera tigris tigris*) and snow leopard (*Panthera uncia*) in Nepal

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ABSTRACT

The Bengal tiger (*Panthera tigris tigris*) and the snow leopard (*Panthera uncia*) are highly endangered apex predators. These charismatic animals are categorized as flagship and umbrella species, and hence are the focus of many conservation programs. Protecting tiger and snow leopard also safeguards the entire habitat in which they reside, including other non-focal sympatric carnivores. Our non-invasive sampling based genetic studies on these flagship species have detected other non-focal carnivore species that co-share the same habitat. In our non-invasive genetic study of the tiger in the Chitwan National Park (2011-2013), of all collected scat samples (n=420), only 62% (n=262) were of tiger. The remaining non-tiger samples (n=158) included common leopard (*Panthera Pardus fusca*, n=74), leopard cat (*Prionailurus bengalensis*, n=10), fox (*Vulpes ssp.*, n=5) and jungle cat (*Felis catus*, n=1). Of 48 putative snow leopard scat samples collected from the Mustang region (2010-2011), only 65% (n= 31) were of snow leopard. We identified red fox (*Vulpes vulpes*, n=7), leopard cat (*Prionailurus bengalensis*, n=2), wolf (*Canis lupus*, n=1), common leopard (*Panthera Pardus fusca*, n=1) and lynx (*Lynx lynx*, n=1) from the remaining samples using target DNA amplification and sequencing. This study, which was integrated in our overall genetic studies of tiger and snow leopard, has significantly increased our understanding of the carnivore community in the Terai and Himalaya region of Nepal. We were also able to document lynx at the highest elevation (3935 m) and detect the presence of an illusive himalayan wolf and leopard cat for the first time in the snow leopard habitat of Nepal.

Key words: Bengal tiger, carnivore species, Chitwan National Park, leopard