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STUDY SHEDS LIGHT ON PREY-PREDATOR RELATIONSHIP IN HIMACHAL

Relevant for: Environment | Topic: Biodiversity, Ecology, and Wildlife Related Issues

The elusive and charismatic snow leopard feeds on hoofed animals (ungulates) including the Siberian ibex, blue sheep, urial and argali in the Himalayas. File photo: Special Arrangement

A recent study by the Zoological Survey of India (ZSI) on snow leopard (*Panthera uncia*) has thrown up interesting insights on the elusive mountain cat and its prey species. The study under National Mission on Himalayan Studies revealed a strong link between habitat use by Snow Leopard and its prey species Siberian ibex and blue sheep.

Scientists used camera traps and sign surveys to evaluate the co-occurrence patterns of snow leopards and its prey species (Siberian ibex and blue sheep) in Spiti valley of Himachal Pradesh. Details of the study have been recently published in a paper titled *Landscape use and co-occurrence pattern of snow leopard (Panthera uncia) and its prey species in the fragile ecosystem of Spiti Valley, Himachal Pradesh* published in the journal Plos One.

“Furthermore, we found that the snow leopard detection probability was high if the site was used by its prey species, i.e., ibex and blue sheep. Whereas, in the case of the prey species, the probability of detection was low when the predator (snow leopard) was present and detected. Besides this, our results suggested that both species were less likely to detect together than expected ...,” the publication states.

Lalit Kumar Sharma, lead author of the publication, said that snow leopards use rugged mountainous areas or non-forested areas covering an altitude between 3200m-5200m. Dr. Sharma, who heads the GIS & Wildlife Section of ZSI, said that the study suggested that habitat covariates, such as barren area, grassland, aspect, slope and distance to water were important drivers of habitat use for the snow leopard as well as its prey species. He added that Spiti Valley possessed a good habitat in and outside the protected areas which could support a viable population of both threatened snow leopard and its prey species.

Classified as ‘Vulnerable’ by the International Union for Conservation of Nature (IUCN) Red list and listed in Schedule-I species of the Indian Wildlife (Protection) Act, 1972, snow leopards are elusive mountain cats whose survival depends on depends primarily on wild ungulates.

Amira Sharief, biologist at ZSI and also an author of the paper, said that the study aimed at examining how the predator used habitat in presence or absence of its prey species and vice-versa, “We also tested how the environmental variables are influencing the distribution of the species in presence or absence of the other species,” the biologist said. According to Ms. Sharief higher up in the mountains, predators such as snow leopards regulated the populations of herbivores such as the blue sheep and Siberian ibex, thereby safeguarding the health of grasslands and a long-term absence of snow leopards could cause trophic cascades as ungulate populations would likely increase, leading to depletion of vegetation cover.

Snow leopards have a vast but fragmented distribution across the mountainous landscape of central Asia, which covers different parts of the Himalayas such as Ladakh, Himachal Pradesh, Uttarakhand, and Sikkim.. This charismatic species is largely threatened because of the loss of natural prey species, retaliatory killing due to conflict with humans and illegal trade of its fur and bones.

Dhriti Banerjee, Director, ZSI, said that protecting snow leopards may result in a cascade of benefits to the ecosystem as a whole. “The knowledge about the relationships among the species will be useful for developing better conservation and management strategies for the long-term viability of snow leopard and its prey species in the landscape of Spiti Valley. Maintenance of areas having potential habitat for top predators in and outside the protected areas can serve as a useful tool for conservation and management planning,” Dr Banerjee added.

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