

CEF UPDATE

Predicting Tiger and Leopard Attacks on Livestock in Kanha Tiger Reserve, India
By Jennie Miller

In the jungles of Kanha Tiger Reserve in central India, tigers and leopards kill more than one domestic animal every day. In 2010 alone, the Forest Department distributed \$12,000 in compensation payouts for 351 livestock killed in the park. For a farming family, the death of a cow, buffalo or goat can mean the loss of investment, field labor, milk, cash income and even social status, and motivate villagers to violently retaliate against tigers and leopards. To prevent these conflicts, the AZA Conservation Endowment Fund (CEF) supported us in a year of research in Kanha to investigate where and why these cats kill with the goal of generating models to predict – and thus avoid – areas where future attacks will occur.

From December 2011 through August 2012, our two research teams visited livestock attack sites across Kanha's

2,000km² of thick jungle, chest-high grasslands and open croplands. We worked closely with a network of Forest Department beat guards, watchers and wireless operators to identify and survey fresh kills that had been reported by livestock owners. At each site, we noted details about the prey and large cat predator signs, measured vegetation structure and spoke with livestock owners about grazing and protection methods. In the span of three seasons, we visited 386 localities where the park's robust and ravenous population of tigers and leopards attacked 448 livestock.

We suspect that ecological factors such as forest type, habitat structure and predator hunting mode play strong roles in determining where attacks occur. Environmental drivers have long been ignored in favor of social science approaches to resolving human-felid conflict. We hope that in using environmental variables to predict livestock depredation risk and better manage grazing, we can generate an effective new tool for mitigating conflict.

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