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Humans and Tigers Can Timeshare Territory

by Sid Perkins on 4 September 2012, 4:51 PM | [0 Comments](#)

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Big cats need big habitats to roam in. Will an increasingly crowded world still have room for tigers? A field study of tigers in Nepal suggests that, in some cases, people and animals can coexist by "timesharing" the same territory.

Nepal's Chitwan National Park, established in 1973, covers about 1000 square kilometers and is one of only 28 reserves in the world that can support more than 25 breeding female tigers—likely the smallest number needed to maintain genetic diversity, says Neil Carter, a conservation scientist at Michigan State University in East Lansing. Human activity in and around the park is both diverse and widespread: Local residents collect firewood, soldiers patrol forest roads to deter poachers and other criminals, and a growing number of ecotourists visit the area each year. The fate of tigers in protected areas along the southern rim of the Himalayas likely hinges on how well conservation efforts fare in Chitwan, Carter suggests.

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Burning bright. By shifting much of their activity to nighttime hours, tigers in and around Nepal's Chitwan National Park (one "caught" by camera trap, *shown*) may be able to coexist with humans who tolerate their presence, a new study suggests.

Credit: Neil Carter

The good news is that the tigers are still there. Even though the park and its vicinity harbor about twice as many people per square kilometer as other countries where tigers live, a good number of tigers inhabit the area, Carter says. To study how the two species coexist, he and his team placed motion-sensing "camera traps" along trails and roads in a study area including the northern fringe of the park. The team conducted their research from January through May—during the dry season before the monsoon rains began—in both 2010 and 2011, each year deploying at least 75 camera traps spaced no more than 1 kilometer apart.

Surprisingly, Carter notes, human presence outside the park didn't drive the tigers into the park's wilderness: The density of tigers inside and just outside the park was not significantly different. And overall tiger numbers in the park didn't drop when more humans were around: In 2010, the team estimates, the area hosted about 4.4 tigers per 100 square kilometers. The next year, that number jumped by about 40%—even though the number of humans measured by the "camera traps" rose by 55%.

Nevertheless, the team's analyses show that [tigers were more likely to be found at sites away from human settlement](#), the researchers report this week in the *Proceedings of the National Academy of Sciences*. The team also found that the tigers in and around Chitwan park were much more likely to be active at night than tigers living elsewhere. Tigers at study sites in Indonesia and Malaysia, which have considerably less human activity, are spotted more than half the time during daylight hours, whereas about 80% of those seen within the Chitwan study area – and 95% of those seen adjacent to the park, where humans are particularly active – were spotted at night.

"Tigers don't like to go around where people are," says John Seidensticker, a conservation scientist at the Smithsonian Institution's National Zoological Park in Washington, D.C. It's surprising that so many tigers live in and around Chitwan, he notes, because "when I've been there I've never been outside the soundscape of people." Nevertheless, he adds, "Nepal has been good at working out ways for people and tigers to get along successfully."

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For instance, with an economy that includes a lot of tourism, people living near Chitwan—an ecosystem that also includes large numbers of rhinos—have a big incentive to get along with wildlife there. "When there's not an economic incentive [to get along], people tend to get cranky," Seidensticker says.

Timesharing the environment might not work well with many threatened species or in many areas: Think of the attitudes against bears, cougars, and wolves in certain regions of the United States, for example. However, Carter and his colleagues contend, the notion of humans and endangered animals sharing the same terrain by shifting their behavior—and particularly by shifting when each species uses the habitat—should be incorporated into conservation plans when it makes sense.

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