The straight poop on counting tigers

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A team of researchers collecting tiger scat in India for DNA analysis -- a powerful new tool in estimating tiger populations. Credit: S. Gopinath

The Wildlife Conservation Society (WCS) announced today a major breakthrough in the science of saving tigers: high-tech DNA fecal sampling.

According to the study, researchers will be able to accurately count and assess tiger populations by identifying individual animals from the unique DNA signature found in their dung. In the past, DNA was collected from blood or tissue samples from tigers that were darted and sedated. The authors say this new non-invasive technique represents a powerful new tool for measuring the success of future conservation efforts.

The study appears in the June 16th edition of the journal *Biological*

Conservation. Authors of the study include: Samrat Mondol of the National Centre for Biological Sciences; K. Ullas Karanth, N. Samba Kumar, and Arjun M. Gopalaswamy of the Wildlife Conservation Society and Centre for Wildlife Studies; and Anish Andheria and Uma Ramakrishnan, also of the National Centre for Biological Sciences.

"This study is a breakthrough in the science of counting tiger numbers, which is a key yardstick for measuring conservation success," said noted tiger scientist Dr. Ullas Karanth of the Wildlife Conservation Society. "The technique will allow researchers to establish baseline numbers on tiger populations in places where they have never been able to accurately count them before."

The study took place in India's Bandipur Reserve in Karnataka, a longterm WCS research site in the Western Ghats that supports a high abundance of tigers. Researchers collected 58 tiger scats following rigorous protocols, then identified individual animals through their DNA. Tiger populations were then estimated using sophisticated computer models. These results were validated against camera trap data, where individual tigers are photographed automatically and identified by their unique stripe pattern. Camera-trapping is considered the gold standard in tiger population estimation, but is impractical in several areas where tiger densities are low or field conditions too rugged.

"We see genetic sampling as a valuable additional tool for estimating tiger abundance in places like the Russian Far East, Sunderban mangrove swamps and dense rainforests of Southeast Asia where camera trapping might be impractical due to various environmental and logistical constraints," said Karanth.

Source: Wildlife Conservation Society (news : web)