

Can feces save the species?

May 12 2008

It's a tough job, but somebody, or at least some dogs, have to do it. In the Cerrado region of Brazil, four dogs trained to detect animal feces by scent are helping researchers monitor rare and threatened wildlife such as jaguar, tapir, giant anteater and maned wolf in and around Emas National Park, a protected area with the largest concentration of threatened species in Brazil.

The researchers analyze feces found by the dogs to learn about where and how the threatened mammals live. Data such as numbers, range, diet, hormonal stress, parasites and even genetic identity contribute to a study of how the mammals use environments inside and outside the park, especially on privately owned lands of the region.

The information helps develop conservation and development strategies that meet the needs of both the animals and local farmers. The dogs are rewarded for their good work with tennis balls to chase and chomp.

The project is led by Carly Vynne of the Center for Conservation Biology at the University of Washington as part of her doctoral thesis, in partnership with Conservation International (CI) Brazil.

After a brief pilot study in 2004, research began in 2006 in a 3,000-square-kilometer (equivalent to 300,000 soccer fields) area in the western portion of Emas National Park and surrounding farms in Mato Grosso do Sul state and Goiás state.

Now nearing conclusion, the project's analysis of feces samples shows

that all the species studied use the area surrounding the park, but that farms with less than 30 percent of natural vegetation cover have fewer endangered mammals. Jaguar, however, rarely moved outside the protected park into the more deforested surrounding farmland, as they require the healthy ecosystems of conserved environments. According to Vynne, preservation of open grasslands should be a priority for maned wolf, giant anteater and giant armadillo since these species prefer open areas of park but there is very little open area under protection outside the park.

“The data and results serve as a warning to develop conservation strategies for the restoration of degraded areas in the region, both to conserve healthy ecosystems and biodiversity,” Vynne said.

Brazil’s Cerrado region, a wooded grassland that is one of the world’s 34 biodiversity hotspots, already has lost 60 percent of its original area to deforestation and continues to disappear at twice the rate of the neighboring Amazon forest. Such deforestation leaves protected national parks as savanna islands surrounded by agricultural fields, noted Ricardo Machado, director of the Cerrado-Pantanal Program of CI-Brazil. Using the sniffing dogs to locate trails of endangered species is instrumental in identifying and establishing key areas as corridors to connect isolated areas of native vegetation. That means working with rural landowners to help threatened species survive.

“If we wish to speak of sustainable development, we have to establish incentives and strategies for farmers to maintain native species in agricultural landscapes,” Machado said.

In addition to CI-Brazil, the project is supported by the University of Brasilia, the Jaguar Conservation Fund, and the Chico Mendes Institute for Conservation of Biodiversity, the entity responsible for management of the Emas National Park.

The dogs are trained in the same manner as those trained to sniff out drugs. When the dogs find the feces, the accompanying researcher marks the location with a GPS (Global Positioning System) and collects the samples. With the aid of satellite images, the sample data are correlated with the environments where the samples were found.

Prof. Jader Marinho Filho of the University of Brasilia, a sponsor of the project, said sniffing dogs can collect data that otherwise would only be available through radio telemetry and other expensive and labor-intensive techniques. Tracking dogs also are non-intrusive, collecting biological material without capturing or sedating animals, and the information they help gather is essential.

“The levels of stress hormones in the animals’ feces are important indicators in the evaluation of their capacity to reproduce in a given environment,” Marinho Filho said. “These data allow us to estimate which mammals would be able to reproduce or if they would be destined to disappear from the region.”

Source: Conservation International

Citation: Can feces save the species? (2008, May 12) retrieved 25 April 2024 from <https://phys.org/news/2008-05-feces-species.html>

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