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Scat-Detection Dogs Seek Out New Locations of *Priodontes maximus* and *Myrmecophaga tridactyla* in Central Brazil

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The use of scat-detection dogs is increasingly recognized as a valuable wildlife assessment and monitoring tool (Long *et al.,* 2007a). Chosen for their drive for play-reward with a tennis ball, these dogs enable researchers to seek out scat samples of rare and otherwise difficult-to-study species. The dogs are able to cover large areas, are unbiased in their sampling of gender, and have demonstrated accuracy in their ability to home in on their targets while ignoring non-target species (Smith *et al.,* 2003). Studies comparing detection dogs with camera-traps and hairsnag surveys have demonstrated that detection dogs are superior both at locating the presence of target species as well as number of individuals (Wasser *et al.,* 2004; Harrison, 2006; Long *et al.,* 2007b). Once located, the scat samples may be used to understand wildlife movements, for diet and disease studies, and for DNA and hormone analyses (Wasser *et al.,* 2004).

In 2004 we employed three teams of scat-detection dogs in a successful pilot study to survey carnivores (maned wolf *Chrysocyon brachyurus*, jaguar *Panthera onca*, and puma *Puma concolor*) in the Cerrado of central Brazil (Vynne *et al*., 2005). Given this success, we decided to try training these seasoned dogs to also find two species of xenarthrans, *Priodontes maximus* and *Myrmecophaga tridactyla*. Subsequent field seasons, beginning in May 2006, have yielded valuable information on the occurrence and habitat use of these two species (Vynne *et al*., in prep.; Silveira *et al.,* 2009) in and around Emas National Park, a 133,000-hectare reserve on the common border of the states of Goiás and Mato Grosso do Sul. To our knowledge, this is the first study using scat-detection dogs outside of North America, and the first to survey for species in the Xenarthra.

Results thus far include 67 point localities of giant armadillo and 560 of giant anteater in and around Emas National Park. These locations have been the first to show extensive use of non-Park areas by the two species and to demonstrate how the two species are using the system of legal reserves and agricultural lands. Giant anteater samples are being used to monitor changes in the density of the population, which has been susceptible to large-scale fires in the Park, and giant armadillo samples will be analyzed to learn how these localities correspond to movement and home range.

Of particular importance has been that both species are still found to occur outside of Emas National Park. While Emas is a grassland island, almost entirely surrounded by intensive agriculture, current Federal legislation requires landowners to set aside 20–30% of their farm as protected land. Our initial assessment is that this mosaic of habitat fragments is extremely important for these two species, providing corridors for movement and critical protection to individuals and their food sources. Of concern, however, is the small amount of natural grasslands, the habitat preferred by the two species inside the Park, under protection beyond Park borders. As these grasslands support the highest density of ant and termite mounds, priority should be given to protecting and restoring natural, open habitats that support these critical food sources in the landscape surrounding Emas National Park.

Our field surveys concluded in May of 2008 and spatial analyses are underway. In the meantime, we are looking for collaborators who may be interested in using the physical samples that we have been collecting. Samples have been divided for DNA and diet/hormone/disease analyses and are stored in a 20% DMSO (dimethylsulfoxide) salt solution (a preservative for DNA) and frozen. Each sample has associated information on habitat, spatial location and sample quality that we would make available. The samples are currently in Brazil at the Universidade de Brasilia and within-country requests will receive first priority, although it is possible to arrange for export permits if necessary. For more information, please contact Carly Vynne at <cvynne@u.washington.edu>.

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