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New Information on Population Declines in Pink Fairy Armadillos

The conservation status of the pink fairy armadillo (*Chlamyphorus truncatus*) was extensively discussed during the recent IUCN Edentate Species Assessment Workshop (Fonseca and Aguiar, 2004). The near-total lack of data on its natural history and population dynamics, however, made it extremely difficult to assess. Fresh information from the field now suggests that its current classification as Near Threatened (IUCN, 2006) should be reconsidered.

In March 2006, I assisted a film crew in their search for pink fairy armadillos in Mendoza Province, Argentina. The documentary will be the opening film in a new television series, "Nick Baker's Weird Creatures," produced by Icon Films in association with the British Natural History Museum, and to be aired concurrently on Channel 5 (UK) and Animal Planet. Although our efforts to trap, track, or observe a live pink fairy armadillo were unsuccessful, our interviews with local people provided new and important information on the abundance of this species—information that needs to be considered to ensure that its conservation status is accurately assessed. There is no doubt that this information requires confirmation by scientific methods. But in the absence of long-term ecological research, we are obliged to listen to

the careful observations of local people, who are often an excellent source of information on native fauna and flora.

More than a decade ago, Roig (1995) reported a considerable reduction in sightings of *C. truncatus* in Mendoza between 1985 and 1995, and he warned that its wild populations might have suffered significant declines. In recent years this trend has been confirmed by locals in Mendoza, but it seems that sightings have never been very frequent—at least over the past several decades. One farm worker, Chani, who has worked in rural areas of San Rafael for most of his forty-five years, reported that he has seen about a dozen pink fairy armadillos in his entire life—and Chani is famous for having seen more pink fairy armadillos than anyone else in the region.

Although the geographic range of *C. truncatus* encloses a relatively large area in central Argentina (Fonseca and Aguiar, 2004), it should be noted that the pink fairy armadillo is restricted to small patches with specific soil types, such as loose sand dunes. The area with the most sightings—a *Chlamyphorus* "hotspot," as it were—lies near Monte Comán, where they appear to be relatively abundant. It should be noted, however, that "relatively abundant" involves no more than two or three sightings per year: one pink fairy armadillo was killed by a domestic cat about eight months ago (M. Lucero, pers. comm.), one was seen crossing a road in January 2006 (G. Ferraris, pers. comm.), and one had been raiding an earthworm farm over the course of several months in 2004 (G. Gonzalez, pers. comm.). Other recent sightings have been reported from east of Ñacuñán (Chani, pers. comm.); Corral de Lorca (G. Gonzalez, pers. comm.); to the south of El Nihuil (Rojas family, pers. comm.); and the Lavalle Desert in northeastern Mendoza (Mr. Molina, pers. comm.). The pink fairy armadillo's situation in protected areas looks no more promising: not a single individual has been observed for a decade in the provincial reserve of Bosques de Telteca in northern Mendoza (G. Ferraris, pers. comm.), nor has one been seen by researchers at the MAB Reserve Ñacuñán for 18 years (V. Roig, pers. comm.). Ironically, three weeks before we drove through the area, a seven-year-old boy captured a live pink fairy armadillo in the middle of the village of Ñacuñán and released it in the Reserve (Brian, pers. comm.).

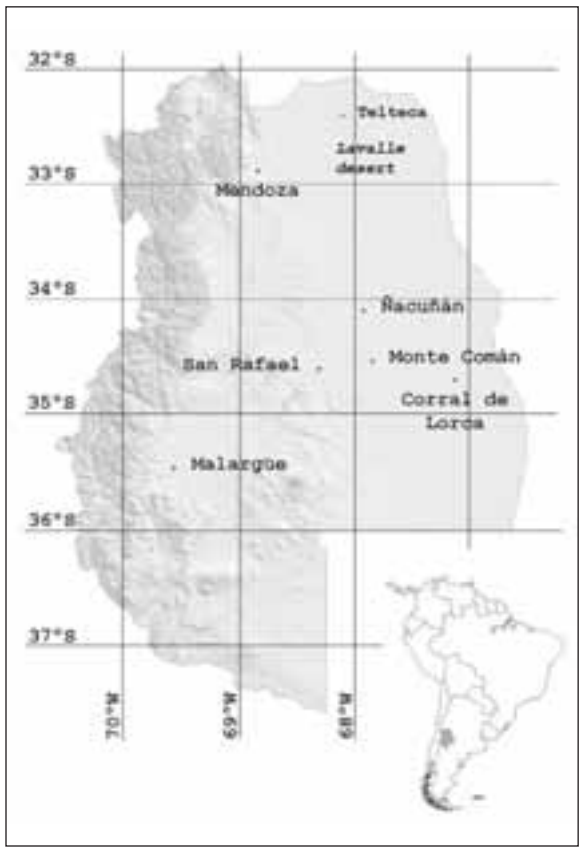

FIGURE 1. Map of Mendoza Province, Argentina. Recent pink fairy armadillo sightings have been reported from the Lavalle Desert and rural areas around Ñacuñán, Monte Comán, and Corral de Lorca.

The story of the Rojas family is a good example of the accounts we heard from many locals throughout the region, including Mr. Day and his neighbors living in the Lavalle Desert; Mr. Lucero and his colleagues in the Monte Comán area; and Mr. Ponzina and Mr. Manzano, of the Department of Natural Renewable Resources, in the area around Corral de Lorca. The Rojas family has lived on their farm south of El Nihuil for almost 100 years. The mother, now 85 years old, told us that when her sons were boys, they often caught and released pink fairy armadillos in the nearby sand dunes. According to Mrs. Rojas, they would only catch these odd creatures to watch them, but never killed them, "because these little animals don't do any harm." This opinion is shared by many locals, and suggests that persecution for cultural reasons is not the main cause of the recent population declines.

The last tracks were observed around September 2005, and the last sighting dates back to over a year ago, when a drowned pink fairy armadillo was found in an irrigation ditch. (The amazingly well-preserved dead animal is now a family treasure.) Mrs. Rojas and her sons confirmed that sightings were much more frequent 10 to 20 years ago—but they could not give an explanation for the population decline, as pink fairy armadillos are not used as a protein source, and

therefore not the target of poachers. The Rojas family suggested that a disease—perhaps an epidemic similar to the "pichi plague" that has affected *Zaedyus pichiy* in their area—could have decimated local populations of *C. truncatus* as well.

This species may also be finely susceptible to environmental stress; sudden changes in environmental temperature have been known to kill *C. truncatus* (Roig, 1971). Pink fairy armadillos have very low survival rates in captivity; many individuals have died during the transport from the point of capture to the captive facility, while others survived only a few hours to days in captive conditions. This extreme sensitivity has been attributed to stress or inappropriate environmental conditions, both by researchers (V. Roig, pers. comm.) and locals (e.g., Chani, pers. comm.). Without knowing more of this species' autecology, it will be difficult to determine which factors determine the survival of pink fairy armadillos in captivity: light, temperature, soil quality, or absence of external factors such as soil vibrations—or something else entirely unexpected. These same factors could also negatively affect *C. truncatus* in the wild, if their natural habitat is altered by human encroachment or global changes—and may already have caused the population declines reported by so many local people.

These reports from the inhabitants of rural Mendoza sketch a worrisome portrait of *C. truncatus* in the wild. It is entirely possible that other pink fairy armadillos have been observed by different locals in recent years; distances are large in rural Mendoza, and communication is difficult at best. But it is unlikely that a large population of pink fairy armadillos would exist somewhere in Mendoza without our becoming aware of it. In five years of fieldwork on *Zaedyus pichiy*, I have visited some of the remotest corners of Mendoza Province and talked to countless locals about armadillos of every kind. My interest—call it obsession—in seeing a live pink fairy armadillo keeps me asking everyone I meet—locals, anti-poaching patrols, and rangers—about sightings of *C. truncatus*. Despite my constant questioning, and a network of volunteers who promised to contact me in case of a sighting, I still haven't been able to see a single live individual of this rarest and oddest of armadillos. Given its exceptional rarity, and the clear declines which so many local people have reported, I wonder whether the pink fairy armadillo's current Red List status of Near Threatened does not, in fact, dangerously underestimate the threat this species is facing—and whether a classification as Vulnerable would be more realistic. If anyone has more information on any aspect of the distribution or population ecology of pink fairy armadillos, I would be more than interested in a dialogue.

Mariella Superina, Las Palmas 3307, Vistalba, Luján de Cuyo (5509), Prov. Mendoza, Argentina. E-mail: <mariella@superina.ch>.

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An Agonistic Encounter Between Two Giant Anteaters (*Myrmecophaga tridactyla*)

On the afternoon of 2 July 2005, during a field excursion in the center of the Brazilian Pantanal (18°59′S, 56°39′W), we had the opportunity to witness and photograph the unusual presence of four giant anteaters in the same two-hectare patch of open scrub grassland. All four animals were adult-sized but of unknown sex. Two of them were foraging separately, walking in parallel some 50 m apart; throughout the encounter they ignored each other and the other two anteaters (Fig. 1a). These latter two, however, became involved in an agonistic encounter, which followed the pattern of an injury-producing fight as described by Shaw *et al.* (1987). While foraging, their paths drew near to each other; when they were approximately 10 m apart, one of them apparently detected the other by scent and walked directly towards it (Fig. 1b), producing a long, deep "harrrr" sound. Both animals began to circle one another with tails raised (Fig. 1c), and after about a minute the aggressor began striking with its forepaw at the other animal's face (Figs. 1d and 1e). This lasted only a few seconds. When the attacked animal fled, the aggressor chased it for over 100 m with its tail raised and piloerected (Fig. 1f), and then resumed foraging nearby.

Although Shaw *et al.* (1987) frequently observed agonistic behavior among free-ranging giant anteaters in Serra da Canastra National Park in central Brazil, to our knowledge it has not been reported in field studies elsewhere.