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Tolypeutes matacus

Southern Three-banded Armadillo

Description:

The Southern Three-Banded Armadillo, *Tolypeutes matacus*, is a small creature, about 10- 15 cm tall, 21 – 30 cm long(Eisenburg & Redford, 1999), and 1.00 to 1.59 kg in weight (EOL, 2014). The outer shell of the Southern Three-Banded Armadillo ranges from light brownish-yellow to blackish-brown in coloring. This armadillo is comprised of three parts: a head, body, and an immobile, stout tail that are heavily armored with a leathery, thick shell(Ellis, 1999). This leathery armor covers the entire animal, except for the belly and ears, when walking



Southern Three Banded-Armadillo, *Tolypeutes matacus*, (Smith, 2007).

and/or standing. The skin of the front and rear portions of the Southern Three-Banded Armadillo are not attached to the middle section, allowing the animal to roll into a tight ball(EOL, 2014). Other features that make the Southern Three-Banded

Armadillo distinct are the third and fourth claws of the hind feet that look like hooves, while the front feet have only three sharp powerful claws(Superina, 2009). Southern Three-Banded Armadillos have a long pink tongue that is usually sticky. Their heads are long, and are unique to each armadillo; like humans' fingerprints, researchers have used their head patterns while tracking them to identify which individual armadillo they are researching(HZ, 2011).

Ecology:

Southern Three-Banded Armadillos are native to north central Argentina, east central Bolivia and multiple sections of Paraguay and south west Brazil. The Southern Three-Banded Armadillo is found mainly in scrub forests and savannahs in these sections of South America. The armadillo takes refuge in the forested areas, while it forages in the savannah(Smith ,2007). Southern Three-Banded Armadillos are most commonly found in the most arid parts of the Gran Chaco, a flat plain in central South America where temperatures are high and rainfall is low. The Gran Chaco region holds 3,400 plant species, 500 bird species, 150 mammal species, and 220 reptiles and amphibian species. Around a quarter of this region is non forest, while the other is forests(EOL, 2008). Southern Three-Banded Armadillos require dry conditions and warmer temperatures due to their slow metabolic rate; when temperatures drop and rain falls, the metabolic rate of the Southern Three-Banded Armadillo slows(RHZ, 2014). Since Southern Three-Banded Armadillo's are solitary creatures, the cold season is the only time that they are documented sharing a burrow(Smith ,2007).



Giant Anteater, the most ecologically significant species for the Southern Three-Banded Armadillo. (Duplax, 2013).

In these sections of central South America, the Southern Three-Banded Armadillo has many other species that it interacts with within its community. Their interaction with the Anteater is most commonly studied; the Southern Three-Banded Armadillo mainly uses the emptied Anteater burrows to build their homes(HZ, 2011). The Southern Three-Banded

Armadillo have not been documented in a wild habitat that did not also support the anteater(Anacleto & Diniz-Filho, Vital, 2006). Although equipped with the claws for burrowing, the Southern Three-Banded Armadillo prefers to use these abandoned burrows rather than digging their own(HZ, 2011). Like anteaters, these armadillos mainly eat ants and termites between July and November, the dry season of the region. Southern Three-Banded Armadillo's are opportunistic creatures who will go into an anthill after Anteater has dug through it to pick up the left over; however, do not usually dig through the ant hills if they have not already been ruined. If an 'un-ruined' ant hill is nowhere to be found, they lift up tree bark off the floor of the forest to find termites underneath(Ellis, 1999). The diet of the Southern Three-Banded Armadillo consists of "70% invertebrates, 20% plant material (mainly fruits), and 10% unidentified material,"(Bolkovic Caziani and Protomastro, 1995).

Historically, the Southern Three-Banded Armadillo was used as a resource for the ancient pre-Columbian peoples. The people of south central South America used Three-Banded Armadillo shells for containers, to make seats for their gods, meat, instruments, vases, codives, ocarinas, and many other objects(Benson, 1997).

Range and Population Trend:

The population density of the Southern Three-Banded Armadillo ranges from study to study from 0.42 individuals/ km² to 7 individuals/ km²(Smith 2007). However, over the last



decade it has been estimated that 30% of this species was lost(Smith 2007). Multiple causes are blamed for the recent decline of the Southern Three-Banded Armadillo. Firstly, habitat deforestation is creating a huge negative impact on

Gran Chaco Region, (Wiki, 2014).

the species. Nearly 85% of the original Gran Chaco region has been cleared over the last 30 years(Zak et al. 2004). When there is a smaller habitat, less individuals can be supported in that habitat. Secondly, Human caused fires are sweeping through the dry Gran Chaco region, adding to the lack of habitat to support this species(CZ, 2010). Since the Southern Three-Banded Armadillo relies so heavily on Anteaters being in their ecosystem, if the habitat cannot support an anteater population then the population of the Southern Three-Banded Armadillo declines as well.

Thirdly, human hunting and capturing of Southern Three-Banded Armadillos for meat and pet trade also have had a large negative impact on this species' population trends. (Smith 2007). When native peoples of the Gran Chaco region were hunting the Southern Three-Banded Armadillo for meat, the species could withstand the impact. However, with the wildlife pet trade as large as it is, Southern Three-Banded Armadillos cannot sustain an acceptable population level. During exportation, 80% of the specimens die on their way out of the Gran Chaco region, only causing more capturing of this species(Smith, 2007).

Reproduction rate of these animals plays a role in the declining population trend(Abba &

Superina, 2010). Females only produce a single young, only on very rare occasions do they produce more than one pup. Females also only produce young yearly(CZ, 2010). It takes both male and female Southern Three-Banded Armadillos 320 days to sexually mature, than an additional 120 day gestational period is added to produce a pup(Abba & Superina, 2010). Other armadillo species produce four or more pups at a time; the low reproduction rate and high



Southern Three-Banded Armadillo and new pup. (CZ, 2010).

capturing rate of the Southern Three-Banded Armadillo coincide with the decline in population and a higher rate of capture compared to other armadillo species.

Although the true historic range of the Southern Three-Banded Armadillo is unknown, by tracing items made with the shell of the armadillo, they hypothesize that this creature has been reduced to 40 percent of its historic range. Researchers believe that The Southern Three-Banded Armadillo inhabited Mesoamerica, Costa Rica, and most of South America(Benson, 1997).

Legal Status:



Symbol for legal status of the Southern Three-Banded Armadillo (Abba & Superina, 2010).

In 1996 the IUCN established that the Southern Three-Banded Armadillo was at Lower Risk/ near threatened. Ten years later, it was reassessed and deemed that the population trend of the animal was continuing to decrease and again was said to be near threatened(Abba & Superina, 2010). Since this species has a low amount of predators, most of the pups survive to reproduce their own young and are not yet of very high concern. IUCN states however that this species is probably in significant decline of a rate of 30% over ten years. The IUCN red list status of the Southern Three-Banded Armadillo is currently near threatened, but close to qualifying for Vulnerable which will be reassessed within the next two years(Abba & Superina, 2010).

Threats and Conservation:

The Southern Three-Banded Armadillo has multiple threats that are causing its species to near extinction. Firstly, human interactions with the Southern Three-Banded Armadillos are

causing their populations all over South America to decrease (Abba & Superina, 2010). A high volume of Southern Three-Banded Armadillos are being exported to support the wildlife pet trade all over the world (Smith, 2007). When individuals are removed from a population, the genetic variability decreases exponentially, leading species into extinction. Due to the high volume of individuals exported for pet and zoo trade, the genetic variability between sexually reproducing Southern Three-Banded Armadillos is plummeting. Humans are continuing to actively hunt for the Southern Three-Banded Armadillo as well, which adds to the decrease in individuals. The Southern Three-Banded Armadillo is a creature that lays and waits for its predator to come near its belly, so it can promptly close into a ball. The lack of escape on the armadillos part increases the likelihood of being picked up by a hunter exponentially (Superina & Laurdy, 2011) making it the easiest species of armadillo for humans to pick up (Abba & Superina, 2010).



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Waiting Southern Three-Banded Armadillo, (Sarfore, 2014).

Human caused deforestation, fires, and agricultures are another threat for the Southern Three-Banded Armadillo (Smith, 2007). As more shrub and forested habitat is taken away from the Southern Three-Banded Armadillos, they are forced to move to the savannah areas; since the Southern Three-Banded Armadillo relies on Anteater burrows, which are not in the savannah areas, these creatures are easier to be captured and hunted by humans (Superina & Laurdy, 2011).

Information on conservation efforts for the Southern Three-Banded Armadillo is limited. Since the IUCN has labeled the Southern Three-Banded Armadillo near threatened, the Centro

de Datos de Conservacion in Paraguay has labeled it an N3 and is not listed by CITES, conservation efforts for this creature is little to none. The Southern Three-Banded Armadillo has been spotted in several protected areas in the Gran Chaco, but there has not been any published data on the national population levels of the species(Smith, 2007).

The only upside to the fact that they are highly captured for the pet trade, is that there is a large captive population of this species in its non-native North America. However, due to the Southern Three-Banded Armadillos need for warm dry weather and contact with anteater populations, this species would never be able to survive if released in any place other than their native habitat. The Southern Three-Banded Armadillo was identified as an individual species in 1804, and is estimated to be as old as 60 million years old (HZ, 2011); if the lack of conservation trends for this species continue, then it will surely lead to the extinction of the Southern Three-Banded Armadillo.

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