



The 20-cm high gap left at the bottom of the enclosure barrier to allow access to smaller animals.
Credit Patrícia Medici

ability to capture the diversity of plants in the areas. Both curves seemed to have stabilized and reached an asymptote. As we move forward with the subsequent data collections, more sophisticated statistical analysis will be conducted in order to determine this ability.

The same sampling quadrants and plants will be measured twice a year, at the end of the wet season (April-May) and at the end of the dry season (September-October). At the end of the last data collection period (April-May 2009) a decision will be made



Researchers taking measurements and collecting baseline data.
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whether to continue the project or not based on the results obtained by then.

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Tapir Extinction in the Atlantic Forests Between the Rio de Contas and the Rio Paraguaçu

By Kevin Fleisher

I regret to report that tapirs (*Tapirus terrestris*) are extinct in the Atlantic Forest remnants between the Rio de Contas and the Rio Paraguaçu, in Bahia State, Brazil, with the only memory of their existence being two place names on the map – a town named Poço d'Anta between Jequié and Jaguaquara and a rural area west of Taperoá called Cabeça d'Anta. Over the past seven years I have worked exploring what is left of the Atlantic Forest surrounding the coastal town of Ituberá, in a region of southern Bahia known as the Costa do Dendê (Palm Oil Coast). The focus of my dissertation research is to try to identify the factors that determine the distribution and relative abundance of medium and large mammals in this agro-forestry landscape in order to understand how human resource use affect the long-term persistence of these species. Early on in the study I found out that tapirs were extinct, but the when and why of this extinction only became clear after studying historical documents and interviewing old farmers who lived before the large-scale deforestation and landscape-transforming events of the 1950/60s.

History of Land Use and Hunting in Ituberá

There were two distinct peoples living in the Ituberá region when the Portuguese settled here in the mid-16th century: the Tupiniquins, who lived in villages

along the coast with a subsistence economy based on manioc cultivation, hunting and fishing; and the Botocudos (or Aimorés), who were wandering hunter-gatherer people whose territory incorporated all of the land beyond the coastal palisades. Along the coast just to the north lived the Tupinambás, whose culture was similar to that of the Tupiniquim. Soares de Sousa opens his classic 1587 treatise on the wildlife of Bahia with an account of the tapir and describes how the Tupi peoples hunted tapirs with bows and arrows, and sometimes raised young animals in their villages as pets. Prince Maximilian Wied-Neuwied (1821) gives the best account of the Botocudos and other hunter-gatherer peoples of the interior Atlantic Forests of Bahia; he describes them as expert long-bow hunters capable of killing any animal they encountered. While these peoples hunted tapirs, tapirs were not extirpated during their tenure of southern Bahia, probably because human population densities were low and the landscape was largely forested, and because of the temporally shifting spatial impact of human land use and hunting. The Botocudos stayed in an area as long as the hunting was good, after which they moved long distances to more plentiful hunting grounds. The Tupiniquim moved when soil fertility in their gardens decreased. In both cases, these movements alleviated hunting pressure in a given area, presumably allowing the wildlife to recover. At least in the case of the Tupiniquim, their garden fallows may have actually increased the value of the habitat for tapirs.

In the 1540s the Ituberá region became the province of the Jesuits, who established several towns along the coast by incorporating the defeated Tupiniquim and using their expertise to learn how to survive. The Jesuit tenure lasted until 1759 and, while they had increased the scale of agriculture through the commercial production of manioc flour, their settlements remained small and restricted to the coastal hills and islands because of conflicts with the Botocudos. The Botocudos thwarted attempts at inland migration by killing those who tried and by periodically sacking and burning the Jesuit settlements. Even with the final defeat of the Botocudos by the end of the 18th century, the colonists remained restricted to coastal towns and the region languished, remaining a sparsely populated backwater with a subsistence-based economy. Logging, while also limited to the coastal forests, remained selective and gradually intensified over the centuries. The landscape was still almost completely forested well into the 20th century. Hunting never stopped being an important subsistence activity. Although tapirs may have been shot out of the areas within several kilometers of the permanent settlements, they continued to persist in the forests beyond at least as late as the early 19th century, when Wied-Neuwied saw them in the hinterlands of Ilhéus and along the Rio Mucuri.

By the end of the 19th century Ituberá is described as an economic backwater with a populace of several thousand farmers subsisting on manioc cultivation. There is no indication that the landscape had fundamentally changed, and yet, this is the period during which tapirs were extirpated. The hinterlands were forested and inhabited by posseiros living on scattered homesteads in the hills (people who lived on vacant government land [terra devoluta] without legal title). These posseiros were the descendants of Tupiniquim, African, and European peoples who mixed all along the coast of Bahia; their way of life, based on manioc cultivation and the hunt, mostly resembled that of their Tupi ancestors. By all accounts, the population density in the hills surrounding Ituberá was very low with almost no one living more than 10 km from town. Forest disturbance was limited to small swidden plots and fallows, some small scale selective logging, and natural tree falls on steep slopes during times of heavy rain. I had the fortune of interviewing 8 people (75-84 years old) who were born into the life of the posseiros, themselves sons of posseiros. As hunting was a central part of this culture by being one of the main subsistence and leisure activities, people had a great knowledge of wildlife. Had tapirs existed in their lifetime, they would have been aware of the animals. Only one of these informants recalls hearing about tapirs during conversations between older people when he was young (60-70 years ago), but remembers nothing specific about the animal. The other informants do not remember the species being mentioned by their fathers, so it probably was gone at least during their grandfathers' generation, some 120-150 years ago (circa 1850-1880). This suggests that tapirs were extirpated when the landscape was almost completely forested and human population densities were relatively low, confirming the assertions that even subsistence hunters are capable of extirpating tapirs and that tapirs are particularly vulnerable to hunting pressure.

The tapir was the first mammal species to become extinct in Ituberá, proving to be more vulnerable than any other animal with the possible exception of the green and red macaw (*Ara chloroptera*), which disappeared at about the same time. Other species that were extirpated when the landscape was still forested include the giant armadillo (*Priodontes maximus*), last seen in the 1920s, and the white-lipped peccary (*Tayassu pecari*), shot out sometime in the 1930/40s. The jaguar (*Panthera onca*) was extirpated in the 1950s during the large scale forest clearing, while the red-billed curassow (*Crax blumenbachi*) held out until the 1970s. The yellow-breasted capuchin monkey (*Cebus xanthosternus*) and the capybara (*Hydrochoerus hydrochaeris*) are today on the brink of extinction.

Tapir Extinctions in the Forests beyond the Study Landscape

I visited the other main forest areas between the Rio de Contas and the Rio Paraguaçu in 2002 and 2003, and found a similar situation to that of Ituberá. All of the forests have been heavily logged and hunting pressure is chronic throughout. No one I interviewed had ever heard of tapirs in any of these areas and, although we interviewed very few people (2-4 in each region), the informants were hunters who showed good knowledge of the wildlife (i.e., details of natural history) and had lived there all or most of their lives. Deforestation for timber occurred as long ago as the early 19th century along the Rio Jequirica, but the major landscape transformation began with the spread of cacao cultivation north from Ilhéus during the late 19th century. Systematic and industrial scale logging for timber began in the 1950/60s for those areas that had not been already cleared for cattle pasture and cacao; no forests were spared. The best remaining tracts of forest are those on the high ridges of the Rio Preto and Rio Jequirica watersheds, and those on the ridges most remote from highways BA-001 and BR-101 between Camamu and Valença.

Lessons Learned

Despite the continued existence of 100,000s of hectares of forest between the Rio de Contas and the Rio Paraguaçu in Bahia, including up to 60,000 ha in the Ituberá region and an equal amount in the upper Rio Preto watershed, these forests are not appropriate for tapirs. Habitat is not lacking – even the disturbed forests of my study landscape retain a diverse flora (>400 species of trees and lianas); wetlands, riparian forests, and secondary forests with dense herbaceous growth and saplings are abundant. Hunting, however, is rampant and while 82.5% of the wildlife community studied persists, most species survive tenuously as reduced populations of skittish animals. There are no adequately protected reserves, even on properties of landowners who claim to be protecting their forests, and this situation is not likely to change in the near future. Tapirs have no place in landscapes such as these where the culture of hunting is deeply rooted and where there is virtually no law enforcement, regardless of habitat availability. Perhaps as the only source for hope, informants say that fewer youths are interested in hunting than ever before, so maybe one day tapirs can be brought back to roam in these hills again.

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COLOMBIA

Current Distribution and Conservation Status of the Colombian Lowland Tapir (*Tapirus terrestris colombianus*) and the Baird's or Central American Tapir (*Tapirus bairdii*) in Colombia

By Emilio Constantino

Introduction

Colombia is the only country to have the three American tapir species living within its borders, *Tapirus bairdii* (Central American, Chocó or Baird's tapir), *T. terrestris* (Lowland or Amazon tapir) and *T. pinchaque* (Mountain or Woolly tapir); also, a rare form or subspecies of the lowland tapir, known as Colombian tapir or *T. terrestris colombianus*. That richness reflects the great biodiversity of this country and the unique ecosystems it harbors. Regrettably, as highlighted in this report, little is known about the vast majority of the species and ecosystems at a time when they face high and tangible risks of extinction.

The Colombian tapir, *T. terrestris colombianus*, was classified from a few individuals collected by the American vertebrate taxonomist Phillip Hershkowitz during the 1940's and 50's in northern Colombia. The taxon is currently assigned to a population of the lowland tapir occurring in trans-Andean eco-regions, or regions located to the west of the Eastern cordillera of the Colombian Andes. Very little-known, over hunted and with most of its original habitat transformed, today this sub-species is considered critically endangered throughout all its distribution range.

The Baird's tapir was said to occur from southern Mexico, southwards across Central America and along the pacific coast of South America, south to north western Ecuador. Today doubts are cast about its southern distribution, but there are several references about the occurrence of this species in Colombia. In this country, the species is currently known to occur only in a few places of the Darien and northern Chocó eco-regions, and it is also considered critically endangered.

Urgent actions are needed to prevent these tapir species from becoming extinct in the near future: a complete ban on their hunting, the creation of nature