



**Figure 2. Direct sighting of a mountain tapir in its natural habitat on the Tungurahua Volcano, Ecuador. Credit: Juan Pablo Reyes Puig.**

ing and verifiable evidence. In the surrounding areas (i. e. Runtun, Pondoá) indirect observations (tracks and feces) evidence other mountain tapir groups that could be more or less connected with the Tungurahua population. Historical reports (e.g., Martínez 1933) mention that this mammal was common at the beginning of the 20th century but, according to the local inhabitants, the tapir populations were severely threatened by hunting until 1990, when this activity was forbidden.

In addition, the constant eruptions of the Tungurahua volcano have stopped the colonization of the region with the consequent improvement of the natural areas surrounding it. Due to its inaccessibility, the influence of the eruptions in keeping humans at bay, and its connectivity with other protected zones, this area could constitute one of the last refuges for mountain tapirs in the Ecuadorian Andes.

The tapir observations described herein were made while conducting a monitoring project on endangered wildlife at the Tungurahua Volcano, with support from Ecociencia and Conservation International.

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*\*N.B. patches of bare skin in the hind quarters of Mountain Tapirs are not uncommon and at present it is unknown whether these are indicators of the health or age of the animals.*

## Occurrence of Baird's Tapir Outside Protected Areas in Belize

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### Abstract

**We conducted a preliminary survey of the presence of the endangered Baird's tapir outside protected areas in Belize during March to May 2006. We found that Baird's tapir occurred in every district of Belize and that hunting of the species took place but was not widespread. We make suggestions for further conservation and management of the species outside protected areas.**

### Introduction

Baird's tapir (*Tapirus bairdii*) occurs from south eastern Mexico to northern Colombia. The species is an important food resource for local people and plays an important role as seed disperser for many plant species. Currently it is considered vulnerable to local extinction triggered by habitat loss and over-hunting (Naranjo & Bodmer 2002) and is classified as endangered (IUCN, 2006).

Little research has been undertaken on Baird's tapir in Belize since the 1980s (Fragoso 1983; Fragoso, 1991). The IUCN/SSC Tapir Specialist Group organised a Population & Habitat Viability Analysis (PHVA) workshop for Baird's tapir in August 2005 which highlighted the lack of data available on the distribution and status of the species within Belize, as well as in other range countries. A survey of the distribution of Baird's tapir in Belize was recommended as a result of the PHVA (Medici *et al.*, 2006).

Tapirs are protected from hunting in Belize but they can be legally shot if they destroy crops or become dangerous to humans. During the Baird's tapir PHVA, participants were informed of the remains of eight tapirs discovered near the protected area of Tapir Mountain in Belize (R. Richardson in Waters *et al.*, 2006). The possibility was raised that these might be retaliatory killings of the species as a result of its crop raiding behaviour. This study aimed to make a preliminary assessment of the extent that Baird's tapirs conflicted with people due to crop raiding, and to ascertain the presence of Baird's tapir outside protected areas in Belize. Results of the latter aspect of the study are presented here; results on the human/tapir conflict survey will be published elsewhere.

This study was conducted throughout Belize, where the Baird's tapir is the national animal. The country has one of the lowest human populations in Central America, with ~240,000 inhabitants (Roberts, 2000). A high proportion of the country (approximately 36%) is within protected areas. However, Belize has illegal encroachment problems on its western border with Guatemala, where protected areas are heavily frequented by collectors of xaté palm leaves (*Chamaedorea* sp.). This activity has been prevalent since 1998 (Anon, 2005) and up to 1,000 illegal xaté collectors have been reported to camp and hunt in the Chiquibul protected area (comprised of the Chiquibul Forest Reserve and the Chiquibul National Park) whilst harvesting the leaf (Castillo, 2005). Although the forestry division regularly patrols the protected areas in an attempt to prevent illegal collection of xaté, the large number of people and the large size of the areas they use may mean that illegal hunting of protected species such as the Baird's tapir is prevalent in these protected areas.

## Methods

We undertook a countrywide assessment of human-wildlife conflict amongst subsistence farmers in Belize from March to May 2006. We used a structured questionnaire to interview local people from all six districts of Belize about potential problems with crop raiding by wild animals. The villages targeted for interviews were selected based on their dependence on

subsistence agriculture and location outside protected areas. Those villages and communities dependent on citrus, banana and sugar cane cultivation, and cattle farming, were excluded from the survey. The questionnaire was administered to the person who worked on his/her farm in every sixth house in a village.

The interview protocol was thus: The interviewer told the respondent that s/he was from an NGO and undertaking research on agriculture. They were then asked if they would answer questions regarding their land and crops and were assured of confidentiality. When the questionnaire was completed, and if the respondent had not already mentioned Baird's tapir as a crop raider, they were asked about the presence of tapirs in the area. GPS locations for Baird's tapir were recorded if they were reported by at least two respondents independently of one another in each village surveyed, and/or where evidence of tapir sign such as foraging sign or footprints was found. If possible, the farm where crop raiding had been reported was visited and a GPS location taken there. Otherwise, the location of the village where the respondent lived who had reported the presence of Baird's tapir on his farm was recorded. A GIS map was generated from these data.

## Results

A total of 168 people were interviewed during the survey from a total of 63 villages. Baird's tapir were reported from all six districts of Belize. We verified 19.6% (N = 51) of reports of tapir occurrence by sign. A map showing reported presence of Baird's tapir can be seen in Figure 1.

Hunting was reported to take place in 10 of the 51 locations where tapirs were reported to occur. In two villages, interviewees reported that tapirs were hunted preferentially for their meat. 9.6% of respondents reporting that tapir occurred in their areas (N = 73) indicated, without prompting, that they shot them. Orange Walk and Belize districts reported a higher incidence than would be expected by chance of tapir hunting when compared to other districts of the country (Fisher's exact test,  $p = 0.003$ ). In addition, four respondents stated, without prompting, that they had been charged by an adult Baird's tapir whilst in the forest, although they had escaped without injury.

## Discussion

The distribution data collected for Baird's tapir cannot be used to ascertain relative abundance of the species throughout Belize; yet, these data may be useful for understanding patterns of presence and absence of the



**Figure 1. Baird's Tapir Records Outside Protected Areas in Belize.**

species within the landscape. They also demonstrate that, unlike the lowland tapir in Peru (Naughton-Treves *et al.*, 2003), Baird's tapirs visit farms near settlements, as tracks were found near human habitation in this survey.

Orange Walk has the lowest number of reports of tapirs although the species does occur in the protected area of the Programme for Belize (E. Ariola, pers. comm.) located in the northwest of the district. Orange Walk is also one of the two districts that yielded more reports of tapir hunting than would be expected by chance among all districts of the country.

Three unprotected areas appear to hold what may be sustainable tapir populations and merit further investigation. These are: the watershed of the New River in Corozal; the area south (and probably north) of Yalbac Creek in northern Cayo district, along with a population of black howlers and the possibility of the occurrence of spider monkeys (Waters & Ulloa, submitted); and the watershed of the Temash River in southwestern Belize where black howlers were also commonly heard (Waters & Ulloa, submitted).

Although hunting by subsistence farmers in response to crop raiding does not appear to threaten

Baird's tapir in Belize at present (Waters & Ulloa, in prep.), preferential hunting of tapir for their meat appears to be localized in some areas with potential threats of unsustainable extraction.

The reports of the remains of eight tapirs mentioned above, a report of an adult tapir shot on farmland near the Tapir Mountain reserve in 2005 (R. Richards, pers. comm.), and another report of an animal shot in the area of Monkey Bay near Belmopan while conducting this survey, reflect that tapirs are also being shot in Belize for other reasons apart from crop raiding or for their meat. All respondents who reported being charged by tapirs whilst in the forest expressed fear at meeting them. It was perceived knowledge amongst respondents during the survey that surprising a female tapir and calf whilst in the forest may cause the female to charge at the disturbance. Thus, another aspect of human-wildlife conflict – fear of death or injury by a large animal – could be a possible explanation for the abovementioned, apparently motiveless, killings of tapirs. Although this situation has not, so far as is known, led to any human fatalities in Belize, there may be a common misapprehension that all tapirs are unpredictable and thus dangerous, and this may lead to killing of the species whenever it is encountered. However, this needs further work before any firm conclusions can be reached.

Tapirs may remain common in Belize because they are not a preferred meat species for the majority of the population (Fragoso, 1991). Its status as Belize's national animal was also mentioned by respondents as a reason for not killing the species. However, there is no room for complacency because the extent of the effect that illegal xaté collectors are having on wildlife in protected areas of western Belize is not being quantified and could be extensive and negatively impacting on the Baird's tapir over an important area of its distribution. Xaté collectors may be entering areas otherwise rarely visited by subsistence hunters and farmers. The fact that some protected areas are not secure from illegal hunting means that unprotected areas which are still relatively undeveloped and have yielded evidence of tapir and primate presence should be the subject of stakeholder conservation management plans to ensure that the habitat supporting those and other species does not disappear.

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## About the possible Return of Baird's Tapir to El Salvador

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### Abstract

As it is well known, the Baird's tapir (*Tapirus bairdii*) has been declared extinct in El Salvador since 1982 by the IUCN. However, two reports in 2002 and 2004 suggested the presence of the species in some Salvadorian protected areas. In both cases field biologists reported footprints of a tapir but there are no verifiable evidences to support the reports (such as photographs, plaster moulds, videos, etc). Due to the increasing interest of some Salvadorian zoologists to update and produce confident wildlife inventories, and as a result of the mentioned reports, a research team attempted

to verify the possible presence of *T. bairdii* in the country. The first efforts were carried out in two protected areas, El Imposible and Barra de Santiago – Sector Santa Rita, where the footprints were reported in 2002 and 2004, respectively. Although this first attempt to obtain definitive evidences to establish the presence of this species in El Salvador did not confirm the mentioned reports, there is a good possibility that some individuals of *T. bairdii* from Guatemala are exploring Salvadorian land due to the good quality of habitat observed particularly in the El Imposible National Park. Notably, some local inhabitants in the surveyed areas attest to never have seen a tapir.