Cerro Negro: An Important Mountain Tapir Conservation Area in the Piuran Andes, Piura and Cajamarca States, NW Peru

Craig C. Downer [1]

1 Wildlife Ecologist, President: Andean Tapir Fund
P. O. Box 456, Minden, Nevada 89423 USA
Email: ccdowner@yahoo.com

Abstract

Local Peruvians along with the Andean Tapir Fund are working together to establish a nature sanctuary in the Piuran Cordillera (a.k.a. *Cordillera de las Lagunillas*) of NW Peru, but must counter the designs of large mining companies. The sanctuary would center around Cerro Negro mountain and be located in both Piura and Cajamarca states. This area contains Peru's most crucial remaining occupied habitat for the endangered mountain tapir. It is also in the ecologically significant Huancabamba Depression, a region of high species endemism that provides a vital water source for a vast region whose rivers extend east to the Amazon and west to the Pacific, to parts of Ecuador as well as Peru. This sanctuary would provide a biological corridor connecting the mountain tapir population here found, and those of other rare/declining species, by means of free passage to the north, to Ecuador and beyond.

Keywords: Andes, biological corridor, endangered species, mining, mountain tapir, nature sanctuary, Peru, Piura

Introduction

One of the most important reasons populations of mountain tapirs are decreasing is loss of habitat. This loss is not localized but widespread, resulting in many small and unconnected tapir populations, rather than a few large ones. This problem, known as habitat fragmentation, is a compounding effect of habitat loss: the small fragmented populations are, individually, more susceptible to other causes of extinction, including catastrophes (e.g., large fires) and foibles linked to inbreeding depression, such as disease and genetic drift resulting in fixation of lethal alleles in the population (Brack Egg & Vargas, 2004).

Fragmentation is a particularly important concern for the endangered mountain tapir (*Tapirus pinchaque*), because this species inhabits „natural islands" located in mid- to high-elevations of the Andes of northern Peru, Ecuador and Colombia. Loss of habitat at all elevations within its range has created isolated „refuges" of tapir populations restricted to a few small areas, some higher, some lower (Downer, 1997, 1996). Hence, one of the most urgent conservation actions for mountain tapirs is to designate and legally protect natural corridors that connect the species' known populations in order to enhance genetic flow. Here I describe one such important area that has the potential to connect at least two known populations. I address what makes this area an important conservation target, its other conservation values, and potential conflicts with economic interests – the conservation challenge.

The Area

A recent study by biologists Diego Lizcano and Aivi Sissa (2003) reveals 206,000 hectares of remaining Andean forest and *páramo* (high northern Andean moorland above the treeline; also Spanish/English scientific name for this unique biome in the northern Andes [Davis, 1997]). This is suitable habitat for the endangered mountain tapir and includes areas around Cerro Negro, NW Peru, where the Andean Tapir Fund is proposing to create a nature sanctury (see Map 1). A recent WWF-Peru-sponsored evaluation by biologist Jessica Amanzo et al. (2003) recommends the conservation of 57,144 hectares as an extension of the existing 29,500-hectare Tabaconas-Namballe National Sanctuary (TNNS - see Map 2). Including the WWF-proposed extension of Andean forests and páramos and more, the proposed Cerro Negro Nature

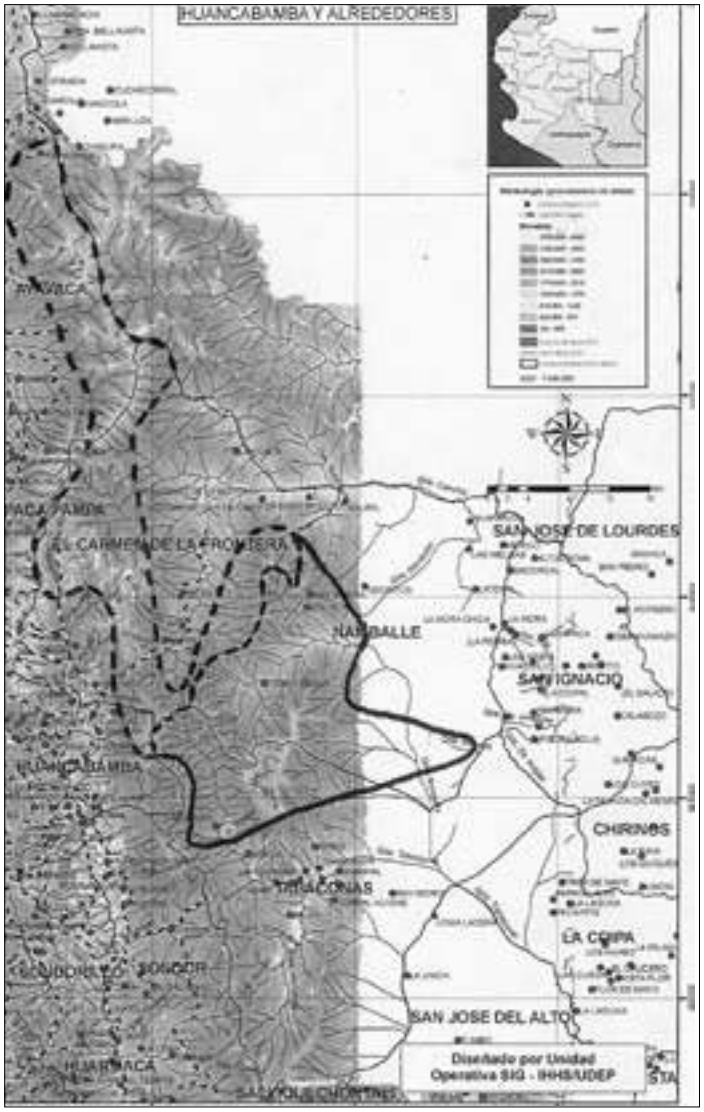

Figure 1. 57,144 ha Cerro Negro Sanctuary (dashed line).

Sanctuary would connect TNNS with areas in Ecuador. This would include areas already identified for reserve status in the provinces of Ayabaca and Huancabamba, Piura state, Peru, as well as adjacent areas to the east in Cajamarca state (or *departamento*). This area would be at least 150,000 hectares in size (see Map 3) and would include all areas recommended by Lizcano and Sissa (2003), and Amanzo et al. (2003). Given adequate protection and public cooperation, the proposed nature reserve could potentially become a biological corridor of great significance. It would link tapir populations in both TNNS and Ecuador. The Andean Tapir Fund is currently working with northern Peruvian communities, conservationists and government agencies to legally and professionally establish this *Santuario Natural Cerro Negro* (CEPA, 2006).

Conservation Value

Workers currently associated with the Andean Tapir Fund have made several expeditions and numerous observations in the area of Cerro Negro between 1988 and 2005; and they have also borrowed from the observations and reports of natives and local biologists familiar with this region (Downer, 2006, 2005, 2001, 1997, 1996, 1988, 1988-2006,; Zegarra-Pezo, 2006, 1985-2006). Resulting from these efforts are extensive species lists for four vertebrate classes - birds, mammals, reptiles and amphibians - as well as for major classes of plants. These lists contain annotations as to the degree of endemism and special conservation status of many of the species, and demonstrate the high degree of biodiversity and endemism that render the Cerro Negro area of high conservation value. Corroborating this, both local, or alpha, and regional, or beta, diversity were found to be high in the 57,144-hectare area proposed by WWF-Peru (Amanzo et al., 2003). Our combined results indicate that many species are specific to one particular habitat type of local occurrence, and that the biodiversity of the region as a whole is extraordinarily high.

For four vertebrate classes, percentages of species that are threatened with extinction are as follows: Birds: 23.7%, Mammals: 12.8%, Amphibians: 48.1%, and Reptiles: 57.1%. For these same classes, percentages of species that are considered endemic to this region of the Huancabamba Depression are: Birds: 8%, Mammals: 6.6%, Amphibians: 37%, and Reptiles: 42.9% (see Table 1) (CEPA, 2006).

The protected corridor in the form of the nature sanctuary would provide a connection along the entire northern Andes for the migration and genetic interchange of such seriously endangered species as the mountain tapir, the spectacled bear and the pacarana (both Spanish and English name, Family Dinomyidae). Furthermore, Cerro Negro is at the heart of a vital sub-ecoregion lying at the southern limit of the North Andes Ecoregional Complex. This complex has been identified as one of the 200 most important ecoregions in the world by a recently held World Forum for Nature (Torres-Guevara, 2006, p. 50 ff; see also Davis et al., 1997).

The Challenge

Around 700,000 hectares in the mountains and valleys of Piura and Cajamarca states have recently been tentatively designated to companies as mining concessions by Peru's national government, pending environmental assessments. The biggest concession was to the London-based Monterrico Metals plc, whose

Table 1. Taxonomic/Conservation Categories for Animal/Plant Species Lists for Proposed Cerro Negro. Special Conservation Status = Rare, Threatened, Endangered, Restricted Range, Focal Species.

Taxonomic Category	Orders	Families	Genera	Species	% Endemic Spp (Numbers)	% Special Conservation Status Spp (Numbers)
Birds	18	42	267	439	8% (35)	24% (104)
Mammals	10	38	142	196	7% (13)	13% (25)
Amphibians			13	27	37% (10)	48% (13)
Reptiles			11	14	43% (6)	57% (8)
Vascular plants, ferns & mosses		67	189	217	3% (7)	7% (16)

Peruvian company is Majaz (Downer, 2006). Massive mining projects are planned in and around the Cerro Negro mountain area where tens of thousands of hectares of cloud forest and treeless paramo provide a last refuge for the endangered mountain tapir and many other rare, endemic, and/or endangered species of plants and animals. Monterrico and other companies have plans to mine copper, molybdenum, gold, silver and zinc using the ecologically devastating process of open pit mining combined with heap leaching using cyanide and other noxious chemicals to extract the metals from the crushed ore. The rivers at risk include *Rios* Chira, Piura, Blanco, and Chipillico, of which the latter fills the agriculturally important San Lorenzo Reservoir. Also at risk are the Rio Quiroz, which fills the equally important Poechos Reservoir, and the important *Rios* Huancabamba and Chinchipe. The latter supplies the only nature reserve in the area, the 295,000-hectare *Santuario Nacional Tabaconas-Namballe,* home to the mountain tapir. The headwaters of the Rio Quiroz are affected by mining concessions originally designated for Newmont-USA, while the headwaters of Rio Chinchipe are seriously compromised by concessions designated to Monterrico Metals-Majaz, according to Piuran plant ecologist Fidel Torres Guevara (2006, 2003).

The millions of tons of waste rock that would be generated would continue to leach caustic sulfuric and nitrous acids for generations, releasing heavy metals that become incorporated into the food chain. The livelihoods of many thousands of peasants and townsfolk would be negatively impacted, as would Peru‘s 231,402-hectare Man and the Biosphere Site (*El Nor-Oeste* – Sp.) to the northwest. Many Peruvian laws should prohibit these mining activities, including those prohibiting the devastation of endangered species such as the mountain tapir, watersheds and the compromising of national security and the very welfare of future generations.

Due to imminent disappearance of glaciers from the Andes of Peru (as elsewhere), this nation’s remnant forests and paramos have become all the more vital to the future of agricultural production in the Andes; and there is no more important region of forest and paramo in Peru than that now jeopardized by the mining concessions here in question (Appenzeller, 2007; Torres-Guevara, 2006, 2003).

Though appropriate habitat for 350-375 mountain tapirs was estimated to exist in 2003 for northern Peru (Lizcano & Sissa, 2003), due to uncontrolled hunting combined with habitat destruction, it is estimated that only about half this number still survive (Lizcano et al, in press). If Monterrico-Majaz‘ Rio Blanco and other pending mining projects are allowed to proceed, a final death blow could be dealt to that ecologically important seed disperser and ancient living fossil in Peru known variously as *danta negra, gran bestia*, and „Ah-Ha!“ for the sound it emits when surprised, i.e. the mountain tapir (Downer, 2001, 1997, 1996).

The nationally promoted Rio Blanco mining project was rejected by 95% in a referendum by local communities (ENS, 2007), whose citizens cited among their reasons the preservation of the endangered mountain tapir. However, preliminary exploration in the project area has already caused significant ecological damage, according to a study by the University of Texas at Austin. This study projects very serious threats should the planned 1,000-hectare open pit mine proceed (Salazar, 2007). Though ca. 500 local jobs for several years might result, the true price that future generations would pay in terms of long-term sustainability, general water supply, ecological integrity and general quality of life would prove devastating (Appenzeller, 2007). It should

finally be mentioned that this natural Andean region is culturally important as a center of folk healing and spiritual refreshment (Downer, 2006). Currently (7/2009) a General Assembly of Andean communities is being organized where a map of the future sanctuary should be collectively defined and approved and a vote taken on whether or not to democratically establish this unique and crucially important nature reserve.

Acknowledgements

The author wishes to thank the Municipality of Ayabaca, Piura, Peru; CEPA of France, ZGAP of Germany, The Plant Family Environmental Fund, Dr. Jaime Cavalier & The Gordon & Betty Moore Foundation as well as his parents: Robert Carpenter Downer & Alice Gottschalk Downer for providing permission and/or support to the Andean Tapir Fund for this project.

References

Amanzo, J. et al. 2003 (December). Evaluacion Biologica Rapida del Santuario Nacional Tabaconas Namballe. WWF-Peru, Lima.

Appenzeller, T. 2007 (June). The Big Thaw. *National Geographic*. Pp. 56-71. Washington, D.C.

Brack Egg, A. & Vargas, C. M.. 2004. Ecologia del Perú. Editorial Bruno, Lima. (495 pp).

CEPA (Conservation des Especes et de Populations Animales). 2006 (Dec.). Projet de creation d'une aire protegee pour le tapir de montagne dans le nord-oest du Perou. CEPA Magazine No. 15. Pp 14-15. Fresnes, France.

Cavelier, J., Lizcano, D. Yerena, E. & Downer,.C. In press. The mountain tapir (*Tapirus pinchaque*) and Andean bear (*Tremarctos ornatus*): the two largest mammals in South American tropical montane cloud forests. Proceedings: „Mountains in the Mist" conference on cloud forests of the world organized by University of Hawaii, Waimea, Hawaii. July-Aug, 2004.

Davis, S.D., Heywood, V.H., Herrera-MacBryde, O., Villa-Lobos, J. & Hamilton, A.C. 1997. Centres of Plant Diversity: A Guide and Strategy for their Conservation. Volume 3: The Americas. WWF & IUCN. See Pp. 465-469, Huancabamba Region, Peru & Ecuador, (Tropical) Andes: CPD Site SA32. IUCN Publications Unit. Cambridge, U.K. (562 pp.)

Downer, C. C. 1988-2006. Field reports with descriptive species lists. Files of Andean Tapir Fund, P.O. Box 456, Minden, NV 89423 USA

Downer, C. C. 1988. Peruvian Mountain Tapir Trip Reports with Species Lists. April & August. Unpublished manuscripts. University of. Durham-UK (Department of Biology). April: Report: 21 pp, Species list: 5 pp; August: Report: 27 pp, Species list: 5 pp.

Downer, C. C. 1996. The mountain tapir, endangered 'flagship" species of the high Andes. *Oryx* **30**(1): 45-58.

Downer, C. C. 1997. Status and Action Plan for the Mountain Tapir (*Tapirus pinchaque*).**In**: Tapirs: Status Survey and Conservation Action Plan (D.M. Brooks, R.E. Bodmer, S.M. Matola, Eds.). IUCN SSC Tapir Specialist Group, Gland, Switzerland.

Downer, C. C. 2001. Observations on the diet and habitat of the mountain tapir (*Tapirus pinchaque*). *Journal of Zoology, London* **254**:279-291.

Downer, C. C. 2005 (December). Agonia de los Tapires de Montaña/Agony of the Mountain Tapirs. *Rumbos de Sol y Piedra*, Año IX, No. 44, pages 34-48, with color photographs. (Bilingual).

Downer, C. C. 2006 (Febr. 6). INSIGHTS: Mining Peru's Andean Forests Puts Unique Species, Ecosystem at Risk. *Environment News Service*: http://www.ens-newswire.com/ens/feb2006/2006-02-06-insdow.asp

Duellman, W.E. & Wild, .E.R. 1993. Anuran amphibians from the Cordillera de Huancabamba, northern Peru: systematics, ecology, and biogeography. *Occasional. Papers: Museum of Natural History, University of. Kansas* **157**:1-53.

ENS (*Environment News Service*) 2007 (10/10/07). Peruvians Vote 95% to Save Andean Forests from Mining. www.ens-newswire.com_

IUCN. 1996/2002. 1996/2002 IUCN Red List of Threatened Animals. IUCN, Gland Switzerland.

Lizcano, D. J. & Sissa, A.. 2003 (June). Notes on the Distribution and Conservation Status of Mountain Tapir (*Tapirus pinchaque*) in North Peru. *Tapir Conservation*, Vol.12, No. 1, pages 21-24. IUCN Species Survival Commission, Tapir Specialist Group.

Parker III, T.A., Schulenberg, T.S., Graves, G.R. & Braun, M..J.. 1985. The avifauna of the Huancabamba region, northern Peru. *Ornithological Monographs* **36**:169-197.

Ridgely, R.S. & Tudor, G. 1989. Volume I: The Oscine Passerines. The Birds of South America. University of Texas Press, Austin. (516 pp.).

Ridgely, R.S. & Tudor, G. 1994. Volume II: The Suboscine Passerines. The Birds of South America. University of Texas Press, Austin. (814 pp.).

Salazar, M. 2007 (Sept. 12). Peru: Mining Project Hurting Highland Ecosystem. www.ipsnews.net/print.asp?idnews=39233

Torres-Guevara, F. 2003. Mineria Metalica bajo El Niño en Piura: Injustificado Riesgo para su Vida y Desarrollo. Colectivo Piura, Vida y Agro "Godofredo Garcia Baca", Piura, Peru. (174 pp.)

Torres-Guevara, F. 2006. Escenario de Riesgo para el Agua y la Biodiversidad: Pretension de mineria metalica en las cuencas del norte del Peru. Colectivo Piura, Vida y Agro "Godofredo Garcia Baca", Piura, Peru. (159 pp.).

Zegarra-Pezo, A. A. 1985-2006. Reports, articles, species lists and photographs from montane forests and paramos of Cordillera de las Lagunillas. Files: Pro-Norte Peru, Sullana, Piura, Peru.

Zegarra-Pezo, A. A. 2006. Lista Preliminar de Especies de Fauna Registradas en Cerro Negro y Anexos, Ayabaca-Piura, Peru. Unpublished manuscript. Andean Tapir Fund-US. 33 pp.