



**TAPIR PROJECTS**  
Endorsed by  
The IUCN/SSC Tapir Specialist Group (TSG)

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# BAIRD'S TAPIR

## BELIZE

### Raising Awareness about the Central American Tapir in Belize

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**ABSTRACT:** The program will involve the distribution of a poster designed to alert citizens regarding the need to preserve important tropical habitat in order to sustain remaining populations of Baird's tapirs in Belize. The Belize Zoo education department frequently takes programs to schools and communities throughout Belize. This added resource would serve to empower efforts aimed at bringing about a greater appreciation for the country's populations of tapir. The simple message would convey that keeping tapirs in Belize requires keeping forest habitat intact. The Belize Zoo has found that, over the years, these types of messages combined with attractive posters, serves an important role in seeing that a greater environmental awareness develops.

**Project Status:** Seeking Funding

**Project Budget:** US\$5,000

**Amount of Funding Currently Sought:** US\$5,000

## COLOMBIA

### Geographic Distribution of *Tapirus bairdii* in the Darién Region of Colombia

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**ABSTRACT:** The Darien region of Colombia has been identified as a high-priority area for biodiversity conservation. The *Fundación Darien* is a NGO which has been working in the area for the last 15 years, promoting conservation initiatives. This NGO is working on a conservation strategy which includes the establishment of private reserves, and promotion of sustainable development projects. *Tapirus bairdii* was selected as a focal species for conservation in the region. *T. bairdii* had not been sighted in the Darien region for 15 years until 2001 when a population was located in Los Katios National Park. Population density was estimated at two river basins within the park, using information from the only recent, confirmed records of *T. bairdii* in Colombia. We then recommended verifying the presence of this species in the northern part of the park and the coastal area near to Serrania of Tripogadi. Such activity is currently ongoing. Some indigenous communities in the area have shown interest in conserving this species and we have approached them with the suggestion of developing a conservation project. The objective of this proposal is to verify information concerning new distribution records of *T. bairdii* in the Darien region of Colombia. The first phase would be to locate and georeference new distribution sites for the species in the region, and also to work with the indigenous communities to develop a solid conservation proposal for *T. bairdii* in the area.

## COSTA RICA

### Conservation of the Central American Tapir (*Tapirus bairdii*) and the La Amistad International Park, Costa Rica & Panama

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**ABSTRACT:** "La Amistad" International Park (PILA), with almost 200,000 hectares in Costa Rica is the largest in the country. It forms part of a Trans-frontier Park with Panama and is the main core area of the La Amistad Biosphere Reserve (RBA). This park possesses a great variety of microclimates, extensive forest cover and an important connector for future biodiversity preservation in both countries; the fact that tapir populations are found from 500 masl to 3,600 masl confirms that. The park is large and inaccessible due to steep slopes and has limited funds, the true situation of its ecosystems and biodiversity is not accurately known. Culturally, the PILA is surrounded by the Bribri and Cabécares indigenous communities on the Costa Rican side and the Teribes and Ngöbes peoples are found in the Panamanian part. In the past, these communities had important hunting areas that were sacred to them. For them, tapirs had a deep sacred and symbolic value. A study which began in the field in January 2004 is looking at the abundance, diet, home range and important areas for tapir survival in order to strengthen the management of the PILA in both countries while fostering local participation for conservation goals. Indigenous communities, local rural communities, national environmental authorities (ANAM and MINAE) and international agencies (CI) are involved. After 22 months of investigation, with 182 days of fieldwork and 18 days of special events, our findings can be summarized in three categories: i) Perceptions of park and tapir conservation by indigenous peoples, peasants and environmental organisms; ii) Tapir ecological information (diet, abundance and biosphere areas conservation); iii) Socio-biological integration for biodiversity conservation.

**Project Status:** Ongoing

**Project Budget:** US\$30,000

**Current Funding Sources:** Critical Ecosystem Partnership Fund (CEPF) - Conservation International.

**Amount of Funding Currently Sought:** US\$10,000

## Selection and Reflection in a Large Herbivore: *Tapirus bairdii*'s Browse Selection in a Costa Rican Rain Forest

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**ABSTRACT:** Foraging theory is a key concept in ecology underlying the diet selection in all animals. Plant selection by large herbivores is particularly important because they have the potential to shape plant diversity in an ecosystem. Hence, greater emphasis is being placed on understanding the link between how and why food resources are chosen. In Neotropical forests, Baird's tapir (*Tapirus bairdii*) is among the largest herbivores and as such has the potential to influence plant communities. My research focuses on the foraging selection of Baird's tapir at Corcovado National Park, Costa Rica, their mechanisms behind plant selection and the consequences to the plant community. Additionally, I want to determine if patterns of tapir foraging may impact food web components, such as the *Heliconius* butterfly community that depends on specific plant species selected by the tapir. In summer 2005, I conducted a pilot study using the point - quarter technique to determine if tapirs select for specific plant species and to quantify the frequency individual plants are browsed. First, I found that tapirs selected particular species. Frequently after new growth appeared the same individuals were re-browsed. Additionally, species that were consumed are known to contain potentially harmful secondary plant compounds. For example, tapirs often selected plants of the family Sapindaceae, which contain aglycones, which are easily converted to Hydrogen cyanide (HCN) in the presence of fermenting bacteria (as in the enlarged cecum of tapirs), or Rubiaceae which contain alkaloids. These compounds may aid in digestion or act as self-medicating agents. Second, tapirs foraged twice as often in secondary forests as in primary forests, which may be due to several factors: specific plant composition, elevation, amount of water or understory biomass. This study serves as the basis for my future research, which will address foraging mechanisms of the tapir as well as the cascading effects of tapir foraging on the community. Specifically, I will determine: (1) the nutritional intake of wild tapirs compared to theoretical nutritional requirements. (2) If tapirs are selecting or rejecting plants based on these nutritional needs or specific secondary compounds. (3) How the tapirs are able to determine the nutritional or chemical makeup of a plant. (4) Finally determine what food webs are being affected the most by tapir foraging. Understanding the mechanisms behind the diet selection of herbivores will allow us to better understand the interactions of the ecosystems that need to be preserved, maintained or created to continue the conservation of this amazing herbivore. This information is not only beneficial to the tapir but can potentially lead to mechanisms applied to all foraging ungulates and their effects on the ecosystem.

**Project Status:** Seeking Funding

**Project Budget:** US\$17,980

**Amount of Funding Currently Sought:** US\$9,640

## Habitat use, Relative Abundance and Diet of Baird's Tapir (*Tapirus bairdii*) in Tortuguero National Park & Barra del Colorado Wildlife National Refuge, Costa Rica

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**ABSTRACT:** Costa Rica is one of the countries with the highest number of research projects focusing on Baird's tapir. These studies have been focused on lowland forests such as Corcovado National Park, Santa Rosa National Park, Arenal Conservation Area; and on highlands such as Talamanca Mountain Range and Wildlife Refuge Cerro Dantas. However, there is a lack of knowledge regarding Baird's tapir in other areas within its range in Costa Rica. In many Areas of Conservation, the presence of tapirs has only been documented by direct observation or by sign. However, these data have not been taken into account to estimate the total population of Baird's tapir in Costa Rica. Barra del Colorado Wildlife Refuge (81.211 ha) and Tortuguero National Park (31.187 ha), located on the Caribbean side of Costa Rica, are two of the areas, where it is known that tapirs are present but there are no scientific data to support this. The Caribbean side is known as one of the sites with the highest biodiversity in Costa Rica, because of its wide vegetation surface enclosing a high percentage of endemic species. Baird's tapir is endangered due to habitat fragmentation and loss and hunting. Generation of information about the species and its

status in protected areas will provide us with tools to develop appropriate management plans. Knowing what we have and knowing what kind of efforts we need to make means that we can guarantee the conservation of Baird's tapir, not only at a regional level, but also at a national level. Direct methods such as direct sightings and, indirect methods such as observations of signs (tracks, feces) will be used to calculate relative abundance, preference or habitat use and dietary habits in the area. I will develop a list of plant species consumed or potentially consumed by Baird's tapir. A long-term project is then planned to include radio telemetry and other more advanced methods to allow better techniques to preserve the species and its habitat.

**Project Status:** Seeking Funding

**Project Budget:** US\$10,000

**Amount of Funding Currently Sought:** US\$10,000

## ECUADOR

### Determining the Presence of Baird's Tapir (*Tapirus bairdii*) in Northwestern Ecuador

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**ABSTRACT:** Baird's tapir (*Tapirus bairdii*) is considered Critically Endangered within Ecuador (Red Book of Mammals, 2001). Its presence within Ecuador is currently contested. The only record of the species in Ecuador is found in a newspaper report from 1974, along with oral reports from farmers in the Esmeraldas and Imbabura Provinces and from park rangers within the Cotacachi-Cayapas Ecological Reserve (CCER). They claimed in 1999 that they observed tracks and an individual. This project will attempt to find tracks and to directly observe Baird's tapir in order to verify whether the species exists in North-western Ecuador. If it does exist we will propose urgent measures to be undertaken for the protection and conservation of this species.

**Project Status:** Ongoing

**Project Budget:** US\$6,180

**Current Funding Sources:** Fundación Espíritu del Bosque (FUNDEBO) - Andean Bear Project

**Amount of Funding Currently Sought:** US\$2,000

## GUATEMALA

### Establishment of a Baird's Tapir (*Tapirus bairdii*) Population Monitoring Program in Three Protected Areas at Izabal, Guatemala

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**ABSTRACT:** The tapir is the largest mammal of the Neotropics, however, very little is known about this species, even though it is in danger of extinction all over its distribution range. In Guatemala the implementation of a *National Action Plan for the Conservation of the Tapir and Its Habitat* is beginning. The determination of the distribution and abundance of this species is one of its priorities. It is for this reason that the present project looks for a way to establish a monitoring program in which the population abundance is considered, allowing the authorities in the future to determine the changes in population size over time and to establish the impact of human actions on the same. The project will be focused on the larger protected areas in the state of Izabal, Guatemala. It will begin with Phase I in Reserva Natural de Usos Múltiples Río Sarstún. The monitoring will be carried out using remote detection cameras, which would be placed in proportion to the different types of habitat, over a period of 60 days during the 2007 dry season. From the data that are obtained, we will be able to determine the population abundance, the types of habitat used and preferred by the species, and its patterns of activity. In addition, data including the presence of other species associated with tapir habitat will be obtained. Phase II will

include monitoring three protected areas during the dry season for two years, including RNUM Río Sarstún and two more areas. We hope that this program will be a model that could be used in other protected areas of the country, in a way that they will be managed and implemented as a monitoring program at a national level that will allow us to compare the status of tapir populations. Additionally, these would be used for the development of the *National Action Plan for the Conservation of the Tapir and Its Habitat*.

**Project Status:** Ongoing

**Project Budget:** US\$220,000 (Phases I, II, and III)

**Current Funding Sources:** Escuela de Biología, Universidad de San Carlos, Guatemala (US\$ 3,550); FUNDAECO, Guatemala (US\$2,200); Idea Wild, USA (US\$4,000 Pending); Fondo para el Desarrollo de la Ciencia y Tecnología (FODECYT), Guatemala (US\$300 Pending); and Wildlife Conservation Society (US\$15,685 Pending).

**Amount of Funding Currently Sought: US\$5,000**

## HONDURAS

### Abundance, Distribution and Conservation of Baird's Tapir (*Tapirus bairdii*) in the Natural Area of Rus-Rus, La Moskitia, Honduras

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**ABSTRACT:** This research project will assess the abundance, distribution and habitat use of the Baird's tapir population in the proposed protected area of Rus-Rus in southeastern Honduras. This natural area is located near the border with Nicaragua in the area known as La Moskitia and is part of the largest area of continuous pristine forest in Central America. The *Tapirs Status Survey and Conservation Action Plan* (IUCN/SSC 1997) mentions that it is highly important to do baseline status surveys of tapir populations in Honduras and Nicaragua. Transects will be located in all the habitats represented in the area, the presence and the number of tracks per transect will be used to assess abundance and distribution. Interviews will be conducted with householders and hunters from the villages around Rus-Rus to assess the importance of tapir meat for this indigenous community and possible human impacts on tapir populations. All sampling areas will be marked with a GPS and maps will be generated with ARC/VIEW 3.2. Dietary information will be obtained from tapir feces. All data will be presented to the Honduran office in charge of protected areas and to the community of Rus-Rus in the hope that it might be helpful for the management and protection of this natural area.

**Project Status:** Ongoing

**Project Budget:** US\$7,000

**Current Funding Sources:** Tapir Specialist Group Conservation Fund (TSGCF)

**Amount of Funding Still Sought: US\$1,600**

## MEXICO

### The Biology, Ecology, and Conservation of Baird's Tapir in Chiapas, Mexico

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**ABSTRACT:** This study seeks funding for capture, restraint, and monitoring equipment necessary for a Mexican zoo-based field study on the conservation status of Baird's tapir populations in the Sepultura, El Triunfo and El Ocote Biosphere Reserves of Chiapas, Mexico. During a 36-month period, researchers from the Zoológico Regional Miguel Álvarez del Toro (ZOOMAT) will capture, radio collar and monitor up to nine animals living in and around the Sepultura, Triunfo and Ocote reserves. Important data such as daily activity patterns, habitat use and home range size will be gathered using radio telemetry, visual tracking, and indirect observation methodologies. Dietary habits

and feeding behavior will be evaluated by gathering and identifying local fruit and plant species consumed by the study animals. Animal captures will provide a unique opportunity to collect a wide range of medical data including blood serum samples, skin biopsies, and external parasites. Overall health of tapir populations in the reserves will be evaluated using these data. The collection of medical data will also help determine whether illnesses such as Venezuelan equine encephalitis, documented in domestic farm animals in the surrounding area, threaten the health of the tapir populations in these Reserves. Information gathered during the field study will aid in the development of future management plans for Mexico's remaining Baird's tapir populations as well as improved captive management protocols for animals currently held in zoo collections throughout Mexico.

**Project Status:** Seeking funding

**Project Budget:** US\$4,570/year

**Current Funding Sources:** Local organizations

**Amount of Funding Sought:** US\$3,000

## Conservation Biology of Baird's Tapir in the Zoque Forest, Mexico

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**ABSTRACT:** Apart from the clearly important ethical and historical reasons for protecting tapir, they are also crucial components for the maintenance of natural systems. As an umbrella species, tapir contribute to the process of planning for reserve size and configuration. Because tapir are sensitive to hunting pressures and habitat changes that affect cover and water sources, they are good indicators of intact ecosystems and functioning ecological processes. As important cultural icons, tapir are often used as the focus of education and public relations programs. They are keystone species that contribute to the integrity of ecosystem structure and function. This latter role is often little understood and thus not fully appreciated. The behavior and activities of tapir ripple through the trophic levels of a system and affect species that seem distantly related taxonomically and ecologically. Yet, despite their apparent importance, we know little about their ecology and behavior. More research and field data are necessary for the conservation of this species and for conservation planning of the landscape in which they occur. The objectives of this study are: (1) to estimate the distribution, abundance, home range, habitat use, and movement patterns of Baird's tapir populations in the Chimalapas forest; (2) to assess the impact of hunting on the species; and (3) to propose a conservation strategy incorporating the monitoring of the species in collaboration with local inhabitants. We will address these objectives by estimating animal population densities, harvest rates, and movement patterns in both non-hunted and persistently hunted sites within the study area. The techniques to be used will include transect sampling, radio-telemetry, collection of skulls, interviews, and workshops in two localities of the Chimalapas forest. The conservation proposal will be structured on the basis of the results of this study, and discussions with residents, local authorities, and researchers.

**Project Status:** Ongoing

**Project Budget:** US\$50,000

**Current Funding Sources:** Secretaria de Medio Ambiente y Recursos Naturales (SEMARNAT), Dirección de la Región Prioritaria para la Conservación San Isidro La Gringa Chimalapas, Comisión Nacional de Áreas Naturales Protegidas (CONANP), Mexico; Tapir Specialist Group Conservation Fund (TSGCF); Zoo Conservation Outreach Group (ZCOG), United States; and Universidad del Mar (UMAR).

**Amount of Funding Sought:** US\$5,000

## Consequences of the Anthropogenic Loss of Herbivorous Mammals for the Rain Forest Plant Diversity and Regeneration

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**ABSTRACT:** The unprecedented rate of decimation of tropical mammals makes the understanding of the ecological consequences of their loss an urgent need. Large herbivores such as tapirs are particularly prone to be affected by the main drivers of defaunation (habitat loss/hunting) because they are greatly appreciated game species and have large home ranges. Growing evidence suggests that the extirpation of herbivorous mammals might have profound effects for the regeneration of tropical rain forests. These effects include the alteration of one of the most distinctive features of this ecosystem: its floristic diversity. Yet, direct observation of herbivory and its effects on the understory community are difficult to document. Thus, for this study we plan to set up an experimental design that allows for a detailed quantitative assessment of the effect of herbivorous mammals on the understory in terms of plant mortality/recruitment and seedling/sapling community diversity. Our design consists of a set of exclosures and control plots to be set up in the rain forest of the Montes Azules Biosphere Reserve in the state of Chiapas in Southeast Mexico. This site is the largest remnant of rain forest in the northern limit of distribution of this ecosystem in the Americas and maintains what it seems to be the most conserved and diverse rain forest mammalian community in Mexico. This level of conservation of the fauna makes feasible to experimentally mimic defaunation using exclosures to evaluate its effect on the vegetation under conditions that minimize the influence of other factors such as soil and light heterogeneity. Our exclosures will be of two types: i) complete and ii) semi-permeable. Each complete exclosure will consist of a 3X6 m area protected by a wire fence (1 m height) and a steel rodent proof wall (60 cm height) extending 30 cm above the ground. Within each exclosures a central plot of 1X4 m will be marked and divided in four 1X1 m sub-plots with PVC stakes. Within the 1X4 plot all the plants with a height  $\geq 10$  cm and a DBH  $\leq 5$  cm will be identified to species, tagged and measured (height and/or DBH). In addition, location of tagged plants will be recorded in a map. Plants  $< 10$  cm will be counted. Horizontal plant cover will be estimated placing a vertical 1 m metallic needle in the geometrical center of each of the 1X1 m sub-plots and counting the number of plants touched. Semi-permeable exclosures will follow the same design but instead of the steel wall at the base they will have a 20 cm high gap to allow access for small mammals. Each exclosures (complete and semi-permeable) will be accompanied by 1X4 m control plot where the same measurements will be recorded. Each control plot will be placed at a random point 10m apart from the corresponding exclosure. Distance among pairs of exclosure/control plots will be at least 50 m. A total of 25 complete exclosures, 25 semi-permeable exclosures and 50 control plots will be set up. Measurements will be repeated every year for five years. Statistical comparison between control and total excluded plots will provide an estimation of the effect of a total absence of understory dwelling herbivorous mammals on plant structure and diversity. The contrast between total and semi-permeable exclosures will provide a comparison of the effect of large mammals vs. medium and small mammals. One of the particular strengths this approach has is that its experimental protocol is based on the methodology used by the project "Influence of large herbivores on Neotropical forests" coordinated by the Tapir Specialist Group and currently being carried out in five countries of Latin America (Argentina, Brazil, Colombia, Costa Rica and Peru). This makes the results of this study amenable to be analyzed and compared in a wide geographical context. In addition, our site will provide information from the northernmost limit of distribution in the continent of large herbivores such as tapirs, white lipped peccaries and red brocket deer.

**Project Status:** Seeking Funding

**Project Budget:** US\$42,242 (Total budget) – Installation and first survey (US\$20,242); Year 2 (US\$5,500); Year 3 (US\$5,500); Year 4 (US\$5,500); Year 5 (US\$5,500)

**Amount of Funding Sought:** US\$42,242

## PANAMA

### Distribution and Conservation Status of the Baird's Tapir (*Tapirus bairdii*) in Panama

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**ABSTRACT:** Although Panama was ranked as having the highest expected population of wild Baird's tapir in Central America and Mexico, as a result of the 2005 TSG Belize workshop, no study on wild tapirs has been carried out in this country since the late 70's and no management program for captive tapirs exists. Panama still conserves almost 50% of its land with forest cover in which tapir observations are frequent. Nevertheless, Panamanian tapirs are threatened by habitat loss and hunting. This 7-month study proposes to: 1) update the information on tapir distribution in Panama; 2) identify protected and non protected areas where tapirs still exist; 3) identify and rank main threats; 4) identify and assess tapir potential forested habitat availability; 5) assess the management programs (e.g. education, conservation, research) for tapirs in zoos and private collections; 6) update the baseline information for developing tapir conservation strategies. A team of researchers will survey Panama's nine provinces and two indigenous reserves. Reported or potential sites for tapirs will be identified and visited with the aid of forest cover maps, and interviews will be carried out targeting local park personnel, hunters, conservationists, and community leaders. Additionally, a survey will be carried out targeting regional and national park and wildlife personnel, NGO members, and national and international scientists. The field study will also include visits to the most important zoos in Panama, to interview zoo personnel and assess their captive management programs. Tapir distribution will be related to land use and forest cover with the aid of a GIS system. All data gathered from visits to wild lands and zoos, and from interviews/surveys will be categorized, included in a database, analyzed, and interpreted. The main conservation significance of this project is the following: 1) The collection of detailed and accurate field data on tapir distribution and threats will serve as baseline for government agencies and NGOs to develop conservation strategies at national or local level; 2) The information on the status of captive management programs in zoos and private collections will serve as a baseline to develop standard guidelines or regulations to carry out conservation, educational, and research activities with captive tapirs; 3) The results from this study will serve as cornerstone to develop the Tapir National Conservation Action Plan for Panama.

**Project Budget:** US\$47,181

**Current Funding Sources:** US\$28,000 (in-kind contributions); and Panama Environmental Authority (ANAM)

**Amount of Funding Sought:** US\$19,181

# LOWLAND TAPIR

## ARGENTINA

### Sport Hunting of Native Mammals in North Western Argentina

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**ABSTRACT:** Wild mammals and birds constitute one of the more attractive taxonomic groups for humans and the most utilized terrestrial taxon with direct economic value (direct market value). The species of direct market value are those utilized for commercial consumption (meat), or tourism reasons. The sport hunt or weekend hunt is very popular in the Argentinean northwest (ANW). This activity is not well controlled in the region and no studies exist on the impact of sport hunting on wild mammal populations. Illegal hunting is very common and it affects endangered species such as the tapir and jaguar. Argentina is promoted in the world as an excellent hunting destination. There are many safaris and private hunting ranches where both native and exotic species, including some protected species are hunted. These private areas are poorly controlled and documented. We carried out surveys, in different points of the ANW to establish the number and locations of private hunting ranches. We interviewed local and non local hunters to establish hunt areas, hunted species, official controls and intensity of the sport hunt. The collected specimens will be utilized for distributional, genetic and taxonomic surveys. We want to develop a hunting map of the northwest, indicating areas with low, medium and high levels of hunting. A later stage of the project will be looking at the impact this activity has on native mammals.

**Project Budget:** US\$6,000/year

**Amount of Funding Sought:** US\$6,000

### Reintroduction of the Lowland Tapir (*Tapirus terrestris*) in the Province of Tucumán, Argentina

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**ABSTRACT:** The lowland tapir (*Tapirus terrestris*) is endangered in Argentina, like many other of the country's large mammals such as jaguar, huemul and pampas deer. The tapir has been extinct since the 50's in the province of Tucumán in the Argentinean Northwest, fundamentally due to the habitat loss and to illegal hunting, to which it is particularly sensitive. Given their large size and their important ecological role, tapirs have the characteristics of an umbrella species that could help conserve the ecosystems in which they live. Some of these ecosystems, such as the Premontane Forests, are considered the most threatened ecoregions in Argentina. There are few records for the reintroduction of large mammals in Argentina and those that have taken place suffered from inappropriate planning and execution. The Universidad Nacional de Tucumán (National University of Tucumán - UNT), have two of the three university reservations in the country, both totaling more than 14.000 hectares. These are the Reserva Universitaria Sierra de San Javier (San Javier Hills University Reservation – RUSSJ – 14000 ha) and the Reserva Experimental Horco Molle (Horco Molle Experimental Reservation – REHM- 200 ha). They occupy 70% of San Javier's Hill, located 15 km to the west of the city of San Miguel de Tucumán, capital of the province of Tucumán. The university reserves have Yungas vegetation with secondary vegetation of premontane forests in the foot hills. Since 1989, the REHM has developed a successful program of tapir breeding in semi captivity plus a program of environmental education. Both are considered key points to develop a tapir reintroduction project in the province. The main objective is to create, within 5-10 years a population nucleus of 40 to 70 reproductive individuals inside the university reserves with the capacity to disperse within the rest of the protected and non protected natural areas (Yungas) of the province. We hope to inspire favorable public opinion towards the project. The activities of environmental education will focus on the hunting community and people around the reserves. Economic

resources, for local human population, will be generated through an expected increase in ecotourism in the areas of reintroduction. The animals to be released will be subjected to quarantine and a period of acclimatization at the REHM. Some of them will also be used as *in situ* reproducers, under semi captive conditions. Exchanges with zoos are also planned. Activities post release will include intense monitoring to allow us to evaluate the results of the project. These results will be used to adapt management activities and contribute to the TSG guidelines for tapir reintroduction and translocation.

**Project Budget:** US\$20,000 (2 years - US\$10,000/year)

**Amount of Funding Sought:** US\$10,000

### Tapir Conservation Project among Argentinean Zoological Institutions

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**ABSTRACT:** In Argentina there are eleven (11) institutions that hold a total of 48 tapirs (*Tapirus terrestris*) in captivity or semi captivity. The objective of the Argentinean Tapir Group is that all the institutions that hold *Tapirus terrestris* have the same working criteria and guidelines that follow the recommendations of the IUCN/Tapir Specialist Group, in order to contribute to the conservation of this species in Argentina. To reach this goal, the group will carry out a workshop every year in order to define its conservation actions and priorities. Last year, two workshops were held, the first one was held in Temaikén Wild Animal Park (May 2005) and the second was in Horco Molle Experimental Center (December 2005). During these workshops the group defined the following issues: Animal identification: photos of the body marks and/or Microchips (AVID); Genetic studies: These need to be addressed to ascertain the degree of inbreeding of tapirs in captivity. This action will be performed in cooperation with the IUCN TSG Genetic Committee; Health studies: These will be based on serological samples in order to check diseases such as Vesicular Stomatitis; Aujeszky, Encephalomyelitis, etc; Develop a studbook for the species: Develop common criteria for the management of captive tapirs. This will take into account nutritional aspects, reproduction, capture (physical and chemical), enclosures for tapirs (Ref. Tapir Husbandry Manual). The next meeting will be held in May 2006 at the Cordoba Zoo. It is planned to invite the Fauna Governmental staff in order to introduce them to the Argentinean Tapir Group.

**Project Status:** Ongoing

**Project Budget:** US\$2,800

**Amount of Funding Sought:** US\$2,800

### Current Distribution, Conservation Status & Action Plan for Tapirs (*Tapirus terrestris*) in Argentina

#### Silvia C. Chalukian

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**ABSTRACT:** During a workshop about the status of lowland tapirs within their range, it was agreed that tapir status in the area of the Chaco biome is still largely unknown. Tapirs are known to occur in this area but no information available on their current status or population trends. Using satellite images, we will detect potential habitat for tapirs in the Chaco region and select the target areas in which to record tapir presence, current threats and local people's knowledge and perceptions through interviews previously developed for other areas. Results will be mapped as a GIS project including current and past distribution, current and potential threats, human settlements etc. Information will be added to the National Conservation Action Plan for tapirs in Argentina.

**Project Status:** Seeking Funding

**Project Budget:** US\$6,000

**Amount of Funding Currently Sought:** US\$6,000

## Tapir Density, Range and Habitat Use in El Rey-Centinela Conservation Unit

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**ABSTRACT:** The El Rey-Centinela Conservation Unit, located in the mid-Yungas region, includes El Rey National Park (44,000 ha) and many private lands that still maintain a considerable amount (about 380,000 ha) of continuous montane forests, which have been only slightly disturbed, and modified by humans. Basic ecological information to enable the design of adequate space (reserves, buffer zones, corridors, etc.) for long-term survival is urgent. These strategies need to be supported with basic ecological information, focused on the most sensitive set of species. Using non-invasive methods such as digital camera traps, track analysis and transects in different areas of the Park and nearby lands, we will assess density, home range and habitat use of tapirs in order to find out their basic range needs.

**Project Status:** Ongoing

**Project Budget:** US\$21,600

**Current Funding Sources:** Wildlife Trust, United States

**Amount of Funding Sought:** US\$21,000

## Habitat Use by Large Ungulates in El Rey National Park, Salta, Argentina

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**ABSTRACT:** Large herbivores have a significant impact on the structure and function of natural ecosystems. Local extinctions or population declines may cause the disruption of some key ecological processes, compromising the long-term integrity and biodiversity of the ecosystem. In Argentina, large ungulates have adapted to stressful conditions (less fruit availability, seasonality, less plant diversity, cattle farming), so it is extremely important to protect their populations, as intra and inter-specific relationships could be quite different in other areas of their distribution. In El Rey National Park, located in the Montane Forests region, four large herbivores can be found: lowland tapir (*Tapirus terrestris*), white lipped peccary (*Tayassu pecari*), collared peccary (*Pecari tajacu*) and two species of brocket deer (*Mazama americana* and *M. gouazoubira*). Habitat use will be estimated in five different habitats (three altitudinal ranges and secondary and mature forests), evaluating tracks in track traps along transects.

**Project Status:** Seeking funding

**Project Budget:** US\$6,500

**Amount of Funding Currently Sought:** US\$6,500

## Assessment of Corridors and Dispersal Routes Available for Lowland Tapirs (*Tapirus terrestris*) Between National Parks and Buffer Zones in Northwestern Argentina

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**ABSTRACT:** Little is known about lowland tapirs in Argentina, the southernmost limit of their distribution, where they are considered locally vulnerable because of habitat reduction and disturbance, and hunting. Additionally, tapirs share much of their habitat with cattle, which depredates resources and causes competition for space and food. This determines that increasing isolated populations in National Protected Areas is a trend that should be mitigated and managed. Dispersal routes should be evaluated and managed, through natural corridors between protected areas and private lands that surround them and eventually might connect with another protected nucleus. In the Northwest of Argentina, they are protected in three national parks, Baritú, Calilegua and El Rey,

but the connections between these areas is currently at high risk, particularly in the southern portion. By evaluating potential (GIS analysis) and current (field assessment) main dispersal routes for tapirs to and from the El Rey National Park, we intend to gather information about: a) protected areas as sources of wild populations; b) suitable sizes that protected areas should have for tapir populations; c) movements of tapirs in the area; d) habitat characteristics of suitable routes; e) relationships between populations using a non-intrusive method for DNA analysis with feces. Fieldwork includes detection of tapir routes by tracks, track analysis and photographic records (photo traps), habitat characterization, feces collection and analysis. Information for the minimum size of reserves and reserve design planning, as well as to support the hypothesis of the Parks' role as source of tapirs will be provided, based on tapirs' needs.

**Project Status:** Seeking funding

**Project Budget:** US\$20,000

**Amount of Funding Currently Sought:** US\$20,000

### The Influence of Large Herbivores on Neotropical Forests

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**ABSTRACT:** The project "Influence of Large Herbivores on Neotropical Forests" is a coordinated research initiative conducted in four field sites in four countries of Latin America: El Rey National Park in Argentina, Morro do Diabo State Park in Brazil, Los Nevados National Park in Colombia, and Corcovado National Park in Costa Rica. This project is an innovative conservation initiative and will investigate the role large herbivores (tapirs, deer, peccaries etc) play in maintaining and shaping Neotropical forests. Many ecologists have documented the important roles played by large mammals in seed dispersal, seed predation, herbivory, and pollination, but until recently few have considered what would happen if large mammals were removed from the system. The primary goal of this project is to describe the influence large herbivores exert on the plant communities of five different Neotropical ecosystems of Argentina, Brazil, Colombia, and Costa Rica. Specifically, the main objective is to examine how the removal of large herbivores will affect the physical structure and floristic diversity of the understory plant communities in primary and secondary forest habitats at each site. In order to simulate the removal of large herbivores from the forests, we will construct exclosures to prevent them from foraging on vegetation in selected areas. Data will be gathered on variables to describe structural and floristic changes in the plant communities over time.

**Project Status:** Ongoing

**Project Budget:** US\$8,300

**Current Funding Sources:** Sophie Danforth Conservation Biology Fund; and Tapir Preservation Fund (TPF)

**Amount of Funding Currently Sought:** US\$6,700

### The Ecological Role of Tapirs (*Tapirus terrestris*) in the Yungas Forest, Salta, Argentina

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**ABSTRACT:** In the forest regeneration processes, *Tapirus terrestris* plays an important role and could be considered a keystone or architect species. As seed dispersers, selective browsers, mobile and frequently present in secondary forests, tapirs have a direct effect on the population dynamics of some plant species and the community as a whole. We can expect that tapirs influence forest dynamics in two ways: a) contributing to the development of other succession stages, or b) collaborating in maintaining early succession stages. Currently, habitat loss and hunting are the main threats to tapir populations, and their reduction will affect their habitat dynamics in the medium or long-term. In Argentina, the southernmost limit of their distribution, tapirs are endangered and almost no information is available about habitat-animals interactions. The objective of this study is to assess the tapir's role as a seed disperser and predator of woody species in secondary forests of El Rey National Park. We will determine tapir consumption rate of tree fruits on a monthly basis and assess its legitimacy, effectiveness and

efficiency as a disperser. Tapir's habit of breaking tree renewals in order to browse leaves will be studied, in terms of selectivity and impact on secondary and mature forests. This information will be useful for the restoration of degraded areas, to make management plans for protected areas and develop conservation strategic plans for the species.

**Project Status:** Ongoing

**Project Budget:** US\$7,500

**Current Funding Sources:** Consejo de Investigación, Universidad Nacional de Salta, and the Tapir Conservation Project in Northwest Argentina.

**Amount of Funding Currently Sought:** US\$3,000

## BOLIVIA

### Camera Trap Surveys of *Tapirus terrestris* in Dry Forests of Santa Cruz, Bolivia

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**ABSTRACT:** This study, begun in 2001, is based on systematic surveys developed for jaguars (*Panthera onca*) using sets of 25-35 pairs of camera-traps. Individual tapirs *Tapirus terrestris* are identified from photographs according to scars, white spots on the legs and tail, etc. According to the number of individuals "captured" and "re-captured" in photographs during a 60-day continuous survey, it is possible to estimate tapir abundance using software programs such as CAPTURE. Calculating the effective survey area based on the distances moved by individuals identified during the camera trap survey, population densities between 0.2 and 0.8/km<sup>2</sup> have been estimated for four long-term research sites in the Kaa-Iya del Gran Chaco National Park and in the ranch property/private reserve of San Miguelito. Camera trap data also define activity patterns that are principally nocturnal, even within an enormous protected area with no hunting pressure. In 2005-2006 we are surveying new sites in the Kaa-Iya National Park and in San Matias protected area, Bolivian Pantanal. This project is part of a larger programme on biodiversity conservation in the landscape that includes the Kaa-Iya del Gran Chaco National Park and adjoining Isoso TCO (indigenous communal land). We are conducting systematic camera trapping surveys at sites across the landscape to evaluate tapir populations in the principal vegetation types and land use classifications (national park, indigenous communal lands, private reserves etc).

**Project Status:** Ongoing

**Project Budget:** US\$5,000/year

**Current Funding Sources:** Wildlife Conservation Society (WCS); Gordon & Betty Moore Foundation; and Beneficia Foundation.

**Amount of Funding Currently Sought:** US\$5,000/year

### Habitat Use by *Tapirus terrestris* in the Isoso (Cerro Cortado) According to Latrines

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**ABSTRACT:** In this study, begun in 2003, *Tapirus terrestris* latrines are being counted and monitored in the three principal habitats in the Chaco forest around Cerro Cortado, located at the boundary between the Kaa-Iya del Gran Chaco National Park and the Isoso Indigenous Communal Land. The observed latrines are classified in categories of age in days. In the three habitat types, 53 latrines have been recorded. More latrines have been recorded in the Chaco forest on mixed clay-sand soils, compared to the other two forest types. More old latrines, as opposed to new, have been recorded in Chaco forests on clay soils and on clay-sand soils. Research continues to evaluate

differences between seasons (dry and wet) and years. This is an on-going project that schoolchildren and professors from Isono schools visit periodically to learn about wildlife and conservation directly from the Ioseño parabiologists who run the research and education centre. This project is part of a larger programme on biodiversity conservation in the landscape that includes the Kaa-Iya del Gran Chaco National Park and adjoining Isono TCO (indigenous communal land). Ioseño parabiologists manage the long-term research and education center at Cerro Colorado, including this on-going research project and organized visits by school children and teachers from the schools of the 25 Isono indigenous communities.

**Project Status:** Ongoing

**Project Budget:** US\$3000/year

**Current Funding Sources:** Wildlife Conservation Society (WCS); and Gordon & Betty Moore Foundation.

**Amount of Funding Currently Sought:** US\$3,000/year

## BRAZIL

### Lowland Tapirs as “Landscape Detectives” for the Atlantic Forest

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**ABSTRACT:** This long-term project focuses on the research and conservation of wild populations of lowland tapir (*Tapirus terrestris*) in the Pontal do Paranapanema Region, São Paulo State, Brazil. This region, located in the extreme west of the state, includes Morro do Diabo State Park (35,000 ha), one of the last remnants of Atlantic Forest of significant size, and surrounding forest fragments. The Atlantic Forest has been reduced and fragmented to 7% of its original size and is one of the most threatened ecosystems on the planet. The specific objectives of this research are to describe home range size and territorial behavior of tapirs in the park and neighboring forest fragments; to estimate the size of the sub-populations; to describe and map the most used dispersal routes and pathways in the landscape; and to assess the genetic and health status of the sub-populations. For the past nine years, we have captured, radio-collared and monitored twenty-five (25) tapirs at the Pontal region. The results obtained will facilitate the implementation of two management plans critical for the long-term conservation of the species and the Atlantic Forest: metapopulation management of tapirs, and restoration of main wildlife corridors. The main assumption of this project is that tapirs are *landscape detectives*. They move between the park and the smaller forest fragments and their dispersal routes in the landscape are potential land pieces to be conserved and restored as wildlife corridors. Building upon the tapir ability to travel long distances, we will develop an ecological network of core reserves and buffer zones linked by biological corridors to increase habitat and allow for the natural dispersal of tapirs and other wide-ranging species. We need to re-establish the landscape connectivity by linking the park to the remaining forest fragments in order to maintain a genetically and demographically viable metapopulation of tapirs and other wide-ranging species. This project is part of a major conservation program for the Pontal region, where governmental agrarian reform is taking place at the present moment. This regional program is conducted by the Instituto de Pesquisas Ecológicas (IPÊ). IPÊ's researchers at the Pontal region work towards the creation of forested benefit zones around the forest fragments, establishment of corridors, implementation of agro-forestry *stepping-stones* between the forest fragments, capacity building on agro-forestry, and assistance and training in the construction and management of community-based agro-forestry nurseries.

**Project Status:** Ongoing

**Project Budget:** US\$35,000/year

**Current Funding Sources:** Chester Zoo, North of England Zoological Society, England; Dutch Foundation Zoos Help, The Netherlands; Woodland Park Zoo, USA; Houston Zoo Inc., USA; and Parc Zoologique d'Amnéville, France.

**Amount of Funding Currently Sought:** US\$26,000 for 2006

## Influence of Large Herbivores on the Atlantic Forest of Morro do Diabo State Park, São Paulo State, Brazil

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**ABSTRACT:** This project is investigating the role large herbivores play in maintaining and shaping the plant communities of Morro do Diabo State Park, the largest remnant of Atlantic Forest in the interior of São Paulo State, Brazil. Specifically, we are examining how the removal of the lowland tapir, red brocket deer, gray brocket deer, white-lipped peccary, and collared peccary will affect the physical structure and floristic diversity of the understory plant communities in primary and secondary forest habitats. Many ecologists have documented the important roles played by large herbivores in seed dispersal, seed predation, pollination, and nutrient cycling, but until recently few have considered what would happen if the large herbivores were removed from the system. In order to simulate the removal of these herbivores from the forests, we have constructed exclosures that prevent them from foraging in selected areas. Data will be gathered on variables to describe structural and floristic changes in the plant communities over time. The results obtained will provide additional insights into the ecological functions of these herbivores, which will enhance existing and future management plans.

**Project Status:** Ongoing

**Project Budget:** US\$5,000/year

**Current Funding Sources:** Houston Zoo Inc., United States (2004/2005/2006)

## Conservation Biology of Lowland Tapirs (*Tapirus terrestris*) in the Brazilian Pantanal, Mato Grosso do Sul State, Brazil

### Patrícia Medici

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**ABSTRACT:** The Pantanal is one of the largest continuous wetlands on the planet, covering approximately 160,000 km<sup>2</sup> of low elevation floodplain of the upper Rio Paraguay and its tributaries, in the center of the South American continent. Although species diversity is not particularly high and endemism is practically absent, the region is notable for its extraordinary concentration and abundance of wildlife. During the past few decades, economic and political changes have increased the pressure on the Pantanal, which has been leading to large scale, irreversible wetland degradation. For the past ten years, the Brazilian Non-Governmental-Organization IPÊ - Instituto de Pesquisas Ecológicas (Institute for Ecological Research) has been carrying out a long-term lowland tapir conservation project in the Atlantic Forests of the Pontal do Paranapanema Region, São Paulo State, Brazil. As a next step in terms of promoting tapir conservation in Brazil, we will be expanding this project to the Brazilian Pantanal, where virtually no tapir research has ever occurred, and where the threats and conservation issues are very different. This project aims to investigate the conservation status of the lowland tapir population in a selected field site of the Brazilian Pantanal. Specifically, population demography, habitat use and animal movement, genetic status, and health status will be evaluated in the perspective of establishing a long-term monitoring program. The main goals of this project are to use the data collected to assess the conservation status and viability of the lowland tapir populations in the Brazilian Pantanal, and to design a specific set of recommendations for the conservation of lowland tapirs in the region. Furthermore, we will be comparing the data collected in the Pantanal with results obtained from the Atlantic Forest.

**Project Status:** Seeking Funding

**Project Budget:** US\$125,000 (first year - July 2007/June 2008 - establishment of project)

**Amount of Funding Currently Sought:** US\$125,000

## Ecology and Conservation of Tapirs (*Tapirus terrestris*) in Rio Preto State Park, Minas Gerais State, Brazil

### Edsel Amorim Moraes Junior

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**ABSTRACT:** Most of the Cerrado biome is already classified as "highly modified", with only 20% still occurring in its original state. Currently, little more than 3% is protected in conservation areas. This project will be undertaken in the Rio Preto State Park (RPSP) of 10.755 ha, comprising four main floristic formations represented by "matas de altitude" (seasonal semi-deciduous forests), "campos de altitude" (high altitude grasslands), "cerrado" (savannas) and "campos rupestres" (rocky grasslands), which occur at elevations between 1,200 and 1,800 m. RPSP is the third most visited park in Minas Gerais with about 200 tourists per month. In Minas Gerais state, the lowland tapir is an endangered species (State Red List) and habitat destruction is the principal cause of its decline. The project objectives are to investigate tapir ecology, home range and movements using radio-tracking; to verify the effects of tourism on animals' behavior and design actions to improve tapir conservation in this region. Some adult individual tapirs will be captured using pitfall traps and corrals and will be monitored periodically. To verify the effects of tourism on tapir behavior, the activity, time, locale and numbers of tourists will be related to tapir locations and activity.

**Project Budget:** US\$6,246

**Current Funding Sources:** Institute of Forests of Minas Gerais State (IEF)

**Amount of Funding Currently Sought:** US\$1,766

## Home Range, Habitat Use, Movement Patterns and Diet of Tapirs (*Tapirus terrestris*) in the Brazilian Cerrado

### Edsel Amorim Moraes Junior

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**ABSTRACT:** Most of the Cerrado biome is already classified as "highly modified", with only 20% occurring in its original state. Currently, little more than 3% is protected in conservation areas. The *Gerais* is a region of Cerrado (savanna) represented by a vast area at the left margin of the São Francisco River, in the northwest of Minas Gerais and southwest Bahia. The region is suffering from anthropogenic impacts such as monoculture plantations, cattle-grazing and uncontrolled deforestation. The present project was developed in the Grande Sertão Veredas National Park (GSVNP), and the ecological corridors associated with these units of conservation and surrounding areas, located in the states of Minas Gerais and Bahia. The Park was created on the 12 April 1989, under decree nº 97.658, and had its limits altered by decree on 21 May 2003, delineating a total area of 230,714.4 ha. The topography is almost entirely flat with few slopes, and the soil is predominantly sandy. In Minas Gerais state *Tapirus terrestris* is an endangered species (State Red List) and habitat destruction is principally responsible for its decline in the state of Minas Gerais (Costa, 1998). The present study will use radio tracking to determine the home range of the species and how it moves through the different habitats in the region of GSVNP, its patterns of habitat use and its diet. Five lowland tapir adults will be captured using pit fall traps and corrals (Medici & Mangini, 2001) and will be monitored periodically. The locations of each animal will be placed on satellite images and used in GIS (Geographical Information Systems) to investigate the spatial association of *T. terrestris* with vegetation cover and other characteristics such as watercourses, roads and pathways. Several studies have already determined the minimum viable area needed for this species, have evaluated biological corridors in fragmented habitats and investigated the patterns of movements in altered landscapes in Brazil (Medici, 2005). However, little has been discovered of animals inhabiting the Brazilian Cerrado or of their behavior and movements in undisturbed habitats.

**Project Status:** Seeking Funding

**Project Budget:** US\$10,692

**Current Funding Sources:** Biotrópicos - Instituto de Pesquisa em Vida Silvestre

**Amount of Funding Currently Sought:** US\$1,000

## Lowland tapir (*Tapirus terrestris*) Conservation in the Central Corridor of the Atlantic Forest

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**ABSTRACT:** The Brazilian Atlantic Forest is one of the world's biodiversity hotspots. Habitat loss and fragmentation are serious threats to biodiversity persistence in the Atlantic Forest. To protect its rich fauna and flora, a management strategy of creating ecological corridors is being implemented in the region for the Central Corridor of the Atlantic Forest ranges from southern Bahia to southern Espírito Santo. The lowland tapir has already been recorded in four protected areas in northern Espírito Santo and three areas in southern Bahia. This entire region is severely threatened by anthropogenic activities. The present project has, as a general goal, the improvement of our knowledge regarding the lowland tapir's ecology in this region, and to contribute to the species conservation and management in the Atlantic Forest. Fieldwork in this area will gather data on population ecology (e.g. density, home ranges, etc), and monitor population trends by using radio telemetry and camera traps. Such demographic data will be used to run a population viability analysis model, VORTEX, to evaluate population status and help guide management strategies. Observing the tapir's spatial use of the fragmented landscape, we may identify important areas for population persistence and for landscape management in the Atlantic Forest.

**Project Status:** Seeking Funding

**Project Budget:** US\$86,000

**Amount of Funding Currently Sought:** US\$86,000

## COLOMBIA

### Lowland Tapir Status in the Tuparro National Park, Colombian Orinoquia Region

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**ABSTRACT:** Lowland tapir distribution in the Colombian Orinoquia region was poorly understood, although several populations were known to occur in this area. However, oil extraction, cattle ranching, commercial agriculture, and human colonization have affected the area for several decades, and current existence of remnant populations of tapirs was uncertain. In year 2004-2005 we conducted a study with the aim of determining where lowland tapir populations were still present in this region of Colombia. We found that current tapir distribution in the Orinoquia region is fragmented in at least four core populations in areas representing 11% of the Orinoquia region in Colombia. Population status of lowland tapirs in those sites as well as the level of threat they face are still unknown. One of those four core populations exists in the Tuparro National Park, a protected area of 548,000 ha in size. The purpose of this research is to evaluate the population status of lowland tapir in this park and to establish their ecological relationships with other wildlife in the area. This project is a component of a larger study entitled "*Distribution, abundance and ecological interactions of large mammals in the Colombian Orinoquia and Amazonia regions*", whose overall goal is to address ecological and conservation aspects of five large mammal species in several sites of eastern Colombia.

**Project Status:** Seeking Funding

**Project Budget:** US\$25,000

**Current Funding Sources:** Pending US\$20,000 and in-kind support from Universidad Nacional de Colombia.

**Amount of Funding Currently Sought:** US\$10,000

## ECUADOR

### Cytogenetic and Molecular Characterization of the Amazonian Tapir (*Tapirus terrestris aenigmaticus*)

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**ABSTRACT:** The lowland tapir (*Tapirus terrestris*) is the largest terrestrial mammal of the Neotropics. It performs important functions such as seed dispersal and marking of footpaths that other animals use. The species with the largest distribution in Ecuador is the lowland tapir which has four subspecies, one of them, *Tapirus terrestris aenigmaticus*, is present in the Amazonian rainforest (Hershkovitz, 1954). *Tapirus terrestris* is listed in the IUCN Red List of Threatened Species as Vulnerable, seriously threatened by extractive processes (lumber, oil industry and hunting). Little research has been developed on the molecular genetics and cytogenetics of the four extant species of tapirs. Most of the studies have focused on monitoring wild populations to estimate density, home range, dispersal patterns and population genetic structure. Here, we undertake a research that aims to characterize *Tapirus terrestris aenigmaticus* subspecies. Mitochondrial DNA has been a source of genetic information because of its high evolutionary ratio, conservative character of its genes and semi-autonomous evolution. This source of information would say much about tapir genetic structure and would help us to clarify *Tapirus terrestris* taxonomy at the subspecies level. This study is part of the plan to describe tapir genetic variation in distribution countries as put forth in the Tapirs Action Plan (1997) and the Genetics Committee of the Tapir Specialist Group.

**Project Status:** Ongoing

**Project Budget:** US\$15,000

**Current Funding Sources:** US\$7,000

**Amount of Funding Currently Sought:** US\$8,000

### Tayja-Saruta Project: Conservation of *Tapirus terrestris* in Ecuador

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**ABSTRACT:** The lowland tapir *Tapirus terrestris* has been categorized as "Vulnerable" on the IUCN Red List. Over hunting is the main threat. For the indigenous inhabitants of the Sarayacu Community in Ecuador, Province of Pastaza, the lowland tapir is of high value for subsistence and monetary income. The result is a dramatic decline in the number of tapirs. The Sarayacu people were aware and concerned about this development and therefore they developed together with Anders Siren (Department of Rural Development and Agro-Ecology Upsalla) a project for sustainable management of Amazonian fauna. The project aimed to find alternatives, to achieve conservation of all native species and to guarantee the co-existence of nature and people. To achieve this goal, members of the community planned to establish wildlife refuges and to find alternative sources of protein and monetary income. The Zoo Osnabrück in Germany and the cooperating foundation "Pro Kreatur" decided to support this project with 15,000 Euro per year for at least five years. The major tasks are to fund: a.) equipment for the wildlife refuges; b.) the forest guards and the project coordinator; c.) the construction of poultry-houses and fish ponds; and d.) to supply a feeding station for re-introduced tapirs. The project started in June 2003 and is managed by the local people. Up till now, two wildlife refuges have been established. A number of lectures and organized workshops for inhabitants of Sarayacu, teachers, students and also for neighboring communities were held. A further addition to the project is the resettlement of tapirs in the wildlife refuge using the IUCN Guidelines. During the past two years two females have been released, marked with ear-tags and observed at a feeding station. Osnabrück Zoo accompanies the project with education projects. A permanent exhibition outlines the project.

## FRENCH GUIANA

### Lowland Tapir Project - French Guiana

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**ABSTRACT:** French Guiana is unique in that the lowland tapir does not benefit from any protective legislation. Although a recent survey revealed that the species remained widely distributed, direct threats to wildlife and pressures on forest habitats are growing in many areas where human populations are concentrated. In contrast, a significant part of the country is covered by pristine forest, providing one of the rare remaining opportunities to study undisturbed tapir populations. The French Guiana project includes complementary components for joint action plans for both species and habitat conservation: it comprises the management of a national sightings database, field methodological developments for population monitoring, ecology and genetic studies, and people awareness. In the field, track surveys are already in progress. The aim is to develop a reliable tool for the rapid assessment of tapir abundance for between-sites comparisons and site monitoring. Because of naturally low densities of tapirs in lowland forests, surveys are conducted along river edges, where sightings probabilities are higher. Rivers facing different threat levels (hunting, gold mining, *vs.* pristine areas) are surveyed several times per year, in order to identify natural (*e.g.*, water levels) and anthropogenic (*e.g.*, hunting, logging) variations susceptible to affect both track index reliability and populations densities. Forthcoming works will include surveys of new areas, and also telemetry (via satellite tracking) and camera-trapping in the Nouragues Nature Reserve. These last investigation methods will provide new information on behavior, habitat use, and densities of tapirs in a pristine lowland rainforest. A third part of the project, in collaboration with the Forest National Agency, will be the identification of factors influencing the absence or presence of the species. The proposed methodology is to map large quadrants (100 and 25 sq km), and to define with both Geographic Information System and remote-sensing the forest type, the level of fragmentation, the logging pressure, the hunting pressure, and the closeness of human settlements. These features will then be crossed with presence / absence of tapirs, defined by a standardized field effort in each quadrant. Another complementary approach is a precise habitat description in some selected study sites in which animal populations are also identified (line transect method or presence/absence for rare species as tapir). The objective is to better understand ecological requirements of the species, for a better management of habitats in areas planned to be used for timber harvest. The last planned action is the use of highly variable genetic markers (nuclear micro satellite DNA) to assess genetic diversity, gene flows between populations, and population trends. Although these tools are increasingly used for wildlife population management, identification of potential source populations, design of ecological corridors, they have not yet been used with the lowland tapir. Lastly, an awareness component is undertaken, with public and children (with posters, leaflets, educative books), and also towards local politics and habitat managers. The objectives are to help for a better management of forest logging, to modify current laws allowing tapir hunting with no regulations, and to explain the prime necessity to conserve tapirs because of their ecological roles, and to sustainably manage their forest habitats.

## PARAGUAY

### Distribution, Population Trends, and Conservation Opportunities for the Lowland Tapir (*Tapirus terrestris*) in Paraguay

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**ABSTRACT:** Paraguay retains large and relatively undeveloped portions of highly endangered ecoregions in the Neotropics, such as the Chaco, the Interior Atlantic Forest, the Cerrados, and the Pantanal (SEAM/PNUD/GEF 2003). This represents a unique opportunity for conserving and sustainably managing wildlife species that depend on large areas of high quality habitat for their long-term survival. Nevertheless, the lack of reliable information on species' current distributions and population trends greatly reduces the effectiveness of conservation and sustainable development actions, especially when it comes to deciding where and how to allocate our generally scarce resources. The lowland tapir is the largest area-dependent herbivore species in Paraguay. It is considered "vulnerable" at the regional level (IUCN 2004), in decline at the country level (CDC/SEAM 2003), and is included in Appendix I of CITES (CITES 2006). High rates of habitat destruction and fragmentation, as well as poaching are the main threats to this species. Because the lowland tapir requires large undisturbed areas for its long-term viability, is relatively conspicuous, and has utilitarian values for local people, we believe that it can be used both as an *umbrella* and *flagship* species to promote habitat conservation and sustainable development in a wider sense. This research proposes to study the historic and current distribution, and population trends, as well as to identify priority areas for conservation and sustainable management of the lowland tapir in Paraguay. Our methodology includes three interrelated steps. First, the estimation of the historic and current geographic distribution of this species will be carried out by developing predictive habitat distribution models. In this step, aided by a Geographic Information System (GIS), we will integrate and analyze past and present records of the species with geographic data such as digital elevation models, vegetation, land use, soils, hydrology, meteorological maps, road networks, and human population density. Second, based on our predictive models, we will select at least ten sites with potential suitable habitat for the species where we will carry out our fieldwork. This will consist of estimating the species' density using distance sampling and camera trapping methodologies over a period of one year. In the final step, we will conduct a Protected Areas GAP Analysis to identify priority areas for this species. We expect that the results of this research will guide wildlife managers and policy-makers in implementing effective conservation and sustainable management actions for this species. Because the lowland tapir is an *umbrella* species, the identification of priority areas will contribute to the protection of other species that depend on large tracts of undisturbed habitat for their survival. This research will also contribute directly to achieving the goals of the Tapir Specialist Group (TSG) at the regional level.

**Project Status:** Ongoing

**Project Budget:** US\$7,000

**Amount of Funding Currently Sought:** US\$7,000

## PERU

### The Ecology of Lowland Tapirs (*Tapirus terrestris*) in the Lowland Rainforest of Madre de Dios, Peru

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**ABSTRACT:** Tapirs are an important game species and are locally threatened in many areas due to hunting and habitat destruction. A good knowledge of their ecology is important for their conservation and management. Tapirs may have a significant impact on the vegetation patterns of tropical lowland rainforests by seed dispersion and predation as well as by trampling and feeding on plants. Therefore, knowledge of tapirs' use of space over the landscape as well as their diet preferences is necessary to increase understanding of their ecological role. Using GPS collars we will look at the movement patterns of tapirs. We want to find out how large their home ranges are, if there are seasonal variations in home range size and location that could be related to food availability, and which vegetation type they prefer. We will try to relate movement pattern to vegetation patterns as well as the location of key resources such as mineral licks and patches of Aguaje (*Mauritia flexuosa*). We are also interested in the daily distance the animals move and the frequency with which they revisit sites. Mineral licks are an important mineral source for animals and are frequently visited by tapirs. We will continue monitoring work (started in 2003) at several licks to get more information on the number of visiting tapirs, the frequency individual animals visit the licks and their behavior at the mineral lick. We will examine both temporal as well as spatial patterns of mineral lick visits by tapirs. Tapirs are regularly hunted, but there is little information on the natural density of these species. By combining telemetry with camera trapping and direct observations at mineral licks we hope to develop and calibrate a method to monitor tapirs and possibly other ungulates that regularly visit mineral licks and estimate their population sizes.

# MALAY TAPIR

## INDONESIA

### Monitoring Malay Tapir Population in Fragmented Lowland Forest in a West Sumatran Landscape

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**ABSTRACT:** Forest loss in Sumatra's lowland forest is ranked as one of the highest in the world. Given that Malay tapir normally occupy lowland habitats near rivers, wetlands and other water sources, further loss of lowland forests pose a serious danger to their continued existence. Therefore, identification, protection and monitoring of key areas that contain significant Malay tapir populations are required and are high priority. Due to naturally low densities, small home ranges and major threats identified in previous studies; we propose to expand our work on monitoring Malay tapir using camera traps in areas of larger coverage in west Sumatran landscapes. This study will perhaps demonstrate more clearly the current status of Malay tapir, in several types of forest patches. Anthropogenic effects on Malay tapir activity will also be studied, since the project will be conducted in forest areas that have varying distances from local community areas. By using Geographic Information Systems (previously not yet conducted), we will delineate the distribution and area covered, and will identify key areas for Malay tapir conservation. Possibilities of joining areas with corridors will also be proposed based on the results of the study. Since camera traps can detect all animals that pass within their range, other mammals will also be censused in the study area. It is hoped to identify a key area in which to develop a long-term study of Malay tapirs in Sumatra.

**Project Status:** Ongoing

**Project Budget:** US\$25,867

**Current Funding Sources:** Rufford Small Grants, United Kingdom

**Amount of Funding Currently Sought:** US\$6,150

## MALAYSIA

### The Malay Tapir Conservation Project

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**ABSTRACT:** In 2002, Copenhagen Zoo in collaboration with the Malaysian Department of Wildlife and National Parks (DWNP) decided to implement a pilot tapir study where the project team tested various types of trapping methods and radio collaring of a single individual. Subsequently, the project was expanded to a full three-year project that is likely to continue for 3-5 more years. The project is currently based in Krau Wildlife Reserve in the state of Pahang Darul Makmur where DWNP already has its research and training facilities. The main objective of the project is to study the behavioral ecology and habitat requirements of the Malay tapir. For this purpose, we obtained 30 camera traps, 6 radio-transmitters and developed five lightweight cage traps for capturing individuals.

The camera traps are deployed at salt licks and jungle trails where tapir tracks are commonly found. The camera traps will record time and date of the picture as well as provide the project with individual characteristics of the animal that is on the picture. Captured individuals are measured, sex determined, fitted with radio-transmitters and subsequently followed by the project team after they are released. The distance traveled, the daily activity, diurnal activity, food preference and much other information is recorded. Currently, the project is monitoring two individuals fitted with the transmitters. The distance a tapir travels varies from individual to individual. Some travel more than 25 km in two weeks whereas others are more stationary within a 5-10 km radius. However, the team can conclude that tapirs generally utilize large tracts of habitat with home ranges up to 10-15 km<sup>2</sup>. Furthermore, with a total number of only 30-40 individuals, the population in Krau Wildlife Reserve appears much lower than previously anticipated. If Krau reflects a typical distribution pattern in Malaysia, the population density in Malaysia may number as few as 1,500 individuals, and a global population of less than 5,000 animals. In comparison, there are more than 35,000 Asian elephants, 4,000-5,000 tigers and 25,000-30,000 gaurs.

**Project Status:** Ongoing

**Project Budget:** US\$50,000/year

**Current Funding Sources:** Copenhagen Zoo, Danida

**Amount of Funding Currently Sought:** US\$25,000 for 2006

## MYANMAR

### A Preliminary Study of Habitat Selection, Abundance, and Threats for Malay Tapirs (*Tapirus Indicus*) in the Tenasserim Hills, Southern Myanmar

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**ABSTRACT:** The objectives of the research and survey program proposed herein are: 1.) To determine the range and extent of Malay tapir distribution in the Tenasserim Hills, Southern Myanmar; 2.) To identify and monitor the threats affecting Malay tapirs in the Tenasserims, by: a.) determining the location of critical habitats for Malay tapirs and monitor the rate of loss of forest habitats, b.) assessing habitat affinities of Malay tapir and determining the influence of forest edges on tapirs, and c.) determining the existence and impact of trade in Malay tapirs, either as live animals or for meat or other parts; 3.) To provide the opportunity for training of researchers and staff on field research and monitoring techniques for wildlife conservation. This project has been delayed to due to problems with getting official access to the proposed study site in southern Myanmar. However, it is expected to begin in 2006 with permissions from the Myanmar government having now been granted. Myanmar has been closed to biologists for most of the last four decades. Slowly areas are opening up and present unique opportunities for discovering new information about the status and distribution of tapirs and other large mammals.

**Project Budget:** US\$5,000

**Current Funding Sources:** Tapir Specialist Group Conservation Fund (TSGCF); and the Royal Zoological Society of Scotland (Edinburgh Zoo).

# MOUNTAIN TAPIR

## COLOMBIA

### Ecology and Conservation of Mountain Tapirs in the Central Andes of Colombia

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**ABSTRACT:** The mountain tapir is the most threatened mammal species in the tropical Andes, due primarily to habitat loss and hunting. Additionally, the remaining habitat for the species is being severely impacted by high altitude cattle ranching. This project will study mountain tapir habitat requirements and the possible consequences of cattle ranching on mountain tapir populations in the central Andes of Colombia. The most important expected outcome is a cattle management plan to be implemented in tapir habitats. In the proposed research, we will study mountain tapir habitat use looking for the extent and overlap between cattle and mountain tapir. Habitat use will be studied by the direct observation of cattle, and by GPS telemetry of mountain tapir. This project will help us understand how increased cattle ranching will impact the montane Andes region and how it can be better managed for cattle without affecting the mountain tapir's remaining habitat. In addition, this research will provide tools to design better management plans to protect Andean wildlife in regions where cattle ranching exists.

**Project Status:** Ongoing

**Project Budget:** US\$38,982

**Current Funding Sources:** AZA Conservation Endowment Fund (CEF), United States; Instituto Humboldt (Colombia); and Conservation International - Colombia.

**Amount of Funding Currently Sought:** US\$17,000

### The Influence of Large Herbivores on Neotropical Forests

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**ABSTRACT:** The project "Influence of Large Herbivores on Neotropical Forests" is a coordinated research initiative that will be conducted in four field sites in four countries of Latin America: El Rey National Park in Argentina, Morro do Diabo State Park in Brazil, Los Nevados National Park in Colombia and Corcovado National Park in Costa Rica. This project is an innovative conservation initiative and will investigate the role large herbivores (tapirs, deer, peccaries etc) play in maintaining and shaping the plant communities of Neotropical forests. Many ecologists have documented the important roles played by large mammals in seed dispersal, seed predation, herbivory, and pollination, but until recently few have considered what would happen if the large mammals were removed from the system. The primary goal of this project is to describe the influence large herbivores exert on the understory plant communities of five different Neotropical ecosystems of Argentina, Brazil, Colombia, Costa Rica and Malaysia. Specifically, the main objective of the study is to examine how the removal of large herbivores will affect the physical structure and floristic diversity of the understory plant communities in primary and secondary forest habitats at each site. In order to simulate the removal of large herbivores from the forests, we will construct exclosures to prevent them from foraging on vegetation in selected areas. Data will be gathered on variables to describe structural and floristic changes in the plant communities over time.

**Project Status** Ongoing but need more funding to increase number of exclosures.

**Project Budget:** US\$3,000

**Current Funding Sources:** Rufford Small Grants, United Kingdom.

**Amount of Funding Currently Sought:** US\$1,500

## Estimating the Genetic Diversity of Mountain Tapir (*Tapirus pinchaque*, Roulin, 1829) Populations in Colombia

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**ABSTRACT:** This project will study the genetic diversity of mountain tapirs in three different points of their distribution in Colombia. Currently we have with information on the ecology and demography of some populations of mountain tapirs (Lizcano & Cavelier 2000; Acosta *et al.* 1996; Lizcano *et al.* 2002), but no information exists regarding the genetic structure of any population, which is very important for the knowledge of evolutionary processes and natural history of wildlife populations (Frankham *et al.* 2004). This project will fill the existing gaps by comparing genetic diversity using molecular methods. This is the first approach to the knowledge of the genetic structure of the Colombian populations of mountain tapir and will give us a better idea of the conservation status of its populations. And underline the importance of the use of new non-invasive and molecular biology methods to study the status of endangered species. This project will contribute to the development of methods and molecular markers that many researchers are able to use to study genetic, demographic, and ecological and natural history information on mountain tapir populations. Our preliminary results show the need to introduce highly variable genetic markers, micro satellites, to ensure a better resolution. For the development of micro satellites it's necessary to obtain DNA samples of at least 20 mountain tapir individuals. At this time, we have obtained samples from three different individuals from the Cheyenne Mountain Zoo (USA) and have three other potential samples, two from the Populations Genetics Laboratory of Javeriana University (Colombia), and one from a six month juvenile under the care of the CAM Corporation (Corporación Autónoma del Alto Magdalena, Colombia). The requested budget will be used to collect at least 20 more samples from different individuals, in order to develop specific genetic markers for the mountain tapir and analyze all the samples collected.

**Project Status:** Ongoing

**Project Budget:** US\$8,000

**Current Funding Sources:** Instituto de Investigación de Recursos Biológicos Alexander von Humboldt, Colombia; Conservation International - Colombia; and Idea Wild, United States.

**Amount of Funding Currently Sought:** US\$3,000

## Germination of Seeds Dispersed by the Mountain Tapir (*Tapirus pinchaque*) in the Central Andes of Colombia

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**ABSTRACT:** It has been found in different studies that the function of the tapir in the maintenance of the composition and structure of the tropical forest is key for keeping forests healthy. In the case of the mountain tapir, the dispersal of seeds from more than 20 species with germination viability has been reported in studies from Ecuador. This kind of study has not been done in Colombia, but it is proposed to carry one out with the help of local communities, former tapir hunters and university students who, among other things, will participate in the collection of samples (feces) and the management of germination sites. Tapir feces will be collected during one week once a month, for a period of six months. The location for the sampling will be the tapir paths in the Ucumari and Nevados National Park. The samples will be processed and taken to conditioned sites for their final germination between 1,800 and 3,000 masl. Finally, the small plants and seeds will be identified with the cooperation of the Botanical Garden of the Pereira Technological University.

**Project Status:** Seeking Funding

**Project Budget:** US\$6,000

**Amount of Funding Currently Sought:** US\$6,000

### Friends of the Mountain Tapir - An Education & Outreach Project

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**ABSTRACT:** The average inhabitants of our cities do not know much about the Mountain Tapir. Often they have never heard of the species which lives in the Andean Forest and the Páramos. There are no education programs being taught to children or young people based on the knowledge about and value of tapirs and their importance. Thus, this is one the aims of the National Program of Tapir Conservation in Colombia mainly because in spite of legislation, hunting of mountain tapirs still occurs in protected areas and surroundings. Thus, the objective of this project is to take the message of the existence and the importance of the mountain tapir to the school children of the region, concentrating mainly on the schools in rural areas close to the parks where the mountain tapir occurs lives. The first phase of the project is to design and develop videos, hand-outs, brochures, posters, stickers, t-shirts, etc.; and the second phase is the realization of educational workshops which will be called 'The Friendship of the Mountain Tapir', where the proposed materials will be circulated and the importance of conserving the tapir will be passed on to the community.

**Project Status:** Seeking Funding

**Project Budget:** US\$7,000

**Amount of Funding Currently Sought:** US\$7,000

### Determining the Presence of Andean Tapir (*Tapirus pinchaque*) in the Massif of Mamapacha (Boyacá) and Health Status Survey of some of its Co-Specifics

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#### Diana Vargas Munar

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**ABSTRACT:** The Mamapacha massif is an isolated fragment of 27,512 hectares of cloud forest and páramos, located in the department of Boyacá in the north of the Colombian Eastern Cordillera. Recently there were a few unconfirmed reports of the Andean tapir in this area, which may imply its northernmost distribution, together with its highly endangered status. The massif has been affected by cattle ranching for decades, and infectious diseases such as Vesicular Stomatitis and Brucella have been recently diagnosed, which may imply another risk factor for the tapir and other wildlife species. The goals of the present project are to confirm the presence of the Andean tapir in the Mamapacha massif, and to evaluate the health status of its co-specifics, focusing on wild and domestic ungulates, such as red dwarf brocket deer (*Mazama rufina*) and domestic livestock, in order to detect possible health risk factors. The project is currently ongoing, and evidence of tapirs has not been collected yet, however a local resident reported two sights of a tapir in the páramos in March and May 2005. We also analyzed several fecal and blood samples from local livestock and one deer, and found mild to moderate infestations of Trichostrongylids (Nematoda, Strongylata) and Coccidia. We still need to evaluate most of the reserve, and carry out further microbiological and serological analyses.

**Project Status:** Ongoing

**Project Budget:** US\$15,000

**Current Funding Sources:** Rufford Maurice Laing Foundation, United Kingdom; and Idea Wild, United States.

**Amount of Funding Currently Sought:** US\$8,000

## The Conservation of the Mountain Tapir in the Puracé / Cauca Area of Colombia: A Conservation Strategy Focusing on Education, Research and Local Community Participation

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**ABSTRACT:** Due to its biological richness, Colombia is considered one of the mega-diverse countries. The Cali Zoo Foundation is committed to conserving this biodiversity through educational and research programs in its area of influence. Since 2003, the Zoo Foundation has been carrying out ecological studies on the mountain tapir in the Puracé National Park (PPN) in Cauca Province in order to establish its conservation status (Sandoval 2005). The objectives of this study focused on finding evidence of the presence of mountain tapir in the Puracé, Cauca Province, Colombia, at an altitude of 2000-3400 m, and evaluating the factors that threaten the species. In addition a study has been made of the communities' perceptions of the species. Actions have then been formulated to encourage the local inhabitants to value biodiversity and the conservation of the mountain tapir. This work has been undertaken in concert with the indigenous communities residing in the zone through the Indigenous Environmental Plan (PAI) group. A map has been made of the vegetative groundcover based on the actual evidence of the specie's presence. Trips have been made to the region in search for evidence, which was then geo-referenced. Evaluation of the threat factors has been undertaken through interviews with the community. Workshops about valuing biodiversity and recognizing the species have been held with schools in the region. Training in environmental diagnosis and handling field equipment has been also given to members of the PAI. The mountain tapir has shown a tendency to prefer high Andean forest sectors, avoiding open fields for their transit. No evidence for the species was found in the Paletará valley, which is adjacent to the western zone of the Puracé PNN, possibly due to the volcanic mountain chain, which acts as a natural barrier. On the western bank of the Cauca River in the mountains that connect with the Sotará páramos, however, there was evidence of tracks, feces and trails. Extensive cattle ranching in the natural areas of the páramos could also be a threat to the mountain tapir given the lack of sign found in these places. Similarly, there were no traces of the species in forest zones used as human camps. Hunting by the indigenous communities in the study area was not identified as a threat due to the little interaction that exists with the species at present. The children from the region have little knowledge about the species. However, there is a great appreciation for natural resources although there are inadequate exploitation practices (agriculture and livestock). Educational materials such as informative handbooks, stickers, billboards and posters have been prepared about the species and distributed in the region. The knowledge of environmental diagnosis and handling equipment will permit the members of the community to design, execute and monitor projects that involve the knowledge, use and conservation of biodiversity. The future of the conservation of the tapir in these regions will depend on involving the communities in the government's environmental plans.

**Project Status:** Ongoing

**Project Budget:** US\$35,000

**Current Funding Sources:** Los Angeles Zoo, USA; and Corporación Regional del Cauca (CRC), Colombia.

**Amount of Funding Currently Sought:** US\$23,000

### ECUADOR

#### Mountain Tapir Research in Condor Bio Reserve, Ecuador

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**ABSTRACT:** We would like to replicate what we have done with the Andean bear in Condor Bio Reserve. That is determining habitat availability, population density and threats to mountain tapir (*Tapirus pinchaque*) in Condor Bio Reserve, Ecuador. Condor Bio Reserve is a 2 million hectare conservation area in northern Ecuador. It contains seven officially protected areas and several private reserves. It is an area with great diversity and very important for environmental services like water and recreation. EcoCiencia, among other local organizations, is working to conserve the area. In order to do this, we are using Conservation Area Planning and we defined mountain tapir as

a conservation target. The mountain tapir is considered endangered throughout its distribution (Colombia, Ecuador and Peru). Its main threats are habitat destruction and hunting (Lizcano *et al.* 2005). We will begin with a pilot area (50,000 hectares) where we will develop a habitat availability model using Mahalanobis distance multivariate statistic. This model is based on indirect signs (hair, trail, feces, track) collected in established transects. After the model for the pilot area is concluded and validated, we will expand the model to the whole Condor Bio Reserve area (2 million hectares) (Cuesta *et al.* 2003, Peralvo *et al.* 2005; Remache *et al.* 2005). Besides registering signs, we will collect hair and feces to make genetic analyses. We would begin establishing genetic variability and through intensive collection from specific sites we would determine population numbers of certain localities. Combining this information with the habitat availability we would model the population number for all of Condor Bio Reserve (Cuesta *et al.* *en prep*). Also we will combine information about habitat with other information generated for Condor Bio Reserve (infrastructure projects, land use change, accessibility) to map and quantify threats. With information about availability we would do least cost path analysis to determine possible movement corridors (Maldonado *et al.* 2003; Cardenas *et al.* 2005; Boada & Remache *en prep*).

**Project Status:** Starting and Seeking Funding

**Project Budget:** US\$41,600/year (3 years)

**Current Funding Sources:** USAID and The Nature Conservancy (US\$5,000 for 2006)

**Amount of Funding Currently Sought:** US\$36,600 for 2006

## Monitoring and Habitat Use of Andean Tapir and Bear in Piura and Cajamarca, North Andes, Peru

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**ABSTRACT:** The Andean tapir and bear are two of the most threatened species of mammals in South America, and Peru is the country that could maintain the lowest population of the Andean tapir and the highest of the Andean bear. They have plenty of potential to be considered as focal species for the protection of large Andean natural areas. The north Peruvian Andes, where the study area has been established, corresponds to the south limit of the northern Andes Ecoregion. This area is very important for its flora and fauna which has been of great scientific interest (ecologic, biogeographic, systematic and conservation). A high percentage of endemism and has been found there and it corresponds to the distributional limit of many species. The study area has 70,000 ha that corresponds to premontane tropical forest, montane tropical forest and páramos habitats. In this zone are localized the upper parts of many watersheds (Quiroz, Blanco, Huancabamba, Parcuchaca, Tabaconas, Namballe and Samaniego) of the Piura and Cajamarca Departments. The main goal of the project is to develop a predictive model of the Andean bear and tapir habitat use for the corridor of Tabaconas Namballe – Ayabaca, Northern Andes of Peru. For this, we will determine the available habitat, the effect of the ecogeographic variables and finally the seasonal patterns of habitat use. Likewise, in the study we will assess the resources used by season for both species and analyze seed germinative potential of the consumed plant species from the ones defecated by the Andean bear and tapir. A monitoring net of 50 transects of 1.6 km each, disposed randomly stratified in different vegetative formations will be established. We will register, collect and georeference every 3 months the indirect signs (eating places, footprints, trails, dens, etc.) found in transects and this will be set in digital format (GIS) for the analysis and the development of the models. We will use and compare the analysis of Mahalanobis Distance, Generalized Linear Model (GLM) and Ecological Niche Factor Analysis (ENFA), that use information of presence and, presence and absence. Also, we will determine the species and genera of plants consumed and the other kind of resources used by the tapir from the transect signs by season. Additionally, we will take pictures of the footprints and then analyze it using the non invasive technique for census and monitoring, the footprint identification technique (FIT), with the collaboration of WildTrack. Samples of scat and hair will be collected for genetic analysis to be developed in collaboration with CONOPA Institution. These results will provide information about the home range, minimum number of individuals, threats by isolation etc. The results of the project will bring more

knowledge of the Andean tapir and bear ecology, its habitat requirements and its potential as seed dispersal agents of many plant species from the mountain forests and páramos.

**Project Status:** Starting and Seeking Funding

**Project Budget:** US\$35,000/year (2 years)

**Current Funding Sources:** US\$5,000 for 2006

**Amount of Funding Currently Sought:** US\$30,000

### Mountain Tapir (*Tapirus Pinchaque*) Distribution in Ecuador, Hunting Levels and Habitat Use in the Llanganates National Park

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**ABSTRACT:** This research has three main goals. First we want to determine the actual distribution of the mountain tapir in Ecuador, and to determine hunting levels and the habitat use in the Llanganates National Park. To determine mountain tapir distribution it will be necessary to visit areas included in the Status and Action Plan of the Mountain Tapir (*Tapirus pinchaque*; 1997: RE. El Ángel, RE. Cotacachi Cayapas, PN. Sumaco Galeras, PN. Cotopaxi, BP. Llanganates, RPF. Chimborazo, AR. El Cajas, Cordillera del Cóndor, Provincia de Zamora) and to consider the EcoCiencia distribution of the Andean Bear Ecuador Map. I will establish transects (2km in length) in order to observe areas where there are indicators of mountain tapir presence. The sign and transect will be marked with GPS. In the areas where no data exists regarding mountain tapir presence or absence, I will carry out interviews with people in the local community, researchers, officials from the Environmental Ministry of Ecuador and other organizations. To determine hunting levels I want to identify the hunting areas and places where hunting is not sustainable in the Llanganates National Park communities. Determine if the hunting is: occasional, direct, indirect, human conflict, etc. and the community's use of tapir in the Llanganates National Park. To achieve these objectives, I will visit many communities and establish a direct relation with the local people to determine the study area. In the local communities, part of the research will be to conduct interviews, DRPs, workshops, and environmental education programs. Community members can contribute a great deal of information about the uses and methods of the mountain tapir hunting process. To determine the mountain tapir habitat preferences in the Llanganates National Park, I want to establish the main type of vegetation that is most used by the mountain tapir and determine the influence of the dry and wet seasons, fruiting periods and human activities around mountain tapir habitat in the National Park. Direct observations and indirect signs, like tracks, feces, salt licks etc. will be noted as we walk these transects. If the feces are representative, I will analyze mountain tapir diet. Vegetation plots will be created in order to determine the species (plants) within each transect.

**Project Status:** Seeking Funding

**Project Budget:** US\$27,000 (17 months)

**Amount of Funding Currently Sought:** US\$27,000

### Completion of Data Analysis: Elevation Separation of *Tapirus pinchaque* and *Tapirus terrestris* in Five Major Hydrographic Basins of Sangay National Park, Ecuador

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**ABSTRACT:** From October, 2001, to March, 2002, we undertook five river expeditions within Ecuador's Sangay National Park. These were the *Rios Upano, Palora, Volcan, Abanico* (lower part), and *Sangay*. Through extensive GPS-aided tapir localization, elevation distributions from páramos, at ca. 4,000 m elev., to lowland rainforest, at ca. 1,000 m elev., of both mountain and lowland tapir species, associated species (including the Andean bear and the woolly monkey), park encroachments, and many other types of data have been gathered. I would now like to scientifically analyze this information. This analysis will elucidate the elevation ranges and separations of both species of tapirs, particularly the lower limits of the mountain tapir and the upper limit of the lowland tapir. The results will prove valuable in devising a conservation strategy for the long-term survival of both species throughout their respective geographical ranges, and throw light upon the evolutionary past history of these closely related species. The report will also provide site-specific information concerning the location of mineral procurement sites, territorial trails, and hunting and habitat destruction within Sangay Park. The existing GPS localizations will be

entered into data sheets using Quattro Pro with numbered references to detailed digitalized computer maps of Sangay National Park. These data will be tabulated and graphed; and hypotheses concerning these, such as significant elevation separation between the two tapir species, will be subjected to statistical tests for significance. The report, including results and conclusions, will be presented to sponsors, authorities and conservation groups concerned with the preservation of the park, its tapirs, and other wildlife species.

**Project Status:** Ongoing

**Current Funding Sources:** US\$14,000

**Amount of Funding Currently Sought:** US\$7,000

## PERU

### Creation of Cerro Negro "Mountain Tapir" Sanctuary, Piura & Cajamarca States, Peru

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**ABSTRACT:** A nature sanctuary in NW Peru's Cordillera de Las Lagunillas would be created in an area of vital importance to Peru's remaining endangered mountain tapir. This sanctuary would link occupied mountain tapir habitat in Peru's existing Tabaconas-Namballe National Sanctuary with similar habitat in Ecuador, thus preventing population fragmentation through the establishment of a biological corridor. The approximate size of this projected sanctuary is 60,000 hectares. The following steps would be taken to achieve this goal: (1) Professional preparation of a map delineating the precise boundaries of the new sanctuary based on existing montane forest and páramos habitat and documenting present distribution of the mountain tapir, habitat contiguity, land ownership and usage and political jurisdiction. This map would include several overlays, including for mountain tapir presence, vegetation type, and land tenancy. (2) The preparation of descriptive lists of species found in the proposed sanctuary and to include mammals, birds, amphibians, reptiles, fish, invertebrates, plants and fungi. These lists would indicate known endemic/rare/endangered/threatened/near-threatened status, both according to current Peruvian and IUCN SSC Red List criteria. (3) The preparation of a thorough professional justification for the new sanctuary to include items (1) and (2) above as well as the legal, ecological and conservation foundations for its creation. The proposed sanctuary is located at the southern limit of the Northern Andean Center of Endemism and just to the north of the Huancabamba Depression of the Andes, a significant North-South barrier to many species and an area of high species endemism in its own right. (4) The professional presentation of this proposal will be made to all appropriate government agencies from the municipal and provincial to the departmental to the national levels and in coordination with all relevant natural resource agencies, such as Peru's national INRENA, and to conservation organizations, such as WWF-Peru. The latter two have recently completed a "rapid biological evaluation" in and around the Tabaconas-Namballe sanctuary and have recommended an extension of this reserve. Their work will provide corroborating support for the new Cerro Negro sanctuary. (5) Contingent upon the sanctuary's legal creation, the Andean Tapir Fund would actively pursue the sanctuary's implementation through budgetary allocations, public education, the promotion of alternative lifestyles, active in-field and legal vigilance of ecosystems/ species present, scientific study and monitoring of wildlife species, including especially the mountain tapir, among other activities.

**Project Status:** Seeking Funding

**Amount of Funding Currently Sought:** US\$80,000

## INTERNATIONAL PROJECTS

### The Biogeography of *Tapirus terrestris* in the Atlantic Forest Biome

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**ABSTRACT:** The lowland tapir has suffered a serious decline in the Atlantic Forest and is extinct north of southern Bahia State, Brazil, but in spite of this alarming situation its distribution and conservation status remain poorly known. These data are essential for developing an effective strategy for preserving the species in this biome and so collecting them is a fundamental and urgent goal of the IUCN/SSC Tapir Specialist Group. The specific objectives of this project are: 1.) To study the lowland tapir's biogeography by traveling throughout the southern part of the Atlantic Forest, from Bahia State to northern Argentina, visiting the sites (identified by forest cover satellite maps and interviews with professionals working in the biome) where appropriate tapir habitat exists but for which we do not know whether the species is present; and 2.) To make contacts with professionals working with tapirs in order to create a communication network for coordinating conservation action, sharing information, and providing other forms of assistance. The main goals of this project: 1.) Determine the distribution of the lowland tapir in the Atlantic Forest, establishing the degree of population fragmentation and the limits of each sub-population; 2.) Identify threats to the various populations; 3.) Prioritize sites for conservation action; 4.) Establish contacts with professionals working with tapirs in the biome; 5.) Produce a report to be presented in the "Lowland Tapir Conservation Workshop: Population and Habitat Viability Assessment (PHVA)" that will be held in Sorocaba, São Paulo, Brazil, April 2007, and provide the baseline data needed to improve the upcoming Species Action Plan.

**Project Status:** Seeking funding

**Project Budget:** US\$5,000

**Amount of Funding Currently Sought:** US\$5,000

## PROJECTS INVOLVING MORE THAN ONE SPECIES

### Strengthening the Colombian Tapir Network (Red Danta)

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**ABSTRACT:** After four years of existence, a major change has occurred for Red Danta, the Colombian Tapir Network. After consultation with its members, Red Danta has expanded outside Colombia. Beginning in 2005 we hope to include more Spanish speaking people from other countries involved in tapir conservation or just interested in information about tapirs in Spanish. We needed to strengthen the Colombian Tapir Network to play a more active role in the implementation of the National Program for Tapir Conservation and Recovery in Colombia and to expand it into Ecuador, Peru and Venezuela. This project aims to improve Red Danta's communication tools by enhancing its website management and producing printed materials. It is expected to make Red Danta's website an informative and useful website. Additionally, it is expected that conservation organizations, as well as the general public will be more familiar with Red Danta's activities, increasing the network effectiveness in spreading information on tapir conservation issues.

**Project Status:** Ongoing

**Project Budget:** US\$2,500

**Amount of Funding Currently Sought:** US\$1,500

## The Art of Tapir Conservation

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**ABSTRACT:** People sharing tapir habitat in the Neotropics usually see the species merely as a source of meat and medicine. At the same time, some of these communities have incredible artistic abilities to design and produce a variety of beautiful crafts using natural materials such as seeds, fibers, wood, etc., obtained directly from the forest. Nevertheless, the relationship between this activity and tapir conservation is unclear for these people. The aim of this project is to show people living near tapirs that there is a direct relationship between tapir conservation and improved income for their families. We want to use craft production as an incentive in local communities using tapirs and other related species as the source of inspiration for this kind of artistic work and show the people how raw material availability and tapir ecology are related. We will analyze aspects of sustainable extraction and use of raw materials. At the end of the process we will help people in the commercialization of its art works (produced in a sound way) in the domestic and international market via the Internet. We argue the participation of all the zoos holding tapir species to serve as the vehicles to distribute tapir crafts made by this people. As a first step we will choose a couple of communities living near national parks inhabited by tapir populations in Colombia. We will visit them periodically and work with craft producers in the design of tapir items and its commercialization. At the same time we will analyze human – tapir interactions in the study sites, evaluating hunting and habitat loss. We will compare this data periodically to evaluate the effectiveness of the project. We think that this project will help to preserve part of the cultural heritage of this “tapir people” and, of course, tapir populations.

**Project Status:** Ongoing

**Project Budget:** US\$17,200

**Current Funding Sources:** Tapir Preservation Fund (TPF), United States

**Amount of Funding Currently Sought:** US\$16,200

## Characterization of Reproductive Physiology of Tapirs Using Non-Invasive Endocrine Analysis

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### Janine Brown

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### Morty Ortega

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**ABSTRACT:** The lack of information on reproductive parameters in the four species of tapir decreases possibilities when designing conservation and breeding programs. The captive tapir population in North American zoos can be a potential tool for use in increasing basic reproductive knowledge of the species in order to establish a baseline in physiological parameters. The purpose of this study is to develop a non-invasive technique for monitoring reproductive hormones excreted in the feces of captive tapirs. The project will begin providing a hormonal database to better understand the reproductive physiology of tapirs and facilitate the development of assisted reproductive techniques for these endangered species. The project will attempt to answer the following questions: 1. Are there any intra and/or interspecific group differences in excreted hormonal levels?; 2. Is the reproductive cycle similar among all four species?; 3. How well can fecal steroid monitoring detect estrus and pregnancy in each species?; and 4. Is there a noticeable difference between blood and fecal hormonal levels?

**Project Status:** Ongoing

**Project Budget:** US\$50,000

**Current funding sources:** US\$25,000 (University of Connecticut and the Conservation and Research Center)

**Amount of Funding Currently Sought:** US\$7,000