



**Database of
TAPIR CONSERVATION PROJECTS**
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IUCN/SSC Tapir Specialist Group (TSG)

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BAIRD'S TAPIR

COSTA RICA

Demystifying the Cloud Forest: The Baird's Tapir Project of the Northern Talamanca Mountains

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In Costa Rica, the Baird's Tapir has been relatively-well studied at sites like Corcovado National Park and Santa Rosa National Park, but very few studies have been conducted in highland and montane regions where this species has some of the largest remaining in-tact habitat in the country. One such region is the areas in and around the Los Santos Forest Reserve, on the Pacific slope of the northern Talamanca mountain range. Naranjo de Dota is a little-known area of the country between the mountain town of Santa Maria de Dota and Quepos on the Pacific coast. Elevations in the region range from 1500m to 3000m and up, and are made up of montane rainforest, including primary and secondary forests. Strong agricultural pressures, including dairy, coffee and avocado farming, have resulted in severe habitat fragmentation in the region, which has isolated migratory species between their lowland and highland habitats. However, there still exist large tracts of primary and secondary forest habitat, mostly in the area included in the Los Santos Forest Reserve. Local reports indicate a strong presence of Baird's tapir in the area, but no scientific study has been conducted to confirm these reports. In fact, very little data is available on the fauna of the region, with most references utilizing studies conducted in the Rio Savegre watershed farther south and west of the study area. Additional large mammal species known to occur in the area include jaguar, puma, brocket deer, wild boar and peccary. Utilizing tools such as community interviews, line transect studies and camera trap studies, the tapir population in this area will be studied to determine estimated hunting pressure, relative abundance, habitat use and movements. Concurrently, community workshops will be held to improve the relative local knowledge of the tapir, its conservation status and the threats posed to it in the local region. Pending funding, a radio and/or GPS telemetry study will be conducted to determine the movements of tapirs through the area and establish highly-used corridors to guide the future conservation and management of the region.

Project Status: Seeking Funding / Start in January 2011 (Pending funding)

Project Annual Budget: US\$ 30,000

Amount of Funding Currently Sought: US\$10,000 (Start-up funding)

GUATEMALA

Baird's Tapir Habitat Changes in Guatemala and the Mayan Forest

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Currently, the Baird's tapir distribution in Guatemala corresponds to the north-eastern Departments of Petén, Alta Verapaz, Quiché, Izabal, El Progreso and Zacapa. There are records from 1700, 1800s and early 1900s of the species being present in the southern lowlands and volcanoes. The forests in these sites were transformed into agricultural landscapes mainly with sugar cane and coffee plantations, both are exportation crops playing an important role in the national economy. The current distribution of the species has a direct relation with the habitat spatial pattern of lowlands in northeast Guatemala, so assessing the habitats changes of tropical forests in northern and southern lowlands and the forces behind these transformations will generate useful information to understand currently and future processes affecting tapir's habitat in order to generate tools for its management. Analyses will be conducted using a Geographical Information System (GIS) with raster formats. All available maps, GIS shapes, aerial photographs and satellite images with Guatemala's forest cover from 1900s to present,

will be collected and digitalized. Changes in land use and cover within each available image will be measured and identified in order to detect patterns. With this data the probability of transformation will be calculated for each pixel. The results will be summarized in a flow chart of the principal land cover and land use transitions and dominant processes. A second analysis will be conducted for the Mayan forest assessing land use and cover transformation in Guatemala and Mexico. The Mayan forest is the largest tropical forest remnant within Baird's tapir distribution range, and is estimated to contain about of the 50% of the world's population of the species; so assessing past changes and calculate the probability of future changes in this area, is essential to generate strategies to increase the species population viability. Results from both analyzes will be presented to the Guatemalan Protected Areas National Council and other environmental authorities, maps and documents will be generated as tools for Baird's tapir habitat management.

Project Status: Seeking Funding

Project Timeframe: 2 years

Project Annual Budget: US\$25,000

Baird's Tapir: The Guardian of the Mayan Forest

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The Mayan forest is the most important remnant for Baird's tapir survival on its northern distribution range due its size, connectivity and survival probability of the specie's contained population. This forest remnant is shared by Guatemala, Mexico and Belize, and is composed by neighbor protected areas in the three countries. The Guatemalan portion corresponds to the Maya Biosphere Reserve (MBR) integrated by core areas and multipurpose use zones, the last ones consecionados to communities and corporations for its sustainable management mostly for timber companies. The Universidad de San Carlos (USAC) manages seven main protected areas of the Guatemalan protected areas system (GPAS), the Centro de Estudios Conservacionistas (CECON), a center from the USAC, was established in 1981 for this purpose as well as a new category within the GPAS named "Biotopo". Four of them are core areas within the MBR: Biotopos protegidos Laguna del Tigre – Río Escondido (BPLR), San Miguel – La Palotada – El Zotz (PBSLE), Naachtún – Dos Lagunas (BPND), and Cerro Cahuí (BPCC), so the USAC plays a very important role in the development of sustainable and integral management in the MBR as academy, research center and protected areas manager. There is a current educational program for the four Biotopos inside the MBR, composed by 2 technicians, and because lack of funds, currently the program is only implemented in the Cerro Cahuí Biotopo's rural communities located in the influence zone. These communities have influence not only on the Biotopo but also on Tikal National Park one of the most visited protected areas by international tourists. This projects aims to enhance the educational program at BPCC but also to start the program in the BPSLE. The method includes training for the technicians in new techniques and biodiversity topics, renewal of the equipment for the program, and the design and print of educational material and activities using Baird's tapir as a flag species. Once the training is done and the material is ready, an educational agenda will be prepared in association with teachers from rural schools located near both Biotopos. The agenda will include a quarterly activity including theatre plays, drawing contests and handcraft workshops. The printed environmental educational material designed in this project will be for subjects such as mathematics, social science and language, including environmental topics as the transversal. For example mathematics problems and examples will include native flora and fauna, and conservation ideas. The same will be for the other subjects. As a complement for this project a documentary about Baird's tapir in the MBR will be created, based on the belief of some local people that tapirs are the guardians of the forest. People from rural communities will be interviewed and some videos will be obtained from key tapir habitat sites. This documentary will be projected in the schools as a part of the environmental education agenda, in a special presentation in the city of Flores and Guatemala for academy and managers, as well as general audience, and if possible in national TV and local channels.

Project Status: Seeking Funding

Project Timeframe: January 2011 - June 2012 (18 months)

Project Annual Budget: US\$20,000

Long-Term Baird's Tapir Monitoring at Aguadas: The Hearth of the Mayan Forest

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After three years assessing Baird's tapir conservation status in Guatemala, one conclusion is that the Maya Biosphere Reserve is the most important protected area and forest remnant for the species survival in Guatemala due: it is the largest tropical forest remnant within the species distribution range including about the 50% of its world's population, morphological pattern of the species habitat reveals that only the 13% of the country's surface is core forest mainly located at the Maya Biosphere Reserve, connectivity analyzes reveal that this remnant has the highest integral connectivity index for forest remnants in the country, and a population viability analysis showed that the population contained in this remnant has the highest probability of survival within the next 100 years. Other researches shows that the Mayan forest is the most important remnant also for other endangered species of large mammals such as jaguars and white lipped peccaries, but there have not been conducted long-term monitoring for this species or Baird's tapir. This research aims to start a long-term monitoring for Baird's tapir and other large mammals in the Biotopo Protegido Naacthún – Dos Lagunas (BPNDL), a protected area managed by the San Carlos University, located in the hearth of the Mayan forest. Biotopo is a special category for protected areas managed by the San Carlos University dedicated to conservation and research, and thus it has rangers, researches and an administrative structure managed by the Centro de Estudios Conservacionistas (CECON), our research center. The BPNDL is located in the northern border line with Mexico, surrounded in all directions by protected areas in both countries, so it has a low probability the be threatened by land use change in long-term scale. In 2009 and 2010, tri-national workshops were held in order to homogenize monitoring methodologies for jaguars and tapirs, so the methods for this project are based on workshop's results, to have data comparable to the one collected in Mexico and Belize. The Mayan forest area has the characteristic of low availability of superficial water, and during dry season, water is only available at the "aguadas", ponds of collected rainwater, that are visited sites by most medium and large body sized mammals. The method is based on camera-traps use, locating three cameras per aguada, so all animals visiting the site can be recorded, and even some white-lipped peccaries groups can be counted. This methodology has been used by Wildlife Conservation Society researches in the BPNDL and by ProNatura in Calakmul Biosphere Reserve in Mexico. The long-term camera-trap monitoring field work will be carried out by rangers from the Biotopo, training of field workers will be carried out during the first year of the program which is expected to start in 2011. Data analyses and supervision of the field work will be conducted by researchers located in the headquarters of CECON. This long-term monitoring program will contribute to Mayan Forest Monitoring Roundtable, a coalition of research institutions advising governmental authorities in decision making concerning biodiversity within the Mayan forest.

Project Status: Seeking Funding

Project Timeframe: January-December 2011 (First Season)

Project Annual Budget: US\$35,000

HONDURAS

Fragmentation and Migration in Baird's Tapir (*Tapirus bairdii*)

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In the 15 years from 1990 to 2005, Honduras lost 37.1% of its forest cover to agricultural land. The remaining pockets of forest are largely isolated and surrounded by a highly degraded agricultural wasteland, unsuitable for colonization by Central America's largest terrestrial mammal, Baird's tapir (*Tapirus bairdii*). Using a combination of molecular and ecological techniques, this study aims to assess how Baird's tapir are responding to the loss and fragmentation of their habitat, and to make conservation recommendations for this species. The abundance of Baird's tapir will be monitored across eight protected regions in Honduras using Patch Occupancy Analysis. Genetic material will be collected by fecal sampling across all field sites. Microsatellite DNA profiling will be performed to assess levels of genetic diversity within, and gene flow among occupied patches. By overlaying population genetic data on the GIS maps of Cusuco National Park in North West Honduras, this study will analyze how landscape features impact upon dispersal and gene flow in Baird's tapir. Genetic and occupancy data will also be compared to assess how gene flow is affected by occupancy rates.

Project Status: On-going

Project Timeframe: October 2009 - October 2013

Project Annual Budget: US\$26,000

MEXICO

Anticipated Effects of Climate Change on Endangered Fauna Highly Dependent of Water Resources in the South of the Yucatan Peninsula

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The effects of climate change have started to cause changes in the distributions and phenology of species. In Mexico, climate change has caused a considerable reduction in the precipitation in the Selva Maya, which extends from Mexico to Guatemala and Belize. For example, in the last 50 years we have observed a decreased of 16% in the mean precipitation of the area. In addition, preliminary data produced by hydrological models developed by the IPCC for Mesoamerica show that the combined effect of global warming and the changes in precipitation will intensity the magnitude and length of the dry seasons in the Selva Maya. In this region, there are no permanent water bodies therefore water available for the fauna of the region is only present in small depressions of the terrain (waterholes), which depend on precipitation. This suggests that a decrease in precipitation or an increase in drought conditions will likely cause negative and dramatic consequences on the wildlife that depends on these waterholes for their survival. These species include the white-lipped peccary (*Tayassu pecari*), the Baird's tapir (*Tapirus bairdii*) and the king vulture (*Sarcoramphus papa*), among others. These three species are in danger of extinction and have important roles in the ecosystem, which emphasizes their important role to maintain the ecological integrity of this region and to provide important ecosystem services. The main objective of this project is to understand the influence of climate change on the availability of resources (water and food) in the short-, medium- and long-term, and consequently on the movement patterns of three endangered species in the Selva Maya. These three species strongly depend on the availability of water resources, especially during the dry season, either for maintenance of a stable body temperature or as refugee. For example, we observed that in the dry season of 2005 and 2006 white-lipped peccaries stayed closed to remaining (wet) waterholes, while tapirs were observed bathing in the middle of waterholes during the hottest time of the day, a behavior not common to this

species. We also observed that the king vultures leave their sleeping sites when the waterholes dry up. The methods we will use in this project include the use of satellite and VHF collars to identify species movement patterns, the use of camera traps placed near waterholes to identify the use of waterholes by the species and the waterhole dynamics during the dry and wet season, and the use of vegetation transects to evaluate fruit availability. This project will allow us to identify some of the possible impacts of climate change on the movement of species. In addition, this project will facilitate the development of conservation priorities to prevent the loss of species and their habitats.

Project Status: On-going / Seeking Funding

Project Timeframe: January 2011 - June 2012 (18 months)

Project Annual Budget: US\$62,100 (Total Budget = US\$93,150)

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

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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 ≥ 10 cm and a DBH ≤ 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: On-going since 2008

Project Total Budget: US\$42,242

Population Size and Habitat Use of the Endangered Species *Tapirus bairdii* in the Biosphere Reserve El Triunfo, Chiapas, Mexico
<http://tapirmexico.blogspot.com>

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The Central American or Baird's tapir (*Tapirus bairdii*) is by far the largest native mammal inhabiting tropical forests in Mesoamerica. This species was originally distributed from Ecuador and Colombia to southern Mexico. However, the combined effects of habitat loss, hunting and disease have caused the extinction of Baird's tapir populations all over its distribution range. It is estimated that Baird's tapir global population has declined by 50% in the last three decades putting the species in a severe level of threat. Since tapirs are avid consumers of fruit and plants the extinction of their populations has the potential to impact forest regeneration. The assessment of the impact of anthropogenic perturbation on tapir populations has been greatly limited by the secretive habits of this species. In this study we will apply a novel approach combining camera-trapping, remote sensing and mathematical modeling with the goal of producing a very detailed assessment of tapir's population size, patterns of activity and habitat preferences in a key stronghold for the species, El Triunfo Biosphere Reserve in the Sierra Madre of Chiapas, southern Mexico. This information will be used to evaluate the magnitude of the impact of anthropogenic perturbations on tapir populations and to implement conservation actions and monitoring.

Project Status: On-going / Seeking Funding

Project Timeframe: December 2010 - July 2012 (19 months)

Project Annual Budget: US\$10,000

NICARAGUA

Baird's Tapir Project, Nicaragua

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The Southern Atlantic Autonomous Region (RAAS) of Nicaragua holds one of the largest remaining tracts of lowland tropical rainforest in the Americas and forms an important linkage between two key protected areas in Mesoamerica. Previously, Baird's tapirs (*Tapirus bairdii*) were thought to be locally extirpated from much of the area. In 2009-2010, camera trapping data revealed numerous individuals in several locations. However, detections have not been high enough to enable successful tapir habitat modeling. This project aims to increase detections by integrating spatially explicit historical tapir hunting accounts from local communities with more intensive current sampling. In conjunction with an analysis of a time series of satellite images stretching back to the 1970s, historical detections, as compared with contemporary detection or non-detection, will enable us to analyze the probability of extinction in different habitat types across the region. The objective is to create a map displaying the key remaining tapir habitat in the RAAS to enhance future conservation efforts. Funds will also be directed toward hiring local assistants and fostering greater tapir awareness throughout the region.

LOWLAND TAPIR

ARGENTINA

The Influence of Large Herbivores on Neotropical Forests: El Rey National Park, Salta, Argentina

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This project is a coordinated research initiative conducted in five field sites in four countries of Latin America and one country of Southeast Asia. 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: On-going / Seeking Funding
Project Total Budget: US\$10,000
Amount of Funding Currently Sought: US\$5,000

Implementation of the Action Plan for the Conservation of Tapir (*Tapirus terrestris*) in Argentina: Assessing the Conservation Status and Population Monitoring in the Northwest

www.proyectotapir.com.ar

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There is currently not reliable information about the status and trends of wildlife populations in northwestern Yungas (montane) and Chaco forests of Argentina. Current management is hamstrung by the absence of baseline information in areas with different human activities. Obtaining such information will provide for conservation efforts of local tapir populations, as well as of other associated and threatened species such as jaguars and white-lipped peccary, and raise alternatives to mitigate landscape degradation y soil use conversion. We propose to use a protocol method for population monitoring through: 1) Recording indirect evidence (tracks, feces, roosts, browsing, etc.) in transects and tracks plots and 2) Recording species with camera traps. Baseline information on density and activity patterns will be obtained, in different areas of Salta and Jujuy provinces, under different human soil use, such as protected areas, cattle ranching and forestry. We have the support and commitment from local governments, the institutions responsible for conservation and management of natural resources.

Project Status: On-going
Project Total Budget: US\$100,000
Amount of Funding Currently Sought: US\$50,000

BRAZIL

Lowland Tapir Conservation Initiative: Pantanal Tapir Program

www.tapirconservation.org.br; www.ipe.org.br

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Patrícia Medici has been leading since 1996 a long-term conservation program on lowland tapirs in the Atlantic Forests of the Pontal do Paranapanema Region, São Paulo, Brazil. This program has included studies in basic tapir ecology, population demography, epidemiology, genetics, habitat use and effects of habitat fragmentation, as well as the promotion of community involvement through education and habitat restoration efforts. One of the main achievements of the Atlantic Forest Tapir Program has been working with local communities on the establishment of agro-forestry projects to restore critical tapir habitat (e.g. corridors) identified through telemetry, while creating economic alternatives for local families. Results of the project have been used to design a Regional Action Plan for the Conservation of Tapirs in the Atlantic Forest. To advance scientific knowledge and promote the conservation of tapirs in Brazil, Patrícia has launched a nation-wide Lowland Tapir Conservation Initiative that aims to establish tapir research programs in other key Brazilian biomes. The first of these was the Pantanal, where no tapir research has ever been conducted. The main goal of Pantanal Tapir Program is to collect data to assess the status and viability of tapir populations in the region. Results will be used to substantiate the development of a specific set of conservation recommendations that will benefit tapirs, other wildlife and the Pantanal biome itself. In addition, tapirs have been used as ambassadors for conservation in the Pantanal, catalyzing environmental education and outreach, training and capacity-building, and scientific tourism initiatives. The next biomes considered are the Amazon and Cerrado.

Project Status: On-going since 2008

Project Timeframe: January 2008 - January 2013 (5 years)

Project Annual Budget: US\$118,000

Amount of Funding Currently Sought: US\$50,000 for 2011

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

www.tapirconservation.org.br; www.ipe.org.br

Patrícia Medici

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This project is investigating the role large herbivores play in maintaining and shaping forest structure and biodiversity in the Atlantic Forests of Morro do Diabo State Park, São Paulo, 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. 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 these animals were removed from the system. In order to simulate the extinction of these herbivores, we have constructed enclosures that prevent them from foraging in selected areas. Data have been 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: On-going since 2004

Project Timeframe: July 2004 - July 2014 (10 years)

Project Annual Budget: US\$5,000, fully funded

Conservation of *Tapirus terrestris* Populations in the State of Espírito Santo, Brazil

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The Brazilian Atlantic Forest is one of the world's hotspots of biodiversity. Habitat loss and fragmentation are serious threats to the biodiversity of this biome. In the northern of the state of Espírito Santo, southeastern Brazil, the last forested areas are represented by protected areas. The presence of lowland tapirs has been confirmed in only five of them. Two of these populations are located in the Biological Reserve of Córrego do Veado (BRCV) in the municipality of Pinheiros, and the Private Reserve of Recanto das Antas (PRNPRA), in the municipality of Linhares. This species is listed as Endangered in Espírito Santo according to the State Red List. BRCV is isolated and placed in one of the regions with less forest cover in the state, suffering with water scarcity, fire and hunting, contributing to the increase of the probability of extinction of local tapir populations. On the other hand, PRNPRA is located in the largest forest patch of Espírito Santo, consisting of the Biological Reserve of Sooretama and the Natural Reserve of Vale do Rio Doce. We aim to answer the following questions: How does the reduction in habitat connectivity, the matrix type of the landscape and the state of conservation of flora affect the home range, habitat use, and the diet of *Tapirus terrestris*? How these variables contribute to long-term persistence of tapirs in both protected areas? How is the health of tapir populations affected in these two areas? This is the first project that seeks data on population ecology (e.g. density, home ranges etc), species conservation and management, and health monitoring in the State of Espírito Santo.

Project Status: On-going / Seeking Funding

Project Timeframe: 2010-2014 (5 years)

Project Annual Budget: US\$20,000

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

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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 12 April 1989, under decree n° 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 listed as an endangered species (State Red List) and habitat destruction is mostly responsible for population declines (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 pitfall 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, 2010). However, little has been discovered of tapirs in the Brazilian Cerrado or of their behavior and movements in undisturbed habitats.

Project Status: Seeking Funding

Project Annual Budget: US\$10,700

The Biogeography of *Tapirus terrestris* in the Atlantic Forest Biome, Brazil

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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.) Provide baseline data needed to improve upcoming initiatives to develop action plans for the conservation of lowland tapirs.

Project Status: On-going

Linking Landscape to Molecules: Genetic as a Tool in the Study of Lowland Tapir Populations in Brazil

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Mammal populations, especially medium and large-sized species, have been suffering significant reductions as a result of hunting, habitat loss and fragmentation induced by human development. The disruption of continuous environments, such as fragmentation, highways and agricultural areas, may limit or block the gene flow of mammalian species. Tapirs (*Tapirus terrestris*), one of the most aimed large-sized mammals for hunting, has suffered drastic population reduction even in the continuous forests of the Atlantic rainforest. This project is investigating tapirs through non-invasive genetic analysis of fecal samples in the fragmented Atlantic rainforest of the southeastern Brazil, with the use of microsatellites markers. With the results we intended obtaining estimates of population minimum number and genetics diversity of these populations, besides mapping the individuals in the areas, verifying the movement pattern and gene flow of this important mega herbivore. Genetic data will be supplemented with landscape data aiming to verify the effects of the landscape structure on the distribution and movement of these animals. We have completed the survey in two areas of the Atlantic rainforest coastal (PE Serra do Mar/Núcleo Santa Virgínia e PE Carlos Botelho). This genetic investigation has been expanded with the inclusion of new areas (Atlantic Rainforest, Cerrado and Pantanal) as result of collaboration with other researchers. In this way, this study will provide strict and large-scale information on the genetic diversity distribution of *T. terrestris* populations, these important seed dispersers and vulnerable mega mammals. Studies on biology, ecology and monitoring of the genetic variability of populations of these organisms are very important, because all scientific information has a strategic role not only in the management and conservation of the species, but also in the sustainability of the ecosystem studied.

Project Status: On-going / Seeking Funding

Project Timeframe: 2008-2012 (5 years)

Project Annual Budget: US\$8,500

Biodiversity Dynamics and Land-Use Changes in the Amazon: Multi-Scale Interactions between Ecological Systems and Resource-Use Decisions by Indigenous Peoples

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Indigenous peoples control at least 44 % of government-held land area in the Amazon Basin. The three continental scale biological conservation corridors identified for the region overlap extensively with indigenous lands. Based on documented levels of biological diversity in Amazonia, these lands support a high proportion of the world's biodiversity. There is strong evidence, however, that once indigenous peoples in the Amazon become sedentary and integrate themselves to national socio-economic systems, they exert unsustainable pressure on natural resources and especially on vertebrate game animals. Such overexploitation appears to be a consequence of complex interactions between indigenous resource-use practices, a growing population, adoption of new technologies, and direct and indirect influences from the surrounding non-indigenous landscape (roads, cities, markets, wage employment, agribusiness etc.). This project will test the hypotheses that “traditional” aspects of indigenous culture buffer the impacts of integration on resource use and therefore on biodiversity; that recent practices can have both positive and negative impacts on biodiversity; and that certain combinations of traditional and new practices can be positive for biodiversity. We will do this by (1) quantifying social, economic, biological and land-use variables in and around 30 Macuxi indigenous communities in the northern Brazilian Amazon; (2) identifying statistical relationships between social and spiritual factors, hunting practices, and the dynamics of medium- to large- body size vertebrate animal populations at these sites; and, (3) modeling the dynamics of the coupled hunting-animal-landscape system to identify driving processes, synergies between hunting and environmental variables, and feedbacks between hunted populations to hunting practices. This project will advance our knowledge and understanding of coupled human-natural systems, in this case represented by animal populations in their biotic habitat (a forest-savannah mosaic) and an Amazonian indigenous group undergoing the simultaneous processes of integration with and resistance to the national society. Such a process characterizes indigenous cultures worldwide. Our project is unusual in assessing the importance of spiritual and other intangible aspects of culture on hunting practices by identifying correlations between these aspects and shifts in hunting practices. Our models will provide insights into the role of hunting by indigenous peoples in animal population dynamics. They will also improve upon previous models by acknowledging that indigenous peoples responded and still respond to game population declines with management strategies. The project will also produce detailed models of animal metapopulation dynamics that incorporate the sources and sinks created by hunting itself as well as by habitat variability; such spatially explicit models will be extremely valuable to managers and theoretical ecologists. Moreover, our project will advance discovery and understanding while promoting teaching, training and learning by establishing a direct link between research and student training through the use of a distance-linked graduate seminar in which students will collaborate across departments, campuses and disciplines. The research team includes two anthropologists, three population / community ecologists, one remote sensing specialist, one systems ecologist, one mathematical modeler trained in both physics and ecology, and one agro-forestry botanist. The multi-disciplinary nature of the team will facilitate obtaining insights into the complexities of interdisciplinary research and into effective ways to train students for interdisciplinary work. In addition to its scientific and educational contributions, this project could influence the human rights arena by enhancing understanding and communication between managers/conservationists and indigenous peoples. It will inform the ongoing debate on the role of “people in parks” and clarify the contribution that indigenous peoples will make to biodiversity conservation worldwide.

Project Status: On-going

Project Timeframe: 2006-2011

Project Annual Budget: US\$ 333,000

COLOMBIA

Participative Camera Trapping at La Sierra Nevada de Santa Marta (La Guajira), Macizo Colombiano (Huila), Parque Amacayacu (Amazonas) and Serranía del Darien (Chocó), Colombia

www.nativa.org

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The three tapir species present in Colombia (*Tapirus terrestris*, *T. bairdii* and *T. pinchaque*) are vulnerable and overexploited species, but also one that is preferred for bush-meat. Bush meat hunting is one of the major issues facing tropical forest conservation. Therefore, a better understanding of their ecology, behavior and sustainable management of the hunting will be important in helping to conserve them and the forests in which they live. This project have been producing information and working with the local communities since 2008, resulting in very interesting data thanks to a interdisciplinary approach that combines research that looks at the ecology of all three tapir species, all over their Colombian range of distribution, with an understanding of the local perceptions from the people that use them, and also making the people the very central part of the project by means of camera trapping that involves the local communities. The project main objectives aim to establish conservation actions in the short and long term by means of: 1. Establishing a participatory camera trapping national network as a tool of monitoring local populations; 2. Determining and understanding the relationship between communities and tapirs; 3. Proposing, designing and giving support in the implementation of new alternative ways of productive environmentally friendly activities as a way to reduce the pressure on tapir's populations.

Project Status: On-going / Seeking Funding

Project Timeframe: 2008-2012 (5 years)

Project Annual Budget: US\$15,000

ECUADOR

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

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The lowland tapir 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

Ecology and Population Dynamics of the Lowland Tapir (*Tapirus terrestris*) in French Guiana

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Despite its classification as "Vulnerable" by the IUCN Red List of Threatened Species, for a long time there were no restrictions on hunting lowland tapirs in French Guiana. Only in 2007 was the tapir put on a list of species that cannot be commercialized, but it can still be hunted without restrictions for personal consumption and sport, and it remains a well sought after game species in French Guiana. The current projects by the National Office for Hunting and Wildlife (ONCFS) aim to gather baseline data on the ecology of the tapir in order to establish some restrictions on hunting and create better management plans. Some of the main questions the project seeks to answer are: What is the density of tapirs in an undisturbed population? How large are home ranges and what are key resources that determine home range use and population density? The Réserve Nationale des Nouragues, a 1000 km² protected area in central French Guiana, was chosen as the main study site because of its healthy tapir population as well as the presence of an international research station where a lot of base line data on plant diversity and phenology is already available. Over the last four years we collected data on the distribution, habitat use and activity patterns of tapirs using camera traps. We are currently analyzing the data to estimate tapir density using capture-recapture methods. If this works, camera traps could be used to monitor populations over time. We also collected fecal samples to look at the diet of tapirs. We use two methods to analyze the content of the feces: the classic morphological approach that works well for seeds and large plant fragments, and a new molecular technique to identify browsed species from the DNA contained in small plant fragments. This allowed us to identify 67 species tapirs consume as browse as well as 43 species consumed as fruit. Since 2010 we are trying to capture tapirs to equip them with GPS collars. This will give us detailed data on the home range size, habitat use and movement patterns of tapirs, as well as on the interactions between individuals. Our goal is to capture five individuals over the next two years. The data collected through this project will be directly applied to wildlife policies and management plans in all of French Guiana.

Project Status: On-going

Project Timeframe: 2006 - Present

Project Annual Budget: US\$80,000

Lowland Tapir Conservation in French Guiana

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French Guiana is unique in that the lowland tapir benefit from only limited protective legislation, with hunting still allowed and not managed. Although recent surveys 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 is implemented by both the Kwata association and the Game and Wildlife National Agency, and includes complementary components for joint action plans for both species and habitat conservation. Works comprise the management of a national sightings database, field methodological developments for population monitoring, genetic studies, and

people awareness (led by Kwata association), and ecological studies including diet, assessment of densities and habitat use (Game and Wildlife National Agency). On the field, track surveys aim is to develop a reliable tool for the modelling of preferred habitat and to develop rapid assessment of abundance for between-sites comparisons and site monitoring in order to identify natural (e.g., water levels, vegetation type) or anthropogenic (e.g. hunting pressures) causes of variations. In collaboration with the Forest National Agency, the identification of factors influencing the absence or presence of the species is also investigated. The methodology is to map 1 sq km quadrants 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 are crossed with presence / absence of tapirs, defined by a standardized field effort in each quadrant: the objective is to understand ecological requirements of the species, for a better management of habitats in areas planned to be used for timber harvest. The last study action is the use of highly variable genetic markers (nuclear microsatellite DNA) to assess genetic diversity, gene flows between populations, and population trends. Last, an awareness component is undertaken, with public and children (with posters, leaflets, educative books, forthcoming movie), 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. The first successful step was the publication in 2009 of the first part of the Action Plan for French Guiana, approved by local authorities. Regarding ecological work, the study is confined in the Nouragues Nature Reserve, and includes diet analysis using molecular information coming from feces, and camera-trapping in order to provide information on behavior, habitat use, and densities of tapirs in a pristine lowland rainforest. Surveys telemetry via satellite tracking is planned to complement this work.

MALAY TAPIR

INDONESIA

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

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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: On-going / Seeking Funding

Project Annual Budget: US\$26,000

MALAYSIA

The Malayan Tapir Conservation Project

www.malaytapir.org

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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, 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 km². 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.

Project Status: On-going

Project Annual Budget: US\$50,000

MYANMAR

A Preliminary Study of Habitat Selection, Abundance, and Threats for Malay Tapirs in the Tenasserim Hills, Southern Myanmar

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The Tenasserim Hills in southern Myanmar supports extensive evergreen forests and contains globally significant populations of Malay tapir (Medici *et al.*, 2003) and other large mammals such as Tiger (Lynam, 2003), Asian elephant, and potentially significant national populations of large ungulates (Gaur, Banteng, and Sambar), bears, macaques, and pangolins, and tropical hardwoods. In order to protect these important natural resources, the Myanmar Government gazetted a 1,700 km² area as the Taninthayi Nature Reserve on 30th March 2005. The objectives of the research and survey program proposed herein are: 1.) To determine the range and extent of Malay tapir distribution in the Taninthayi Nature Reserve (TNR), the only functional Protected Area in the Tenasserim Hills, southern Myanmar; 2.) To identify and monitor the threats affecting Malay tapirs in the TNR, 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. Since the middle of May 2009 the project was delayed due to instability in the project area and the aftermath of Cyclone Nargis which affected coastal areas. Following a restructuring of the TNR, and the recently completed national elections we expect to be able to resume field activities starting in January 2011. The priorities will be to resume field surveys for tapirs, wildlife trade investigations work, and the wildlife training program.

Project Status: On-going / Seeking Funding

Project Annual Budget: US\$5,000

MOUNTAIN TAPIR

COLOMBIA

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

www.mountaintapir.org

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The mountain tapir (*Tapirus pinchaque*) 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 studies 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 program to be implemented in tapir habitats. In the proposed research, we will study mountain tapir habitat use looking for 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 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 is able to provide tools to design better management plans to protect Andean wildlife in regions where cattle ranching exists.

Project Status: On-going / Seeking Funding

Project Timeframe: July 2006 - July 2016

Project Annual Budget: US\$10,000

ECUADOR

Conservation Status of the Mountain Tapir (*Tapirus pinchaque*) in the Eastern Slopes of the Central Andes in Ecuador (PCTA)

www.zanjarajuno.org

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This project has four main components: 1.) Field research about tapir ecology and biology; 2.) Local training in field monitoring; 3.) Environmental education; and, 4.) Dissemination and communication. We seek support to for the conservation of the mountain tapir, among the world's most endangered large mammals. Hunting, habitat destruction, and cattle pose the greatest threats to its survival. This mammal is hunted by the local people due to consumption of its meat and skin; it is also believed that the mountain tapir's toes have aphrodisiac properties. In reality it is a shy herbivore. The habitat of the mountain tapir, the Tropical Andes, is the world's richest "biodiversity hotspot" in total species richness and in a major measure of endemism-number of endemic plants. The mountain tapir has a key role in sustaining this plant diversity. However, in Ecuador, protection of species and habitats within Andean national parks has been inadequate, placing the hotspot's phenomenal biodiversity at risk. Lack of basic scientific knowledge about endangered species, lack of training of park guards, widespread hunting, cattle and agriculture have worsened the situation for several threatened species. The mountain tapir has suffered exceptionally from these impacts. Its remaining habitat is highly fragmented, and tapir populations are concentrated in inaccessible high-elevation (1,400-4,700 m) areas. In Ecuador, even in areas where the species was thriving several decades ago, it has been driven to local extinction. In protected areas, this mammal is still hunted, and cattle incursions pose another major threat. Scientists estimate that fewer than

2,500 individuals occur through its geographical distribution. The mountain tapir has been categorized by the IUCN Red List 2008, the Ecuadorian Government and the US Fish & Wildlife Service as an Endangered. This project is carried out by local members of the IUCN/SSC Tapir Specialist Group (TSG), Finding Species Inc., Fundación Oscar Efrén Reyes, and Centro Ecológico Shanca Arajuno.

Project Status: On-going / Seeking Funding for 2011

Project Timeframe: January 2008 - January 2013 (5 years)

Project Annual Budget: US\$20,000

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

Mountain Tapir (*Tapirus pinchaque*) Conservation Program in the Influence Areas at Cayambe-Coca National Park and Antisana Ecological Reserve, Ecuador

www.ecociencia.org

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Since December 2010, the alliance between Fundación EcoCiencia, Fundación Zoológica del Ecuador, and IUCN/SSC Tapir Specialist Group (TSG) of Ecuador, financially supported by EcoFondo, have been leading the "Mountain Tapir (*Tapirus pinchaque*) Conservation Program in the influence areas at Cayambe-Coca National Park and Antisana Ecological Reserve, Ecuador" as part of Conservation Program of Endangered Species in Ecuador. Our goal is to contribute the conservation of Mountain Tapir, catalogued as endangered species by IUCN, and their habitat. The project is located along the Papallacta River Basin (PRB), at highland mountain forest in Quijos and El Chaco municipalities, northeastern Andes of Ecuador. The PRB form part of Cayambe-Coca National Park and Antisana Ecological Reserve, internationally renowned by its unique composition of fauna and flora species, endemism and rarity. Furthermore, these protected areas harbor the last remnants of montane cloud forest, catalogued as critically endangered ecosystems, in northeastern Ecuador. This project has three distinctive components: 1. Research: We are going to capture and monitoring specimens using radio-telemetry, and by indirect sampling (transects). In order to understand relevant aspects of their population biology, through these methods we may study their habitat uses and preferences, abundance, density, health, genetics and threats in the area; 2. Environmental sensitization: We work directly with local people (children, young, adults), through capacity-building of teachers and park rangers, even in technologic as well the didactics process, developing of didactic materials, and communicative activities (festivals, itinerant expositions, posters, guides, manuals, radio messages); 3. Institutional Strengthening and Governance: The processes of institutional strengthening are aimed to promote activities which allow improving specific capacities of management from Tapir Specialist Group, local Governments and Ministry of Environment of Ecuador. These activities will include the development of proposals for local and regional conservation projects, diffusion of the project research results, generation of specific capacities and the elaboration of tools for public policies, with key actors and governments in direct work with local people. This initiative is currently developed by a multidisciplinary team with wide expertise in research processes on threatened mammal species in Ecuador.

Project Status: On-going

Project Timeframe: December 2010 - May 2013

Project Annual Budget: US\$133,000

Monitoring and Analysis of the Viability of the Mountain Tapir (*Tapirus pinchaque*) Populations in Three Sites in the Cayambe Coca Ecological Reserve, Eastern Ecuadorian Andes

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The Mountain Tapir (*Tapirus pinchaque*) is the smallest of the four living tapir species (length up to 180 cm, height 75-90 cm, weight up to 250 kg). It is distinguished from the other tapir species by its white lips and a relatively long (3-4 cm) black pelt. Found exclusively in the Andean regions of Colombia, Ecuador, and northern Peru, its habitat is comprised of mountain forests (200-3500 m) and páramos (>3500). The species is highly sensitive to territorial fragmentation and degradation, and its populations are isolated and subject to high pressures from hunting. As such, it is included in CITES Appendix I and listed as an Endangered in the IUCN Red List. The proposed study area consists of three sites located within the Cayambe Coca Ecological Reserve (Eastern Ecuadorian Andes): (1) the extreme northern buffer zone of the CCER (3500-4000 A.M.S.L.); (2) the central part of the CCER (3387 A.M.S.L.); (3) the Cuyuja sector in the extreme south of the CCER (3836 A.M.S.L.). As its objectives, the study looks to evaluate the state and health of Mountain Tapir populations, habitats, and ecosystems, and to determine the pressures of hunting activities on the species. This will be achieved via the following proposed courses of action: 1. Botanical characterization. Six parcels will be established in each site and a botanical inventory will be carried out. Trees with special nutritional importance for the species will be identified and marked, and will be regularly visited to observe patterns of floration and fruition. Initial measurements of diameter at chest level (DAP) will be carried out and repeated annually. Since trees of the same species do not always reproduce yearly, observation for a minimum of 2 years will be necessary in order to more accurately register the phenological cycle. 2. Evaluation of the population state of the *Tapirus pinchaque*. In order to maximize sample effectiveness, fauna populations will be evaluated using standard professionally-recognized census methods over transects and “recce” evaluation trails used by the species. Observation of fauna will be carried out concurrently with periods of botanical characterization in order to ensure the closest correspondence between the study results. 3. Systematic camera-trap monitoring of *Tapirus pinchaque*. Systematic monitoring using sensor-equipped camera traps is a relatively new technique, designed for the observation of large mammals with large territorial ranges, which has proven highly useful in the study of presence/absence and the collection of relative abundance data. Fifty camera traps will be set in an evenly spaced grid design, and 25 two-camera sampling stations will be installed. The cameras in each site will remain active over two 60-day periods each year. 4. Estimation of hunting rates and pressures for *Tapirus pinchaque*. The set of methods used to obtain information on hunting rates and pressures will include: (1) interviews with hunters, (2) direct entrance with hunters, and (3) use of a form for the self-registration of hunting activities. This project will be developed by the Institute for Conservation and Environmental Training (ICCA) with financial support from the EcoFondo Foundation of Ecuador for a period of two years.

Project Status: Starting in 2011

Project Timeframe: 2 years

Project Annual Budget: US\$125,000 (US\$250,000 for 2 years)

Amount of Funding Currently Sought: US\$40,000

PERU

Creation of Cerro Negro Mountain Tapir Nature Sanctuary, Peru

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A nature sanctuary in NW Peru's Piuran Cordillera (including de Las Lagunillas) would be created in an area of vital importance to Peru's remaining endangered mountain tapirs (*Tapirus pinchaque*). 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 their conservation status (already largely done); (3) The preparation of a thorough-going professional justification for the new sanctuary to include items (1) and (2) above and additionally the legal, ecological and conservation bases 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 would 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, and most immediately before a General Assembly of native communities who would exercise their democratic rights to consider and possibly declare the sanctuary, knowing its mutually agreed upon boundaries and the rules that apply to its protection; (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 establishment of sanctuary boundaries, 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. An official referendum by communities in September of 2007 rejected an open pit consortium of mining projects that threatens the cloud forests and páramos of this region -- by 95% of the vote.

Project Status: On-going since 2000

Project Timeframe: January-December 2011

Project Annual Budget: US\$20,000

THEMATIC PROJECTS

Reproductive Biology of the Tapir

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There is little information pertaining to fundamental reproductive biology of tapirs. Majority of effort has been directed at characterizing female reproduction especially behavior and endocrine profiling. A thorough understanding of both male and female reproduction is vital for developing various assisted reproductive technologies including artificial insemination and sperm cryopreservation. Sperm cryopreservation also serves as insurance against catastrophic loss of genetically valuable animals. Furthermore, cryopreservation also might allow the import of new founders without having to move live animals. Therefore, the overall objective of this project is to characterize the reproductive traits of all tapir species and develop consistent methods for collection and cryopreservation of their spermatozoa. Advances in these areas also would permit the establishment of a sperm genome resource bank for tapirs. To facilitate this effort we also seek collaborations with researchers in all range countries. Successful completion of this project would immensely improve our ability manage animals in captivity as well as capture valuable genetic material from wild born individuals.

Project Status: On-going / Seeking Funding

Project Timeframe: January 2009 - Present

Project Annual Budget: US\$20,000