



Tapir Conservation

The Newsletter of the IUCN/SSC Tapir Specialist Group

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The views in Tapir Conservation do not necessarily reflect those of the IUCN nor the entire IUCN/SSC Tapir Specialist Group (TSG). The objective of Tapir Conservation is to offer the members of the IUCN/SSC Tapir Specialist Group and others concerned with the family Tapiridae, news briefs, opinions, and general information about this threatened mammalian genus. Anyone wishing to contribute to Tapir Conservation, please send materials to:

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Letter from the Deputy Chair and Retiring Chair

As we begin the year 2000, Sharon Matola will step down as Chair of the Tapir Specialist Group. Patrícia Medici of Brazil has been proposed by Sharon to fill the position. The Executive Committee of SSC will meet at the end of March and will review the Specialist Group Chair appointments for 2000-2004. The appointments will be made after October 2000.

Sharon has been Chair since 1990. As she completes a decade of work for the group, we look back on the newsletter she created, publishing the first six issues of *Tapir Conservation* working from a manual typewriter in her office at the Belize Zoo. In 1991, Sharon began submitting regular contributions to *Species*, the official magazine of the IUCN/SSC. The magazine is a valuable and under-utilized forum for making SSC group work known to other members, and Sharon made sure the tapir group was represented regularly. Under her direction, the TSG Action Plan was written, and was published in 1997. In 1998, the Tapir Specialist Group grew to its present size, with members in almost every tapir range country. Communication expanded among tapir researchers, students, and conservationists, and a web site for the group was developed. Recently, the conservation struggle in Belize has escalated, claiming all of Sharon's time. As this newsletter goes to press, the Belize Zoo itself is threatened. It is through this zoo and its related Tropical Education Center that Sharon carries on much of her important work in Belize, and her

attention there is critical. She will continue to represent Belize in the TSG.

Sharon and Sheryl both support Patrícia's appointment enthusiastically. Many of you know Patrícia already. Those who do not will find her easy and delightful to work with. Patrícia has every qualification for the job. She is an excellent communicator, original thinker and fine organizer, and has extensive experience in the field working with lowland tapirs. She is currently completing her Master's thesis. Patrícia's e-mail is: epmedici@uol.com.br

Sheryl Todd will work with Patrícia as TSG's Deputy Chair. She will continue to edit *Tapir Conservation* and develop the TSG web site.

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The drawing on our masthead was donated by artist Kevin Burkhill of Birmingham, England.

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Editors' note

The Editors wish to thank you for your contributions to this issue. We've seen the newsletter expand over the past few years, and your efforts are very much appreciated. We have an excellent collection of articles and notes this issue, and we are grateful to everyone who helped. Due to time constraints, we were unable to get all of the interesting material in print this issue, particularly if it required questions or updates. We will try to include this material next issue, which we expect will be out by fall, 2000. We had intended to publish two issues in 1999, but were unable to do so before the end of the year. If you have paid by subscription, your subscription will be extended to include the correct number of issues. Thanks for your patience.

Please continue to send in your reports and notices. It will be helpful if you can submit them in electronic form, either by e-mail or by file (either Word or WordPerfect is fine). A minimum of text formatting is preferable. Photos, tables, and figures are welcome.

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Tapir workshop report from Paraguay

by Olga Montenegro, Patricia Medici, and Richard Bodmer

The Tapir Workshop was held on October 5, 1999, in Asuncion, Paraguay, during the IV International Congress on Wildlife Management in the Amazon and Latin America. The workshop lasted for four hours of intensive work and included four different sessions. The first session was an introduction to the workshop and welcome to the participants (about 60 people).

The second session consisted of presentations made by twelve tapir researchers from eight different countries: Patricia Medici (Brazil), Diego Lizcano (Colombia), Juan Pablo Juliá

(Argentina), Enrique Richard (Argentina), Jorge Segundo (Bolivia), Paulo Rogerio Mangini (Brazil), Sonia Foerster (USA-Costa Rica), Clara Solano (Colombia), Nancy Vargas (Colombia), Olga Montenegro (Peru), Richard Bodmer (USA-Peru), and Eduardo Naranjo (Mexico). The presentations included several topics regarding the three Latin American species of tapirs (*Tapirus terrestris*, *Tapirus bairdii* and *Tapirus pinchaque*). The presentations made it possible to become acquainted with each other's most recent activities and plans for the future, and also to make a preliminary diagnosis of the tapir population's status in the study sites covered by the participants. Diego Lizcano, Clara Solano, and Nancy Vargas showed that the mountain tapir's original distribution in Colombia was considerably reduced, mainly due to habitat destruction and fragmentation. Diego Lizcano is beginning a new phase of his project. He will capture and radio-collar four animals at one of his study sites to investigate their use of area and habitat. Sonia Foerster and Eduardo Naranjo showed that the Central American tapir was affected by depletion of habitat and poaching in Costa Rica and Mexico. According to Jorge Segundo's presentation about his work in Bolivia, the lowland tapir, despite having the largest distribution range of the three species, has been over-hunted in some areas. The majority of the locations in which tapirs still survive are protected areas, and their situation outside of these areas is a very serious problem. Richard Bodmer, during his presentation, showed that some rural communities in the Peruvian Amazon are monitoring their own subsistence hunting of lowland tapir in order to help sustain the tapirs' numbers. The ongoing field research conducted by Patricia Medici in Brazil showed that lowland tapirs are able to move through the landscape, probably searching for resources or using the nearby forest fragments as a refuge. Medici's plans for the future include investigating why these animals visit other forest fragments, using her previous three years' worth of data to investigate the tapirs' preferred habitats, and the capture of animals in the smaller fragments of the Pontal Region. Sonia Foerster and Paulo Rogerio Mangini, both veterinarians, discussed the

veterinary aspects (immobilization, health studies, etc.) of tapir studies in Costa Rica and Brazil respectively. Sonia is the responsible veterinarian for her husband's ecological study on *Tapirus bairdii* in Costa Rica, and Paulo Mangini is responsible for veterinary aspects of Medici's project in Brazil. Juan Pablo Juliá and Enrique Richard talked about their experience in captive management and breeding in Argentina, demonstrating that there is potential for ex-situ conservation of the lowland tapir. Olga Montenegro presented tools to determine potential areas for tapir conservation.

The third session consisted of a short presentation by Patricia Medici about the Tapir Specialist Group and Tapir Preservation Fund. Previous to the workshop, Sheryl Todd (President of the Tapir Preservation Fund and Deputy-Chair of the Tapir Specialist Group) and Sharon Matola (Chairperson of the Tapir Specialist Group) prepared press releases about both groups, and copies of these releases were distributed to workshop participants. Copies of the most recent *Tapir Conservation* newsletter (a publication of the TSG) were also distributed. During her presentation, Medici talked briefly about the group's main activities and objectives, and also about the need to improve communication among tapir people and participation in the TSG and in TPF activities.

The fourth session consisted of another short presentation by Sonia Foerster, who discussed her intentions to organize an International Tapir Meeting for 2001. According to her presentation, the meeting will probably be held in Costa Rica or Miami in June 2001. She has recruited several others, including Rick Barongi (TAG - Tapir Advisory Group), Sheryl Todd (TPF/TSG), Sharon Matola (TSG, Belize Zoo), and Donald Janssen (San Diego Zoo) as initial planners.

Approximately 60 people attended to the workshop — a turnout that was extremely gratifying for the organizers. It was also exciting and rewarding to see the amount of valuable and useful information that has been gathered by researchers. This data is fundamental for tapir conservation. We would also like to mention that most of the research has been done on a long-term basis, and this is important for understanding the real issues involved in the conservation of tapirs.

We would also like to highlight that while not making presentations, other tapir researchers were present at the workshop and contributed by asking questions, making suggestions, and creating discussions. Some of these researchers were Joe Fragoso, Silvia Chalukian, Andrew Noss, Daniel Brooks, Robert Wallace, and Lilian Painter. Joe Fragoso has studied *Tapirus bairdii* in Belize, and is still interested in tapir conservation. Andrew Noss is working on *Tapirus terrestris* in the Bolivian Chaco, and is concentrating his efforts on capturing and radio-collaring animals at his study site. Daniel Brooks studied *Tapirus terrestris* in Paraguay several years ago, and was one of the editors of the Tapir Action Plan (1997), together with Richard Bodmer and Sharon Matola. Robert Wallace and Lilian Painter, both from Wildlife Conservation Society (WCS), are starting a new project on *Tapirus terrestris* (and several other animals) in Bolivia. They will be using satellite radio-collars for their studies.

Others who attended the workshop were Andrew Taber (WCS), Cláudio Valladares-Pádua (IPÊ - Brazil), Laury Cullen, Júnior (IPÊ - Brazil), Kent Redford, Peter Feisinger, Bruce Young, William D. Toone (San Diego Zoo), and several other researchers and students from Latin America and the United States.

Finally, the workshop was also an excellent opportunity for the researchers to meet each other, to exchange ideas, and also to have fun. We would like to say that we are really pleased with the way the workshop turned out, and that it was an excellent opportunity to spread "tapir fever." We thank the Congress organizers, who helped tremendously in putting everything together; we also thank Fundación Moisés Bertoni, Florida University, Sheryl Todd (TPF and TSG), Sharon Matola (TSG - Belize Zoo) and all the participants who were with us during the workshop's long sessions. Special thanks to all the tapir researchers who did their best to make it to Paraguay and to share with us all their amazing experience and insights!

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Richard Bodmer

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Presentations

1. Conservation Biology of lowland tapirs (*Tapirus terrestris*) and their potential as "landscape detectives" at Pontal do Paranapanema Region, São Paulo State, Brazil. Medici, E. P. & Valladares-Pádua, C.
2. Tapir (*Tapirus terrestris*): diet and management in an environment of mountain forests (Horco Molle Experimental Station), Tucumán, Argentina. Richard, E. & Juliá, J. P.
3. Population status of the mountain tapir (*Tapirus pinchaque*) in Colombia. Lizcano M., D. J. & Cavelier, J.
4. *Tapirus terrestris* at the Bolivian Chaco. Barrientos Segundo, J.
5. Veterinary aspects of the study of *Tapirus terrestris* in the wild at Pontal do Paranapanema Region, São Paulo State, Brazil. Mangini, P. R. & Medici, E. P.
6. Effects of the anaesthetic and health studies of a *Tapirus bairdii* population in Costa Rica. Foerster, S.

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7. Tapir population status at the Peruvian Amazon. Bodmer, R.
8. Status of the three species of tapir in Colombia. Solano, C. & Vargas, N.
9. Identifying tools for the conservation of tapirs at the Colombian Amazon. Montenegro, O. L.
10. *Tapirus bairdii* in Mexico. Naranjo, E.

2001 tapir conference in planning stage

Sonia Foerster and Rick Barongi head a committee to discuss plans for a world-wide tapir conference to be held in the summer of 2001. The date is expected to be in July, and the venue will probably be either Miami, Florida, or San José, Costa Rica. Please mark your calendar and keep in touch, as it would be nice to have as many tapir people there as possible. Further announcements will be made through *Tapir Talk*, other e-lists, and in

upcoming issues of *Tapir Conservation* as plans progress.

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Who adopts zoo tapirs?

Many zoos have adoption programs for their animals, including tapirs, by which the public can pay to help maintain the animals. The adoptive "parents" are given certificates, visiting privileges, or other acknowledgement for their help. Some fans go further, supporting other organizations that benefit the conservation of the species. Mark and Carol Reid of Canada are two such people. Over the years they have helped support tapirs through the Panamanian Tapir Trust, the Tapir Preservation Fund, and in other ways. Carol has made tapir earrings and place mats for the Tapir Gallery Gift Shop, and both Carol and Mark have supported the organization in various ways. We wanted to get to know Mark and Carol better, and we thought our readers might enjoy hearing about their experiences. Both members of this peaceful and conservation-minded couple work at the Canadian War Museum preserving Canada's history.

The interview

Q: How did the two of you first become interested in tapirs?

A: We've always enjoyed a shared interest in animals, and when we read an article by Rick Barongi about tapirs we contacted him to find out how we could help these endangered "lovelies." Rick very kindly directed us towards the Tapir Preservation Fund (TPF) and we discovered other like-minded people.

Q: I gather that tapirs now occupy a large part of your life?

A: So our friends and families tell us! No one who visits our place can leave without learning something about tapirs, if only because our living room is dominated by a full-size papier maché tapir head. One of our bathrooms is decorated in a tapir motif, complete with antique prints of them, a ship's crest of H.M.S. Tapir and a jungle shower curtain. The bedroom is also home to a small colony of plush Malayan tapirs, everything from ones that can sit in your hand to a huge Steiff "critter."

Q: I'm told that you even plan your vacations around zoos that have tapirs?

A: Well, yes, even our honeymoon was planned to include a visit to Bertie and Eva, a couple whom we adopted at London Zoo. We visit the UK every couple of years (Mark was born there) and have been fortunate to adopt others at Colchester, Port Lympne and Marwell. We even manage to occasionally visit a couple of Canadian tapirs at the Toronto Zoo. Carol and I had quite a nice greeting when we arrived at Regent's Park Zoo on our honeymoon to find Bertie, the male Brazilian tapir, padding about in the

outdoor paddock. No doubt recognising us as tapir aficionados, he unleashed a "stream of welcome" over Carol's new leather jacket. I thought it was rather thoughtful of him, but Carol expressed different views as she sponged off with a few Kleenexes (and expletives!). The day was saved, however, when, after making contact with a zoo employee called Steve, we were invited back for the afternoon feeding at 3:00 pm. We went behind the scenes and were actually able to feed and touch Eva. Carol still considers it the highpoint of our honeymoon (sigh!) and we have a marvelous photo of her with a mile-wide smile, stroking an enormous "snoutie" who has collapsed under an overdose of petting and bananas (er, Eva, that is, not Carol). I could wax poetic about other encounters, but figure that I should leave it at that for now.

Q: What reactions have you received from zoo staff (not the tapirs!) when you visit?

A: Keepers and staff are always delighted, if sometimes a little surprised, to learn that people have actually adopted animals other than the lions, tigers, monkeys, etc. On occasion, they have actually allowed us to have a more personal visit with the tapirs, no doubt in contravention of the rules, but greatly appreciated and a guarantee of renewed adoption!

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NEWS FROM THE FIELD

All countries from which we have reports are listed. The arrangement is generally north-to-south beginning with the Americas and continuing to Asia. Please help by sending reports from the country in which you work. Population estimates have been omitted due to lack of accurate information, as much more research is needed. Reports are welcomed by the editors.

IUCN Categories:

Mountain tapir (*Tapirus pinchaque*):

Endangered (EN)

Asian tapir (*Tapirus indicus*):

Vulnerable (VU)

Baird's tapir (*Tapirus bairdii*):

Vulnerable (VU)

Lowland tapir (*Tapirus terrestris*):

Lower Risk (LR) - Near Threatened

Central America

Belize

Baird's tapir (*Tapirus bairdii*)

The Upper Macal and Ruspaculo river system, located within the Central Maya Mountains of Belize, remains a sanctuary

for the Central American tapir, *Tapirus bairdii*. Due to the rich riverine vegetation found there, the herbivore populations are robust. Visiting scientists have remarked that few places exist within the region, so unspoiled and harboring endangered species. Past studies have focused upon tapir densities within the river system, making careful count of tracks, trails, feces and animal sightings. Seed dispersal has been looked at through the examination of feces, as well. In one field study, it was found that only remains of riverine vegetation, mainly a cane species *Tripsacum andersonnii*, was present in the tapir feces. This indicates how important the riverine vegetation is to the diet of *T. bairdii* in this region. This region is presently under threat by a proposed hydro project. Should the project go forward, the habitat which supports healthy populations of tapir, would be flooded

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Honduras

Baird's tapir (*Tapirus bairdii*)

Update on the tapirs of northeastern Honduras

by Kevin Flesher

It had been five years since I visited Honduras when I returned this past August. My objectives were to visit the colonization front in the southern buffer zone of the Rio Platano Biosphere Reserve to see if it had advanced, to collect more data on the status of the tapir (*Tapirus bairdii*), to see how Hurricane Mitch had affected the forest, and to find out if any conservation work is being done. I spent one month in Honduras with 10 days in the field.

Area visited (figure 1)

I entered the biosphere reserve along the Dulce Nombre de Culmi-La Llorona road, stayed with a family in the upper Saguazon watershed, and spent eight days walking in the mountains in this area. I also crossed into the Rio Chiquito (on the IGN maps this river is called the Rio del Pino) and the Rio Cristal basins.

My guide and main informant was Tanito Avila, who has lived there for 15 years.

Tapir tracks and bedding sites

I found seven sets of tapir tracks and three bedding sites, with tapir signs found in each of the three basins visited (table 1). Sets of tracks were spaced at approximately 1 km from other sets of tracks and track size differences suggests that several individuals were represented. In addition to the tracks and bedding sites, we found tapir trails along many of the ridgetops. All signs were found in areas that are infrequently visited (once a year or less) and > 1.5 km from the nearest house.

Threats to tapir persistence

Habitat loss – changes in the colonization front

Clearings in the areas visited have changed little in the past five years and most farms in the upper Saguazon basin and east of here are still predominantly under forest cover. The population density in the areas settled 10-20 years ago does not appear to have changed much, which is explained by local people as a consequence of all the land being claimed. This means that in order to acquire land one must buy it from someone who is moving out, so immigration and emigration are linked and the population remains stable even though the inhabitants change. For peasants without the means to buy land, the only way to acquire a plot is to clear previously unclaimed land. This has resulted in the continuing expansion of the colonization front (which has now reached the Rio Pao in the nuclear zone of the reserve) and a net increase in the biosphere's human population. The newly opened trail to the Pao will probably draw more people in the coming years and lead to more habitat loss for tapirs.

Forest disturbance – changes in economic activity

Farmers are making just enough from their harvest surplus to pay for the basic necessities they require from the outside world. The value of coffee (their main cash crop) fluctuates yearly and provides little economic stability, and farmers are always on the lookout for ways to improve their incomes. In the last two years, COHDEFOR (the government agency responsible for environmental protection and forestry regulation) has sanctioned

peasant co-operatives that harvest *caoba* (*Swietenia macrophylla*) trees, and this has led to intensive exploitation of this species. The *caoba* produces a large fruit with wind-dispersed seeds, and its extirpation will probably have little or no impact on the tapir food supply, but the increase in trails and human presence in the forest means less undisturbed habitat and an increased chance of encounters with hunters.

Hunting

Informants said that no tapirs had been killed in the last five years in the upper Saguazon and Saguazito watersheds or along the Aner or Mahor rivers. Many people claim that they do not hunt tapirs and that as a result the animals come close to their fields. Some hunters, on the other hand, are known as tapir killers and one man has killed 15 animals in the past 15 years. These individual differences in the choice of quarry makes assessing the impact of hunting on the tapir population difficult. Hunting appears to be mostly concentrated within 1.5 km of a hunter's house, so a tapir hunter's impact on the population covers a small geographic area. This would suggest that the spacing of human settlements is key for minimizing the effect of hunting on tapir persistence in this region.

A man in Cielo Azul (Aner River) caught a baby tapir in June and took it home to raise it, but it escaped. In the Agalta Mountains, a large male tapir was killed on the Tolagua River in July, about a two-hours' walk from Catacamas.

Hurricane Mitch

The hurricane caused extensive damage to the forest throughout the mountains, particularly devastating riparian vegetation. As the water accumulated during days of rain, the soil along the waterways become saturated and slipped down-slope carrying the forest with it, leaving landslide scars visible on many slopes in both cultivated and pristine areas. Erosion has been severe and the major rivers and streams were still running red 10 months after the hurricane. Tree damage away from the streams was also extensive, and there is an abundance of new treefall gaps. Plants are just starting to sprout in the landslide areas, and it will take years for the riparian forests to grow back. While the

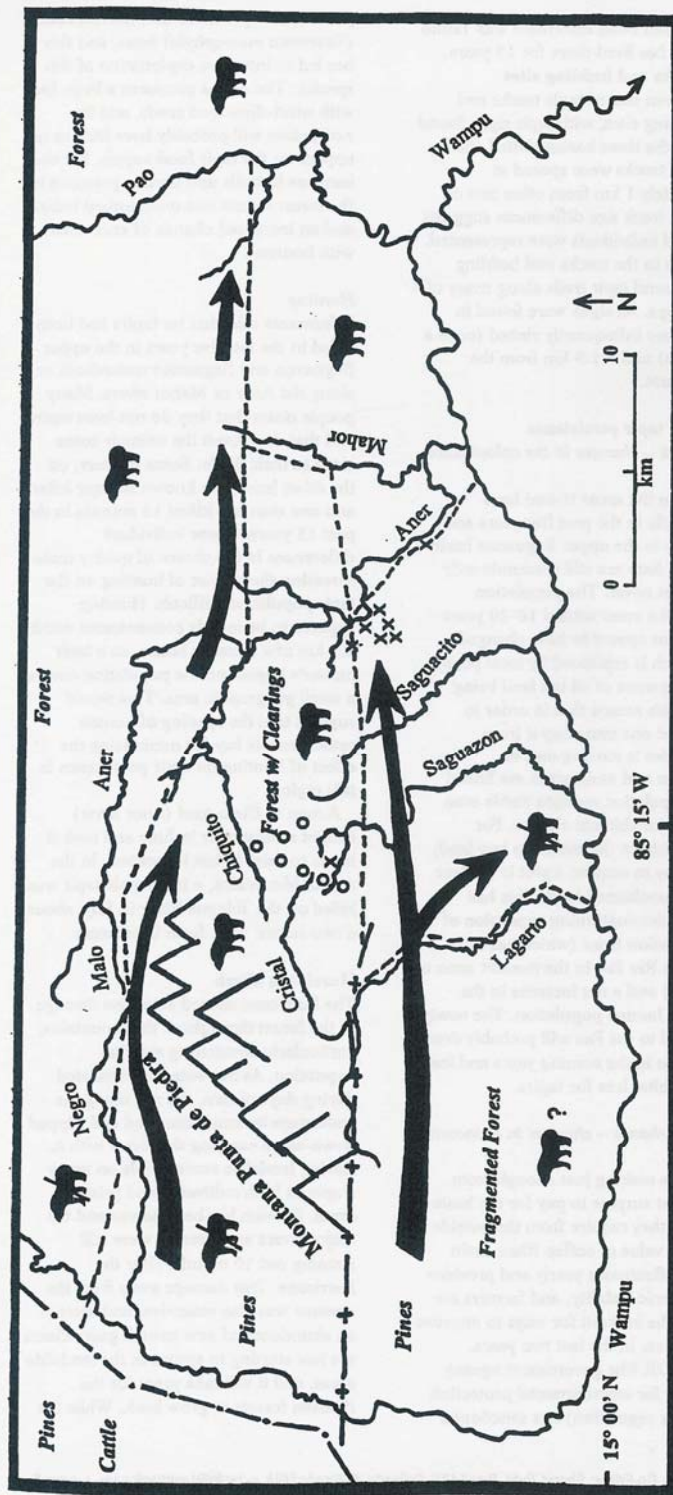


Figure 1. Southwestern Section of the Rio Platano Biosphere Reserve. The Wampu River marks the southern and southwestern boundary of the reserve. Arrows indicate the main routes used by colonists. Open circles = tapir track locations 1999. X's = tapir track locations 1994. Small dash marks = foot/mule trails. Dashes and crosses = the road from Culmi to La Llorona/Plan Grande (end of the line for vehicles). Dashes and dots = the Culmi-Las Marias road (and connections to Catacamas and Tegucigalpa). The tapir symbol indicates areas that still have the species and those that do not (line through the tapir).

tapirs may suffer a temporary shortage of herbaceous riparian vegetation, this should change to a surplus as the vegetation grows back and these areas become dominated by low secondary growth. The increase in treefall gaps will probably also increase the tapir food supply.

One can only imagine that many animals, including tapirs, were killed during the storm, as few animals caught in the path of one of these landslides would have been likely to escape. A farmer told Leonel Marineros (TSG member who works in the El Chile cloud forest reserve) that two dead tapirs floated down the river coming out of El Chile after the hurricane.

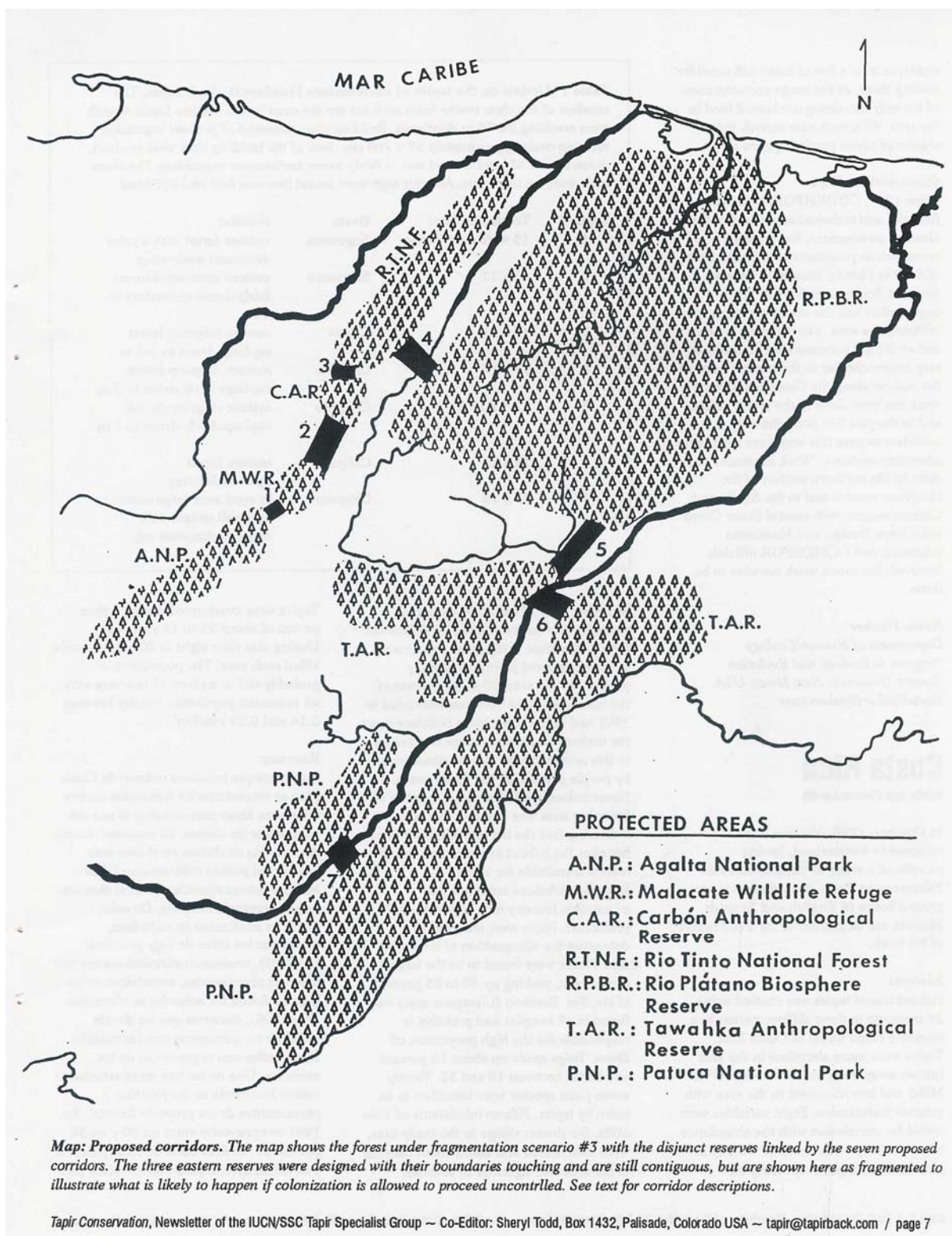
Discussion

What has allowed tapirs to persist on an old colonization front?

The particularly rugged topography of the Montana Punta de Piedra is probably the main reason why tapirs still exist in this area. The steep, folding slopes of the range have acted as a barrier to settlers, channeling them around its northern and southern flanks along the relatively flat Negro and Malo drainages and along the Lagarto River (figure 1). With the exception of a small amount of clearing on the lower Rio Cristal, the southern and eastern slopes of the range support pristine forest, and the range was referred to by one local as "un fuente de dantos" (a source of tapirs).

Will tapirs persist in this area?

Despite the availability of 4-6,000 ha of unclaimed land, colonists have continued to push eastward in their quest for property rather than attempting to settle in the Punta de Piedra, and as long as this is so, the tapirs should be safe. However, the likelihood of this range remaining unoccupied in the long-run seems slight, and one farmer who owns several hundred hectares in the upper Chiquito basin has plans to clear land in the coming years. It is also likely that as local farmers' children mature (my guide has



eight), at least a few of them will consider settling there, as the range contains some of the only remaining unclaimed land in the area. With each new arrival, the chance of tapirs persisting goes down.

Conservation efforts

Since 1997, CODEHFOR, with the financial and technical assistance of the German government, has initiated a conservation program in the buffer zone of the Rio Platano Biosphere Reserve aimed at finding solutions to forest degradation and the economic stagnation afflicting the area. The program is new, and so far has concentrated on trying to stop encroachment in the nuclear zone of the reserve along the Guaraska River. No work has been done in the area I visited, and in the past five years the only outsiders to pass this way were a group of adventure travelers. Work continues to be done in the northern section of the biosphere reserve and in the Agalta and Carbon ranges, with several Peace Corps volunteers, foreign and Honduran scientists, and COHDEFOR officials involved, but much work remains to be done.

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Costa Rica

Baird's tapir (*Tapirus bairdi*)

In October, 1999, Mathias Tobler returned to Switzerland, having completed a study in the Cordillera de Talamanca in Costa Rica. Abstracts are printed below in English and Spanish. Mathias can be contacted for a full report of his work.

Abstract

Habitat use of tapirs was studied using 24 transects in three different areas in a montane cloud forest of Costa Rica. Tapirs were more abundant in the area further away from the next village (Villa Mills) and less abundant in the area with greatest disturbance. Eight variables were tested for correlation with the abundance of tapirs. Slope was lower ($P < 0.05$) in parts used by tapirs, especially on

Table 1 (Update on the tapirs of northeastern Honduras). Tapir signs. The smallest of the clear tracks from each set are the ones listed. Mature forest = with trees reaching 20-30 m dominant. Bedding sites consisted of pressed vegetation forming ovals approximately 65 x 160 cm. Two of the bedding sites were in short, dense stands of bamboo and one in fairly dense herbaceous vegetation. The three beds were on ridgetops. All tapir sign were found between 660 and 960 masl.

Tapir #	Track size (cm)	Basin	Habitat
1	15 wide x 14.5 long	Saguazon	mature forest with a palm dominant understory
2	13 x 12	Saguazon	mature streamside forest fairly dense understory to 4m
3	13 x 12	Cristal	mature ridgetop forest saplings dense to 3-5 m
4	17 x 17	Chiquito	mature ridgetop forest saplings fairly dense to 3 m
5	15.5 x 13.5	Chiquito	mature ridgetop forest saplings fairly dense to 3 m
6	13 x 13	Chiquito	mature forest open understory
7	15 x 15	Chiquito	in open near large stream up small stream with dense herbaceous veg.

browsing sites ($P < 0.005$), the other variables showed no significant difference. One of the three study areas was located in the permanent plots of a forestry project. In this area, 20 to 30 percent of the basal area of all trees was harvested in 1991 and forest roads were built to extract the timbers. Tapir abundance was lowest in this area, probably due to disturbance by people passing on the forest roads. Nevertheless, a relatively high number of browsing sites was found in this area, indicating that the harvest of timber does not alter the habitat in a way that would leave it unsuitable for tapirs. Recommendations are made for sustainable forestry with regard to tapir protection. Feces were analyzed to determine the composition of the tapir's diet. Fibers were found to be the largest component, making up 40 to 55 percent of the diet. Bamboo (*Chusquea* spp.) was found in all samples and probably is responsible for the high proportion of fibers. Twigs made up about 15 percent and leaves between 10 and 30. Twenty-seven plant species were identified to be eaten by tapirs. Fifteen inhabitants of Villa Mills, the closest village to the study sites, were interviewed and asked about hunting in the area and sightings of animals.

Tapirs were overhunted during a time period of about 25 to 15 years ago. During that time eight to 20 animals were killed each year. The population is probably still in a phase of recovery with an estimated population density between 0.14 and 0.29 ind/km².

Resumen

En un bosque montano nuboso de Costa Rica se recorrieron 24 transectos en tres diferentes áreas para estudiar el uso del hábitat por las dantas. Se encontró mayor abundancia de dantas en el área más alejada del pueblo más cercano (Villa Mills) y menos abundancia en el área con mayor presencia humana. De ocho variables analizadas en cada área, solamente los sitios de baja pendiente ($P < 0.05$), resultaron correlacionados con mayores abundancias, especialmente en lugares donde los animales se alimentan ($P > 0.005$), mientras que las demás variables no mostraron una correlación significativa con la presencia de los animales. Una de las tres áreas estudiadas estuvo localizada en las parcelas permanentes de un proyecto forestal. En 1991 se aprovechó entre un 20 y un 30 por ciento del área basal de estas parcelas y se construyeron pistas de arrastres para

la extracción de las tucas. La abundancia de las dantas fue menor en este sitio, probablemente debido al paso frecuente de personas locales e investigadores del proyecto. Sin embargo, se encontró un número relativamente alto de áreas en donde las dantas se habían alimentado, lo que indica que un aprovechamiento moderado de la madera no deja inapropiado el hábitat para las dantas. Se hacen recomendaciones para el aprovechamiento sostenible de estos bosques, con respecto a la protección de las dantas. La composición de la dieta de las dantas fue evaluada mediante el análisis de heces. Las fibras constituyeron entre un 40 y un 55 por ciento de las muestras, de las cuales todas contenían restos de bambú (*Chusquea* spp.) que es probablemente responsable por el alto contenido de fibras. El contenido de ramitas fue de un 15 por ciento, mientras que el de hojas fue entre un 10 y un 30 por ciento. En las muestras se identificaron 27 especies de plantas comidas por la danta. Información sobre cacería y avistamientos de dantas fue obtenida mediante entrevistas a quince personas del pueblo de Villa Mills. Aparentemente, la cacería fue muy intensa durante la década 1975 -1985, período en que se mataban entre 8 y 20 animales por año, pero ha disminuido fuertemente en años recientes. Es posible que la población de dantas esta en una fase de lenta recuperación con una densidad actual estimada entre 0.14 y 0.29 individuos por kilómetro cuadrado.

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Panama

Baird's tapir (*Tapirus bairdii*)

Eva Bravo reports that she completed her graduate thesis in veterinary science in 1997, basing it on her study of Baird's tapir in her home country of Panama.

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Availability of info for students

Also from Panama, Alex Cardenas, now a physics student at Purdue University,

wrote to tell us about growing up as a tapir fan in Panama. He says, in Panama, "tapirs are known as 'macho de monte.' I don't think most people have heard the word 'tapir,' but they certainly know what a 'macho de monte' is. When I was a kid (mid 1980s), I heard stories about people seeing macho de montes in the forest, but I didn't know what they looked like. Also, to increase the myth around them, one of the toughest divisions of the panamanian army was called 'macho de montes' (just like navy seals in the US). So I grew up and came to college in the US without ever having seen a tapir. Then during a vacation, I went with my parents to a zoo called Los Nisperos in the very popular tourist town of Valle de Anton. In that zoo, I was amazed to see many signs pointing to the tapir exhibits. They seemed to be the main attraction. . . . So I went in, and saw this wonderful animal, and that's when all those years of curiosity ended. My interest grew. . . . Years passed by, and now I'm interested because not only pandas and bald eagles have the right to be saved."

Recently the Tapir Preservation Fund was pleased to loan a photo of Baird's tapirs from our web site to Ariel R. Rodriguez, Museo de Vertebrados, Universidad de Panama, for publication in a newspaper article. The purpose of the article was environmental education.

South America

Colombia

Baird's tapir (*Tapirus bairdii*)
Lowland tapir (*Tapirus terrestris*)
Mountain tapir (*Tapirus pinchaque*)

27 July 1999: Farallones Expedition after Tapirs

In summer of 1999, the Tapir Preservation Fund helped pay expenses for an expedition into the Farallones organized by Emilio Constantino of Colombia. The purpose was to try to determine whether the tapirs present in the area were Baird's or mountain tapirs. The findings were not conclusive due to weather, but another trip is being funded for 2000. Emilio reports on the 1999 expedition:

Finally there was a weather break and the trip to the upper Farallones de Cali was made during the first week of July (2nd to 9th), 1999. Warfare situations were "very hot" at this time due to the kidnapping of about 120 church attendants that were taken hostage to the Farallones, by the ELN (National Liberation Army). Participants were:

Sr. Alirio Silva, Farallones Guide and tracker; leader of the expedition. He participated in the last expedition to the Upper Farallones last January, when they reported seeing tapir tracks in the upper ridges.

Sr. Emilio Cardona, tracker and hunter; he currently lives at La Cascada, a place in the western part of the Farallones at 800 masl., near the park border, where he hunts and travels all of the territory. He has hunted several tapirs in the western slopes, among other rare mammals. He participated in the expedition as tracker and without a shotgun!

Sr. Juan; he participated as a guide and as a porter; a friend of Alirio.

The expedition took two days to reach the upper ridges towards the Farallones del Cajambre, a region that very few people have had the opportunity to visit; it is in pristine condition without any human intervention. The weather had been quite dry in the páramos, opposite to the heavy rainfalls in the lower regions for the past months. Besides camping equipment for very cold and windy weather they took light rations of food and water and the material to register the tracks: odontological gypsum (or plaster), plastic cases for transporting the samples and parafin to try it as a track register.

After setting camp in the lagoon of the páramos of Farallones del Cajambre, at 3600 masl. they spent three days looking for tapir tracks; they found the páramo quite dry, but no tapir tracks were found in the same place they were found last January, nor even for several kilometers around the place. Many spectacled bear tracks, scats and feeding remains were found on Puya; also many puma scats and tracks. They collected several scats of both species. They also observed several small tracks of a deer species that could be either from brocket deer (*Mazama* sp.) or even from the rare pudu deer (*Pudu mephistophiles*), the smallest deer in the world, and not reported for the western

cordillera north of Munchique. The expedition found a wide and worn trail (supposedly a tapir trail) that goes from the upper páramos down to the montane jungles of the upper Cajambre, but it seemed unused for a number of months previously, because there were no tracks on it. An interesting point is that Sr. Emilio Cardona, who has hunted the tapirs in the region of Las Dudas in the upper Anchicayá, at approx. 1600 masl. said that the tapirs move upwards to the páramos during the rainy season. So, it is probable that the species involved is *Tapirus bairdii* and not *T. pinchaque*, but the question remains.

It is recommended that we make another expedition during the first months of the year (January-February) when the right weather and season conditions can be found. According to Dr. Jorge Hernández-Camacho, who is currently writing the tapir chapter for a book on Colombian mammals, there is an urgent need to know which tapir species inhabit the Farallones de Cali.

During a recent visit to a new private reserve in the Magdalena Medio I was able to locate a remaining population of the very rare *Tapirus terrestris colombianus*; it still lives in a highly fragmented area near Puerto Berrío, where I was able to look at many tracks and trails of at least six individuals (five adults and a baby). The forest fragment is located in the reserve and in a neighboring farm, which is actually for sale; we fear that the new owners will try to destroy the forest to convert it to pastures for cattle.

Emilio Constantino

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Murdered conservationist mourned

Emilio Constantino brought to our attention the murder of a Colombian conservationist whose passing is mourned widely. Sr. Eusberto Jojoa of La Cocha, a member of the board of the Network of Private Reserves was killed 6 January by guerrillas for promoting

"strange" (i.e. conservationist) ideas to his people. Eusberto lived in one of the prime areas for mountain tapirs, and was a strong defender of the tapir and other wildlife. He was very concerned about the future of this tapir species and other endangered mammals that still live around La Cocha. Information and quotes in the following paragraph are from WWF, Colombia.

Eusberto and his family were among the 52 peasant families living around the shores of Cocha Lake in the south of Colombia. Their "incredible organizing process and efforts to create an alternative way of living, and their love and compromise for taking care of our mother Earth" had become known to many. "They are an excellent example of the ecovillage at a grassroots level." Of Eusberto, the writer said, "He was one of these persons about whom no-one could think that anyone could wish something negative to happen to him. . . . With this message I just want to share with you the sadness for us and the Planet of losing such a beautiful person, a rainbow warrior, a dreamer, an ecovillage builder, a conservationist, a peasant." Because the murder was officially committed by "an unknown" group, the Network of Private Reserves has had to launch a protest in order to press authorities to clarify the injustice done to Eusberto Jojoa.

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Project in Santa Marta receives funding

21 December 1999

We now have some funding for a tapir flag project in order to contribute to a sustainable development plan for the Sierra Nevada de Santa Marta. The study area is located on the northern slope of the Sierra Nevada de Santa Marta within the departments of Magdalena and Guajira. Specific study sites are situated in tropical lowland forest, premontane evergreen and temperate forest within the San Salvador Valley, including an altitudinal gradient from sea level to 2300 masl. The valley has been identified as a priority region for conservation because of ecological significance and social and operational considerations (including the

security situation). Other sites within the northern slope of the Sierra Nevada will be assessed for gathering additional information on the distribution and key habitats of *Tapirus terrestris*.

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Venezuela

Lowland tapir (*Tapirus terrestris*)

TSG Member Denis Torres reports on "Proyecto Danta" ("Tapir Project") in the "News from Captivity" section of this newsletter. Denis reports that this is the first pragmatic step for tapir conservation in Venezuela.

French Guyana

Lowland tapir (*Tapirus terrestris*)

Tapirs have no specially protected status in French Guyana. Local people report that tapirs are hunted and their meat is sold, which is acknowledged by certain environmentalists. As reported by non governmental groups in French Guyana it is legal to trade tapirs and to hunt them. As a proof, they showed copies of lists of protected mammals edited by the Office National de la Chasse, dated 15/5/86. There the Tapir is not mentioned as a protected species. On one of the other lists of the Office National de la Chasse, the tapir is listed as a species which is allowed to be traded. At the moment we are attempting to get an official statement and more recent information.

Brasil

Lowland tapir (*Tapirus terrestris*)

Medici study continues in Pontal

For the past three years, Patrícia Medici (IPE – Instituto de Pesquisas

Ecológicas) and her team have been capturing and radio-collaring lowland tapirs (*Tapirus terrestris*) in Morro do Diabo State Park and surrounding landscape (Pontal do Paranapanema Region – extreme west of São Paulo State, Brazil). The main objective today is to investigate the tapirs' potential as "landscape detectives," showing Patrícia the most used dispersal routes and pathways in the landscape, and thus the potential areas to be conserved and restored as wildlife corridors. The project has caught and radio-collared eight animals so far, and has collected much data. This data is in the process of preliminary analysis. Patrícia was able to use five of these eight animals as landscape detectives, as they frequently wander outside the large forest source which is Morro do Diabo State Park. They normally cross open areas (pastureland) to reach the nearest forest fragments. Patrícia suggests that these individuals use the smaller fragments as "stepping stones" during their temporary movements outside main forest sources.

Specific objectives of this study include describing and mapping these dispersal routes through the landscape. Preliminary information about the tapirs' dispersal behavior has shown that this large and, to some extent, generalist mammal, is still surviving in very small forest patches, mainly because it is able to exploit surrounding resources and move long distances between forest fragments. It is necessary to restore and conserve the most used dispersion routes or corridors, keeping landscape connectivity and, therefore, the metapopulation scenario for this large keystone species in its threatened ecosystem.

During 2000, Patrícia intends to conduct four rounds of captures and radio-collar at least 10 more animals. From 2000 onward, she will concentrate her field efforts on the smaller and isolated forest fragments around the Park.

Acknowledgements: Forestry Institute of São Paulo State; IBAMA; WPTI - Wildlife Preservation Trust International USA; CERC - Center for Environmental Research and Conservation USA; Fundo Nacional do Meio Ambiente (FNMA); Smithsonian Institution; Chicago Zoological Society - Brookfield Zoo; Lincoln Park Zoo - Scott Neotropic Fund; Tapir Preservation Fund - Club Tapir; Tapir Specialist Group/IUCN; Idea Wild; Woodland Park Zoo - Jungle Party Conservation Fund

and, Tapir Preservation Fund - Anonymous Donor.

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Jácomo: Study outlined in Emas National Park

Anah Tereza de Almeida Jácomo, a Brazilian PhD candidate in Animal Biology at the University of Brasília (UNB), central Brazil, reports on local conservation work and a proposed study. She writes:

I am a biologist and have been working with my husband Leandro Silveira at Emas National Park since 1994 with ecology and conservation of the carnivore community, especially with jaguars, pumas and maned wolf. Now the study will be extended to the top predators (jaguars and pumas) and their largest prey (tapirs and peccaries). The study will involve aspects of the ecology and conservation of these species at Emas National Park, one of the largest Cerrado reserves of Brazil. Below is a summary of my project:

Ecology and conservation of tapirs and peccaries in Emas National Park and surrounding farmland

The Cerrado, a savanna-like vegetation distributed in mosaics of grassland, scrubby field, marsh, gallery forest and others, is Brazil's second most extensive biome. It covers 2 million km² and spans 21 degrees of latitude. The Cerrado has lost around 65% of its natural vegetation to farming activities, reservoirs from dams, mining, urbanization, etc. Consequently, natural habitats and fauna of this biome becomes confined to conservation units.

Emas National Park is situated in central Brazil in the extreme southwest of Goiás State (18°19' S e 52° 45' W). It is one of the largest Cerrado reserves of Brazil (132,000 hectares) under protection. However its fauna and flora have been suffering the consequences of the rapid process of insularization due to

intense agriculture activities in its surroundings.

The Park is known for protecting populations of large mammals such as tapirs, and white lipped and collared peccaries. However, these species eventually leave the Park to feed in surrounding crop fields. During this period, they are illegally killed by farmers in retaliation for the damage caused. These species play an important role in the maintenance of the Park's fauna and flora communities, as they are important seed dispersers and prey for large predators. Despite their ecological importance, there are no published studies considering the ecology and conservation threats of tapir and peccaries in the Cerrado.

It is proposed in this study to raise information on the ecological requirements and conservation status of these species in and around the Park as well as to evaluate their real predation impact on crops. Ten tapirs and three individuals of each group of peccaries will be captured in and around Emas Park, radio-collared and monitored during 24 consecutive months. Crop damage by these species will be quantified in the surrounding farmland of the Park during farming cycles. The results may be used in the conservation and management of tapirs and peccaries in the Park as well as in other Cerrado areas.

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Field notes from Brasil: Tapirs (*T. terrestris*) in the Chapada das Mangabeiras

by Kevin Flesher

While visiting a fazenda recently acquired by the Fundação BioBrasil in southern Piauí, I had a chance to search for signs of tapirs in the area. Here are some notes on what I found.

Geography – The Chapada das Mangabeiras is a mesa or tableland which lies at the point where the states of Piauí, Bahia, Maranhão, and Tocantins meet in

northeastern Brasil and forms the divide between the Parnaíba and the Tocantins (Amazon Basin) river basins. The chapada rises 200-300m above a vast sand plain forming a solid wall of spectacular sandstone cliffs over 200 kilometers long. The vegetation consists of a variety of cerrado (savanna) types including open campos with very little tree cover, mature woodland with a fairly closed canopy and trees reaching 10 m, and areas of dense bush forming an impenetrable thicket growing to 2-3 m. The most notable habitats, however, are the extensive sedge wetlands (veredas) and gallery forests which form along the many rivers and streams. The buriti palm is the dominant tree species along the wetlands and is a crucial resource for many wildlife species including the blue and yellow macaw. Just to the east of the chapada along highway BR-135 the vegetation begins to grade into the *caatinga* (xerophytic shrubland) which characterizes so much of northeastern Brasil.

Human landuse – The region is sparsely populated, and for the past 200+ years has been mostly used for cattle ranching. Ranching consists of turning cattle loose and checking in on them every two weeks. Attempts to plant pasture have repeatedly failed, so there is practically no clearing of vegetation, although controlled burning is common. While people used to live on the ranches, most now live in small towns along the highway. Up until the past 10 years, the land on the chapada top was considered useless, as access was difficult and there are very few streams. It was recently discovered, however, that this flat, largely rockless plateau has good water-retaining soils ideally suited for industrial agriculture, and now the soy boom that has affected so many other parts of the Brazilian cerrado has reached the Chapada das Mangabeiras. The plateau is still mostly covered in natural habitat, but vast tracts have been cleared, and a newly paved road and money from large national and international interests guarantees that a good deal more of the land will be cleared in the future.

Wildlife – The region abounds with wildlife, especially birds, including three macaw species, but the large mammal community has been impacted wherever hunters have easy access. Tapirs have been extirpated from the areas I visited

along the base of the cliffs in Piauí, and hunters who have been active in the area for over 20 years do not remember tapirs occurring there. One rancher saw tapir tracks in the gallery forest of his ranch near the town of São Gonçalo last year, but he hasn't seen tracks since and believes the animal was a transient (perhaps a dispersing individual?). Other species that have largely disappeared from this area are the two peccary species, the campo deer, the giant armadillo, and the giant anteater. Maned wolf, the marsh deer, jaguars, and pumas are still present, as are brown capuchin and black howler monkeys. The situation on the chapada top is different, however, and the large mammal community is intact. In the two days we spent on the plateau, we saw brown brocket deer, campos deer, yellow armadillo, and black-rumped agoutis, and found the tracks of jaguar, ocelot, peccary, maned wolf, giant armadillo, and, finally, tapir. The tapir tracks were about three days old. We found them on the old dirt road which lies beside the newly paved road. A single tapir with a foot size of 11 cm wide x 14 long and a stride (4 steps) of 176 cm had walked about 1.3 km along the road. The location was km62, right where the road runs along the plateau edge at the headwaters of the Rio São José (Bahia). The guide said that this is a common place to see tapir tracks, as they sometimes climb the escarpment along the stream to visit the plateau. The vegetation consisted of dense bush growing to 1.8-2m with some more open areas of tall grasses (1.5m) and 2.3m shrubs. The tapir had come within 1.5 km of the extensive soy development of Fazenda São José. Close by were tracks of agoutis, maned wolf, giant armadillo, and two jaguars – one of which had paw measurements of 10 x 10cm (a large enough animal to kill a tapir, I imagine).

Other parts of the Chapada das Mangabeiras with tapirs – The Serra de Jalapinha in Tocantins is reported to be a part of the chapada with many tapirs. Several people reported that tapirs are common in the Maranhão section as well. People say that tapirs stay mostly below the cliffs during the dry season, but ascend the escarpment during the rainy season when water accumulates on the otherwise dry plateau.

Conservation – It is unclear how the development of industrial agriculture will

affect the tapirs. The federal government environmental protection agency (IBAMA) has stipulated that a minimum of 20% of each farm must be left under natural vegetation and two APAs (multiple-use reserves) have been declared which give some protective status to the land along the cliff sides. If, in fact, 80% of the landscape is converted to soy and rice fields, it is hard to believe that many of the large mammals will survive. Whether the clearing ever reaches this extent remains to be seen, and will undoubtedly be influenced by factors far beyond this remote region, such as the world market for soy and the availability of government-backed loans. The cattle ranches below the cliffs generate little money, and many are for sale. With people now living in the towns, the countryside is largely empty, which will hopefully lead to a reduction in hunting, which in turn may allow tapirs to re-colonize some of the areas they have lost over the past decades – the habitat is still there, the tapirs just need protection in order to move back in.

Additional notes – It makes little sense in terms of long-term conservation if the 20% is fragmented into a series of discreet habitat islands, whereas in an area as large as the Chapada das Mangabeiras where 20% = hundreds of km², if the 20% of each property are coordinated into a continuous habitat unit, the conservation area could be very valuable for long-term conservation. The owners of at least three of the farms I visited on the plateau are all leaving 2-3 km distance between their fields and the cliff sides, which means that their 20% areas are all linked. It is hard to know what will really happen as the process of deforestation and soy planting are in the initial phase, but the fact that the farmers have stated these plans is a hopeful sign. The APAs were designed to protect the habitat along the cliffs, so these farmers are following the law. I have requested copies of the APAs in order to know what exactly has been stipulated as the terms for multiple-use and protection. The habitat below the plateau remains intact, so if the cliffs and a distance of 2-3 km from the cliffs on the plateau are in fact protected, then this will mean that animals can move up and down the cliffs moving through natural habitat the whole way. The low population density, the low profitability of cattle ranching, and the

fact that most of the land owners are absentee owners who have no interest in killing wildlife (in fact the few I know of like having wildlife around) allows for cautious optimism.

There is a lot of land speculation going on now that the area has been "discovered" as good for industrial agriculture, so the coming decade will see much change on the plateau. Even so, I suspect the land below the cliffs will continue on as it is now or be gradually abandoned as fewer people are willing to work as cowboys.

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Vidolin proposes two studies

Funds are being sought for both of the following projects.

1. *Tapirus terrestris*: feeding ecology and habitat use in the Parque Estadual das Lauráceas, Parana state, Brazil

A population of tapir (*Tapirus terrestris*) will be studied in the Parque Estadual das Lauráceas, a nature preserve managed by the Instituto Ambiental do Paraná. This reserve has 27,524.32 ha and is located within the municipalities of Tunas do Paraná and Adrianópolis (25°15' - 25°22' S and 48°33' - 48°37' W). The objectives of this study are: 1. to study the feeding ecology of the tapir, with emphasis on seed predation and dispersal that will include phenological studies and germination tests; 2. to evaluate the diversity and the relative importance of each food item found in the diet of the species based on their recording frequency in faecal samples; 3. to identify the habitat preference and home range of the species on this area based on the spatial distribution of tracks and faeces; 4. to estimate the population size of the species in the study area; and 5. to initiate an environmental education program with the local community that will emphasize the importance of this species in the maintenance of the local ecosystem. The results to be obtained with this study will not only improve the knowledge on the biology of this poorly known species but also be an important tool in the elaboration of management plans for the

conservation of the study area.

2. The use of track measurements to identify sex and age in the tapir, *Tapirus terrestris*

The present proposal will complement the study on the ecology of the tapir that is being conducted in the Parque Estadual das Lauráceas, Parana state, Brazil. The objective of this study is to identify the sex and to estimate the age of free-ranging individuals based on their track size. To do so, track measurements will be obtained from captive animals held in zoos and private collections. To obtain the footprints we will conduct the animals whose sex and age are known to an appropriate substrate within their cages. After this, the following measurements of the track will be taken: length and width of the anterior and posterior feet, cushion, and longest digit. A mold in plaster will also be taken. Data analysis will be done with Statistica to check whether there are significant differences between the measurements of the tracks of males and females of different ages. If so, the results will be used to estimate the proportion of males, females, juveniles and young individuals within the population of the Parque Estadual das Lauráceas.

Note: Paula told the editors she has begun measuring tapir footprints at the Curitiba Zoo. There are five tapirs there, three of which have white spots on their legs, even though they are adults. The zoo's veterinarian said that all the three of these tapirs came from Mato Grosso do Sul. The editors have pictures of other adult tapirs marked in this way and will publish them next issue. If anyone knows of adult tapirs retaining juvenile markings, please contact Sheryl Todd: tapir@tapirback.com.

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Tracks found in Serra do Cipó

In November, 1999, while taking a field course in Serra do Cipó National Park in Minas Gerais State northeast of Belo Horizonte, Patrícia Medici discovered

tracks of *Tapirus terrestris* in the park. Although jaguar were plentiful and Patrícia saw her first maned wolf in the wild, she had been told that tapir did not exist in this high savannah. Feeling that they must be here (tapirs inhabit savannahs in other parts of Brazil), she continued watching the ground during the fieldwork portion of the course. Her dedication paid off when she saw "huge" tapir tracks near the river that runs through the center of the park. Returning the next day, Patrícia found more fresh tracks. This is "one more place where we know tapirs still survive in Brazil," she reported.

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Ecuador

Mountain tapir (*Tapirus pinchaque*)
Lowland tapir (*Tapirus terrestris*)

Craig C. Downer attempts relocation of *T. pinchaque*

Between December, 1998, and May, 1999, Craig Downer attempted to capture and relocate a pair of mountain tapirs from the Upper Rio Cofanes area to the Golondrinas Reserve, both in northern Ecuador. The project, which was funded by Wildlife Conservation Society of New York (WCS) had been in planning stages since 1997. The project was not able to capture any tapirs in 1998/99, and the translocation will be re-attempted in 2000.

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Bolivia

Lowland tapir (*Tapirus terrestris*)

Lowland tapir project in Bolivia; needs reference materials

Biologist Guido Ayala is completing his Masters Degree in Ecology and Conservation in the city of La Paz. His thesis is entitled, *Monitoring Tapirus terrestris at the Kaa-Iya del Gran Chaco National Park through the use of radiotelemetry as a basis for a management plan by local communities*. Guido reports: "The field work has begun. We have five radio-collared tapirs and are collecting data. In Bolivia, information on these areas of study is difficult to obtain, and I am looking for additional material on methods for estimating mammal density and abundance, and tapir management." Any help with study materials will be appreciated.

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Lizcano helps on Bolivian project

Diego Lizcano of Colombia spent some time with Andrew Noss in Bolivia. He reports that during three weeks there, they caught and radio-collared three tapirs (two females and one male) in four days, using dogs to capture the animals. It seems that most of the projects in Colombia and Bolivia use this method, whereby hunters and their dogs are hired to catch animals for collaring rather than for the usual reason – killing. Lizcano said he may also use dogs in Colombia, but in addition he will try pitfall traps. Patricia Medici reports that Eduardo Naranjo in Mexico will be using both pitfalls and box traps.

Argentina

Lowland tapir (*Tapirus terrestris*)

Oikovéa: "Project Chaco"

Officers of the newly-formed French conservation organization, Oikovéa,

visited Argentina at the end of 1999 to make contacts and evaluate projects for collaboration. Jean-Marie Carenton and Cecile Flamen both work at the Branféré Zoo in the La Bretagne area of France.

Jean-Marie writes:

16 December 1999

We returned home one week ago, having seen a tapir (*T. terrestris*) in the wild for the first time. It was incredible! In reality, it was more exciting to see tapir than most of the other mammals, because it was during the night, and the atmosphere made the event seem almost magical. The sightings took place in El Rey National Park in northwestern Argentina. We saw at least one tapir every evening by car. I tried to search for them alone on foot, but I could not find any this way. I suspected they might smell me and be more afraid than when we were using the car.

Concerning our project in Argentina, we are very happy to report that we have met several people with whom we will work to promote conservation. We have decided to study two emblematic species to protect their environment: the maned wolf and the tapir. The Anta Project will be a component of Project Chaco. Dr. Enrique Richard and Florencia Tola are two of our several contacts. Florencia is an Argentinian PhD student specializing in anthropology. She will accompany us this year to meet the Toba people and to study their relationship with the tapir, which they hunt. Our objective is education concerning the tapir's conservation. One of our contacts is a zoo which has asked us to help with conservation efforts in the area. We realize there is a lot of work ahead of us, but that's fine!

We would particularly appreciate contacting anyone who has created material for education about tapirs that could be used in our area (picture poster, teaching booklet, etc.).

Oikovéa is a very young association, born the 17th May 1999. The name comes from the Guaraní language. It means "nature and the human beings living together in one place" – which is to say that we see Oikovéa as a consolidation of the human being and nature. We are seeking to create that which we want to create a multidisciplinary team (biologist, anthropologist, educator) which will settle in Formosa.

I have volunteered in Africa working with chimpanzees, but was disappointed

because there was no educational component to the project, and the underlying problems were not addressed; essentially, nothing changed. That was when Cécile, who had previously worked in Thailand, and I decided to create our own association. For a number of reasons, we selected the Chaco of Argentina as a focus. The maned wolf, tapir, and giant anteater all attracted our attention as well as the various habitat types in the area. And finally, the woman who established the Branféré Zoo also loved the Chaco. She was an artist, and her last picture was of that region.

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Southeast Asia

Thailand

Asian tapir (*Tapirus indicus*)

TSG Member Tony Lynam writes: "I would like to introduce Mr Suwat Kaewsirisuk to the Tapir Specialist Group. Mr Suwat is Chief Superintendent of Halabala Wildlife Sanctuary in southern Thailand. Since 1998 he has been studying the distribution and feeding ecology of Malayan tapirs in the sanctuary, specifically the effect of forest edges on the species. Mr Suwat would like to receive the newsletter *Tapir Conservation*, and in the future would like to share the results of his work with the group." Mr Suwat's details are:

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Malaysia

Asian tapir (*Tapirus indicus*)

The status of Malayan tapir (*Tapirus indicus*) in Peninsular Malaysia

by Jasmi bin Abdul

Introduction

The Malayan tapir (*Tapirus indicus*) or Badak Cipan in the Malay language, is one of the four species of tapir in the world. This animal is believed to be the most common species of large mammal in Peninsular Malaysia. Tapir were also found in Sabah and Sarawak on the island of Borneo. The prime habitat of tapir is the lowland dipterocarp forest with an altitude less than 300 meters above sea level. This animal is active early in the morning and late evening, while resting at midday and late at night. Tapir are usually solitary, but often adult males and females are together during breeding or mating season. Tapir reach maturity at the age of about 2.5 years and the gestation period is about 13 months. The baby tapir is colored differently than the adults. It has a dark brownish color with white spots along the body. This color will change after eight to nine months, and it becomes black on the anterior and white on the posterior except for the legs. Tapirs feed on jungle fruits, leaves and young shoots. The most common jungle fruit is *simpoh* (*Dillenia aurea*), *ara* or *Ficus* sp., and *pauh kijang* (*Irvingia malayana*). Leaves of *senduduk* or *Malastoma malabathricum* and *mengkirai*, *Terma* sp. are the most favored by this animal. Tapir re-use the same trails and visit nearby salt licks for minerals and nutrients.

The Malayan tapir were considered to be the most fortunate animals in the country. Due to cultural and religious beliefs, tapir is considered a taboo animal, even to the native people, the Orang Asli. There is no record of tapir being hunted for food in Malaysia. There are no cases of tapir being poached illegally by hunters. Wire snares set by poachers intending to trap wild boar or barking deer may accidentally catch tapir. Young tapirs may become prey to tigers, and several pictures of tapirs show scars, probably from tiger or leopard attacks.

The most serious problem faced by tapir and many other large mammals is the loss of their prime habitat. Many lowland dipterocarp forests, prime habitat for significant numbers of large mammals, are slowly declining due to rapid development such as land clearing for agriculture and human settlement. Only 45% of the total land area of Peninsular Malaysia is covered with forest, and only 5% is under the protected areas system, which includes national parks, wildlife reserves, and wildlife sanctuaries.

Survey by camera trapping

Survey by camera trapping was begun in November, 1997, and continues until today. These cameras were sponsored by the Wildlife Conservation Society of New York (WCS) and the United States Wildlife and Fisheries Services. The main objective is to study the population of the Indo-Chinese tiger (*Panthera tigris corbetti*) in the forests of Peninsular Malaysia. Thirty camera traps were set within 40 square kilometers of forest areas. Six different locations and forest types were chosen for the survey. The total area surveyed is about 240 square kilometers. This work involves at least ten wildlife rangers and one researcher from the DWNP. Each camera is triggered automatically by an infrared beam. The cameras were set up along clear jungle trails commonly used by large mammals, including tiger, leopard, Malayan honey-bear, sambar deer, and tapir. When set, the cameras were left on site for two weeks and then taken back for processing. Negative Fuji film, ASA 400, was used.

Results

As many as 6,480 color prints were developed from the six survey areas. Only 790 images turned out to be good wildlife pictures, and 113 pictures were of the Malayan tapir. From these prints, individual tapirs were identified. It was estimated that approximately 50 tapirs were found within the 240 square kilometers of forested areas. This will give an average of five tapirs for 40 square kilometers, which means that along with the tiger and sun bear, the tapir is the most common large mammal found in the Malaysian jungle after wild boar and barking deer. Some of the pictures also indicated breeding populations of tapir, since mothers with young were seen together. Pictures of tapir are not only

taken in the undisturbed forest, but also in the secondary and logged forest areas. Tapirs were found using the same trails used by other mammals such as tiger, leopard, clouded leopard, sambar deer, Malayan honey-bear, wild boar and barking deer.

The Wildlife Department and National Parks (DWNP) will continue the camera trapping program throughout Peninsular Malaysia at the different habitat types and locations. This program may take between three and four years to complete. The main objective is to estimate the number of tiger and other large mammal populations, including tapir, in the forests of Peninsular Malaysia. Several conservation measures have been taken by the Federal and State Governments in order to sustain some of their natural forest areas. Some states have begun to adopt the National Biodiversity Policy by establishing more state parks and other protected areas for the conservation of Peninsular Malaysia's endangered wildlife species. Rules and regulations on the possession of firearms are becoming stricter for the owner and new applicant. Increased public awareness programs for wildlife conservation are also important in the long-run for the conservation of wildlife, including tapir, in this country.

The Malayan tapir is listed under Schedule One of the Wildlife Protection Act 76/1972 and considered a totally protected animal. This means no licenses or permit may be given for keeping, hunting or killing this animals. Fines of up to MR 5000 (US \$2000) or five years in jail may be levied against the offender.

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Indonesia

Asian tapir (*Tapirus indicus*)

Regular market exists for tapir meat in Sumatra

In July, TSG Member Debbie Martyr reported from Sumatra, "We had a visit today from a lecturer from Andalusi University, Padang (West Sumatra) whose colleague, Ardinis Arbein, is studying tapir habitat and population just south of Padang. We were told of a tapir caught in a pig trap (snare) in February which was instantly butchered and the flesh taken to Padang for sale to members of the Chinese community there. Our guest reported that tapir are regularly caught in snares in this area and that there is a regular market for tapir meat in the Chinese community in Padang. This is the first time we have had a report of an active/actual market for tapir meat."

TSG Member Jeremy Holden uses camera traps to monitor large mammals in the area, including tapirs; Debbie reported an incident in which a tapir in their area attacked a camera. "... The same day [we heard about] tapir attacking a canoe [in Belize] Jeremy got camera trap film developed and found that the animals that had destroyed one camera and damaged a second was not the usual Sumatran tiger (they've damaged or destroyed four traps to date) or even a sun bear (one) but ... Malay tapir. ... Tapir very often stroll up to the cameras and units and make a close examination, but they've never done something like this before." The next day another camera was knocked over by a tapir, again at a salt lick, but without damage to the camera. This feat had previously only been accomplished by an elephant.

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Novarino conducting feeding and habitat studies in Sumatra

Background

Several field studies in West Sumatra, Indonesia, have reported occurrence of Asian tapir (*Tapirus indicus*), however, no information was available concerning a

study on the species.

Our previous studies showed that conditions in Taratak area (West Sumatra) appear to be good for populations of Asian tapir. The result of that study, based on three census line track counts totalling 6 km in length, showed the population of Asian tapir reach six to 10 individuals. The population is, of course, supported by the habitat condition and food supplies.

Purpose

The purposes of this study are to know what species of plants comprise the tapirs' habitat, and which species are eaten and preferred by them. This result can be used as a base line in order to maintain and manage the habitat and population of the Asian tapir here. The results can also be used for preparing food storage for Asian tapirs at the Bukitting Zoo.

Proposed schedule of work, and methodology

This program will be conducted for three months. Equipment will be used as follows: DBH meter, altimeter, compass, tape, alcohol, plastic for collection and herbarium apparatus and other field equipment. The two main components of fieldwork in this program will be:

1. *Analyses of vegetation*: using a line transect method (Michael, 1984). The plots attach at systematic range along the track of Asian tapirs. Sizes of plots are 10 x 10 m for trees, 5 x 5 m for saplings, and 1 x 1 m for seedlings. All plant species will be collected for making a herbarium. Plant species will be identified at Herbarium Andalusi University and the data will be analyzed as follows; the density, abundance, frequency, dominance and importance will be valued for each species.

2. *Food preference*: The preference for several food plants will be predicted by collecting plant species that are eaten by the tapirs. Feces will also be collected to help recognize food items. If possible, when we encounter a tapir we will attempt to follow it along its track.

Completed studies

The initial step, now completed, involved identifying the distribution of the Asian tapir in West Sumatra based on information obtained from local people, references, clippings from newspapers and magazines, and from field work.

From these results, we chose two locations in which to predict tapir populations.

The second step, also completed, was to study the population at the two sites selected above. We determined that the population was about 6-16 individuals. At one location (Taratak, Pesisir Selatan, Sumatera Barat, a buffer zone of Kerinci Seblat National Park), we predict that there are 6-10 individuals. We also obtained some interesting data in this location. Local people here say that the tapir is a pest for destroying paddy fields and crops on their plantations. The Tapirs eat certain crops such as watermelon, cucumber, spinach, and tomatoes, and they trample other crops, including the red pepper plant and seedling rubber trees. The local people set traps, and if a tapir is caught, it is sold in the Chinese market in Padang. In field we found tracks of juvenile individuals as well as adults, and we believe this area has good potential to become a sanctuary for the tapirs if it can be protected from the activities of local people. We have chosen this site for further studies.

Future work

We plan to study the tapir's habitat and feeding in this region as described above. Additionally, we hope our study will enable Bukitting Zoo to give the tapir fresh food of the type it prefers in the wild, and possibly to plant this type of food in the exhibit. After this stage, we will move on to behavioral studies, examining the tapir's home range and territory. If possible, we would like to create a research study centre at Taratak, and propose to Province government to protect this area for the Asian tapir of West Sumatra.

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Fires threaten Sumatran wildlife

On 10 March 2000, Reuters news service reported:

Indonesia's neighbors on Friday sent in firefighters to train Indonesian crews battling bushfires on Sumatra island as

the haze-making blazes spread. The firefighters were sent under a plan drawn up after health-threatening smoke from Indonesian fires blanketed large swathes of southeast Asia in 1997, the Association of South East Asian Nations (ASEAN) said in a statement. . . . The fires, which started in the province of Riau on Sumatra with the onset of the dry season, have spread to southern parts of the huge

island, said an official with the Indonesian government's Forest Fire Prevention and Control Project, Ifran Destianto Imanda. "South Sumatra and Jambi should be on alert now as firespots are appearing on our monitors," he told Reuters. Sumatra lies west of Singapore and Malaysia. Many of the fires are illegally set and officials and environmental groups accuse palm oil plantation companies of lighting

them to clear land. Indonesia said Thursday it would name and revoke the licenses of companies guilty of lighting fires.

Ed Colijn

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NEWS FROM CAPTIVITY

"Proyecto Danta" takes shape in Venezuela

by Denis Torres

Proyecto Danta is a conservation project developed by AndígenA Foundation (Venezuela) with funding assistance from the Tapir Preservation Fund (USA).

Presentation

The tapir (*Tapirus terrestris*) is one of the least known and highly threatened mammalian species in Venezuela. Its current status is uncertain, which can be argued due to the lack of information and field research. Nevertheless, the species has recently been classified as *Vulnerable* in the *Red Data Book of the Venezuelan Fauna* (Rodríguez & Rojas-Suárez 1999). The fact that important extensions of its habitat still remain in the southern portion of the country leave us optimistic that there may be viable populations in this region. On the contrary, to the north of the Orinoco River, the species has vanished in many areas, and the remaining populations continue to decrease as a consequence of poaching and habitat destruction.

In its first stage, Proyecto Danta is focused on two main objectives: environmental education and captive breeding.

In Venezuela, there are a fair number of live tapirs housed in many private collections and zoological parks. This notwithstanding, there has been inadequate management that would help sustain conservation actions *in situ*, and

little exchange between parks to favor genetic integrity. Proyecto Danta proposes to begin an automated database of all, or a great part of, the captive individuals in Venezuela. This will aid as a framework in promoting the exchange of specimens within national zoos, elaboration of captive breeding protocols, and as a starting point of a series of research projects in captivity and the field, among many other goals.

In this stage, it is also planned to promote a pilot program of captive breeding in the Chorro de Milla Zoo, located in the city of Mérida, in the homonymous state, Venezuela. The park has an appropriate exhibit for the tapir, where a male specimen named "Pijigao" (a Venezuelan indigenous name), will serve as breeding stock. In order to find a female partner, we have made contact with other zoological parks in the country. The project will also include:

- The performance of some minor improvements to tapir exhibit (finish the handling den) and
- Execute an educational campaign for the zoo's visitors, focusing the conservation of tapirs and the tropical forests that constitute their habitats.



This project is undertaken with the official support of the Corporación Merideña de Turismo, which administers the Chorro de Milla Zoo, and with financial support from the Tapir Preservation Fund. If you wish to collaborate or require further information on this project, please see our contact information below.

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Club Tapir contributions enable project to begin

Contributions from the members of the Tapir Preservation Fund's Club Tapir program at the end of 1999 have allowed the project described above by Denis Torres to begin. A potential mate for Pijigao was located at the Barquisimeto Zoo in Lara State, Venezuela. However, before she is brought in, upgrades will be made to the exhibit. The animal accommodations will be repaired and refurbished, and native planting will be added to the exhibit, which encompasses a lake, but is currently without much vegetation. The cost of the project is estimated to be about US \$1500.00, a portion of which has been raised.

AndígenA, which has partnered with the zoo on this project, has a track record

for environmental education, which will be an important component of the tapir project. They have also developed an environmental education program focused on Andean bears with financial support from the Cleveland Metroparks Zoo. For the tapir project, AndigenA will serve as technical advisors in environmental education and captive management for the tapirs. They will develop an environmental education campaign, including production of a poster, and activities that will include zoo visitors, particularly children.

Dr. Alberto Osuna, Managing Director of Chorro de Milla Zoo and Zoot. Hernando Gordils, Supervisor, report that they have had the male tapir for more than six years in an enclosure of 1,400 square meters with a 700-square-meter fresh-water pond provided by the Chorro de Milla River. Thousands of students visit the zoo each year with their teachers, making the zoo a prime candidate to carry out an education program focused on local conservation education. The Andean condor exhibit is also being upgraded with funds from the Cleveland Metroparks Zoo. Osuna and Gordils feel that Chorro de Milla could become a major source of motivation to preserve *T. terrestris* and other species in Venezuela.

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Australia's first *T. indicus* birth

Fourteen-year-old Denise gave birth to Australia's first *T. indicus* baby on November 16, 1999, at the Taronga Zoo, Sydney. Denise's mate is Bernai, four years old. There are only four adult Asian tapirs in Australia. Denise and Bernai came to Australia from the Philadelphia and Houston Zoos in the U.S. The baby's name, "Semangka," means "watermelon" in Indonesian.

Sadly, one of the keepers was attacked by the new mother. Apparently the baby gave a distress call, a keeper tripped and was bitten. At last report, the keeper, Shona Wessely, was recovering well despite multiple serious injuries requiring a number of surgeries. The dam had been

gentle throughout her pregnancy and delivery, but apparently circumstances caused a quick change in behavior to protect the calf from a perceived threat.

More about omnivorous tapirs

The keeper of the lowland tapirs at the Dortmund Zoo, Germany, told me that the tapirs eat meat when it's available. She doesn't feed any meat (but will give animal protein such as eggs) considering the consequences to the digestive system. But once she observed the female chewing a rabbit in her mouth. Young rabbits enter the enclosure at night, and one had died there. Several times the tapirs ate dead chicks which had been fed to the stork in the same exhibit.

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Zoo standards for keeping tapirs in captivity

by Rick Barongi

Introduction

Tapirs are relatively easy to maintain in captivity provided their owners have a sound knowledge of the animals' biology and behavior. Reproduction is commonplace. It is a lack of information that is largely responsible for many of the medical and behavioral problems experienced by managers of captive tapirs. While managers should allow for variables in individual behavior, compatibility, and degree of human interaction when maintaining these animals, the following list of standards should be considered minimal when developing a program for successful and humane tapir management.

Taxonomy

The family Tapiridae is represented by four extant species, one from Southeast Asia and three others from Central and

South America. All four species are classified by the U.S. Fish and Wildlife Service as Endangered. Under CITES regulations, trade in Brazilian or Lowland tapirs is monitored by its Appendix II regulations; the other three species are protected by more restrictive Appendix I regulations. Scientific names and distributions of all four species are listed below:

***Tapirus indicus*: Malayan or Asian tapir** – Southern Burma, Malayan Peninsula, Southeast Asia and Sumatra

***Tapirus bairdi*: Central American or Baird's tapir** – Southern Mexico to northern Colombia and Ecuador west of the Andes

***Tapirus terrestris*: Brazilian or Lowland tapir** – Colombia and Venezuela to northern Argentina and southern Brazil

***Tapirus pinchaque*: Mountain or Woolly tapir** – The Andes from northwestern Venezuela to northwestern Peru

Behavioral and social groupings

Most older studies suggest that tapirs are solitary and nocturnal. Recent field observations have shown tapirs to be more tolerant of conspecifics and more active during the day than previously believed. The social behavior of tapirs in captivity is largely dependent upon individual personalities, past experiences, food availability, and the size or layout of their enclosures. Some zoos have problems getting two animals to remain together while others have 5-10 animals together in the same enclosure.

Some tapirs may be extremely aggressive toward conspecifics and humans while others are easily approached and enjoy being scratched by their keepers. Through a safe barrier, many tapirs can be trained to lay down by being "scratched down" by their keepers. This scratching or massaging seems to be particularly enjoyable to many individuals and while being scratched, some readily tolerate additional veterinary procedures which reduce the need for anesthesia. Regardless of their seeming docility, a tapir's behavior can be unpredictable and caution should always be exercised when working around these large and powerful animals. There are numerous records of tapir attacks on keepers, some of which have resulted in serious bite wounds and loss of fingers.

Prior to parturition, females should be separated from males. After birth, some females can be introduced to the male or other tapirs when the calf is only 1-2 months old. Other pairings require the owner to wait until the calf is three or four months old. In a few cases, reintroduction of the adults is not possible until the calf is permanently separated from its dam.

Enclosure requirements

Except for the warmest parts of the country, tapirs require indoor housing if outdoor areas are part of their living space. In the very warmest regions, adult tapirs may not require indoor housing but night time housing should be equipped for supplemental heat, especially if young are present. Where pairs are maintained, alternate areas are necessary to allow for the separation of adults.

Indoor facilities

Stall size – Where primary or outside housing is present, indoor or evening stalls for a single adult tapir should have a minimum dimension of 6 ft x 6 ft (1.83 m x 1.83 m). If only a single stall is present for all housing, minimum stall dimensions for a single animal should measure at least 10 ft x 10 ft (3.05 m x 3.05 m), and should be increased by 50% if young are present.

Where multiple stalls are present, each stall should be interconnected by 3 feet (one meter) wide sliding gates that can be operated without placing the keeper at risk. If more than one tapir is maintained, each should have its own stall so that animals can be separated for birth, medical, or behavioral problems.

Walls and floors – Indoor holding pen walls should be a minimum of 6 feet (1.83 m) high. Walls should be solid (wood or concrete) or vertical steel bars with less than 8 inches (20.32 cm) between verticals bars, 6 inches (15.24 cm) if young are anticipated. Because tapirs can climb to some degree, horizontal bars should not be used. Floors should be concrete and easy to clean. Surfaces should not be too rough, i.e. heavy brush finish, as to be too abrasive to the animals' feet. All floors should be sloped toward covered drains.

Indoor temperature – Stall temperatures should be maintained between 65-85 degrees F (20-29 degrees

C). Radiant heaters are acceptable heat sources although managers in colder areas may also need to use heated flooring, hog warmers, or provide ample bedding to further insulate animals from cold. If young are present, floor temperatures should also be monitored because they are susceptible to pneumonia until 6-8 months old. Humidity levels should be kept above 50% unless an indoor pool is provided.

Water – Fresh drinking water should be available at all times. If a pool is not available, containers should be heavy or secured so that they cannot be overturned. Automatic waterers are also satisfactory. Tapirs being kept indoors without access to a pool should be hosed daily.

Pools – If there is no outdoor bathing area or if the animal(s) must be kept indoors for extended periods of time, indoor quarters should include a pool. Each should be large enough for an adult tapir to completely submerge itself. Safe and easy entrance and exit to the pool should be provided by gradual inclines and non-skid surfaces.

Sanitation – All indoor holding areas should be cleaned and disinfected daily. For safety reasons, animal(s) should be transferred to an adjacent pen during cleaning.

Outdoor or primary housing:

Enclosure size – Tapirs are relatively inactive during the day but do require ample space for movement. Each adult should be allotted a minimum of 200 sq. feet (18.6 sq. m) for normal movement. If pairs of adults or additional individuals are kept, 50% more space per additional animal is required for breeding and other normal activities.

Pool – For health and behavioral reasons, all tapirs maintained outside should have access to an outdoor pool. At a minimum, pools should be large enough for two adult animals to submerge, and should be cleaned and refilled with fresh water daily. Tapirs frequently defecate in water, and deprivation of this ability may increase the incidence of rectal prolapses as well as being unsanitary.

Barriers – Tapirs are easily maintained by shallow dry slanted moats that have a 6 foot (1.83 m) vertical outer moat wall. Non-moated enclosures should also have at least a 6 foot (1.83 m) high barrier. Fences can be wood or chain link (10

gauge or heavier). Tapirs do not jump but can easily climb over vertical walls or other objects as high as 4 feet (1.22 m). Because of their large size, tapirs can push over chain link fencing unless it is properly secured. Observers or public visitors should be kept at least three feet (one meter) away from yards to prevent contact with an animal.

Shade – Tapirs are forest animals and require access to shade at all times. Tapirs maintained in southern climates will require more shade than those in northern regions. Without shade, corneal clouding and ulceration may result.

Substrate – The surface of outdoor exhibits may be grass or hard packed soil. The substrate should provide good drainage as well as facilitate easy and complete removal of feces. Tapirs should not be kept permanently on concrete surfaces.

Diet

Tapirs should be fed a diet of hay and commercial pellets as long as it is supplemented with fresh produce (fruits and vegetables) and other plant material. Although bananas are a favorite food, they should only be fed as treats or for use when medicating animals or they may stop eating other food items. Produce should be cut into bite size or smaller pieces and fed fresh daily. Diets should be fed in separate containers or tubs.

The daily intake for a mature adult New World tapir (400-700 lb/181.5-317.8 kg) or Asian tapir (600-900 lb/272.4-408.6 kg) should be approximately 4-5% of the animal's body weight. Females may be larger than males and require more food, especially pregnant or lactating females.

Veterinary and health requirements

The only prophylactic vaccination recommended at this time (1994) is tetanus toxoid. In areas where rabies or encephalitis is prevalent, vaccination against these diseases should be considered. Tuberculosis has been recorded. Fecal examinations should be made at least twice yearly. Because some individuals are sensitive to fire ant bites, insect control in both primary and evening areas is important in areas where this pest is found.

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TAG news

Report from the European TAG meeting for Tapirs and Hippos

The third meeting of the European Taxon Advisory Group for Tapirs and Hippos was held in Basle, Switzerland, during the annual EEP meeting which took place in September. This TAG meeting is always well attended demonstrating the high level of interest in both tapirs and hippos.

As far as tapirs are concerned there are currently three species held in captivity in Europe. There is an EEP for the Malayan tapir and an European studbook for the South American tapir. The Baird's tapir

population consists of only five individuals at Wuppertal Zoo in Germany and is co-ordinated through the North American SSP.

Helmut Magdefrau from Nuremburg Zoo in Germany is the EEP coordinator for the Malayan tapir and has held this position for about three years. The European population has not been doing well for some time. However, for the first time in years all the animals are in breeding situations and at least three births have already been recorded for 1999. This EEP has 19 participants (including one in South Africa) with a population of 43 (20.23) individuals at the beginning of 1999. Nuremburg Zoo is planning a veterinary survey for this species and we hope to have the European studbook transferred to SPARKS and published early next year. The species has proved difficult to coordinate in the past due to some zoos not cooperating in the movement of older animals. However, most of these problems seem to have been resolved and we hope that the Malayan tapir population in Europe is now stabilised and will hopefully increase. However, research needs to be undertaken to try and ascertain why there is such a high level of infant mortality for this species in captivity.

The South American tapir studbook is compiled by Franck Haelewijn and Aude Desmoulins from Lille Zoo in France. The first studbook was published in 1999. This population does not present any problems apart from the usual lack of females.

A lot of time was spent discussing hippos, but other tapir business included a reiteration of the request by Dr. Alastair MacDonald, one of the TAG advisors, for placentas of tapir sp. for anatomical and histological study. If anyone working with tapirs is fortunate enough to find a fresh placenta then they should place it whole (or in a piece 20 x 20 cm²) in 10% formal saline such that there is enough space for it to "swim" freely. Alastair can be contacted to arrange transport to Edinburgh by:

Tel. + 44 131 650 6120

Fax: + 44 131 650 6576

E-mail A.A.MacDonald@ed.ac.uk

Matt Hartley, formerly a vet at Port Lympne Wild Animal Park, gave a short report regarding the breeding and reproductive research which had been undertaken with the Malayan tapirs there.

Goals for the forthcoming year include

the publication of the European studbook for the Malayan tapir and a European space survey for tapirs and hippos which can then be used to formulate a European regional collection plan.

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EEP TAG Members and Advisors

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Siân S. Waters (Chair, Rome), Peter Studer and Beatrice Steck (Basel), John Partridge (Bristol), Bengt Holst (Copenhagen), Pierre de Wit (Emmen), Franck Haelewijn (Lille), Helmut Magdefrau (Nuremburg).

Advisors

Dr. Andrew Greenwood (Int Zoo Vet Group), Dr. Rebecca Lewison (IUCN Hippo Specialist Group Chair), Dr Alastair MacDonald (Edinburgh University).

North American Tapir TAG meeting

There will be a Tapir TAG master planning meeting at the AZA Regional Conference in Toledo, Ohio, on May 1-2, 2000. The objective is to coordinate and prioritize all breeding recommendations and exhibit space for the four species in AZA zoos. We will also develop *in-situ* programs that the members can support and get involved with.

Rick Barongi

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Studbook news

Tapirus bairdii

A bound edition of the *Central American Tapir (Tapirus bairdii) International Studbook* was compiled by Joe Roman through the Virginia Zoological Park in Norfolk, Virginia, USA. A lot of work went into the new update. The book bears a 1998 date, but data is current

through 30 June 1999. A questionnaire was sent out in 1999 to facilities holding Baird's tapirs. Responses to the survey indicated a worldwide population of 80 (52.27.1) animals. There were no reported births, deaths or transfers for the 1998 calendar year." Please forward any information to:

Joseph M. Roman
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jroman5@ibm.net

Tapirus terrestris

Don Goff continues to work on the regional studbook for the lowland tapir in North America. If you have information, please contact:

Don Goff
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Fax: (203) 394-6566

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