

Tapir Conservation

The Newsletter of the IUCN/SSC Tapir Specialist Group

Edited by Siân S. Waters and Stefan Seitz

(c) Kevin Burkhill



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Reasons to smile: The First International Tapir Symposium in Costa Rica was a promising event for tapir conservation. From left to right, the photo shows Gordon Blankstein (Mountain View Conservation & Breeding Center, Canada), Rick Barongi (Houston Zoo, USA), Charles R. Foerster (Baird's Tapir Project, Costa Rica), Heidi Frohring (Woodland Park Zoo, USA), James E. Norton (University of Illinois at Chicago, USA), Stefan Seitz (Germany), and (kneeling), Wally Van Sickle (Idea Wild, USA), and Alexander Blanco (Parque Zoológico Las Delicias, Venezuela), after the fund raising auction.

Photo by Sonia Hernandez-Divers



Printing and distribution of the Tapir Conservation Newsletter is supported by the Houston Zoo, 1513 N. MacGregor, Houston, Texas 77030, United States <http://www.houstonzoo.org>



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Masthead

Tapir Conservation is the newsletter of the IUCN/SSC Tapir Specialist Group (TSG). *Tapir Conservation* offers the members of the TSG and others concerned with the family Tapiridae, recent events, relevant publications, and general information about this threatened mammalian genus. More information about the IUCN/SSC Tapir Specialist Group is available at: www.tapirback.com/tapirgal/iucn-ssc/tsg/

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Sponsored by The Houston Zoo, Texas, USA

Price US\$ 10.00 per volume, free for members

Potential contributors may submit material to the contributions editor, Sian Waters, preferably by email. **The closing date for submissions to the next issue is 31 August, 2002.** The views in *Tapir Conservation* do not necessarily reflect those of the IUCN nor of the entire IUCN/SSC Tapir Specialist Group. Items from this newsletter may be reprinted providing they are credited to this publication. Photo copyright is retained by the individual photographers.

Letter from the Chair



After two years as TSG Chair, I would like to start this letter with a brief retrospective. In the beginning of 2000, Sharon Matola stepped down as chair and proposed my name for the position. I agreed to take over and I do not have enough words to thank Sharon, Sheryl Todd and Mariano Dixon for all their great help and support during the transition. I would not have made it without them!

Initially, Sheryl and I worked on a list of short, medium and long-term actions for the group and put together the new membership. The number of members increased to 71 professionals from 22 different countries (South, Central and North America, Asia, and Europe) and with varied backgrounds and expertise. In an effort to create a stronger organization and distribute the workload, Sheryl and I appointed a Species Coordinator for each tapir species, and additional officers based on the group's needs (current positions, names of the coordinators, and members of the different committees can be found in the "TSG's STRUCTURE" article in this issue).

As you all probably know, Sheryl Todd has been the TSG Deputy-Chair for four years. She is also the President of the Tapir Preservation Fund (TPF), manager of the Tapir Talk e-mail group and Webmaster of the Tapir Gallery website (www.tapirback.com/tapirgal/). Recently, Sheryl decided to step down from the TSG Deputy-Chair position. She will continue being an active member of the group and will stay on as Webmaster and banker for TSG (via TPF). The TSG and the TPF will keep working together as closely as ever. Charles Foerster, a North American biologist, who has been studying Baird's Tapir in Costa Rica for the past 7 years, has agreed to take over the position and will help me chair the group during the next years. I would like to thank Sheryl for all her tireless work over the past years (and, in advance, for all her work in the future!) and welcome Charles to the position!

Siân Waters (conservation & zoo biologist, UK) and Stefan Seitz (captive research on tapir behavior and management, Germany) are the new editors for the Tapir Conservation Newsletter. We still plan to publish two issues per year and from now on Siân and Stefan will be responsible for the newsletter's editing. Thank you, Siân and Stefan for all your hard work in putting this together. I would like to remind you all that news-

letter contributions can range from just a paragraph about your work or observations to short papers. The purpose of the newsletter is not only to let the world know what we are doing as a group, but to monitor status, conservation, and research relating to tapirs.

During 2001, most of our time and energy was spent on the organization of the First International Tapir Symposium, a joint effort between the IUCN/SSC Tapir Specialist Group, the Tapir Preservation Fund (TPF), and the American Zoo and Aquarium Association (AZA) Tapir Taxon Advisory Group (TTAG). The symposium was held in San Jose, Costa Rica, from 3 to 8 November 2001 and it proved to be a great boost to tapir conservation efforts. This was the first time that so many tapir experts and conservationists had gathered to share their knowledge and address future challenges facing these threatened species. We had 85 participants including almost half of the TSG membership. Over 80% of the symposium's budget was covered by donations from four major zoos (Houston, Los Angeles, Disney and San Diego) and I would like to THANK them all for their contributions. Very special thanks go to Rick Barongi, Director of the Houston Zoo, chairperson of the AZA Tapir TAG and member of the TSG, for raising most of the funds for the event. Thank you, Rick!

Several results, plans, tasks, insights and ideas were generated by the symposium. The TSG will be responsible for seeing that the momentum from the conference is not lost. During the next few months, we will start working on the symposium proceedings and that will be as important as the event itself! We must ensure that the information resulting from the symposium is published so that there are immediate and long-term benefits for tapir conservation worldwide. Abstracts of the presentations and workshops, as well as pictures will be available on the Tapir Gallery website soon. Further details about the symposium, our future actions and plans for TSG, coordinators of each one of the committees, etc. can be found in the "FIRST INTERNATIONAL TAPIR SYMPOSIUM" article in this issue.

Fundraising is a topic we discussed exhaustively during the symposium in Costa Rica and this will be a

major priority for 2002. The main idea we have in mind right now is to raise funds for the TSG via TPF and to distribute these funds to field researchers and educators. Ideally, TSG would work as a "funding agency" for tapir projects. For this purpose, we have created a committee (Charles Foerster, Heidi Frohring, William Bob Harris and myself) to work on the organization of this fund. As a first step, we are putting together a proposal for the TSG as a whole. It will include the history of TSG and TPF, our mission statements, objectives and goals, and abstracts about all tapir projects that are currently being conducted. We want the donors to know what projects we have "available"! We strongly believe that this type of proposal will be very attractive to funding agencies. As soon as we put the proposal together, we will start approaching funding agencies. In order to select proposals and distribute the funds we are creating an evaluation committee, a group of professionals with different backgrounds, to review the proposals and select those to be funded.

Finally, I would like to thank all contributors for their submissions in this issue!

Patrícia Medici

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The Tapir Specialist Group's Evolutionary Consultant

Greetings! My name is Matthew Colbert, and recently I was appointed as 'evolutionary consultant' for the Tapir Specialist Group (TSG) of the IUCN. As my first assignment, I was asked to come up with a list of tasks that would comprise the evolutionary consultant's responsibilities. After mulling it over a bit, I decided that the main responsibility of the evolutionary consultant is to provide a forum for the exchange of information related to tapir evolution. This would include topics such as genetics, population genetics, cytogenetics, molecular and morphological systematics, morphology, biometrics, developmental biology, and paleontology.

Related topics would also include questions concerning tapir population demographics (for example, developing methods for aging or staging tapirs, and using such information to evaluate population age structure, etc.), functional anatomy, and evolutionary ecology. Establishment of this 'forum' would first involve determining who is working on various issues, and finding out what information is already available in the literature. It is hoped that maintaining this list of resources and lines of communication will not only help coordinate research efforts, but also aid in outreach education.

I should note that I am by no means an expert in most of these fields, being a palaeontologist/zoologist by training (if you would like to find out more of what I do, check out the tapir pages at www.digimorph.org). In the course of my studies, however, I have realized that 'cross-fertilization' of ideas and knowledge often results in unusual and profitable solutions to common problems. Thus, hypothetically, while a museum researcher might be doing a morphometric analysis to determine the correlated shape changes that occur during growth based on samples in museum drawers, a field biologist could potentially apply such information to estimate the relative age of tapirs that are trapped or found as mortalities in the wild. Reciprocally, the measurements and data that the biologist in the field could make available to the museum scientist might provide critical data for refining the morphometric analysis (tapir data sets are notoriously small!). Collaboration between such disparate researchers would thus be a fruitful way to advance our knowledge of the tapir on several fronts.

I hope that all of you all will feel free to contribute your knowledge and questions to this forum on tapir evolution. I will make an effort in the near future to contact those of you who I know are working on 'evolutionary' problems. However, it would make my life a lot easier if those of you who are experts in evolutionary topics could let me know who you are (my e-mail is colbert@mail.utexas.edu), so that both questions and opportunities can be directed to the most appropriate person.

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The First International Tapir Symposium

By *Patrícia Medici and Charles Foerster*



We would like to start by saying that this is just an informal report to give you an idea of what happened in Costa Rica! Complete reports will be prepared as soon as we finish compiling the final results, plans, and ideas generated by the conference. All the information, including pictures, will be available on the Tapir Gallery website soon!

The symposium was a historic event! Never before have there been so many tapir experts and conservationists assembled under one roof to share their knowledge and address the challenges ahead for these endangered species. It took us two years and a lot of work and energy to organize the event but it was worth it!

We had 85 participants, of which 27 were Tapir Specialist Group members (42% of the group; quite a significant number!). Participants included field researchers, husbandry and captive management specialists, non-governmental organization representatives, university representatives and other key players in the development and implementation of tapir conservation programs.

A significant fact about this conference was the level of zoo participation. Ten years ago there was little or no collaboration between zoos and tapir field researchers. Today, modern zoos are focusing more on their primary mission of conservation rather than just exhibition. A good example of the modern zoos' new commitment to conservation is the support they gave to the tapir symposium. Our budget for the symposium was just over \$50,000, and over 80% was covered by donations from four major zoos (Houston, Los Angeles, Disney and San Diego). The directors of two of these contributory zoos, Rick Barongi from the Houston Zoo and Manuel Mollinedo from the Los Angeles Zoo, attended the symposium.

One of the significant events at the symposium was the auction conducted to raise funds to donate to Dr. Daniel Janzen's efforts to purchase reserve land in the Area de Conservación Guanacaste in Costa Rica. One of the first things that the members of the planning committee discussed at the beginning of the symposium

organization was that we would like to leave something behind in Costa Rica. We wanted the symposium to somehow contribute to a conservation program in the country and Dr. Janzen gave us the opportunity. Attendees were asked to bring typical items from their countries to sell at the auction. Wally Van Sickle (Idea Wild, United States) kindly organized and conducted the auction and the symposium raised \$5,000 for Janzen's project. And that's not all. Before the auction was held, the Wege Foundation had agreed to match any amount we collected through the auction. So, in all, we actually raised \$10,000 which will buy 15 hectares of threatened rainforest in Costa Rica.



Rick Barongi, Director of the Houston Zoo, Chair of the AZA Tapir TAG, and member of TSG, opening the First International Tapir Symposium.

Photo by Patrícia Medici

Specific topics of the paper sessions were Ecological Studies, Population Management, Husbandry and Education, Veterinary Issues/Diseases and Tapir Bio-Politics. In all, 48 papers and 9 posters were presented. All of these presentations and posters provided the audience with a very complete overview of current tapir research (*in-situ* and *ex-situ*). The keynote speakers were Richard Bodmer (Kent University, UK), Daniel Janzen (University of Pennsylvania, United States) and, William Konstant (Conservation International, United States) and their speeches were truly inspiring. Special evening presentations were con-

Tapir Symposium

ducted by Wally Van Sickle and Matthew Colbert (University of Texas, United States). The titles of all presentations, as well as the abstracts and contacts of the presenters will be available online soon.

We also conducted four workshops to discuss more specific topics related to tapir research and conservation. Wally Van Sickle conducted an amazing workshop on fundraising and exchanged ideas with participants on how to acquire funds to sustain their projects for the long term. Patty Peters (Columbus Zoo, United States) and Diane Ledder (Disney, United States) conducted a Marketing and Media Affairs workshop and shared with us their experience of how to get the conservation message out to the general public. Patrícia Medici conducted two other workshops. The first one, the IUCN/SSC Tapir Specialist Group workshop, was more of a presentation about our ideas for the future and the next steps we need to take in order to make the group more active in terms of tapir conservation. Our species coordinators, Emilio Constantino from Colombia (Mountain Tapir), Denis Torres from Venezuela (Lowland Tapir), Eduardo Naranjo from Mexico (Baird's Tapir) and, Nico van Strien from The Netherlands (Malay Tapir) were introduced to the audience and made brief comments about their views on the future of the group. For the second workshop, which focused on the Tapir Action Plan (TAP), Patrícia had the great help of Alfredo Cuarón from Mexico, who participated in the process of writing the first edition of the TAP. During that session, we discussed the need to review the 1997 version and the creation of a group of people to work on that.

The last session of the symposium was a plenary session which we called "Plans for Action". It was beautifully conducted by Susie Ellis (Conservation International, United States) who used her skills to help us to establish our priorities and get participants committed to the tasks and challenges we will have ahead of us. Each task has a leader who will be responsible for it and a committee of volunteers that will help the leader to reach the objectives. Some of the goals for the near future are related to the structure of the TSG, internal and external communication and fundraising. In terms of structure, new guidelines for future membership will be established (coordinators Patrícia Medici and Lewis Greene). Wilson Novarino and Sonia Hernandez-Divers have agreed to lead a committee that will work on annual plans for the group's activities. Matthew Colbert, Heidi Frohring, and Patrícia Medici will direct a committee to list the tasks for each one of the positions we have created. Charles Foerster and his com-

mittee will develop a set of guidelines for proposals seeking TSG endorsement/support. In terms of internal communication, we will revise the 1997 version of the Tapir Action Plan (coordinators Alfredo Cuarón and Patrícia Medici). Rick Barongi has agreed to lead a group to improve the communication between field biologists and zoos. Ways to improve communication between biologists and veterinarians will be explored by Sonia Hernandez-Divers and her committee. In terms of external communication, Alberto Mendoza will coordinate an effort to develop educational and TSG brochures. Charles Foerster, William Bob Harris, and Patrícia Medici will explore funding opportunities for TSG and tapir research projects.



Dr. Daniel Janzen receiving a cheque for \$10,000 from TSG Chair, Patrícia Medici, for the Area de Conservación Guanacaste in Costa Rica.

Photo by Sonia Hernandez-Divers

Another noteworthy event at the symposium was a meeting held by the veterinarians present to discuss the concerns of veterinarians working with tapirs. Some of the issues considered were a) lack of communication, b) lack of access to other veterinarian's data, research project information, articles published, c) the need to improve the availability of local vets for field projects that need veterinary support, and d) the need to discuss the AZA Tapir TAG and IUCN/SSC TSG Veterinary Committee goals. As a result of this meeting the group of veterinarians, under the guidance of Dr. Sonia Her-

nandez-Divers, have created a list of tasks for the near future. Some of the tasks include making a list of potential functions of veterinarians in research projects, training biologists and veterinary students, improving communications between veterinary and biology/ecology universities, developing a veterinary website and a list serve for tapir related questions and for listing relevant publications.

A group of Colombian researchers and students gathered together at the symposium to form a specialist group of those who work with tapirs in Colombia. A direct result of this meeting was the creation of the "Colombian Tapir Network". This is reported on in more detail in this newsletter.

During the next few months, we will be asking all paper and poster presenters and keynote speakers to send us their complete articles so we can start working on the symposium proceedings. That will be as important as the event itself! We must ensure that all the information and recommendations that resulted from the symposium are published and implemented so that there are immediate and long-term benefits for tapir conservation worldwide. All participants will receive a copy of the proceedings. If you did not attend the symposium but are interested in receiving a copy of the proceedings, please let us know.

All participants are very excited about the possibility of having this symposium every two years and we decided to do so. The options for the next one (2003) are Venezuela, Colombia or Ecuador. Another option would be to stay in Costa Rica.

First International Tapir Symposium Planning Committee

- Rick Barongi, Houston Zoo, AZA Tapir TAG, United States
- Mike Dee, Los Angeles Zoo, AZA Tapir TAG, United States
- Heidi Frohring, Woodland Park Zoo, United States
- Lewis Greene, Prospect Park Zoo, Wildlife Conservation Society, AZA Tapir TAG, United States
- Sonia Hernandez-Divers, University of Georgia, AZA Tapir TAG, United States
- Donald Janssen, San Diego Zoo, AZA Tapir TAG, United States
- Sharon Matola, Belize Zoo and Tropical Education Center, Belize
- Patrícia Medici, IPÊ – Instituto de Pesquisas Ecologicas, Brazil

- Phil Schaeffer, Caligo Ventures, United States
- Brandie Smith, American Zoo and Aquarium Association, United States
- Sheryl Todd, Tapir Preservation Fund, United States

Organizations

IUCN Species Survival Commission (SSC) Tapir Specialist Group; American Zoo and Aquarium Association (AZA) Tapir Taxon Advisory Group (TTAG); Tapir Preservation Fund (TPF).

Symposium management and organization

Caligo Ventures (United States); Horizontes (San Jose, Costa Rica); Corobici Melia Confort Hotel (San Jose, Costa Rica)

Funding agencies

Disney Wildlife Conservation Fund; Houston Zoo; Los Angeles Zoo; San Diego Zoo; Wildlife Trust; Tapir Preservation Fund – Club Tapir; Conservation International; Wildlife Conservation Society; Continental Airlines.

Sponsors of Participants

Zoo Conservation Outreach Group – ZCOG (United States); American Association of Zookeepers (AAZK) – The Puget Sound Chapter (United States); International Gibbon Foundation (Indonesia); Natureza e Sociedade/Programa de Treinamento para Profissionais na Área de Conservação – USAID/WWF (Brazil); German Research Community – DFG (Germany); Fundación Tropenbos (Colombia); World Society for the Protection of Animals (United States); Zoocriadero Ecopets (Venezuela); El Colegio de la Frontera Sur (Mexico); Instituto de Ecología – UNAM (Mexico); Agencia Española de Cooperación Internacional (Spain); Wildlife Conservation Society (United States); Ark Angels (Canada); Conservation International Colombia; Fundación APAS (Colombia); Fundacite (Venezuela); University of Malaysia (Malaysia).

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Conservation Committees Founded

Red Danta Colombia (Colombian Tapir Network)

By *Diego Lizcano*

The Tapir Network of Colombia was the result of a lunch at the First International Tapir Symposium in Costa Rica. The Colombian participants were motivated to create the network because Colombia is the only country that has all the Neotropical tapir species. Despite this privilege, the local people don't know very much about tapirs and the situation of the species in the field is very worrying.

Currently there is a good quantity of information available on the web about tapirs but little of this information is accessible to Spanish speakers. It is for this reason that one of the main objectives of the Colombian Tapir Network is to share information in Spanish about tapir ecology and conservation projects carried out in Colombia. Our goals for the network are to promote study and conservation projects about tapirs in our country. We are also interested in sensible discussion about policies that concern tapirs. We are field researchers, conservationists and students interested in tapir ecology and conservation. To date we have developed a web page (<http://clik.to/danta>) and an e-mail list of Colombians interested in tapirs.

Each species has its own coordinator. Jaime Andres Suarez is in charge of mountain tapir (*Tapirus pinchaque*) information, Javier A. Sarria for lowland tapir (*Tapirus terrestris*) and Emilio Constantino for Baird's tapir (*Tapirus bairdii*). Other group members offer advice and support to the species coordinators. Franz Kaston Florez is the veterinary assessor, communicator and diffuser of scientific information to the group. Delio Mendoza is responsible for the use of new technology in the study of tapirs. Hector Ruiz is interested in subsistence hunting. Diego Lizcano, Alonso Quevedo and David Alfonso Bejarano are interested in the ecology and conservation of mountain tapir and Sergio Sandoval, a specialist in large Andean mammals, is the web master. We welcome the addition of new members to the group. We hope to be strong enough to influence our government in developing good tapir conservation policy. In the near future, we expect to publish detailed information on our web page about tapir studies in ecology, conservation projects and zoos exhibiting

and zoos exhibiting tapirs. If you are interested in finding out more, or would like to join us, then please visit our web page. <http://clik.to/danta>

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The Mexican Committee for Tapir Conservation and Recovery (MCT)

By *Eduardo Naranjo*

The Mexican Committee for Tapir Conservation and Recovery (MCT) was formally created on November 30th, 2001. This committee is sponsored by the National Institute of Ecology (INE), which is an agency of the Ministry of Environment and Natural Resources (SEMARNAT). The MCT was initially composed of 15 professionals (mainly biologists and veterinarians) who have worked with tapirs in Mexico. However, we expect more people to join the group in the future. Eduardo Naranjo (President), Epigmenio Cruz (Secretary), and Alfredo Cuarón (Information Vocal) constitute the first board of directors. None of the members of the MCT receives any payment for their services, although there may be a possibility for group members to obtain partial funding in order to attend group meetings.

The following are the proposed, primary goals of the MCT:

1. To be the "official" consultancy group for national and international institutions and persons related to conservation, management and research on tapirs and their habitat in Mexico.
2. To suggest and promote actions and policies for the conservation and recovery of Mexican tapir populations.
3. To facilitate communication among people and institutions interested in tapir conservation and research in Mexico.

The initial tasks of the MCT are:

1. Identification of priorities for conservation, management and research on tapirs and their habitats in Mexico (review and adaptation of the IUCN Action Plan).
2. Discussion and proposal of specific, immediate actions to be taken in order to address the identified priorities for tapir conservation.
3. Coordinate with the IUCN Tapir Specialist Group to obtain funding for tapir research in Mexico.
4. Creation of a database and a web site to include available information about tapirs in Mexico.
5. Publication of a National Action Plan for tapir conservation and recovery in Mexico.

At the moment, the most important goal for us is the publication of the national action plan. We have set deadlines and personal commitments to achieve this goal, and we will hold a couple of two-day meetings this year to discuss our progress with the manuscript.

Eduardo Naranjo

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Current Project Updates

■ CENTRAL & SOUTH AMERICAN JOINT PROJECT

The Influence of Large Herbivores on Neotropical Forests

By Patricia Medici and Charles Foerster

Four TSG members are joining forces to investigate the role tapirs and other large herbivores play in maintaining and shaping the plant communities of Neotropical forests. Specifically, we will examine how the removal of the large herbivores will affect the physical structure and floristic diversity of the understory vegetation in four different ecosystems of Argentina, Brazil, Colombia and Costa Rica.

Many ecologists have documented the important roles played by large animals in seed dispersal, seed predation, herbivory, pollination, and predation, but until recently few have considered what would happen if the large animals were removed from the system. In order to simulate the removal of these herbivores from the forests, we will construct exclosures that will prevent them from foraging in selected areas. The results obtained will provide additional insights into the ecological functions of these herbivores. Tropical rainforests are the most complex and important ecosystems on the earth. How would these forests change if the large her-

bivores were removed? How do large herbivores contribute to the success and functioning of tropical ecosystems?

Past field research on tropical herbivores has focused primarily on their basic ecology, population dynamics and the risk of extinction of small populations. Genetic viability and demographic parameters are the most common concerns surrounding low population sizes. However, by emphasizing the importance of plant-animal interactions, it can also be argued that reduced numbers or complete absence of large herbivores will have an impact on the functioning of the ecosystem.

The results obtained will provide additional insights into the ecological functions of these herbivores, which will, in turn, enhance existing and future management plans. By showing the importance of large herbivores in maintaining the ecological processes of plant communities, wildlife managers will be better able to justify the implementation of programs designed to prevent the disappearance of large herbivores in the forest. For example, environmental education programs can focus on the importance of herbivores in the forest. Law enforcement agencies can use this information to justify increased efforts to reduce hunting pressure. The results can also justify the implementation of specific habitat management programs such as the creation of protected areas large enough to maintain viable populations of large herbivores, the establishment of

Project Updates

wildlife movement corridors, and reforestation projects. Population management methods, such as reintroductions and translocations, may be used to restore large herbivore populations that have become locally extinct or that have low population sizes.

Most people agree that rainforests are an important resource that should be conserved, if only for the benefit to mankind (water source, pharmaceuticals, climate control, food source, etc). In this day and age, conservation merely for the preservation of a species or ecosystem does not seem to be enough of an incentive. Unfortunately, until an ecosystem or animal's "value" to the human race can be proven it is hard to convince the world that it must be protected and saved. Our goal for this study is to provide evidence that tapirs, peccaries and deer are vital to the health of tropical rainforests and that more efforts should be made to ensure their protection.

The project will be coordinated by Charles Foerster in Costa Rica (Corcovado National Park), Diego Lizcano in Colombia (Ucamari Regional Park and Los Nevados National Park), Patrícia Medici in Brazil (Morro do Diabo State Park) and Silvia Chalukian in Argentina (El Rey National Park).

We would like to invite anyone interested in establishing a similar study to get in touch with us.

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Proyecto Danta – Corcovado National Park, Costa Rica

By Charles Foerster

Charles Foerster continues to coordinate the work of the Baird's Tapir Project / Proyecto Danta in Costa Rica. The project began studying the population dynamics and ecology of tapirs in Corcovado National Park in 1995. Specifically, radio telemetry and direct observation are being used to document home range size, habitat use, reproduction, offspring and adult sex ratios, offspring survival rates, juvenile dispersal, spatial distribution, population density, and mortality. In addition, the genetic variability of the study animals is

being studied to determine relatedness between individuals and the genetic status of the population.

Charles presented results from the first five years of the study at the tapir symposium in Costa Rica last November. He reported that the average annual home range size of tapirs in the study site was 107 hectares, with extensive overlap between individuals. Wet and dry season home range sizes were found to be 83 ha and 92 ha respectively. Secondary forest patches and areas near permanent water sources were identified as most frequently used by tapirs. Primary forest was found to be important for daytime resting sites and fruit consumption.



Map of the study site.

Graphic by Charles Foerster

In terms of reproduction, 12 offspring (5 male, 5 female, 2 unknown) have been born to five different females during the study. The average birthing interval for those females that have had multiple births was reported to be 21 months. Offspring survival has been surprisingly high for those young born into the study. 92% have survived the first 4 months, while 86% have survived the first year. 80% lived to reach 2 years of age and 60% until 3 years. However, considering the longevity and slow reproductive rate of the tapir, several more years and more radio-tagged females are needed for an adequate sample size. The project is currently monitoring three female offspring born last June.

As the offspring grow and mature, Charles is placing radio-collars on them and monitoring their movements. The three offspring mentioned above will be collared this June. Since the project began, nine juveniles (5 female, 4 male) have been included in the study. Thus

far, four females have dispersed an average of 18 km from their original home ranges. Five juveniles (1 female, 4 male) are currently being tracked and are expected to disperse within the next year.

In all, 27 tapirs have been part of the study since 1995. Charles plans to continue the study for at least another five years with the objective of obtaining larger sample sizes to measure reproduction, survival, mortality, and juvenile dispersal. The study area is also part of a new joint project with three other TSG members (Patrícia Medici, Brazil; Diego Lizcano, Colombia; Silvia Chalukian, Argentina) to describe the influence tapirs and other large herbivores have on forest structure and diversity.

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Offspring like PRIMA, with MAMA in the foreground, are promising subjects for the long-term monitoring of Baird's tapirs in the Corcovado National Park, Costa Rica.

Photo by Charles Foerster

Conservation biology of lowland tapirs (*Tapirus terrestris*) and their potential as landscape detectives in the Pontal do Paranapanema Region, São Paulo State, Brazil

By Patrícia Medici

Conservation Biologist, Patrícia Medici at the Instituto de Pesquisas Ecológicas (IPÊ), directs the project "Conservation biology of lowland tapirs (*Tapirus terrestris*) and their potential as *landscape detectives*" in Brazil's South Atlantic Forest. This ecosystem is one of Conservation International's hotspots and has been fragmented by agricultural and industrial expansion. The area is one of the most threatened ecosystems on the planet and harbours 7% of the world's species, most of which are endangered.

Research

For the past five years, Patrícia, with veterinarian Paulo Rogerio Mangini and field assistants, have been captu-

ring, radio-collaring and studying tapirs in Morro do Diabo State Park and in the surrounding landscape (Pontal do Paranapanema Region). One of the initial challenges of the project was to develop safe methods and protocols to capture and anaesthetise the tapirs in order to be able to fit the radio-collars and thus begin data collection. Some researchers had already captured tapirs in the wild, but in different contexts. The first five months of fieldwork demanded careful planning and the testing of different strategies, but proved to be very important for the success of the project. The testing of different methods was proposed by this study as part of its initial objectives. As such, the objective was adequately fulfilled as the results were achieved. Pitfalls, which were used as the capture method, as well as the anaesthetic protocol, were exhaustingly tested and demonstrated their safety and efficiency.

The project has caught and radio-collared 20 tapirs so far (10 males and 10 females), and has collected much data on home range size, territorial behaviour, movement patterns, overlap between neighbouring individuals, dispersal routes, activity patterns and the health of the population. Blood samples have been collected for genetic studies.

The main objective today is to investigate the tapirs' potential as *landscape detectives*, showing the research team the most used dispersal routes and pathways in the landscape, and thus the potential areas to be conserved and restored as wildlife corridors. It is becoming clear that the tapirs leave the park more often than previously thought. This information is critical to the development of the regional conservation plan for the landscape of the Pontal Region. Patrícia was able to identify six of the 20 tapirs as *landscape detectives*, as they actually wander outside the large forest source that is Morro do Diabo State Park (35,000 hectares) and travel between the park and neighbouring fragments. In order to do so, they normally have to cross some areas where landless people have been settled around the park (pastureland or crop fields) 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.



Digitalized map of the Pontal Region. The forest fragments are mentioned in the text. Graphic by Patrícia Medici

Specific objectives of this study include describing and mapping these dispersal routes through the landscape. Preliminary information about the tapirs' dispersal behaviour 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, maintaining a genetically and demographically viable population of these ungulates and, therefore, the metapopulation scenario for this large keystone species in its threatened ecosystem.

Five years of data is already being analysed and is showing that there is more overlap (between neighbours) than originally thought and this will result in a more precise estimation of the tapir populations in the park and in the surrounding forest fragments. In reference to activity patterns, it has become clear that tapirs have crepuscular and nocturnal habits, which confirms the published data on this species.

The epidemiological studies observed positive serum titres for Equine Encephalomyelites, EEE strain, Blue tongue, Infectious Bovine Rhinotracheates, and *Leptospira interrogans* sorovar *sensit*. Morbidity, mortality, transmission source, as well as the vectors involved in the epidemiological chain of these diseases were not evaluated. However, it is safe to suppose that these diseases contribute to the mortality of wild tapirs in the region. The observed results demonstrate that tapirs are exposed to important infectious agents, and these agents are relevant to animal and public health. The occurrence of antibodies for these etiological agents demonstrate that the proximity between domestic and wild animals may represent an important way of spreading and perpetuating some of the diseases in the region, affecting both wild and domestic animals.

In previous years, fieldwork has concentrated on Morro do Diabo State Park, especially at the west, southeast, north and northwest borders. These borders are relatively close to forest fragments around the protected area and tapirs leave the park from those edges to visit the forests. This is helping Patrícia to understand tapirs' dispersion patterns and she will use this information to design and effectively build corridors connecting the forest areas. From 2002 onward, field efforts will concentrate on the forest fragments around the park. She will capture and radio-collar tapirs in the Alcídia, Água Sumida, Santa Maria, Santa Zélia, Tucano, Ponte Branca, and Minerva forest fragments (see photo). Radio-tracking the tapirs in the fragments she will be able to check whether there is movement between fragments.

Educational Component

Another objective of the project is to teach local people about the importance of conserving tapirs and their habitat and to stimulate and help them to establish agro-forestry plots on their properties. It is necessary to bear in mind that this project is part of a bigger conservation plan for the entire Pontal do Paranapanema Region, where governmental agrarian reform is taking place at the present moment. IPÊ conducts several

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conservation projects in the region and in order to understand the tapir project's benefits to local people, it is necessary to describe the situation in the region.



Veterinarian Dr. Paulo Rogerio Mangini darting ESPERTA (she's inside the pit), the adult female we captured in January 2002.
Photo by Charles Foerster

A large part of the remaining Atlantic Forest of Brazil is characterized by forest remnants in agricultural landscapes. These fragments are important reservoirs of biological diversity, but because of the small size of the majority of them, they do not provide many natural benefits for the rural people living around them – such as the harvesting of commercially valuable plants and subsistence hunting. From an ecological standpoint, these forests are often the only place left to obtain the biological information and diversity necessary to successfully restore their endangered ecosystem. Unfortunately, most of these fragments are surrounded by settlements and are currently being depleted by the local people through fires, cattle grazing and spreading of aggressive grasses, causing serious damage and gradually and continuously eroding the forest edges. This encroachment affects the forest structure and causes the loss of many plant and animal species, mainly by the well-known consequences of the edge effect.

According to this situation, all IPÊ's projects and their research coordinators in the region have been working towards the creation of forested benefit zones around these fragments with the use of different agro-forestry options. The choice and the implementation is being discussed with the local farmers (former landless people), based on the evaluation of potential multi-purpose

trees according to two different criteria. The first explores the compatibility of the trees in combination with local agricultural practices. The second considers the usefulness of the trees in providing a protective zone around forest fragments. Such zones represent mutual benefits both to the local farmers and to the forests.

With the assistance and enthusiasm of community members, IPÊ has successfully established fourteen community agro-forestry nurseries as sources for most multiple-use trees and shrubs for the benefit zones. The projects provide technical assistance and training in the actual construction and management of the nurseries, as well as supplying the seeds of most multiple-use trees. Most of the tree species were selected by the communities and should help minimize erosion, maintain soil fertility and produce fuel, fruits, woods and forage as well as protecting the forest's integrity by providing a sustainable resource for the farmers. In the long run, planting trees for the agro-forestry production of high quality wood could also increase income possibilities.



ESPERTA coming out of the pit after recovery.
Photo by Charles Foerster

Acknowledgements: We thank the Forestry Institute of São Paulo State; IBAMA; Wildlife Trust (WT) USA; Center for Environmental Research and Conservation (CERC) USA; Fundo Nacional do Meio Ambiente (FNMA); Smithsonian Institution (Wildlife Conservation and Management Training Program); Chicago Zoological Society, Brookfield Zoo; Lincoln Park Zoo, Scott Neotropic Fund; Tapir Preservation Fund, Club Tapir; Tapir Preservation Fund, Anonymous Do-

nor; The Ledder Family Charitable Trust; Paul and Elaine Beckham; IUCN/SSC Tapir Specialist Group; American Zoo and Aquarium Association (AZA) Tapir Taxon Advisory Group (TTAG); Idea Wild; Nellcor USA; Woodland Park Zoo, Jungle Party Conservation Fund; Deanne Holsworth; Kevin Burkhill; American Association of Zoo Keepers (AAZK), The Puget Sound Chapter; Corinna Bechko and Gabriel Hardman; Mike Dee; Gilia Angell; American Association of Zoo Keepers (AAZK), Los Angeles Chapter; Alex and Susan Sze; Andy Schultz; IUCN Small Grants Programme, The Ford Foundation; USAID Programa Sociedade e Natureza; Columbus Zoological Park Association; and, Sophie Danforth Conservation Biology Fund, The Rhode Island Zoological Society & The Roger Williams Park Zoo. Special thanks go to Dr. Cláudio Valladares-Pádua; Luiz Homero Gomes Pereira; José Maria de Aragão; Dr. George Velastin; Laury Cullen Junior; Cristiana Saddy Martins; Sheryl Todd; Heidi Frohring; Sharon Matola; Rick Barongi; Harmony Frazier; Wally Van Sickle; Rudy Rudran and Mariano Dixon.

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Tapir Surveys in Colombia

By Emilio Constantino with help from Conal Ho

Introduction

During the summer of 2000, Emilio Constantino traveled to various parts of Colombia to find out if tapirs inhabited specific regions in which they had been reported in the past, and if so, to verify which species

would be found there. Results for these areas of Colombia have been inconclusive so far – no tracks or signs of the tapir have been found. Other resources have also been tapped including museums, museum catalogues, and local Colombian scientists. These channels have revealed pertinent information about Colombia's tapir populations.

Field Expeditions

Two trips were made to the Farallones in 2000. The first expedition, which included Emilio Constantino, Alirio Silva, and Jaime Castro, took place late March. However, after spending only one night near the foothills, they were turned back by the army due to heavy fighting. Fighting has worsened in southern Colombia, particularly in jungles, mountains, national parks and indigenous reserves, which are all potential tapir areas. The United State's financial involvement (US\$1.3 million) in the drug war has probably worsened the situation.

Another expedition was carried out between April 10 and April 16, 2000. This time, Jaime Castro was unable to take part, so was replaced by Emilio Cardona from the 1999 expedition. The party left Cali in the early morning and set up camp in the late afternoon. After a six to eight hour hike, they reached the western slopes of the Farallones in the upper Cajambre River at an elevation of 3500 meters above sea level, where tapir tracks had been reported two years previously. The search continued for the next few days, but no tracks, trails, or other sign of tapir could be found.

Other Information about Colombia's Tapir Population

Emilio's contacts with local scientists and museum visits and Sheryl Todd's ongoing research, have revealed much information but raised even more questions. After some discussion between Emilio and the late Dr. Jorge Hernández-Camacho*, and between Dr. Jaime Cavelier of WWF and Dr. Hernández, it is fairly certain now that Baird's tapir (*Tapirus bairdii*) is found only in northern Colombia. Most of the population is located in Katíos National Park and in the Serranía del Darién by the Panamá border.

Furthermore, the mountain tapir (*Tapirus pinchaque*) is found only in the Eastern Cordillera north to Sumapaz (south of Bogotá). Its distribution limits are: Eastern Cordillera northern limit: Chingaza National Park; Central Cordillera northern limit: Los Nevados Na-

tional Park, east of Pereira, but possibly farther north up to Antioquia department; Western Cordillera: there are no reports from this region except for that of Craig Downer, who found one possible track along the upper Farallones on a wide trail that descended to the Pacific jungle. This track was found in the 1970s, and no other sign was seen there until 1998, when Alirio Silva and Dr. Eduardo Calderón, the botanist, went there to collect plants, and they, too, reported seeing a probable tapir track.

It is uncertain how many lowland tapir of the subspecies *Tapirus terrestris colombianus* remain. It is quite possible that this trans-Andean subspecies in Colombia is highly endangered. The director of Fundación Pro-Sierra, Dr. Fernando Salazar, and Emilio estimate that there are about twenty *T. t. colombianus* left in the Sierra. The rest are probably in the Serranía de San Lucas, where fighting has occurred. Dr. Hernández suggested there might be another subspecies of lowland tapir apart from *T. t. colombianus* in the trans-Andean region. Sheryl so far has found only one skull to prove the presence of Baird's tapir south of the isthmus of Panamá. In combing through various museum catalogues, no Baird's tapir from Colombia is listed. Searching for Baird's tapir in Colombian museums did not discover any trace either.

Emilio relays that natives and local hunters report that Baird's tapir exists in the Choco (western Colombia). Other reports have indicated that signs of tracks suggest the presence of the mountain tapir in two sectors of the western Cordillera: Farallones de Cali and Tata-má.

Dr. Hernández reported that Baird's tapir is still sympatric with lowland tapir in the Upper Sinú. He also confirmed that Baird's tapir is present in northwest Colombia but the southern limits of the species were also a mystery to him. He noted that there was a Baird's tapir skull in the von Humboldt Institute in Colombia.

With regard to other tapir species, Dr. Hernández stated that *T. t. colombianus* is cinnamon in colour and inhabits the Upper Sinú, the Magdalena Medio and the Catatumbo (Lake Maracaibo basin). He hypothesised that they inhabited the Sierra Nevada de Santa Marta and were similar to the Bolivian forms. He also said that the mountain tapir's northernmost limit appeared to be the Los Nevados National Park along the central Cordillera. However, there may be a possibility that the species exists further north in the Páramo de Sonsón.

There were no records to confirm that the species lived in the western Cordillera.

There are still important questions regarding tapir population and species distribution in Colombia:

- What are the southern limits for Baird's tapir?
- Where is the historical and actual northern limit for the mountain tapir in the eastern and central Cordillera?
- Is the mountain tapir actually present in the western Cordillera? If not, what restrained this species from migrating to this part of the Andean range?

Urgency of Tapir Research in Colombia

There are various reasons to continue investigating the tapir population in Colombia and to find ways to conserve it. Human activities that have endangered the tapir population include:

Application of the herbicide "Roundup" (glyphosate), used to control the growth of poppies in the páramos and mountains above 2700m, is threatening mountain tapirs. Colombia has seen a similar situation affect Baird's tapir.

Thirty-five years ago, the region from the coast southwards to the Atrato River was dense jungle. Supposedly, Baird's tapirs inhabited this jungle. In the 1970s, this jungle was cleared to make way for banana plantations and cattle farms.

Heavy warfare in southern Colombia is endangering the mountain tapir, in particular, areas such as Sumapaz and the national parks of Nariño/Putumayo. This area is Colombia's stronghold for the species.

Heavy fighting has been taking place in northern Colombia – the same area where Hershkovitz's specimen of *T. t. colombianus* was found along with Baird's tapir. This area is also a likely area for the Baird's tapir. This is also the region identified as "strategic" for national energy development. The Ministry of the Environment has authorized the filling of the Urrá dam affecting both the indigenous culture and the local wildlife population.

Drilling by oil companies on the eastern slopes of the Eastern Cordillera towards the Llanos Orientales (Eastern Plains) is endangering the lowland tapir. The area is rich in biodiversity and is the ancestral homeland of the Uwa people.

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Despite these threats, conservation efforts have seen results. The spectacled bear has returned to the Páramo de Las Delicias in the Guambiano Indian Territory. For about eighty years, the spectacled bear had disappeared from that region. Now, the Indian authorities are also making efforts towards bringing back Baird's tapir to the area. At this point, local Colombian scientists have identified that the three tapir species in the Andes region and west of the mountain range should be priorities for research and conservation efforts.

Latest Developments

In 2001 Emilio reported that the presence of *T. t. colombianus* had been confirmed during recent research trips to the areas of Magdalena Medio and Sierra Nevada de Santa Marta. The population at Magdalena Medio was small but not under any hunting pressure. However, fragmentation of the forest habitat is a problem and corridors between fragments should be developed. Sierra Nevada has intact habitat but there is hunting pressure. Emilio recommends the development of an education programme to improve the prospects for the long-term survival of this population.

This year's developments are not very encouraging regarding tapir survival in some areas. Emilio visited the Marías Mountains in mid February and found no traces of tapir. Indeed, local people had not seen sign of tapir since about 1975. The area is a very dangerous one and is the focus of heavy conflict. In addition, the area containing *T. t. colombianus* population in Sierra Nevada de Santa Marta, reported on above is also in a state of unrest. Hopefully, this population can survive this latest challenge to the tapirs of Colombia.

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*Editor's Note

It is with sadness that we report the death of Dr. Jorge Hernández-Camacho last year. His obituary will appear in the next edition of the newsletter.

News from the Field

■ CENTRAL AMERICA

Belize

Sharon Matola of the Belize Zoo has a number of reports from her field surveys including the sighting of 11 tapirs in four days on the one of the rivers of her field site. Sharon reports that her field team had one of their canoes attacked by an adult female tapir. She actually left a bite mark on the bow of the canoe! Sharon suggested that the female might have had a youngster in the bush nearby. In another report, Sharon describes interrupting a 3 m long crocodile, which had just drowned a young tapir of less than four months of age. Sharon moved the crocodile away with the paddle of her kayak and although the crocodile moved, he wasn't too keen to leave the site of the kill and continued to guard the tapir even when it was dragged onto a rock (see photo). This amazing event happened in the area, which is due to be flooded by the Chalillo Dam and highlights the potential loss of biodi-

versity that this dam would cause. This dam is described in the following also from Sharon.

The most robust populations of Baird's tapir found in Belize, are under determined threat by the proposed development of a dry season storage dam. The flooding of the area proposed would eradicate 90% of the riparian vegetation found there, and this is the very type of habitat, which provides ample food sources for herbivores. Joe Frago found, through his fieldwork in Belize in the 1980s, that this riparian or floodplain vegetation was the preferred food for tapirs. This has been confirmed from later fieldwork, where faeces, collected and analysed, was found to contain remains of herbaceous, floodplain vegetation only. These findings reinforce the important role that floodplain habitat plays for the preservation of this endangered species in the central Maya Mountains. Unfortunately, the area slated for the proposed dam is not replicated in other areas of Belize, and appears to be the most singular, important habitat for wildlife populations in the country.

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A crocodile guards the body of its drowned prey, a young tapir of less than four months of age. This amazing event highlights the potential loss of biodiversity in Belize in the area where the construction of the Chalillo dam is planned.

Photo by Sharon Matola



Field notes from Eastern Honduras: Tapirs (*Tapirus bairdii*) in the Rio Patuca region

By Josiah Townsend

During a herpetological expedition in July and August 2000 to the Rio Patuca in eastern Honduras some observations were made of Baird's tapir (*Tapirus bairdii*). The presence of tapirs in Honduras has been documented and IUCN representatives in the country estimate that 1000–2000 animals survive in the country today, with a majority of those inhabiting remote eastern Honduras. We surveyed the Rio Patuca as well as several of its tributaries: the Rios Casamacao, Zutawala, and Wasparesni. One adult tapir was sighted in the Rio Zutawala, and tracks were seen at locations farther up the Zutawala and also on the Rio Casamacao.

Region

The areas we visited are part of two designated protected areas: Reserva Antropológica (R.A.) Tawahka and the newly created Parque Nacional (P.N.) Patuca. These are relatively large areas (ca. 2510 km² and 3750 km², respectively) and make up part of the largest contiguous stretches of intact forest in Central America. The lowland tropical forests of this region are currently protected by the following system of parks: Rio Platanos Biosphere Reserve, R.A. Tawahka, and P.N.

Patuca in Honduras, and the Bosawas National Park in Nicaragua. The continued contiguity of this corridor will be difficult to ensure because of the increasing and unregulated flow of *campesinos* into the region. These settlers establish a homestead along the river and then proceed to cut down the adjacent forest to clear land for their livestock and crops. Despite this human influx, which has increased markedly since Hurricane Mitch (October/November 1998), the region still provides large tracts of suitable habitat for tapirs and the other large mammals that have become increasingly rare throughout much of Central America.

Parque Nacional Patuca: Officially established on 20th October 1999, P.N. Patuca was created to protect a large swathe of forest that borders Nicaragua and is adjacent to R.A. Tawahka. Fundación Patuca, a German NGO, was instrumental in the creation of the park and is currently involved in its management, inventory of and research on its flora and fauna, and the development of sustainable agricultural practices for the *campesinos* that already live within the park's newly established boundaries. The park's terrain is typified by steep forested hillsides and small streams that drain into the Rio Patuca and its tributaries.

Observations

Evidence of tapir activity was observed at three different localities along tributaries of the Rio Patuca. Tracks of an adult tapir as well as a wallow were observed along a clay-bottomed stream that fed into the Rio

Casamacao. The topography of this area is characterized by steep hills and muddy streamside areas. Vegetation in the vicinity can be described as primary forest with a closed canopy and a minimum of secondary growth. The tracks were followed for a distance of approximately 0.5 km along the stream and then up an adjacent hill into primary forest.

Tapir tracks were also observed in an area of floodplain forest along the Rio Zutawala. The Zutawala floodplain is ca. 2 km wide, with the majority of this lying on the northern side of the river. The tracks were observed within 15m of the north bank of the river, on a game trail that ran roughly parallel to the river. Two days later, while travelling back down the Rio Zutawala towards the Patuca, a large adult tapir was spotted while sleeping in vegetation alongside the river. The tapir was startled by the sudden appearance of our boat and attempted to flee by swimming along the river's edge and climbing the steep bank.

While no *campesinos* we encountered claim to actively pursue tapirs as a food source, nearly all of them related that they do kill or attempt to kill tapirs when the opportunity presents itself. Tapirs are obviously the largest game animals available, and taking one not only provides a source of meat but also is considered a sort of status symbol.

Recommendations

Parque Nacional Patuca provides a large area that would provide a suitable location for the ecological study of tapirs. Given the accelerated rate of deforestation in the region coupled with the value placed on the tapir as a food item by *campesinos*, it would be advisable for interested parties to conduct a preliminary census of tapirs as soon as it is feasible. Secondly, an education campaign for the *campesinos* could be implemented to raise awareness of the endangered status of this animal and dissuade hunting of the animal for food.

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■ SOUTH AMERICA

***Tapirus terrestris* (LINNAEUS, 1758) (Mammalia, Perissodactyla) In an Area of Sub-tropical Forest in Southern Brazil: Diet, Habitat Use and Population Density**

By Renato de Oliveira Affonso

Renato de Oliveira Affonso, has completed his masters degree at the University of Rio de Janeiro, Brazil. His thesis is entitled *Tapirus terrestris* (LINNAEUS, 1758) (Mammalia, Perissodactyla) in an Area of Sub-tropical Forest in Southern Brazil: Diet, Habitat Use and Population Density. The study presents an analysis of data concerning the diet, habitat use, seed-dispersal role, and density of the lowland tapir population of the Parque Florestal Estadual do Turvo in the sub-tropical forest of the upper Uruguay river basin, Rio Grande do Sul State, Brazil. Tapir presence was determined by following fresh tracks and then counting tracks and faeces located by walking along 910 km cumulative transects of trail on roads and near creeks. *Syagrus romanzoffiana* (Arecaceae) was the main fruit in the diet of the lowland tapir, replaced by *Holocalix balansae* (Caesalpinaceae) and *Campomanesia xanthocarpa* (Myrtaceae) when available. Viable seeds of this palm were found in dung piles, suggesting the possible role of tapirs as seed dispersers of this plant. The habitual deposition of dung piles in non-flooded areas could favour the germination of seeds. The water in permanent swamps, the availability of fruits and the presence of hunters seem to be the main reason for the differences regarding habitat use and density observed between the studied areas in the Park. The estimated density of the lowland tapir population is below the values observed for hunted areas in Amazonia. The seasonality of food resources may be partially related to the observed values for sub-tropical habitats.

Renato de Oliveira Affonso

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Professor J.C. Voltolini of the Mammal Ecology Study Group at the University of Taubate, is starting a project with two students to monitor the movement in space and time of tapir, peccaries and their predators (pumas). Another project on track measurements is

trying to identify statistically significant differences among ages, soil type and, if possible, a regression model to predict tapir biomass. This site is crucial for these large mammals because there is one 40 km trail used by both poachers and animals throughout the year. Therefore, the presence of biologists is important to record tapir movements but is also important to monitor the area for the presence of poachers.

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Ecuador

A semi-tame tapir has been the inspiration for the creation of a nature reserve near the village of Sarayacu in the Ecuadorian Amazon. The presence of the tapir meant that hunters in the area stopped hunting tapir for fear of killing this particular female. **Anders Siren** wrote to TPF and as a result the project was funded by Club Tapir. As a result, the reserve is now a reality and Anders has now turned the project over to the villagers although he will continue to oversee it.

Mountain Tapir Translocation Project, Northern Ecuador, October 1999 - May 2000

By Craig Downer

In November 1999, two expeditions took place into Sangay National Park. The first expedition was to my former radio-telemetry study area of the early 1990's, the Culebrillas sector of Sangay National Park. I discovered that a more intense invasion by domestic livestock was occurring in that area, driving the mountain tapirs further away from their former domain. The second expedition we made was to the Purshi sector of Sangay National Park. Here, I believed, we would have an excellent chance to observe mountain tapirs by walking along the recently constructed Guamote-Macas road. During our week's stay, we descended to

mid-elevation forests where we did finally see fresh tracks of a mountain tapir crossing the road. Most disturbing was the forest destruction occasioned by the road's construction.

During the first half of December 1999, three volunteers and I made the demanding expedition into the capture site at the salt lick below La Sofia. With three local guides, we observed several fresh mountain tapir trails coming and going from the traditional mineral seep area, which the tapirs have visited for generations according to native reports.

A capture strategy was formulated involving the baiting of the tapirs either with additional salt and/or preferred fruits and vegetables. It was determined that the broad river plain would be safe for helicopter entry after the tapirs were captured. We returned to camp after the strenuous expedition. I was looking forward to returning to the salt lick for the capture within a short time.

In Feb 2000, I made a trip to the Canyon Aguas Blancas, the Fundacion Golondrina's Reserve in northern Carchi, where the tapir pair is destined to make its new home. During my stay, we worked on the construction of 2.5-meter high poles, as per the corral specifications I had worked out with the advice of veterinarian Della Garell at the Cheyenne Mountains Zoo near Colorado Springs, USA.

In April 2000, we began final preparations for the translocation attempt. By mid-April, the Brazilian veterinarian, Dr. Jose Roberto Vaz Ferreira, from Sao Paulo State arrived. Immediately upon his arrival, we organized all equipment and supplies and drove north to Carchi. The helicopter preceded us to Tulcan, flying the day before from its base near Quito. The pilot and his helicopter remained on standby during all our capture attempts of the succeeding week. Since the veterinarian would not be available for more than a few days we decided to leave La Sofia for another opportunity and try the captures in the Garapatal and Culebrillas forested canyons just to the north of La Bonita. For nearly a week, we pursued the mountain tapirs near La Bonita with two hunter teams and their dogs. Although tracks of several mountain tapirs were trailed, these tapirs were very wary and were able to evade the hunter teams by sticking to higher, more precipitous terrain. They abandoned the canyons where we were trailing them for a higher and much more distant and inaccessible habitat to the west. On the final day, these tapirs were pursued to this distant region, but the ruggedness

of the terrain and dense forest exhausted the teams by midday, and we finally had to relinquish our efforts.

As the veterinarian and I concluded with our entourage, this expedition had not been in vain, for we had gained a measure of just how difficult it was to capture the tapirs in the vicinity of La Bonita, even with the best of available teams. It was agreed that we would have a much greater chance of success at the originally intended capture site below La Sofia at the salt lick where they are accustomed to come. At the veterinarian's suggestion, I have now adopted a plan to bait the mountain tapirs to accustom them to visiting the capture site over a longer period of time, two weeks to a month and possibly more.

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■ ASIA

Indonesia

Jeremy Holden working in Kerinci Seblat National Park in Sumatra has sent information and photos regarding the Malay tapir situation there. He writes: Here are the two images of tapir taken during daylight hours, plus a depressing picture of a tapir in a snare set for tiger.

The two daylight photographs represent the only full daylight images of tapir that we have made during over 150,000 hours of camera trapping in Kerinci. Previously we had made two images of tapir in daylight, but both – one early morning and one late evening – could be classed as crepuscular and not full daylight. The above images were made at a salt lick between 0800 and 1200h. I had followed this individual over approximately six kilometres and it had appeared in another of the camera traps along this route, but at night.

The trap picture was taken in August 1997 and shows a male tapir, that I had previously photographed on the camera traps, staked out as bait between two tiger traps. The tapir was almost certainly caught by accident in a powerful wire spring snare set for tiger.



Diurnal photographs of two Malay tapirs taken at Kerinci Seblat National Park in Sumatra. Photos by Jeremy Holden

The smashed up saplings around the trap were testament to the trapped animal's struggle, and a pool of blood and a slit throat evidence of how it was dispatched. The trappers then used the corpse as bait to bring in a tiger, placing another snare behind the corpse. Luckily, I found this trap the morning it had been set and could disarm it. When I visited the site two days later with rangers from the national park two Malay sun bears had been feeding on the tapir carrion. Both of these would, no doubt, have ended up as corpses too.

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This tapir was caught in a wire spring snare and then killed for use as tiger bait. Photo by Jeremy Holden

Also in Sumatra – **Matt Linkie** is undertaking fieldwork on the effects of deforestation on tapirs caused by subsistence farming. This work is taking place at the Kerinci Seblat national park and has been supported by TPF and Club Tapir.

Since 1983 **Marcel Silvius** has undertaken and (supported through project development and fundraising) many surveys in peat and freshwater swamp forests in Indonesia. These surveys, whilst not focusing on the Malay tapir, have contributed data on the occurrence of this species in Sumatra. Marcel believes that with the rapid demise of Indonesia's freshwater and peat swamp forests (its main habitats) due to reclamation for agriculture, unsustainable forestry practices (including clear felling) and the burning of millions of hectares associated with these practices, the species is becoming very much threatened.

Thailand

Tony Lynam reported the finding of a new Malay tapir area along the Thai-Myanmar border. He also reported that tigers, elephant and gaur were in reasonable abundance.

News from Captivity

Venezuela

Proyecto Danta – This project was reported on in the last edition of this newsletter and is a conservation project developed by Fundación AndígenA. The project has received support from the Tapir Preservation Fund in the past and another piece of the jigsaw was put in place when Denis Torres reported that Chorros de Milla Zoo in Merida, Venezuela received a female tapir, Simona, in August 2000. Simona is a mate for Pijiguao who was already there. Simona was sent from Bararida Zoo and Botanical Gardens in Barquisimeto in Lara State, Venezuela. She was born in July 1998 and is named Simona because she shares her birthday with the national liberator of Venezuela, Simon Bolivar. The transfer of Simona was not without problems but took place thanks to cooperation between Fundación AndígenA, Chorros de Milla Park Zoo (Mérida,

Venezuela), Bararida Zoo and Botanical Gardens (Barquisimeto, Venezuela) and the Tapir Preservation Fund. It is an important development for tapir captive breeding in the region.

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Enclosure Effects on Tapir Breeding and Welfare

A project currently being supported by TPF and Club Tapir is that of **Lisa Nordstrom** who is examining the effects of captive enclosures on the health, longevity and breeding success of captive animals.

■ TAG & STUDBOOK NEWS

**Report from the EAZA
Tapir & Hippo TAG**

The latest meeting was held in Prague in September, 2001. Activities since the last meeting in 2000 were summarised as follows:

Malay tapir (*Tapirus indicus*)

- Studbook data (by Helmut Mägdefrau): The population was reduced by two individuals in 2000. There is a slight tendency for the population to get younger, mainly because of imports from the AZA population.
- We need to consider exchanging older individuals in the future, not just young ones. One male of thirty years has been demonstrated to have perfectly viable sperm.
- Berlin Zoo has tried artificial insemination.

Research: Since the last meeting, Alastair Macdonald has received a complete Malay tapir placenta from Copenhagen Zoo. The placenta will be used for structural examination in accordance with the research project described in the minutes from last year's meeting.

Husbandry: The species coordinator has prepared a husbandry questionnaire to be sent to all holders in autumn 2001 in order to get baseline data for Malay tapir management in Europe at present.

The most serious problems identified so far are incompatibility (behavioural) and jaw cancer (medical). Experience has shown a tendency towards problems in mating if animals are transferred at a very young age.

Lowland tapir (*Tapirus terrestris*)

A European studbook for lowland tapir was again published by Aude Desmoulins (Lille Zoo, France). Copies are available from Aude (Mailing Address: Parc Zoologique de Lille, Avenue Mathias Delobel, 59 800 Lille, FRANCE; E-mail: audedesmoulins@nordnet.fr).

Aude informed the meeting about the major findings of the studbook and discussed the problem of TB in tapirs. TB is obviously widespread among lowland tapirs in Europe, and it was decided to prepare a survey that could identify the size and distribution of the problem as well as the different TB types present in tapirs. Furthermore, it was recommended not to keep lowland

tapirs in groups (to avoid spreading the disease) and to keep lowland and Malay tapirs apart. So far, TB is not a big problem among Malay tapirs although their sensitivity to it is well known. No reliable TB tests are available for the moment. It was mentioned that Metro Toronto Zoo is working on a reliable TB test for exotic animals and Aude will contact them.

The studbook keeper also stressed the problem that many zoos still do not want to give away their offspring. This leaves several zoos with single animals not in breeding situations. Based on the problems with management, pair formation etc. an upgrade from ESB to EEP should be considered and the EAZA committee contacted.

Future tapir activities in Europe will include:

- Include tapirs in a future TAG survey in order to get an overview of the overall situation (the last survey was conducted in 1995).
- Prepare the Regional Collection Plan for tapirs and hippos (ready early 2002).
- Prepare a survey focusing on TB in lowland tapirs.
- Prepare a research project on tapir nutrition (conducted by Andy Beer, Researcher at Sparsholt College, UK). See below.

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**Research Proposal on
Tapir Nutrition**

By Andy Beer

The aim of the project is to collect data and information on the nutritional intakes, outputs and status of dietary components of tapir diets in captivity. There is currently little comprehensive knowledge, which is reported or published on the subject. Concerns have arisen recently about the health status of some animals, and the intention of the investigations is to help set the baseline data to determine normal values for carbohydrates, protein, fat and minerals. A subsidiary aim is to establish information on gastrointestinal tract anatomy and structure from necropsy findings.

Necropsy protocol for tapir research on nutrition by Andy Beer

1. Please arrange for the necropsy to be carried out as soon as possible after death as decay sets in very quickly after body organs have ceased to function.
2. If possible please obtain photographs of the digestive tract *in situ* (with skin and ribs removed) and after removal from the abdominal cavity. Please ensure that the stomach and the hindgut are clearly visible in the latter case. Digital photographs for dispatch by e-mail would be particularly appreciated.
3. Please empty the contents of the stomach by pouring the contents into a volumetric vessel and recording the result. Please repeat for the caecum and the colon.
4. Please wash the tract free of superficial blood, and preserve it in an intact state in a 10% solution of

formalin (containers and preservative will be provided by the researcher on request).

5. If there is knowledge of impending death or euthanasia, please notify Andy Beer (contact details below) so that arrangements can be made to assist in the collection of digestive tract anatomy and histology at the time of death.

Andy Beer

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Baird's Tapir Studbook

Change of Email Address for the Studbook Keeper – Joe Roman's email address has changed. It is now: jroman5@attglobal.net

Contributed Papers

Malayan Tapirs (*Tapirus indicus*): Far from Extinction in a Malaysian Rainforest

By *Kae Kawanishi*¹, *Melvin Sunquist*¹, and *Sahir Othman*²

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sular Malaysia*

Malaysia, Wildlife, and Protected Areas

Since independence in 1957, large areas of productive lowland forests in Malaysia have been converted into oil palm and rubber plantations through government agricultural development schemes. In addition to this habitat loss and fragmentation, increased demands for wild meat and high-priced body parts of some wild animals brought population declines of many large mammals, including elephant (*Elephas maximus*), sambar deer (*Cervus unicolor*), seladang or gaur (*Bos frontalis*), tapir (*Tapirus indicus*), Sumatran rhinoceros (*Dicerorhinus sumatrensis*), and tiger (*Panthera ti-*

gris). The Javan rhinoceros (*Rhinoceros sondaicus*) and banteng (*Bos javanicus*) are now believed to be extinct in Peninsular Malaysia. All of the above species are totally protected in Malaysia.

Peninsular Malaysia is still forested at 45%, and about 5.5% of the total land cover is strictly protected. The existing protected area system relies heavily on its only national park, Taman Negara. Established in 1938 and largely due to its inaccessibility, the park has remained intact and undisturbed for the most part. It encompasses 4,343 km², accounting for 59% of the total protected area in Peninsular Malaysia. It is not only the largest park among 13 national parks in the nation (12 other parks are in East Malaysia), but also one of the largest in Southeast Asia.

Taman Negara is part of a large contiguous tract of forest that stretches to southern Thailand. Encompassing a total of 27,469 km², this large forest tract includes 7,135 km² in five protected areas (Dinerstein *et al.*, 1997), offering the best chance for much of the endangered wildlife in Malaysia. Under the Constitution of Malaysia, land is a state matter and the State Executive Committee of each state, not the Federal Government, is the highest decision-making body concerning land-use policy. In addition to the geographical significance, Taman Negara thus represents the only

piece of land in Peninsular Malaysia that comes under direct jurisdiction of the Federal Government. Therefore, Taman Negara is a stronghold for many of the endangered species in Malaysia.



Malay tapirs (*Tapirus indicus*) captured on film by an infrared camera-trapping system in Taman Negara National Park, Malaysia.

Photo credit: University of Florida – Malaysia Tiger Project.

The UF-Malaysia Tiger Project and Tapirs

Yet, even in this most critical conservation area, ecological data on many endangered species are lacking. The UF-Malaysia Tiger Project, a joint project between University of Florida and Department of Wildlife and National Parks Peninsular Malaysia (DWNP), has been studying the ecology of tigers and their prey species in Taman Negara since 1998. Financial support for the project has been provided by the Save the Tiger Fund, a special project of the National Fish and Wildlife

Foundation created in partnership with the ExxonMobil Corporation, the World Wide Fund for Nature (WWF)-Japan, WWF-UK, the Disney Wildlife Conservation Fund, University of Florida, WWF-Netherlands, 21st Century Tiger, and Wildlife Conservation Society.

We collect all possible information (sightings, signs, photo-captures, and interviews) of all medium to large mammals, assuming that anything above 2 kg may be food for tigers. Preliminary results suggest that tapirs are among the most abundant and widespread large mammals in the sample areas (Kawanishi *et al.*, 1999). Of 3,900 wildlife photographs collected so far from three 200-km² sites, 12.7% are of tapirs, followed by 12.6% of barking deer (*Muntiacus muntjac*) and 10.2% of wild boar (*Sus scrofa*). These appear to be the three most common large mammals, next to humans (18.6%), in the area. The majority of the human photographs are of aborigines living in the park, the others are of tourists and villagers. Many photographs of tapirs were taken near or on trails leading to saltlicks, more so than barking deer or wild boar. Nevertheless, tapirs were photographed at 48% of all camera-trap locations ($n = 132$) spread out over the 600 km² sample area, whereas wild boar and barking deer were photographed at 68% and 85% (thus most widespread) of all trap locations, respectively.

Caution needs to be taken with interpretation of the number of photographs. The number reflects not only the abundance but also the activity level of animals. Furthermore, it does not consider their social system. For example, one individual tapir at a salt-lick site can expose an entire roll of film overnight, thus 36 photographs over 24 hours of trapping at that site (=1 trap night). On the other hand, one photograph of wild boar may contain 10 individual animals, whereas two individuals per photo have been the maximum group size photographed for tapirs. These factors, along with the heterogeneous capture probabilities, mean that the absolute abundance and number of photos does not have a correlation coefficient of 1.0. For tigers, which have unique stripe patterns, we use mark-recapture population models to estimate the population based on individually identified tigers on photographs (see Karanth and Nichols, 1998). A few tapirs have scars on the bodies that can be used for this purpose, but not all animals are marked. We will be looking at all images more closely when the field sampling ends in August 2001 to see if the technique suggested by Holden (1999) to identify tapirs by examining damage and injuries to the ears is applicable. Based on finding some individually identifiable animals, we can at least determine the minimum number known alive, minimum home-range size, and average daily distance tra-

velled for those animals. In addition, we should also obtain information on general activity patterns and gain some insights into the social system and reproductive patterns.

Camera-trapping and Track-counting as Monitoring Tools

Two of the objectives of this project are to establish a monitoring system and to gather baseline information for many of the endangered species, which includes tigers and tapirs, in Taman Negara for future monitoring purposes. A statistically defensible estimation of an absolute density of these large secretive mammals in rainforests is often difficult and expensive to obtain. Relative abundance indices (RAI) based on standardized data collected systematically will suffice for comparing the population trend among sites and/or over time. Although we have to assume equal capture probabilities among individual animals and species, this method is far better than counting the number of tracks or even photographs and calling it a 'population estimate'. To derive a RAI based on a number of photographs, we first define 'detection', a unit of observation, as more than one photograph of a species per trap night per camera-trap location. This does not eliminate, but minimizes the effect of the activity level in the number of photographs and standardizes the analytical procedure among studies. Basically an RAI based on camera-trapping data is a ratio of detection over total trapping efforts. Furthermore, we have devised a technique to incorporate results from track-count surveys into results from camera-trapping to derive a combined RAI as a more robust and easy-to-apply measure of abundance (see Kawanishi *et al.* 1999 for more details). Using this method, DWNP can monitor the trend of wildlife abundance throughout Malaysia.

The DWNP wildlife database, the clearing house for data from all inventories and wildlife studies carried out by DWNP staff, also suggest that tapirs are relatively abundant in many types of forest throughout Peninsular Malaysia, even in peat swamps.

Tapirs as Food for Humans

Why are tapirs so abundant? Cultural values of wildlife vary considerably in this multi-racial country, comprised of 50% Malays, 33% Chinese, 9% Indians, and 8% other minorities, including aborigines. Due to their religious beliefs, the Malays do not eat tapirs. Unlike the situation in Sumatra (Martyr and Holden, 2000), we are not aware of a regular market for tapir meat in the Chinese community in Malaysia especially when wild

boar meat is plentiful. Tapir are a totally protected species and fines of up to RM 5,000 (USD 1,300) and/or five years in jail may be levied against an offender while wild boar is a protected game animal, meaning that one can obtain a license to hunt boar throughout the year. So far, DWNP Law Enforcement Division has filed only one case of a tapir poacher who possessed a severed tapir head after the flesh was cooked and served in his restaurant in 1997. Intriguingly, many Chinese Malaysians are superstitious about this peculiar animal. In China's national language Mandarin, the tapir is written and pronounced as 'Mo'. The character is the same but is pronounced as 'Baku' among Japanese who think tapirs are comical cute animals that eat people's bad dreams while sleeping. It is a sort of imaginary character. The Chinese Malaysians, however, more commonly use another word, 'Si-bu-xiang' for tapirs. A direct translation of this word is 'Four-no-images/objects', meaning 'four images of no animal' or 'four images and nothing is like it'.

In mainland China, the Chinese use this word 'Si-bu-xiang' for the Père David's deer or Mi-lu (*Elaphurus davidianus*), a peculiar animal that became extinct in the wild 1800 years ago and has been reintroduced recently into its former range (Corbet and Hill, 1992). The Chinese superstitiously believe that Mi-lu is a mix of horse for its face, deer for its antlers, cow for its hooves, and donkey for its tail. Strange, yet clearly a deer, Mi-lu has been consumed as food and ingredients for traditional Chinese medicine. The Chinese migrated to Malay Peninsula in the early 15th century, saw the tapir, and called it a strange 'Si-bu-xiang' because it looked like a mix of a horse for its face, rhino for its hooves, elephant for its nose, and pig for its nostrils and general body shape. Yet it is nothing like deer, nothing like pig, no other animals resemble tapirs. Indeed, it is too strange to be consumed. No parts of tapirs are used in traditional Chinese medicine. Then why doesn't this superstition hold among Chinese in Sumatra? Unlike Chinese Malaysians, those who migrated to Thailand or Indonesia were not allowed to retain their culture until recently. Over time they lost their language and some cultural values. For example, Chinese Indonesians today have Indonesian names and speak Indonesian. Not quite Muslim they can eat pigs and not quite Chinese they eat tapirs.

We do not know if rural Indians in Malaysia hunt tapirs. We have never heard of tapir curry. Interviews with aborigines reveal that tapir meat is not palatable and that the meat or other body parts have little or no market value. Lastly, in Malaysia tapirs are not the major culprits for raiding cash crops, therefore they are not subject of retaliation by villagers.

Tapirs as Food for Tigers

The aspect of tapir ecology most interesting to us is their anti-predatory behaviour. We have no records of tapirs being killed by tigers. If jaguars (*Panthera onca*) prey on lowland tapirs (*T. terrestris*) (Taber *et al.*, 1997), then why not tigers on Malay tapirs? Experienced wildlife rangers in Malaysia say that tigers eat wild boar the most, then barking deer, supplemented by sambar deer and occasionally primates, mouse deer and porcupines. What about tapirs? The range countries where tiger and tapirs occur sympatrically are Malaysia, Sumatra, Thailand, and possibly southern Myanmar, Cambodia, and Vietnam. Information on either species from the latter three countries is scarce. The only tiger food habits data from this region are from Thailand (Rabinowitz 1989) and tapir was not documented as a prey for either tigers or leopards. More than half of the tiger diet in Thailand consisted of barking deer (42%) and wild boar (9%). Tigers were surviving on relatively smaller prey such as porcupines (12%) and hog badgers (9%), but did not feed on tapir, which would have been a more energetically efficient prey than any of the above. It is possible that tapir, having short hair, was not detected in the faeces. In the IUCN Status Survey and Action Plan for Tapirs, Mohd Khan (1997), the former Director General of DWNP, wrote, "Tigers (in Malaysia) have been known to kill tapirs but such cases are few in number." A researcher in Thailand observed that some tapir captured on film had deep scarring on the body and he speculated that it might be a result of escaping a predator (Lynam, 1999). According to our project veterinarian, Dr. Abraham Mathew from the National Zoo Malaysia, tapirs use their sharp incisors for intraspecific fights, especially among males, and they often leave nasty scars more frequently near the rump.

In a discussion of whether tigers can kill an adult tapir, a TSG member, Debbie Martyr, says, "...providing the alternative (deer, pig, monkeys) prey base is sufficient, I don't see why tiger should actively seek out a large adult tapir. ...like most cats, they prefer easy prey where possible" (Holden and Martyr, 1998). The largest terrestrial obligatory predator has evolved to take down the largest prey possible. In India where tigers have been studied for almost four decades, tigers are known to selectively kill larger prey: gaur, sambar and adult male chital. An average adult male gaur weighs 5 times as much as a male tiger (Karanth and Sunquist, 1995). In India and Nepal, when tigers have a choice, they go for larger prey. Coincidentally, large male tapir are about 5 times the weight of male

tigers in Malaysia. By default, tigers should select tapirs.

Furthermore, tigers are excellent swimmers. In India, a tiger will sometimes chase deer into water for an easy kill. The tapirs' ability to dive into water as defence behaviour against predation by large cats, postulated in *Tapir Conservation* (1997, vol. 7 p 2), is debatable. The Malay tapir's obscure coloration and extra thick skin around the neck and nape suggest that tapirs, too, might have evolved to fend off the predators by protecting its vital region. In our study sites, where gaur and sambar are rare, it is mysterious that tapir, the next largest possible prey for tigers, are as abundant as wild boar and barking deer in some places. Little is known about tiger predatory behaviour in tropical evergreen rainforests. The question of tapir as food for tigers remains an enigma at least until a dietary analysis of tiger faeces collected in this study is completed.

Acknowledgements

We would like to thank Dr. Lim Boo Liat and Song Horng Neo-Liang for their cultural input to this paper.

References

- Corbet, G. B., and J. H. Hill. 1992. *The Mammals of the Indomalayan Region: A Systematic Review*. Oxford University Press, New York.
- Dinerstein, E., E. Wikramanayake, J. Robinson, U. Karanth, A. Rabinowitz, D. Olson, T. Mathew, P. Hedao, M. Connor, G. Hemley, and D. Bolze. 1997. *A Framework for Identifying High Priority Areas and Actions for the Conservation of Tigers in the Wild*. World Wildlife Fund-US, Washington, D. C.
- Holden, J. 1999. Photo-trapping in Sumatra. *Tapir Conservation* 9 (1): 10-11.
- Holden, J. and D. Martyr. 1998. Southern Sumatra. *Tapir Conservation* 8: 17.
- Khan, M. K. M. 1997. Status and action plan of the Malayan tapir (*Tapirus indicus*) In: D. M. Brooks, R. E. Bodmer, and S. Matola (eds.), *Tapirs: Status, Survey and Conservation Action Plan*. Pp. 23-28. IUCN.
- Karanth, K. U. and J. D. Nichols. 1998. Estimation of tiger densities in India using photographic captures and recaptures. *Ecology* 79: 2852-2862.
- Karanth, K. U. and M. E. Sunquist. 1995. Prey selection by tiger, leopard and dhole in tropical forests. *J. Animal Ecol.* 64: 439-450.

- Kawanishi, K., A. M., Sahak, and M. Sunquist. 1999. Preliminary analysis on abundance of large mammals at Sungai Relau, Taman Negara. *J. Wildlife and Parks (Malaysia)* 17:62-82.
- Lynam, T. 1999. Camera-trapping reveals the status of Malayan tapirs in southern Thailand rainforest remnants. *Tapir Conservation* 9(1): 9-10.
- Martyr D. and J. Holden. 2000. Regular market exists for tapir meat in Sumatra. *Tapir Conservation* 10(1): 16.
- Rabinowitz, A. 1989. The density and behaviour of large cats in a dry tropical forest mosaic in Huai Kha Khaeng Wildlife Sanctuary, Thailand. *Nat. Hist. Bull. Siam Soc.* 37(2): 235-251.
- Taber, A. B., A. J. Novaro, N. Neris, and F. H. Colman. 1997. The food habitats of sympatric jaguar and puma in the Paraguayan Chaco. *Biotropica* 29: 204-213.

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Recent Observations of Melanistic Tapirs in Peninsular Malaysia

By Mr. Mohd. Azlan J.

Two melanistic or black tapirs (*Tapirus indicus spp brevetianus*) were recorded on two occasions in Jerangau Forest Reserve, Ulu Terengganu. Both of these records were made by infrared cameras set up to study tiger presence and movement. The first record was made on 9th July, 2000 at 19:44hrs at N 4^o 54.17; E 103^o 08.24. This lowland forest was logged over 30 years ago. Only the back half of the animal was recorded, but this was sufficient to show the all black colouring of the tapir (Fig. 1).

Fig. 1. All black Malay tapir recorded by an infrared camera in Jerangau Forest Reserve, Ulu Terengganu, Malaysia.

Photo by Mhd. Azlan J.



The second record was made on 20th July, 2001: 1:13hrs at N 4^o 59.80; E 103^o 06.36 (Fig.2). This was in hill forest which was also logged 30 years ago.



Fig. 2. Picture of another specimen without the typical white colour pattern (saddle).

Photo by Mhd. Azlan J.

The only published record on black tapir was by Kuiper (1926). He described a black tapir in 1924 found in Babat, a low-lying plain of Palembang, Sumatra, Indonesia. He noted that the adult male tapir was completely black. He proposed a separate subspecies for this animal based on a presumed genetic basis for this colouration.

Within Jerangau Forest Reserve, we have found that the occurrence of black tapirs is very low. From a total of 3314 photographs taken over a period of 21 months, 280 tapir were recorded, of which only two individuals were black. This, of course, raises doubt as to whether or not the black tapir is really a subspecies or, that it is indeed a variation in coloration of *Tapirus indicus*.

It would be of interest to initiate basic genetic studies to understand the genetic differences between *Tapirus indicus* and the subspecies described by Kuiper. Jerangau Forest Reserve would provide a useful study-base for such studies. Further information is desperately needed to develop effective conservation strategies for the Malay tapir in general. Basic facts about their biology, behaviour, ecology and range are still lacking.

Acknowledgements

The author would like to thank WWF UK, WWF Japan, British Hicom and Guinness Anchor (M) for making this research possible and Dr. Dionysius Sharma for his comments.

Reference

Kuiper, K., 1926. On a black variety of the Malay tapir (*Tapirus indicus*) *Proc. Zool. Soc. London*, pp. 425-426.

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International Tapir Survey in Several European and North American Zoos

By Stefan Seitz

Introduction

The public perception of tapirs in captivity has never been the subject of a specific investigation. The first extensive visitor study was conducted during a research project for a doctoral degree in zoo biology in Germany, Switzerland, and the United States between 1997 and 2000. The entire research topic goes beyond the scope of this newsletter, so I will focus on the re-

sults of a spot check questionnaire among zoo goers (precisely: tapir watchers). Altogether, their answers can be of some importance. The nine zoos included in the study are: Los Angeles and San Diego Zoos in California, USA, Zurich Zoo in Switzerland, as well as Berlin Zoo, Dortmund Zoo, Heidelberg Zoo, Hellabrunn Animal Park at Munich, Nuremberg Animal Gardens and Wuppertal Zoo in Germany. Among these, 14 exhibits are distributed between the four tapir species as follows: *Tapirus indicus* (6), *T. terrestris* (4), *T. bairdii* (3), *T. pinchaque* (1).

Method

To ensure a high resonance and reliability, participants have been chosen after equal criteria everywhere: Watching tapirs and speaking English or German were required before being questioned. 479 visitors (149 in the US) in front of the outdoor enclosures filled out a two-page questionnaire concerning 10 subjects. Questions referred to peoples' impressions and knowledge, and offered multiple choice answers and short notes. The presented percentages in this article either refer to the number of participants or to the number of questions answered. Where questions allowed several answers, their sum may exceed 100%. The following paragraphs represent the results.

Results

1. Attention to the tapirs

The tapir exhibits are commonly reached by visitors while walking on a circuit through the zoo (64.1%), i.e. more or less by coincidence. The animals themselves attract 27.3% of passing visitors by their shape or colour. Activities, and vocalization reach only 9.6%. This is no surprise, as most visitors approach the enclosures whilst the animals are resting. Planned visits (8.1%) have several reasons, e.g., the tapir is the visitor's favourite animal or they want to see the baby, other reasons are because it has a funny name or a rare animal. Enclosures (7.3%), signboards (6.1%), and houses (7.9%, where existing) are of minor importance. Other reasons for a visit include: special interest, picnic, searching for elephants, or "to watch it eat ants" (altogether 10.2%).

Question number 2 and 3 refer to single enclosures being judged as either positive, negative, or neutral after nine criteria (see below). Without giving detailed descriptions of each facility, just a general overview seems useful at this point.

2. Impressions of outdoor enclosures

People give most critical assessments to enclosure size, vegetation cover and availability of water. There are, indeed, great differences between the zoos. The largest exhibit received approval by 71.0%, the densest vegetation by 83.3%, and the biggest pool by 88.9% of the participants. In one case, dense vegetation in the visitor area leads to high approval of the exhibit (69.4%), although there is no natural vegetation in reach of the animals (except for some browse). The nature of the substrate cannot be judged very well by laymen. Wire mesh (37.5%) is less popular than obstacle free viewing above low fences or moats (71.2%). The position of the enclosure within the zoo is generally highly approved basically because the methodology of the survey means that everyone questioned were already in front of the exhibit.

3. Impressions of Signboards

The position of signboards at the enclosure has a direct influence on their use. Approval ranges between 16.0% and 83.3%. The best arrangement reaches 77.4% (large, coloured table), the oldest sign 4.0% (included just name of the species, picture, and distribution; now replaced). The quality of information ranges up to 76.7% of positive judgement. People are predominantly interested in facts like natural distribution, "lifestyle", habitat, diet, name and behaviour of the animals. Endangered status, facts about reproduction, and history of individuals should not be forgotten. To hit the nail squarely on the head, a visitor wrote: "Tidbits I can easily memorize."

4. Source of Knowledge

Former zoo visits are the most important source of being familiar with tapirs (57.0%), followed by television (45.3%). 33.0% of the zoo goers state tapirs belong in their general knowledge. Literature (25.5%) is of greater importance than biology lessons (15.0%), while radio is definitely low in imparting tapir notes (0.6%). 14.0% of the visitors watched tapirs for the first time when asked. Other sources are: books and games for children, crosswords, vacations in Belize, Costa Rica, and Venezuela, articles in National Geographic, and, last but not least, Stanley Kubrick's science-fiction "2001 – A Space Odyssey" (together 7.5%).

5. Popularity of Tapirs

No method was suitable to detect any difference in acceptance between the four species, apart from the personal survey: Every participant was pleased to give a grade between 10 (very much) and 1 (not at all) re-

garding their personal pleasure at watching tapirs. Still keeping a high mean value, lowland tapirs are least attractive (7.4). Baird's tapirs gather slightly higher grades (7.7), while mountain tapirs reach 8.5 in average. In the Malay tapir, results vary greatly between 7.4 and 8.5 depending on the display. This results in an average of 7.9. A baby of the latter species ("watermelon" stage showing shape of the saddle) attracted 9.3. Some remarks were given, among them: cute, lovely, different, unusual, interesting "odd" looking, fun to watch, no entertainment value.



Once detected, tapir babies become attractive to visitors, like the Malay tapir INDAH at the Dortmund Zoo.

Photo by Stefan Seitz

Tapirs were the favourite animal of 19 participants. The categorized ranking of 401 namings includes: 1. carnivores, 2. primates, 3. hoofstock, 4. elephants, 5. sea mammals, 6. others.

The following five questions tested people's knowledge about the general biology of tapirs (387 participants).

6. Diet

91.5% class tapirs as vegetarians. 8.0% thought they ate a mixed diet and 0.5% think tapirs are carnivores. Altogether, these amounts seem to represent their regular diet.

7. Habitat

Tropical rainforests are believed to be the most suitable habitat (62.0%). Temperate forests (18.1%), dry regions (12.4%), and open waters (8.8%) are the alternatives given. In front of two exhibits in US zoos, the majority of people crossed temperate forests as first preference.

8. Relatives

The ranking of the – supposed – closest relatives of tapirs are: anteaters (30.2%), pigs (26.1%), rhinos (22.0%), horses (17.3%), hippos (15.5%), and elephants (7.2%). The anteater is also the animal tapirs are most often mistaken for (see publication mentioned below). The contradiction between the supposed diet and closest relatives is revealing. Right answers are particularly promoted by information on signboards.

9. Functions of the Proboscis

The importance of the short proboscis as an olfactory organ is most obvious (73.6%). Digging (58.9%), touching (55.8%), and grabbing (43.7%) seem to be probable functions for many people, too. Drinking (23.8%) and trumpeting (7.8%) are definitely incorrect functions of the trunk. The second rank for digging is evocative of pigs (digging behavior is rarely seen in tapirs). One visitor added "to snorkel" because he had read it on a sign.

10. Function of Black and White Colouration

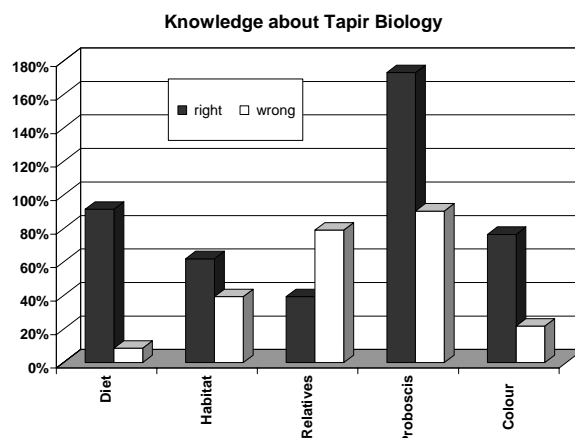
Three quarters of visitors have correctly thought that camouflage is the function of the contrasting black and white colour in Malayan tapirs (76.5%). Deterrence of enemies is the decision of 13.2%, a better identification of individuals was chosen by 8.5%. Asking for further examples, 57 different animals have been named: zebras, various pets (e.g., Hampshire pigs, Dalmatian dogs), wild boar piglets (compared with tapir babies by Europeans only), pandas, and skunks are known best.

Discussion

The survey shows the personal opinions of those zoo goers interested in tapirs. Results are probably different from the "average" visitor. The number of people familiar with tapirs or calling them a favourite might decrease elsewhere. Asking the same general questions outside zoological gardens could be an interesting supplement to the study conducted. The answers at different zoo settings are quite comparable across continents and cultures and should therefore be sufficiently representative. General differences between American and European visitors do not exist in this context.

Zoos should not lose their important role of public education. Better arrangements of enclosures and signboards could help to increase an interest in those animals that are easily "overlooked". Active tapirs present themselves successfully (e.g., when running, playing, swimming). Unfortunately, the most attractive tapirs are the rarest ones. Concerning people's knowledge, a

majority get the right impressions about diet, habitat and functions of different morphological structures. Only the relationship question makes participants helpless, even biology teachers! People often become surprised (not to say "shocked") when told that tapirs are the closest relatives to the well-known horses and rhinoceros. Fortunately, such aha-experience is easily remembered.



Right and wrong assessments concerning basic aspects of tapir biology (n = 387).

Graphic by Stefan Seitz

Acknowledgements

I would like to thank the visitors (remaining anonymous) who participated in the survey, the staff from all the zoos I worked in (mentioned above), and Sheryl Todd, president of the Tapir Preservation Fund. The Association of Friends and Supporters of the Zoological Museum at the University of Heidelberg, the German Academic Exchange Service (DAAD), and the German Research Community (DFG) are gratefully mentioned for their financial support.

Further Information

A related article "In the name of the tapir: Confusions and conclusions" from *International Zoo News* No. 300 is available on the web (<http://www.zoonews.ws/IZN/300/IZN-300.html>), as well as a summary of my thesis (<http://www.tapir-online.com>).

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In this chapter, we would like to present periodically the most current publications about tapirs. An encouraging amount of articles appeared in books and journals during the last few years.

Not only scientific investigations and theses, but also well-founded views in public or zoo magazines will be mentioned. Please let us know about new records. A list of articles published in previous volumes of *Tapir Conservation* will be prepared.

Abstracts

Kinahan, A. 2000. Preference testing in captive, Brazilian tapirs (*Tapirus terrestris*) at Dublin Zoo: are captive animals' needs different from their wild counterparts? *Advances in Ethology* 35 (Supplements to Ethology), 43.

Mangini, P. R.; Gasino-Joineau, M. E.; Carvalho-Patricio, M. A.; Fortes, M. A. T.; Gonçalves, M. L. L.; Martins, T. D. M.; Medici, E. P.; Cullen Jr, L. 2000. Avaliação da ocorrência de títulos positivos para doenças infecto-contagiosas em uma população selvagem de *Tapirus terrestris*, na região do Pontal do Paranapanema, São Paulo. In: *Abstracts Book of the XXII National Congress of Zoos / IV International Meeting of Zoos*. Belo Horizonte, Minas Gerais, Brazil.

Medici, E. P.; Valladares-Pádua, C. B. 2001. Um enfoque inovador, antas como "detetives da paisagem". In: *Abstracts Book of the V International Conference on Wildlife Management in Amazonia and Latin America: Ungulate Workshop*. Fundación Natura and Florida University. Cartagena de Índias, Colombia.

Scientific Investigations

Downer, C. C. 2000. Observations on the diet and habitat of the mountain tapir (*Tapirus pinchaque*). *Journal of Zoology* 254: 279-291.

Downer, C. C. 2001. Geplantes Projekt für den Sangay National Park in Ecuador. *ZGAP Mitteilungen* (Zoologische Gesellschaft für Arten- und Populationsschutz e.V.) 17 (1): 18-19. [in German]

Fragoso, J. M. V.; Huffman, J. M. 2000. Seed-dispersal and seedling recruitment patterns by the last Neotropical megafaunal element in Amazonia, the tapir. *Journal of Tropical Ecology* 16: 369-385.

Herrera J. C.; Taber, A.; Wallace, R. B.; Painter L. 1999. Lowland Tapir (*Tapirus terrestris*) Behavioral Ecology in a Southern Amazonian Tropical Forest. *Vida Silvestre Neotropical* 8 (1-8): 31-37.

Holbrook, L. T. 2002. The unusual development of the sagittal crest in the Brazilian tapir (*Tapirus terrestris*). *Journal of Zoology* 256: 215-219.

Lizcano, D. J.; Cavelier, J. 2000. Daily and seasonal activity of the mountain tapir (*Tapirus pinchaque*) in the Central Andes of Columbia. *Journal of Zoology* 252: 429-435.

Lizcano, D. J.; Cavelier, J. 2000. Densidad Poblacional y Disponibilidad de Habitat de la Danta de Montaña (*Tapirus pinchaque*) en los Andes Centrales de Colombia. *Biotropica* 32: 165-173 [in Spanish]

Lizcano, D. J.; Cavelier, J. 2002. Geographic distribution and population size of the mountain tapir (*Tapirus pinchaque*) in Colombia. *Journal of Biogeography* 28: 1-9 [in press]

Murphy M. R.; Masters J. M.; Moore D. M.; Glass H. D.; Hughes R. E.; Crissey S. D. 1997. Tapir (*Tapirus*) enteroliths. *Zoo Biology* 16: 427-433.

Salas, L. A.; Kim, J. B. 2000. Spatial Factors and Stochasticity in the Evaluation of Sustainable Hunting of Tapirs. *Journal of Zoology* 252: 429-435.

Schürer, U.; Kauffels, T. 1999. Erste Nachzucht des Mittelamerikanischen Tapirs, *Tapirus bairdii* (Gill, 1865), im Zoologischen Garten Wuppertal. *D. Zool. Garten N.F.* 69 (3): 188-191.

Seitz, S. 2000. Feeders and fecal scents for Malayan tapirs. *The Shape of Enrichment* 9 (1): 6-7.

Seitz, S. 2000. In the name of the tapir: confusions and conclusions. *Int. Zoo News* 47 (3): 148-160.

Bibliography

Seitz, S. 2000. Individual, intra- and interspecific behaviour of *Tapirus terrestris* (Linnaeus, 1766) on a South American zoo exhibit in relation to space and time. *Zoocriaderos* 3 (2): 13-27.

Witmer, L. M.; Sampson, S. D.; Solounias, N. 1999. The proboscis of tapirs (Mammalia: Perissodactyla): a case study in novel narial anatomy. *Journal of Zoology* 249: 249-267.

Book Chapters

Gade, D. W. 1999. Epilepsy, Magic, and the Tapir in Andean America. In: Gade, D. W. (Ed.): *Nature and Culture in the Andes*. The University of Wisconsin Press, Wisconsin and London. 118-136.

Janssen, D. L.; Rideout, B. A.; Edwards, M. S. 1999. Tapir Medicine. In: Fowler, M.E.; Miller, R. E. (Eds.): *Zoo & Wild Animal Medicine*. Philadelphia, W. B. Saunders Company. 562-568.

Medici, E. P. 2001. Order Perissodactyla, Family Tapiridae (Tapirs): Biology. In: Fowler, M. E.; Cubas, Z. S. (Eds.): *Biology, Medicine, and Surgery of South American Wild Animals*. Iowa State University Press, Ames, Iowa. 363-367.

Montenegro, O. L.; Medici, E. P.; Bodmer, R. E. 2000. Conservación e manejo de tapires latinoamericanos. In: Cabrera, E.; Mercolli, C.; Resquin, R. (Eds.): *Manejo de Fauna Silvestre en Amazonia y Latinoamérica*. Fundación Moisés Bertoni and Florida University, Asunción, Paraguay. 295-299.

Nunes, L. A. V.; Mangini, P. R.; Ferreira, J. R. V. 2001. Order Perissodactyla, Family Tapiridae (Tapirs): Capture and Medicine. In: Fowler, M. E.; Cubas, Z. S. (Eds.): *Biology, Medicine, and Surgery of South American Wild Animals*. Iowa State University Press, Ames, Iowa. 367-376.

Todd, S.; Matola, S. 2001. Tapir. In: Bell, C. E. (Ed.): *Encyclopedia of the World's Zoos*. Vol. 3 (R-Z). Fitzroy Dearborn Publishers, Chicago and London. 1204-1209.

Reports

Cohn, J. P. 2000. On the tapir's tapering trail. *Américas* 52 (1): 40-47.

McLaughlin, R. 1999. Odds & ends make a magnificent beast. *Zoonooz* 72 (4): 8-13.

Sontag, W. 2002. Lebende Fossilien. Tapire – friedliche, scheue Vegetarier von archaischer Gestalt. *Wiener Zeitung EXTRA*, 5./6. April: 7.

Zscheile, K. 2001. Tapire – Gestalten aus grauer Vorzeit. *Flamingo* (Schweriner Zoo-Journal) 3 (2): 6.

Dissertations & Theses

Müller, A. 2001. *Die Auswirkungen von Environmental Enrichment bei Flachlandtapiren im Zoo Osnabrück*. Hausarbeit im Rahmen der ersten Staatsprüfung für das Lehramt an Realschulen. Universität Osnabrück, Fachbereich Biologie/Chemie. [in German]

Oliveira Affonso, R. de 2001. *Tapirus terrestris (LINNAEUS, 1758) (Mammalia, Perissodactyla) in an Area of Sub-tropical Forest in Southern Brazil: Diet, Habitat Use and Population Density*. Master's thesis, University of Rio de Janeiro, Brazil.

Seitz, S. 2001. *Vergleichende Untersuchungen zu Verhalten und Schauwert von Tapiren (Familie Tapiridae) in Zoologischen Gärten*. Doctoral thesis, University of Heidelberg, Germany. Cuvillier, Göttingen. 380 pp. [in German]

Taylor, E. 2000. *The captive behaviour of Malayan tapirs in an enriched and non enriching enclosure*. Dissertation, Sparsholt College, Hampshire, United Kingdom.

Fiction & Nonfiction

Royte, E. 2001. *The tapir's morning bath – Mysteries of the tropical rain forest and the scientists who are trying to solve them*. Houghton Mifflin Company, Boston, New York. 328 pp.

Tapir Discovery

By Stefan Seitz and Kate Wilson (1999)

TAPIR:

not a common name,
though they deserve much wider fame –
so brace yourself for facts and features
on these snouting, squeaking creatures.



Mother NORA and son NIKO, two Malay tapirs from the Berlin Zoo. Photo by Stefan Seitz

Kin they are to horse and rhino,
but have no mane or horn that I know
(except the lowland tapirs sport
a ridge of neck-hair, very short.)
Some can weigh eight hundred pounds.
All speak in clicks and whistling sounds.

The body's stocky, with short tail,
which helps the tapir clear a trail
through dense, damp forests, tropically,
of old and new world, topically.
And of their presence, these are proofs:
imprintings of all fourteen hoofs.

The short and splodgy trunk works well
for grabbing, touching, sniffing, smell.
This snout helps tapirs in the wood
to find and eat their favourite food:
enjoying all the night and day
soft leaves, sweet fruits, and grass, and hay.

In the water, tapirs thrive;
they swim quite well. They even dive!

We used to think that tapirs walked
alone, disliked each other, balked
at friendship, stayed apart;
but now we find that at the heart,
the tapir is a social beast
and goes by twos or threes, at least.

In thirteen months, a mom gives birth:
one offspring starts its life on earth.
The young have spots and stripes (how cute);
but as they grow, their colours mute
except the Asian's – he turns black
with one white saddle on his back.

With good teeth and nose and ears,
A tapir lives some thirty years,
except ... well ...
they're endangered. Man
will skin and eat them where he can,
but even worse, deforestation
means all tapirs in creation

die.



Just sleeping: the mountain tapirs MIDORI and INCA at the Los Angeles Zoo. Photo by Stefan Seitz

And so I write this paper:
Save the rainforests, save the tapir.

You didn't know? It doesn't matter.
Now you know the tapirs better!

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IUCN/SSC Tapir Specialist Group – Structure and Positions



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Photo by Steven Hernandez-Divers

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