

CONSERVATION

The Malay Tapir Conservation Workshop: A Major Success

By Patrícia Medici and Bengt Holst

During the First International Tapir Symposium held in Costa Rica, in November 2001, it became clear that one of the biggest concerns among tapir experts was the limited attention that has been given to the conservation of Malay tapirs and that TSG should give this species priority. As a consequence, the TSG decided to organise and hold a Malay Tapir Conservation Workshop in Asia. The European Association of Zoos and Aquaria (EAZA) Tapir Taxon Advisory Group (TAG), the IUCN/SSC Conservation Breeding Specialist Group (CBSG), and the Malaysian Department of Wildlife and National Parks (DWNP) kindly agreed to support this initiative and the first steps towards the organisation of this important meeting were taken about two years ago.



Habitat Threats Working Group. Photo by Charles R. Foerster.

The workshop was held in Krau Wildlife Reserve, Malaysia, August 12-16, 2003, and was a major success. The group was formed by 35 participants from Malaysia, Indonesia, and Thailand, with TSG representatives from several other countries also participating. Unfortunately, we did not have any participants from Myanmar. Dr. Phil Miller and Amy Camacho from the IUCN/SSC CBSG facilitated the workshop using a *Population and Habitat Viability Analysis* (PHVA) format. The PHVA is a very efficient and systematic working process that gets all relevant stakeholders together, identifying status and problems, and based on that generating research and establishing conservation priorities for specific species. It combines a quantitative risk assessment tool with intensive discussions and deliberations of the biological and social issues relevant

to the species conservation across its range. Taken together, the risk assessment modelling and focused, stakeholder-driven deliberations are designed to directly address the issues affecting the species so that alternative strategies can be analysed rationally and systematically. When this occurs, better conservation decisions and specific action steps with targeted responsibility will result.

The first step of the workshop was to put together all the available information and data about Malay tapirs. Participants contributed scientific articles, data and knowledge of the species and its habitat, and listed the major issues related to Malay tapir conservation. Based on this, participants were divided into four different working groups:

- 1.) **Distribution and Habitat**
- 2.) **Population Biology and Simulation Modelling**
- 3.) **Habitat Threats**
- 4.) **Species Management**

Each group had a series of tasks: (1) Identifying and defining problems and ranking them in order of priority; (2) Developing goals to achieve the change in the conditions identified in the problem statement, specifying minimum and maximum goals to achieve in the next five years, developing goals for each problem and ranking the goals in order of priority; (3) Developing actions to accomplish the goals identified under the problems or issues, taking into account the scientific information on the species, its habitat, and the threats identified.

Major issues addressed by the **Distribution and Habitat Group** were related to collection, management, sharing and storage of data in Southeast Asia. There is a lack of uniformity and quality in data collection methods, coverage and human resources (including officials and the general public). There is insufficient unified management and weak international coordination and collaboration. In addition, there is limited access to land use data and rivalry between stakeholders. There is a fear of unauthorised use, misuse and loss of control over data. And, finally, there is lack of centralised, coordinated and secure data storage.

The group listed several goals to deal with the problems identified and three of them were considered to be major priorities:

- To build the capacity of field staff to meet the minimum requirements of the ASEAN

- occupational standards;
- To build the capacity of personnel in data analysis and interpretation;
- To ensure sufficient data quality control at all staff levels.

Priority actions listed by this group were:

- Approach regional agencies and request they incorporate/promote tapir conservation into their planned training programmes for nationals to meet ASEAN PA (Protected Areas) occupational standards.
- Widely distribute workshop outputs to relevant agencies/institutions and field personnel.
- Recommend to those agencies/institutions under whose jurisdiction wildlife research and management fall, that they ensure that each tapir research project includes a training component for local people (staff/community/students).
- Develop/build capacity on data collection.
- Develop a tailor made system reflecting the national needs and capacity that can ensure collected data are double-checked, crosschecked and deficiencies addressed.
- Strive to obtain independent review of information intended for public disclosure/publishing.

Major problems identified by the **Population Biology and Simulation Modelling Group** were:

- 1.) A lack of understanding of basic tapir biology and how threats impact on them.
- 2.) The need for alternative management scenarios.

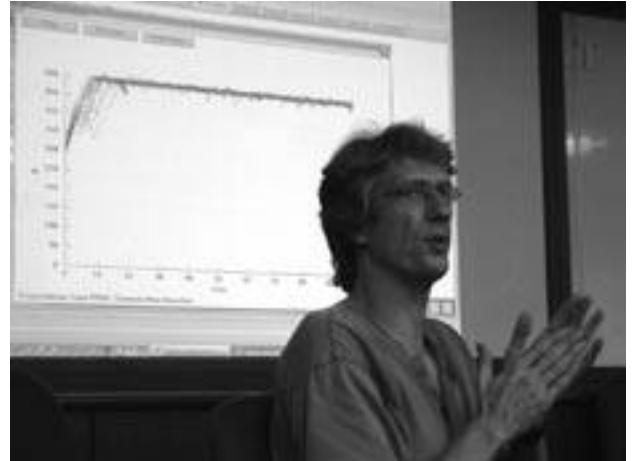
The group listed the following goals:

- Develop a greater understanding of basic tapir biology and how human activities impact those processes.
- Evaluate alternative management scenarios.

Demographic parameters for Malay tapirs were discussed and estimated, a basic model was developed, and several simulations were conducted. Some of the most important results from the simulations were:

1.) *Probability of Extinction*: The Malay tapir populations simulated during the workshop, with all the assumptions made, were able to maintain moderate or no extinction risk in the absence of extraction (e.g. hunting) only if their numbers were moderate to large (50 or more). If the population is under extraction pressure, the numbers needed to maintain low extinction risk are much larger, as much as 10 times more (500 animals). Furthermore, in small populations a small increase in extraction levels (of only 5%) can double

the chances of the population going extinct. Because both accidental and intentional extractions occur throughout the Malay tapir's range, and because population numbers are low at any given place, it is very likely that current populations are at high risk of extinction within the next 100 years if no further conservation actions are taken.



Dr. Phil Miller, IUCN/SSC Conservation Breeding Specialist Group (CBSG) presenting the first results of the Population Biology and Simulation Modelling Group. Photo by Charles R. Foerster.

2.) *Growth Rate*: The simulations conducted during the workshop also provided insights into the average growth of the populations over 100 years given the combination of population sizes and extraction rates. Under the “no hunting” scenario, only populations with 50 or more individuals showed a positive average growth during the entire interval. Because the demographic stochasticity represented in the exercise was conservative, it is likely that a larger number will be needed to ensure positive growth. A 10% extraction rate will require 100 individuals or more; 20% extraction levels will require more than 1,000 individuals. A population of 2,000 tapirs was insufficient to maintain a positive growth under 25% extraction.

3.) *Genetic Diversity*: Loss of genetic diversity behaved similarly across all hunting scenarios, and was largely determined by the size of the initial population. Populations of 20 to 50 tapirs were able to retain only 60% or less of the original heterozygosity levels after 100 years. At least 500 individuals were needed to ensure no loss. These results suggest that current population levels are at high risk of genetic erosion over the next 100 years.

Overall, the group concluded that despite conservative values of demographic stochasticity and low extraction levels, tapir populations must be maintained at high numbers to ensure their long-term survival, growth and genetic health. Because such high numbers are unlikely to be found throughout their range, the Malay tapir is under considerable threat.

Priority actions listed by this group were:

- The design and implementation of two detailed field studies (Sumatra and Peninsular Malaysia) to generate more precise estimates of selected demographic parameters, such as density and survival rates (primarily of adults).
- Improvement/additions to our database on the distribution of Malay tapirs throughout their range.
- Design and implementation of a study to evaluate the genetic diversity of Malay tapirs throughout their range.
- Assessment of the level of extraction of Malay tapirs (hunting, by-catch, road mortality, etc).
- Periodic addition of results from long-term studies into a Malay tapir central database.

The **Habitat Threats Group** identified the following issues:

- 1.) Reduction in available habitat for tapirs due to various legal and illegal processes including concessions in protected areas, open or illegal logging and expanding cultivated areas.
- 2.) Fragmentation of tapir habitat due to roads, power lines, other human infrastructure, creation of protected areas with or without buffer zones.
- 3.) Damage or destruction to habitat due to shifting cultivation or vandalism.
- 4.) Deliberate killing for sport hunting or pest control, or by live capture for pet trade, or incidental take from snaring, ignoring restrictions on licenses.
- 5.) Mass tourism causing disturbance of normal reproduction/behaviour leading to reduction in available habitat.

The goals identified to change the conditions were:

- No net loss of tapir habitat in core areas;
- To minimise fragmentation of existing tapir habitats and to reduce exposure of habitats to edge effects.
- To minimise the negative effects of fires on tapir habitats.
- To minimise the number of tapirs killed or captured by humans.
- To minimise the negative effects of mass tourism on tapir habitats.

Priority actions listed by this group were:

- To conduct awareness campaigns on the need for conservation of tapir habitats
- To create incentives and support for people on the ground to enforce the law.
- To include conservation concerns in land use planning.

The **Species Management Group** identified the main issues related to tapir conservation as being a lack of appropriate policies, research, and public awareness.

Priority actions recommended by this group were:

- Revision of policy regarding wildlife management in Southeast Asia.
- Conducting national level studies on resource management, land use, development, biological diversity, policies, and identification of sectors that support tapir habitat conservation.
- Fundraising for tapir research.
- Training on *in-situ* and *ex-situ* tapir conservation (e.g. population dynamics, species biology, reproduction, behaviour).
- Establishment of a global tapir forum.
- Organise a NGO meeting on tapir conservation;
- Establishment of an awareness campaign (local people, hunters);
- Organisation of a rural participatory workshop;
- Creation of opportunities in tourism-related jobs.



Species Management Working Group. Photo by Charles R. Foerster.

Recommendations coming from all four groups were put together and prioritised. The final outcome of the meeting will be a very detailed and updated action plan, listing and prioritising strategies and actions for the conservation of Malay tapirs. The CBSG editorial team is reviewing the first draft of the action plan, and as soon as we have the final version of the document we will print and distribute copies to all interested parties in Southeast Asia. Also, this document will be incorporated as the Malay Tapir Chapter in the next, revised edition of the IUCN/SSC *Tapir Status Survey and Conservation Action Plan* (1997).

The TSG would like to thank all people and organisations directly or indirectly involved in this workshop. First of all, we would like to thank Nico van Strien, former TSG Malay



Plenary session. Photo by Charles R. Foerster.



Dr. Ardinis Arbain, Andalas University, Indonesia, presenting the final results of the Species Management Group. Photo by Charles R. Foerster.

tapir coordinator, for all his help and useful advice during the organisation of the meeting. Also, we thank the CBSG staff, especially Dr. Phil Miller and Amy Camacho, for helping us to design the most appropriate format for the meeting. The organisation of this workshop would never have been possible without the support from the Malaysian Department of Wildlife and National Parks. We would like to extend our gratitude to the Director for Research, Siti Hawa Yatim, Dr. Kae Kawanishi and Ms. Ramlah Abdul Majid for all their hard work organising the logistics of this meeting. Financial support for the meeting was kindly offered by the Copenhagen Zoo in Denmark, our largest donor, and from the Wildlife Conservation Society Thailand, the Department of Wildlife and National Parks of Malaysia, and several other funding agencies that supported partial or total expenses for some of our participants.

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CURRENT PROJECT UPDATES

Colombia

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

By **Diego J. Lizcano**

In the tropical Andes, the mountain tapir (*Tapirus pinchaque*) is the largest mammal, eating a variety of plants, fruit and

seedlings, along tapir trails and in tree fall gaps (Acosta *et al.* 1996; Downer 1996). Studies in Bolivia's lowlands suggest that herbivory by large mammals affects plant community dynamics by reducing the competitive ability of faster growing herbaceous species, which would out compete less competitive species (Painter 1998). But to date we do not have similar data for the tropical Andes region. This research will provide information regarding the importance of mountain tapirs as herbivores.

Hunting in the Neotropics is important to the livelihood of natives and colonist peoples of South America (Redford & Robinson 1987). The growing human population and more