

PROJECT UPDATES

Preliminary Analysis of Footprints for Lowland Tapir Identification

By Zoe Jewell, Sky Alibhai &
Silvia Chalukian

WildTrack worked with the Tapir Research and Conservation Project of Northwest Argentina in 2004 to look at the feasibility of developing a footprint identification technique (FIT) for tapirs, encouraged by positive results obtained with rhinoceros (Jewell *et al.*, 2001). The FIT was thought to be particularly suitable and inexpensive to use with tapirs in a National Park, being a goal of this part of the project to count and attempt to identify animals mainly through non-invasive methods.

Fifty-seven digital photographs of left hind footprints from six different known lowland tapirs were submitted for a trial analysis to assess the feasibility of the FIT. These footprints came from three wild animals from El Rey National Park (two adults and one juvenile) and three captive animals from the Fauna Station of the Salta Provincial Government (two males and one female) (Figs. 1 & 2).

We constructed the FIT algorithm (through canonical analysis) to identify each animal based on its



Fig. 1. Leo Lizárraga encourages a tapir to pass through a sandy path in order to take footprint photographs, at the Fauna Station of the Salta Provincial Government, Argentina.



Fig. 2. Footprint of Chiru, a young male from the Fauna Station, Salta, Argentina.

footprint's geometric profile and the results were very encouraging despite small sample sizes. All six tapirs were identifiable using FIT. Figure 3 shows a clear separation of all five adult tapirs along the two canonical variable axes; the sixth (juvenile) was even further apart on the chart. Figure 4 shows the result of a test by attempting to separate a subset of footprints of one tapir and give them another name. The FIT still matches them to the correct animal.

These encouraging results have led to Silvia Chalukian collecting more footprints for further testing, which will be analyzed shortly. Recently, WildTrack trials with tapirs have been helped greatly by Patricia Medici, Chair of the IUCN/SSC Tapir Specialist Group (TSG), who has encouraged tapir researchers to collect more print photographs for analysis, and by Jeremy Radachowsky, who has submitted a collection of photographs of Baird's tapir prints. Preliminary analyses of Jeremy's dataset suggest that FIT may also be able to determine the sex and age category of Baird's tapirs.

WildTrack is looking forward to working with as many members of the Tapir Specialist Group as possible to validate its FIT technique at field sites and hopefully attract funding for further development.

References

- Jewell, Z. C., S. K. Alibhai, and P. R. Law. 2001. Censusing and monitoring black rhino (*Diceros bicornis*) using an objective spoor (footprint) identification technique. *Journal of the Zoological Society of London* 254:1-16.

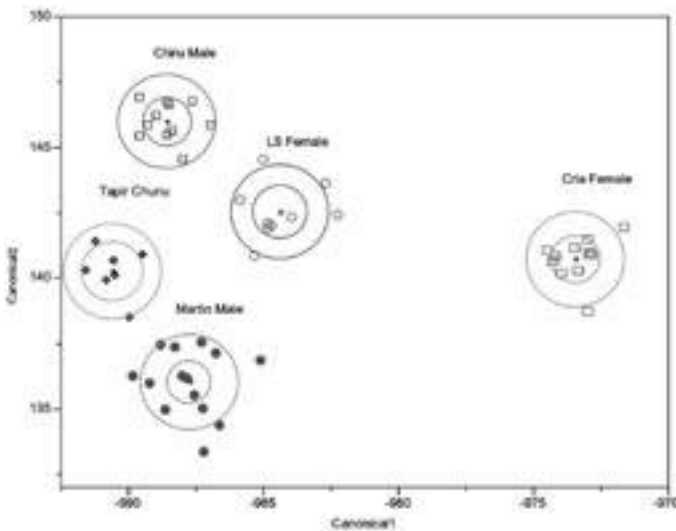


Fig. 3. Clear separation of individual tapirs' morphometric data from footprints along two canonical variable axes. These are very promising results that the FIT algorithm may work very well for tapirs.

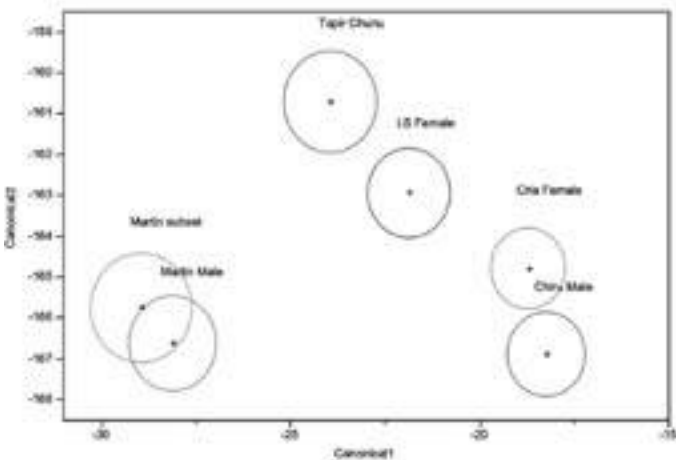


Fig. 4. Testing the FIT – a separate subset of footprint measurements are matched to the correct animal.

Zoe Jewell & Sky Alibhai

WildTrack

Casa Ribeira Grande, Apartado 210, Monchique,

8550-909, Portugal

E-mail: wildtrack@clix.pt

Silvia C. Chalukian

Coordinador, Proyecto de Investigación y Conservación del Tapir

Florida 466 Dep. 508, 4400 Salta, Argentina

E-mail: tapiresalta@argentina.com;

silviach@uolsinectis.com.ar

The TSG Library becomes Virtual

By Harald Beck

I am very pleased to inform you that most articles and publications on tapirs are now available as electronic copies from our website (address to be announced soon – stay tuned). Currently we have over 326 articles! I think we may have the largest and most comprehensive tapir library that was ever compiled! Thank to all of you who send articles! I also want to acknowledge my graduate student Melissa Cameron at Towson University, who worked very hard on this library.

As you know, our library is only as good as the materials it contains. I have made an effort to include as much material as I could find, but I am also certain that I have missed some of your papers. I ask you to help us in this endeavour: please send me electronic (scanned, PDF) copies of any publication or theses on tapirs that you see missing in our Tapir Specialists Group Virtual Library (TSGVL). Send these please to: e-mail: hbeck@towson.edu

We also must make an effort to maintain the TSGVL up to date. This is the easiest way to ensure that we have a complete information account of any works on tapirs. Please send me copies of any new articles you publish or theses (other than in the TCN) about tapirs, or any discoveries of new articles you may find in your bibliographic searches.

It is my sincerest hope that the TSGVL will be a vital tool assisting research and conservation work on tapirs worldwide. Please note, articles published in magazines and journals, and theses, are the property of the publishing institutions. We are approaching the publishers to request permission to offer download of these articles from our site. We will post terms of use on the website, as we must follow the copyright and ownership agreements reached. When we do so, please make sure you read, understand, and agree to these terms. If you have any comments or suggestions to make the TSGVL more useful to you, please do not hesitate in contacting me.

Harald Beck Ph.D.

Assistant Professor & Curator of the Mammal Museum

Department of Biological Sciences, Towson University,

Virtual Library Manager,

IUCN/SSC Tapir Specialist Group (TSG)

8000 York Road, Towson, MD 21252-0001, United States

Phone: +1-410-704-3042 / Fax: +1-410-704-2405

E-mail: hbeck@towson.edu