

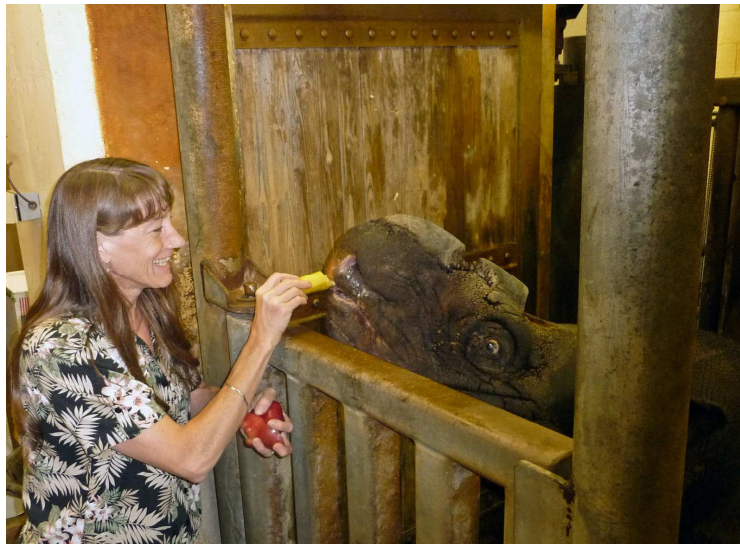
Saving the Sumatran rhino

By Michiel Hegener

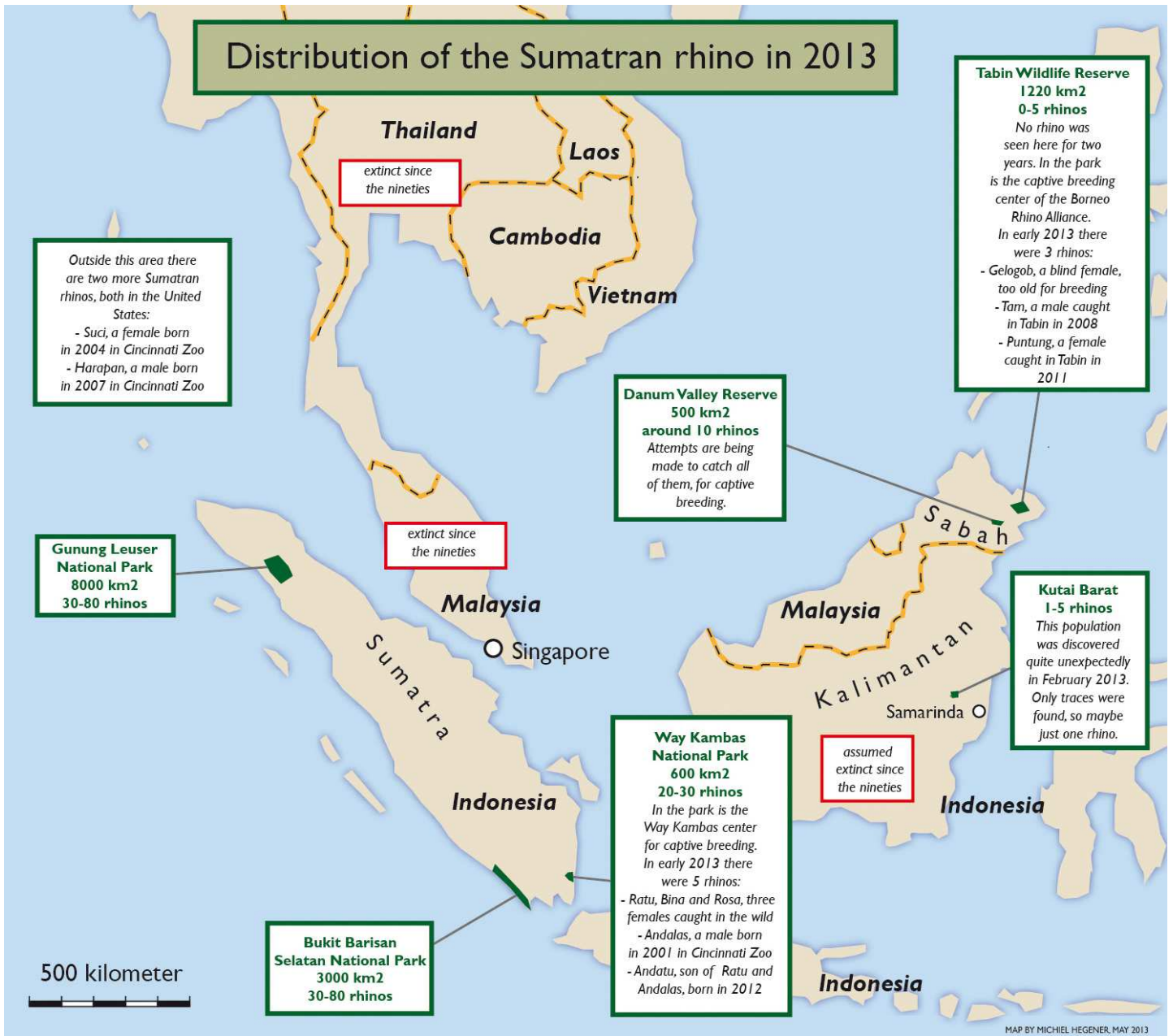
Summary

With only about a hundred of them left, the Sumatran rhino is probably the world's most endangered mammal. Of the Javan rhino fewer than fifty remain, but they are together in one relatively small, well protected peninsula, where they can meet and breed. The Sumatran rhinos are scattered over huge areas. At the Sumatran Rhino Crisis Summit, in Singapore in April 2013, experts explored the best chances to save the Sumatran rhino from the brink of extinction.

An abbreviated version of his article appeared in the Dutch daily NRC Handelsblad on 8 April 2013 and can be found at <http://bit.ly/14ZU3aK>



Only four Sumatran rhinos were born in captivity since the 19th century. Ipuh in Cincinnati Zoo was the father of three of them and the grandfather of one. Here he gets breakfast from Dr. Terri Roth, director of the Zoo's Lindner Center for Conservation and Research of Endangered Wildlife, who discovered in the late nineties how to breed Sumatran rhinos. Till then, that was a mystery. A very ambitious captive breeding program from 1985-1994 involving 18 rhinos caught in Indonesia, 10 in Sabah and 12 in peninsular Malaysia, brought together in two captive breeding centers, resulted in zero births. © Michiel Hegener



The world's most threatened mammal, the Sumatran rhino, can still be found in three areas in Sumatra, one, possibly two in the Malaysian state of Sabah (Northern Borneo), and in an area near Samarinda in the Indonesian part of Borneo. The population last mentioned was discovered in February 2013, at least rhino traces were found. Maybe it's just one animal. If so, he or she constitutes one percent of the total population worldwide: according to a recent estimate by the IUCN, there are fewer than a hundred Sumatran rhinos left in the wild, plus ten in captivity.

The smallest of the five rhino species, the Sumatran is about 1.3 meters high, it's the only Asian rhino with two horns, it's the world's largest animal living exclusively in tropical rainforest, and it's the only furry rhino (more so when young), a reminder of their ancestor the woolly rhino of the last ice age.

From March 31 till April 4 in 2013, more than a hundred experts met in Singapore for the Sumatran Rhino Crisis Summit, a last ditch attempt to save this wonderful species. According to biologist Dr. John Payne, director of the Borneo Rhino Alliance (BORA), there is only one possibility left to pull the Sumatrans from the brink of extinction. On the phone from Singapore, directly after the Summit, he says: "On Sabah there are now ten left in the wild, fifteen at most. The Malaysian government has decided to catch them all, no rhino in Sabah is off limits. The same should happen with the rhino or rhinos near Samarinda - there can only be a few there, because a larger population would not have gone unnoticed for so long. And personally I think that at least some of the remaining animals on Sumatra should be caught." After capture, the animals should be brought to one of the three captive breeding centres where they can meet other rhinos and produce offspring: in the Way Kambas National Park in southern Sumatra, in the center of BORA in Sabah and in Cincinnati Zoo in the US. Till now, four Sumatran rhinos were born in captivity: in Cincinnati (2001, 2004, 2007) and in Way Kambas (2012).

According to Payne, the most important result of the Summit was the decision by Indonesia and Malaysia to start serious cooperation, at last. It was also decided to no longer prohibit breeding between the rhinos from Sumatra and Borneo, two geographical subspecies with only very small differences. Payne: "It's really too late now to keep them separate because of the very dire situation of the species."

The breeding center of BORA (almost entirely funded by multinational and palm oil producer Sime Darby) now houses one relatively young couple, plus one elderly blind female who is too old for reproduction. Tam, the male, walked into a Sabah palm oil plantation in 2008 with an injured right foot, the result of a poacher's snare from which he freed himself. Puntung, the female, was not so easy to catch. After twenty months of following her and digging pit

traps, the BORA staff finally caught her in December 2011, in the Tabin Nature Reserve. Total cost: around \$200,000.-, including the rent of a helicopter to lift her out of the jungle.

Payne: “We had two teams of six each, working in shifts to check the pits. It is tempting to dig them in places where humans have relatively easy access, by doing that we lost fifteen months. With better selection of trap sites it should be possible to have a rhino enter a trap within a much shorter period, so staff costs would be much lower. We now have located and targeted two rhinos and we have dug traps for them.”



Tam, left, and Puntung during their first close-up encounter, on 12 August 2012 in the BORA breeding centre in Sabah. Note Puntung's missing left foot.
© Stephen Hogg, Wildtrack Photography.

Puntung is about twelve and seems to be healthy – but her uterus and fallopian tubes are full of cysts that hamper pregnancy. Payne: “The sperm can't get past those cysts. And if successful, it is unlikely that the embryo could be imparted on the uterus wall. At least half of all the females caught or killed had a significant reproductive tract pathology. Probably it's the result of not getting pregnant when young. And the lack of pregnancies in the wild is probably the result of the

extremely low densities. The remaining Sumatran rhinos are unlikely to meet any partners.”

Puntung may have been roaming the jungle all alone for ten years or so. She did so on three legs as her left foot is missing, also the result of a snare. Payne thinks that Puntung, when freeing herself and losing her foot, was still with her mother, who nurtured her till the wound was healed. “The cut must have occurred when she was a small infant, when the foot was small and narrow, and the skin could close over.”

There are plans to remove the cysts or otherwise ameliorate the cyst problem, and Puntung has the full attention of some vets specialised in rhinos. Maybe artificial insemination or even in vitro offers a way to make her pregnant. Payne. “An embryo from a test tube can even be implanted in a female of a different rhino species.”

Dr. Terri Roth of Cincinnati Zoo, who also participated in the Summit, is less optimistic about chances of creating calves by other ways than just mating. It was she who discovered, in the late nineties, the unusual cycle of the Sumatran rhino’s procreation. That paved the way to the four births so far, including one female, Suci, who is now in Cincinnati. Roth emails: “We are hoping to either inseminate Suci with Tam's sperm or breed Suci and Tam naturally in the near future. Artificial insemination has been used successfully to produce a couple of calves in white rhinos and Indian rhinos, but so far, the success rate is far lower than that achieved through natural mating. In vitro fertilization has proven even more difficult and to my knowledge, only two embryos have been produced. Both were produced in black rhinos and no offspring have resulted in any rhino species from IVF and embryo transfer. Therefore, it is absolutely essential that we focus on natural breeding for the Sumatran rhino (which has proven successful repeatedly) and use assisted reproduction as a last resort when no other options are available. We hope the technology will advance over time, but time is not something we have with the Sumatran rhino. Many people have the misperception that assisted reproduction will produce more offspring than natural mating, but that is not the reality.”



*Terri Roth in Cincinnati Zoo with Suci, a female born in the Zoo in 2004.
© Michiel Hegener*

Payne: “The breeding centers in Sabah and Way Kambas both need at least two extra females and one extra male. In Indonesia it is not yet time to have a blanket approval to capture the wild rhinos, the authorities there take a more measured approach. Whether they want to capture wild rhinos and bring them into Way kambas is unknown. But a vision is likely to be needed next year.”

Good news is that traces of young rhinos are sometimes found in the Way Kambas National Park, which has maybe 20 or 30 animals left. But Payne warns: “The wild rhinos in peninsular Malaysia, in Thailand, in Kalimantan were all breeding thirty years ago, and they aren’t there anymore. Breeding proof doesn’t mean the population is safe in the wild. My personal opinion: now is the time for captive breeding.”

The survival of this wonderful species now seems to depend on capturing young females, let them breed with Tam on Sabah or Andalas, the male in the Way Kambas breeding center, and hope for relatively many daughters.