

# BORNEO RHINO SANCTUARY (BRS) PROGRAMME

2019 REPORT

## *Malaysia did the maximum humanly possible...*

This is the eleventh and last in a series of reports on Borneo Rhino Sanctuary (BRS), a programme and facility based in Tabin Wildlife Reserve, operated by Borneo Rhino Alliance (BORA) on behalf of Sabah Wildlife Department. From 2009-2016, the programme was funded generously by Sime Darby Foundation, while from 2016 to present, largely by Ministry of Natural Resources and Environment Malaysia, in 2018 renamed Ministry of Water, Land and Natural Resources. The national governmental funding from 2016 onwards was channeled under a programme named Application of Advanced Reproductive Technology in Conservation of Endangered Wildlife in Sabah ("ART programme"), whereby the focus was on rhino, but with the intent to develop Malaysian capability in this field. Government of Sabah funded the custom-designed BRS facility in Tabin. Supplementary funding from many concerned small donors locally and internationally is gratefully acknowledged.

The last two Sumatran rhinos in Sabah (and in Malaysia) died during 2019. Although the genus *Dicerorhinus* is extinct in Malaysia, a few fertile individuals are still alive in Indonesia.

In an open letter to the international rhinoceros community, published in November 2019 (<http://www.pachydermjournals.org/index.php/pachy/article/view/553/449>), BORA outlined the long-overdue requirements to prevent the impending first extinction of a mammal genus in the twenty-first century. The requirements are : (1) leadership within Indonesia, (2) one meta-population programme, (3) competent, dedicated people, (4) capture of as many Sumatran rhinos possible, prioritising fertile individuals, (5) minimise birthing interval, (6) ensure that every rhino, including the reproductively compromised individuals, contributes its gametes towards making embryos.

Some may question why was all the money spent on trying to "save the Sumatran rhino" via the Borneo Rhino Sanctuary programme. Here are some of the answers :

- this rhino formerly was the Asian rhino, distributed from southern China and north-eastern India to Borneo and Sumatra, and it happens by chance that the last few are now in the nation of Indonesia, hence the name "Sumatran rhino";
- this is a genus (not just a species or subspecies about to go extinct), and the global institutions that seek to prevent wildlife extinctions have not stepped up to their aims and responsibilities;
- and, government at national Malaysian and Sabah levels did step up, to the best of their abilities, with a global view in mind.



Without the BRS programme and the challenges that it required, we would not now have in Malaysia in year 2019 :

- expertise (which could be used elsewhere in equatorial rainforest) to capture and use a helicopter to remove rare large mammals from remote hill forests;
- expertise (which could be used in zoos and similar facilities globally) in managing large wild mammals with severe reproductive pathologies over several years, while at the same sustaining the estrus cycle and allowing harvest of egg cells;
- a Malaysian team able to put Sumatran rhinos under general anesthesia, safely, and with smooth recovery, for harvesting of sperm;
- Reproductive Innovation Centre for Wildlife and Livestock (RICWL; Pusat Inovasi Reproduksi Hidupan Liar & Ternakan), a laboratory established in the Faculty of Sustainable Agriculture, Universiti Malaysia Sabah (UMS) Sandakan Campus, ready to be used for other wildlife species and for livestock;
- a Malaysian team of experts able to apply advanced reproductive technology to various wildlife (and domestic animal) species;
- and (due to the open mind of government and assistance from overseas and local experts) the genomes of the last four Sumatran rhinos in Sabah (Iman, Tam, Puntung and Gelogob) preserved in living cell cultures. Technology already exists to make egg cells and sperm from these cultures.

Prevention of extinction is not impossible. European bison and Przewalski's horse were saved from extinction a century ago, each from about 12 captive founder animals and concerned humans, well before advanced reproductive technologies were available. If Sumatran rhino goes extinct, that will be due not to habitat loss and poaching, but to the inability of the persons and institutions designated as responsible, to coordinate and implement a programme that is free of irrational sentiments.

For the record, here are some noteworthy events of year 2019.

2nd Asian Rhino Range State Meeting, held in New Delhi, 26-28 February. Two foreign NGOs contested the sole Malaysian government representative's request for reference to application of advanced reproductive technology and use of sub-fertile rhinos at this IUCN-convened meeting and, disappointingly, the final text relating to Sumatran rhino blandly states : "To accelerate natural and conservation breeding of critically endangered Sumatran rhino including best use of all available individuals and technologies." A letter was sent from Government of Sabah to the chairman of the IUCN SSC requesting that he make known Malaysia's concerns to the NGOs.



Starting in March, a programme was initiated to allow guests of Tabin Wildlife Resort to view Tam or Iman in their forest paddock. The idea was to gain income to help sustain costs of staffing and maintaining the BRS facilities, thereby relieving government of the burden.

Every year, BORA receives reports that someone has seen a rhino in Sabah. Normally, these are ignored because they are not credible. Based on reports from local community members that they had seen two rhinos and rhino footprints in July 2017 in Malua Forest Reserve, however, 20 camera traps were set over an area of about 1,500 hectares, 12-15 March 2019, by teams from Sabah Forestry Department, BORA and WWF-Malaysia. The cameras were checked and serviced 20-23 June and left in place to be checked again and removed 17-21 September. There were images of all species of large mammal except rhino. It is concluded that the report was made in good faith, but was of immature elephants.

Following intensive treatment and palliative care, the last male Sumatran rhino in Sabah (Tam) died on 27 May. Cause of death was hypovolemic shock linked to end stage renal disease. Semen was harvested and cryo-preserved. Samples of organs were sent to International Islamic University Malaysia (IIUM), Kuantan, for cell culture.

A National Geographic sponsored session on Sumatran rhino was held at the Society for Conservation Biology's 29th International Congress for Conservation Biology in Kuala Lumpur, 25 July. A series of sessions of the Sumatran Rhino Rescue Husbandry and Propagation Expert Advisory Board, in Jakarta, organized by an IUCN, WWF & US-based consortium, 29 July to 3 August. Both sessions showed that the current international



proponents of Sumatran Rhino “rescue” are ignorant of what is needed to prevent the genus extinction.

A delegation from Sabah led by State Deputy Chief Minister and Minister of Tourism, Culture and Environment, Datuk Christina Liew, met the Director-General of Natural Resource and Ecosystem Conservation at the Ministry of Environment and Forestry Indonesia, in Jakarta on 9 August. The purpose was to hasten signing of a Memorandum of Understanding between Indonesia and Malaysia, required by Indonesia before allowing “Malaysian” Sumatran rhino egg cells to enter Indonesia for in vitro fertilization attempts using sperm from a fertile male held in captivity in Way Kambas National Park.

Letters were sent from Sabah to Indonesia, 26 August and 10 September 2019 outlining six possible options for handling any egg cells collected, and requesting issuance of a CITES Import permit into Indonesia.

Egg cell harvest from Iman, the last Sumatran rhino in Malaysia, was performed on 30 September by the Leibniz Institute for Zoo and Wildlife Research team in collaboration with the BORA team. Only one oocyte was recovered and matured in the RICWL. Intracytoplasmic sperm injection, using thawed sperm from Tam, was performed there by Professor Arief Boediono of IPB University on 1 October, but there was no cell division.

Iman died due to shock on 23 November. It is important to put on record that this was not a result of the egg cell harvest work. The cause of the shock was the growth of one large leiomyoma weighing almost 7kg, attached at the cervical uterine junction, pressing on to blood vessels, ureter and nerves. No ovarian follicles were found.

The deaths of both rhinos in 2019 resulted in significant local and global comment both on social media and on supposedly reliable news feeds. The sympathy is touching to those close to the rhinos, but all the reporting from outside Malaysia demonstrates a universal lack of understanding of the species’ current situation, with undue emphasis on tragedy, sympathy and perpetuating the story that Sumatran rhino was a sort of competition between Indonesia and Malaysia.





