https://news.mongabay.com/2019/11/malaysias-last-sumatran-rhino-dies-leaving-indonesia-as-the-final-refuge/

Mongabay Series: Asian Rhinos

Malaysia's last Sumatran rhino dies, leaving Indonesia as the final refuge

by Basten Gokkon on 25 November 2019

- *Iman, the last Sumatran rhino left in Malaysia, died over the weekend after a long battle with uterine tumors.*
- *Her death has sparked an outpouring of grief among wildlife conservationists, as it meant the species is now fully extinct in Malaysia, after being declared extinct in the wild in 2015.*
- *Named after a river near where she was captured in 2014 for a captive-breeding program, Iman was believed to be 25 years old when she died.*
- *The fate of this critically endangered species now lies with a tiny population of no more than 80 individuals in Indonesia, where captive breeding has yielded some success in recent years.*

The Sumatran rhinoceros (*Dicerorhinus sumatrensis*) is now extinct in Malaysia following the death of its last captive individual, Iman, over the weekend. The fate of this critically endangered species now rests with a tiny population in Indonesia.

Iman, a female rhino, died on the late afternoon of Nov. 23 at a captive facility in the Malaysian Bornean state of Sabah, according to the local wildlife department.

"Its death was a natural one, and the immediate cause has been categorised as shock," said Christina Liew, the state environment minister, said as quoted by local media.

"Iman was given the very best care and attention ever since her capture in March 2014 right up to the moment she passed. No one could have done more," Liew added.

Iman, the last female Sumatran rhino in Malaysia. Image courtesy of the Borneo Rhino Alliance (BORA).

In her last few days, Iman's health had deteriorated, according to news reports. She had been battling massive blood loss from a ruptured uterine tumor over the past couple of years, a condition that almost killed her on previous occasions.

"But we knew that she was starting to suffer significant pain from the growing pressure of the tumors into the bladder," Augustine Tuuga, the director of the Sabah Wildlife Department, said as quoted by local media.

Iman was believed to be 25 years old when she died. She was named after a river near where she was discovered and captured in Sabah's Danuw Valley for a captive-breeding program.

"You are the 5th Sumatran rhino the world has lost in the past 5 years, and the very last rhino in Malaysia," the Borneo Rhino Alliance (BORA), a wildlife conservation group deeply involved with Malaysian authorities in caring for the captive rhinos in Sabah, said in a statement. "You were also the sweetest soul, who brought so much joy and hope to all of us.

“We are in so much pain right now, but we are thankful that you are no longer in pain,” it added. “May we be as strong as you in our urgent fight to save your species. May we be as courageous as you to never give up.”

As they did with the previous captive rhinos in Malaysia, all of which died of illness without ever managing to breed in captivity, conservationists have stored cell cultures from Iman. They hope that, when the technology is in place, these cells can be turned into viable embryos and transplanted into a surrogate rhino. They also plan to preserve Iman’s body for exhibition at Sabah Museum, according to the state’s wildlife department.

Iman was the last Sumatran rhino in Malaysia. Image courtesy of the Borneo Rhino Alliance (BORA).

Conservations had previously attempted to produce rhinos from Iman and Tam, the last male rhino in Malaysia, who died earlier this year from old age. These attempts included natural breeding and assisted reproduction technology. But Iman’s uterine tumor, which was first detected when she was captured, prevented conception. Last month, experts attempted in vitro fertilization of eggs harvested from Iman with Tam’s sperm, but the experiment failed to result in an embryo.

“There is limited knowledge about Sumatran rhino reproductive physiology and converting cells in a laboratory into viable embryos is complex,” Susie Ellis, the

executive director of the International Rhino Foundation, said in a statement. “Still, there is hope for the survival of Sumatran rhinos.”

Conservationists in Malaysia had also hoped to try fertilizing Iman’s eggs with sperm from rhinos held at a captive-breeding site in Indonesia’s Sumatra. And although both countries have in principle agreed to a mutual bilateral partnership — a prospect that Indonesia had ignored for years — no joint breeding programs have yet to materialize.

Indonesia insists that the best option is for Malaysia to send over egg cells for the IVF attempt, and if successful, the embryo can be transplanted into a surrogate rhino in Sumatra.

Liew said Sabah would continue to pursue the partnership with Indonesia despite Iman’s death, as it could include collaborations in management of female Sumatran rhinos with reproductive pathology, safe harvesting of gametes from living rhinos, and cell culture.

Mongabay’s reached out to Indonesia’s environment ministry for comment on Iman’s death and the future of the partnership with Malaysia. The ministry did not respond by the time this article was published.

Iman’s death means there are now no more Sumatran rhinos in Malaysia — either in captivity or in the wild. The country declared in 2015 that the species was extinct in the wild, with only the captive population remaining. Between 1987 and 2014, Malaysia had captured over a dozen wild rhinos.

“The passing of Iman, Malaysia’s last known Sumatran rhino, marks a tragic development for this species,” Jon Paul Rodriguez, chair of the IUCN Species Survival Commission, said in a statement.

“Iman’s death underscores the urgency of the global community’s efforts to save the Sumatran rhino from extinction and we are committed to continuing our work to support the government of Indonesia’s Emergency Action Plan to save this species,” he added.

Indonesia developed the plan in 2017 to capture rhinos and corral them into large, semi-natural breeding and research facilities, modeled on the Sumatran Rhino Sanctuary (SRS) in Way Kambas National Park, in Sumatra’s Lampung province. The action plan also calls for breeding programs between captive rhinos. Two rhino calves have been born at Way Kambas, both conceived by natural means. Indonesian conservationists also hope to try an IVF attempt using eggs harvested from a lone female at a second SRS facility in Indonesian Borneo. They plan to fertilize it with sperm from one of the males at the Sumatran facility, in a bid to boost the species’ gene pool.

 A tumor in Iman’s uterus ruptured in 2017. Scientists didn’t believe she could carry a baby to term, but her eggs can still be utilized. Image courtesy of Sabah Wildlife Department.

The critically endangered species was decimated by poaching and habitat loss in the past, but today observers say the small and fragmented nature of their populations, and a correspondingly low birthrate, is the biggest threat to their survival. Few of the remaining populations left in the wild are believed to be large enough to support natural reproduction, and isolated individuals have been found to be prone to developing reproductive pathologies like the uterine tumors suffered by Iman.

With no more than 80 Sumatran rhinos left on the planet, the species’ last hope lies in Indonesia. The country has eight individuals in captivity: seven in Sumatra, including the two captive-born calves, and one in Borneo.