



Borneo Rhino Sanctuary (BRS) programme (restricted distribution)

Quarterly report : covering the period September – November 2011

Programme objective

To prevent the extinction of the Sumatran rhinoceros in Sabah by protecting wild rhinos and by bringing rhinos together in managed breeding facilities at Tabin Wildlife Reserve (TWR)

Main participating agencies

Sabah Wildlife Department (SWD), Borneo Rhino Alliance (BORA), Universiti Malaysia Sabah, Sabah Forestry Department, WWF-Malaysia, Leibniz Institute for Zoo and Wildlife Research (IZW; Berlin), Zoo Leipzig.

Main financing agencies during this quarter

Sime Darby Foundation (YSD); WWF-Germany; Sabah Wildlife Department; BORA; Zoo Leipzig.

Programme description (following May 2009 Sabah State Cabinet decision)

- protection and monitoring of wild rhinos in TWR (BORA-SWD) and Danum Valley Conservation Area (WWF-Malaysia), the only two areas where potentially viable wild populations exist.
- establishing Borneo Rhinoceros Sanctuary (BRS) breeding facilities (a managed, fenced area) inside TWR.
- bringing isolated remnant rhinos from non-viable situations, into BRS.
- establishing a sustainable financing scheme to allow long-term operations of BRS.
- appointing a professional company to manage BRS and its rhinos

Activities and progress

Monitoring and security of wild rhinos Due to 100% prioritization of capture of Puntung, no patrols were done elsewhere around TWR during this quarter. It is understood that regular monitoring of rhinos at Danum Valley has ceased, and that rhino monitoring by WWF-Malaysia is now part of a more general programme of patrolling in eastern Sabah.

Rhino rescue Traps 1 to 4 were built on sites where Puntung very rarely visits and not on her known routes. The criterion for choosing these sites was proximity to a large river, rather than the probability of capturing the rhino. Accordingly, with the agreement of SWD, the location of trap number 5 was chosen on a ridge top rhino trail, and was completed and opened on 4 October. An electronic device was installed in this trap in an effort to be able to monitor the trap using a satellite transmitter, without twice-daily manual checking, but the device failed to work after six weeks of operation, and has been returned to the manufacturer for examination. During this quarter, the location for an additional trap site (trap 6) was identified and agreed by SWD, about 400 metres south-east of trap 5, on another ridge top used by Puntung to travel between the lowlands and upper part of her home range. Materials for this trap number 6 were brought into the forest in the second half of November. Twice daily manual monitoring of traps 3 and 5 continued through this quarter.

Former wildlife ranger Mr Saimon Ambi was employed 23 September – 11 October to seek possible camp sites for rhino survey planned for early 2012 in Kulamba Wildlife Reserve. A sighting of a rhino was reported, but a return visit for further evidence in November had to be abandoned due to heavy rain and flooding in the Kulamba swamp forests.

Rhino Quarantine Facility (RQF) Ten photovoltaic cells and a solar-powered electricity system were installed at RQF in mid November, adequate for lights, fans, a refrigerator, and water jet. Due to multiple and disappointing failures by Lahad Datu based material suppliers, contractors and fitters, the water supply to the RQF was not installed during this quarter.

Rhino health and management Routine procedures continued. Samples of urine collected from Suci (young mature female rhino in Cincinnati Zoo, and kindly supplied by Dr Terri Roth) were received in September, after more than two weeks in transit by DHL, via Alaska and Singapore. The samples are kept refrigerated and periodically sprayed into Tam's nostrils in an effort to boost his libido. Although the urine arrived in rather poor condition, Tam exhibited a characteristic flaring of the nostrils when presented with samples taken during oestrus. Both Gelogob and Tam continue to need close monitoring and treatment to maintain good health. In September, Gelogob suffered impaction of the large intestine, while in November Tam's eyes showed signs of infection and opacity. Both conditions were successfully treated.

Reproductive assessment of Tam and Gelogob As follow-up to the assessments of the reproductive condition of Tam and Gelogob done by IZW veterinarians in January-February 2011, further treatment and assessments were done during this quarter (see photos below). This commenced with hormone treatment of Gelogob starting 23 October. Subsequent absence again of follicular growth shows that Gelogob is now permanently unable to reproduce. Accordingly, cells from the mouth and reproductive tract were taken as a basis for cell culture. Parts of the culture were transferred via IZW to Friedrich-Loeffler-Institute, Germany, one of the world's most advanced institutions with experience in fibroblast cell culture. Even though Gelogob will die without producing young, her genome will survive. It is to be stressed that the precaution of maintaining cell cultures is taken only as a back-up of last resort, in case all ongoing efforts with live rhinos ultimately fail.

The results of the 31 October electro-ejaculation procedure on Tam were again disappointing, although better than in January 2011. Tam's October ejaculate, containing little sperm mainly of poor quality, was preserved in Lok Kawi Wildlife Park. There are only a few possible reasons for these continued poor results, and all will be explored as far as possible. The possibility that natural chemicals in rainforest leaves eaten by rhinos might have a negative effect on sperm production will be explored with Dr Charles Vairappan of Universiti Malaysia Sabah, commencing with initial discussions in November.

Rhino food supply Daily provision of horse pellets to Tam and Gelogob was reduced to no more than 1 kg each, as both rhinos have increased in body weight by about 100 kg over the past year, an increase which is judged to be more than ideal for good health. Planting of the seedlings of rhino food plants near the interim rhino facilities and rhino quarantine facility continues periodically on an ad hoc basis, to help sustain long term availability of leafy food (at least 50 kg is needed daily for each rhino). Planting and maintenance on a larger scale of rhino food plants (which are predominantly trees and other woody plants) on the western fringes of Tabin Wildlife Reserve would be useful but initiation of such a programme is limited by number of available staff.

Policy issues Important progress was made during this quarter on generating a consensus by all relevant parties that all and any rhinos remaining in Sabah are candidates for translocation to the BRS facilities. The notion that only "isolated" or "doomed" rhinos will be taken for captive breeding is now in the past, as such rhinos are most likely to be old or infertile.

WWF-Malaysia and Borneo Conservation Trust These two NGOs raised the idea during this quarter of establishing teams to locate and capture rhinos. The response to the former was to ensure that prior agreement is reached on the mode of collaboration with SWD and BORA; if pursued, the latter would focus wholly on Siungkung island, where rhino was apparently present periodically between 2007-2010.

Links with Indonesia Yayasan Badak Indonesia (YABI) is the sole official institution for rhino conservation work in Indonesia. Meaningful links between Sabah and Indonesia remain only occasional. There are several reasons for this, including governmental protocol issues, and the existence of independently operating Sabah-German and Indonesia-USA axes. The global imperative to collaborate for Sumatran rhino conservation needs further sustained effort.

BRS breeding facilities Due mainly to frequent rainfall, there was little progress on construction of the 1.2 km access road.

Water supply at Tabin The unreliable piped water supply at Tabin continued to take up too much work time and effort, and be cause for significant concern for humans and rhinos. Upgrading done in late 2010 has not led to noticeable improvements.

Meetings held SWD-BORA, 5, 18, 28 October, 17 November; BORA-YABI, 11 September; BRS programme technical committee meeting was held 3 November.

Problems to be addressed

1. Failure to capture Puntung.
2. Non-availability of anticipated funding from federal government of Malaysia to build the BRS breeding facilities.
3. Unreliable piped water supply for humans and rhinos at Tabin.

Solutions

- (1) At least two traps on routes that Puntung has used on several occasions in the past.
- (2) Seek alternative funds for development of BRS breeding facilities.
- (3) Clarify responsibility for monitoring and maintenance of water supply, and put in place a means to repair any breakdown without excessive delay.

Plans for next quarter

- (1) Capture Puntung. (2) Improve collaboration with Sumatran rhino programme in Indonesia.



(left) routine maintenance of trap 3, adding twigs and leaves as bedding, (middle) replacing the door of trap 3, (right) discussion at the Malambabula camp (28 November) on methods of removing crate and rhino out of Tabin after capture, involving rhino trapping team leader Herman Stawin, Bob Patterson of Erickson Air Crane and Stephen Hogg, adviser to BORA on photographic and electronic issues.



(left) digging the hole for trap 5, (middle) a view inside trap 5 hole during construction, the rock is removed by chisel and pick axe down to a depth of eight feet, (right) removal of rocks from the trap 5 hole during construction.



(left) materials for trap 5 (about 6 km from forest edge), including a temporary stockade for use after capture, were brought in to the site by manpower over a period of two weeks, (middle) a water pump and piping is installed to obtain water from a small stream 150 metres from trap 5, (right) an electronic device was installed at trap 5 in an effort to be able to monitor the trap without twice-daily manual checking.



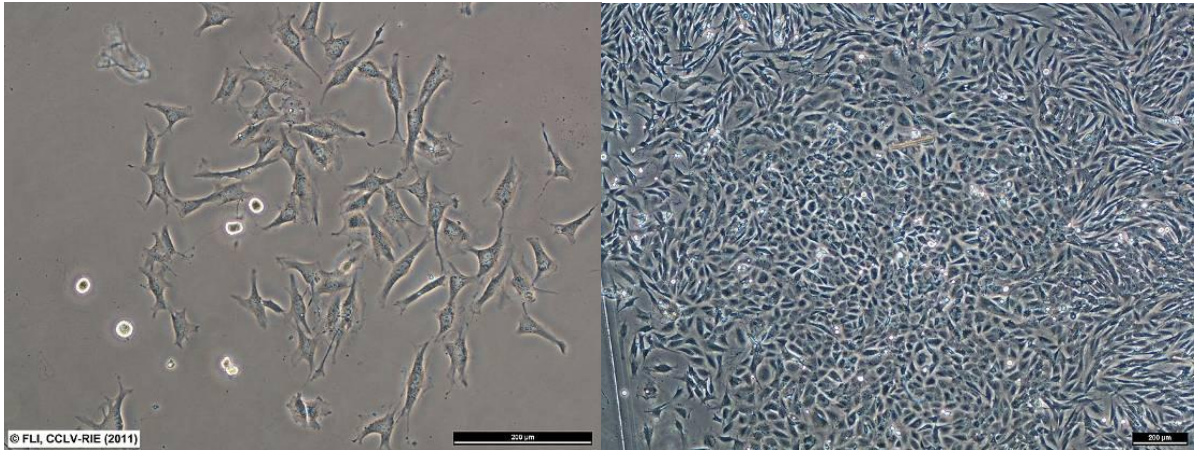
(left) BORA acting field team supervisor Tinrus Tinduk ponders a decision on the precise location of trap 6, (middle) team leader Rasaman Jaya and Zuraimi Rahman rest at the stream about 200 metres from the trap 6 site at the bottom of a steep gully, (right) champion carrier of heavy materials into trap sites 5 and 6, Mr Rosendo Denden.



Tam underwent a third electro-ejaculation procedure, 31 October, in an effort to obtain good sperm samples. (left) Tam under anaesthetisation (Dr Sympharosa Sipangkui, Sabah Wildlife Department veterinarian in background, with IZW and BORA staff in front), (right) Dr Zainal calms and cleans Tam immediately after the procedure is over.



(left) Drs Zainal Z Zainuddin (BORA), Chris Waltzer (University of Veterinary Medicine, Vienna) and Thomas Hildebrandt (IZW) view an ultrasound image of Gelogob's reproductive tract, 29 October, revealing that the final attempt at stimulation of follicle production has failed, (middle) Drs Waltzer and Frank Goeritz (IZW) obtain cells from the mouth of Gelogob for culture, (right) stem cell specialists Professors Katarina Jewgenow (IZW) and Vasil Galat (Children's Memorial Research Center, Chicago Northwestern University, process Gelogob's cells in a temporary laboratory in the Sabah Wildlife Department office at Tabin.



The cells from Gelogob survived and divided well, (left) after three days, (right) after seven days. The purpose is to ensure Gelogob's genome remains available after her death.



(left) Gelogob moves out of her night stall in the Rhino Quarantine Facility (RQF) into her paddock, led by keeper Rusdi Saibin, (right) the open space in front of the RQF will need to be concreted after the next rainy period.



(left) the ten photovoltaic cells for solar electricity at RQF were installed in mid November, (middle) the electrical storage batteries, (right) the piped water supply to RQF remained unconnected by end of this quarter, and the two new water storage tanks at the RQF had to be filled manually.



Frequent heavy rain commenced again in October 2011, (left) Lipad river in moderate flood, at the location where water is abstracted for use by staff at Tabin, (right) the rope bridge over the Malambabula river which provide access to traps 5 and 6 during floods.



(left) Tam's eyes showed signs of infection and opacity, which was successfully treated through November, (middle) seedlings of *Alstonia angustiloba*, a rhino food plant, were planted around RQF in late October 2011, (right) the same seedling 30 November.