Javan Rhino Conservation and Habitat Expansion

Update on Projects supported through ARP partner International Rhino Foundation by Maggie Moore, IRF

We are working hard to learn as much about the Ujung Kulon population as possible. In December 2008, a track analysis census, part of a long-term effort to monitor the population, estimated the population to be between 37 and 44 rhinos. Another survey is now underway, using on-the-ground counts backed up by 60 camera-traps. This effort is collaboration between the park, the Rhino Foundation of Indonesia, and WWF Indonesia. Together, these data will verify population numbers and guide management decisions."

Though the Ujung Kulon population is stable, it is believed to have reached its carrying capacity in the current habitat and probably cannot grow any larger without intervention. Expanding the habitat available to Javan rhinos in Ujung Kulon should allow the population to increase, which in turn would allow us to eventually translocate some animals to establish a second population at a separate site, further helping to expand the species' population and prevent its extinction.

In 2009, Dr. Andy Gillison, world-renowned rapid habitat assessment expert was commissioned to evaluate potential translocation sites in Java. The small team was co-led by Widodo Ramono, Executive Director of Yayasan Badak Indonesia (YABI), and included representatives from the Indonesia Scientific Authority, Ujung Kulon National Park, the RPUs, and WWF-Indonesia. The team first collected baseline data on a series of representative transects in Ujung Kulon National Park, followed by intensive data collection on transects in the adjacent Gunung Honje area and in Gunung Halimun National Parks. Other team members conducted parallel work including socio-cultural assessments and geo-referencing of transect data.

Taking into account various biophysical elements, including the influence of human activity, the study concluded that while conditions in peninsular Ujung Kulon National Park and adjacent Gunung Honje may not be entirely optimal for sustained management of the Javan rhino, they nonetheless are considerably better than those offered in the other areas surveyed in Java, where translocation would almost certainly lead to failure.

Short-term recommendations are to establish a 4,000 hectare Javan rhino research and conservation area inside the Gunung Honje area with intensified active management, including replanting natural forest vegetation with rhino food plants in some areas, carefully implementing controlled slash and burn patch management in designated and closed forest areas to promote regeneration of rhino food plants, and continuing and increasing anti-poaching protection, including establishing new patrol paths and additional guard posts in Gunung Honje. Infestation by Langkap (Arenga) palm, an invasive species that poses a serious threat to rhino food plants, also will be reduced.

Work to establish the Javan rhino study and conservation area is progressing well. IRF has already received a significant portion of the funds required for phase one of this initiative, thanks to generous donors like you.

On June 21, 2010, the Government of Indonesia formally launched the Javan Rhino Study and Conservation Area. This ground-breaking initiative will expand the habitat available to Javan rhinos in Ujung Kulon, which should allow the population to increase. This in turn would allow us to eventually translocate some animals to establish a second population at a separate site, further helping to expand the species' population and prevent its extinction.

Our initial activities include: clearing the site for an electric fence and adjacent patrol road, constructing small bridges and the electric fence, habitat management such as clearing and planting rhino food plants and providing for a water supply and saltlick, constructing new guard posts, hiring guards and other staff, and socialisation work with local communities.

Finally, working with local communities will be key – an increase education programs in areas adjacent to Gunung Honje will be carried out, as well as a more comprehensive study of socio-economic issues associated with establishing a research and conservation area, so that local peoples' livelihoods can be linked to active rhino management through activities such as wildlife tourism, cottage industries, and agriculture intensification outside the designated conservation area.

Indonesian Minister of Forestry and Governor of Banten Province launch the Javan Rhino Study and Conservation Area and Declare June 21st Javan Rhino Day in Indonesia. (Photo courtesy of IRF.)

Indonesian Rhino Protection Units

Fewer than 200 Critically Endangered Sumatran rhinos are believed to remain on Earth. The population declined at a rate of 50% in the 1980s and 1990s from deforestation and habitat fragmentation. Bukit Barisan Selatan National Park (BBS) and Way Kambas National Park (WK) in Sumatra, Indonesia, are two of the three major habitats for Sumatran rhino, and are also two of the highest priority areas for other threatened megafauna, including the Sumatran tiger and Sumatran elephant. Approximately 50 rhino, 40-50 tigers, and about 500 elephants inhabit BBS. Way Kambas is home to 25-30 Sumatran rhino. The Javan rhino is also Critically Endangered, with fewer than 48 animals believed to exist in two known populations. The only viable reproductive population lives in Java's Ujung Kulon National Park (between 37 and 44 animals). Ujung Kulon National Park -- Indonesia's first UNESCO World Heritage Site -- is the largest remaining lowland forest site in Java. In addition to holding the world's only viable population of Javan rhino, Ujung Kulon is home to a number of other endangered species, including the Javan gibbon, ebony leaf monkey, Javan leaf monkey, leopard, fishing cat, and the banteng, a species of wild cattle.

The initial decline of Javan and Sumatran rhinos was poaching for horn now, the populations are also limited by available habitat, which is continuously being encroached illegally by human populations and converted to agricultural land The rate is now declining in some areas, where in partnership with national park authorities, RPUs are helping implement community development schemes to reduce encroachment. In one area bordering BBS, encroachment has decreased by as much as 60%, and – a first for Indonesia – farmers turned over 87 illegal guns to the RPUs.

With our partner, the Indonesian Rhino Foundation (YABI), the International Rhino Foundation with funding assistance from ARP operates a comprehensive program aimed at protecting and increasing the populations of Sumatran and Javan rhinos in Indonesia – the RPUs are the backbone of this program.

Thanks to the RPUs, there have been no incidences of poaching of Sumatran rhinos in Bukit Barisan and Way Kambas National Parks in Sumatra for the past 5 years, or of Javan rhinos in Ujung Kulon National Park in Java, for the past 14 years. The RPUs also protect numerous other threatened species, including tigers, elephants, tapirs, gibbons, monkeys, leopards and fishing cats.

During 2009, the RPUs operating in Bukit Barisan Selatan, Way Kambas and Ujung Kulon destroyed 36 traps and made a total of 52 arrests. The majority of these arrests were for illegal fishing and poaching of deer or small mammals. In 2009, 6 suspects that had previously been arrested by the RPUs were successfully prosecuted for poaching. Sentences ranged from 8 to 16 months of jail time and up to around USD$275 in fines per offence.

At the request of the Head of the National Park, the Way Kambas RPUs are participating in a large integrated effort (in partnership with national government authorities and the police) to reduce encroachment in the park. Over the past year, RPUs worked with local communities to facilitate reforestation efforts in previously-encroached areas. The RPUs helped local villagers plant more than 10,000 new trees.

Already in 2010, RPUs have arrested 9 people for illegal logging and encroachment, and have investigated and reported another 40 suspects to the police and

park authorities for a variety of offences, including poaching, illegal fishing, illegal logging, illegal wildlife trade, and encroachment. During their investigations, the RPUs confiscate any evidence of illegal activity and turn it over to the police and park authorities. This year, they have confiscated 4 motorcycles, 2 bicycles, 3 traditional guns, 4 chainsaws, several spears and knives, pieces of tiger skin and elephant ivory, pangolins, poached deer, and illegal harvested timber.

The RPUs have also removed 23 snares – most of these snares were designed to catch deer and other small mammals, but at least 2 tiger traps were found and destroyed.

As part of their continuing efforts to turn back encroachment, in partnership with park authorities, the RPUs have removed over 100 cattle from inside the parks; destroyed 2 bridges built by illegal encroachers to create access to Way Kambas National Park, and destroyed 7 cabins illegally built by squatters inside park boundaries.

Finally, we've also planned several new initiatives for 2010/2011 to help improve the effectiveness of the RPU program. Several Sumatran RPU members will attend a MIST (Management Information System) training sponsored by the Wildlife Conservation Society, where they will be trained on utilising this simple, user-friendly database for ranger-based law enforcement monitoring. This methodology has great potential for the RPU work, particularly in putting the rhino data in a central database for the parks, which will be accessible to the park authorities.

Additionally, a new opportunity has arisen with the Leuser International Foundation (LIF) for enhanced information exchange, cross-training, and enhanced protection of Sumatran rhinos across the island. Estimates of Sumatran rhinos in the Leuser Ecosystem range from 35 – 80, with the population being perhaps the largest on the island. For a variety of reasons, information exchange between the staff working in Leuser and in other Sumatran rhino areas has not been optimal in the past. IRF has secured a commitment from the LIF to implement an exchange between the protection staff in the Leuser Ecosystem with RPU staff in Way Kambas and BBS, with visits from the LIF staff to Way Kambas and Bukit Barisan Selatan National Parks, and a mutual exchange with up to twelve RPU members to Leuser. We believe this will help us to begin the necessary dialogue to standardize methodologies for protection, tracking, and survey methodologies on a Sumatra-wide basis, and in general, build a more solid and collaborative effort for Sumatran rhino conservation.

Sumatran Rhino Sanctuary

The Sumatran Rhino Sanctuary (SRS) is a 250-acre complex located within Way Kambas National Park in Sumatra, Indonesia. Its five rhinos – 'Andalas', 'Rosa', 'Ratu', 'Torgamba' and 'Bina' – are part of an intensively managed research and breeding program aimed at increasing our knowledge about the Sumatran rhino with the ultimate aim of increasing the population in the wild. At the SRS, the rhinos reside in large, open areas where they can experience a natural rainforest habitat while still receiving state-of-the-art veterinary care and nutrition.

Given its Critically Endangered status, we need to learn as much as possible about the Sumatran rhino – including its basic biology, disease risks, and food and habitat requirements – to help it survive. The five rhinos living at the SRS serve as ambassadors for their wild counterparts, and as instruments for education for local communities and the general public. The population also is an 'insurance' population that can be used to re-establish or revitalize wild populations that have been eliminated or debilitated, an invaluable resource for biological research, and hopefully, in the future, could be a source population for reintroductions, once threats have been eliminated in their natural habitat.

All animals are monitored on a daily basis by the sanctuary's two veterinarians and are immediately treated for any health problems that may arise.

Because there are so few Sumatran rhinoceros managed in captivity around the world, a group called the Global Management and Propagation Board (GMPB) for the Sumatran rhino was formed in order to bring all stakeholders together to truly manage the small and dispersed population at a global level. Per the GMPB recommendations, Andalas (a 7-year-old male born at the Cincinnati Zoo, raised at the Los Angeles Zoo, and transferred to Indonesia in 2007) has been exposed to as many of the female rhinos as possible over the past year so he could learn to communicate with the rhinos long before they are put together for breeding purposes. In December 2009, Andalas began successfully mating with Ratu. The breeding followed months of gradual introduction, ultimately resulting in

a pregnancy after their third mating.

Ratu became pregnant in January 2010 – the first pregnancy at the SRS! Unfortunately, Ratu later miscarried, which is not unusual for a rhino's first pregnancy. While all of us were saddened by the loss, achieving a pregnancy confirms that the Sumatran rhino breeding program is progressing. Emi, Andalas' mother, lost a number of pregnancies early in gestation before she carried one to term at the Cincinnati Zoo & Botanical Garden. Experience and information gained with Emi will be used to help Ratu sustain her next pregnancy. Ratu has recovered very well from the miscarriage with no negative health issues. She has already begun breeding with Andalas again, but her cycle is not yet regular and thus she has not yet become pregnant again.

Torgamba, the sanctuary's older male, has mated with both Ratu and Bina several times over the past year. Torgamba is still producing sperm, though on an erratic basis. He is still being mated routinely with Ratu and Bina to help keep them on a regular cycle. (Sumatran rhinos are induced ovulators, which mean that the females only ovulate after they've mated. Most animals mate before or near the time of ovulation.) Rosa is also being introduced to Torgamba, to help teach her how to mate, but to date, she usually runs away when they are introduced.

The regular exposure of male and female rhinos described above also helps the team look for behavioural signs of oestrus that may help them choose the proper timing for breeding. The regular use of ultrasound will also continue as it has proven quite successful in predicting the appropriate time for mixing.

During the next year, in partnership with the Cincinnati Zoo, the SRS will also begin working on an artificial insemination program, to help increase the likelihood of pregnancies, and to help bank sperm for global conservation and breeding efforts.

Captive breeding is one part of IRF's integrated conservation strategy for the Sumatran rhino, which is now down to no more than 200 animals in the wild and 10 in captivity. Saving Sumatran rhinos will require a balance of caring for the wild population and trying to breed as many animals as possible in captivity in order to boost population numbers.

Indian Rhino Vision 2020

Greater one-horned, or Indian, rhinos now number about 2,850 and the population slowly continues to increase. This year, IRF co-funded a census in Kaziranga National Park which confirmed that the park now holds 2,049 rhinos – more than any other area in India or Nepal.

Indian Rhino Vision 2020, implemented in partnership with the government of Assam, IRF, WWF-India, and the Bodo Territorial Council, is partly funded by the ARP

thanks to the generous donation from the Taronga Conservation Society Australia. It aims to increase the rhino population in India to 3,000 by 2020 by moving animals from concentrated populations to areas where rhino populations are not as dense. Getting a rhino ready for translocation is no easy feat, and it must be carried out in a way that provides maximum safety for the animals as well as the people involved. Rhino translocations were delayed this year because of difficulties in importing the highly-controlled tranquilisation drug of choice, etorphine.

Nevertheless, we are still making progress! Last year, one of the male rhinos previously translocated to Manas National Park wandered outside of the park for more than 2 weeks, travelling more than 60 km before he could be safely immobilized and returned to the park. As a result, IRF, and Save the Rhino funded construction of an 8-km (about 5-mile) electric fence along the southern boundary of the park to keep the rhinos in. As a side benefit, the fence also protects local communities from elephants that previously raided their crops, reducing incidents of human-elephant conflict and increasing farmers' incomes. The hope is to eventually provide another 8-10 km of fencing so that all communities along the Manas National Park border can benefit.

Over the past year, they have continued to successfully protect and monitor the two rhinos translocated into the park in 2008, and to prepare for the additional rhinos that will soon arrive. The program has hired 50 "Home Guards" to monitor and protect the translocated rhinos and other wildlife in Manas NP. Guards are recruited from local fringe villages and are trained by the Assam Forest Department on wildlife conservation and combating poaching. Home guards are on patrol 24 hours a day; units alternate patrols in three-hour blocks.

They patrol all areas of the park, either on foot, or using bicycles, cars, elephants and boat as necessary. Patrols are heavily concentrated along the southern boundary of the park, which is the direct contact zone with the fringe villages. The home guards keep daily field records and assist the park authorities in conducting the wildlife census.

The program also conducted enforcement training for 20 frontline park staff from Manas NP. The curriculum included: basic first aid, basic navigation, weapon handling, patrolling operations, hostile engagement, arresting securing and searching suspects, and basic laws.

After months of hard work, negotiations and eventual appeals to the Prime Minister of India and the Central Minister for Environment and Forests, the 2020 team was finally able to get all the required permits and certifications in place to import etorphine from South Africa for the translocations. Unfortunately though, the rainy season began early this year, and the unusually heavy flooding and monsoons have made it too dangerous to translocate rhinos at this time.

The team is now planning to translocate at least eighteen rhinos into Manas once the dry season begins in late 2010. These will likely include four male and four female rhinos from Pabitora and three male and seven female rhinos from Kaziranga.. The methodologies outlined in this document have been approved by the Government of India and the provincial Government of Assam.

Up to four selected rhinos per translocation effort will be immobilized with etorphine hydrochloride (M99) from elephant back. Rhinos will be monitored by a team of veterinarians during transportation and prior to release. Post-release, animals will be monitored using radio-collars and direct observation, both from elephant back and on foot. Effective translocation, monitoring and survival of these first ~20 rhinos to Manas National Park will be the key indicator as to the probability of success for subsequent phases of IRV 2020.

Monitoring of a translocated rhino will begin immediately upon arrival by a team of biologists with all necessary equipment organized to track the rhino using its radio collar and visually. Initially, the rhinos will be monitored for properly settling in at the new location. Once this phase is over, long term monitoring will ensue, with behavior of the rhinos and their use of the habitat monitored carefully.

A team of at least two biologists will locate each rhino on a daily basis and observe them over the course of the day for overall behavior and well-being. Location data will be transformed onto a GIS domain with layers of vegetation mapping and other management parameters. These analyses and conclusions will provide critical data for improving management practices and identifying other needs for making the program successful, in addition to providing information and experience for further translocations, and management of protected areas.