improve decisions for conservation management. The Sumatran rhino (*Dicerorhinus sumatrensis*) is a good example to illustrate the challenges in the conservation of a highly endangered species. Less than 100 Sumatran rhinos still exist in the wild. They are remnants of the two extant subspecies*, D. s. sumatrensis* in Sumatra, Indonesia, and *D. s. harrissoni* in Borneo in Kalimantan, Indonesia who live in very small and highly fragmented populations. Several conservation strategies have been proposed to stop the decline of the species and to increase its numbers. However data suitable and relevant for such measures hardly exist. Despite intensive research on Sumatran rhinos in the past, the exact number of the remaining individuals as well as their sex and age ratio are still unknown. This lack of data makes the conservation of the species challenging. The size of the population is easily overestimated and conservation measures such as the consolidation of isolated subpopulations to enhance the chance of mating are being delayed. We reviewed the literature on rhinos and assembled a comprehensive dataset on surveys of the Sumatran rhino subspecies (*D. s. harrissoni*) in the Malaysian state of Sabah on Borneo to chart the historical development of the population in Sabah and its exploitation until the present day. We ran a series of population viability analyses (PVAs) to extract the key demographic parameters most likely to affect population dynamics. The analysis revealed that unrestrained hunting between 1930 and 1950 drastically reduced the historical rhino population in Sabah and that the remnant population could have been rescued by combining the effort of total protection and stimulation of breeding activity. Two factors were identified as crucial parameters driving population dynamics: the percentage of breeding females and female lifetime reproductive period. In combination with total protection against poaching, even moderate improvements in these parameters could elevate population viability substantially. The experiences with the rhinos in Sabah illustrate that remnant populations with less than 15 individuals have a high chance of extinction if left to their own devices. We therefore recommend to translocate isolated individuals or small subpopulations to protected locations and to undertake measures to maximize conceptions. One possible option would be to run state-of-the-art reproductive management with assisted reproduction techniques to improve the reproductive performance of the female rhinos. The next few years are crucial for the survival of the species. Concerted efforts of the governments, NGO´s and scientists in terms of a one plan approach are needed to save the Sumatran rhino from extinction.

**Saving the Sumatran rhino: Amalgamation in the Leuser Ecosystem**

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The Leuser Ecosystem (LE) is one of four locations left in the world where Sumatran rhinos still exist in the wild. In LE there are at least four locations where the Sumatran rhino populations are relatively small: the western LE, Beutong, Samarkilang and Kappi. According to a PVA from 2015, there are at least 8-10 rhinos in Kappi, 3-5 in Samarkilang and 2-3 in Beutong. From our patrol reports over the last 3 years in Kappi, the last 2 years in Samarkilang, and from intermittent survey activities in Beutong, we could not find any indication that this critically endangered species is breeding in these 3 sites. Without intervention, there is a high chance that these populations will go extinct no matter how intensely we patrol and protect their habitat. One way to save these isolated individuals is by translocating them all to one location. After ascertaining population numbers and assessing the health and reproductive capability of these individuals, an appropriate breeding center should be built. This is the most viable option for conserving these small Sumatran rhino populations remaining in the eastern part of Leuser Ecosystem. Before we take the major step described above, we intend to conduct population surveys in these three locations using the occupancy method and camera trapping. Our next step would be capturing them and building a breeding center. The intensity of wildlife patrols would be concurrently heightened in the new

habitat or breeding center to ensure the safety of the rhinos. Veterinarians and rhino experts would need to be present during the capture, health assessment and translocation process. The best possible site for translocation is the Kappi plateau due to its high variety of preferred foods for rhinos (149 species), at least 6 saltlick complexes, a relatively flat landscape, and the area has a strong legal status. The biggest threat right now in this area is a geothermal project plan and the frequent presence of locals coming into the forest to fish, hunt, and harvest non-timber forest products. An ideal site for a breeding center can be developed in Samarkilang, which is a relatively lowland forest landscape and is still naturally regenerating after logging activity halted a decade ago. There is a high variety of biodiversity in Samarkilang due to the continuing regeneration of secondary forests, which will provide a high variety of food for rhinos. The main threats in this area are illegal poaching, logging, and forest encroachment. Strong legal protection of these two areas is a critical precondition to be fulfilled before we designate them as translocation and breeding center sites.

**Conserving Javan rhino through special interest ecotourism in Ujung Kolon National Park**

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The Javan rhino (*Rhinoceros sondaicus*, Desmarest 1822) is one of two species of rhino found in Indonesia (the other is the Sumatran rhino). The Javan rhino is critically endangered and can now be found in the wild only in Ujung Kulon National Park (UKNP), Indonesia. It was also previously found in Vietnam, but was declared extinct there in 2011. Only about 60 individuals are found in the UKNP, and they face threats from loss of habitat, encroachment (by local people) for farming, invasive vegetation, and competition from other species (wild cattle). Poaching, although not currently occurring, is also a potential threat. Despite the problems the Java rhinos face in UKNP, it is considered still possible to save this population from extinction through a concerted effort by all parties. Both commitment and substantial funding are required to save this species. Special interest ecotourism offers an opportunity to both raise funds for the conservation of the species, and to increase awareness of its plight. Friends of Rhino is a local NGO which is developing special interests ecotourism through community-based partnerships. The concept is to accompany small groups to UKNP, so they can observe rhino behaviour and feeding in their natural habitat. There will be strict rules to protect the fauna and the ecosystem. Tours will center on the Cikeusik area, in the core zone for Javan rhino, so groups will be limited to a maximum of three people. Tours are restricted to July to mid-September (dry season period is the best time), Participants will spend at least 7 to 10 days in UKNP, travelling through coastal areas, estuaries and along the river where they are most likely to observe rhino. The anticipated benefits of this special interest ecotourism development are: (a) to increase awareness and knowledge about the conservation of rhinos for visitors; (b) Creating business opportunities and employment so as to increase the income of local communities and the economic growth of local, regional and national levels; (c) as an alternative and sustainable sources of income for local communities and (d) provide a funding source for rhino conservation.