

aspects of seed dispersal by analyzing the diversity of dispersed plant species and also the qualitative aspects of dispersal by investigating the germination potential of dispersed seeds. Additionally, we examined the influence of gut passage on seed germination and latency of *Bauhinia racemosa*, a seed frequently encountered in dung piles. The seeds of ten species belonging to the plant families Solanaceae, Fabaceae, Poaceae, Euphorbiaceae, Scrophulariaceae, Moraceae and Cucurbitaceae were dispersed. The germination potential of majority of the seeds dispersed was poor. In the case of *Bauhinia*, gut passage significantly reduced the time taken for germination but did not affect germination success. In comparison to other elephant populations, the elephant population at Kaudulla was not highly frugivorous and hence dispersed only the seeds of a few plant species. It is also clear that ingestion decreased dormancy in seeds of *Bauhinia*. Our study indicates that elephants effectively dispersed relatively few plant species

### **Facing the habitat crisis: Securing, restoring and habitats for elephants and Sumatran rhinos in South East Asia**

R. Risch<sup>1</sup>, P. Saner<sup>1</sup>, and P. Kretzschmar<sup>2</sup>

<sup>1</sup> Rhino and Forest Fund

<sup>2</sup> Department of Evolutionary Ecology, Leibniz Institute for Zoo and Wildlife Research

The increase of the human population in Asia, agricultural expansion, logging activities, forest fires and urbanization are causing one of the highest rates of deforestation in the tropics. As a consequence, wildlife habitat is being reduced and fragmented. Large mammals such as elephants (*Elephas maximus*), Sumatran rhinos (*Dicerorhinus sumatransis*) and tigers (*Panthera tigris*) are suffering primarily due to the restriction of their movements which often results in human-wildlife conflict. Elephants are especially influenced due to their natural habit of long-distance migration. Human-elephant conflict has many forms, from crop raiding to injury or death of people and killing of elephants. As a consequence, plantations are being fenced which results in elevated elephant densities in the remaining forest patches and which negatively impacts the remaining vegetation. The Rhino and Forest Fund (RFF) is a German-based NGO operating in Sabah, Malaysia and in Sumatra, Indonesia. Our aim is to restore habitat for wildlife and to establish wildlife corridors. Focus species are the two subspecies of the Sumatran rhinos (*D. s. harrissoni* and *D. s. sumatrensis*) as well as the Bornean (*E. m. borneensis*) and the Sumatran elephant (*E. m. sumatranus*). Together with local authorities, two forest restoration projects have been started in Sabah. As a result of our activities, electric fences restricting the movements of elephants and other wildlife have been removed, threatened forest land has been secured for conservation, and habitat connectivity has been improved. Further projects are planned in Indonesia. The target of the Rhino and Forest Fund is to establish a network of well-connected conservation areas of sufficient size and quality to overcome current habitat fragmentation. The corridors are being carefully designed to provide sufficient food for elephant and other wildlife so that the stimulus to move elsewhere is minimized. The wildlife corridors will also help to save and enhance the gene pool of currently isolated sub-populations of wildlife isolated inside the forest reserves. The RFF works together with all crucial stakeholders and considers the socio-economic setting as well as likely ecological and socio-economic developments. Anticipating already visible trends, the RFF has also started working on a model project for best practice restoration of oil palm plantations and soli rehabilitation. Due to heavy soil degradation on oil palm plantations, agriculture will not be economically viable in the future. This enhances the likelihood that huge areas in Southeast Asia will become available for forest restoration during the next decades.