

Return of Wild Phayre's Leaf Monkey Infants to their Social Group in Phu Khieo Wildlife Sanctuary, Thailand

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We describe the release of two Phayre's leaf monkey infants (*Trachypithecus phayrei*) to their natal group in Phu Khieo Wildlife Sanctuary (PKWS), Northeast Thailand. The infants were initially separated from their social group due to natural disturbance. Subsequent human interference prevented the infants from immediately rejoining their group. With a facilitated release however, the infants rejoined their social group. This event shows that if separated, young leaf monkeys can be returned to the wild with human assistance.

On March 28, 2006, Phu Khieo Wildlife Sanctuary (16° 5'–35' N, 101° 20'–55' E) experienced strong winds and heavy rain (for site description see KHON KAEN UNIVERSITY & PHU KHIEO WILDLIFE SANCTUARY, 1995). The storm resulted in numerous tree falls throughout the sanctuary that blocked the road leading from the sanctuary entrance at Pang Muang to the headquarters at Thung Kha Mang. When sanctuary rangers began to clear the road in the late afternoon, they noticed two Phayre's leaf monkey infants that had fallen to the ground with a tree during the storm. The two infants were wrapped in blankets and brought to us at the headquarters shortly thereafter. Both infants appeared to be in shock—they remained silent, their bodies shivering and their gums white. We immediately made sure there were no visible injuries, placed them in dry towels and held them near our bodies for warmth. At this time, we decided to attempt to release the infants back to their social group that day. We believed that the infants were too young to survive in captivity. The youngest male infant was just over a week old (Fig. 1) while the older male infant was estimated to be 4 months old (Fig. 2). Leaf monkeys are notoriously difficult to keep in captivity because of dietary problems (DAVIES & OATES, 1994). More importantly in this case, because the infants were separated from their mothers at such a young age while nursing, they were extremely vulnerable to dehydration. From our observations, it is necessary for Phayre's infants to nurse until at least one year of age in order to have a chance of surviving in the wild (E.L., personal observation). Thus, promptly returning the infants to the wild was our primary goal.

We knew of an unhabituated group that frequented the area near the tree fall (BORRIES *ET AL.*, 2002; KOENIG *ET AL.*, 2004). Thus, we planned to transport the infants back to the site of the fall, find the group, and try to release the infants nearby. Upon our arrival, sanctuary rangers were still removing the fallen tree from the road with a chainsaw. We explained the

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Figure 1 Female Phayre's leaf monkey with an infant about 1 week old, the same age as the youngest infant released (L. Gibson).



Figure 2 The older infant leaf monkey prior to release (L. Gibson).

situation, had the rangers cease sawing and then began to search and listen for the infants' group. Because wild leaf monkeys have rather fixed home ranges with little overlap among groups (KOENIG *ET AL.*, 2004), we sent out a search team towards a specific area to find the infants' group while the others stayed with the infants near the site of the tree fall. The infants had become increasingly active and vocal as we walked along the perimeter of the forest. We hoped that the infant calls were finally audible after the rain and sawing and would attract the group members. The group was encountered within 10 minutes and once their location was radioed to those on the road, the infants were promptly carried into the forest towards the group. It is possible that group members heard the infants because L.G. and T. W. observed them change direction and head back towards the tree fall shortly after the infants began to be carried into the forest. Because we did not want to deter the unhabituated group members from coming to retrieve the infants, we stopped approximately 15 m ahead of the group and released the infants. We freed the two infants from the towels onto the ground near small trees, moved away, and remained quiet while the group promptly approached. Once set free, both of the infants gave constant distress calls and although the youngest infant remained immobile at the spot of the release, the older infant (with a more developed locomotor repertoire) had fled on the ground about 20 m northwest. Within minutes, several group members had come directly over the release area. Then, an adult female (presumably the mother) came down to the ground to retrieve the youngest infant, at which time it ceased vocalizing. We could still hear the older infant calling in the distance. Meanwhile, members of our team who had remained on the road observed some of the group members return to the location of the tree fall, one of which we believe might have been the mother of the older infant. Eventually, these group members returned toward the others near the release site. Once the forest was dark and langurs silent, we returned to the road. Although we were not certain if the second infant was retrieved, further observation of this group the next day made us believe it was successfully reunited with its mother.

The following morning before the langurs awoke, E.L. returned to the release site. Once awake, three adult females were nursing and carrying infants, two of which were similar in age to those released the previous day. From our experience in behavioral observation of this species through the years and the group's behavior the day after, we are fairly confident that the release of both infants was a success. For example, when a Phayre's leaf monkey mother loses a dependent offspring, she will often lag behind the other group members and vocalize a 'lost call' for several days thereafter, using time regularly spent feeding and socializing to search for her infant (E.L., personal observation), which is similar to what has been observed in other primate species (NICOLSON, 1991). No such behaviors were observed the subsequent morning and all individuals seemed cohesive and group members were behaving as we have observed under normal circumstances.

In the case that an infant or injured wild non-human primate is found, we recommend leaving them be. During the first months of life infant leaf monkeys frequently fall to the ground as they develop and fine-tune locomotor skills within their arboreal habitat (Larney, unpublished). When an infant falls, a group member (usually the mother or an older sibling) will almost always come to retrieve it, although it may take some time because leaf monkeys are particularly vigilant when they descend to the ground. An infant that is capable of climbing a tree for safety may survive alone until its group returns. Although hanuman langurs have been observed to return to search for a lost infant after several days (Carola Borries, personal communication), group members often return by the following day. Injured primates are also

capable of surviving in the wild despite a serious injury and have been observed to maneuver using two or three limbs with surprising grace. We have observed leaf monkeys, which had been unable to keep up with the social group due to a serious injury, return and be accepted back after several months (E.L., personal observation).

However, if a wild non-human primate is found and has been prevented from rejoining its group because of human interference, we recommend using the following guidelines. If the primate group is nearby, the individual should be left where it was found and any humans should promptly leave the immediate area. As in several primate species, wild leaf monkeys will give a 'lost call' to find other members of their social group which can be heard at a distance in the forest. If human presence has frightened the primate group away, we recommend minimizing human presence and searching for the group. If the group is found, try to return the individual by placing it on the ground below the group and then leaving immediately. To do so, some knowledge of the primate species, group locations, or the assistance of a trained wildlife specialist are recommended because most gregarious primate species have specific social groups and will only accept certain conspecifics into their group (CHENEY & SEYFARTH, 1990). If a group cannot be found, we recommend leaving the individual near its original location and (if possible) hiding at a distance to observe whether or not it rejoins its group.

Our observation demonstrates that humans can successfully return lost primates to their social groups if they become separated. Nevertheless, wild nonhuman primates are more likely to find, approach, or retrieve a group member if humans are not involved. Although direct contact with a wild primate should be avoided, if necessary, any contact should be limited due to the potential for bacterial and disease transmission (JONES-ENGEL, 2006). We would also like to note that any release should be planned according to the local guidelines such as those of CITES or IUCN (e.g., IUCN, 1995). Wild animals have ways of coping with extreme situations and human interference can sometimes hinder nature's response. In such cases, we believe to truly help is to let nature be.

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