

## **Notes from the Co-chairs IUCN/SSC Asian Elephant Specialist Group**

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Recently the Indian Judiciary was involved in three interesting cases related to elephant conservation. One related to a decision on the need for a flyover that would facilitate elephant movement under a road that cuts through elephant habitat. The second related to the closure of a road at night – again to facilitate wildlife (including elephants) movement across a road that cuts through a protected area. The third related to establishing a corridor for elephant movement in an area that was gradually being broken up by private development (resorts and holiday homes). In all cases the courts ruled in favour of elephants. Good news, but throughout the elephant range in Asia corridors are becoming increasingly important. Corridors may be important conservation tools but they are basically indicators of a far more serious problem – habitat fragmentation and consequently a reduction in the conservation potential of a habitat patch or population. Where corridors cannot be secured and maintained, habitat is broken into two or more smaller patches with exclusive human use areas in the intervening area.

Linear development in elephant habitat, such as roads, railways and canals are major reasons for habitat fragmentation. Planned or unplanned development of human settlements along such infrastructure is routine. Human settlements also tend to occur along rivers and along the foothills of mountain/hill ranges. Such development and settlements break up elephant habitat into smaller and less viable patches for conservation. Such fragmentation also increases conflict by bringing human use areas into elephant habitat and by disrupting normal ranging patterns and cutting home ranges into smaller patches. Unlike habitat loss, which has always been a major conservation concern, habitat fragmentation brought about by linear development apparently seems to have attracted less attention. Possibly because such development generally appears to be relatively small in size and the remaining habitat appears to be large (although now broken

into two patches). Further the initial crossing of elephants across such breakages appears to lessen our worries. However, with time human settlements and activities get entrenched and before long elephants can no longer cross. For example we have all seen elephants crossing roads and in the past roads were not major obstacles for elephant movement. However multilane highways or heavily used roads today have become impassable barriers. This is now being observed in India, home to thousands of elephants and even in China with a few hundred elephants, multilane highways pose similar problems. Elephant habitat in North-western Sri Lanka is fragmented by numerous roads, many with human settlements along them. Elephants are forced to intrude into human use areas. Roads are not the only problem; all development that fragments habitat is a problem.

Other than the obvious increase in human-elephant conflict due to increased fragmentation of habitat there are other more serious problems. Recently one of us (AAD) was involved in an assessment of two fragmented areas one with 20 odd elephants and the other with 50 odd elephants and both these patches were totally unsuitable for elephant conservation with no real opportunities for reviving connectivity. The assessment indicated that these two populations did not have long-term viability unless managed in a zoo like situation in the remaining habitat fragments – all purpose of conserving these animals would then be lost. Certainly conserving the genetic diversity contained in these populations would be useful but there are other means of doing that. These two are not the only cases there are many more, not only in India but across the entire elephant range in Asia.

We are creating smaller and less suitable habitat patches that are really not suitable for elephant conservation. We are creating doomed populations. Their management requires extremely high levels of inputs in terms of efforts

and resources, inputs that are well beyond the reach of most countries. And even if such efforts were to be made the long-term viability would remain doubtful in many cases.

While assessing the status of Asian elephants we take into account the entire population and the extent of remaining habitat. We neglect separating doomed populations and consequently come up with figures that are erroneous and optimistic, indicating a far more secure status than what is really there. Such doomed populations will eventually die out due to retaliatory killings as they are usually in serious conflict with people or due to increased stress and other factors associated with small isolated populations. Another deceptive factor is the longevity of elephants and their ability to persist in sub-optimum habitats. Any population with a few young sub-adults will certainly outlive most of us and can persist in sub-optimal habitats. But in the long run (over several generations) it will eventually decline and die out. Their gradual decline and disappearance does not attract the attention that other issues like poaching and HEC do and as such their loss goes largely un-noticed. More and more populations are being gradually driven into the doomed category because the process attracts little attention and is rarely highlighted.

There are three basic problems that arise from not identifying and accounting for doomed populations. First the status of the Asian elephant appears to be far more optimistic than it actually is. We continue to believe that we have significantly large populations of elephants and habitat. Second, the process of fragmentation and reduction in the conservation potential of the remaining populations (habitat) continues because it is not given the significance it deserve. And third, we do not face up to the reality of managing these doomed populations. We mention them but we do not act or do anything about them. Not enough attention is being given to the long-term implications of declining habitat patch sizes, confined populations and the management of doomed populations. We limit our efforts to HEC mitigation which is largely symptomatic treatment and does not in any way resolve the problem.

If we start to identify such doomed populations it will highlight the true status of the Asian elephant and bring about greater focus on their conservation. It will also make us aware of populations we stand to lose and the processes that brought about such situations. This will make governments and people recognize and accept responsibility for the situation they have created, which in turn will ensure that there are greater efforts made to stop and reverse such processes. We will hopefully stop the slow and largely unseen and unrecognized erosion of the conservation potential that the remaining elephant populations have.

To address issues related to doomed populations we need to ask basic questions about how much habitat is required for a viable population – even for one managed as a part of a meta-population? How to contain such populations in the limited habitat that is available (minimize or eliminate HEC)? What impact will the confined population have on its habitat and consequently on biodiversity? We should not forget that elephant conservation is ultimately a part of biodiversity conservation. What is to be done with the excess population once numbers build beyond the carrying capacity (that is if we can estimate it)? How do we manage population sizes? What are the resources and information needed for managing such population? What resources and knowledge do we need for effective meta-population management? We appear to lack the basic data and information needed to answer such questions as we have not really looked at such issues in any depth. There is an urgent need to gather data related to such issues. We need to evaluate populations based on the long term habitat and population requirements rather than just on numbers. We need to identify doomed populations and come up with pragmatic solutions to addressing such populations. This will be the real challenge in the near future.

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