

ELEPHANT CORRIDORS are vital to elephant management, since they provide the opportunities for gene flow between different elephant populations. As each individual population becomes smaller due to hunting and other anthropogenic factors, gene flow to maintain genetic diversity within populations becomes more and more important to enable the survival of a viable population in the long term.

For the conservation of the Asian elephant, Rodgers (1990) has proposed five 'conservation units' (CU). Two of these lie north of the Palghat Gap, a barrier that elephants cannot currently cross. Three lie south of the Palghat Gap, and are the Anaimalai-Anaimudi CU, the Periyar-Megamalai CU and the Agastyamalai CU.

There are existing corridors within these areas that have been documented in cases : for instance, within the Anaimalais, linking Anaimalais to Anaimudi through the area about to be submerged by the proposed Pooyankutty Hydel Project.

It has not been generally realised that these three CUs are linked by major elephant corridors that are currently under threat. Their preservation, and restoration in cases, becomes a major conservation priority. There are four such corridors, and their current status is summarised below. These are the :

1. North Palnis corridor, connecting the Anaimalais with the northern slopes of the Palnis;
2. High Range corridor, connecting the Anaimalais to the southern part of the Palnis, and to the Cardamom hills;
3. South Palnis corridor, connecting the Top Station area with the Upper Palnis;
4. Cardamom Hills corridor, connecting the Palnis with Periyar;
5. Shencottah corridor, connecting the Periyar-Megamalai CU with Agastyamalai.

1. North Palnis Corridor

Location: From the Anaimalai Wildlife Sanctuary, through Amaravathy Reserve Forest, into the Palnis. Elephants are found below 1000 m in the Kudiraiyar, Pechayar and Pallangi valleys upto the Palar valley, where there is a permanent population.

Approximate area: 250 sq km (Tamil Nadu)

Current status: Used by elephants today.

Landuse in corridor: Reserved Forest. This is dry deciduous forest interspersed with riparian forest in the valleys. In the Palar valley there is moist deciduous forest, from the foothills up. In the north there is cultivation on marginal lands right up to the R.F. boundary. In the south steep cliffs separate it from the Upper Palnis. Most access routes to the Upper Palnis are blocked because of settlements and agriculture, with the exception of Kukkal.

Human-elephant conflicts: Crop-raiding - moderate in Kudiraiyar, severe in Pallangi, negligible in Palar Valley, severe in plains area near Palar Dam.

In the last area, electric fences connected to mains supply have resulted in both elephant and human deaths.

Threats: Grazing severe to moderate in all areas. Fires moderate in Kudiraiyar and Palar, present elsewhere. Commercial Forestry in Pallangi. Poaching severe at Pallangi, moderate elsewhere.

Potential: Management techniques to control above threats; Tighter enforcement against poaching; Nonlethal electric fences near Palar Dam.

Remarks: Secondary corridor through Kukkal links N.Palni and S. Palni corridors. The use by elephants of this is currently uncertain. However, settlements and agriculture in this area might sever this soon. This area is a top conservation/ecorestoration priority.

2. High Range Corridor

Location: Between Eravikulam N.P. and the Top Station area of the Palnis. The northern part connects to the N. Palnis corridor, and the southern end connects to the S. Palni corridor

Approximate area: About 17 km in length.

Current status: Used very frequently.

Landuse in corridor: Tea estates, with a few patches of degraded shola interspersed.

Human-animal conflicts: Damage to tea gardens due to elephant movement. Ganja cultivation at the southern end, in Pambadam shola, is destroying key elephant habitat.

Threats: No immediate threat, since poaching is rigorously prevented by the tea estate managements. Development of Munnar as a tourist centre is likely to increase traffic and affect elephant movements.

Potential: A study to evolve management recommendations to reduce damage to tea is required. The High Range Wildlife and Environment Preservation Association is the appropriate organisation to coordinate this study.

Remarks: Study can be completed in three years.

3. South Palnis Corridor

Location: From Top Station and Pambadam shola through Vandaravu and Mariyan Shola upto Berijam and Mathikettan Shola, 23 km from Kodaikanal.

Approximate area: 100 sq km (Tamil Nadu)

Current status: In use. Elephants have only recently started coming upto Berijam, and are occasional visitors there. The main area in use connecting to the corridor is the Thulukanpatti-Vandaravu area.

Landuse in corridor: Grassland-Shola ecosystem, largely replaced by plantations of pine, eucalyptus and wattle throughout the area. Some small shola patches in places, the biggest being Mathikettan (1000 ha) and Kukkal (300 ha).

Towards the south of the corridor there are steep cliffs with some patches of grassland. In the north there are agricultural settlements. Potato and vegetable farms exist at Kukkal and Thulukanpatti.

Human-animal conflicts : Crop-raiding moderate at Top Station. Plantation activity scattered all over the corridor results in disturbance to wildlife.

Threats: Grazing severe at Kukkal and Tulukanpatty, moderate elsewhere. Fires occur with moderate frequency at all sites with the possible exception of Kukkal. Poaching severe at Top Station, moderate elsewhere. Expansion of settlements at Kukkal.

Potential: Tighter enforcement against poaching Change in coupe activity pattern to have concentrated working in some areas rather than scattered all over the area in the short term; phasing out of commercial plantations in the long term. Possibility of wildlife treks, fishing being developed at sites.

Remarks: Links to N. Palnis corridor through Kukkal, which is top conservation priority. Cardamom Hills corridor starts at Tulukanpatty.

4. Cardamom Hills Corridors

Location: Starts from Tulukanpatty in the Upper Palnis. Goes south to the west of the Anairangal reservoir, on top of the cliff edge on the Kerala side until level with Thevaram in Tamil Nadu, where it descends down the cliff to Thevaram. It then proceeds along the foothills to 5 km from Kumily, and then goes upto Kumily.

Approximate area: Estimated at 75 sq km: no data currently

Current status : Broken between Thevaram to about 5 km north of Kumily, about 30 years ago. Elephants move along the Palnis into the Cardamom hills, and move eastwards into Tamilnadu from above Thevaram.

Landuse in corridor: Agriculture on marginal lands between Thevaram and Periyar Lower Camp. Cardamom plantations on the ridge, on the Kerala side of the state boundary have resulted in a high human population, preventing elephant movement.

Human-animal conflicts : Crop-raiding at Thevaram. Elephants from the Upper Palnis move to this area.

Threats: Continuing encroachment and expansion of human settlements in the Cardamom hills. Some large privately held forest patches in the process of sale and conversion. Mathikettan shola, and Pambadam shola, in Kerala, under heavy threat of encroachment, mainly for illicit cultivation of Cannabis.

Potential: Detailed survey of land use in the area. Detailed survey of use of forest products by locals. Development of a management plan oriented towards elephants in the area. Ecorestoration to a land use compatible with elephant movements in a 75 sq km area between Thevaram and Kumily.

On the ridge, the possibility of resuming the cardamom leases to the east of the Kumily-Devikulam road upto about 25 km north of Kumily needs to be explored. This would create an alternate route to the one proposed for the plains.

Remarks: Restoring this corridor will entail extensive research for at least two years. This research, which will include a complete socio-economic profile of the area, a detailed study of land use, and recording the type and intensity of dependence on forest resources, should be initiated immediately. Ecorestoration will involve expenditure of 10-15 crore Rs. over a period of at least 10 years.

5. Shencottah Corridor

Location: Between Ariankavu and Thenmalai, across the Shencottah Gap, in the southernmost range of the Western Ghats. The southern side abuts the Courtallam R.F., and is dominated by teak. The northern side is farmed with rubber, banana, tapioca and cardamom.

Approximate area: Corridor estimated to be 13 km long (Johnsingh et al, 1992).

Current status: Estimated to have been broken 30-40 years back, from interviews with villagers (ibid.). No recent crop damage reported.

Landuse in corridor: 25% is Reserved Forest. Another 52% is private forests and plantations. The status of the remainder is not known. A road and railway line going through the Shencottah Gap have dense human settlements along them.

Human-animal conflicts : Large-scale poaching for tuskers north of the gap.

Threats: Continued poaching, expansion of plantations, encroachment into forest areas. The threat of inbreeding in the southernmost population, estimated to be about 200, exists.

Potential : Detailed survey and mapping of land use in the area. Mapping of ranges of elephant populations closest to the gap. ECodevelopment of region to land use compatible with both humans and elephants.

Remarks : Will be as big a task as the one preceding it. Requires at least a two year feasibility study. If the proposal is feasible, the ecodevelopment will take another 10-15 years.