

# STATUS OF WILDLIFE CORRIDORS AND THEIR USE BY MAMMALS WITH SPECIAL REFERENCE TO SELECTED ENDANGERED MAMMALS IN THE NILGIRI BIOSPHERE RESERVE

N. Sivaganesan & Ajith Kumar





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SELECTED ENDANGERED MAMMALS IN THE  
NILGIRI BIOSPHERE RESERVE, SOUTH INDIA**

**Final Technical Report**

*Submitted to the Ministry of Environment & Forests,  
Government of India*

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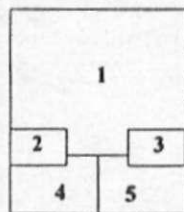
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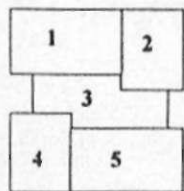
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3. Hyena in Moyar-Valley corridor - R. Arumugam
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## SUMMARY

As natural forest areas get increasingly fragmented, forest corridors are becoming critical to the survival of many wild animals, especially large and wide ranging species such as elephants and large predator-prey communities. The goal of this project was to make an assessment of the status of forest corridors in the Tamil Nadu part of the Nilgiri Biosphere Reserve, in terms of habitat quality, their use by wild animals and the extent of human pressures that the corridors are subjected to.

The study was carried out between October 1995 and June 1998. The field studies included foot and vehicle transects (1254 km), vegetation plots (1496) and questionnaire surveys and interviews with local people.

Eight corridors that are critical to contiguity of habitats within and outside the Reserve were identified. Even though there was wide variation among the corridors in the number of tree species (14 to 47), very few species dominated in all corridors. Thus, *Albizia amara*, *Acacia latronum*, *Cordia wallichii*, *Euphorbia antiquorum*, *Limonia alata* and *Randia spp.* accounted for about 40% of the trees in all corridors. Interestingly, elephant food species formed a high proportion of the trees, as much as 63% in Kallar-Nellithurai and Singara-Mavinhalla corridors.

There was also considerable differences among the corridors in the regeneration and recruitment of trees, the former varying from less than 200 to about 1500 plants/ha, and the latter from less than 200 to about 1800 plants/ha. Both regeneration and recruitment seemed to be greater in areas in perennial rivers. However, due to various human disturbances, especially grazing, there was no correlation among tree density and regeneration and recruitment classes.

Ground cover also varied considerably among the corridors. Thus, grass cover varied from 10% to 66%, while herb cover was low in all corridors except Moyar Valley (23%). *Lantana camara* was by far the most common ground cover, even though *Stachytarpheta indica* was common in some localities. Both declined with increasing tree density.

Direct sightings of large mammals were few. Elephants were mostly seen in the dry season. Sujalkuttai-Bannari corridor had the highest number of sightings (128 elephants in 16 herds), with the dry season having considerably more sightings than wet season (0.86 and 0.14 animals per km. of



transect, respectively). Sightings of deer (chital and sambar) were greater in this corridor, even though sightings were greater in the wet season (4.76 animals/km) than in the dry season (1.71 animals/km). Black-buck was sighted in this and Kallampalayam-Uppupallam corridors, while gaur was seen in three corridors. Other animals seen included the dhole or Indian wild dog (in four corridors), sloth bear (one corridor), besides black-naped hare and porcupine which occurred in all corridors. No signs of tiger was noticed in any of the corridors.

The greater sightings and indirect evidences of elephants in Sujalkuttai-Bannari, Moyar-Avarahalla and Singara-Mavinahalla corridors, especially in the dry season, show the importance of these corridors as migratory routes for the elephants in the Nilgiri Biosphere Reserve and adjoining areas. The first of these corridors is located at the junction of two migratory routes between Eastern Ghats and the eastern slopes of the Nilgiri Hills. The latter two corridors form important routes between the Mudumalai Wildlife Sanctuary and Sigur plateau.

Fuel wood collection, cattle grazing and collection of non-timber forest produce (NTFP) were the major human activities in the corridors, their relative intensity varying from one place to another. Thus, fuel wood collection was the major activity in Sujalkuttai-Bannari, Kallar-Vedar Colony and Kallar-Nellithurai corridors, whereas NTFP collection was not a major activity. There was also some differences among the corridors in the species that were harvested for fuel wood; *Prosopis juliflora*, *Randia spp.* and *Albizia amara* were harvested more in Sujalkuttai-Bannari while *Cordia spp.*, *Pterocarpus marsupium* and *Terminalia chebula* were harvested more in Kallar-Vedar Colony. Nearly 30 food species of elephants were being harvested either for fuelwood or for fodder, the number of species in a corridor varying from 3 to 23.

Human activities in these corridors are having a major impact on standing trees (through fuel wood collection and lopping) as well as regeneration (through collection of NTFP and cattle grazing). Many of the species affected, especially through fuel wood and NTFP collection, are important food species of elephants. These activities have resulted in the rapid spread of weeds, especially lantana, further decreasing the habitat quality of the corridors as far as the larger and wide ranging mammals are concerned and to whom these corridors are critical. In this background, the suggested recommendations include; *a*) launching community participatory programme for subsistence users of the corridors, especially for implementing alternate livelihood means; *b*) acquiring some private forests adjoining some corridors; *c*) monitoring various development activities bordering the corridors so that adverse impacts are detected at an early stage; and *d*) establish an awareness programme on the importance of corridors, especially among people adjoining the corridors including subsistence users of corridors.