8. CONCLUSION
Conclusion

Liana diversity inventoried in eight tropical dry evergreen forest sites distributed four each in coastal and inland areas, together harbored a total of 42 species. The presence of 24-29 liana species among 50-59 woody species (trees+lianas) in the four coastal sites and 21-27 liana species out of the total 47-62 woody species in inland study sites projects the liana life-form to be an important component of peninsular Indian dry evergreen forests. Furthermore, a total of 5,985 liana individuals along with high standard errors obtained for mean liana abundance (826±117.8; 669.5±58.5 in the coastal and inland study sites respectively) indicate a considerable variation in liana abundance among the individual sites. The liana species composition and their abundance in coastal and inland areas revealed that a greater number of species have lower abundance and fewer species occurred in greater abundance; while the spatial pattern of liana individuals at 0.01 ha scale was found to be clumped in all study sites of the coastal and inland areas.

In the coastal sites, there were six predominant liana species (>150 individuals) and they accounted for 59.4% of the total abundance and shared 54.5% of the total basal area. Among them *Strychnos minor* (Loganiaceae) with 623 individuals (range 30-293 individuals ha⁻¹) was the most abundant, whereas in inland study area five liana species were predominant and formed 56% of the total abundance. *Combretum albidum* was the most abundant liana constituting 742 individuals and 18.34% of total abundance in the four inland study sites.

The liana abundance classified into abundance categories viz. predominant (>150 individuals), common (≥20 individuals and <150 individuals) and rare (<20 individuals) showed a significant difference between the two study areas, while it did not differ significantly in the category based on dbh classes (1-3, 3.1-6, 6.1-10 and >10 cm). The
stem size distribution exhibited a reverse ‘J’ pattern, as a majority of liana individuals remained in smaller dbh (1-3 cm) class in both the coastal (65%) and inland (70%) study areas. Four climbing modes viz. twining, tendril climbing, hook climbing, and scramblers which just lean on other plants and all varieties of diaspore types adapted to wind, animal and autochorous modes were encountered in the liana community of dry evergreen forests.

The tree-liana interactions in the two study areas revealed that inland dry evergreen forests had a higher proportion of trees supporting lianas (63%) than the coastal study area (51%). A significant difference in liana infestation rate as well as in mean number of lianas was obtained between trees of 10-30 cm and >30 cm gbh classes and overall in both the study areas the proportion of trees that supported at least one liana increased with host tree diameter. Tree species such as Drpetes sepiaria and Albizia amara had consistently high infestation rates, while Memecylon umbellatum and Glycosmis pentaphylla had lower infestation rates than forest mean indicating that lianas show some degree of host specificity.

The studied dry evergreen forest sites are also ‘sacred groves’ which are ‘temple forests’, but with natural forest biota are preserved based on the religious beliefs, taboos, and customs. Considering the overall depauperate condition of the dry evergreen forests, especially the ones outside the sacred groves which are impacted by anthropogenic activities such as browsing, lopping, grazing, and constant removal of fire wood, a habitat-level approach is called for to conserve these patches of dry evergreen forests. This will restore forest biodiversity in their natural condition and also provide impetus to the presently weakening rich tradition of community-based biodiversity conservation associated with the sacred groves.