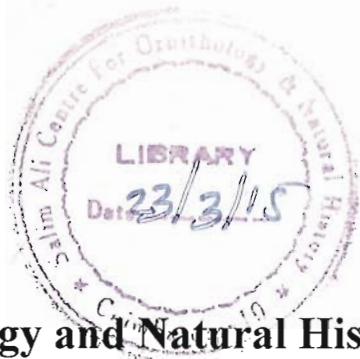


Avian frugivory and seed dispersal of endemic tree species in Thia shola forest of Nilgiri hills, Western Ghats



Salim Ali Centre for Ornithology and Natural History

Coimbatore

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**Tamil Nadu Forest Department-Research wing
Chennai**

October 2012



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Collaborative research project
SACON & Tamil Nadu Forest Department

Final Report

Principal Investigator

Dr. P. Balasubramanian

Project Staff

C. Anbarasu



Salim Ali Centre for Ornithology and Natural History

Coimbatore 641 108

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Summary

Shola forests of Nilgiris are getting degraded due to several reasons viz. cattle grazing, firewood collection and other human disturbances. Shola forests have high water holding capacity and it is the drinking water source for many adjoining villages. Understanding the interrelationship between plants and birds is very essential for the scientific management of natural resources. Hence, a study on avian frugivory and seed dispersal of tree species of Thia shola was carried out. Study of this kind would help in planning afforestation programs.

Phenological observation was carried out on tagged trees; ten individuals were marked and observed once in a month. Flowering and fruiting activity were recorded. A fruiting peak was observed in June to August. Low fruiting activity was noticed in April.

Vegetation sampling was done in three sites of Thia shola forest. We laid 10 quadrats of 50x20 m size for each site. Totally 30 plots were laid. A total of 645 individuals of tree species belonging to 48 species were recorded in site 1. Of these maximum number of individuals was recorded for *Syzygium arnottianum* (n=65) followed by *Syzygium montanum* (n=46) and *Elaeocarpus oblongus* (n=34), where as in the site 2, 862 individuals of tree species belonging to 67 species were recorded. Maximum number of individuals was recorded for *Syzygium montanum* (n=47) followed by *Syzygium densiflorum* (n=46) and *Cinnamomum sulphuratum* (n=37). In total, 1058 individuals belonging to 53 species were recorded in Site 3. Highest number of individuals was recorded for *Syzygium montanum* (n=114) followed by *Elaeocarpus recurvatus* (n=96) and *Cinnamomum sulphuratum* (n=85).

A total of 12 plant species were observed for frugivory studies in the Thia shola forest. A total of 1928 birds belonging to 11 families foraged fruits. Red-whiskered Bulbul (18.62%) and Nilgiri Laughingthrush (15.25%) constituted the predominant bird visitors to fruits. Red-whiskered Bulbul and Nilgiri Laughingthrush appear to be the principal seed dispersers in the shola forest. Red-whiskered Bulbul foraged 12 fruit species followed by Nilgiri Laughingthrush (10 species). Maximum number of avian frugivores were recorded on *Symplocos foliosa* (n=11) followed by *Isonandra perrottetiana* (n=9).

In total, eight plant families were utilized by avian frugivores in the Thia shola forest. Maximum number of avian frugivores visited Lauraceae (30.24%) followed by Myrtaceae (14.21%). Dominant avian frugivore attracting plant families included Lauraceae and Myrtaceae. Among the eight plant families, 17 species of avian frugivores were attracted by Myrtaceae (13 species) followed by Symplocaceae (11 species) and Lauraceae (10 species).

In total, 24 species of avian frugivores belonging to 11 families were recorded in the Thia shola forest. Maximum number of avian visits was made by members of Pycnonotidae (32.99%) followed by Muscicapidae (30.96%) and Columbidae (18.52%). Highest number of avian frugivore species was represented by Muscicapidae (7) followed by Pycnonotidae (5). Pycnonotidae and Muscicapidae constitute the important avian frugivores in the Thia shola forest.