A RAPID STATUS SURVEY OF *MANILKARA HEXANDRA* (ROXB.) DUBARD IN POINT CALIMERE WILDLIFE SANCTUARY

(A collaborative Project funded by the Tamil Nadu Forest Department)

Principal Investigator
Dr. P. Balasubramanian
Senior Scientist
Project Fellow
K.J. Senthil Kumar

In collaboration with
A. D. Baruah, IFS
Wildlife Warden
Point Calimere Wildlife Sanctuary

Sálim Ali Centre for Ornithology and Natural History
March 2006
# Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>1</td>
</tr>
<tr>
<td>Review of literature</td>
<td>1</td>
</tr>
<tr>
<td>Objectives</td>
<td>4</td>
</tr>
<tr>
<td>Materials and methods</td>
<td>4</td>
</tr>
<tr>
<td>Results and discussion</td>
<td>8</td>
</tr>
<tr>
<td>Summary</td>
<td>18</td>
</tr>
<tr>
<td>Recommendations</td>
<td>19</td>
</tr>
<tr>
<td>References</td>
<td>20</td>
</tr>
</tbody>
</table>
Regeneration sites of *Manilkara*

Some interesting observations on *Manilkara* regeneration could be made during the investigations. In both the habitats, low lying and sand dunes, seedlings/saplings were found growing from open light penetrating areas. Young plants were almost absent under the dense canopy. This indicates that seeds of this might require enough sunlight for germination. For example, in the low lying areas, saplings were found growing in a specific micro habitat. The micro-habitat was *Clerodendrum inerme* dominated bush in elevated areas bordering water-logged depressions. The fallen fruits from mature trees would have been washed away during rains and get struck at the base of *Clerodendrum* bushes. On the sand dunes also, seedlings/saplings were mostly noticed in the open sites. This micro habitat was small dunes comprising thorny bushes constituting *Randia* and *Flacourtia*. It is also interesting to note that in both the micro-habitats, the young plants get full protection from being trampled upon or grazed by the cattle.

From the study is known that *M. hexandra* is the most dominant species of this forest. Maximum values for abundance and density were also observed for *M. hexandra*. The basal area also showed maximum value for *M. hexandra* which was found to be the important constituent of canopy layer. An ecological analysis of vegetation of this sanctuary by Rao and Balasubramanian (1994) also reported *Manilkara* as the dominant component of tree layer. On the sand dunes *Manilkara hexandra* with formed the dominant species and in the low lying areas it formed the co-dominant. In the present investigation also, the same trend was observed.

VI. SUMMARY

Tree community structure and regeneration status of trees in the tropical dry evergreen forest was studied to assess the status of *Manilkara hexandra*, a “keystone species” of Point Calimere Wildlife Sanctuary.

Quadrat sampling method was used to quantify the tree community. Sixty 10x10 quadrats were used for sampling the vegetation. Thirty quadrats each on sand dunes and low lying areas were sampled along six select transects.
A total of 35 tree species were encountered during the sampling. Twenty five species were observed in the low lying areas and 26 were recorded on sand dunes. Seventeen species occurred in both the habitats.

*Manilkara hexandra* formed the most dominant species on sand dunes and it was the second dominant species in the low lying areas. Overall, *M. hexandra* formed the dominant component of the tree strata in the tropical dry evergreen forest.

Among the four age classes recognized, matured individuals formed the maximum in both the habitats. Girth class distribution showed some gaps in 5-60 and 60-70 cm class, which is attributed to fruiting failures. Although the regeneration of *M. hexandra* appears to be poor on the sand dunes, it is doing fairly well in the low lying areas.

Two regeneration habitats, both are light penetrating areas viz., i. elevated sites comprising *Clerodendrum inerme* bushes in low lying areas and ii. thorny thickets of *Randia, Flacoutia* on the sand dunes harbour seedlings and saplings of *M. hexandra* were identified during the present study.

**VII. RECOMMENDATIONS**

The present study forms only a rapid survey. Hence, further detailed studies are needed to assess the fruiting seasonality, seed dispersal and natural regeneration of *Manilkara hexandra*.

As fruiting failures cause gaps in the population structure of a species, during the years of fruiting failure, intense planting should be undertaken in appropriate sites.

In the low lying areas, the exotic weed, *Prosopis juliflora* has invaded. This tree thrives well along the edges of water-logged areas which are potential *Manilkara* regeneration areas. Hence, periodic removal of *Prosopis* trees in the low lying is suggested.