

# ECOLOGICAL DISTRIBUTION OF RATTANS AND PALMS IN TAWI WILDLIFE SANCTUARY, MIZORAM

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**Abstract :** Tawi wildlife sanctuary, one of the wildlife sanctuary in Mizoram which is situated in the northern part of Mizoram state in Aizawl District, which is surrounded by villages like Hualtu, Hmuntha, Maite, Lenchim, Tawizo and Mualpheng. It is about 100 km from Aizawl 23030" North latitude and 93000" East Longitude with height range of 600m to 1890m above sea level. It covers an area of approximately 35 km<sup>2</sup>. A three year study was done during the seasons where 9 species of Palm under 6 Genera and 11 species of Rattan (canes) under 4 Genera were identified in these areas. These species found and identified were collected and marked with their Gps location for further studies. These species are needed to be conserve as they are rapidly declining due to anthropogenic activities and climate change. In hoping, these studies will lead to better knowledge of the distribution, condition and importance of the species.

**Keywords:** *Arecaceae*, Rattans, Palms, Tawi, etc.

## I. INTRODUCTION

Rattans and palms are the sub division of *Arecaceae* family which represents perennial lianas, shrubs and trees which are commonly known as palm trees. The *Arecaceae* family is also known as *palmea* or *palmaceae*. They are the only family in the monocot which is under *Arecales*. There are roughly about 187 genera with around 2600 species are currently known in the world in which most of them are restricted to the tropical, sub tropical and warm temperate climates Dransfield.J (1992). Most palms are distinguished by their large, compound, evergreen leaves arranged at the top of an un-branched stems, and also rattan by their climbing habit associated with their characteristics of their flexible woody stem which are derived typically from secondary growth which makes it a liana rather than a true wood (The Plant List (2010)).

Mizoram is one of the tropical areas where rattan and palms are found and distributed. Mizoram also has a few collection of these species around different forest areas, sanctuaries, reserves, national parks and conserved areas. Among which Tawi wildlife sanctuary is one of the conservation sites in the state (Anonymous (2011)). It is found on the northern part of Mizoram in Aizawl district, with location 23°30' North Latitude and 93°00' East longitude having an area of 35 Sq. Km, distance of 100 Km from Aizawl City. Five fringe villages Hualtu, Hmuntha, Maite, Lenchim, Tawizo, and Mualpheng are surrounding Tawi wildlife sanctuary (North east India (2007)). A three year study was done during the seasons where 9 species of Palm under 6 Genera and 12 species of Rattan (canes) under 4 Genera were identified in these areas. These species found and identified were collected and marked with their Gps location for further studies(Champion and Seth ( 1968) Lalnuntluanga (2010)).

## II. MATERIALS AND METHOD

The studies were conducted in Tawi wildlife sanctuary Aizawl District, Mizoram, India. Here, the collection of data was done by visiting the sanctuary area for three years. During these visits, the study site was entered from two points that is from the west and east, the species found were recorded and marked with their gps location. The average rainfall is 2500mm to 3000mm with an average temperature of Summer 20-30°C, Winter 16-20°C (DEFCEM (2018) and Forest Survey of India 2017). Specimens were also being collected for identification. Vast areas were covered during this field work and different species of rattan and palms were found in the study site. The species found were recorded and samples were also taken with their photographs. These samples collected were treated with chloroform and then dried for stored in the herbarium of Environmental science Department, MZU for identification and also for further studies.

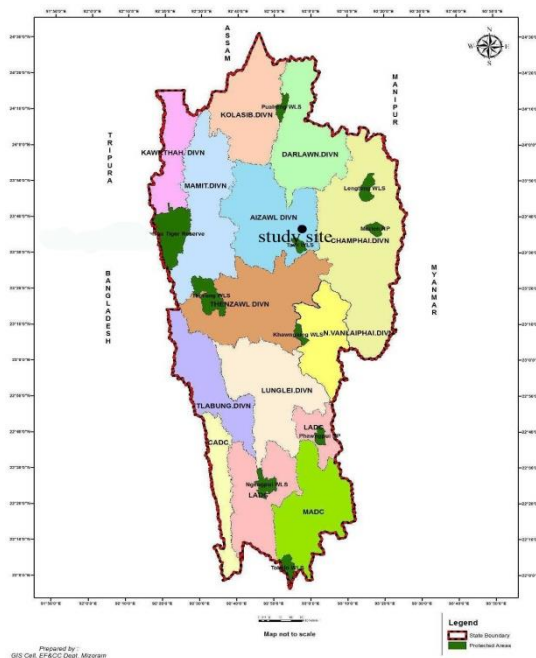


Figure 1: Map of Mizoram

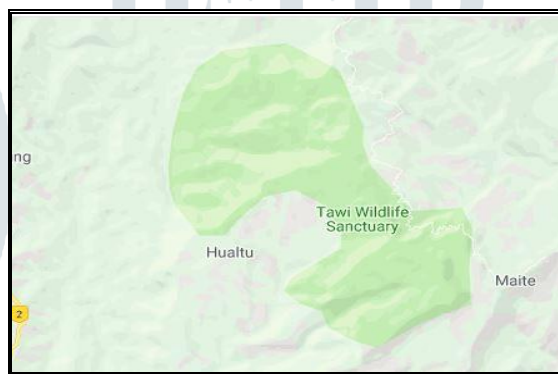


Figure 2: Map of Tawi Wildlife Sanctuary

**III.RESULT AND DISCUSSION**

During the study, it has been observed that from the field work and collection of data, 9 species of Palm *Lecula peltata*, *Caryota mitis*, *Borassus flabellifer*, *Areca triandra*, *Pinanga gracillis*, *Caryota urens*, *Cocos nucifera*, *Areca catechu*, *Livistona chinensis* under 6 Genera *Lecula*, *Caryota*, *Borassus*, *Areca*, *Pinanga*, *Cocos* and *Livistona* are found, and 12 species of Rattan (canes) ie; *Calamus erectus*, *Calamus flagellum*, *Calamus guruba*, *Calamus inermis*, *Calamus acanthospathus*, *Calamus gracilis*, *Calamus tenuis*, *Calamus khasianus*, *Daemonorops jenkinstanus*, *Plectocomia assamica*, *Zalacca secunda* under 4 Genera *Calamus*, *Daemonorops*, *Plectocomia*, and *Zalacca* were identified in these area.

Table 1: Palm species with their altitude and Gps location.

| Sl no | Species                                      | Altitude in m | Location by Gps            |
|-------|--|---------------|----------------------------|
| 1     | <i>Lecula peltata</i> (Siallu)               | 1367m         | N23°32'10.9" E092°58'19.5" |
|       |  | 1502m         | N23°32'10.2" E092°58'12.7" |
| 2     | <i>Caryota mittis</i> (Meihle)               | 1366m         | N23°32'10.2" E092°58'12.7" |
|       |  | 1367m         | N23°32'06.2" E092°58'17.7" |
| 3     | <i>Borassus flabellifer</i> (Laisua)         | 1502m         | N23°32'06.2" E092°58'17.7" |
|       |  | 1366m         | N23°32'10.2" E092°58'12.7" |
| 4     | <i>Areca triandra</i>                        | 1366m         | N23°32'10.9" E092°58'19.5" |
|       |  | 1367m         | N23°32'06.2" E092°58'17.7" |
| 5     | <i>Pinanga gracillis</i>                     | 1502m         | N23°32'10.2" E092°58'12.7" |
|       |  | 1507m         | N23°32'10.9" E092°58'19.5" |
| 6     | <i>Caryota urens</i> (Tum)                   | 1367m         | N23°32'06.2" E092°58'17.7" |
|       |  | 1507m         | N23°32'10.2" E092°58'12.7" |
| 7     | <i>Cocos nucifera</i> (Coconut)              | 1367m         | N23°32'10.9" E092°58'19.5" |
|       |  | 1507m         | N23°32'10.2" E092°58'12.7" |
| 8     | <i>Areca catechu</i> (Kuhva)                 | 1502m         | N23°32'10.9" E092°58'19.5" |
|       |  | 1366m         | N23°32'06.2" E092°58'17.7" |
| 9     | <i>Livistona chinensis</i> (Buarpui chempai) | 1367m         | N23°32'10.2" E092°58'12.7" |
|       |  | 1502m         | N23°32'10.9" E092°58'19.5" |

"m" signifies meter above sea level

Table 2: Rattan species with their altitude and Gps location.

| Sl no | Species  | Altitude in m  | Location by Gps  |
|-------|--|----------------|--|
| 1     | <i>Calamus erectus</i> (Thilthek)              | 1507m<br>1367m | N23°32'10.9" E092°58'19.5"<br>N23°32'10.2" E092°58'12.7" |
| 2     | <i>Calamus flagellum</i> (Hruipui)             | 1366m<br>1507m | N23°32'06.2" E092°58'17.7"<br>N23°32'10.9" E092°58'19.5" |
| 3     | <i>Calamus Guruba</i> (Taite)                  | 1367m<br>1366m | N23°32'10.9" E092°58'19.5"<br>N23°32'10.2" E092°58'12.7" |
| 4     | <i>Calamus inermis</i> (Thilte)                | 1367m<br>1502m | N23°32'10.2" E092°58'12.7"<br>N23°32'10.9" E092°58'19.5" |
| 5     | <i>Calamus acanthospathus</i><br>(Mitperh)     | 1507m<br>1366m | N23°32'10.9" E092°58'19.5"<br>N23°32'10.2" E092°58'12.7" |
| 6     | <i>Calamus gracilis</i> (Kawrtai)              | 1367m<br>1366m | N23°32'10.2" E092°58'12.7"<br>N23°32'06.2" E092°58'17.7" |
| 7     | <i>Calamus Tenuis</i> (Changdam)               | 1507m<br>1366m | N23°32'06.2" E092°58'17.7"<br>N23°32'10.2" E092°58'12.7" |
| 8     | <i>Calamus Khasianus</i> (Mawt)                | 1367m<br>1502m | N23°32'10.9" E092°58'19.5"<br>N23°32'06.2" E092°58'17.7" |
| 9     | <i>Daemonorops jenkinstanus</i><br>(Raichhawk) | 1507m<br>1366m | N23°32'10.2" E092°58'12.7"<br>N23°32'10.9" E092°58'19.5" |
| 10    | <i>Plectocomia assamica</i> (Hruitung)         | 1502m<br>1366m | N23°32'06.2" E092°58'17.7"<br>N23°32'10.2" E092°58'12.7" |
| 11    | <i>Zalacca secunda</i> (Mawttak)               | 1507m<br>1367m | N23°32'10.9" E092°58'19.5"<br>N23°32'10.2" E092°58'12.7" |

"m" signifies meter above sea level

#### IV. CONCLUSION

From the table above we can see that the palms and rattans are found at the altitude range of 1300m to 1600m above sea level. Their distribution is not that vast inside Tawi wildlife sanctuary but their diversity is very high. The species found within Tawi wildlife sanctuary is not that diverse as compare to other tropical areas around the world. They are located in the deep forest where no proper roads with slope of 75° angle are found so their exact amount is not known but these are the main species that are found in and around Tawi wildlife sanctuary.

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