

Maturity Index of Tryambakeshwar Forest of Nashik District, Maharashtra.

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Abstract: Maturity index provides the information about the maturity of the forest community and species dominant within the community. From the study it can be observed that the degree of maturity is less or high in forest. In this present work fourteen stands of about 175 quadrats randomly sampled to collect varied species from Tryambakeshwar forest. Maturity index provides the information about the maturity of the forest community and species dominant within the community. From the study it can be observed that the degree of maturity is less or high in forest.

Key Words: Phytosociology, Maturity Index, Tryambakeshwar, Maharashtra.

1. INTRODUCTION:

Maturity Index: Pichi-Sermolli (1948) suggested an index for the establishment of the maturity in plant communities based on the frequency percent of all species in the stands of a community. The principle is the long accepted notion that higher the frequency percent of each species and smaller the number of sporadic species, the more mature is the community. The Index of maturity of each stand is compared with other stands to establish the general maturity of the community.

2. LITERATURE REVIEW:

Phytosociological studies deals with qualitative study of the structure of the vegetation with an emphasis on quantitative relationship of few species which are to be dominant on the belief that these largely control the community and there by the occurrence of a large number of rare species. As author aware , there detailed accounts on the Phytosociology of Chotaudaepur forests(Shah, Yadav and Parabia,1979): Panchamahals (Shah and Bhatt,1980):Dangs Forests (Yadav,1979): From Maharashtra Tryambakeshwar,Vani, Saptashringi (Jadhav,2002), Jadhav (2004), Talegaon (Jadhav, 2016), Sappaon (Jadhav, 2018),Tryambakeshwar (Jadhav,2018),Saptashringi forest (Jadhav, 2020) ,Vani forest (Jadhav, 2020). Similar investigation is carried out in 14 stands of Tryambakeshwar forest with a view to study the maturity of the forest community, species dominant within the community and the degree of maturity is less or highest in forest.

3. AREA OF STUDY:

Tryambakeshwar lies at 73° 13' – 73° 30' E and 19° 54' – 19° 56' N. It is an important area from the view point of plants. It suffers from high rain fall, wind and soil erosion, not withstanding its close proximity to Sahyadri ranges. The plateau on top of the range here is about 4.8 Km from range of Sahyadris. This is near to Nashik (19° 33' – 22° 53' N and 73° 16' – 75° 6' E) 28.3Km distant. The vegetation is mostly on the lower part of the hill and in the valleys where soil is better.

4. METHOD:

Fourteen stand areas located randomly throughout the study area in the Tryambakeshwar forest. Quadrats of 10 x 10 m were laid down in different directions in forest, so that quadrats represented almost all species in the area. All together 175 plots (covering 17500 Sq. m.) are laid down.

Frequency (%) was calculated by the formula given by Raunkiaer (1934).

5. DISCUSSION:

The Maturity Index values of different stands shows that some are moderately mature [Stand No.1, 5, 14 (M.I. 40 to 60)]. The vegetation at stand No.6 and 10 shows the higher maturity index value (M.I. 66.67 and 71.25). This may be due to higher frequency percentages of species and less number of sporadic species. In other stands Maturity index

values are from 27.77 to 39.51, suggesting that these stands are still under the process of succession and the disturbance to the vegetation by biotic influence is more.

Table 1: Showing the 14 stands of Tryambakeshwar forest and their Maturity Index (M.I.).

Sr.No	Localities	Maturity Index (M.I.)
1	Stand No. 1	39.51
2	2	27.77
3	3	35.75
4	4	33.33
5	5	48.00
6	6	66.67
7	7	34.81
8	8	36.15
9	9	35.09
10	10	71.25
11	11	32.72
12	12	27.36
13	13	35.89
14	14	48.57
Total		572.87
Average M.I.		40.92

6. FINDINGS:

Maturity index is based on the frequency percentage of all species in the stands of community. It is obtained by adding the frequency percentage of all species in a stand and dividing this sum by the total number of species in the stand (Pichi-Sermolli, 1948).

7. RESULT:

Among these 14 stands the vegetation at stand No 2 has much biotic influence due to the newly constructed road, which goes to the Ganga-dwar (Brahmagiri). The average maturity index value and degree of maturity of Tryambakeshwar forest as a whole shows that it is an intermediate.

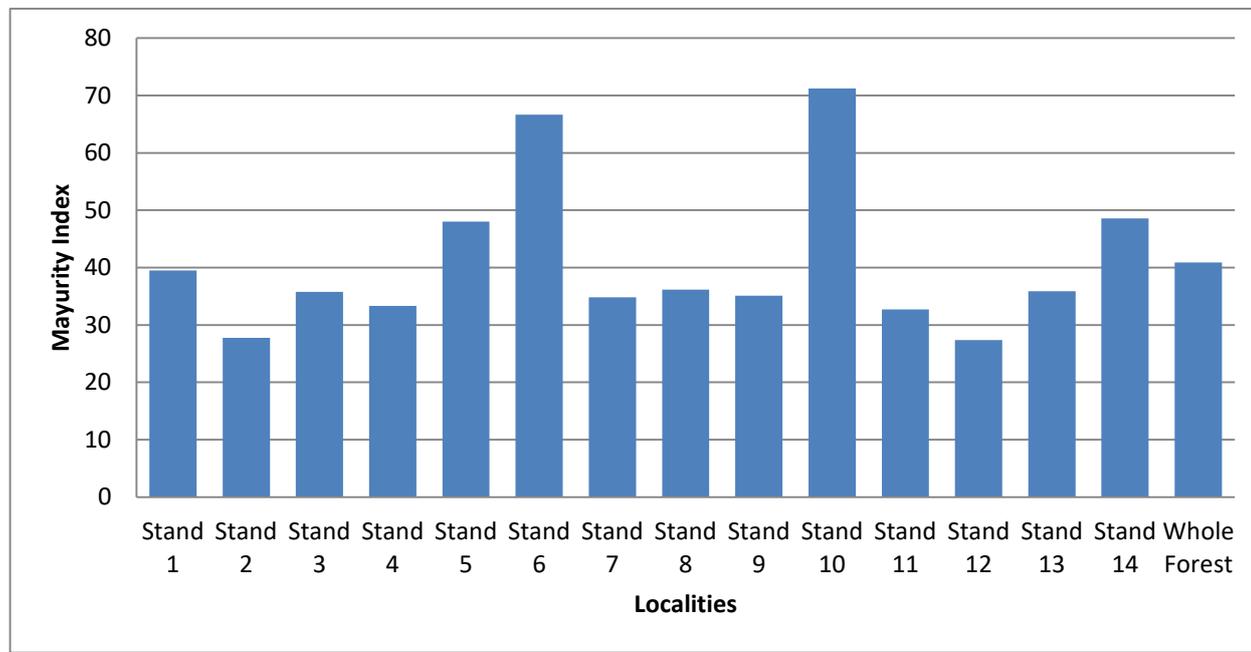
8. CONCLUSION:

Maturity index provides information about the maturity of the forest community. It also impresses up on the dominance of specie within the community. From the Table I, it can be observed that the stands 10 and 6 are highly matured where the sporadic species may be less. This implies that the vegetation is under not much biotic influences and other physical factors. Stands 5,14 are moderately matured whereas all other stands are showing maturity index very less which can be attributed that on and average the forest communities are under much stress of both biotic and a

biotic. The average maturity index is only 40.92. It suggests much disturbance within the stabilization of the communities in Tryambakeshwar forest.

From fig. 1: showing the histogram of Maturity Index. It can be seen that highly matured vegetation is in the stands of 6 and 10.

Figure 1: Showing the Comparative histogram of Maturity Index Stand wise (14) and Tryambakeshwar forest as a whole.



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