

Letter to the Editor

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EFFECT OF FOREST COVER ON RAINFALL DISTRIBUTION AT ANDAMAN AND CAR NICOBAR ISLANDS

Effect of rainfall on vegetation had been studied during last few decades and one of the most enlightening concepts has been the growing apprehension of the importance of the forest biome. Type of forest of a place mainly depends on the amount and distribution of rainfall. The vegetation in turn has an influence on rainfall. The tropical forest, possibly the oldest ecosystem on earth, is a complex of symboises of subtle process of co-operation, lamentably little of which is known. Fedorov *et al.* (1967) analysed the data of the experiment carried out by Valdai Hydrologic Scientific Research Laboratory (U.S.S.R.) and concluded that the precipitation increases (10-12) per cent over the forest. Johnson *et al.* (1975) investigated the forest microclimate with one year data at seven stations along 50 km section covered with forest between two cities in central Illinois (USA) and found that average rainfall of two cities is more than the average rainfall of seven forest stations.

An attempt has been made in this note to examine the monthly rainfall distribution in the Andaman and Nicobar islands and to see the relation, if any between forest cover and annual rainfall.

2. Andaman and Nicobar islands consist of group of islands in the latitudinal belt 12° 35' N-07° 01' N and longitudinal belt 92° 22' E-93° 56' E. Tropical wet, warm and humid climate is experienced here. Maximum and minimum temperatures vary from 27.8° C to 32.8° C and 21.8° C and 25.4° C respectively. The islands are exposed to both southwest and northeast monsoon with major contribution from southwest monsoon spread over May to October.

3. Rainfall and other meteorological parameters are recorded in eight observatories situated at different islands of various forest cover, most

of the observatories except Kutchal and Cambell Bay are having data for more than 16 years.

4. The annual rainfall and rainy days for the seven observatories are given in Table 1. It would be seen that annual rainfall varies from 3239 mm to 2690 mm, number of rainy days ranges from 161 to 129 days. Although rainfall is well spread during the monsoon season, copious rainfall occurs quite often due to tropical storms formed at Bay during the season. Fig. 1 depicts the latitudinal location of different islands and average monthly rainfall distribution. If one proceeds from south to north one notices in general the following three distinct patterns in the different seasons. During the monsoon months June to September; Port Blair, Long Island and Mayabandar (observatories north of latitude 10°N) get more rainfall than their counterparts at south. Rainfall in general decreases from north to south. Rainfall during the transitional period October, November and May is more or less uniform over all the islands of Bay. Rainfall during December to April decreases from south to north. In this period southern islands get more rainfall than those of north.

5. Table 1 gives the area of Bay Islands covered by forest and annual rainfall. The maximum area 104525 hectares of Port Blair is covered by forest and annual rainfall is 3180 mm. Cambell Bay is having 100400 hectares under forest cover and rainfall 3124 mm. Although forest cover of Hut-Bay is third (72617 hectares) rainfall is highest 3239 mm. Rainfall at Car Nicobar is the lowest 2689 mm among all the observatories and forest covered is almost *nil*. Forest areas and rainfall of all other islands fitted properly except Mayabandar where rainfall is 3055 mm. Forest cover was much more before 10 years than at present. Extensive clearance have since been made in this island in order to make a room for rehabilitation and resettlement of refugees from erstwhile East Pakistan. Fig. 2 shows a good correlation of annual rainfall against percentage of forest cover except Mayabandar.

TABLE 1

Island	Area (hec.)	Area covered by forest (hectare)	Percentage of forest	Annual rainfall mm (rainy days)	No. of years data used
Port Blair	135,317	104,525	77	3,180 (147)	30
Cambell Bay (C. Nicobar)	104,912	100,400	95.5	3,124	6
Hut Bay (Li. Andaman)	73,439	72,617	98.8	3,239	6
Katchal	17,503	12,000	68.8	2,816 (161)	7
Mayabandar	10,179	6,000	58	3,055 (135)	17
Nan Cowary	6,713	4,000	59	2,708 (135)	17
Car Nicobar	12,742	Nil	—	2,690 (129)	18

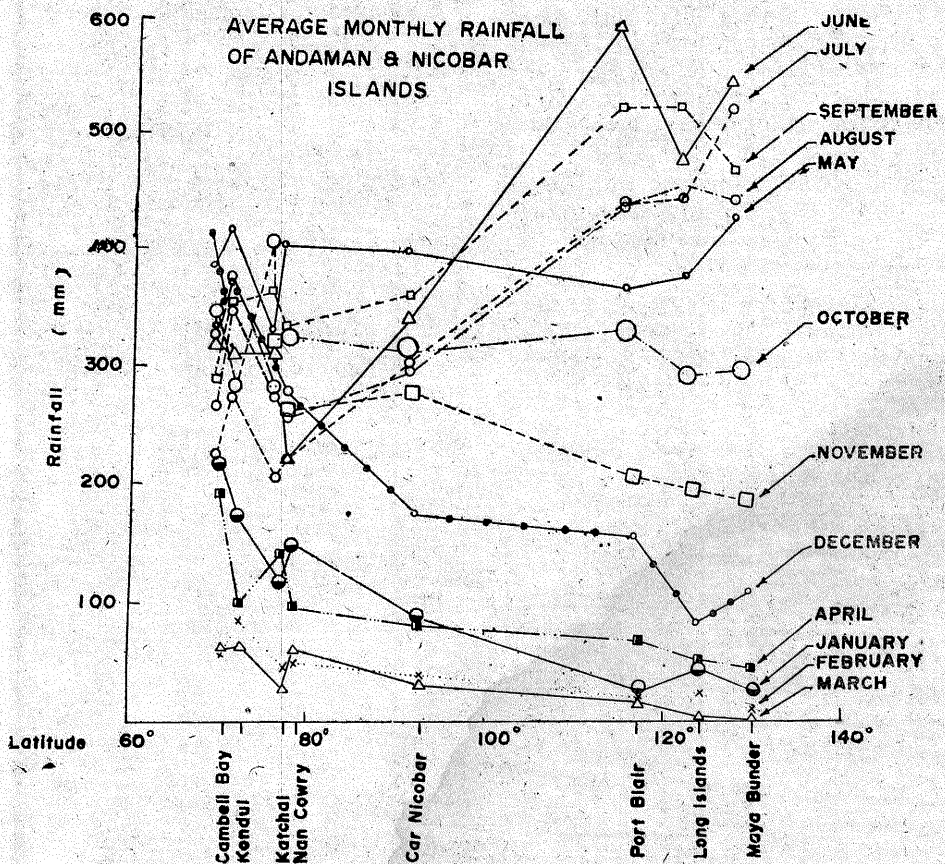


Fig. 1

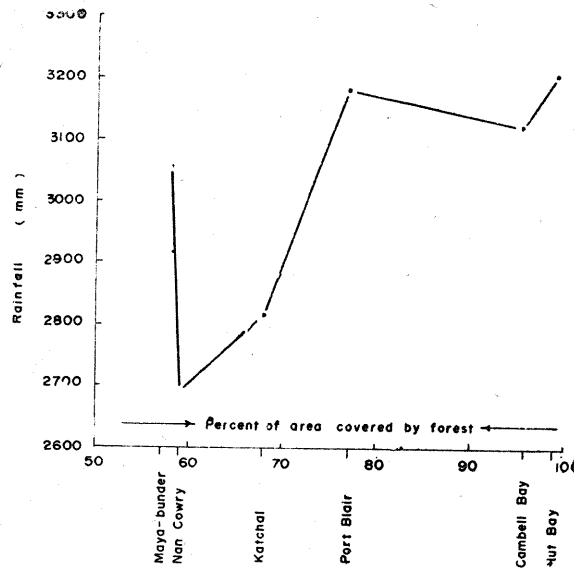


Fig. 2

6. The present study leads to the following conclusions.

(i) (a) During June to September observatories in north Bay get more rainfall than those of south, (b) from December to April rainfall decreases from south to north, (c) during transitional periods October, November and May rainfall is more or less uniform over Bay islands.

(ii) The rainfall seems to increase with forest cover. This ties in well with the conclusion drawn by many workers. Particular mention may be made of the work of Fedorov *et al.*

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