GROWING STOCK POTENTIAL OF BLUE PINE (*PINUS WALLICHIANA*) AND FIR (*ABIES PINDROW*) IN GALIS FORESTS (N. W. F. P.)

— (ANOTHER APPROACH).

By

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Authors carried out a subjective prism sampling in fully stocked patches of Blue pine and Fir areas of Galis forests and worked out the growing stock potential by number and volume for each species (4,5).

To have a further check and confirm the results they subjected the same patches to 100 percent enumeration. The results obtained from this excercise are condensed and compared with earlier findings in the table given below.

TABLE SHOWING STEM AND VOLUME DISTRIBUTION BY DIAMETER CLASSES OBTAINED THROUGH PRISM SAMPLING AND FULL ENUMERATION

D. B. H. class (in.)	Blue pine				Fir			
	No. of stems per acre		Volume cft. per acre		No. of stems per acre		Volume cft. per acre	
	Sampling	Full enumeration	Sampling	Full enumeration	Sampling	Full enumeration	Sampling	Full enumeration
8—11 ..	135.2	43.0	1457	480	163.2	58.3	2611	710
12—15 ..	90.7	57.0	2578	1672	86.2	52.8	3275	1804
16—19 ..	40.9	39.1	2158	2060	47.2	39.9	3115	2469
20—23 ..	22.2	33.2	1864	2741	19.7	20.6	2009	1951
24—27 ..	8.9	16.6	1033	1979	10.2	10.7	1489	1503
28—31 ..	4.9	9.3	792	1549	3.7	7.3	740	1367
32 and over ..	0.5	3.1	126	747	1.1	1.5	287	371
Total				11,228	331.3	191.1	13,526	10,175
Deviation from prism sampling.				+12.2				—24.7

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The data tabulated above bring out the following points:—

(*i*) In case of data obtained in prism sampling the number of stems when plotted against d. b. h. yield an inverse 'J' shaped curve (Figs. 1 and 2). This is a characteristics of a normal irregular forest.

(*ii*) Stem distribution in both the cases follow the same trend above 18" d. b. h. However, in case of full enumeration it shows an excess throughout the range over the former. In diameter classes below 18" the full enumeration data exhibits deficiency in comparison to prism sampling distribution.

(*iii*) The total volume of the growing stock per acre does not differ much in both the cases. The deviation in Blue pine and Fir in case of full enumeration is +12.2 percent and —24.7 percent respectively from prism sampling.

Earlier investigations (1,2,3) show that deviations in volume by these two methods vary even more than the above limits.

In prism sampling the probability of sampling any individual is proportional to its size whereas in full enumerations it is equal for all individuals. The effective sample area about a point in prism sampling is flexible dependant on diameter distribution but in 100 percent count it is fixed and restricted. Hence the area effectively utilized at a point for the stock measurement by the two methods would differ.

Owing to poor stocking in these forests large compact fully stocked patches could not be obtained. Thus in this survey the prism plots invariably had bigger areas (0.07 to 0.40 acres) than areas of the plots fully enumerated (0.01 to 0.20 acres). It implies that the point sampling has provided more representative results regarding the distribution and should thus be taken as a standard for comparison.

In the light of the above discussion the following inferences can be drawn:—

(*i*) The growing stock potential per acre of Blue pine and Fir can be taken as 10,000 and 13,500 cubic feet. respectively.

(*ii*) The forests are generally deficit in low diameter classes and in excess in upper diameter classes. The working plan (6) figures also bear out this fact.

(*iii*) Presently the forests are supporting a growing stock about 33 percent of their potential (4, 5).

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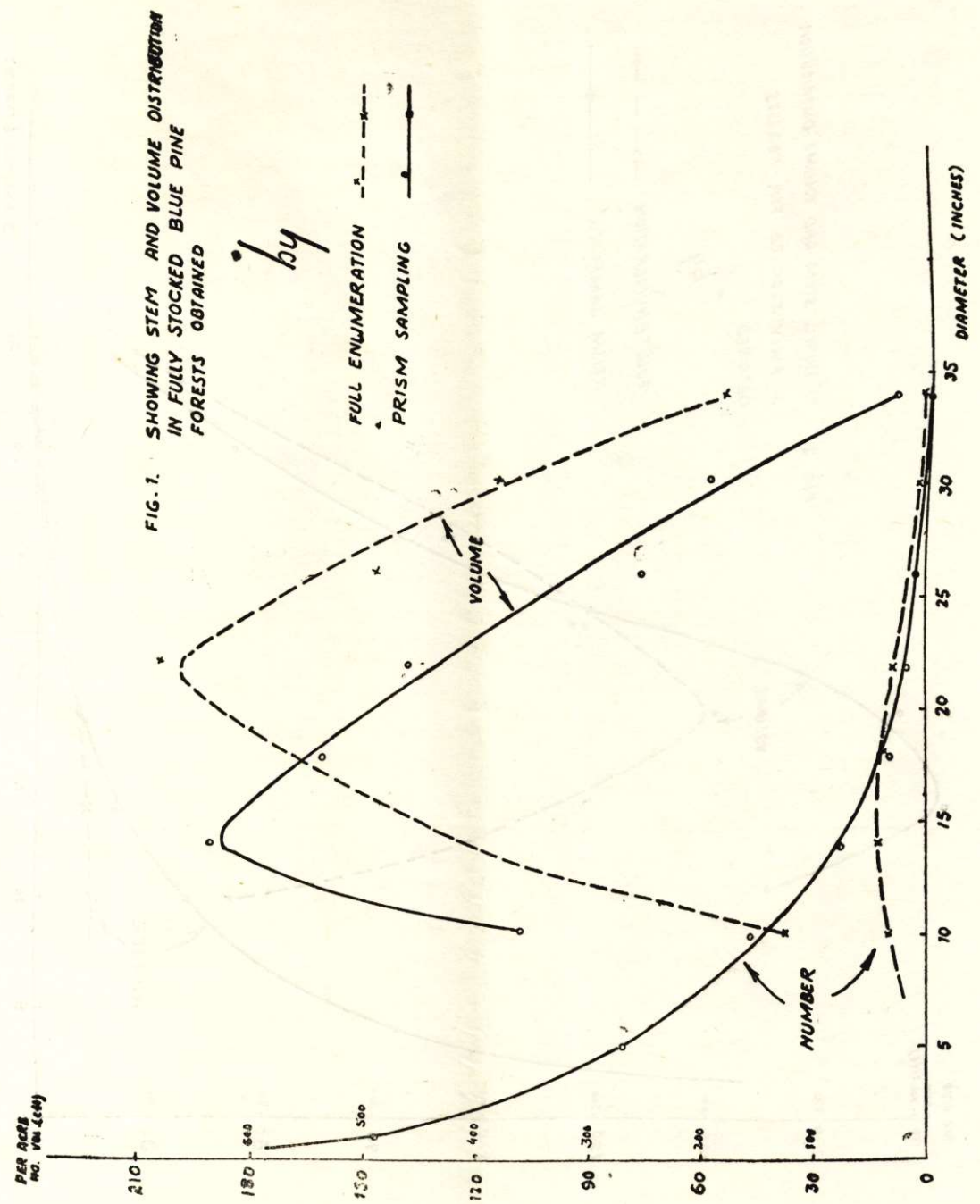
FIG. 1. SHOWING STEM AND VOLUME DISTRIBUTION IN FULLY STOCKED BLUE PINE FORESTS OBTAINED by
FULL ENUMERATION
PRISM SAMPLING
VOLUME
NUMBER
DIAMETER (INCHES)
PER ACRE
NO. VOL (CU)
210
180
150
120
90
60
30
0
5
10
15
20
25
30
35

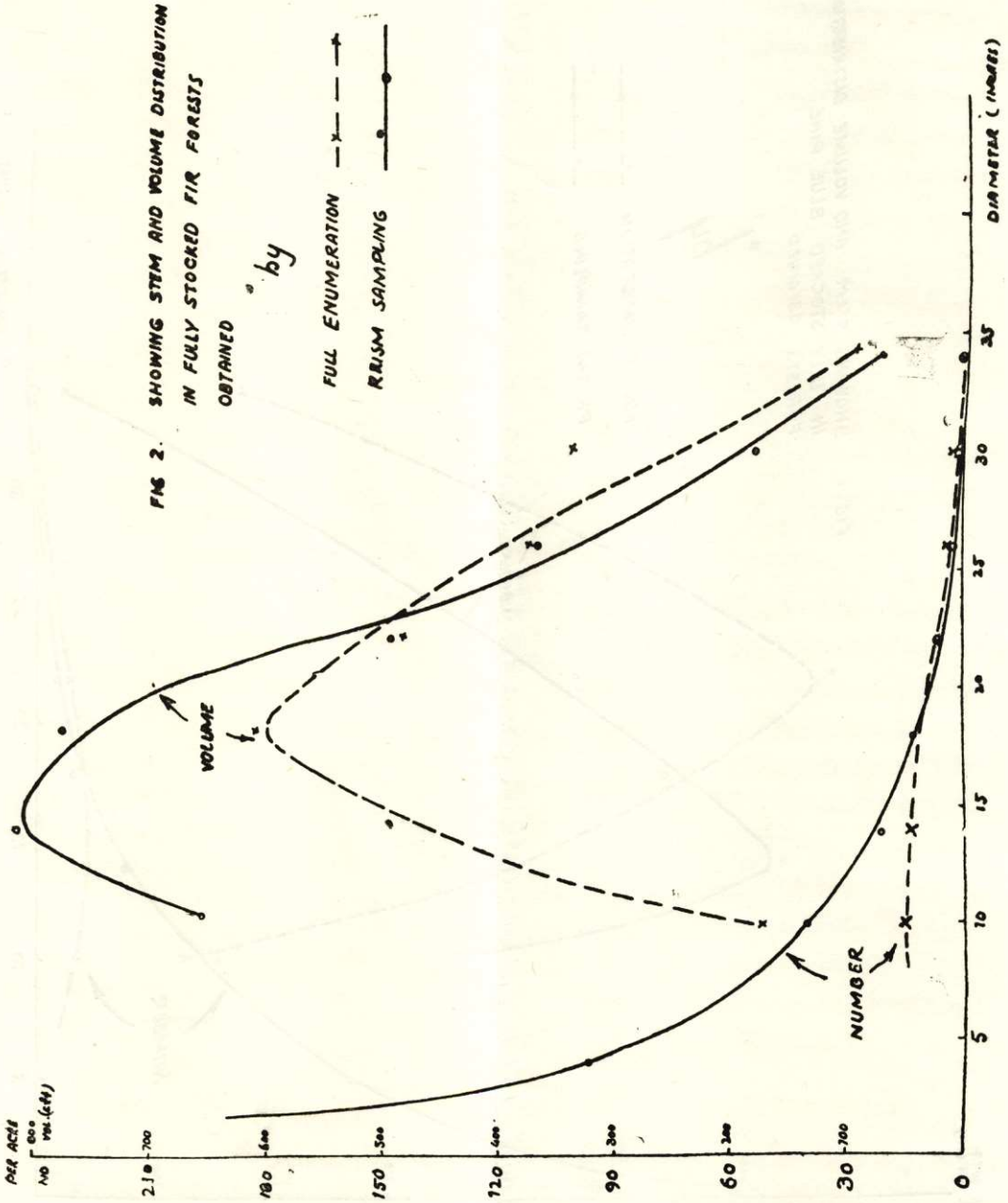
FIG 2. SHOWING STEM AND VOLUME DISTRIBUTION IN FULLY STOCKED FIR FORESTS OBTAINED by
FULL ENUMERATION
REJSM SAMPLING
VOLUME
NUMBER
DIAMETER (INCHES)
PER ACRE
0
5
10
15
20
25
30
35
30
60
90
120
150
180
210
100
200
300
400
500
600
700
800

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