Example of fixed plot area, finding the no of plots, grid preparation and plotting on the stock map.

Let we have a sampling intensity of 2.5 %, the total area of the forest is 100 ha, the sample plot size is 0.1 ha, find out the total no. of sample plot, and also preapare a grid for the forest while the stock map have the scale of 4 inches is equal to 1 mile.

Solution:- Total area of the forest to be studied

Formula=total area of the forest X Sampling intensity

So 100 ha X 2.5%=2.5 ha area

Now total no. plots is equal to total area to be studied/sample plot size

Total no. plot is 2.5 ha/0.1 ha=25 plots

Now for fixed plot area method we have to equal distribute the total no. of plot in the forest area

Formula used is total area of the forest /total no. of plots

So, 100 ha/25 plots=4 ha, mean there should be a plot in each 4 ha of the forest for equal distribution of all the plots in forest systematic sampling. In case of random sampling no need for equal distribution.

Now plot to plot distance

4 ha=40000 meters square as 1 ha =10000 meters square

Now taking the square root of 40000 meter= 200 meters

So plot to plot distance is 200 meters

Now for grid preparation

According to scale

4 inches= 1mile

Scale conversion

4 inches = 1 mile

4 inches = 1609 meters , as 1 mile =1609 meters

1 inch = 1609/4 meters

1 inch = 402.25 meter

As we know that 1 inch=2.54 cm

So 2.54 cm= 402.25 meters

So 1 cm = 402.25/2.54 meters

1 cm= 158.366 meter

Means, that the distance of 1 cm on the map is equal to 158.366 meters on the ground.

Now as we have to move 200 meters apart so 200 meters/158.366 meter=1.26 cm means the distance of 1.26 cm is equal to 200 meters on the ground.

Prepare the grid like 1.26cm by 1.26 cm.

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Example of plotting on Forest stock map, the total plot no. 25 , white circle shows the plot.

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