

Line Sampling for Assessment of Tree Rows and Forest Stretches in Inventories

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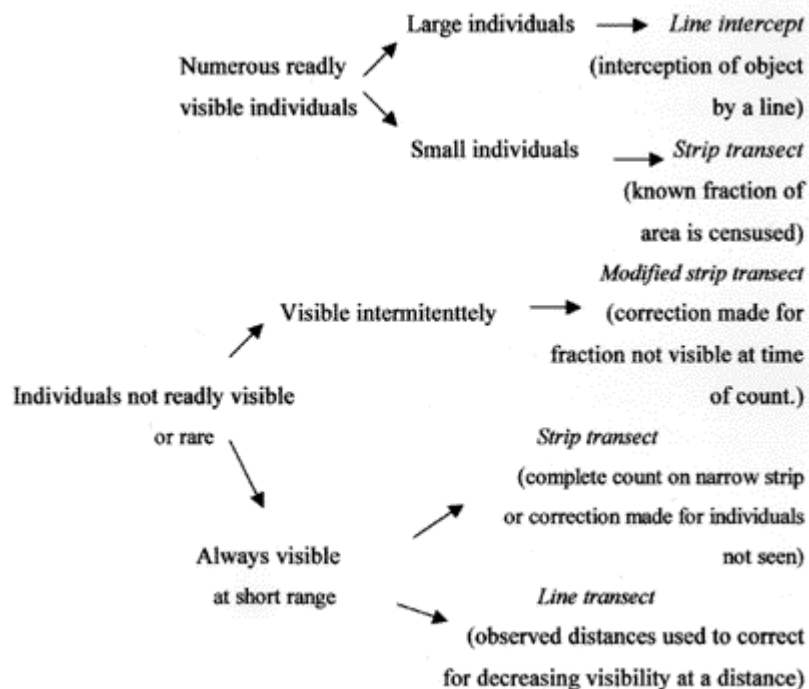
Summary

The four line sampling methods summed up above, allow the unbiased estimation of the three variables: (KLEINN, 1997)

- Density: Number of objects per unit area
- Coverage: proportion of the region covered by the objects
- Length

While, in line intersect sampling, the objects being sampled are considered as lines, on which a needle is defined, the other three methods regard the same objects as two dimensionally (line intercept sampling), and as points (strip transect sampling and line transect sampling).

I think it is worth mentioning the classification of the transect methods made by Eberhardt (1978), in which the detections depend on the searching of the observer.



The line sampling can be, and is, carried out in fields so different, that its application ranges from the inventory of big areas, and the length estimation of road networks, to the estimation of animal abundance in some region. The most common use of each of the four methods is mentioned in the introduction section of each chapter.

When referring to the forestry sector in the specific case of wood Strips, it is worth to mention

the following practical cases, taken from real incidents: they are the French National Forest inventory (CHEVROU, 1973), where the total length of hedges was estimated, and the inventory of windbreaks in Kansas (HANSEN, 1985)

In relation to the methods that can be used for the examination of tree rows or forest Stretches, line intersect sampling and line intercept sampling can be said to bring useful information. "Other forest inventory techniques, like fixed plot, point sampling or strip cruising methods, suit continuous forest cover" (SMITH et al., 1992), and are, therefore, not adequate for this specific case.

As is already mentioned in section (4.5) both transect count methods (strip transect sampling and line transect sampling) described in the dissertation are not recommended for this aim.

As Hansen (1985) pointed out, "the line intersect sampling is considered to be an efficient method for the sampling of linear objects", and therefore seems to be very useful for the estimation of different variables of interest in tree rows, namely area and length. Taking into consideration that in all the bibliography referring to wooded Strips that was found, the used or studied method was the line intersect sampling, and also considering the characteristics of each of the methods here described, we can conclude that the line intersect sampling is the more adequate method for this specific case.