

## Unit Expansion in Sampling

The idea of an expansion factor is that the sample area may be convenient for sampling but makes little sense in reporting. We need a conversion factor to change the sample area to the reporting unit. Common reporting units include:

- acre.
- hectare.
- square mile.
- square kilometer.
- day.
- year.

We usually sample in fractional units of these reporting units. When we are using Probability Proportional to Frequency (PPF) the expansion is the fractional area of the sample area to reporting unit.

Here is an example if we sample a plot that is  $\frac{1}{4}$  of an acre. We assume that the plot is representative of the unsampled trees on the acre. Therefore we multiply the  $\frac{1}{4}$  acre sample by 4 to get the per acre values.

**1 acre**

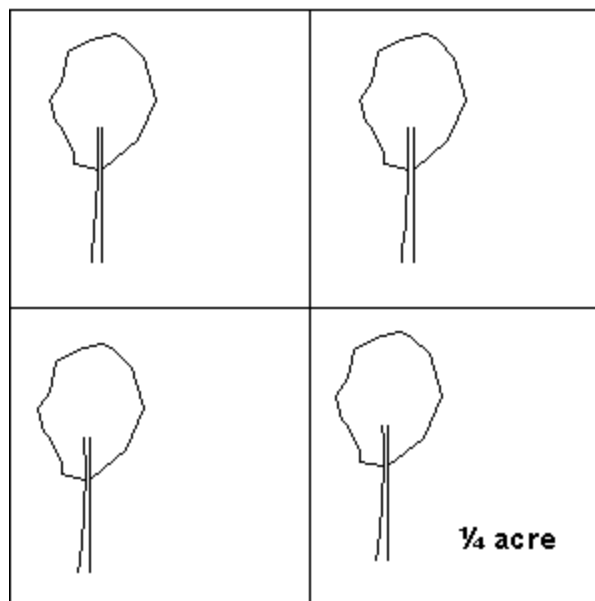


Figure 1. Illustration of the meaning of a fixed area expansion factor



## Natural Resource Biometrics

This concept works the same with other units. For example, we can sample conduct a time sample of 15 minutes. If our reporting unit is a hour the expansion factor is 4 as there are 4 15 minute time periods in 1 hour or 60 minutes.



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