

Natural Resource Biometrics

Sampling Probability

In most situations, we assume that individuals in a population have a equal probability of being sampled. However, sometimes we are more interested in certain parts of the sample than in other parts and want to sample with unequal probabilities. This document is an attempt to describe the relationship between different sample methods and when to choose each.

Probability Proportional to Frequency -- PPF

PPF sampling is the most common sampling method. As the name implies the individuals that are most frequent in the population are sampled at the highest rate. In most cases this is perfectly acceptable.

Common Methods:

- Fixed area plots.

Probability Proportional to Size -- PPS

PPS sampling is one method of sampling with unequal probability. In this type of sampling individuals are included with different probabilities. One way to think of this is that certain individuals are more important than others so we sample the important individuals at a higher rate.

Common Methods:

- Variable point sampling in Forestry.

This type of sampling usually uses an angle gauge (angle gauge, prism, or relascope) to determine the individuals to sample. Husch (2003) (Chapter 14).

This can also be applied as sampling units with unequal probability. Say some unit in a region are more important than others, The probability of a sample unit being selected could be a function of the sample block size. Krebs (1989) (page 232)

Probability Proportional to Prediction -- PPP

PPP is a type of sampling that allow one to estimate a value that may be very expensive or time consuming to measure for a large number of individuals in a population and then validate that estimate.



Natural Resources Biometrics by David R. Larsen is licensed under a [Creative Commons Attribution-ShareAlike 4.0 International License](https://creativecommons.org/licenses/by-sa/4.0/).

Author: Dr. David R. Larsen
Created: October 6, 2013
Last Updated: August 18, 2014

Natural Resource Biometrics

Common Methods:

- Often used in volume estimation in forestry Husch (2003) (pages 216-220)

Literature Cited

Husch, B., T. W. Beers, and J. A. Kershaw, Jr.. 2003. Forest Mensuration. Fourth Edition. John Wiley and Sons, Hoboken, New Jersey. 443 p.

Krebs, C. J. 1998. Ecological Methodology. Harper and Row, Publishers. New York. 620 pp.



Natural Resources Biometrics by David R. Larsen is licensed under a [Creative Commons Attribution-ShareAlike 4.0 International License](https://creativecommons.org/licenses/by-sa/4.0/).

Author: Dr. David R. Larsen
Created: October 6, 2013
Last Updated: August 18, 2014