

A Review of Sampling Methods Available for Environmental Workers

by

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Abstract

This article is a review of existing sampling methodologies used in environmental studies. Modern literature on the subject lacks a non-technical but at the same time quantitative description of sampling methods and the errors that accompany them. This work fills in this gap and provides needed information for those who are faced with the problem of choosing the best sampling design for their study. Along with the basic methods of random sampling, some combined sampling methods are considered and corresponding formulas for their sampling errors are given. In addition, their advantages and disadvantages are also discussed. As an example of a composite sampling, incremental sampling is considered and discussed to greater extent. The formula for its sampling error is derived and analyzed graphically. The arguments are given in favor of its usage in certain environmental settings. Being one of the methods Eco actively uses in its site investigation projects, incremental sampling is given a special attention in this paper. This article is recommended for everybody who want to understand better differences between various sampling methods, specifics of their application, as well as quantitative distinction of the corresponding sampling errors generated in the process of inference, which is an inherent part of all inferential statistical methodology.