

A Comparison of Grid Sampling Designs with Stratified/Nonuniform Probability Sampling Designs for National Park Monitoring (Summary)

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Summary of Full Paper

Grid sampling with a random start is an excellent general-purpose design that assures that all areas of the park are fairly represented. The grid can be intensified in areas of particular interest. Issues and objectives certainly will change over time, but the sampling grid will remain constant and provide a good sample for all questions. Stratified/nonuniform probability sampling designs provide the opportunity for optimization, considering habitat differences, travel time to the plots, administrative requirements and other issues. Stratified designs will provide more precise estimates for important variables, are more flexible and can more easily target rare habitats, but grid designs are simpler and may be better for other variables. Plots can be easily added to stratified designs, but strata changes require the more complex nonuniform probability sampling approach. A grid design can be easily intensified to add plots, but the number of plots is restricted to fit the grid. The full paper is available from the authors or on-line at: www.pwrc.usgs.gov/brd/sampledesignsgw.htm.

We discuss the strengths and weaknesses of each approach and the situations where each would be appropriate, considering the park's objectives. Simple worked examples are provided to illustrate each approach.

- Domains – Estimates for Habitat Types
- Changing Strata and Adding Points in Undersampled Habitats
- Comparison of Sampling Approaches
- Sampling Over Time

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- Unequal Probability Sampling
 - Estimation

References

- Fancy, S. 2000. Guidance for the design of sampling schemes for inventory and monitoring in national parks. On-line at: www.nature.nps.gov/im/monitor/nps_sg.doc, and at www.nature.nps.gov/im/monitor/examples.doc.
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