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Sampling Trees With Probability Nearly Proportional to Biomass

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Volunteer Oral Presentation

It is a truism in the sampling literature that sampling is most efficient when it is conducted with probability proportional to the variable of interest. Variable probability sampling methods have long been applied to trees. The most familiar approach is prism or Bitterlich sampling which samples trees with probability proportional to basal area. Here I introduce a simple practical technique for sampling with probability proportional to an approximate allometric equation for biomass. The technique requires construction of a gauge but the gauge itself is not complex. The efficiency of the method is demonstrated with computer simulations and in a field trial.