Instructions for Using the RGGI U.S. Forest Projects Sequential Sampling Worksheet

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The Sequential Sampling Worksheet is a companion tool to verification guidance found in the RGGI U.S. Forest Projects Offset Protocol (protocol) in Section 10.2.2. Sequential sampling may be conducted using a paired plot comparison or using an unpaired plot comparison. Sequential sampling tools are provided to assist verifiers with the inspection of inventory data for both cases (paired and unpaired).

The worksheets have cells that are automatically calculated and cells that require input from the verifier. The following color scheme is used in the worksheet to clarify where data entry is needed.

Guidance
Project data entered by Project Sponsor
Assumptions and/or data populated automatically

Step 1 – Determine if the verification will be conducted using a paired or unpaired comparison

A paired plot comparison is used where all plots used to calculate the project's inventory estimate are monumented and randomly selected plots by verifiers can be located. In such cases, verifier measurements can be compared directly to the project operator's data. An unpaired plot comparison is used where any of the plots used for verification sampling cannot be relocated. Verifiers must perform a comparison to project operator's data based on a comparison of population estimates from sample data instead of plot to plot.

Project Plot Condition	Guidance Step
All plots monumented and, upon random selection, able to be located by verifier	Go to guidance for 'Paired Plot Comparison'
Plots not monumented as above	Go to guidance for 'Unpaired Plot Comparison'

Paired Plot Comparison

The Paired Plot Comparison worksheet is designed for cases where verifiers can compare their measurements directly to project data. Plots must be located and remeasured by the verifier for this comparison. Refer to the verification guidelines in Section 10.2.2 of the protocol for details in selecting plots for measurement and requirements for verification oversight. If a verifier determines that plots cannot be relocated for a plot to plot comparison, verifiers must use the Unpaired Plot Project worksheet.

The verification review is applied to one stratum at a time, as selected by the verifier. The verifier must insert the number of strata that will be inspected by the verifier (from the verification guidance in Section 10.2.2) and the project acreage by class provided in the worksheet. For projects that are not stratified, the verifier shall treat the worksheet as if there were one stratum. Plots within each selected stratum are randomly selected.

Verifiers must enter data they have measured from the randomly selected plots within the stratum in the same order in which the plots were randomly selected. The worksheet must include both standing live and dead trees, for both Project Sponsor and verifier, and the estimate must include above-ground and below-ground portions of the trees. Verification of the inventory is successful when each stratum selected receives a successful verification ranking, which will be indicated by the worksheet.

For each plot selected by the verifier, the Project Sponsor must provide the plot's CO_2e estimate of standing live and dead trees, including the below ground portion of standing live and dead trees. The verifier will measure the trees on the same plots and calculate the plot's CO_2e using the biomass equations provided by RGGI. The plot estimate is input into the calculation worksheet paired with the Project Sponsor's estimate.

The chart on the worksheet displays the difference between the Project Sponsor's and the verifier's estimate for each plot and a running mean of the difference, calculated with each successive plot. The result of each plot is either 'inconclusive', meaning insufficient data exist to determine a positive outcome for the plot, or 'pass' indicating the verification finding is trending toward a successful outcome. A successful verification finding is achieved when the required number of passing plots in sequence occurs; the column entitled 'Status of Verification' will then indicate 'Verification Satisfied'.

Unpaired Plot Comparison

The Unpaired Plot Comparison worksheet is designed for cases where verifiers cannot compare their measurements directly to project data. Verifiers must randomly select their own plot locations within a stratum polygon chosen for sampling. Refer to the verification guidelines in Section 10.2.2 of the RGGI U.S. Forest Protocol for details in selecting plots for measurement and requirements for verification oversight. The worksheet must include both standing live and dead trees, for both Project Sponsor and verifier, and the estimate must include above-ground and below-ground portions of the trees.

If the project area has been stratified, a separate sequential sampling worksheet (for unpaired data) must be used for each stratum. The verifier shall enter the number of strata that will be verified, the project acreage (using the pull-down menu), the number of sample plots installed by the project operator in the stratum, the stratum's mean, and the stratum's standard deviation. If the project was not stratified, the verifier will enter '1' for the number of strata sampled and complete the remaining inputs as described above.

The result of each plot is either 'inconclusive', meaning insufficient data exist to determine a positive outcome for the plot, or 'pass' indicating the verification finding is trending toward a successful outcome. A successful verification finding is achieved when the required number of passing plots in sequence occurs; the column entitled 'Status of Verification' will then indicate 'Verification Satisfied'.