

Developing Forest Inventory Guidelines to Meet the Requirements of the Chicago Climate Exchange

BY STEPHEN E. FAIRWEATHER

Mason, Bruce and Girard, Inc. (MB&G), under contract to the Woodlands Carbon Company (Woodlands Carbon), is developing forest inventory guidelines and protocols to satisfy the requirements of the Chicago Climate Exchange (CCX). Woodlands Carbon was established by the Oregon Small Woodlands Association (OSWA) in partnership with the American Forest Foundation (AFF) to aggregate and trade sequestered carbon credits from managed forestlands. Participants in the Woodlands Carbon pool must be forest owners enrolled in a CCX-recognized certification program, such as the American Tree Farm System.



Developing inventory guidelines that meet the requirements of the CCX and are also amenable to small properties is challenging. The guidelines must result in baseline inventory estimates that are not only cost-efficient and verifiable, but precise, because the CCX will actually discount estimates of annual carbon sequestration by the minimum of either 20 percent or two times the statistical error of the baseline inventory estimate, where the statistical error is defined by the 90 percent confidence interval. For example, if the 90 percent confidence interval for the inventory is plus or minus eight percent, the discount would be 16 percent.

The challenge in achieving this kind of precision on small properties is that with typical cruising methods, the number of plots required may be cost-prohibitive. For example, depending on the variability in the forest stands on a property, the sample size required to achieve a statistical error of +/- 10 percent at the 90 percent confidence level may be anywhere from 100 to 200 plots. While Woodlands Carbon may be able to offset the cost of cruising for an interested participant, that number of plots will be difficult to establish on an ownership of, say, 50 acres.

MB&G is preparing guidelines both

for the establishment of new inventories and for the qualification of existing inventories. Some of the larger participants in the pool have forest inventories established some time ago, and these have been useful for management planning and valuation purposes. But will they meet the requirements of the CCX? For example, can a confidence interval be developed for the total inventory estimate? If an inventory forester was assigned the task of verifying the current estimate, is there a good chance he or she would agree with it? Has the ownership been delineated by stand, and does every stand have an estimate? Are inventory design and cruising methods well documented? How has the inventory been kept up to date to show changes due to harvesting and growth? Is there sufficient detail in the inventory data to allow the inventory to be grown with the Forest Vegetation Simulator, the only growth model currently approved for use by the CCX?

The inventory guidelines being developed for Woodlands Carbon will be in place by early summer. We expect they will address an array of topics ranging from stand delineation, typing and establishing a stands layer in GIS, to tree observations on a plot. The guidelines will be targeted toward consulting foresters, who we expect will be helping most of the family forest owners with establishing (or improving) their inventory estimates. We expect the guidelines will advocate for the use of stratification as one of the most effective

ways to achieve cost-effectiveness and greater precision. If different ownerships within a pool can be stratified similarly, we may be able to leverage inventory estimates developed for one owner and use them, with some adjustments, for other owners. Stratification, or typing stands by categories of species mix, tree size and stocking, may be one of the most effective tools we can bring to the table.

Forest inventories in the Woodlands Carbon pool will actually be delivered to Forecon, Inc., before they are passed to the CCX. Forecon will determine carbon equivalents in each inventory using their CCX-approved methodology. Woodlands Carbon and MB&G will be responsible for delivering to Forecon updated inventories each year for each landowner in the pool, along with supporting documentation as to inventory establishment and updates.

We believe the consulting forester community will find the inventory guidelines to be flexible enough to accommodate many current practices, yet stringent enough to satisfy the requirements of the CCX. ♦

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