

Proposal to have FVS listed as an accepted quantification tool under the ACR afforestation/reforestation methodology

The Forest Vegetation Simulator (FVS) is the USDA Forest Service's national forest growth and yield model. It is a system of highly integrated analytical tools used throughout the United States by government agencies, industry, educational institutions, private landowners, and others. It uses standard forest inventory data to assess current forest conditions, as well as estimate future forest conditions. It estimates carbon quantities in various pools (such as live trees and dead trees, litter and duff, down dead wood, and wood products). Virtually any management action can be included in a simulation. It is a well-supported model with a helpdesk for users and trainings offered annually.

For those doing carbon analyses, FVS is useful in two ways – it is a powerful forest growth model for making future carbon projections, and it has built-in carbon calculations (quantifying the carbon in various pools based on inventory data). The latter feature allows FVS to be used as a carbon inventory compiler at the stand to landscape level. FVS is currently being used to simulate stand development and management for projects submitted under the American Carbon Registry (ACR) afforestation/reforestation methodology, however this methodology currently does not accept the FVS quantification of carbon so additional calculations are required. Many of the calculation methods and assumptions in “Methodology for Afforestation and Reforestation of Degraded Land, Version 1.0, March 2011” are either identical or very similar to the carbon calculations in FVS. We propose adding FVS as an accepted quantification tool under this methodology.

Blending FVS output into the current methodology is cumbersome and redundant, and the likelihood of computational errors is high. It would be more efficient and less error-prone to allow the FVS carbon quantification to be used directly with the methodology. This approach could also make these analyses more easily replicable and consistent across projects. An applicant could do two FVS simulations for the *ex ante* calculations – one simulation for the baseline and one for the project scenario – to estimate carbon stock changes over time under both scenarios and use this information with minimal manipulation to meet the methodology standards. A third simulation could be done for the *ex post* calculations, where FVS is used with field measurement data to estimate carbon solely for the year in which the data were collected.