F V S   N e w s l e t t e r

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Forest Vegetation Simulator

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Update

In This Issue

Highlights

Welcome to the twenty-third issue of the Forest Vegetation Simulator (FVS) Newsletter. In this newsletter we describe the major updates since our last FVS version release dated September 2022.

Our goal is to keep FVS users up-to-date on recent changes and new additions to the software. For more information on FVS, or to find past issues of our Newsletters or Bulletins, please visit our website.

Feel free to let us know how we are doing. You may email us with any advice, ideas, or other input that you think will help.

Release Info

Version: 2023.1

Revision: 20230106

Forest Vegetation Simulator (FVS) Conference Registration is Now Open

March 7-9, 2023 Fort Collins, CO

The 2023 Forest Vegetation Simulator Conference is the sixth in a series of conferences dating back to 1997. The conference is dedicated to bringing together developers and users of the Forest Vegetation Simulator and has an overall goal of providing the medium to share our experiences, our triumphs, and our lessons learned.

The objective of the conference is to synthesize the knowledge gained from over forty-five years of using the Forest Vegetation Simulator for project-level planning, landscape analysis, forest health assessments, forest plan revisions, inventory updates, habitat evaluation, and all other purposes. A second objective is to improve modeling technology through sharing ideas and recent developments in software related to the Forest Vegetation Simulator, and to report on the calibration and validation of its components.

For further information, or to register, please see the [FVS Conference webpage](#) or contact Erin Smith-Mateja, Conference Coordinator at (202) 579-2926 or [SM.FS.fvs-support@usda.gov](#).

Forest Vegetation Simulator (FVS) Instructor-Led Training Dates and Registration

Registration is **open** for instructor-led Forest Vegetation Simulator (FVS) training for fiscal year (FY) 2023. Courses are tuition free.

The objective of the training is to introduce the concepts of vegetation growth and yield modeling, specifically, the use of FVS and its extensions. Training will emphasize the capabilities of FVS in simulating forest management and impacts on forest structure, growth, fire behavior, and carbon accounting.

2023 Forest Vegetation Simulator Training Schedule

Date	Location	Hosted By
April 3 – 6, 2023	Missoula, MT	Region 1
April 18 – 20, 2023	Juneau, AK	Region 10
May 8 – 11, 2023	Nelsonville, OH	Region 9

There is space for 25-30 students in each session. Registration priority will be given to Forest Service and National Advanced Silviculture Program (NASP) applicants. A waiting list is maintained for all others, as well as any Forest Service employees in excess of the student limit. Early registration is encouraged. Please register no later than six weeks prior to the start date. After that point, available spaces will be filled from the waitlist.

Please carefully complete the [electronic registration form](#) to register for 2022-2023 FVS Training.

Approximately six weeks before the course, you will receive an e-mail asking you to confirm that you still plan to attend. If you do not confirm, we will assume that you are no longer planning to attend, and we will fill your reserved spot with someone on the waiting list.

If for some reason you need to cancel, have questions regarding this registration form, or are unable to complete registration, please contact the FVS Staff (e-mail: [sm.fs.fvs-support@usda.gov](#)).

For other training opportunities and resources, please visit our [FVS Training webpage](#) for videos, recorded webinars and more.

Base FVS Updates

This section highlights the main updates to the base FVS code.

Available Volume Equation Options Expanded

The list of available volume equations has been expanded to better match the equation set from the [National Volume Estimator Library](#). Users in Forest Service Region 4, Region 5, and Region 6 [(Variants BM, CA, CI, EC, NC, PN, OC, OP, SO, TT, UT, WC, WS)](#) may notice these additions when selecting non-default volume equations.

SN Variant Now Accepts Top Diameter User Inputs when using BFVOLUME or VOLUME Keywords

Southern (SN) Variant users now have the ability to define minimum top diameter and stump heights for individual species or groups when using the BFVOLUME or VOLUME keywords.

Improved Height Growth Estimates for Norway Spruce in LS and NE Variants

The height growth prediction for Norway spruce (*Picea abies*) has been modified to use site index curve [Wilde *et al.* 1965 (Noreway spruce plantations, Wisconsin)](#) within the Lake States (LS) and Northeast (NE) Variants. This modification allows FVS to predict height growth more accurately for Norway spruce.

Improved Mathematical Logic in KT Variant

In specific instances, if an input dataset contained tree entry records consisting entirely of identical diameters and heights, the calibration function would fail as there would be no differences between records to be calculated. This logic has been improved to allow for sets of matching diameter and height records to be entered when using the Kootenai, Kaniksu, and Tally Lake (KooKanTL) (KT) Variant.

Corrected Output Database Handling

If a fire was scheduled in a run, and the user only requested the fire and mortality output, output was being written up to the year of the planned fire only. This has been corrected and users will receive outputs for the entire simulation length when requesting only the fire and mortality output.

Corrected 'Before Thin CCF' Value Reporting

An issue was noted that the database was reporting the after thinning crown competition factor (CCF) for both the 'before thin CCF' and 'after thin CCF' variables. Users will now receive the correct value for the 'before thin CCF' variable.

Modification to Crown Ratio Logic for Species in AK Variant and Redwood and Giant Sequoia in CA, NC, OC, OP, PN, WC, and WS Variants

Point quadratic mean diameter (QMD) used in the crown ratio equation for all species in the AK variant as well as for redwood (*Sequoia sempervirens*) and giant sequoia (*Sequoiadendron giganteum*) in CA, NC, OC, OP, PN, WC, and WS variants is constrained to a minimum of 1 inch. This modification prevents a division by zero error that occurs when there are no live trees in a stand at the time of inventory. In addition, this modification helps prevent unrealistically large crown ratio estimates from being predicted for trees residing on inventory points with a QMD of less than 1 inch. Users can expect to see improved crown ratio estimates for the aforementioned

species residing on inventory points with QMD less than 1 inch.

Modification to Height Dubbing Logic of Dead Tree Records in AK Variant

Total tree height predictions for dead alder (*Alnus*), willow (*salix*), Scouler's willow (*Salix scouleriana*), and other hardwood were not being scaled correctly resulting in overpredictions of height. Total tree height predictions are now scaled correctly for dead tree records of these species. Users can expect to see improved total height estimates for snag records of these species.

FVS Interface Updates

This section highlights the updates and improvements made to the FVS interface which are intended to provide an improved user experience.

Summary Table Options Added

When using the keyword window under the database extension, users will now be able to select between the FVS_Summary and FVS_Summary2 when adding the "Summary" keyword to their runs. Previously, this keyword only produced the FVS_Summary output without an option for FVS_Summary2.

Improved Dialog Window when Loading KCP files

When loading .kcp files under the Components > Editor menu the 'open file' dialog box has been modified so the default behavior is to show file types of .kcp and .RData. This filtering will allow users to quickly find and select the desired file to upload. The user still has the option to change the filtering type to 'All Files (*.*)'.

Other User Experience Improvements

Users were experiencing FVS terminating with a screen 'grey out' when clicking the 'Edit' button while a 'PLANT/NATURAL' activity was selected/highlighted or when clicking the 'Change to freeform' button when a Stand ID or Group ID is selected/highlighted in the Run Contents window. This has been corrected and users will no longer experience this issue when these combinations of actions are performed.

Regional Coordinators (for information specific to your geographic area):

Region	Name	Phone Number	Email Address
1 - Northern	Natalie Morgan	406-329-3119	natalie.a.morgan@usda.gov
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