FVS Newsletter

Forest Vegetation Simulator

FVS

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Update

In This Issue

Highlights

Welcome to the twenty-first issue of the Forest Vegetation Simulator (FVS) Newsletter. In this newsletter we describe the major updates since our last FVS version release dated March 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: 4004

Revision: 20220701

National-Level Training Videos

The FVS staff has created training videos for each of the modules and associated individual exercises that are contained within the FVSTrainingGuide.pdf file included with the installation package. By default, this training guide is installed to C:\FVS\Training Guides. Users can now view these videos on our [Self-Paced Training](#) webpage and follow along using this step-by step guide.

Base FVS Updates

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

Canadian FVS Variants

Two Canadian variants are now available. In sporadic development over the last 20 years, and thanks to recent public and private funding, the British Columbia and Ontario variants – FVS-BC and FVS-ON – are now part of the FVS family of geographic variants. Both Canadian variants use metric units for input, output, keywords, and all other places (such as the Event Monitor) where units are used, and are localized to the species and growing conditions of each region. FVS-BC and FVS-ON are available through the open-fvs repository (https://sourceforge.net/projects/open-fvs/) and can be compiled using the same methods and tools used to create other FVS variants. Both variants are undergoing calibration and validation testing and will be further improved and updated as those tests are carried out. A mailing list for periodic updates on the Canadian variants has also been created. You can subscribe through https://essa.com/explore-essa/tools/fvsprognosis/. Please contact Don Robinson at ESSA Technologies (drobinson@essa.com) for additional information.

Improvement to Forest Location Code Logic for Volume Reporting

Volumes were not being reported when modeling stands where the location code was set or mapped to 800 using the Klamath Mountains - Northern California (NC), ORGANON Pacific Northwest (OP), and Pacific Northwest Coast (PN) variants. Internal mapping logic has been improved in the volume equation subroutines and volumes are now being generated for the affected location codes.

Improvement to Default Forest Location Code Logic

When running the Southern (SN) variant without Region, Forest and District codes, or Location codes provided as input, non-default volume equations were being used even though the correct default location code was being reported in the output. The default assignment of location code process has been updated to enable proper assignment of volume equations.

Addition of Height Checking Logic to Prevent Volume Calculation Errors

Tree record input data which included a height and a height-to-topkil,l with height being of equal or lesser value, would result in inaccurate volume calculations for that record. An additional check was added to ensure height is greater than height-to-topkill (if recorded) for a tree record. Otherwise, the height-to-topkill is assumed to be correct and the total height will be dubbed using the variant and species-specific height dubbing calculations, thus, allowing for proper volume calculations.

Statistics Table Updates When Using a Single Plot

The statistics table generation logic was updated to allow for the creation and population of the FVS_Stats_Species table when using input data with a single plot. Please note, the FVS_Stats_Stand output cannot be generated when a stand contains only a single plot.

Climate Extension Error Message Updates

Error and warning messages generated by the Climate extension have been updated and reformatted to be identifiable by the FVS interface error scan once a run has been completed.

FVS Interface Updates

This section highlights the updates and improvements made to the FVS interface which are intended to provide a more refined user experience.

Addition of Automated Required Groups to Input Tables

FVS relies "All_Stands" and "All_Plots" grouping codes being present in the Groups column of the FVS_StandInit and FVS_PlotInit tables respectively. Without these grouping codes, FVS will not run properly. FVS now checks for the presence of these grouping codes in the

appropriate tables of a users's input database and will add the appropriate grouping codes, if missing.

Improvements to Help Screen Loading Times

The FVS help file was previously built the initial time a user accessed the Help page, resulting in noticeable wait times. The FVS help file is now pre-built at time of FVS installation and will be immediately accessible to users without additional wait times.

Increased Graphics Labeling Abilities

Graphic labeling abilities have been upgraded to include support for the inclusion of mathematical symbols and expressions. For more information on how to use these new features, please see the upgraded 'Help' file within FVS.

Fixed Conflict with Pre-Existing Alternative Versions of R

In certain circumstances, users who had an existing version of R previously installed on their machine could encounter loading issues when switching projects in FVS. FVS has been reconfigured to only call the R version that is automatically installed with FVS, which allows for proper project switching.

Improvement to Climate Table Functionality

This release boasts numerous improvements to the user experience when working with the Climate extension and FVS_Climattrs tables.

- A confirmation message has been added to notify the user the climate data has been successfully uploaded. This message also includes information regarding the number of stands and climate scenarios uploaded.
- Logic improvements were done to allow FVS to operate properly when loading climate attribute data within a project containing previously loaded climate data
- Users now have the option to delete an existing FVS_Climattrs table from their project
- Updates have been added to the climate data sourcing logic. Existing climate data in the FVS_Data.db (i.e., the FVS_ClimAttrs table) will be used if found. Otherwise, FVS will verify the presence of a climate .csv file as specified within the Climate keyword set. If no climate data has been loaded to either location, a warning will be displayed, and the run will be halted.
- Stand_ID verification logic has been added to ensure climate data for the target stand exists within the provided data. In the event the Stand_ID is not in the provided climate data that has been uploaded to the FVS_Data.db, an alert will be displayed. If the climate data is a referenced .csv file, FVS will display an error at the end of the run and the information will be included in the .out file
- The displayed warnings associated with the two above verification updates have been made persistent and require user interaction to dismiss

Loading Logic Improvements in View Outputs

In the View Outputs page, if a user selected a 'Database table to consider' prior to the page fully loading, the selection of tables and their associated variables kept resetting in a continuous pattern, requiring the program to be closed. The View Output page loading routines have been improved to allow for proper loading without impediments.

Transitioning time when navigating from the 'Explore' tab to the 'Load' tab has also been improved by eliminating an unnecessary reload of the 'Load' tab.

Tree Spacing when Using Thin from Above / Below

The tree spacing calculations were not functioning within the 'Thin from above' or 'Thin from below' management components. The logic for these tools has been improved to allow for the use of the tree spacing calculations.

Root Disease Keyword Functionality

The manual addition of certain root disease keywords (BBOUT, RRDOUT) was resulting in the program freezing. Additionally, several of the modifiers listed under the 'Modify western root disease model' were not properly recognized and processed within the system. Root disease keyword logic has been improved, allowing FVS to process these keywords effectively.

Extension Keyword Logic Improvements

When components from an extension were added to an individual stand ID, an 'INVALID KEYWORD' error could be encountered during the run. This was due to the necessary keywords to initiate and end extension logic being omitted. The keyword extension logic has been revised to allow for proper keyword annotation.

Regional coordinators for information specific to your geographic area

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