

Release Notice

NEXUS 2.0

November 2004

1. Introduction

NEXUS 2.0 is a PC-based program that integrates existing models of surface and crown fire behavior to permit seamless predictions of surface-through-crown fire behavior and to estimate relative crown fire potential in different stands. It is a flexible system that produces interactive tables and graphs. Outputs can be inserted directly in other documents or imported to statistics or graphing programs for further analysis.

NEXUS 2.0 is available at www.fire.org.

The original NEXUS was an Excel spreadsheet. The updated version is a stand-alone computer program with similar modeling capabilities and a much improved user interface.

2. Changes from the original NEXUS spreadsheet

The original NEXUS spreadsheet was first made available in 1998. Changes from that version to NEXUS 2.0 include:

- **Fuel models** -- NEXUS 2.0 uses both the original set of 13 standard fire behavior fuel models as well as a comprehensive new set of standard fuel models recently developed by Scott and Burgan (in press). In addition to the printed fuel model documentation, Scott and Burgan have developed a "help file" to facilitate transition to the new fuel model set. Both documents will be available for download here when available.

We also support user-defined custom fuel models. Fuel model selection is now done with a custom dialog box that displays a representative photo of each fuel model, including custom fuel models if the user supplies a digital image.

- **Simulation types** -- NEXUS now supports shrub-canopy fire simulations in addition to simple surface fire and conifer crown fire simulations.
- **Dead fuel moisture** -- The FBA tables for estimating fine dead fuel moisture for fire behavior prediction are now included in NEXUS as an optional "wizard".
- **Output Table and Chart** -- The former output table and chart always displayed the chosen output over a range of open wind speed. The new table can show the output over a wide range of input variables. Also, a second input variable, called a "page variable" can be specified -- the different values of the page variable update the whole table or chart.
- **Crown Fire Hazard Chart** -- The "page input" variable is used here; you can judge the effect of changes in an input variable by viewing the instantly updated changes on the

chart. Toggle switches allow the plotting of the Torching and Crowning Indices and Final Spread Rate on the chart.

- **Fire Characteristics Chart** -- We present a fire characteristics chart with user-selectable reference lines (flame length or fireline intensity). Threshold values for crown fire initiation and sustained crown fire spread are plotted; these lines divide the chart into regions of surface, passive, active and conditional crown fire types. Fire characteristics are plotted over a range of 20-ft windspeeds.
- **Screen Capture** -- All charts can be captured in .jpg or .png (portable network graphics) format for pasting into other documents.
- **Save Table Data** -- Data in the Table can be saved to a text file for importing to another program for graphing or analysis.
- **Dynamic fuel models** -- NEXUS 2.0 supports the new dynamic fuel model format for transferring live herbaceous load to dead as a function of live herbaceous moisture content.
- **Batch mode** -- NEXUS 2.0 can be used in batch mode to generate tens of thousands of runs in seconds.

3. System Requirements

Operating System	Windows 2000 ® Windows NT ® Windows XP ® Windows Me ® Windows 98 ® Windows 95 ®
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Memory	32 Mb (10 Mb free)
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Storage	50 Mb
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Display	Minimum 800 x 600 pixels, 256 color Recommend 1024 x 768 pixels, 64K (16-bit) color
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Help	The NEXUS 2.0 online help is a compiled help file (.chm), which can be displayed on any computer with a Windows operating system.
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License	The license requires that a postcard depicting a scene of
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your local area sent to:
Systems for Environmental Management
P.O. Box 8868
Missoula, MT 59801

Data Requirements	NEXUS 2.0 data requirements are described in the online help file.
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4. Download

NEXUS 2.0 is available at www.fire.org. First click on the **NEXUS** page, then click on the **Download** link. From the **Download** page you can retrieve the full NEXUS 2.0 installation program NEXUS2.exe, a self-extracting installation program for Windows® operating systems. You may download the installation file to any location on your computer, but you must remember its location for installation.

5. Installation

5.1 NEXUS 2.0 Installation

Once you have downloaded the installation program NEXUS2.exe, execute it by

- clicking Start and Run, browse to locate the program, and press OK, or
- using Windows Explorer® to locate NEXUS2.exe and double click on its name or icon.

When installation is complete, a NEXUS2 icon should appear on your desktop; click the icon to start NEXUS 2.0. Also, NEXUS 2.0 links are added to the Start Menu. Select **Start | NEXUS2 | NEXUSNS** to start NEXUS 2.0.

5.2 Uninstalling

The NEXUS 2.0 installation program NEXUS2.exe uses Wise® installer to ensure NEXUS 2.0 is correctly registered with your Windows® operating system. The only correct way to uninstall NEXUS 2.0 is via the Add/Remove Programs dialog:

- click the My Computer icon,
- click the Control Panel icon,
- click the Add/Remove Programs icon, and
- locate the NEXUS 2.0 entry in the program list and click Remove (Windows 2000 and XP) or Add/Remove (Win9x).

The uninstaller only removes files that were originally put there by the installation program. Any files you created or saved using NEXUS 2.0 are not removed by the uninstaller. If you wish to remove these files, we recommend using Windows Explorer ®.

6. Support

The following sources of technical support and training are available.

6.1 Online Help

The NEXUS 2.0 online help file covers all aspects of the program operation. It is available only within the program itself. To access the online help file, open NEXUS 2.0, then open the help file (**Help | Contents and Index**).

6.2 Self-study Tutorials

A series of self study tutorials covers operational aspects of NEXUS 2.0 usage. The tutorials are located in the online help file. To access the tutorials, open NEXUS 2.0, then open the help file (**Help | Contents and Index**), then choose “Tutorials and Workshops”.

6.3 Self-study Workshops

Included within the NEXUS 2.0 online help file are a series of self study “Workshops” designed to help the user teach himself to use NEXUS effectively. Each workshop consists of a Q&A, Quiz (with answers), and exercises.

6.4 US Government National Support

Support for US federal and state agency personnel is provided by the USDA Forest Service Fire and Aviation Management Help Desk via phone at **(800) 253-5559** and via e-mail at fire_help@dms.nwcg.gov.