

Consume 3.0 Tutorial

INSTRUCTOR'S GUIDE

To download and/or view the Consume 3.0 tutorial, please visit the tutorial webpage at:

http://www.fs.fed.us/pnw/fera/products/software_tutorials.html

The Consume 3.0 tutorial is intended to be viewed individually by students online or downloaded to a personal computer and viewed offline. You may wish to incorporate the tutorial as a pre-course assignment or in-class exercise. A student workbook is available on the Consume tutorial webpage; the workbook contains an introduction to Consume 3.0 followed by each page of the tutorial with space provided for student notes.

A basic Microsoft PowerPoint® presentation with screen-by-screen instructions on how to use Consume 3.0 is also available for downloading. To effectively use the presentation, you will need to fully understand how to use the program by reviewing the Consume tutorial and by using Consume 3.0 to become familiar with its many applications. The Consume 3.0 User's Guide is also available to you for your reference. If you choose to use the presentation, you may wish to tailor it with examples applicable to your region.

A note on installing Consume 3.0:

Installation instructions are provided in this Instructor's Guide and on the Consume webpage:

<http://www.fs.fed.us/pnw/fera/products/consume.html>

Consume was programmed in Java to allow it to be used in a batch mode on a variety of operation systems. The actual software application (with a full user interface) requires MS Windows 2000 or XP and may require one or two updates.

Your students must have administrative privileges on their computers to install Consume 3.0 and any required updates to their Windows 2000 or XP operating systems.

If you plan to use Consume 3.0 in a computer lab or workshop in which students bring their personal laptops, make sure that every computer has the program fully installed prior to the beginning of your in-class exercise.

INTRODUCTION TO CONSUME 3.0

Fire is a natural process in many ecosystems, and managers are increasingly expected to use fire as a landscape-level fuel treatment to improve ecosystem health and reduce the likelihood of catastrophic fires. Fuel consumption is a key variable in the modeling of fire effects. It is one of the most critical factors in understanding when and how fire should be applied to meet site and landscape objectives, and assessing wildland fire consequences.

Although a tremendous amount of research has been accomplished thus far in the development of fuel consumption models in the United States, until recently, little effort was directed to non-forested fuel types such as chaparral, sage, and palmetto/galberry shrublands in the West and South, pinyon juniper savannas in the Southwest, boreal forest types in Alaska, and hardwood forests in the East and South. In addition, relatively little work has been devoted to characterize long-duration fuel consumption from the burning of large, rotten logs, stumps or deep concentrations of organic matter such as duff or moss, which are often prevalent in forested areas where natural fire has been eliminated for the past 80 to 100 years. Fire is becoming an important landscape-level fuel treatment tool. In order for managers to develop improved wildland fire plans that meet specific land management objectives, research is required to better characterize both the fuel loading and fuel consumed during wildland fire in forested and nonforested fuel types throughout the United States.

Fuel Consumption Research

Between 1994 and 2003, FERA inventoried and burned 106 sites in the United States including marsh grass, tallgrass prairie, sagebrush shrublands, chaparral, palmetto-galberry shrublands, Ponderosa pine/mixed conifer forests, black and white spruce/hardwood forests, longleaf pine forests, southeastern sand hill scrub, and southeastern hardwood and pine forests.

Data from all burns were compiled and analyzed, and fuel consumption models were constructed for the following fuelbed types: black and white spruce/hardwoods, longleaf and loblolly pine, ponderosa pine, nonwoody vegetation (including marshgrass and tall grass prairie), and sagebrush.

Overview of Consume 3.0

Consume v 3.0, released in the fall of 2005, reflects our improved understanding of fuel consumption and emissions in wildland fire throughout major fuel types in the United States. Consume v 3.0 is a decision-making tool, designed to assist resource managers in planning for prescribed fire, wildland fire for use, and wildfire. Consume predicts fuel consumption, pollutant emissions, and heat release based on a number of factors including fuel loadings, fuel moisture and other site characteristics. Using these predictions, resource managers can determine when and where to conduct a prescribed burn or plan for a wildland fire to achieve desired objectives, while reducing the impact on other resources.

For more information, contact:

Roger Ottmar, Research Forester
Fire and Environmental Applications Team
USFS - PNW Research Station
Pacific Wildland Fire Sciences Laboratory
400 North 34th Street, Suite 201
Seattle, Washington 98103

Instructions for Installing Consume 3.0 Software

System Requirements

You can install **Consume** on a personal computer with the following system:

- 30 MB of available disk space.
- Microsoft Windows® 2000 or XP operating systems.
- Optional requirement: **Consume** links to Microsoft Excel for viewing 1000-hr fuel moisture graphs. If you do not have Excel on your computer, **Consume** will run but will not support this graphics feature.

Administrative Privileges

If you do not already have administrative privileges on your computer, you must obtain them before installing **Consume 3.0**. To check if you have administrative privileges, click on the clock at the bottom right of your desktop. If you are allowed to change the date and time on your computer, you already have administrative privileges. If you do not, please contact your system administrator for assistance.

Downloading and Installing Consume 3.0

Consume 3.0 has a flexible design and can be run in Microsoft® Windows or in a simple batch mode for use in other operating systems. The Consume calculator engine was written in Java to allow it to be used in batch mode. The Java implementation for the Windows interface was done using Microsoft® J#.Net. J# requires an extra run-time environment, called the Visual J#.NET Redistributable 1.1. In order to run **Consume** in Microsoft Windows®, it is necessary to have both Microsoft Framework .NET v 1.1 (or .Net v 2.0) and Visual J#.NET installed on your computer. Most computers will already have the Microsoft Framework .NET v1.1 (or .NET v 2.0), but Visual J#.NET will need to be installed on most computers.

The best way to check if you have the necessary Microsoft Windows updates is to try installing **Consume 3.0**. You will receive detailed error messages if you need to install Microsoft Framework.NET version 1.1 and/or Visual J# .NET. To download and install the necessary updates, you may either follow the on-screen instructions provided by Microsoft® or the instructions provided later in this installation guide.

To Download and Install Consume 3.0:

- 1) Go to the Consume website:
<http://www.fs.fed.us/pnw/fera/products/consume.html> .
- 2) Under the **Consume 3.0** software download, double-click **Setup.msi**.
- 3) From the File Download dialog box, click **Save to Disk**. Depending on your internet connection speed, the file download may take a few minutes.
- 4) Once the download is complete, double-click on the file **Setup.msi** to launch the installation process.
- 5) Follow the on-screen instructions to install **Consume 3.0**.

You will receive detailed error messages if you need to install Microsoft

Framework.NET version 1.1 and/or Visual J# .NET. To download and install the necessary updates, you may either follow the on-screen instructions provided by Microsoft® or the following sections of this User's Guide.

Installing Microsoft® Framework .NET version 1.1 Redistributable Package:

Most Microsoft® Windows 2000 and XP operating systems should have a working version of Microsoft.NET. Newer computers will have a working version of .NET v 2.0. If your computer does *not* have Microsoft.NET (v.1.1 or 2.0), follow these installation instructions:

- 1) Connect to the internet (a high speed connection is recommended).
- 2) Go to: <http://www.microsoft.com/downloads>
- 3) Under "Popular Downloads," click on **.NET Framework Version 1.1 Redistributable Package**. If you cannot locate the link under Popular Downloads, type ".NET Framework Version 1.1" under "Search" and then click on **.NET Framework Version 1.1 Redistributable Package** in the search results.
- 4) Click **Download**.
- 5) In the File Download dialog box, click **Save to Disk**.
- 6) Once the download is complete, double-click on the file dotnetfx.exe to launch the installation process.
- 7) Follow the on-screen instructions to complete the installation.

If your operating system already has Microsoft Framework .NET v1.1 or v 2.0 installed, you will get an error message during this installation process. Cancel this installation and proceed to Installing Microsoft® J#.Net Redistributable Package version 1.1.

Installing Visual J#.NET Redistributable Package 1.1:

Most Microsoft® Windows 2000 and XP operating systems will *not* have Visual J#.NET. If your computer does *not* have Visual J#.Net v 1.1, follow these installation instructions:

- 1) Connect to the internet (a high speed connection is recommended).
- 2) Go to: <http://msdn.microsoft.com/vjsharp/downloads/howtoget/default.aspx>
- 3) Click **Download Microsoft® Visual J#.NET Redistributable Package 1.1**.
- 4) Click the **Download** button.
- 5) In the File Download dialog box, click **Save to Disk**.
- 6) Once the download is complete, double-click on the file **vjredist.exe** to launch the installation process.
- 7) Follow the on-screen instructions to complete the installation.

If your operating system already has Microsoft Visual J#.NET 1.1, you will get an error message during the installation process. Cancel this installation and proceed to the Consume 3.0 download and installation.

For further information about the Consume 3.0 download, contact:

Susan Prichard, Research Scientist and Consume Manager
(509) 996-2408
sprich@u.washington.edu

Land Management Tool Training Package
Fire and Environmental Applications Team
USFS - PNW Research Station
Pacific Wildland Fire Sciences Laboratory
400 North 34th Street, Suite 201
Seattle, Washington 98103