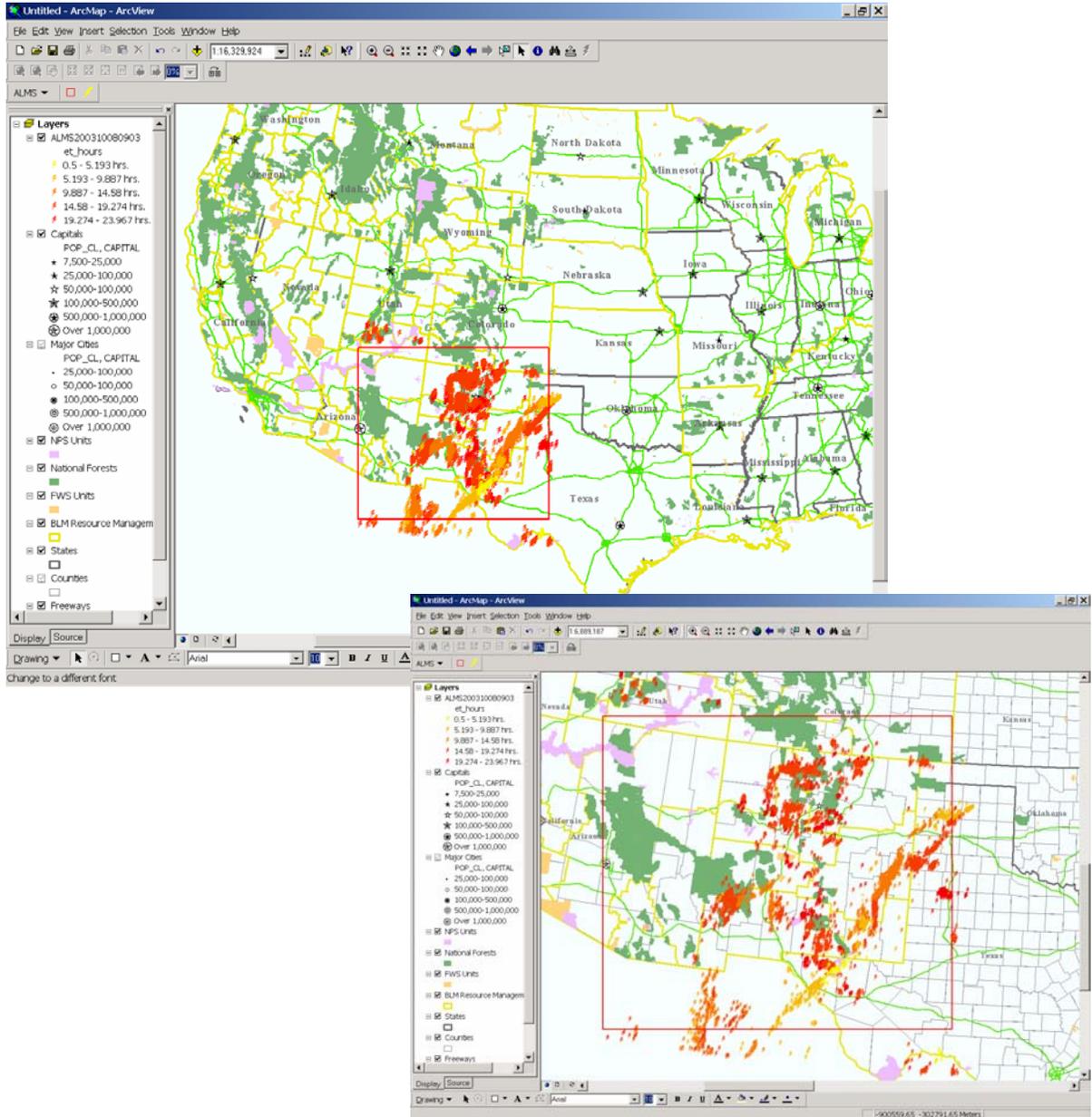


Automated Lightning Mapping System User's Guide Version 4.0



November 2005



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Getting started

This chapter explains the information you need to log on and use the Automated Lightning Mapping System (ALMS). ALMS allows you to download near real time lightning location information from the Bureau of Land Management lightning data server on the Internet and then view that data using ArcMap 9.x. Topics include:

- Before you begin
- Installing ALMS
- Terms and concepts.

Before you begin

Before using ALMS, you must feel confident that:

- You have requested “Administration” privilege to log into the target client PC where you will be installing ALMS.
- You are familiar with your personal computer and functions keys, and understand personal computer concepts.
- You are familiar with Windows NT, Windows 2000 or Windows XP and can log on and log off.
- You have basic skills using ArcGIS 9.x or “ArcMap” and an Internet browser.
- You have assured ArcGIS 9.x or “ArcMap” starts and runs on your target client PC.

Software and hardware requirements

You must have the following hardware and software to run ALMS:

Item	Minimum Requirement	Recommended
Operating System	Windows NT, Windows 2000, Windows XP	WIN 2000 or XP
Internet Browser	MS Internet Explorer 5.0 or newer	IE 6.0
Internet connection	9600 or higher	56K or higher
mapping software	ArcGIS 9.0 or 9.1	ArcGIS 9.1
CPU	Pentium 800 MHz	Pentium 1 GHz
monitor color support	256	65,536

monitor resolution	640 x 480	1024 x 786
RAM	256 MB	512 MB
hard disk space available	50 MB	same
mouse	yes	same
printer	any - windows compatible	color laser

Installing ALMS

This section outlines the basic instructions to install ALMS for Windows NT, 2000 and XP operating environments. Before starting the installation process, close all other applications.

To download the ALMS installation file from the Internet

- 1 Ensure you have logged into the target client PC as a user with "Administrator" privileges.
- 2 Start your Internet browser. In the address box, type <http://www.fs.fed.us/fire/planning/nist/distribu.htm> , and then press ENTER.
- 3 Scroll down to **Software**, and then click **ALMS V4.0**.
- 4 Click the installation file, and then save it in the folder of your choice.

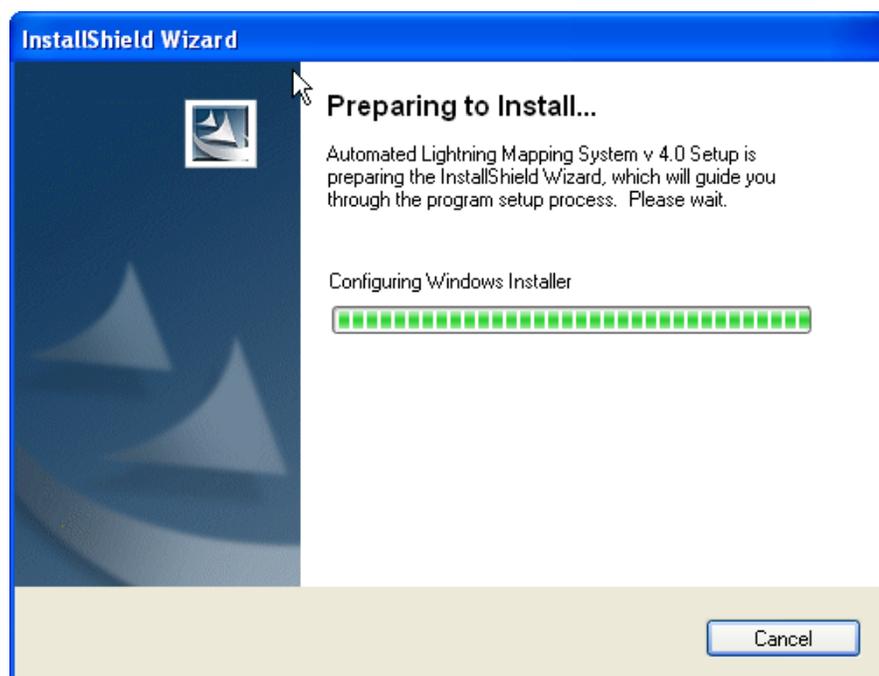
*For Forest Service users, save the ALMS_V4.exe file in
C:\fsapps\fsprod\fam\ALMS For all others, follow your agency's guidelines.*

- 5 The file **ALMS_data.exe** is also located in the **Software** folder. This file contains additional data layers that can be used with ALMS which includes federal lands boundaries. ALMS is distributed with the default layers of Capitals, Counties, Freeways, Major Cities, and States. You may download this file now or at a later time.
- 6 IF you downloaded ALMS_data.exe, navigate to the folder where you saved the file and double-click on the file. Extract the files to a folder of your choice. **Forest Service users extract to c:\fsapps\fsprod\fam\alms\data.**

To install ALMS V4.0

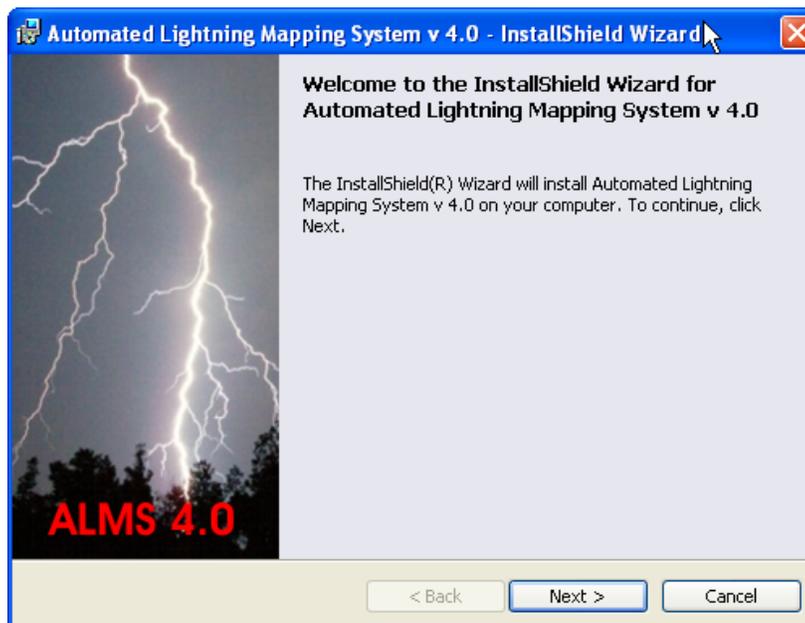
- 1 From your personal computer, locate the folder that contains the file that you downloaded called **ALMS_V4.exe**.
- 2 Double-click **ALMS_V4.exe**.
- 3 Complete the installation process as instructed on your screen.

The following screen shows the first ALMS Installation dialog box.

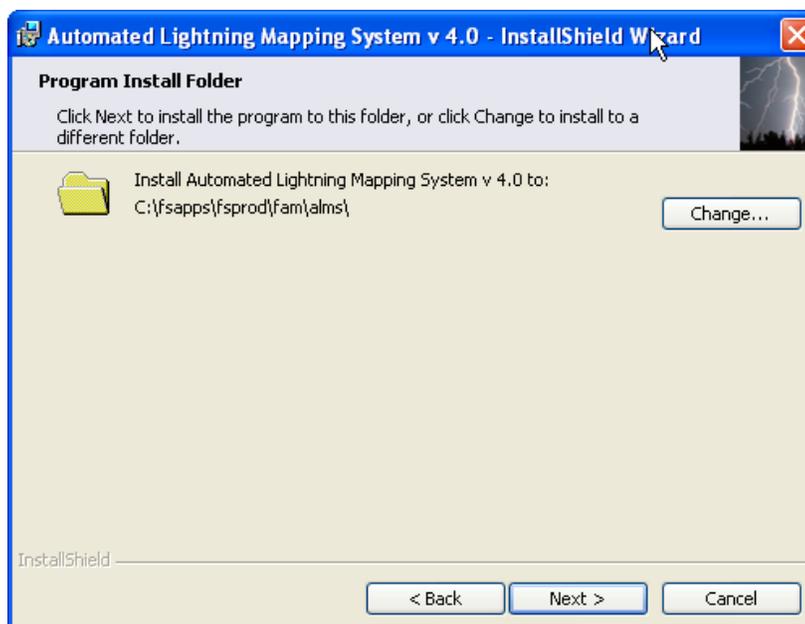


There could be a delay between this window and the following one. Please be patient, the installer is checking your system for the location of ArcGIS and other components. If the installer fails to find one of the required components it will present you with an error message telling you how to proceed.

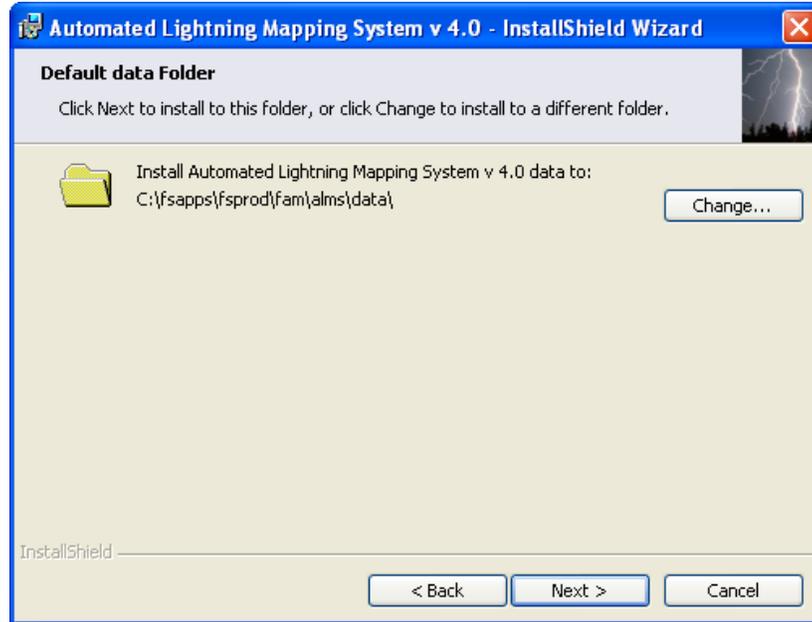
The following screen shows the Welcome dialog box. Click **Next** to continue the installation process.



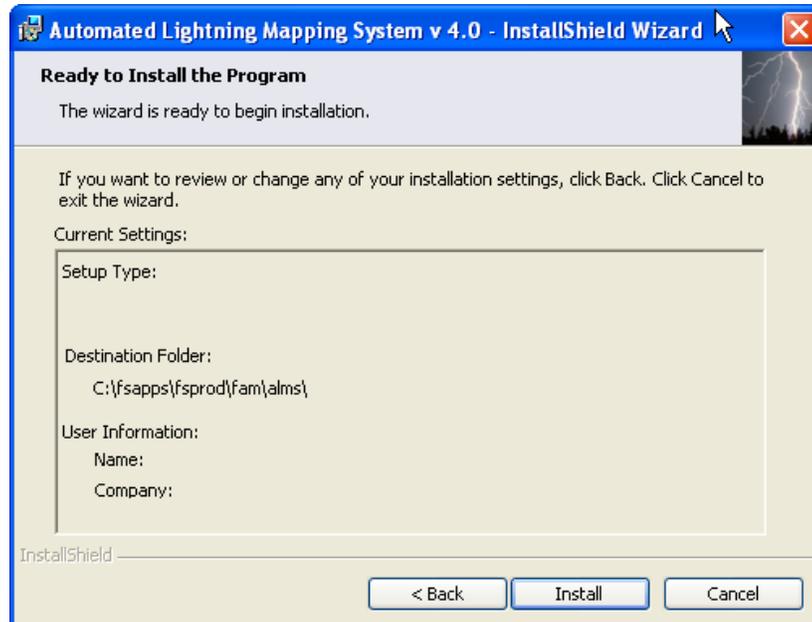
The following screen shows the Program Installation Folder dialog box. Verify that the Program Installation Folder for the ALMS software is correct, and then click **Next** to continue the installation process. Press **Change** only if you would like to select a different installation folder. The folder must be a hard drive on the local workstation. **Forest Service users should keep the default installation folder.**



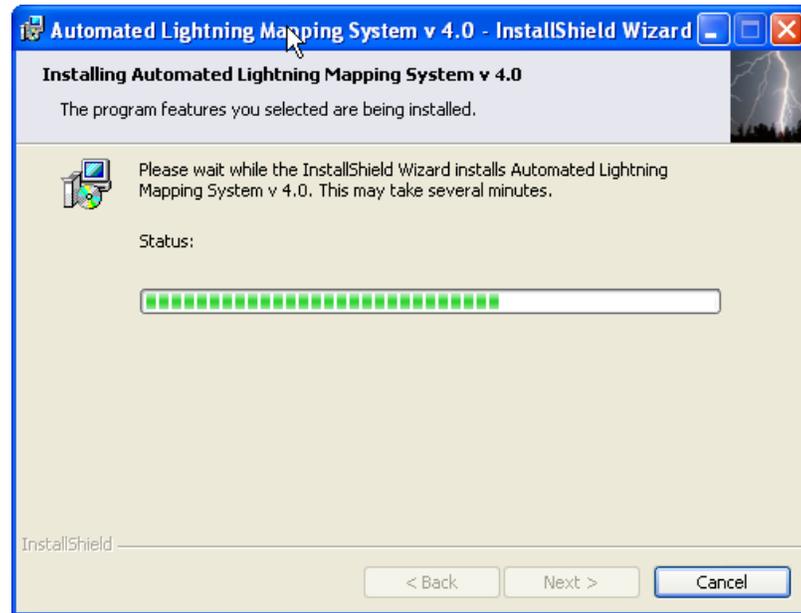
The following screen shows the Default Data Folder dialog box. Verify that the data folder is correct and click **Next** to continue the installation process. Press **Change** only if you would like to select a different Data folder. This folder can be on a local hard drive or on a network drive. **Forest Service users should keep the default Data folder.**



The next screen allows you to review the installation settings you have chosen. Press **Install** to continue or **Back** to go to a previous screen and change a setting.



As the installation continues, you will see the following screen.



When the installation is complete, the following screen will display. Click Finish to complete the installation.



To configure your time zone on the BLM lightning data server

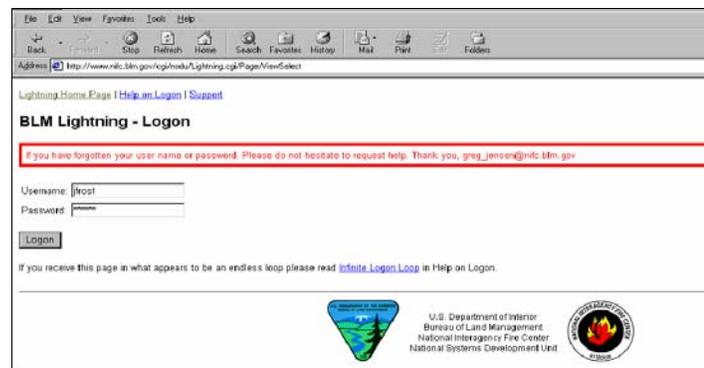
Perform this task only if you have not previously done so!

- 1 Start your Internet browser.
- 2 In the address box, type **http://www.nifc.blm.gov**, and then press ENTER.
- 3 On the **Wildland Fire Management Information** Home Page, click **Lightning**.
- 4 On the **BLM Lightning - Logon** screen, type your **Username** and **Password**, and then click **Logon**.
- 5 On the **BLM Lightning - Successful Logon** screen, click **User Preferences**.
- 6 Under **Time Zone Selection**, select the appropriate **Time Zone** and **Daylight Savings Time** preference, and then click **Update Preferences**.
- 7 When finished, click **Logoff**, and then exit your Internet browser.

The following diagram shows the Wildland Fire Management Information Home Page.



The following diagram shows the BLM Lightning - Logon screen.



The following diagram shows the BLM Lightning - User Preferences screen.

File Edit View Favorites Tools Help

Back Forward Stop Refresh Home Search Favorites History Mail Print Edit Folders

Address <http://www.nifc.blm.gov/cgi/nsdu/Lightning.cgi/Page/UserPreference>

[Lightning Home Page](#) | [Help](#) | [Help on User Preferences](#) | [Select View](#) | [Logout](#) | [Support](#)

BLM Lightning - User Preferences

Logon Information

Username: JFROST

Applications

Authorized: Lightning
Application(s): Weather

Time Zone Selection

Time Zone:

Use Daylight Savings Time when appropriate
 Never use Daylight Savings Time

Organization Information

Organization: United States Forest Service
Unit: National Interagency Fire Center
Sub Unit: NIFC

Contact Information

Name: First Last

Phone: Area Code Prefix Extension

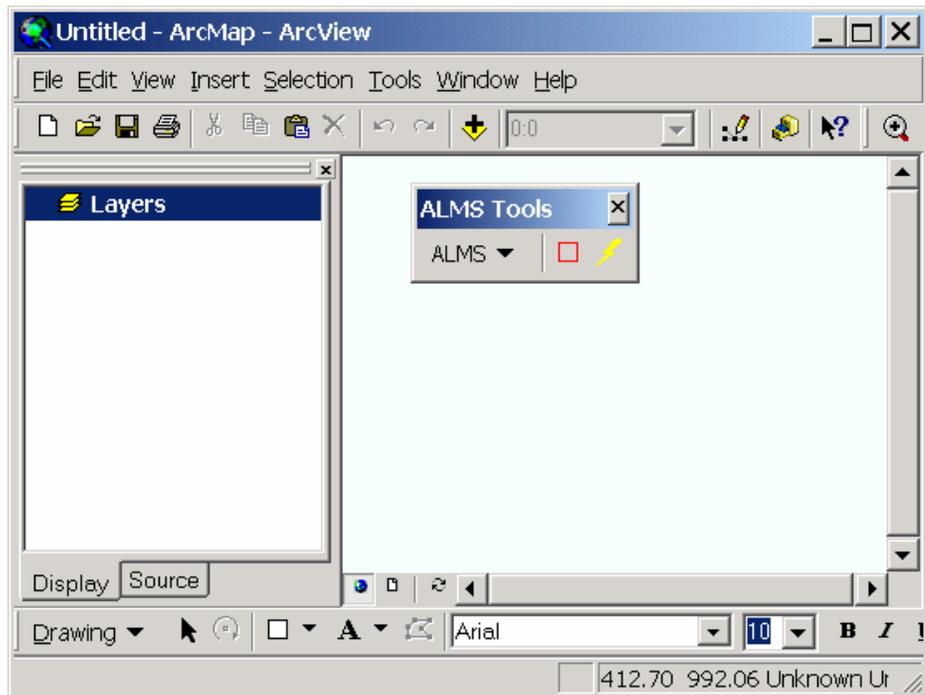
email address:

To set up ALMS 4.0 in ArcMap

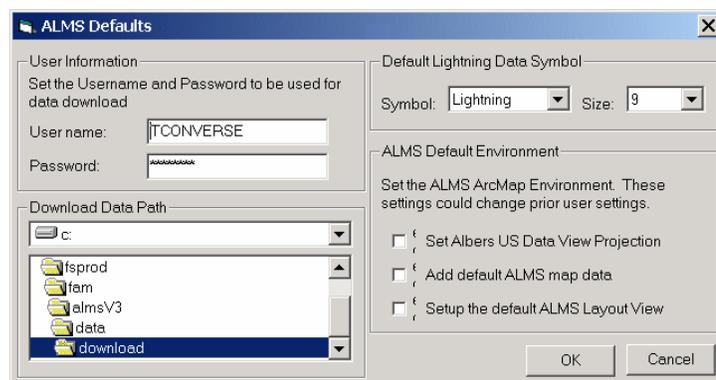
When ALMS 4.0 was installed, an ALMS dll is registered and added as an extension to ArcMap. The ALMS Tools toolbar is then available to be turned on within ArcMap.

Before starting this task, log off Lotus Notes to avoid potential memory conflicts.

- 1 Click **Start**, point to **Programs**, point to **ArcGIS**, and then click **ArcMap**.
- 2 Turn on the ALMS Tools toolbar by selecting **View>Toolbars** and select **ALMS Tools**. You will see the toolbar pictured below. The toolbar can be placed anywhere on your screen or into the header section with the other toolbar buttons. To move the toolbar, left-click in the upper blue section, hold the mouse down and drag the toolbar to the desired location.



- 3 From the ALMS toolbar, select **ALMS>Set User Defaults**. The other ALMS Tools options will not function until the defaults are set. You will be presented with the following screen.



ALMS Defaults are specific to the Windows userid currently logged in. Individual users must each initially set up their ALMS defaults.

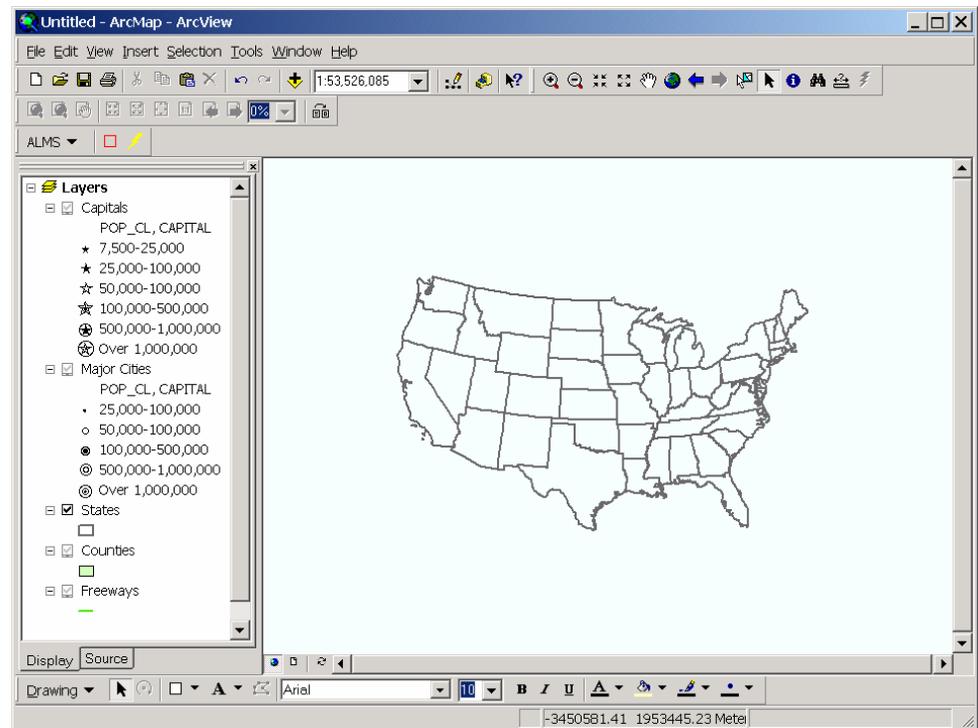
Enter the information required in the following sections and press **OK** when finished. Press **Cancel** to exit this screen without saving any changes.

- **User Information:** enter your BLM Lightning Server Username, and then type your BLM Lightning Server Password. Remember the password is case sensitive.
- **Download Data Path:** Select the path where you would like the downloaded lightning data files to reside. This path can be set to any directory accessible by the user that has read and write permission.
- **Default Lightning Data Symbol:** You may select Lightning, Dot or Box as the default symbols. Also select a size for the symbol. For advanced ArcMap users, this symbol could also be changed within ArcMap.
- **Alms Default Environment:** The items in this section are the basic settings required to map the lightning data. *If you are an advanced ArcMap user and are using the lightning data with an existing project or other data sources, you may want to keep your existing project settings.*
 - ❑ **Set Albers US Data View Projection** – checking this box sets or changes the data view projection for the project to Albers US Data. Only check this if you do not have a projection already set and would like to use this projection for the ALMS data and any other data you are mapping in this project.
 - ❑ **Add Default Alms Map Data** – checking this box adds the default ALMS layers to your project. The default layers are: Capitals,

Counties, Freeways, Major Cities, and States. If any of these layers already exist, the program will replace them only if they are newer. Any other existing layers will not be affected. Other data layers are available including federal boundaries and can be downloaded from <http://www.fs.fed.us/fire/planning/nist/distribu.htm>.

- Setup the Default ALMS Layout View** – checking this box sets the layout view to a default view supplied by ALMS. Checking this box will replace any existing layout view!!

If you chose to Add Default Alms Map Data, a map showing the United States will be displayed. Any layers that are not visible will be activated after zooming into the appropriate scale.



- 4 Save this map project before exiting. Proceed to the **Using ALMS** section of this guide to begin mapping lightning data.

You have just successfully installed ALMS! Next, complete the clean up task and then you are ready to use ALMS.

To clean up

- 1** On the **Start** menu, point to **Programs**, and then click **Windows Explorer**.
- 2** Open the folder that contains the install file **ALMS_V4.exe**.
- 3** Right-click **ALMS_V4.exe**, select **Delete**, and then click **Yes**.

To log off ALMS/ArcMap

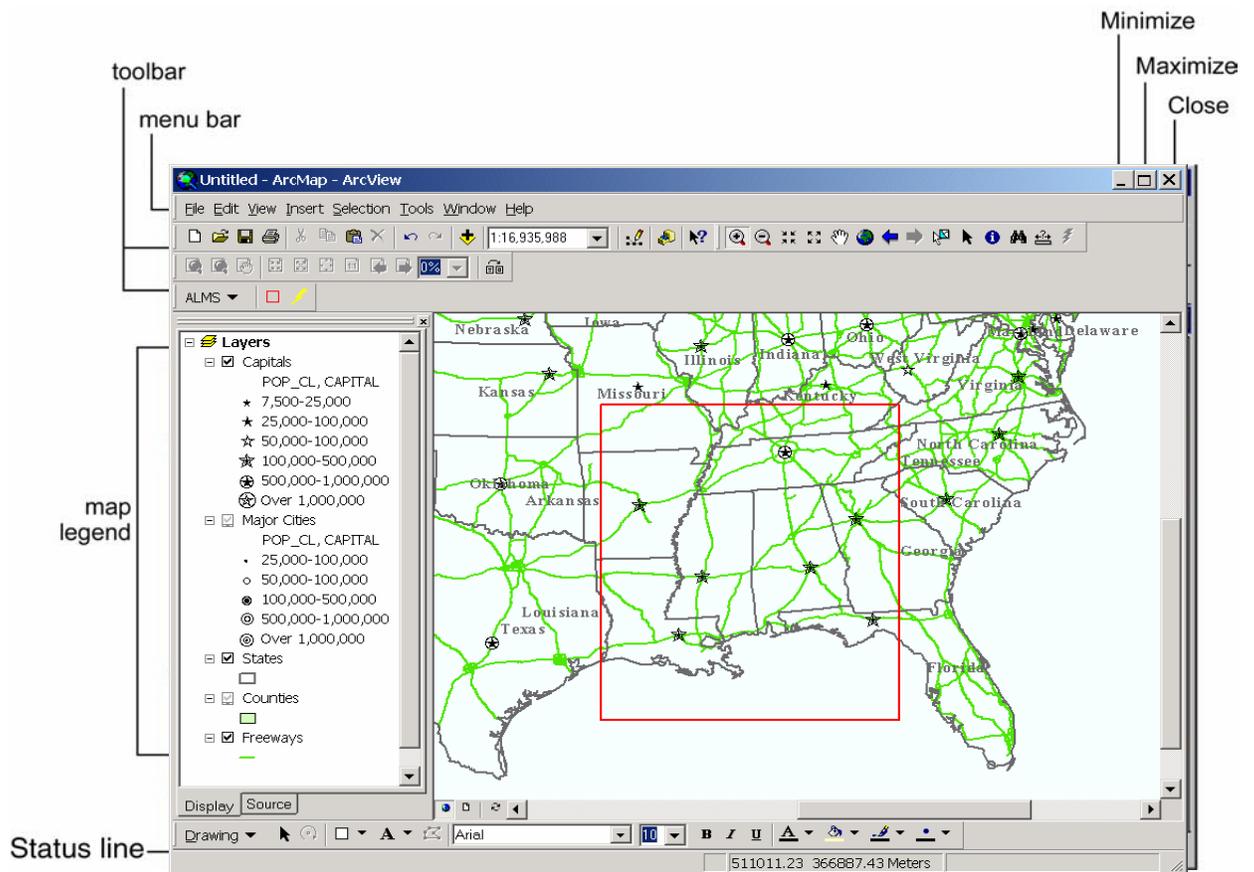
- On the **File** menu, click **Exit**.

Terms and Concepts

This section identifies some of the key toolbars and menus that you will be using in ALMS 4.0.

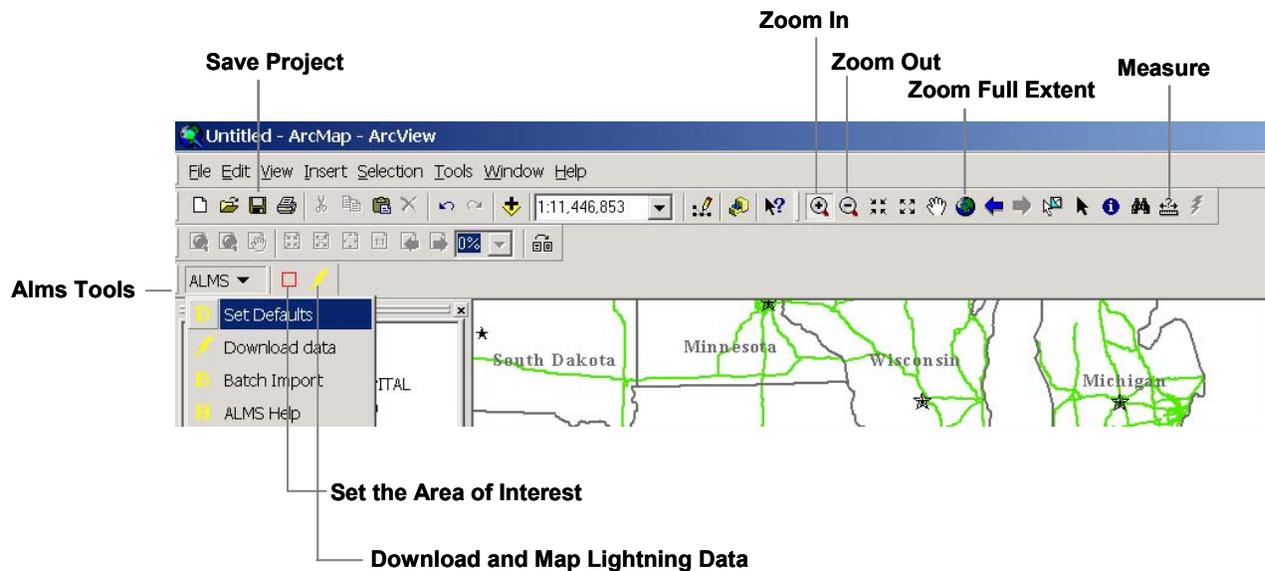
Screen terminology

The following diagram shows the ArcMap/ALMS screen and screen elements.



ArcMap/ALMS Toolbar

The following diagram shows the buttons that are available on the ArcMap and ALMS toolbar. Each button allows you to perform a specific function. When you hover the mouse over a particular button, a description of that button's function displays in a tool tip over or next to the button.



For more information about using toolbar buttons, refer to your ArcMap user's guide.

Using ALMS

This chapter explains some of the basic functions you can perform in ALMS. Topics include:

- Starting ArcMap/ALMS application
- Downloading lightning data
- Setting the area of interest
- Performing Batch Imports

Starting ArcMap/ALMS

You may want to create a shortcut of ArcMap to save time starting the application!

To start ArcMap/ALMS

- 1 Click **Start**, point to **Programs**, point to **ArcGIS**, and then click **ArcMap**.
- 2 Open the existing map that you saved during the installation steps or start with a new empty map. If you start with a new empty map, you will need to go through setting the ALMs defaults again. See the previous section, **Getting Started>To set up ALMS 4.0 in ArcMap>Step 3** for instructions on setting ALMs Defaults.
- 3 If the ALMS Tools toolbar is not showing, on the **View** menu, click **Toolbars** and select **ALMS Tools**.

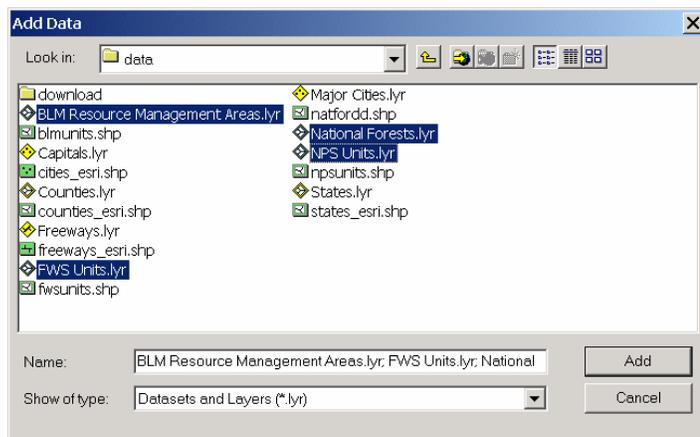
Adding Other Data Layers

ALMS is distributed with the default layers of Capitals, Counties, Freeways, Major Cities, and States. The additional layers available for download are: NPS Units, National Forests, FWS Units, and BLM Resource Management Units. If other data layers are needed the data must reside on the client or be available as a map service on the Local Area Network or the Internet.

To add data Layers stored on the Local Hard Drive:

1. From ArcMap/ALMS. Select **File>Add Data**.
2. Browse to the folder where the data layers are stored and select the layers (.lyr files) you would like to add as shown in the screen below.

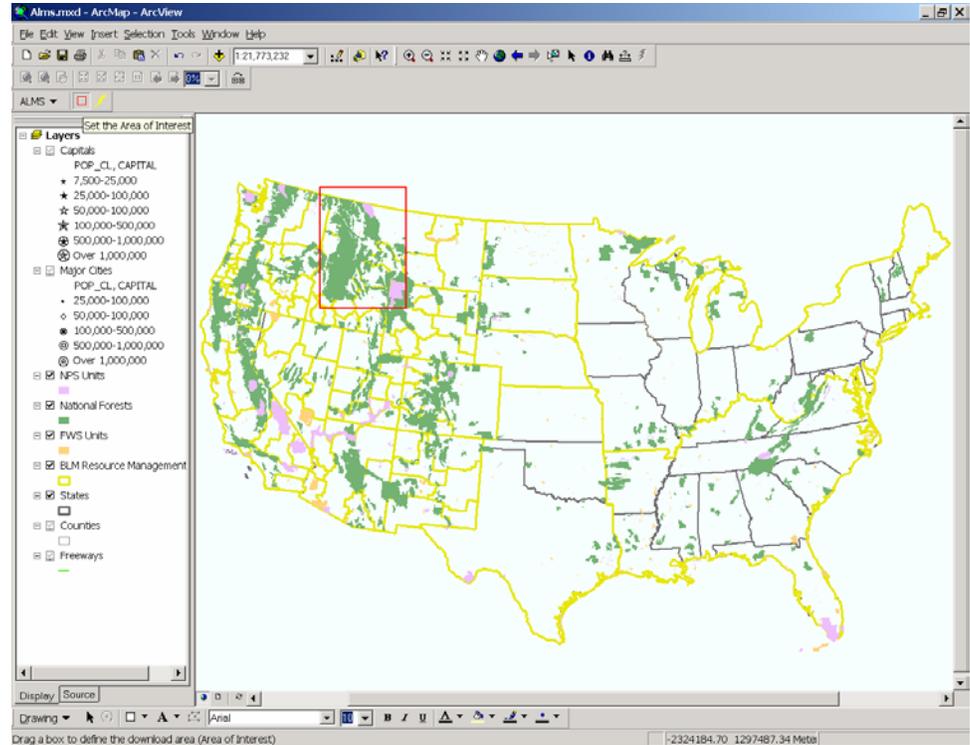
ArcMap sets the projections for map layers “on the fly” to the projection set for the Data View as the data is added. If the layers do not have associated projection information they will not be projected on the fly. You may get warning messages if layers being added have a different datum than the one currently set for the Data View. The warnings can usually be ignored as ArcMap will automatically choose a datum transformation.



Setting the Area of Interest

- 1 Click the **red rectangle** on the ALMS Toolbar.
- 2 Click, hold, and drag to create a rectangle around the area of your choice.

The screen below shows an Area of Interest created in western Montana. If an area of interest is set prior to downloading lightning data, the download will only include data for the area delineated. The area of interest is stored in the users profile and will remain set until it is changed.



Download and Map Lightning data

To download lightning data

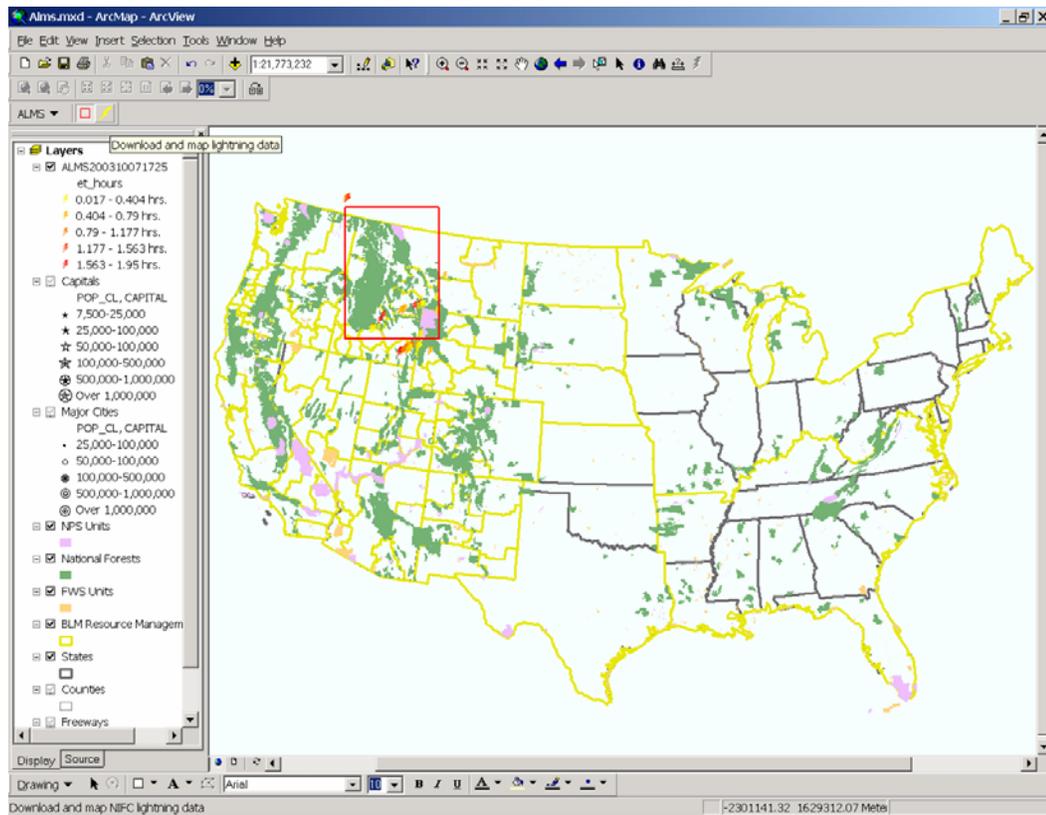
- 1 Click the **yellow lightning** symbol on the ALMS Toolbar or select ALMS>Download Data. The following screen will be displayed.

The screenshot shows the 'Lightning Data Download' dialog box. It contains the following elements:

- Time Frame:** Start Date: 10/7/2003, Start Time: 02:42 PM, End Date: 10/7/2003, End Time: 04:42 PM. Buttons: Previous 24 Hours, Previous 2 Hours, Now.
- Bounding Rectangle:** Top Latitude: 50.4776, Right Longitude: -107.6951, Bottom Latitude: 43.1587, Left Longitude: -117.1787.
- Polarity:** Radio buttons for Positive, Negative, and Both (selected).
- Buttons:** Download Data, Cancel.
- Status:** Select Date/Time range...

- 2 On the **Lightning Data Download** dialog box, enter the desired download parameters:
 - **Time Frame:** The initial values are the Previous 2 Hours from the current workstation date and time. The values can be entered manually or adjusted using the “Previous 24 Hours”, “Previous 2 Hours” and “Now” buttons. The “Now” button sets the End Time to the current workstation time. After pressing the “Now” button you will need to set a new start time.
 - **Bounding Rectangle:** Displays the upper and lower boundaries defined by the “Area of Interest” rectangle. You can change these if you desire.
 - **Polarity:** Indicates polarity values that will be included in the datafile. The default value is “Both”. Click the button next to the desired value.
 - **Status:** Indicates the status of the download and import process as it progresses.
- 3 Click **Download Data** to begin the download.

The following screen shows the downloaded lightning data displayed on the map.



Reviewing specific areas of interest

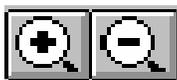
This section explains how to use toolbar buttons to review specific areas of interest. Use these buttons in combination to quickly identify the specific area of your choice.

Using the zoom buttons

There are four different zoom buttons that you can use to navigate around the map:



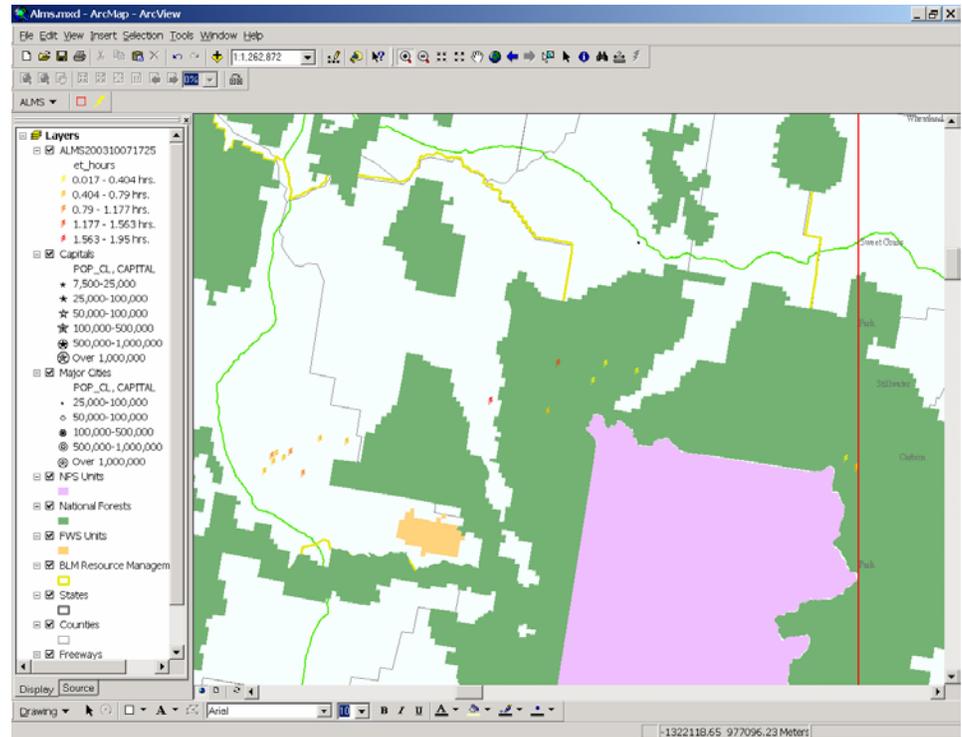
- The zoom buttons that show arrows pointing toward or away from a center point allow you to zoom in or zoom out from the center of the display. These two buttons are on the first row of the toolbar.



- The zoom buttons that show a plus sign (+) or minus sign (-) within a magnifying glass allow you to zoom in or zoom out from a point you click on the map. These two buttons are on the first row of the toolbar.

To zoom in or zoom out

- Click the zoom button of your choice, and then click on the map location of your choice. Notice that various layers are defined as scale dependent and displayed as the map is zoomed in.



Performing Batch Import

The batch import utility can be used to import previously downloaded ascii data files created via the external lightning down executable (lghtndown.exe).

- 1 Select **ALMS>Batch Import** on the ALMS Toolbar.
- 2 Browse to the location of the data files using the Batch Import screen as shown below. Select one or more files for import.
- 3 Press **OK** to import. The text files will be processed into shapefiles and other supporting files then displayed as layers in the project.

