

FFI PDA Field Handbook

The *FFI PDA Field Handbook*, a component of the *FFI User's Guide*, covers operations that are done only on the PDA. For all operations that require the desktop, such as sending sample events to the PDA in preparation for field work and importing data from the PDA, see the [PDA coordination](#) section of the *FFI User's Guide*.

The handbook covers:

- o [Checklist and suggestions](#)
- o [Setting data collection parameters](#)
- o [Entering sampling data](#)
- o [Using multiple PDAs](#)
- o [Managing battery power](#)
- o [Backing up and restoring](#) the database and the FFI PDA software

The *FFI PDA Field Handbook* is available as a stand-alone PDF document that you can load on your PDA for use in the field. This requires that you install Adobe Reader for Pocket PC 2.0, which can be downloaded at <http://www.adobe.com/products/acrobat/readerforppc>.

PDA overview and checklist

FFI on the PDA (FFI PDA) is a simple data capture interface that:

- o Allows input, review, and editing of new protocol data in the field.
- o Supports collection of data for multiple administrative units.
- o Can be used with multiple PDAs in the field.

There are several things that FFI PDA does not do. It cannot:

- o Provide a way to review or edit data from previous sample events.
- o Allow creation of project units, macro plots, or sample events.
- o Work in conjunction with a GPS unit to locate plots.

Before you leave the office

- o Reduce the number of species in your active picklist as much as possible. Having fewer than 300 will improve the performance of the PDA.
- o Print any hard copies of previous readings that you may need for reference.
- o Obtain any backup paper forms that you may wish to carry.
- o Make sure you have an adequate number of unknown species.
- o Develop a strategy for handling unknown species.
- o Develop a strategy for creating backup files.
- o Fine-tune your PDA power usage.
- o Obtain plenty of spare memory cards.

- o Create a self-restoring Sprite backup file on each memory card that you will be using, before you leave the office.

In the field

- o Stand with your back to the sun so that the screen is illuminated by sunlight instead of trying to shade the screen.
- o Back up your data often.

Upon returning to the office

- o Import your sample events and data to FFI on the desktop.
- o Retrieve data from each PDA for each sample event.
- o Reconcile any used unknown species.
- o Review the imported data in the FFI **Data Entry and Edit** window.

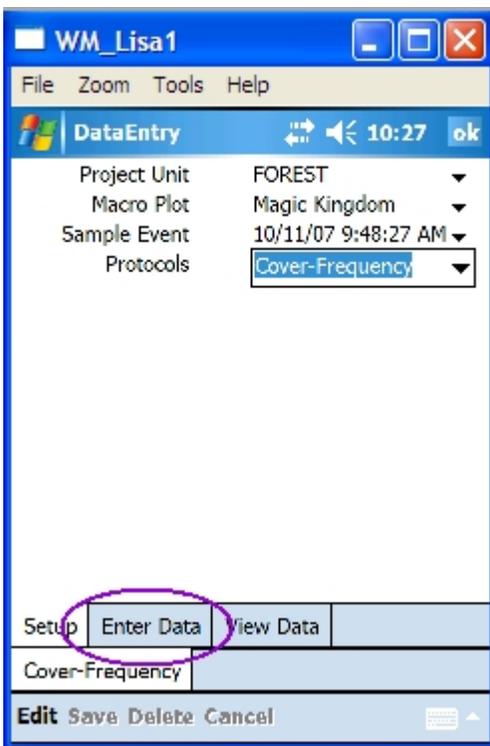
Entering sampling data

Entering sampling data on the PDA in the field involves these steps:

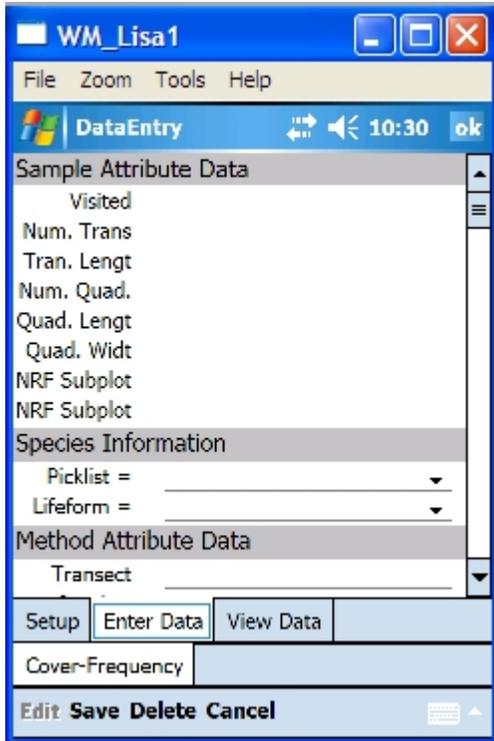
- o Selecting data entry parameters
- o Entering sample attribute data
- o Entering species information
- o Entering method attribute data

To begin

To begin sampling data on the PDA, first set up the data entry parameters (see Selecting sample events and protocols for information), and then click **Enter Data**. In this example, the protocol for which data is to be collected is *Cover-Frequency*.



The **Data Entry** window is now ready to accept data.



Next: Entering sample attribute data

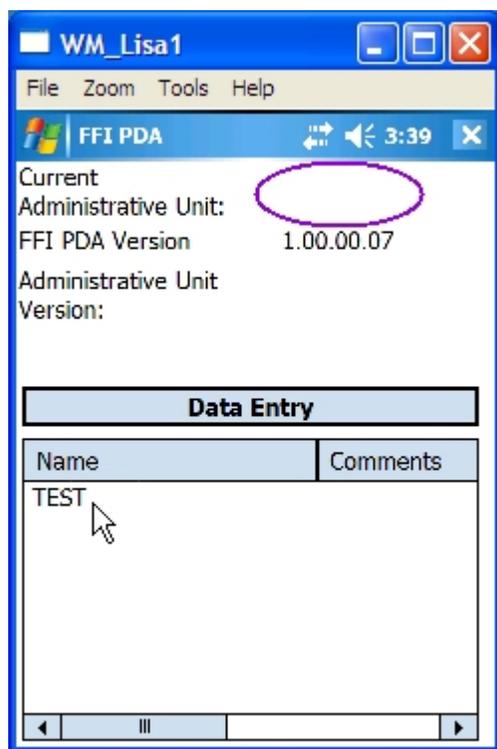
Tips

- o For methods like *Density* that have groupings with tallies, you can enter the same grouping twice. Example: You find three live PIPO seedlings in height class one at the beginning of the belt and then find four more seedlings further down the belt. Instead of editing the old row, just enter a new row for the new seedlings. These can be grouped together at analysis time.
- o If FFI reports errors as you enter method attribute data, find the values shaded in red, and click on the red exclamation point for an explanation of the error.
- o *If your PDA experiences serious errors during operation, you might need to perform a soft reset. If the problem continues, you might need to execute a hard reset and reinstall FFI PDA. Check your PDA operation manual for instructions on resetting your PDA. Keep in mind that a hard reset will erase the device's memory, and no data will be saved.*

Selecting sample events and protocols on the PDA

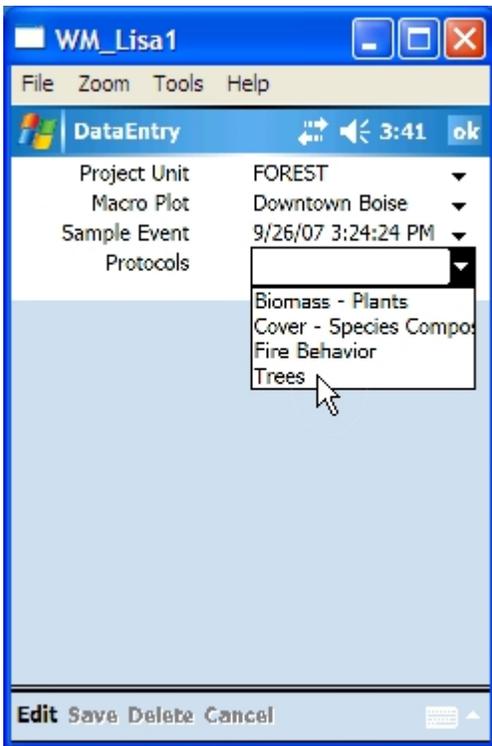
After you have exported your sample events to the PDA and reached the field, you can select sample events and protocols on the PDA in preparation for data collection.

1. Start **FFI PDA** by tapping the **Start** menu and selecting **Programs**. In the **Programs** folder, tap **FFI PDA**.
2. In the main **FFI PDA** window, select the name of the administrative unit in the grid, as shown. The administrative unit name will then appear as the **Current Administrative Unit**.

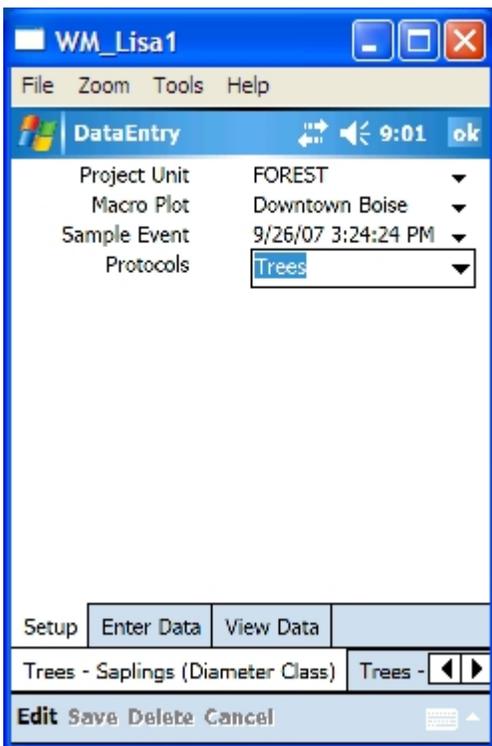


3. Click the **Data Entry** bar.

- In the **Data Entry** screen, use the pull-down lists to select the appropriate project unit, macro plot, sample event, and protocol to be sampled.



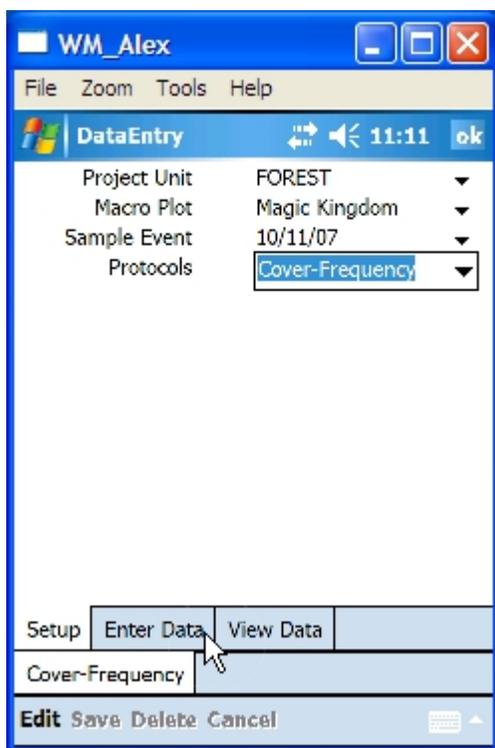
*NOTE: The **Trees** protocol includes three methods, and the **Trees - Saplings (Diameter Class)** method is currently active, as shown at the bottom of the screen. Use the left and right arrows to select the desired **Trees** method.*



Entering sample attribute data

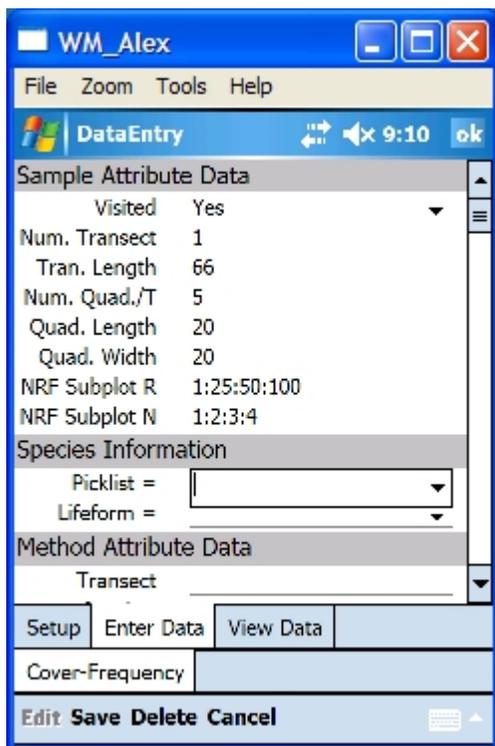
Enter data for the sample attributes:

1. In the **Data Entry** screen, tap **Enter Data**.



2. In the **Sample Attribute Data** window, select **Yes** in **Visited** to verify that the site was visited.
3. Enter data for each of the required sample attributes.

NOTE: You need to enter the sample attributes only once, and only one row is created in the database for sample attributes. These values will stay at the top of the data entry screen as you enter method attribute data.

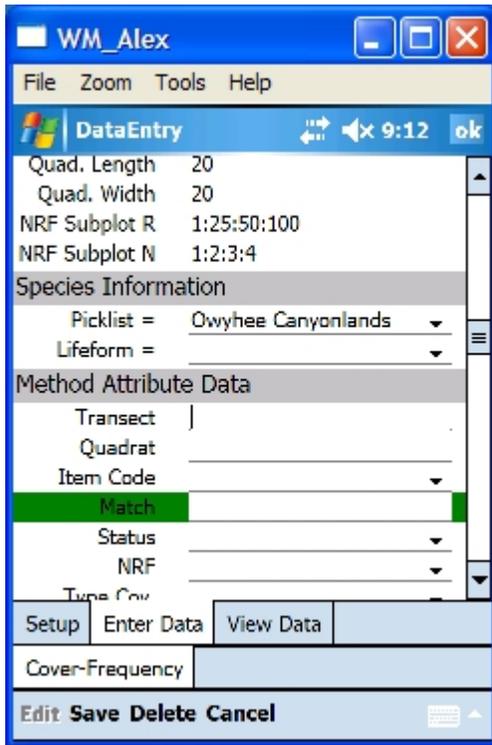


NOTE: If, during the field work, you determine that a sample attribute, such as plot size, is incorrect, don't attempt to change it on the PDA. Make a note in your field notebook and reconcile the data in FFI after import.

Entering species information

In the **Species Information** fields, select either a picklist or lifeform. In this example, the *Owyhee Canyonlands* picklist is selected.

NOTE: You can select a lifeform or a specific picklist, or specifically choose not to filter by picklist, in which case the entire local species list is available during data entry.



NOTES:

- o If you select a picklist, keep in mind that the picklist will remain selected as you move between methods. Be sure to unselect it whenever you need to access your full species list.
- o FFI lets you use **Match**, an auto-fill feature, to select species.

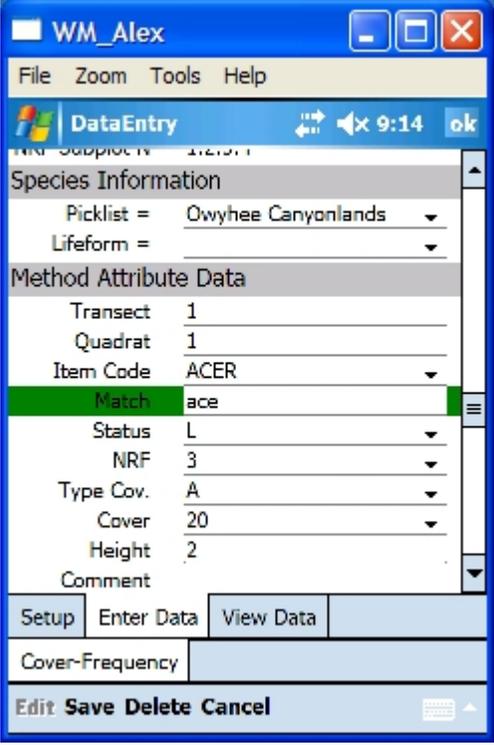
Next, enter method attribute data.

Entering method attribute data

Enter method attribute data, scrolling through the list of attributes for the protocol to ensure that you complete all fields.

NOTE: A row comprises a single method attribute record.

NOTE: If you are entering a values >0 and <1 in fields that allow decimal places, include the leading zero before the decimal point. For example, FFI PDA will interpret the value .1 as 1, so be sure to enter 0.1.



The screenshot shows the 'DataEntry' window of the 'WM_Alex' application. The window has a menu bar with 'File', 'Zoom', 'Tools', and 'Help'. Below the menu bar, there is a status bar showing '9:14' and an 'ok' button. The main content area is divided into several sections: 'Species Information' with 'Picklist = Owyhee Canyonlands' and 'Lifeform ='; 'Method Attribute Data' with fields for 'Transect' (1), 'Quadrat' (1), 'Item Code' (ACER), 'Match' (ace), 'Status' (L), 'NRF' (3), 'Type Cov.' (A), 'Cover' (20), and 'Height' (2); and a 'Comment' field. At the bottom, there are buttons for 'Setup', 'Enter Data', and 'View Data'. A 'Cover-Frequency' field is also visible. The 'Match' field is highlighted in green, and the 'ace' text is entered.

*NOTE: You can use the **Match** auto-fill feature to quickly select a species that is in your species list or a selected picklist. In the **Match** field, begin to enter text. When the desired species is displayed, you can proceed. If **Match** does not find the species you are entering, it will display an error message.*

If FFI reports errors as you enter data, find the values shaded in red, and click on the red exclamation point  for an explanation of the error. Correct errors as you work.

1. When you have completed a single record, tap **Save**. This saves the record and clears the form for entry of the next record.
2. When you have finished entering records for the method, or if you wish to review your work, tap **Save** and then tap **Cancel** to release the record. Then tap **Setup** or **View Data**.
3. To review your work, tap **Save** and then **Cancel** to release the record. Then tap **View Data**.
4. To edit a method attribute row, select it in the **View Data** grid and tap **Edit**. Make any necessary changes and tap **Save**.
5. To select another sample event or method for data entry, tap **Setup** and then select the event or method from the drop-down lists in the **Data Entry** window.

6. Continue until you have completed data entry for all of your sample events.

NOTE: Be sure to back up your database routinely throughout the day.

7. Close FFI PDA.

For instructions on moving your data from the PDA to the desktop, see the FFI User's Guide. These instructions are not contained in the FFI PDA field handbook.

Using multiple PDAs

You can use multiple PDAs to record data for a single sample event. This can be advantageous when sampling a long transect or belt, for example. It does require coordination between team members.

*NOTE: Use multiple PDAs only when you are collecting data for a sample event using multiple-record methods. If you collect data during a sample event using a single-record method, FFI will overwrite the data from the first PDA when you upload the data from the second PDA. The single-record methods are **CBI** (all CBI methods) and **Plot Description**. Also, although **Surface Fuels** is technically not a single-record method, when you use the **Surface Fuels - Fines** method, use a single PDA to record a single record per transect.*

Guidelines for using multiple PDAs

- o Export the same sample events to each PDA that will be involved in sampling the plot.
- o Enter the sample attribute data and species information for the sample event on all PDAs that will be used to sample the plot, even though it is redundant. Upon import, FFI will accept the sample attribute row from the first PDA that imports data and disregard the others.

NOTE: If, during the field work, you determine that a sample attribute, such as plot size, is incorrect, don't attempt to change it on the PDA. Make a note in your field notebook and reconcile the data in FFI after the data from all PDAs has been imported.

- o Upon import, method attribute records from multiple PDAs will accumulate in the FFI database to comprise the data for the sample event. For example, if one PDA reads one half of a transect and a second PDA reads the other, the data from both PDAs will appear as one transect in the FFI database.
- o Split up a transect or belt so that one team member covers the first half and another covers the second half.
- o Establish a procedure for using unknown species. For example, one team member might use numbers 1 - 50 and another might use numbers 51-100. Each team member should record on paper or in an Excel spreadsheet what each unknown is used for.
- o Ongoing communication can prevent assignment of two unknowns for the same species. For example, if team member A tells team member B that she has used UNK_001 for GAMU, then B can also use UNK_001 for GAMU instead of another unknown from his range.
 - If you inadvertently use two unknowns for the same plant, you can use the **Replacing a species in method data** function in Species Management to correct the error after the data is imported to the desktop.
 - If you inadvertently use one unknown for two plants, be sure to correct the error right away. Edit each record on one PDA before you retrieve the data from that PDA.

Backing up and restoring FFI PDA and databases

Be sure to back up your PDA routinely to protect your data and applications. We recommend using a third-party utility. Should you ever need to execute a hard reset on your PDA, you can use the utility backup file to recover FFI PDA, your database, and any spreadsheets or other documents you are using. Sprite Backup software has proven to be very reliable, and has been tested thoroughly. Sprite works with removable media cards.

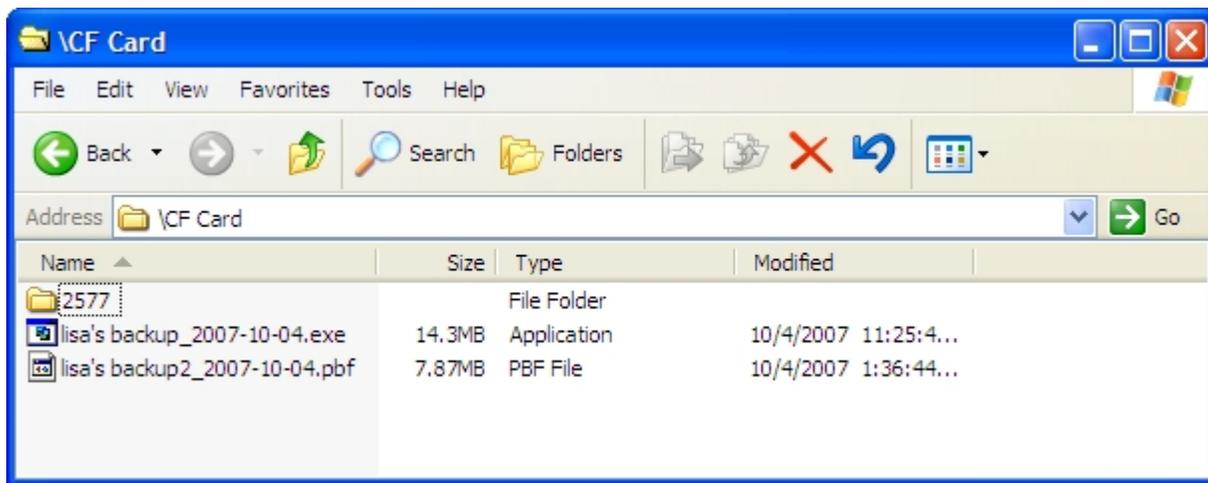
NOTE: Removable cards can fail. Use several smaller (256-MB or 512-MB) cards are better than one larger-capacity card for added security.

Using Sprite Backup software

A daily backup using **Sprite Backup** at the end of a day in the field will protect you from losing the FFI PDA software and database or any spreadsheets or Word documents that you may have on your PDA. Exit FFI PDA before performing a backup, and double-check that the memory card is inserted.

Sprite Backup can be purchased at www.spritesoftware.com and is easy to use. It includes many options, including daily backup scheduling.

Sprite can create two types of backup files: self-restoring files and non-self-restoring files. Self-restoring files are quite large, since they contain executable files, and they have an .exe file extension. Non-self-restoring files, used to back up databases, are smaller and have a .pbf file extension.



Creating Sprite backup files

For added security, consider saving backups to more than one card. Sprite Backup can be configured to perform daily backups to safeguard your field data.

Creating a self-restoring Sprite backup file on a storage card

Self-restoring backup files take up more room on the removable card, but are necessary for recovery from a hard reset in the field. Self-restoring backups will reinstall all of the software on the PDA, including FFI PDA and Sprite Backup itself. One self-restoring backup on each removable card should be adequate.

NOTE: Perform a self-restoring backup on each of your media storage cards before you leave the office.

1. Close FFI PDA.
2. Ensure that a storage card is in place.
3. Open **Sprite Backup** and tap **Options**.
4. Tap **Backup** and then tap **General**.
5. In the **General Backup Options** window, click the checkboxes as shown. Tap **OK** to return to the **Backup** window.



- When you use Sprite with a memory card, Sprite creates a backup file on the card. In the **Backup** window, tap **Backup Card**. In the pull-down list, select the appropriate memory card and tap **OK**.

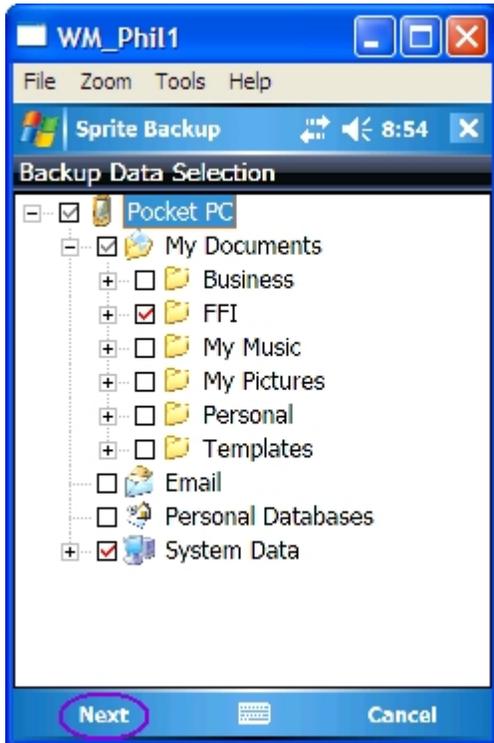


- Click **OK** to close the small Sprite Backup message box and tap **Next** in the backup window.



- Return to the main Sprite menu and tap **Backup**.

9. Select the folders and files that you wish to back up and click **Next**. To ensure that the FFI PDA and database are backed up, make the selections shown here, as well as any others that you may need.



10. Enter name and location information for the backup file and then tap **Next**.



11. Click **Next** in the **Device Reset Required** screen to initiate the backup.

12. The backup operation takes a few minutes, during which Sprite will shut down and restart the PDA and perform the backup. A progress bar will appear, and when the backup is complete, the device will again be reset.
13. When the **Sprite Backup Completion** window opens after the reset, tap **OK**.

NOTE: Refer to the Sprite Backup user guide for complete documentation.

Creating a non-self-restoring Sprite backup on a storage card

Non-self-restoring Sprite backups do not take up much room on the removable media card, since they contain only data. They can be made as often as you think appropriate.

The procedure for creating a non-self-restoring Sprite backup file is essentially the same as that shown above for a self-restoring file, with the following exception:

- o Step 5: In the **General Backup Options** window, unclick the **Create self-restoring Backup Files** checkbox. Tap **OK** to return to the **Backup** window.



Continue the procedure as shown above. If you check the file size in **File Explorer**, you will note that the size of the non-self-restoring backup file on the card is approximately half that of the self-restoring file.



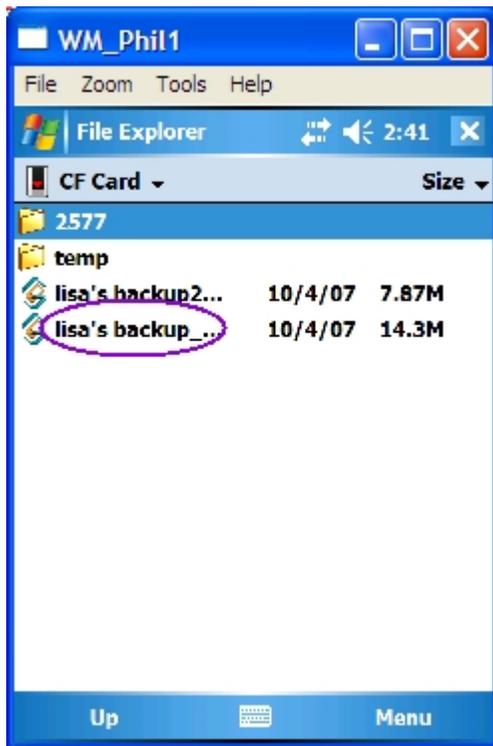
Restoring from Sprite backup files

If FFI PDA is not working properly, try to perform a soft reset on the device, which is similar to rebooting a desktop computer. Never intentionally perform a hard reset in the field.

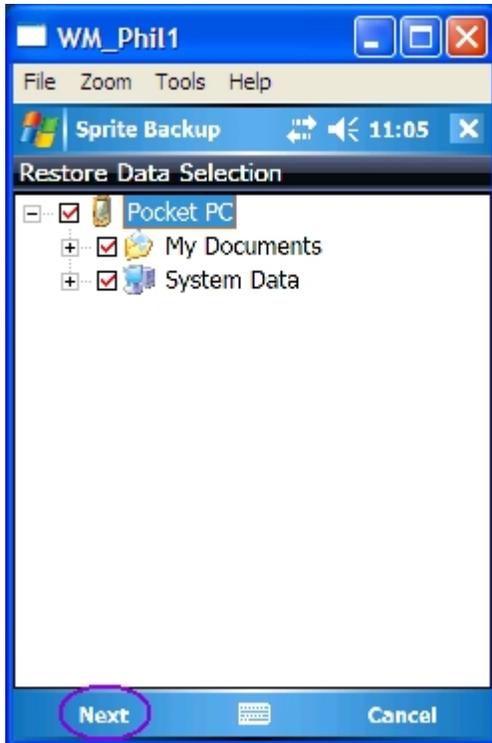
Restoring from a Sprite self-restoring backup file

If your PDA fails in the field, you can recover using a Sprite self-restoring backup file from a memory card. Should such a situation occur, Sprite Backup will probably not be on your PDA and it will not be listed in **Programs** under the **Start** menu. To recover:

1. Use **File Explorer** to navigate to the backup file on the memory card.
2. Click the filename to execute it.



3. After a few minutes, Sprite will open and the **Restore Data Selection** window will appear.



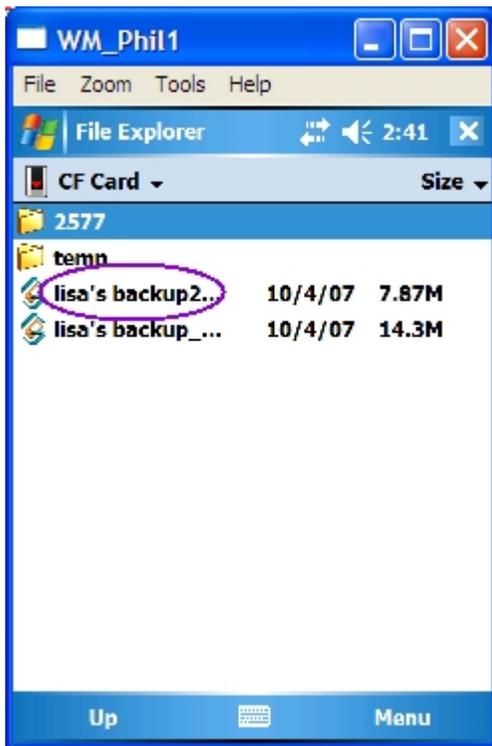
4. In the window, verify that all files that you wish to restore are checked, and tap **Next**.
5. Click **Next** in the **Device Reset Required** window. The restore may take several minutes.
6. When the device resets and the **Sprite Backup Restore Completed** window opens, click **OK**.

FFI PDA and Sprite Backup should now be reinstalled on your PDA along with any other applications and data that were included in the backup. You will need to re-enter any data that you had collected after the non-self-restoring backup file was created.

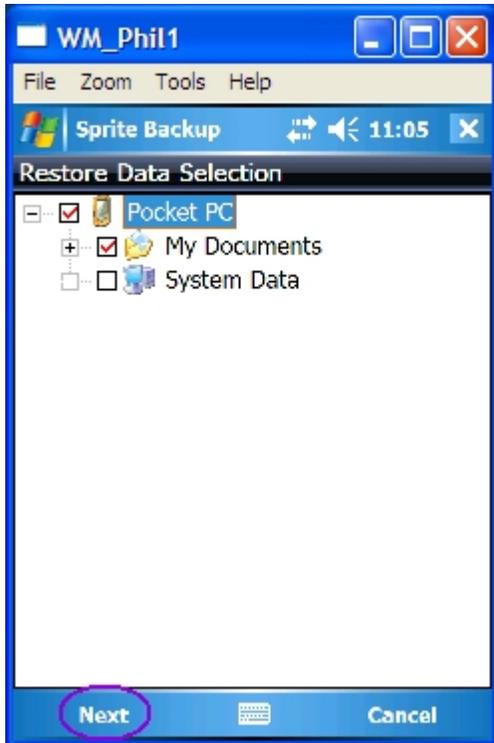
Restoring from a Sprite non-self-restoring backup file

If the database becomes corrupted while you are working in the field but your applications are intact, you can recover using your most current non-self-restoring backup file from a memory card. To recover:

1. Use **File Explorer** to navigate to the non-self-restoring backup file on the memory card.
2. Click the file.



3. Sprite will open and the **Restore Data Selection** window will appear.



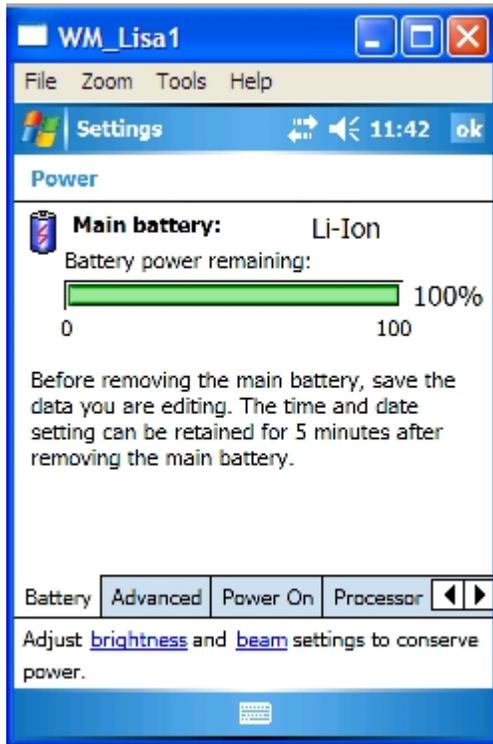
4. In the window, verify that all files that you wish to restore are checked, and tap **Next**.
5. Click **Next** in the **Device Reset Required** window.
6. When the device resets and the **Sprite Backup Restore Completed** window opens, click **OK**.

Your database should now be restored. You will need to re-enter any data that you had collected after the non-self-restoring backup file was created.

Managing the PDA battery

To minimize the possibility of data loss on the PDA, manage battery power properly and back up the PDA database to non-volatile storage, such as a secure digital or a compact flash card.

1. When using the PDA, check battery status frequently for power warnings.
2. To check battery status, select **Settings** on the **Start** menu, select the **System** tab, and click **Power**.



Conserving battery power

You can control several settings on your PDA to conserve power and extend battery life.

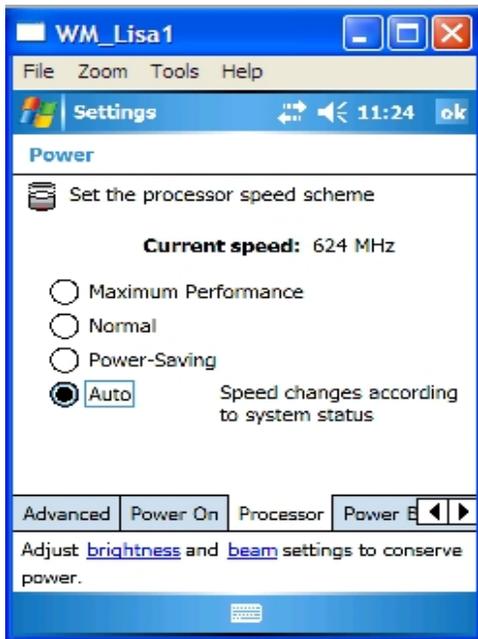
Adjusting battery settings

1. Select **Settings** on the **Start** menu.
2. Tap the **System** tab and then tap **Power**.
3. Select the **Advanced** tab.
4. Check the **On Battery Power: Turn off device if not used for** checkbox and set the number of minutes to the minimum you find usable in the field.



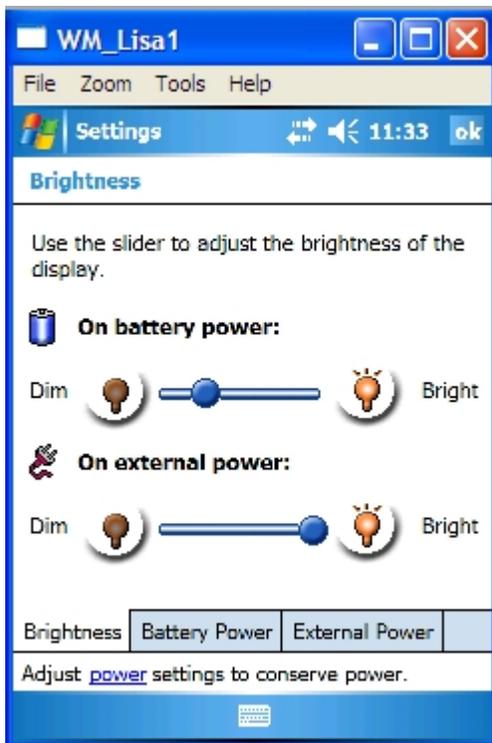
5. Select **Settings** on the **Start** menu, then select the **System** tab and click **Power**.

6. Select the **Processor** tab and select the setting that you find is the best balance between speed in the field and battery life.



Adjusting screen brightness

1. Select **Settings** on the **Start** menu, then select the **System** tab and click **Brightness**.
2. Adjust the **On battery power** slider to the minimum that you find usable in the field.



3. Select the **Battery Power** tab.

4. Check **Dim if device is idle for more than** and set to the minimum number of minutes you find usable in the field.



Setting Not to Receive Beams and Other Signals

1. Select **Settings** on the **Start** menu, then select the **Connections** tab and click **Beam**.
2. Un-check the **Receive all incoming beams** checkbox.
3. If your PDA has Bluetooth or Wireless Ethernet hardware, you may be able to turn it off as well.

