Installation and User's Manual

The Mobile Community Tree Inventory (MCTI) System
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http://www.springfieldparks.com

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Purpose:
The purpose of the MCTI is to provide cities, towns, and non-profit organizations with a tool to inventory forests. The application is comprised of three modules, paper, desktop, and palm-sized computer. With this information it is hoped that forest stewards will have a clearer view of their forests and will be able to make better-informed decisions for their continued health.

Intended Population:
The MCTI is designed for everyone from a volunteer high school student to a certified arborist.

Getting Started

- **Contact local USDA Forest Service liaison** Although the application is public domain and very easy to use, we suggest that all persons interested in using the application contact their USDA liaison so that the liaison can provide you with some helpful tips before you begin.
- **Purchase / Gain Access to a Windows based computer**
  You will need to have a Pentium II class computer that has at least 32mb of Ram and 500mb of hard drive space.
- **Purchase / Gain Access to a Palm-OS handheld device** There are a number of companies that are producing the hand held devices. There are significant differences on the price and capabilities of these units. Please consult the FAQ section of this manual for tips on purchasing a hand held device.
- **Acquire installation software** The MCTI software is freeware and can be obtained in a number of ways. You can download it from the website or have a copy mailed to you from your USDA liaison.
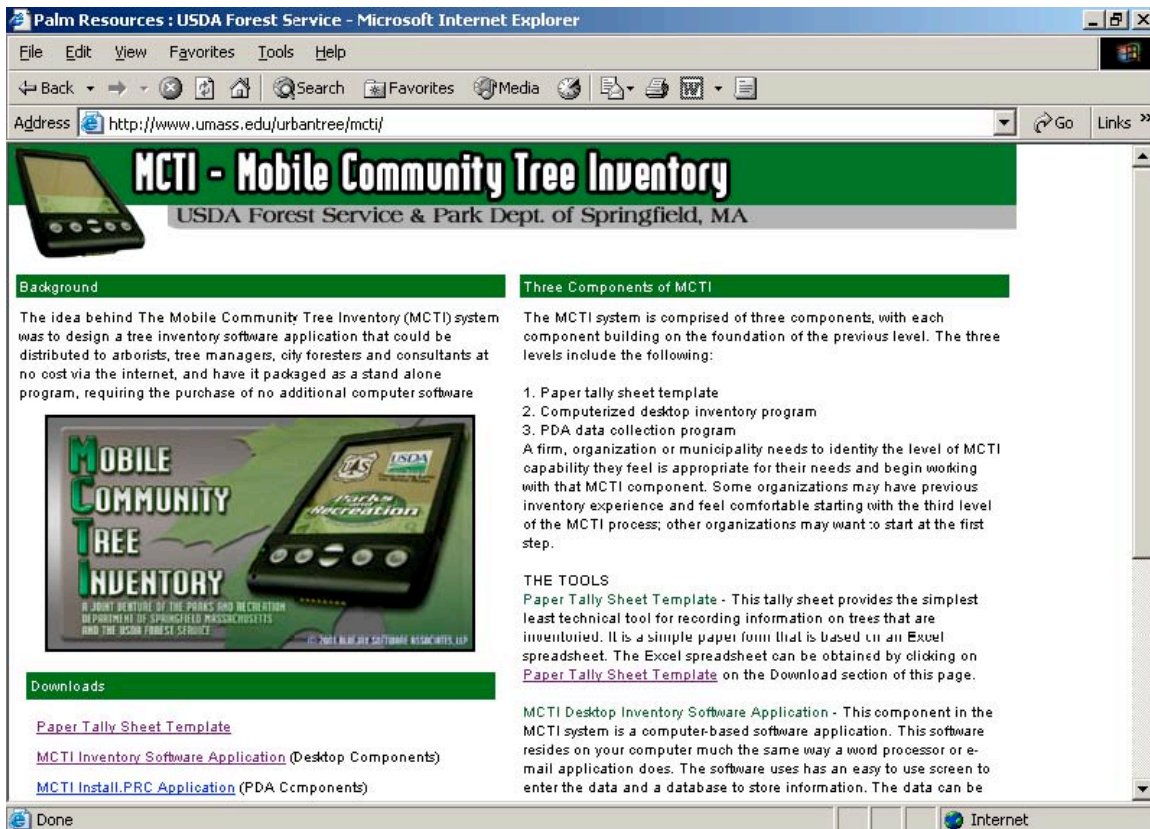
INSTALLATION MANUAL

Installing MCTI Software

Installation Method One: Installing from a CD

1. Insert the CD into the CD-ROM drive.
2. If the CD does not automatically begin the installation process, double-click on My Computer, double-click the CD drive and then double-click the "Setup" icon.
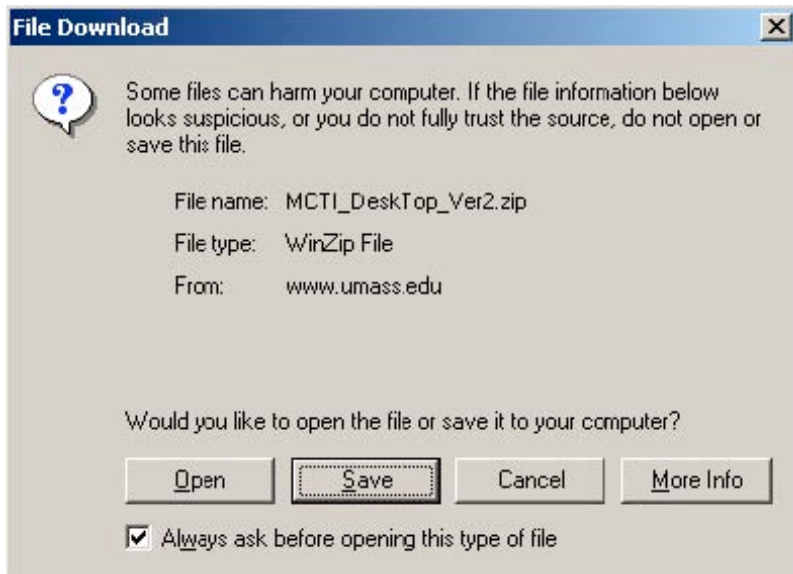3. Follow the prompts to complete the installation.

Installation Method Two: Installing from the Internet

1. Go to www.umass.edu/urbantree/mcti/

2. Click on the MCTI Inventory Software Application link. In the dialog box that appears click Save.

3.   Save the file to a location on your hard drive.
4.   Find the folder where the files were saved.
5.   Double click on the MCTI_Desktop.zip icon. If a WinZip window appears click Use Evaluation Version. A window will appear containing a list of files.
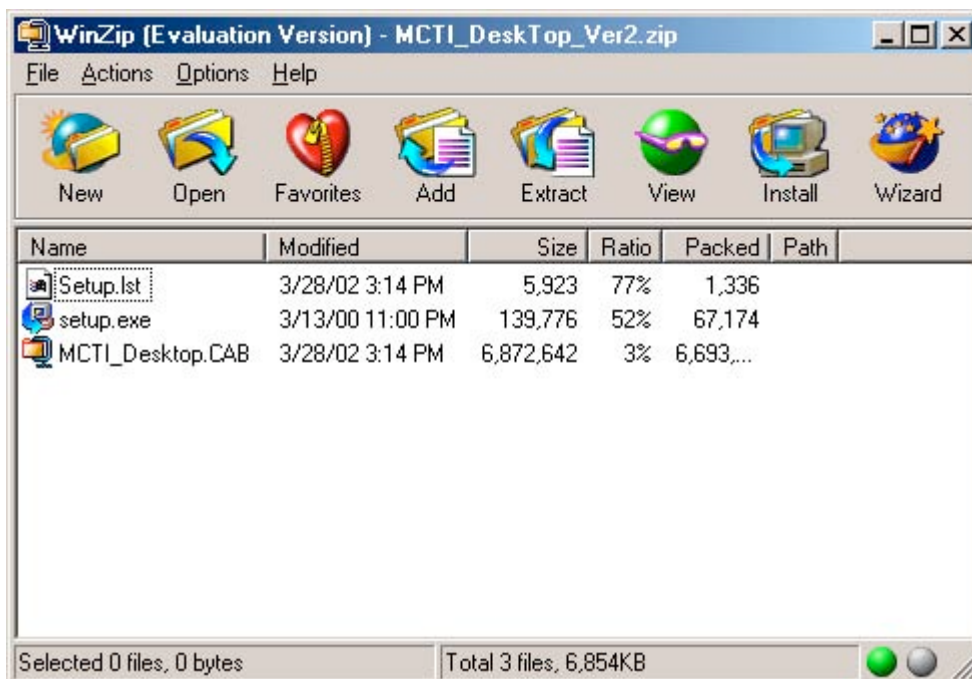
6.   You are now ready to install the software program on your Palm PDA and Windows PC.

Installing the program on your Palm® PDA device(s)

MCTI requires a Palm® Powered device running Palm OS version 3.1 (or later). **Following the instructions that came with your Palm device, install your Palm® software (including the HotSync™ application) on your PC and make sure that HotSync™ works ok.** Several files need to be installed on your Palm device. See your Palm® documentation for the proper use of the "Install Tool". In general, you need only make sure that the following files are "HotSynced" to your Palm device.

First, and this is VERY IMPORTANT, you need to determine which version of the Palm OS (Operating System) is installed on your Palm Device.

To do this, look in the user manual for your Palm PDA, call the manufacturer, or look on their web site to find out what OS Version is on your Palm device. If you guess wrong, MCTI will not run and you will have to clear any of the incorrect version pieces of the program off your PDA before you can do a reinstall. So, take a moment here and get this basic question answered.

You now will have to install the MCTI program, some support "run-time" files, and SIX data ("PDB") files on your Palm. The MCTI-Install file that you use to install the program will be dependent on the Palm OS version that you are using.

You should have the following files in the materials you were given or downloaded for the PDA portion of the MCTI-3 program.

MCTI-Install.PRC – **this is the program installation file for Palm OS 3 and 4**
MCTI-Install.OS5.PRC – **this is the program installation file for Palm OS 5**

Community.PDB – database file
Inventory.PDB - database file
Surveyors.PDB - database file
Treecodes_Palm.PDB – database file
Area.PDB - database file
Streets_Palm.PDB – database file

Using the Palm install tool, copy **ONE** of the "MCTI-Install" files to your Palm and ALL 6 of the PDB files. Once the MCTI-Install.PRC (or MCTI-Install.OS5.PRC) is on your Palm, it will run automatically and complete the MCTI PDA installation.

Installing and configuring the MCTI_Desktop program.

This is just a little more complicated than the Palm® device installation. The complexity comes from the need to set up a way for the Palm® and the desktop application to exchange data.

To do this we need to tell Microsoft Windows® a few things and have to "configure a conduit" to tell the Palm Hotsync™ program how we want the data to be exchanged during the HotSync™ process.

The steps are as follows (detailed explanation will follow):

1. Make sure the Palm® HotSync™ program is installed and working properly. Follow the instructions that came with your Palm® device to accomplish this.

2. Install the MCTI_Desktop program. You just need to run the SETUP installation program and follow the instructions on the screen.

3. The MCTI_Desktop installation will put a file named **"UCRunSetup.Exe"** in the folder where you installed the desktop application. Double Click to run this file. It will start an installation process which sets up the necessary "universal conduit" to allow Palm data synchronization. Just follow the instructions on the screen.

4. Set up an ODBC Data Source Name (DSN) for the MCTI database. This is nowhere as scary a process as it sounds. Full instructions are below.

5. The MCTI_Desktop installation will put a file named **"ConfigConduit.EXE"** in the folder where you installed the desktop application. Double Click to run this file. This will automatically set up everything the programs need to know how to exchange data. A full description of how to run this program is below.

6. You will need to close the HotSync™ program if it is currently running and restart it so that it can recognize the changes you just made. You can do this by clicking on the HotSync icon that appears on your Windows taskbar at the lower right of the screen.

You're finished! See the sections below for detailed explanations of the steps outlined above.

Setting Up an ODBC Data Source

This sounds a bit complicated, but is really very easy. The reason we need to do this is because Palm Databases are different from those that are on your PC and we want them to exchange information when you HotSync your Palm

device. Microsoft Windows provides a way for two different data files to communicate, called "ODBC" (**O**pen **D**ata**B**ase **C**onnectivity). We just need to tell Windows a few simple things about the database to make this happen.

Our database is named "MCTI.MDB" and we need to set up a "DSN" (which stands for **D**ata **S**ource **N**ame) for it.

FIRST, install the MCTI Desktop Program. You will also need to make sure that your Palm HotSync™ program is installed. Then do the following.

Step 1: Click the START button on your Windows taskbar and select SETTINGS. Click CONTROL PANEL. Depending on which version of Windows you have, you will see something like this:
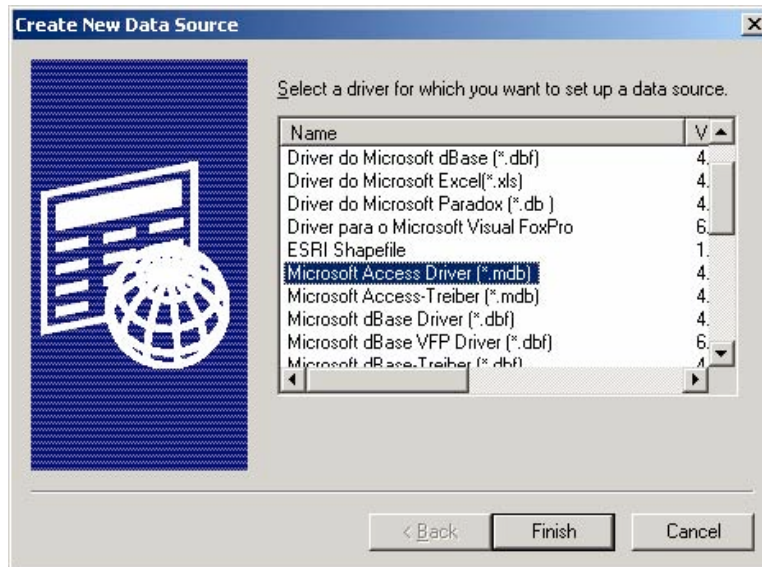

NOTE: In Windows 2000/XP, "ODBC Data Sources" is located inside the Administrative Tools folder in the Control Panel

**Step 2**: Click "ODBC Data Sources". You will see something that looks like this:
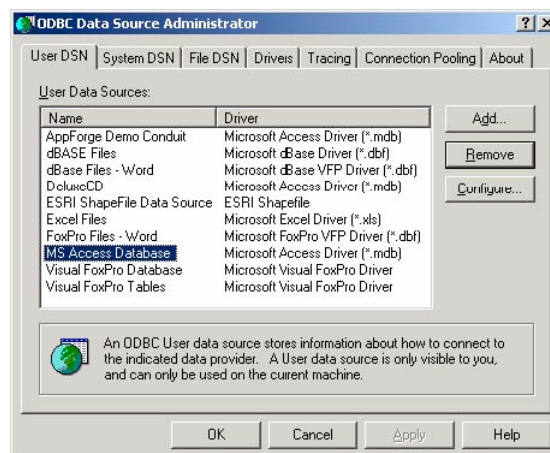
Step 3: Under the User DSN tab, click ADD and select "Microsoft Access Driver

(*.mdb)" Then click FINISH.

Step 4: Enter "MCTI" (all caps) for BOTH the Data Source Name and Description. **Then click the SELECT button and find MCTI.mdb.**   If you didn't change anything when you installed the program, you'll find it in "C:\Program Files\MCTI Desktop"
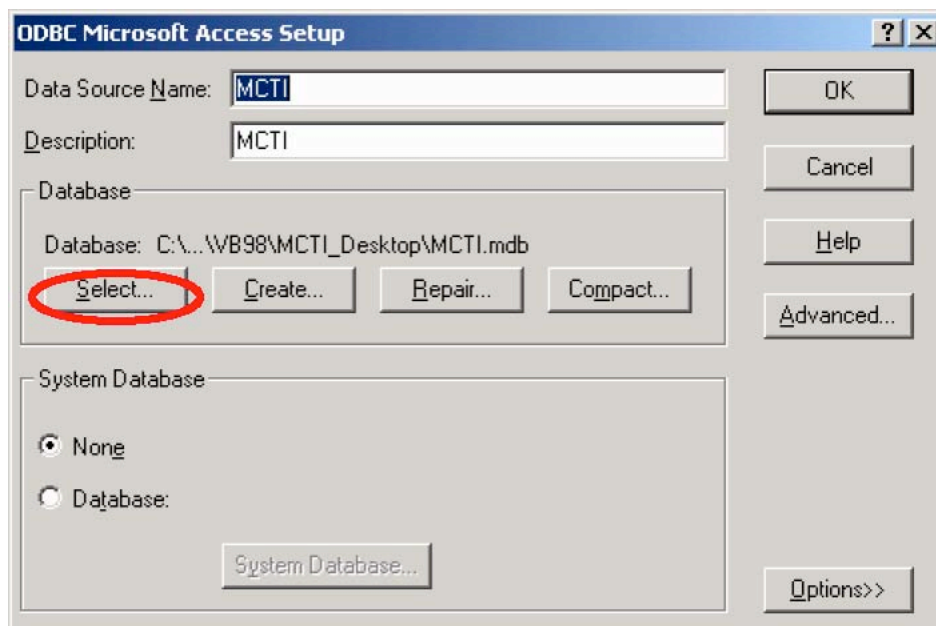
Click OK and you're done! Now there is just one more small thing to do.

Now, we need to set up a "Conduit". Palm HotSync has a list of things to do and

we need to add the MCTI data exchange to that list. We also have to tell it how to exchange the information. For instance, the lists of Surveyors and Tree Species are sent from the desktop application to the Palm and overwrite whatever was previously there. The Inventory information is sent from the Palm to the Desktop and is added to that database.

We've created a program that completely automates this process.

In the folder where you installed the MCTI Desktop program (usually C:\Program Files\MCTI Desktop) you will find a file named **ConfigConduit.exe**. Just double click it and the screen shown below should appear.
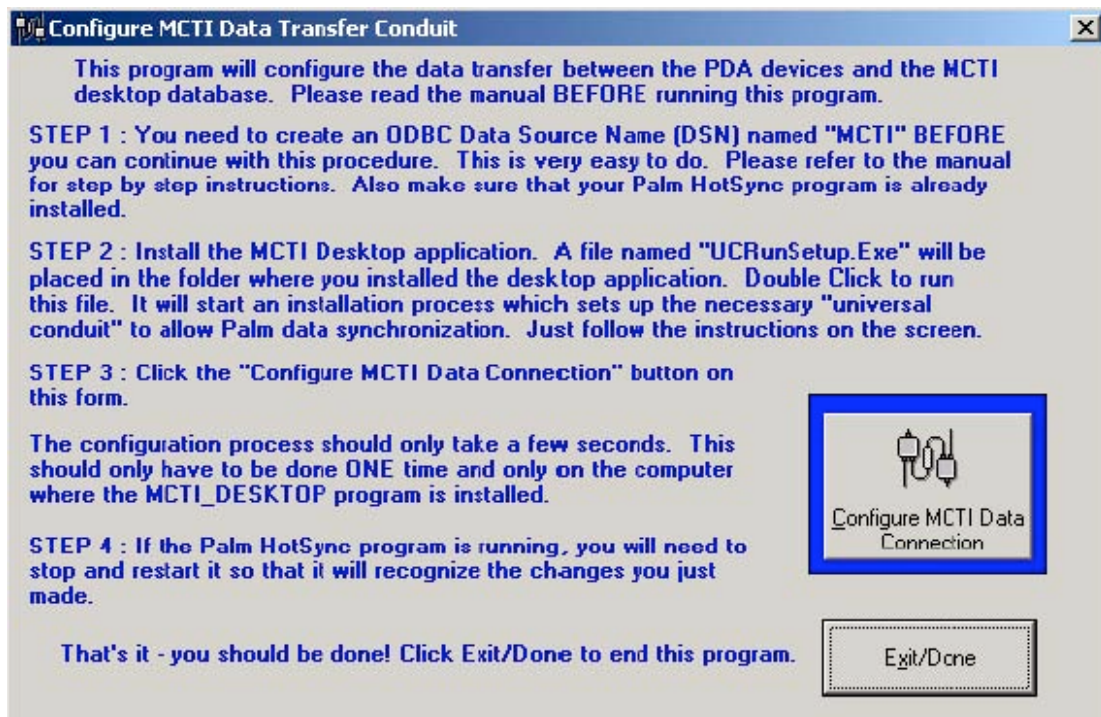
Make sure the MCTI Desktop program has been installed and that you have completed the ODBC setup described above. Also make sure that Palm HotSync™ has been installed.

Click the "Configure MCTI Data Connection" button. After a second or two, you will see a DONE message.

That's it! You're done!

Troubleshooting

Most installation problems occur if you don't do the steps in the specified order or if you omit one. For instance, some users have reported getting a message referencing an "Error 4" when running the ConfigConduit.EXE program. That is generally because they overlooked the step which asks you to run **UCRunSetup.Exe** first. It's also really important that you install the Palm Desktop and Hotsync software that came with your PDA.

Also make sure that you have set up the ODBC connection. If you have multiple users on your computer and you want them ALL to be able to use the ODBC connection for MCTI, you may set up a SYSTEM DSN, instead of a USER DSN as instructed. The only difference is that a USER DSN is only visible to a particular user.

You may get an error message saying that "SETUP.LST" cannot be found when you try to install the desktop program. This generally occurs if you have downloaded the three install files for the desktop program from a web site. SETUP.LST is a small text file that gives instructions to the SETUP.EXE program. In an attempt to be helpful, your web browser may recognize it as a text file and append a ".TXT" to the file name, so it changes it to SETUP.LST.TXT, which really confuses the SETUP program. This may be hard to detect, if your computer is set to hide file extensions that it recognizes. If you get this error, try renaming the file to SETUP.LST and try the installation again.

You may get an error message referencing UUCONFIG.DLL. Some earlier versions of the MCTI desktop install program put this file in the MCTI Application Folder (the location where you installed the MCTI Desktop program and database file), instead of the Windows System folder. This has been corrected in the newer installs, but if you have this problem, you just need to COPY UUConfig.DLL FROM the application folder (by default this is "C:\Program Files\MCTI_Desktop") TO the **Windows System Folder**. For Windows 95/98/XP, this is C:\Windows\System32. For Windows NT/2000, it is C:\WINNT\SYSTEM32. (There may also be a WINDOWS\SYSTEM folder. Don't get confused, you want the SYSTEM**32** folder).

If the Desktop program refuses to install, or your computer will not allow you to create an ODBC connection, your local IT Manager may have locked down your machine. This is common in large organizations. You will need ADMINISTRATOR rights to YOUR WORKSTATION (this is different than your level of Network Access). If this is the case, you will have to ask for assistance from your IT Department. They may be able to grant you temporary Administrator rights – or they may have to come and do the install for you.

If everything installs OK but you cannot HotSync tree data from your PDA to the Desktop, check to make sure that the MCTI Conduit is being recognized by HotSync. This is actually pretty easy to do. At the bottom right of your computer screen (on the Windows Task Bar), you will see a HotSync icon.
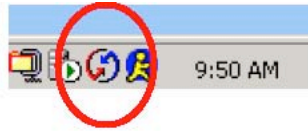
Click it and a menu will appear. Click "Custom"
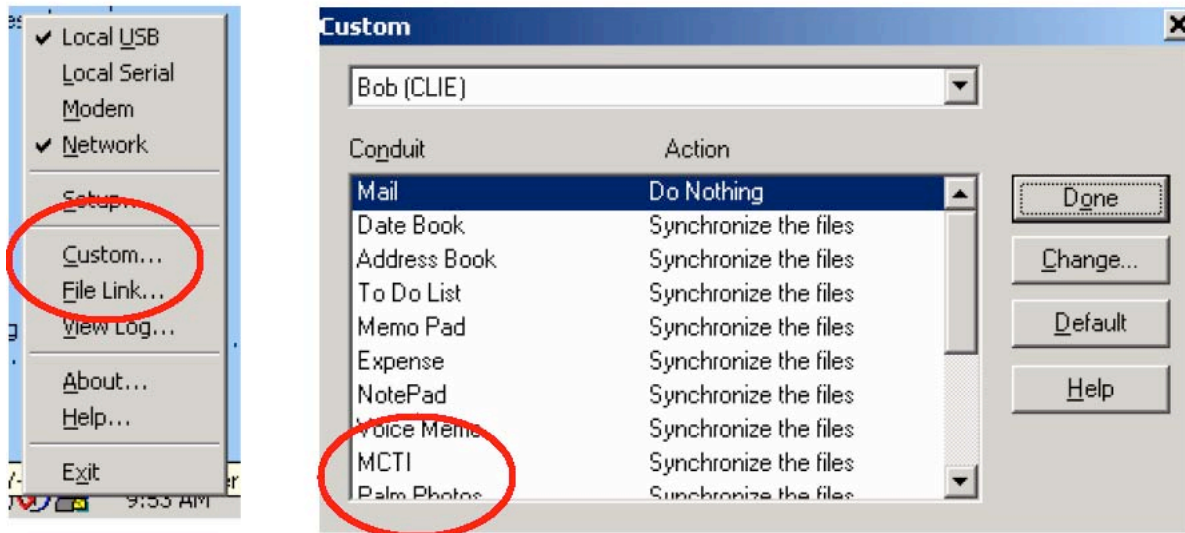
Make sure that MCTI appears in the list of conduits. If it does not, try exiting from HotSync (or rebooting your computer) and look again. On a new installation, it sometimes does not appear until HotSync has been restarted.

OPERATION MANUAL

Customizing the program for first use

You must complete the following instructions on your MCTI desktop application. The setup that you complete by the following steps will then apply to both the desktop and PDA application, once you complete a HotSync operation.

This section will guide you through the process for setting up the MCTI to function in your city or town. This is the same process for updating custom information.

Listing Surveyors
Click > File > Surveyors
In this window you list all of the individuals that will be collection information

Listing Tree Species
Click > File > Species
In this window you will place a check mark next to all of the trees that are commonly found in your area.

Listing Area Descriptions
Click > File > Area Descriptions
In this window you will be able to add an area descriptions such as "street tree" or "park tree".

Listing Streets
Click > File > Street List
In this window you will be able to add individual street names or import an existing street list database from an excel file. You will place a check mark next to the streets that are needed for the inventory. You may also delete streets that are no longer needed for the database.

* In both *Species* & *Street List* there is an option to "Create file for PDA" – this ensures that you have transferred your selections to the Palm device

Identifying the Community
Click >Setup
In this window you will need to choose a community where the inventory is going to take place. (This is extremely important as this information for a piece of the Tree ID Number.)

Collecting Data

Information can be collected for the MCTI in two different ways, paper or hand held PDA) device.

Paper

A standardized paper form can be obtained from the USDA Forest Service Northeast Region at http://www.umass.edu/urbantree/palm/

Paper forms can completed in the field and later entered into the MCTI desktop program where they can be analyzed and evaluated the same as if they were downloaded from a PDA.

Data Input on MCTI Desktop (manual entry)

Step 1 MCTI will open to the "Tree List" screen
Step 2 If you are updating an existing tree click on the row and :

Tab 1

Abbreviated Information

Tab 2

Tree "pointer"

Full Info. Display

Tree Pointer Control

Number of trees in database

List Display Options

Delete Selected tree(s)

Export Data to Excel

Tab Toggle

Add New Tree

Exit Application

Tab One
This screen gives the user a quick look at all of the trees that are stored in the database. When the user moves the mouse over the abbreviated information in the white boxes the information is displayed in full in blue text.

Tab 1 - List of controls and their functions

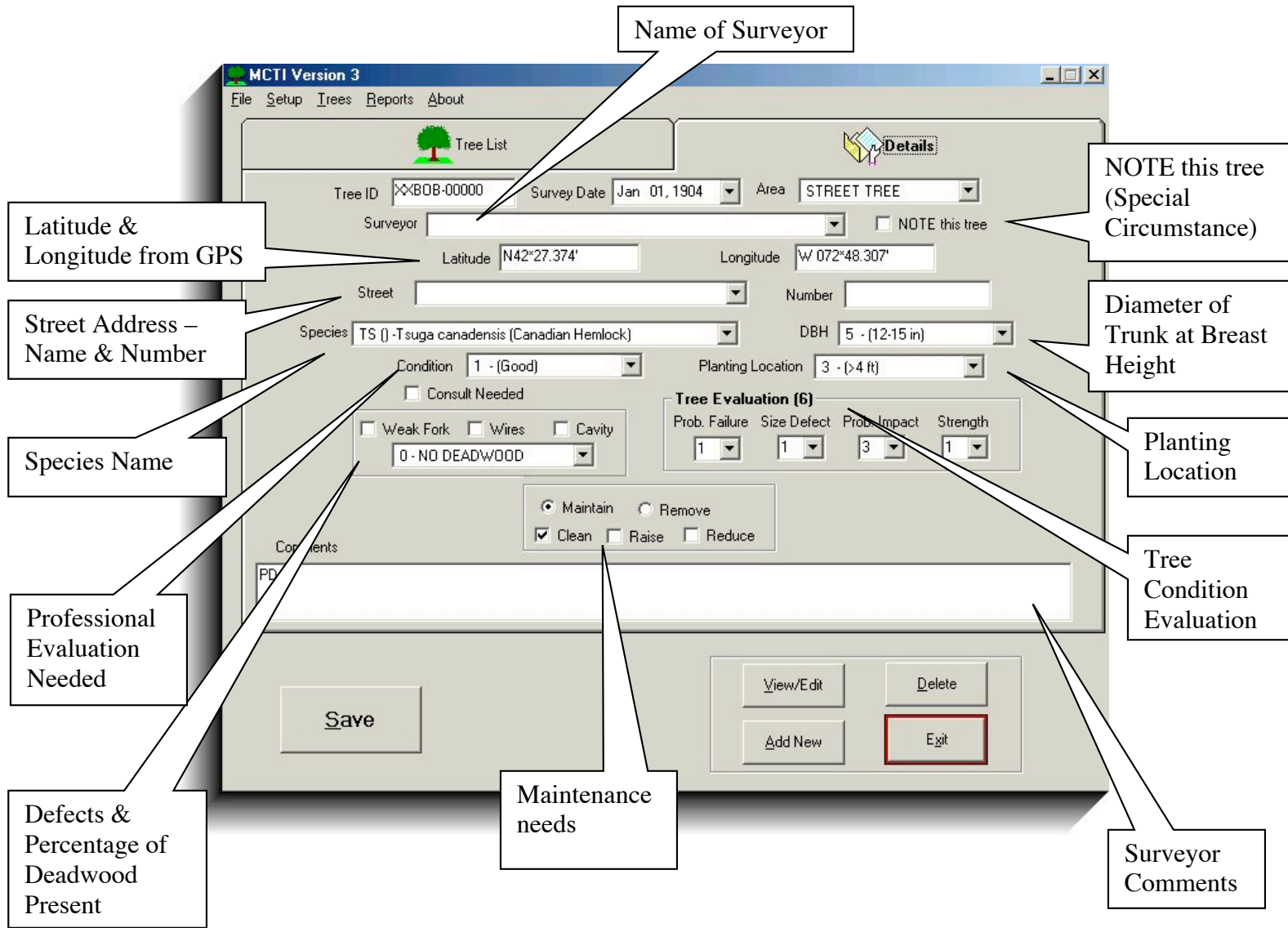| Select a tree	Use the arrows to move the "pointer" up and down the list. The tree that has "pointer" will be the record that appears when the user selects tab two or clicks on the "view / edit" button.
Refresh	The button forces the application to update all of the table based on changes in a record(s)
Entries on file	Total number of trees ("entries") in tree list database
Sort/Filter by	The user can determine in what order the trees are displayed. User can also export data to Excel CSV file.
View/Edit	Changes the users screen from a list of trees to the specific tree that is being pointed to on tab one.
Delete	Deletes the tree that has the "pointer".
Add New	This function will add a new tree to the database.
Exit	Will save and then exit the users session.

Tab Two
This screen shows the user detailed information about a particular tree. The screen allows the user to manipulate information about a tree. All fields require a value.

Tab 2 - List of controls and functions

Tree Id	This number is provided automatically based on the state, town, and sequential number
Survey Date	Date this particular tree was surveyed
Area	Area Description such as "street tree" or "private"
Surveyor	Person or team that evaluated tree(s) for inventory.
NOTE this tree	Tree that you would want to re-evaluate at a later date or specific problem that one would want to address
Latitude and Longitude	Information obtained from a GPS unit
Location / Address	Nearest property or landmark
Species	Scientific name of tree
DBH	The measurement of the tree at breast height. Round (diameter as breast height) down to the nearest option
Planting Location	0 –unknown 1 – sidewalk 2 - <4 ft (tree is planted in less than 4 ft of tree belt width) 3 - >4 ft 4 –lawn (located on terrace or park property)
Condition	Generalized perception of the health of the tree, options are: good, fair, poor, dead, unknown
Consult	Unknown health of the tree, requesting immediate certified aborist inspection

Weak Fork	The tree has more than distinct trunk. One trunk shows sign of age and wear.
Cavity	Tree has an existing cavity or cavities
Wires	The tree has power lines running through it.
Dead wood	The percentage of the tree that best describes the amount of deadwood.
Tree Evaluation	Probability of failure, size of existing defect, probability of impact, and strength of the tree are point-based categories
Maintain / Remove	Should the tree be treated or cut down?
Clean / Raise / Reduce	Type of pruning that is necessary to get the tree in good shape.
Comments	Can take note of any desired additional information
View/Edit	Changes the users screen from a list of trees to the specific tree that is being pointed to on tab one.
Delete	Deletes the tree that has the "pointer".
Add New	This function will add a new tree to the database.
Exit	Will save and then exit the users session.

Name of Surveyor

MCTI Version 3

File Setup Trees Reports About

Tree List | Details

Tree ID [XXBOB-00000] Survey Date [Jan 01, 1904 ▼] Area [STREET TREE ▼]

Surveyor [▼] ☐ NOTE this tree

NOTE this tree (Special Circumstance)

Latitude & Longitude from GPS

Latitude [N42*27.374'] Longitude [W 072*48.307']

Street [▼] Number [   ]

Street Address – Name & Number

Species [TS () -Tsuga canadensis (Canadian Hemlock) ▼] DBH [5 - (12-15 in) ▼]

Diameter of Trunk at Breast Height

Condition [1 - (Good) ▼] Planting Location [3 - (>4 ft) ▼]

☐ Consult Needed

Species Name

☐ Weak Fork ☐ Wires ☐ Cavity

[0 - NO DEADWOOD ▼]

Tree Evaluation (6)
Prob. Failure [1 ▼] Size Defect [1 ▼] Prob. Impact [3 ▼] Strength [1 ▼]

Planting Location

Professional Evaluation Needed

● Maintain   ○ Remove
☑ Clean ☐ Raise ☐ Reduce

Tree Condition Evaluation

Comments
[PD]

Defects & Percentage of Deadwood Present

Save

View/Edit   Delete

Add New   Exit

Maintenance needs

Surveyor Comments

Printing Reports
Click > Report > Summary Report

In this window (Summary Report) you will be able to create a report that uses the custom information collected to calculate important statistics.

Click > Report > Street Summary Reports

In this window (Street Summary Report) you will be able to select specific streets to be included in the report * a maximum of 40 streets may be selected.

Specific Streets can be selected (up to a maximum of 40 streets)

Click > Report > Trees with "Note this Tree" flag

In this window ("Note this Tree" Report) a report will be generated that includes all inventoried trees marked with "Note this Tree" designation.

Generates a Report based on all trees where "Note This Tree" was selected

Click > Report > Graphic Reports

In this window Graphic Reports will be created based on Species distribution, Tree Condition, and Hazard Rating.

*Tab One – Species Rating

    Gives a bar graph of 10 most frequently found species
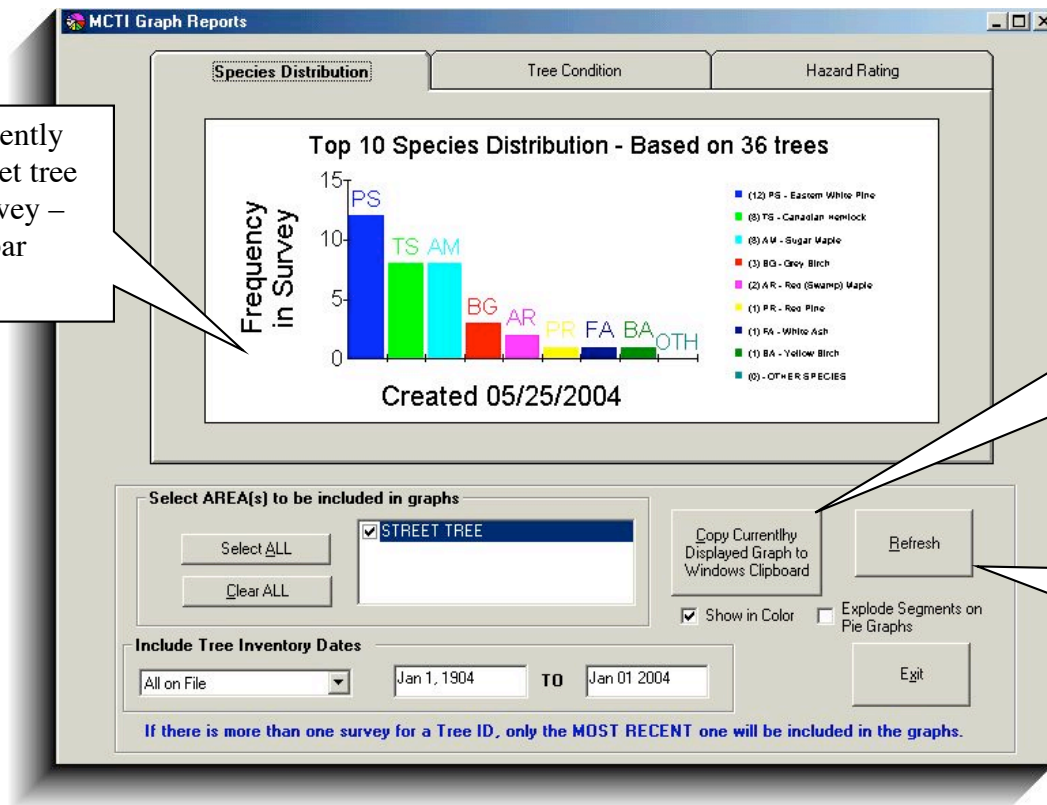
10 most frequently occurring street tree species in survey – displayed in bar chart format
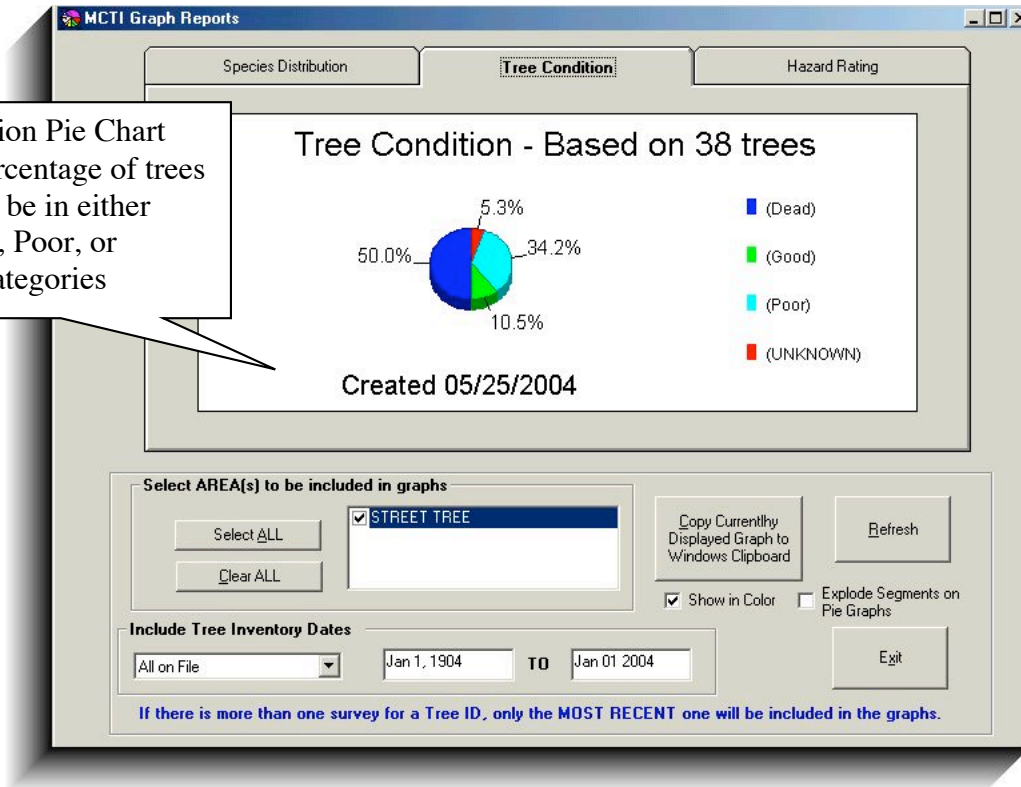
Copy Currently Displayed Graph to Windows Clipboard

Updates Graph to display any changes in database

*Tab Two – Tree Condition

Pie Chart for the percentage of trees in a given condition
(Good, Fair, Poor, etc)

Tree Condition Pie Chart based on percentage of trees evaluated to be in either Dead, Good, Poor, or Unknown categories

*Tab Three – Tree Evaluation

Creates a pie chart (percentage) for categories of tree evaluation
(the number of points earned by a tree becomes a category – so a group
is created for all trees evaluated with an overall score of 9)

Tree Evaluation created from point based system – all trees with a "9 rating" were grouped and they totaled 21.1% of the total (38) trees surveyed
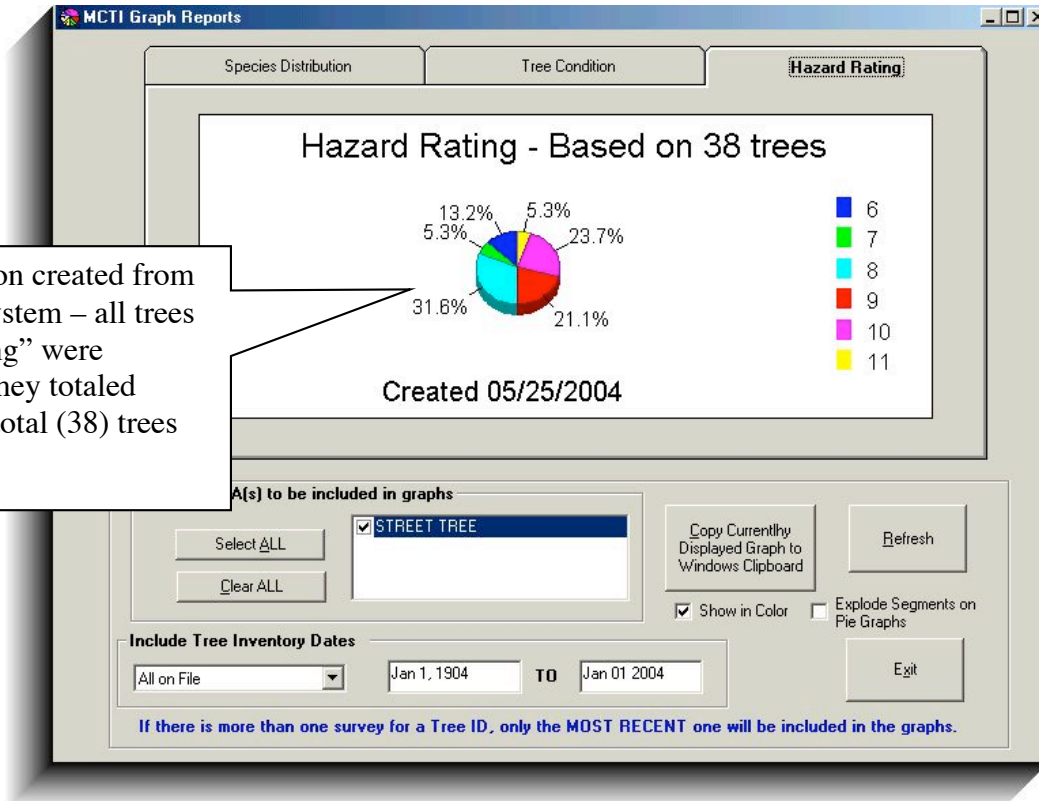
Data Input (with a Palm OS Hand Held)

The palm pilot input screens are exactly the same as the desktop input screens. For an explanation of the individual fields please refer to the appropriate page of this manual.

User needs to Log In

Add a Tree(s):

1. Date
2. Area Description
3. Community ID (Number)
4. Surveyor
5. Tree ID being edited
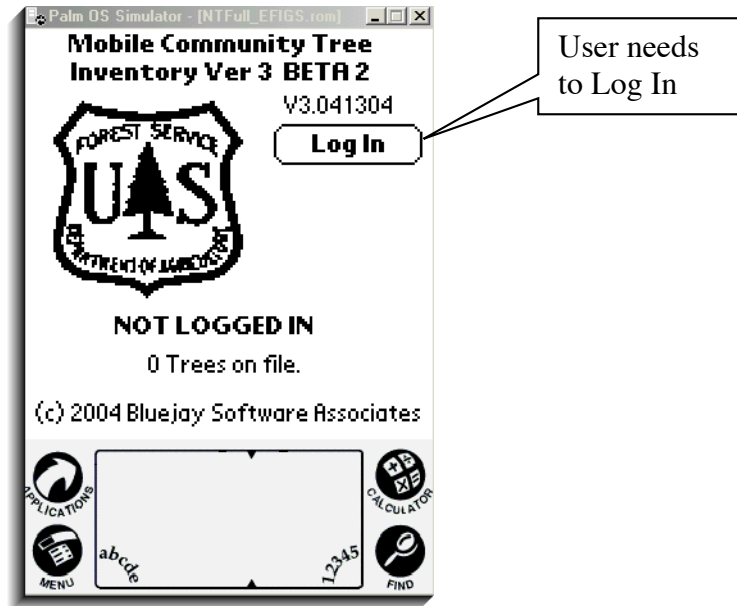
6. Street Number
7. Street Name
8. Species Code
9. Condition
10. DBH
11. Consult Needed
12. Weak Fork
13. Wires Present
14. Cavity Present

15. Latitude / Longitude
16. Percentage of
    Deadwood
17. Planting Location
18. Maintenance Needs
   (Remove or Maintain)
        Clean
        Raise
        Reduce

19. Tree Evaluation
(check the Tree Evaluation
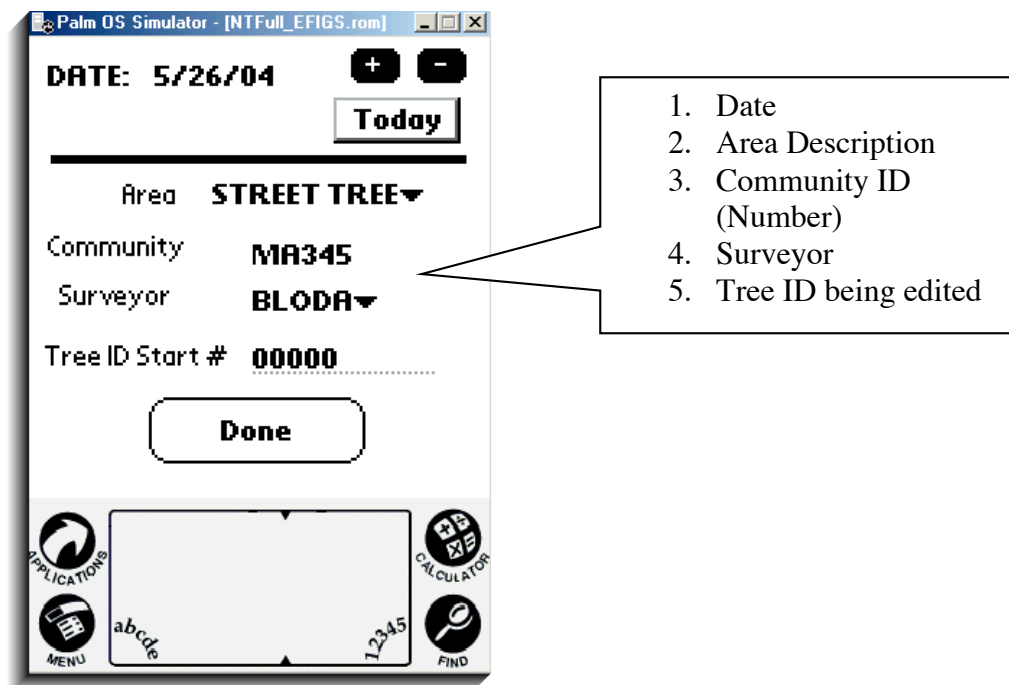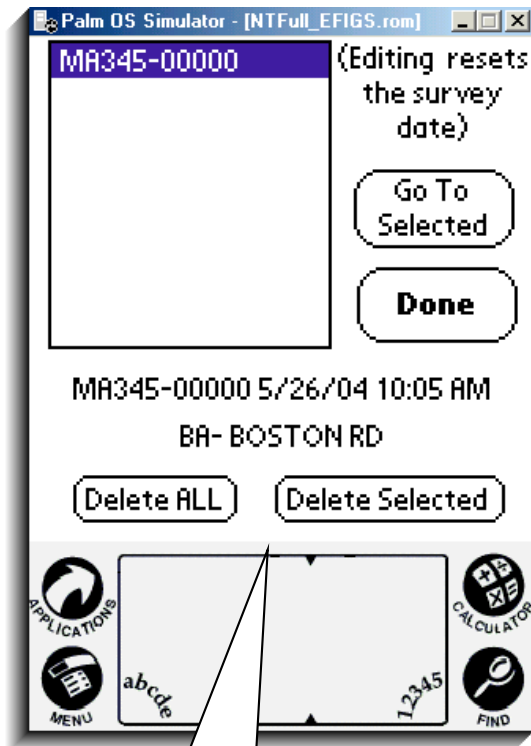Box to bring up point based
scoring options for the
categories of:
        Probability of Failure
        Size of Defect
        Target Impact
        Species Rating

20. Note This Tree:
    Checking this will enable
    you to generate a report
    of all trees selected with
    this option

Palm OS Simulator - [NTFull_EFIGS.rom]

Tree ID   MA345-00000

#/Address [_____]   COPY
                          PASTE

[BOSTON RD   ▼]

Species BA-Yellow Birch▼

Condition Poor▼   DBH 24-30▼
        ☑ Consult Needed
        ☐ Weak Fork   ☐ Wires
        ☑ Cavity
      [CANCEL]   [NEXT]

Palm OS Simulator - [NTFull_EFIGS.rom]

Tree ID: MA345-00000
Lat/Long
[0.0]   [0.0]

% Deadwood   ▼ 2 - 25-50%

Planting Loc   Sidewalk▼
_____
◉ Maintain   ○ Remove
  ☑ Clean   ☑ Reduce
  ☐ Raise
_____
[BACK] [CANCEL] [NEXT]

Palm OS Simulator - [NTFull_EFIGS.rom]

Tree ID: MA345-00000
☑ Tree Evaluation   Eval#: 8

Prob. Failure ▼ 2   Trgt Impct ▼ 1
Size Defect   ▼ 3   Species Rtng ▼ 2

Comments   ☑ Note This Tree

[_____]
[_____]

[BACK] [CANCEL] [SAVE]

Update Old Tree:

1. Select desired tree to edit / update and either hit
   a. Go to Selected
   b. Delete All or Delete Selected

You are now brought to the Tree Information previously stored

Once you have completed your work for the day, place the Palm PDA into the HotSync cradle and press the Hot Sync button. MCTI will move the data from your PDA to the computer. MCTI will not delete entries in the PDA without permission from the user. Don't forget to give permission when you begin a new work day.

NOTES: