

2010 Data Collection Procedures for the Chippewa NF using a Portable Data Recorder

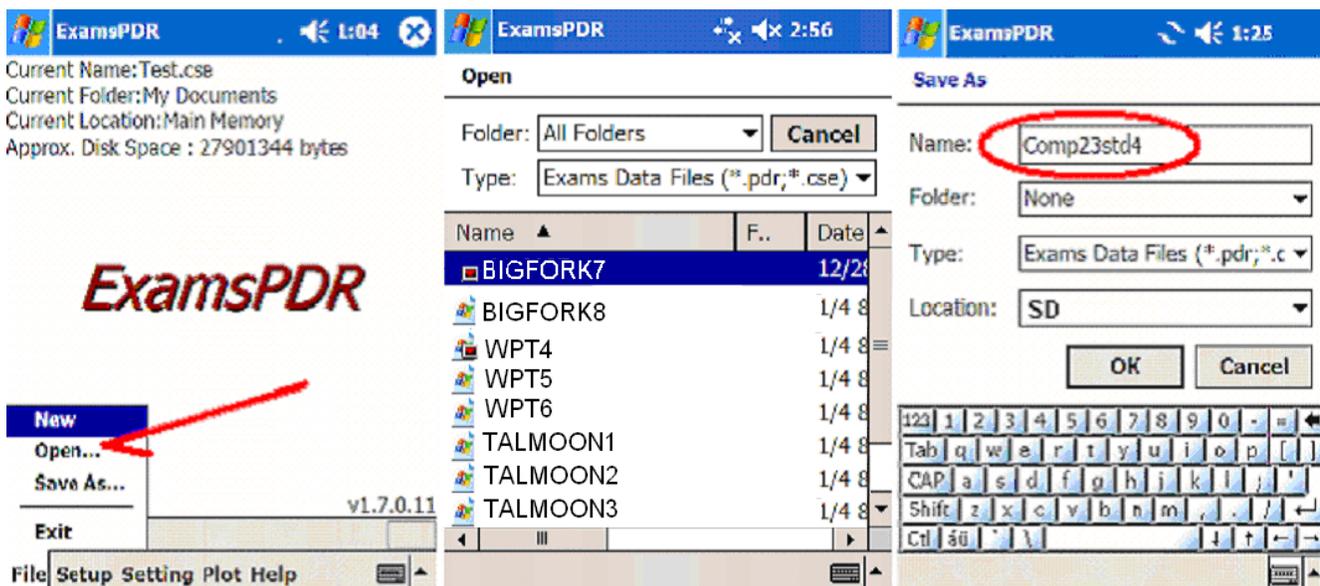
Data Recorders will be used for all Common Stand Exam on the Chippewa National Forest. Using the data recorder for field data collection introduces error checking in the field, reducing the number of errors that are brought into the office to load into FSveg. Transcription errors from hard copy data sheets to the computer are eliminated. Uploading data into FSveg is also greatly facilitated. Data is “ready to use” as soon as it comes in from the field and is uploaded into FSveg.

Execute the PDR Software

On your Dell AXIM, use the stylus to tap the “Start” menu. When the drop down menu opens, tap “ExamsPDR”. The Exams program opens.

The menu bar at the bottom of the display is what you will use to maneuver through the ExamsPDR program. To start out tap “file” and then “open” to open your template file. This has the sample design you will be working with and is named “TALMOON1”, “TALMOON2”, “TALMOON3”, “WPT4”, “WPT5”, “WPT6”, “BIGFORK7”, “BIGFORK8” “BIGFORK9”, or “BIGFORK10”. Select the right file for the project area. You need to open this and then save it. Never enter data into this template file as you will need to use it to create new data files every time you go to the field.

Once the template file is open go back to the “file” option and tap “Save As”. The “Save As” window opens. Name the file using the compartment and stand as in the example. If you will inventory multiple stands within a compartment, you may name the file just using the compartment number. Using this naming convention will help you organize your data and easily identify files containing data you might want to go back to later. Always save the file to your memory card (not Main memory) in the “Location” block.



Once the file has been saved you may enter data. The first step is to create the setting you will be working in. Do this by tapping “Setting” on your menu bar and then tapping “Setting Data Wizard”.

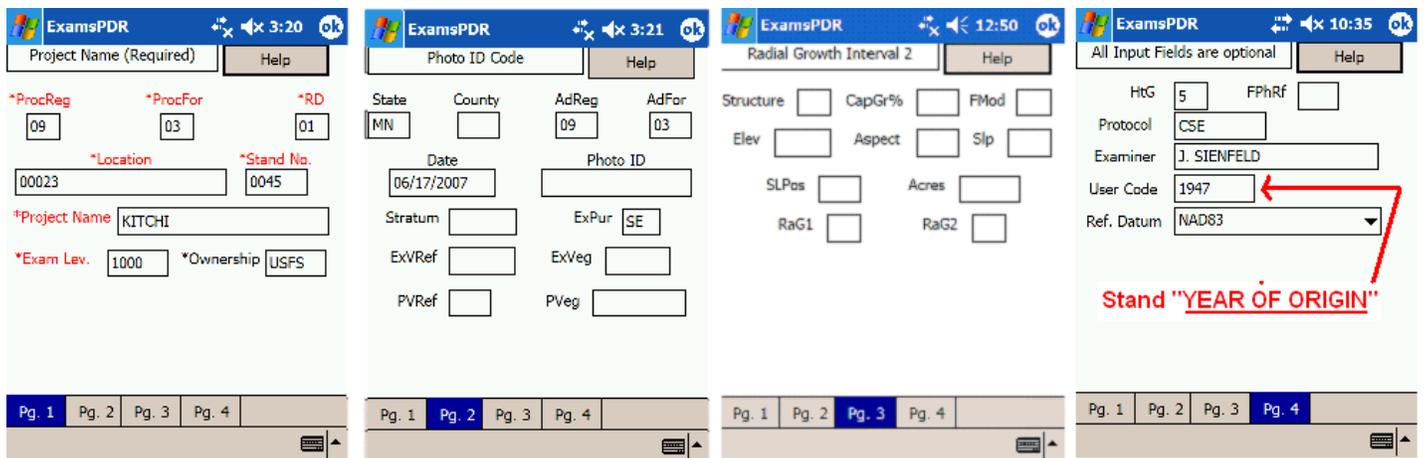
In the next screen, tap the “Insert” button. A setting screen will open to “Pg. 1”. Here you will only need to fill in 4 fields.

- 1) “RD” is the number of the Ranger District (01 = Blackduck, 02 = Cass Lake, 03 = Deer River, 04 = Marcell, 05 = Walker).
- 2) Fill in the “Location” with the 5 digit compartment number, using leading zeros.
- 3) Complete the “Stand No.” with the 3 digit stand number, using leading zeros.
- 4) “Project Name” will be either “TALMOON1”, “TALMOON2”, “TALMOON3”, “WPT4”, “WPT5”, “WPT6”, “BIGFORK7”, “BIGFORK8”, “BIGFORK9”, or “BIGFORK10”. If you selected the correct template file, the project name should be correctly set as the default so you don’t have to retype it every time you create at new setting.

On “Pg. 2”, the date will need to be filled in. This is the date that the setting was inventoried. Usually the same day you create the setting. Other required fields should be filled in automatically as in the following figure.

On “Pg. 3”, nothing should need to be filled in.

On “Pg. 4”, Protocol, Examiner (12-characters) and Year of Origin (User Code) must be entered. The protocol should be “CSE”. Enter the examiners name. If the full name is longer than 12 characters, use only the initial of first name and entire last name, or just the last name. **Do not use reserved characters such as +, /, -, or * in this field.** In the User Code block enter the 4 digit year of origin for the stand **AFTER** the plot data has been collected. (This used to be recorded in setting remarks.)



Sample Design

The Sample Design Form is already defined in the template file.

| Sample Design Form(s); Setting: 09 03 01 00126 0023 | | | | | | | |
|---|------------------|-----|----------------------|----------|--------------------|------|--------|
| Tree | Veg. Composition | | Ground Surface Cover | | Downwoody Material | | |
| Meth | ExpFac | Azm | Cond. | SubFiltr | Var | MinV | MaxV |
| BAF | 10.00 | 360 | --- | ALL | DBH | 5.00 | 999.99 |
| FRQ | 100.00 | 0 | --- | ALL | DBH | 0.01 | 4.99 |
| | | | OR | LIVE | HGT | 0.50 | 4.49 |

Tree Tab

Overstory trees with a DBH of 5"+. An angle gauge with a BAF of 10 will always be used for overstory trees. Both live and dead trees are counted.

Pole trees are measured on a 1/100th acre fixed radius plot. Pole trees are those with a DBH of .01" to 4.99". Both live and dead trees are tallied.

Seedling trees are also tallied on the 1/100th acre fixed radius plot. Seedling trees are trees less than 4.5' in height (in other words, they don't have a DBH).

Veg. Composition, Ground Surface Cover, & Down Woody Material Tabs

There is no data to collect for Vegetation Composition, Ground Surface Cover or Down Woody Material. There are therefore no protocols under those tabs.

Data Forms

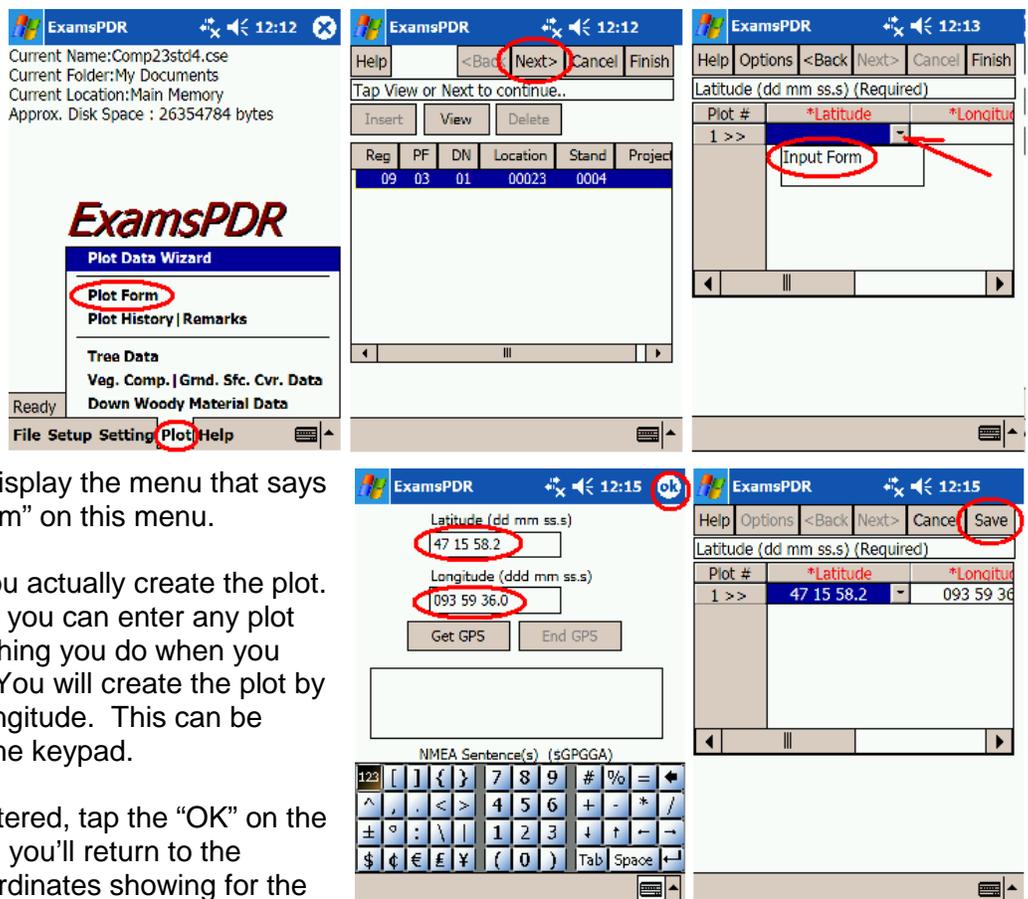
Creating Plots

From the menu bar select "Plot". From the dropdown menu select "Plot Form". With the setting selected (it's blue when selected) tap the "Next" button.

When the next form opens use the dropdown arrow to display the menu that says "Input Form". Tap "Input Form" on this menu.

The "Input Form" is where you actually create the plot. This needs to happen before you can enter any plot data and should be the first thing you do when you arrive at a sample location. You will create the plot by entering the Latitude and Longitude. This can be done by manual entry from the keypad.

Once the coordinates are entered, tap the "OK" on the upper right of the screen and you'll return to the previous screen with the coordinates showing for the

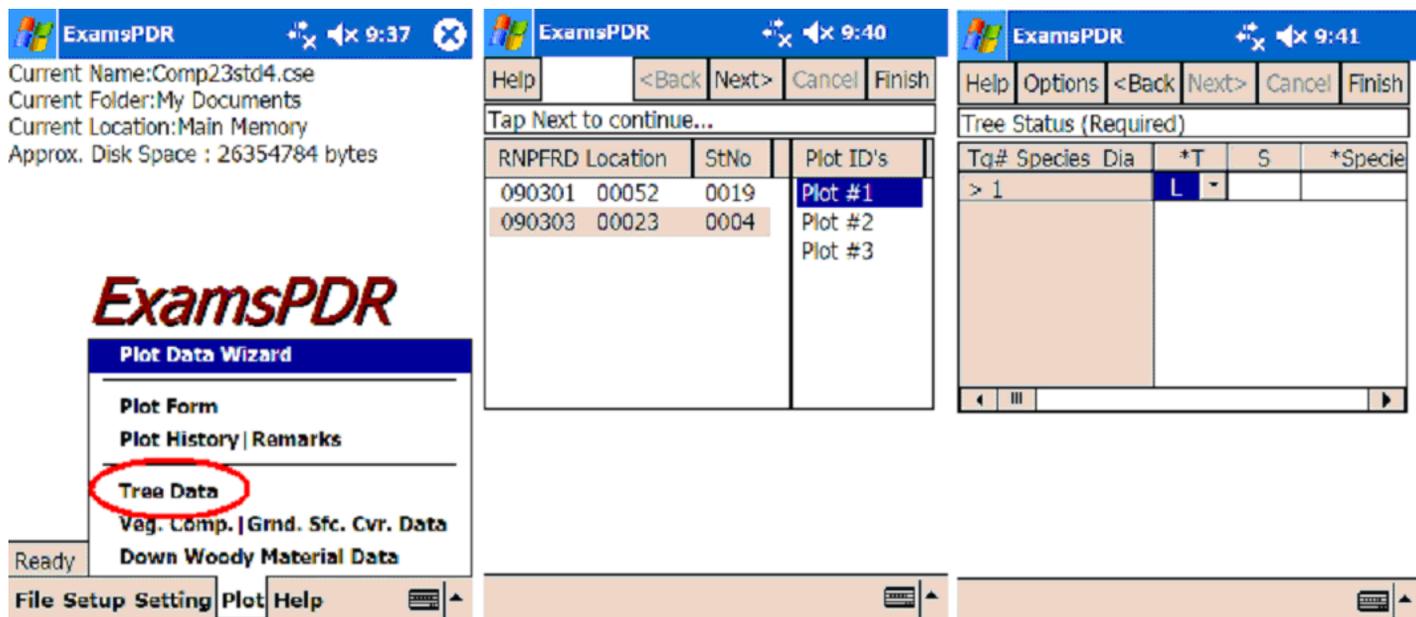


plot you just created. This process will have to be repeated for each new plot in every setting.

When you're finished creating the plot, double check the coordinates to be sure they are correct, then tap the "Save" button.

Tree Data

To open the tree data form, tap "Plot" on the menu bar. In the dropdown menu tap "Tree Data". In the next screen select the setting and plot you want to enter tree data for. Once you tap the plot number the blank tree data screen opens (far right in figure below).



The images in the following figure show data for trees #2 thru #8 after being entered. In the first column "*T", you will enter either "L" for Live or "D" for Dead from a dropdown menu. Do not use the other options of "X", "Y", or "S".

Column "S" is used for site trees. Three site trees will be measured in each setting, no more than one per plot so they will be distributed through the setting. Locate site trees on the plots if possible. If no good candidates exist on the plots, site trees may be selected off the plots. An "S" is recorded for a site tree on a plot. Enter "F" for a site tree off a plot. All site trees in a setting must be of the same species. Site trees should be trees that have been free to grow throughout their lives. Tie a pink flag around each site tree and mark it with the tree "TagID" number using permanent marker. Leave the increment core in the increment hole in the tree trunk, projecting somewhat, so it may be retrieved and used by plot inspectors. If the increment breaks place it on the ground at the base of the tree for inspectors to find. Record the GPS coordinates for "off plot" site trees in the plot remarks of the nearest plot to the off plot site tree. See site tree specifics that follow below.

In the "Species" field use the dropdown menu to select a species code.

The "TCnt" field is for the number of trees represented by the record you're working with. Enter a number from the keypad.

Enter a DBH in the “#DBH” column. These are in two inch size classes (a 5 inch tree would be recorded as 6”, a 7.5 inch tree would be recorded as 8” and so on), except for site trees and trees less than 1 inch in diameter. For trees with a DBH of less than 1”, and site trees, measure the tree diameter at breast height and enter it to the nearest tenth inch. No diameters are entered for seedlings (because they are below DBH).

| Tq# | Species | Dia | *T | S | *Spe |
|-----|---------|------|----|---|------|
| 2 | PIST | 14.0 | L | | PIST |
| 3 | PIST | 16.2 | L | S | PIST |
| 4 | ABBA | 10.0 | L | | ABBA |
| 5 | PIST | | L | | PIST |
| 6 | ABBA | | L | | ABBA |
| 7 | ACRU | | L | | ACRU |
| > 8 | ACRU | 0.5 | L | | ACRU |

| Tq# | Species | Dia | *Species | *TCnt |
|-----|---------|------|----------|-------|
| 2 | PIST | 14.0 | PIST | 1 |
| 3 | PIST | 16.2 | PIST | 1 |
| 4 | ABBA | 10.0 | ABBA | 1 |
| 5 | PIST | | PIST | 23 |
| 6 | ABBA | | ABBA | 56 |
| 7 | ACRU | | ACRU | 89 |
| > 8 | ACRU | 0.5 | ACRU | 12 |

In the “#Hgt” field, enter the tree height to the nearest foot for all trees, including seedlings.

| Tq# | Species | Dia | #DBH | #Hgt | #Age |
|-----|---------|------|------|------|------|
| 2 | PIST | 14.0 | 14.0 | 52 | |
| 3 | PIST | 16.2 | 16.2 | 67 | 75 |
| 4 | ABBA | 10.0 | 10.0 | 45 | |
| 5 | PIST | | | 2 | |
| 6 | ABBA | | | 3 | |
| 7 | ACRU | | | 4 | |
| > 8 | ACRU | 0.5 | 0.5 | 7 | |

| Tq# | Species | Dia | #DBH | #Hgt | #Age | D |
|-----|---------|------|------|------|------|---|
| 2 | PIST | 14.0 | 14.0 | 52 | | |
| 3 | PIST | 16.2 | 16.2 | 67 | 75 | |
| 4 | ABBA | 10.0 | 10.0 | 45 | | |
| 5 | PIST | | | 2 | | |
| 6 | ABBA | | | 3 | | |
| 7 | ACRU | | | 4 | | |
| > 8 | ACRU | 0.5 | 0.5 | 7 | | |

Both live and dead trees are measured and recorded for all trees other than seedlings. Only live trees are measure and recorded for the seedling class.

| Tq# | Species | Dia | #DBH | #Hgt | #Age |
|-----|---------|------|------|------|------|
| 2 | PIST | 14.0 | 14.0 | 52 | |
| 3 | PIST | 16.2 | 16.2 | 67 | 75 |
| 4 | ABBA | 10.0 | 10.0 | 45 | |
| 5 | PIST | | | 2 | |
| 6 | ABBA | | | 3 | |
| 7 | ACRU | | | 4 | |
| > 8 | ACRU | 0.5 | 0.5 | 7 | |

| Tq# | Species | Dia | #DBH | #Hgt | #Age | D |
|-----|---------|------|------|------|------|---|
| 2 | PIST | 14.0 | 14.0 | 52 | | |
| 3 | PIST | 16.2 | 16.2 | 67 | 75 | |
| 4 | ABBA | 10.0 | 10.0 | 45 | | |
| 5 | PIST | | | 2 | | |
| 6 | ABBA | | | 3 | | |
| 7 | ACRU | | | 4 | | |
| > 8 | ACRU | 0.5 | 0.5 | 7 | | |

Enter the age of site trees in the “#Age” field. No other ages are required. For trees 3.0 inches DBH and larger, age is determined from an increment boring made at breast height. To reduce bias, the increment boring should be made at breast height facing plot center. Age is counted from the most current summerwood ring to the pith of the tree. Record the age counted, **do not** add an estimate of the number of years to grow to breast height. In the example, the ring count is 64 years, so record “64” for the tree age.

| Tq# | Species | Dia | #DBH | #Hgt | #Age |
|-----|---------|------|------|------|------|
| 2 | PIST | 14.0 | 14.0 | 52 | |
| 3 | PIST | 16.2 | 16.2 | 67 | 75 |
| 4 | ABBA | 10.0 | 10.0 | 45 | |
| 5 | PIST | | | 2 | |
| 6 | ABBA | | | 3 | |
| 7 | ACRU | | | 4 | |
| > 8 | ACRU | 0.5 | 0.5 | 7 | |

| Tq# | Species | Dia | #DBH | #Hgt | #Age | D |
|-----|---------|------|------|------|------|---|
| 2 | PIST | 14.0 | 14.0 | 52 | | |
| 3 | PIST | 16.2 | 16.2 | 67 | 75 | |
| 4 | ABBA | 10.0 | 10.0 | 45 | | |
| 5 | PIST | | | 2 | | |
| 6 | ABBA | | | 3 | | |
| 7 | ACRU | | | 4 | | |
| > 8 | ACRU | 0.5 | 0.5 | 7 | | |



No damage codes (“D” field) are required for individual trees (but will be recorded for the setting).

When all the tree data has been entered for a plot, tap the “Finish” button in the upper right corner of the form.

Site Trees - A site tree is a tree for which age and height are measured to determine site index and yield capacity for a tree. Site trees have never experienced any overstory competition or damage that would have reduced height growth during any period of their life. Freedom from height growth suppression is the single

most important selection criteria for site trees. Site trees should be sampled on every other plot if possible, with a minimum of three/setting. Locate site trees on the plots if possible. If no good candidates exist on the plots site trees may be selected off the plots as indicated above. **All site trees in a setting must be of the same species.** Select a species that best represents the current stand composition for site trees.

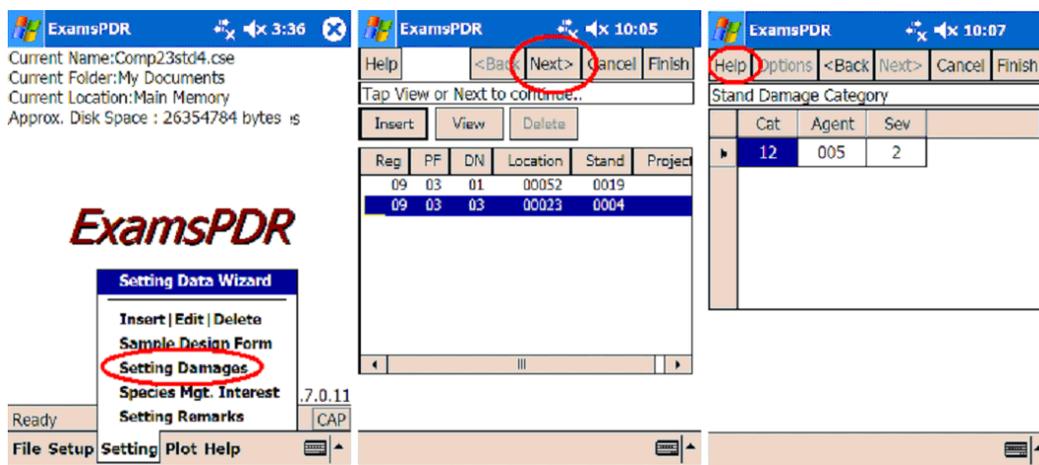
Site Tree Selection Criteria

1. Freedom from height growth suppression
 - Choose dominants or co-dominants.
 - No evidence of top damage, past or present.
 - No damage that could influence height growth.
 - No pronounced period of radial growth suppression.
2. Select trees from a locally defined species list. Species preference is based on the quality of the associated site index-yield study.
3. Similar age class, preferably middle-aged, avoiding old growth and young age classes. Typically > 50 years and < 120 years.
4. Select at least three site trees for each setting. **Tree species should be representative of a featured species in the stand. Select site trees of the same species throughout the stand.**

If none of the trees on at least three plots meet the above criteria, select the nearest off-plot trees that do meet the criteria. Use code “S” to designate site trees located on the plot. Use code “F” to designate off-plot site trees.

Setting Damage

Damage in a stand will be recorded in the “Setting Damage” screen after the data from the plots has been recorded. Examiners should note any damage in the stand as they examine the plots. How to do this is illustrated in the figures. Select the “Setting” option from the menu at the bottom of the screen. In the pop up menu



select “Setting Damages”. On the next screen select the correct setting and tap the “Next” button. The next screen that opens has three fields to complete from drop down lists. These are “Cat” (category), “Agent” (specific agent or vector), and “Sev” (severity or degree of damage). Select options for each field from the dropdown obtained for each by placing the cursor in the field and tapping the “Help” button.

There may be stands that have no damage. In those cases nothing needs to be entered. Conversely, there may be stands where there is more than one type of damage. In those cases, a second (or third, etc.) line will need to be entered in the “Damage” screen. To add additional lines for damage, open the keyboard and tap the down arrow. A new record will appear. Repeat this process for each type of damage that is present in the stand.

Year of Origin

A year of origin will be provided for each stand being inventoried. These are from our database and may or may not be correct. The examiner will determine a correct year of origin, based on knowledge gained of the setting through examination. Stands with a basal area of less than 50 ft²/acre should reflect a year of origin commensurate with the age of the regeneration cohort in the stand. Stands with a basal area equal to or greater than 50 ft²/acre should reflect a year of origin commensurate with the overstory.

Enter the year of origin in the “User Code” space on the 4th page of the setting (see last figure on page 2). To get to this page select “Setting” from the menu bar. Select “Insert|Edit|Delete” from the pop-up menu. Highlight the setting you want and then hit the “Edit” button. Tap “Pg.4”, and enter the year of origin into the “User Code” box. Then to save, tap “OK” at the upper right corner of the screen, then tap “Finish” at the upper right corner of the following screen.

Make sure the file is saved to the memory card (SD or CF) and not the data recorders memory. If not saved to the memory card the file will be lost if the data recorder loses power. It is recommended that at the end of each day all data files created that day be copied to a laptop to create a backup of the data.

Each weeks work will be considered a “block” of data. Files should be submitted every Monday (unless otherwise specified). Sub these files to ghswanson@fs.fed.us and lburke@fs.fed.us. Files will be loaded each Monday and inspection reports given to the inspectors. Inspections will occur as soon as possible following receipt of these reports. Results will be reported back to contractors as soon as they are received from the field by the COR.

Blocks will pass or fail inspections based on specified standards. These can be seen in the following three tables. These are what your work will be “graded on”. Data not meeting these standards will be returned to the contractor for rework.

Plot Data

| Field | Tolerance |
|----------------|-----------|
| Year of Origin | +/- 10% |

Plot Data

| Field | Tolerance |
|----------------|-----------|
| Plot Number | No Errors |
| Plot Latitude | No Errors |
| Plot Longitude | No Errors |
| Plot Remarks | No Errors |
| | |

Tree Data

| Field | Tolerance | | | |
|---|--|-------------------|-----------------|------------------|
| Plot Number | No Errors | | | |
| Tree Status | No Errors allowed in recognizing and coding dead or live trees | | | |
| Tree Species | No Errors | | | |
| Tree Count | Height | Diameter | Trees | |
| | <u>Range</u> | <u>Range</u> | <u>on Point</u> | <u>Tolerance</u> |
| | *All | All | 0 | 0 trees |
| | ≤4.5 feet | | 1-5 | ± 2 trees |
| | ≤4.5 feet | | 6+ | ± 50% |
| | >4.5 feet | <1 in | 1-5 | ± 1 tree |
| | >4.5 feet | <1 in | 6+ | ± 20% |
| | All | 1" – 4.99" d.b.h | 1-5 | ± 1 tree |
| | All | 1" – 4.99" d.b.h. | 6+ | ± 10% |
| | All | 5" d.b.h. + | 1+ | 0 trees |
| <p>*There is no tolerance for recording a tree when none are actually present in any of the above size classes. The recording of a fixed plot tree when none are present will result in a single discrepancy. The recording of a variable plot tree when none are present will result in an unacceptable unit. Grouping criteria are standardized to facilitate stand exam contract inspection and payment.</p> | | | | |
| DBH | No Errors Trees must be within the correct 2" diameter class. | | | |
| Height | ± 10 % on all trees except site trees. On site trees ±5% | | | |