Specialty Cruises

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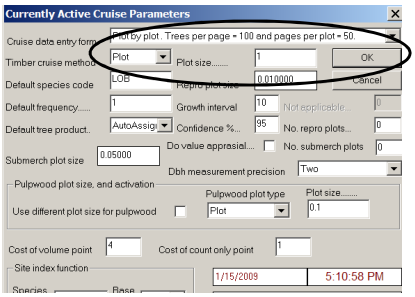
A. 100% Tally and Strip Cruises

TCruise treats a 100% Tally Cruise or a Strip Cruise the same as a one plot "Normal" Cruise with the following 2 minor exceptions in the Active Cruise Parameters:

1. Make your **Cruise data entry form be Plot by plot. Trees per Page =100….** This allows you to have 5000 trees per plot. Be sure and save your one plot throughout the cruise.

2. 100% Tally – Make your **Plot size** and your Tract Acres the same. They can both be 1 and the volumes will be correct.

Strip Cruise – Make your **Plot size** equal the area of your strips and Tract Acres be the total Tract area.



Cumulative Tally

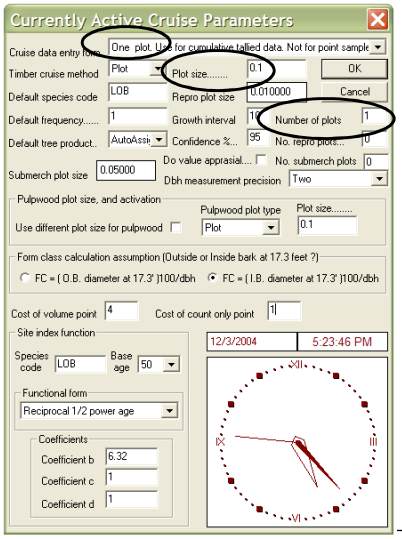
To set up a Cumulative Tally Cruise :

1. Make your **Cruise data entry form be One plot.** All of your trees from every plot will be entered in the same plot in TCruise.

2. Make your **Plot size or Point Size =** the actual size or BAF of the Plots you cruised.

3. Enter the **Number of Plots or Points** you actually cruised**.** This allows TCruise to calculate the total cruised area.

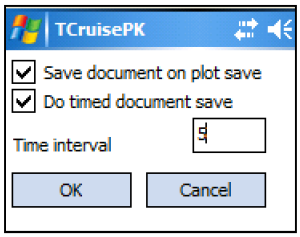
Note: Cumulative Tally is for either Plot or Point cruising.



100% Tally, Strip Cruise, and Cumulative Tally

When doing a 100% Tally, Strip, or Cumulative Tally cruise, be sure and do the following on the handheld:

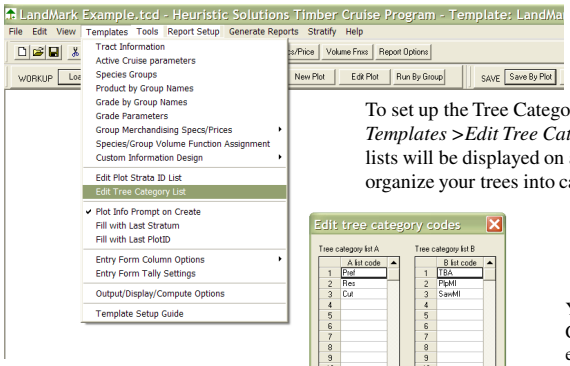
1. Go to File > Backup Options and select Do timed document save and set the time interval to 5 minutes. TCruise will do an automatic backup every 5 minutes throughout the cruise and ensure that you do not lose a half day worth of cruising because you are putting lots of trees in 1 plot.



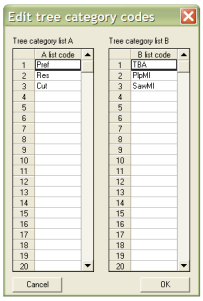
2. Be aware of the Opts > Next Plot Extension option that will allow you to extend your plot if you run out of lines.

B. Tree Category Cruises

Step #1 – Setting up the Tree Categories



To set up the Tree Category Custom Columns, go to *Templates >Edit Tree Category List*. In the field, these lists will be displayed on a tree by tree basis, so you can organize your trees into categories.

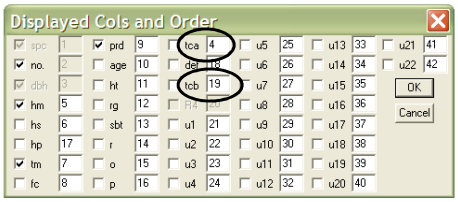


You can use 1 or 2 different Tree Categories. A good example is to mark each tree as Cut or Leave, or Preferred, Reserve, Cut, or 1, 2, 3, 4. Also, you could mark each tree by what mill it will be sent to. When you get back to the office, you can subset the cruise by 1 or both Tree Categories.

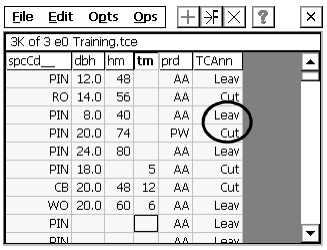
Tree Category Cruises

Step #2 – Setting up the Columns and Entering Data

Be sure and turn on the **tca** and/or **tcb** columns.



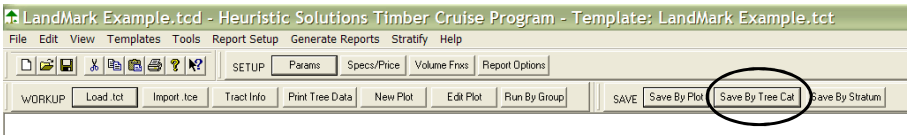
In the field, you can mark each tree according to the column entries you made in the template. In this example, each tree is marked by **Cut or Leave**.



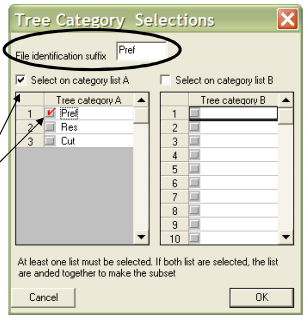
spcCd__	dbh	hm	tm	prd	TCAnn
PIN	12.0	48		AA	Leav
RO	14.0	56		AA	Cut
PIN	8.0	40		AA	Leav
PIN	20.0	74		PW	Cut
PIN	24.0	80		AA	Leav
PIN	18.0		5	AA	Cut
CB	20.0	48	12	AA	Cut
WO	20.0	60	6	AA	Leav
PIN				AA	Leav

Tree Category Cruises

Step #3 – Save the Cruise by Tree Category



Back in the office, you can save a cruise by Tree Category Code by selecting the **Save By Tree Cat** shortcut button on the Save Toolbar. Save the .tcd file, enter a **filename suffix**, and then select which **tree list** or lists and which **category codes** you want to include in your "subcruise".

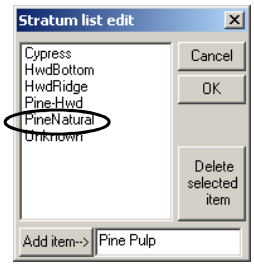


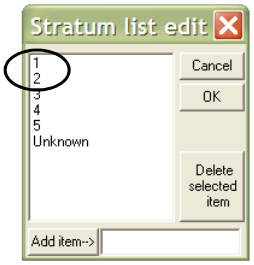
You must then Save that information and LOAD and RUN the SUBCRUISE that you created by going to *File>Open* and selecting the newly created .tcd.

C. Stratified Cruises

Step #1 – Setting up the Strata

There are many different ways to set up a stratified cruise in TCruise. You may choose to stratify by **Timber Type** as shown to the right. You may also choose to stratify by Landscape Position, by Logging Conditions, or by a combination of several parameters.





Many people like to set up the strata to represent **Stands Numbers** so that you can cruise multiple Stands within one Tract.

Note: The stratum list can be modified very easily in the field in case you don't know exactly what the Strata or Stand number will be ahead of time.

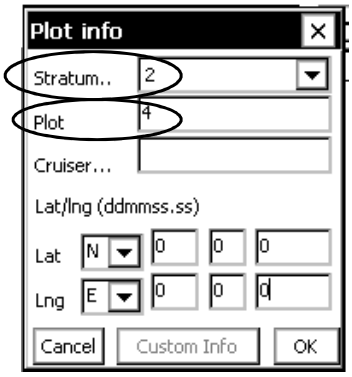
Stratified Cruises

Step #2 – Entering the Strata in the Field

As long as you have selected "Plot Info Prompt on Create", when you begin a new plot, you will see the Plot Info screen shown here.

In this example, we are stratifying by Stand Number. So we are about to cruise **Plot I.D. #4** which is located in **Stand #2.**

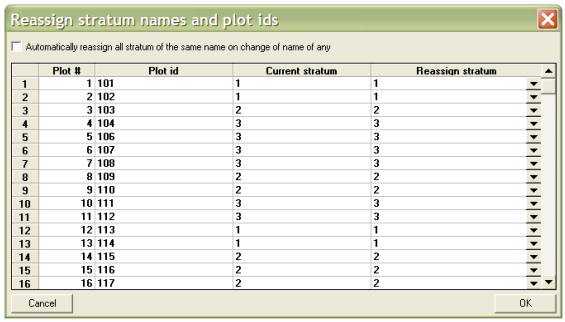
Click OK and you can enter your normal plot data.



Stratified Cruises

Step #3 – Reassign Stratum Names and Plot IDs

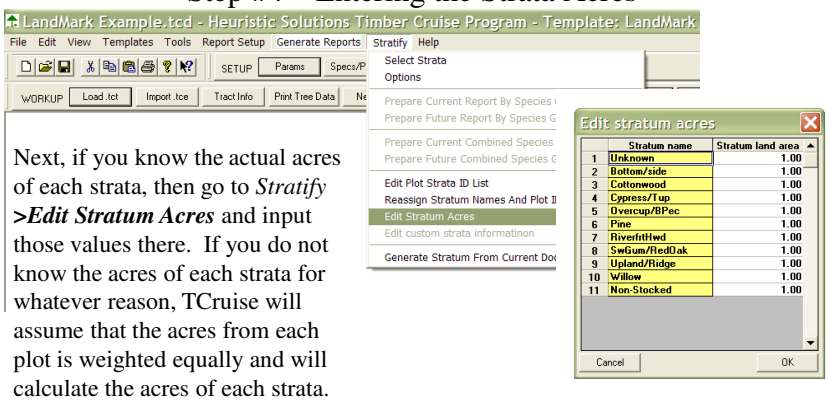
Once you are back in the office, you can reassign stratums if you need to by selecting *Stratify > Reassign Stratum Names and Plot IDs.*



	Plot lt	Plot id	Current stratum	Reassign stratum
1	1	101	1	1
2	2	102	1	1
3	3	103	2	2
4	4	104	3	3
5	5	106	3	3
6	6	107	3	3
7	7	108	3	3
8	8	109	2	2
9	9	110	2	2
10	10	111	3	3
11	11	112	3	3
12	12	113	1	1
13	13	114	1	1
14	14	115	2	2
15	15	116	2	2
16	16	117	2	2

Stratified Cruises

Step #4 – Entering the Strata Acres

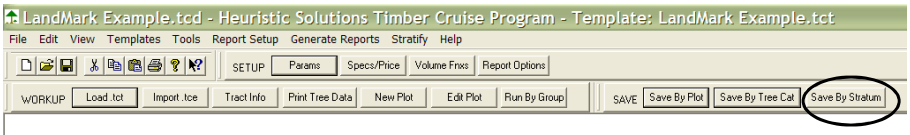


Next, if you know the actual acres of each strata, then go to *Stratify* ***>Edit Stratum Acres*** and input those values there. If you do not know the acres of each strata for whatever reason, TCruise will assume that the acres from each plot is weighted equally and will calculate the acres of each strata.

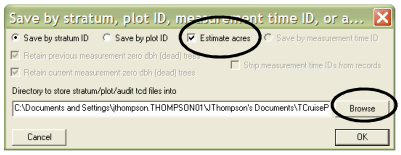
NOTE: If you are using the New LandMark TCruise reports, you simply need to select Run By Groups after this step and all of the stratification will be done in the report module.

Stratified Cruises

Step #5 – Save the Strata in their own .tcd file

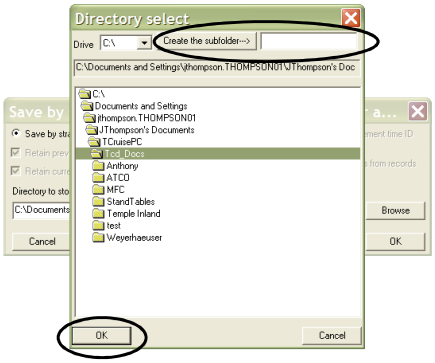


To save the Strata in their own .tcd file, select the **Save By Strata** shortcut button on the Save Toolbar. If you want Tcruise to estimate the acres by assuming that each plot represents an equal proportion of the cruise, check the **Estimate Acres** box. You will then be prompted by the following screen to select an output directory. You need to Select **Browse.**



Stratified Cruises

Save the Strata in their own .tcd file

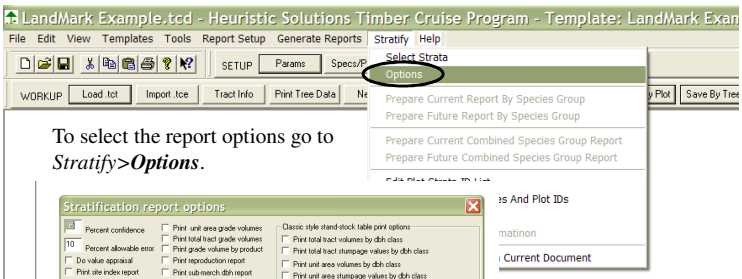


At this screen you need to **name** a subfolder here and select **Create the subfolder**. The subfolder will be created and when you select **OK,** you will be sent to the previous screen. When you select **OK** on this screen, each strata that you selected in the field will be saved in its own .tcd file in the subfolder.

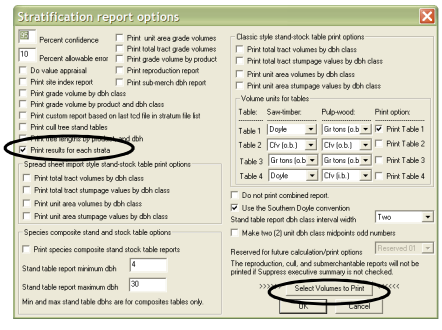
At this point you can open up each .tcd strata file and run it as its own cruise. A better way is to run all of the strata at the same time as detailed in the next steps.

Stratified Cruises

Step #6 – Select the Stratify Report Options



To select the report options go to *Stratify*>***Options***.

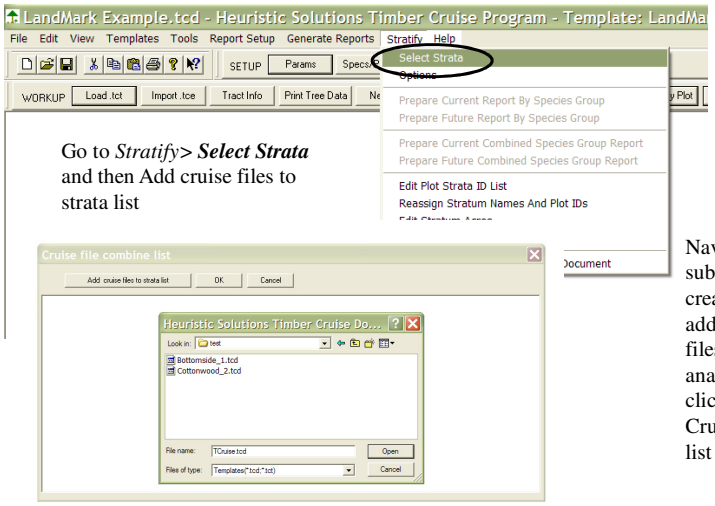


You will then have very similar report options to those discussed earlier in *Report Setup* > *Report Options*. Determine what volumes and units you need. Set up the **Volumes to Print** here.

Be sure and select **Print results for each strata** if you want that info.

Stratified Cruises

Step #7 – Select the Strata

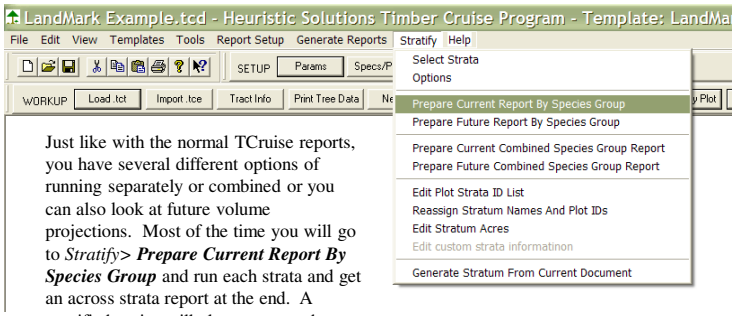


Go to *Stratify*> ***Select Strata*** and then Add cruise files to strata list

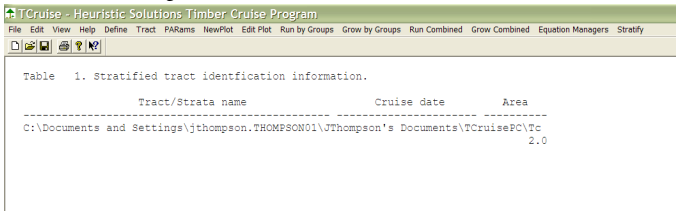
Navigate to the subfolder that you created earlier and add the strata .tcd files that you wish to analyze and then click OK to the Cruise file combine list screen.

Stratified Cruises

Step #8 – Run the Report

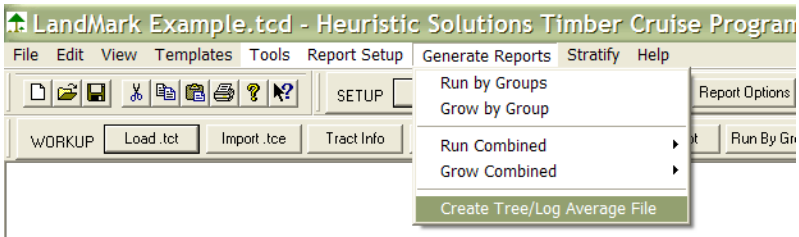


Just like with the normal TCruise reports, you have several different options of running separately or combined or you can also look at future volume projections. Most of the time you will go to *Stratify*> ***Prepare Current Report By Species Group*** and run each strata and get an across strata report at the end. A stratified cruise will also export to the LandMark Export module if that is being used.



D. Tree or Log Average Cruises

Step #1 – Select Create Tree/Log Average File

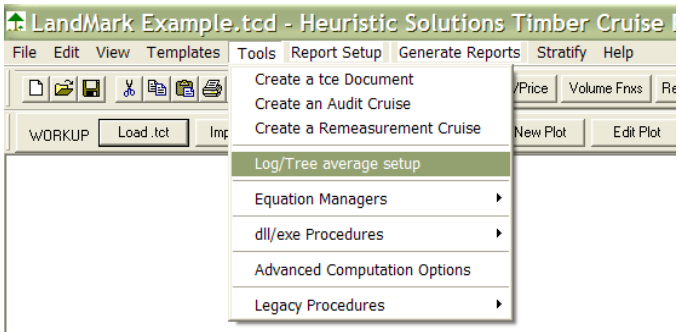


TCruise allows you to run a Log or Tree Average Cruise. For each Species Group, you can calculate the average volume by Species Group, dbh class and/or by product. You can also input a consultant's 100% Tree Tally info and blow the cruise up by your cruised average volume, but his or her actual numbers.

The first step is to tell TCruise you want to do this procedure by going to *Generate Reports* > *Create Tree/Log Average File* and selecting that option.

Tree or Log Average Cruises

Step #2 – Log/Tree Average Setup

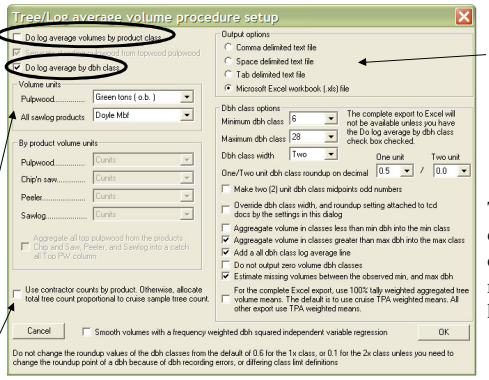


Next, go you need to *Tools* >*Log/Tree average setup* to outline the procedure you want TCruise to use.

Tree or Log Average Cruises

Log/Tree Average Setup

First select whether you want to **Do log average by product class**, by **dbh class,** or both.



You can select different output options. Excel reports are recommended.

There are different dbh class and report options here.

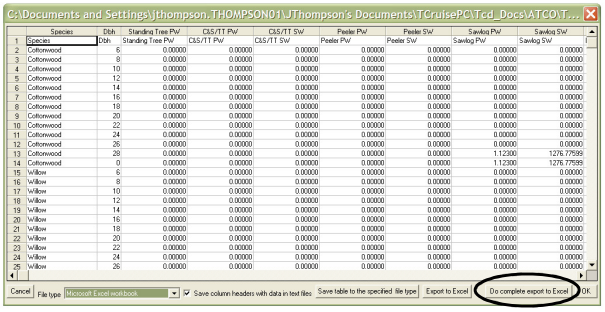
If you choose by dbh and/or product group, you need to select your **volume units**.

If you want to plug in a consultant's 100% Tree Tally numbers but blow the cruise up by your cruised average dbh, check this box.

Tree or Log Average Cruises

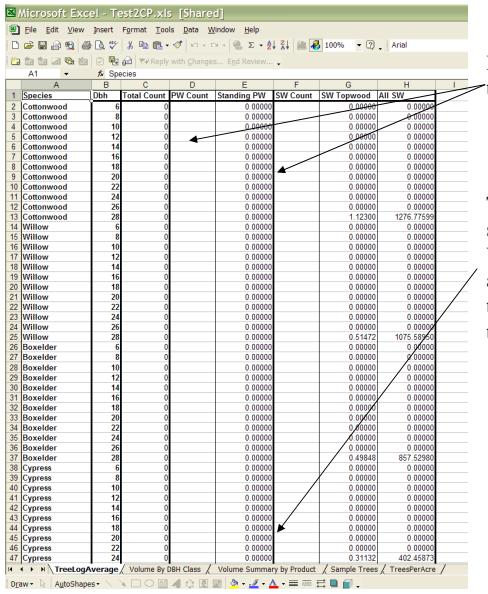
Step #3 – Run the Cruise and Create the Report

To run the cruise and create the Log Average Report, select Run by Groups. Depending upon how you setup up your cruise on the previous slide, you will get a report that shows you the Average Volume by Species Group, dbh and/or product. In some cases, this screen will give you enough info. Other times, you will need to **Export your data to Excel** to input the consultant's tree count or see more information about the Tree or Log Average Cruise.



Tree or Log Average Cruises

Run the Cruise and Create the Report



	A	B	C	D	E	F	G	H
1	Species	Dbh	Total Count	PW Count	Standing PW	SW Count	SW Topwood	All SW
2	Cottonwood	6	0		0.00000		0.00000	0.00000
3	Cottonwood	8	0		0.00000		0.00000	0.00000
4	Cottonwood	10	0		0.00000		0.00000	0.00000
5	Cottonwood	12	0		0.00000		0.00000	0.00000
6	Cottonwood	14	0		0.00000		0.00000	0.00000
7	Cottonwood	16	0		0.00000		0.00000	0.00000
8	Cottonwood	18	0		0.00000		0.00000	0.00000
9	Cottonwood	20	0		0.00000		0.00000	0.00000
10	Cottonwood	22	0		0.00000		0.00000	0.00000
11	Cottonwood	24	0		0.00000		0.00000	0.00000
12	Cottonwood	26	0		0.00000		0.00000	0.00000
13	Cottonwood	28	0		0.00000		1.12300	1276.77599
14	Willow	6	0		0.00000		0.00000	0.00000
15	Willow	8	0		0.00000		0.00000	0.00000
16	Willow	10	0		0.00000		0.00000	0.00000
17	Willow	12	0		0.00000		0.00000	0.00000
18	Willow	14	0		0.00000		0.00000	0.00000
19	Willow	16	0		0.00000		0.00000	0.00000
20	Willow	18	0		0.00000		0.00000	0.00000
21	Willow	20	0		0.00000		0.00000	0.00000
22	Willow	22	0		0.00000		0.00000	0.00000
23	Willow	24	0		0.00000		0.00000	0.00000
24	Willow	26	0		0.00000		0.00000	0.00000
25	Willow	28	0		0.00000		0.51472	1075.59959
26	Boxelder	6	0		0.00000		0.00000	0.00000
27	Boxelder	8	0		0.00000		0.00000	0.00000
28	Boxelder	10	0		0.00000		0.00000	0.00000
29	Boxelder	12	0		0.00000		0.00000	0.00000
30	Boxelder	14	0		0.00000		0.00000	0.00000
31	Boxelder	16	0		0.00000		0.00000	0.00000
32	Boxelder	18	0		0.00000		0.00000	0.00000
33	Boxelder	20	0		0.00000		0.00000	0.00000
34	Boxelder	22	0		0.00000		0.00000	0.00000
35	Boxelder	24	0		0.00000		0.00000	0.00000
36	Boxelder	26	0		0.00000		0.00000	0.00000
37	Boxelder	28	0		0.00000		0.49848	857.52980
38	Cypress	6	0		0.00000		0.00000	0.00000
39	Cypress	8	0		0.00000		0.00000	0.00000
40	Cypress	10	0		0.00000		0.00000	0.00000
41	Cypress	12	0		0.00000		0.00000	0.00000
42	Cypress	14	0		0.00000		0.00000	0.00000
43	Cypress	16	0		0.00000		0.00000	0.00000
44	Cypress	18	0		0.00000		0.00000	0.00000
45	Cypress	20	0		0.00000		0.00000	0.00000
46	Cypress	22	0		0.00000		0.00000	0.00000
47	Cypress	24	0		0.00000		0.31132	402.45873

In Excel, you can input the consultant's tree count here by Pulpwood or Sawwood.

There are other Tabs in this report that show the Volume byDBH Class, the Volume Summary by Product, the number and % of Trees Sampled compared to the total trees sampled for that DBH class, and the Trees per Acre.

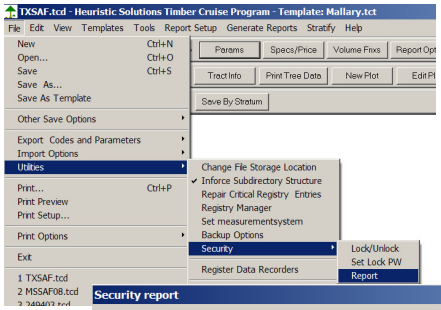
E. Multiple Cruisers on the Same Stand

TCruise allows multiple cruisers to work on the same stand. If the cruisers are using RTI they can generate or use the same plot grid and so it is relatively simple to make sure that they do not cruise in the same area. If they are compass and pacing, as long as they don't cruise in the same areas, TCruise does not care if they have the same plot id numbers or different ones. Make sure that all cruisers are using the **same .tcc code and parameter file** but save the .tce field data files with a different name so that all .tce files can be placed in the same subdirectory under TCruisePC\Tce_docs Template folder.

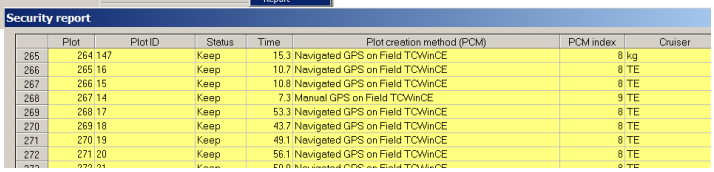
Once you are back in the office, load the template as directed in the Normal Cruise section on the manual, and then you can import all .tce files at once using the **File > Import Options > Batch .tce file option** or you can import each .tce file one at a time by selecting the **Import .tce** file shortcut button on the Workup Toolbar (i.e. the same procedure you did with the Normal cruise data). You can view all of the plots by selecting the **Save By Plot** shortcut button on the Save Toolbar. This will show you the individual Plot id numbers that were entered in the field as well as the new Plot number that TCruise assigned to each plot as it was import into the program. Now just input the correct **Tract acres** and Run by Groups.

Multiple Cruisers on the Same Stand

TCruise Security Report – If you use RTI in the field, it is very easy to determine if your cruisers navigated to plots using their GPS units or possibly just logged the data from the truck or office. To do this select File > Utilities > Security > Report > OK.



The Plot Creation Method Column will indicate if the plot was initiated with GPS or Manual Stylus. Occasional Manual GPS plots are to be expected because this indicates locations that they could not physically get to. This report also shows Time on Plot from the moment the select "Yes" to the "Do you want to log a point in TCruise" question until they select the Finished button in TCruiseCE.



Security report

	Plot	Plot ID	Status	Time	Plot creation method (PCM)	PCM index	Cruiser
265	264	147	Keep	15.3	Navigated GPS on Field TCWinCE	8	kg
266	265	16	Keep	10.7	Navigated GPS on Field TCWinCE	8	TE
267	266	15	Keep	10.8	Navigated GPS on Field TCWinCE	8	TE
268	267	14	Keep	7.3	Manual GPS on Field TCWinCE	9	TE
269	268	17	Keep	53.3	Navigated GPS on Field TCWinCE	8	TE
270	269	18	Keep	43.7	Navigated GPS on Field TCWinCE	8	TE
271	270	19	Keep	49.1	Navigated GPS on Field TCWinCE	8	TE
272	271	20	Keep	56.1	Navigated GPS on Field TCWinCE	8	TE

F. Site Index Cruises

Step #1 – Setting up the Parameters

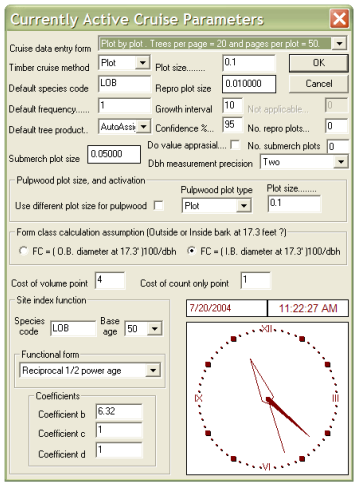
To collect site index data, you need to set up the following parameters in the *Templates > Active Cruise Parameters* dialogue box:

Growth interval – Enter the number of years contained in the growth tree radial increment measurements.

Site Index Key Species code – Select the site index species.

Site Index Base age – By default, the index age is 25 years for plantations and 50 years for natural stands.

Site Index Functional form – Select the site index equation and enter the coefficients.

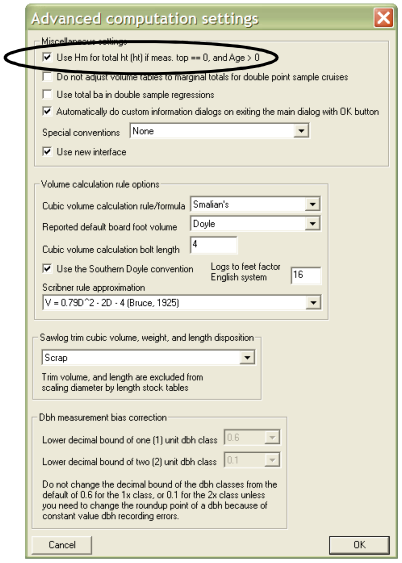


Site Index Cruises

Setting up the Parameters

If you are using profile functions and are cruising Total Height as hm, then you can go to the *Tools > Advanced Computation Options* and check the box that says **Use Hm for total ht (ht) if measure top = 0, and Age > 0**.

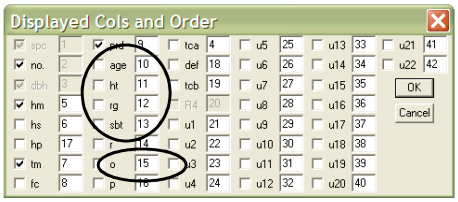
When you check this box, Tcruise will use the hm you entered for the Site Index Total Height if you enter something in the Age column.



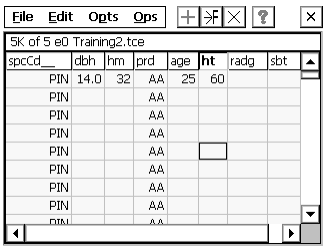
Site Index Cruises

Step #2 – Setting the Columns and Entering Data

Be sure and turn on the **age**, **ht** (height), **rg** (radial growth), and **sbt** (single bark thickness) columns that you need. Also, it is sometimes helpful to turn on the **o** (off plot) column, so that you can record some random, off plot trees to beef up your site index regressions if needed. These will not be used in volume calculations.



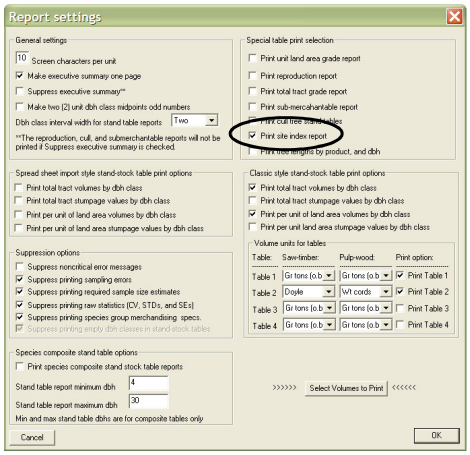
In the field, you can record the site index parameters that you need.



Site Index Cruises

Step #3 – Printing the Report

When you get ready to run your cruise, you need to go to *Report Setup* > *Report Options* and tell Tcruise that you want to **Print a Site Index Report**.



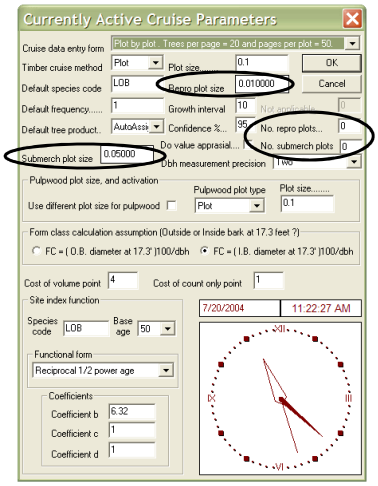
G. Reproduction and Submerch Cruises

Step #1 – Setting up the Cruise Parameters

To collect Reproduction or Submerch tree data, you need to set up the following parameters in the *Templates* > *Active Cruise Parameters* dialogue box:

<u>Reproduction Cruise:</u>
Repro Plot size – in acres
No. repro plots – you only need to enter a number here if the number of repro plots differs from the number of regular plots.

<u>Submerch Cruise:</u>
Submerch Plot size – in acres
No. submerch plots – you only need to enter a number here if the number of submerch plots differs from the number of regular plots.

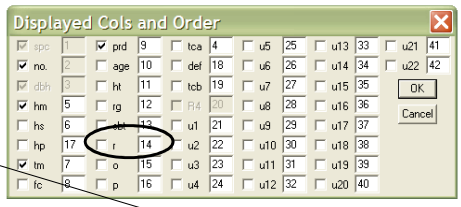


Reproduction and Submerch Cruises

Step #2 – Setting the Columns and Entering Data

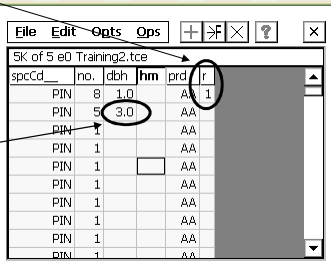
Reproduction Cruises

Turn on the **r** (reproduction) column. Data for this cruise should consist of **Species, Number, and r**. Each line of reproduction data should have a 1 in the **r** box.



Submerch Cruises

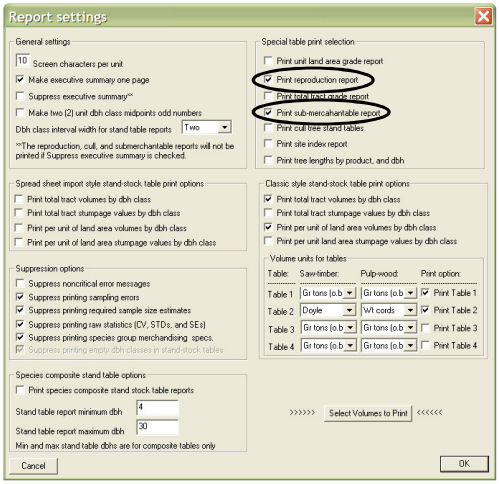
You do not need any special columns for a submerch cruise. Data for this cruise should consist of **Species, Number, and dbh**. When TCruise sees a tree with a dbh less than Pulpwood, it calls that tree a submerch tree.



Reproduction and Submerch Cruises

Step #3 – Printing the Report

When you get ready to run your cruise, you need to go to *Report Setup > Report Options* and tell Tcruise that you want to **Print a Reproduction and/or Submerch Report**.



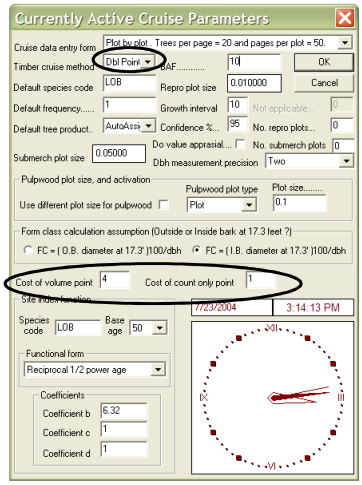
H. Double Point Cruises

Step #1 – Setting up the Cruise Parameters

TCruise allows a cruiser to set up a Double Point cruise where each plot is either a count or volume plot. Generally, one volume plot is collected for every 3-4 count plots. In this way the cruiser can spend less time on the majority of the plots but still have a statistically sound method for calculating volume.

To do a Double Point Cruise, you need to set up the Timber Cruise Method in the *Templates > Active Cruise Parameters* dialogue box to **Dbl Point**. If you want TCruise to calculate sample size estimates based on the ratio of the cost or amount of time that spend on the volume plots verses the count plots, then you may enter that ratio in the **Cost of the volume and count points** boxes.

TCruise will alert you with a message that Double Point Cruising is not recommended for Stock and Stand tables or Growth Projections.

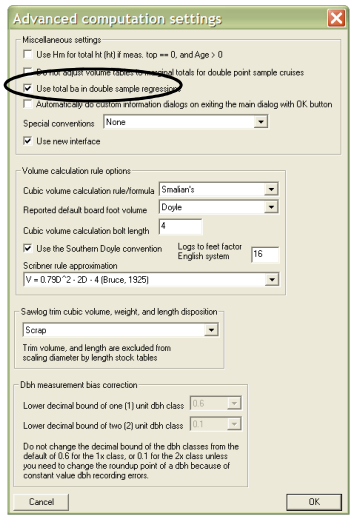


Double Point Cruises

Setting up the Cruise Parameters

The recommended way to cruise the Count Only plots is to record Species and Number by Product. This forces you to merchandize the tree on the stump, but it results in a more precise volume estimate.

If you only want to record Species and Number on the Count Only plots, then go to *Tools > Advanced Computation Options* and check the **Use total ba in double sample regressions.** You must also set up the handheld as shown on the next slide. This method is not recommended.

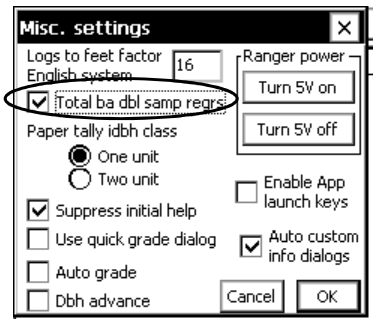


Double Point Cruises

Setting up the Cruise Parameters

If you want to cruise the Count Only plots by Species and Number only, then you must also set up TCruiseCE on the **handheld** as well.

To do this, go to Opts > Misc. settings and check the **Total ba dbl samp regrs** box.



Double Point Cruises

Step #2 – Setting the Columns and Plot Cycle

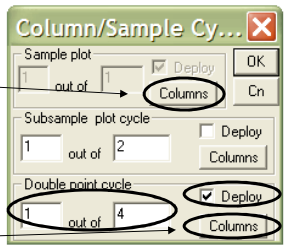
Count Plots

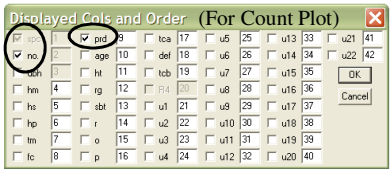
To set up the columns for the count plots, go to Set Display Columns and then go to the **Sample Plot Columns** and check the **Species, Number, and Product** columns as shown below.

Volume Plots

Because the data collected on the volume plots is no different from a "Normal" cruise, the columns for the volume plots are the same as the "Normal" Sample plot columns. To set these up, go to the **Double Point Cycle Columns** and select the columns you normally use.

If you want to set TCruise up so that it automatically keeps up with the type of plot (Count or Volume) you are on and displays the appropriate columns for that plot type, click **Deploy** and enter **how many plots out of how many should be Volume**. If, however, you want Tcruise to ask you at the beginning of each plot if that plot is a Count or Volume plot do not **Deploy** the Double Point Cycle.

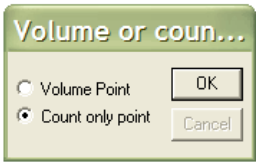




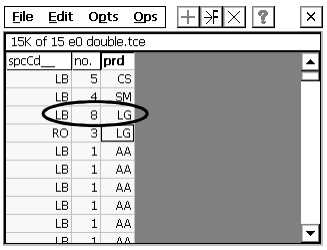
Double Point Cruises

Step #3 – Entering the Data

If you did not Deploy the Double Point Cycle, then the dialogue box to the right will pop up at the beginning of each plot. Choose Volume or Count only.



The Volume Plot screen is the same as you see in a "Normal" cruise. With the Count Only plots, however, you will only see the 3 columns you selected. Enter the **Species, Number, and Product** for each tree in the count plots.



Double Point Cruises

Step #4 – Printing the Report

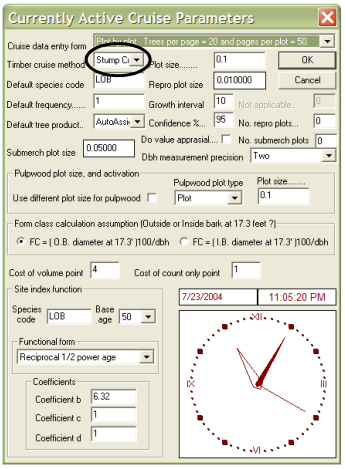
There are no report specific settings for a Double Point cruise. Simply import your .tce file(s) and Run by Groups.

I. Stump Cruises

Step #1 – Setting up the Cruise Parameters

TCruise also allows a cruiser to set up a Stump cruise so that a volume estimate can be obtained from a stand that has already been cut. For a Stump cruise to work, there must be stumps and there must be some representative "specimen" trees that are left in the stand to measure. These specimen trees help give TCruise an idea of what the previous stand might have looked like before it was cut.

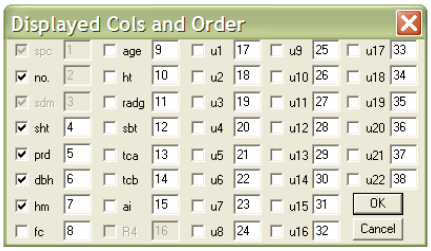
To do a Stump Cruise, you need to set up the Timber Cruise Method in the *Templates* > *Active Cruise Parameters* dialogue box to **Stump Cruise**.



Stump Cruises

Step #2 – Setting the Columns

When you set up the columns for the Stump cruise, you will immediately notice that the choices are slightly different.



<u>Stump Parameters:</u>
Species - required
Number - optional
Sdm = Stump diameter - required
Sht = Stump height – optional

<u>Specimen Tree Parameters:</u>
Species – required
Number – optional
Prd = Product – optional
Dbh – required
Hm = Total height - required

Other parameters can also be collected on a stump cruise, but these are the primary ones.

Stump Cruises

Step #3 – Entering the Data

Stump Data

You will need to enter **Species and Stump diameter (sdm).**

Specimen Tree Data

You will need to enter **Species, dbh, and Total Height (hm).**

File Edit Opts Ops

1K of 1 e0 TCruisePK

spcCd__	no.	sdm	sht	prd	dbh	hm
LOB	1	14.0		AA		
LOB	1	16.0		AA		
LOB	1	8.0		AA		
LOB	1	6.0		AA		
LOB	1			AA	16.0	48
LOB	1			AA	8.0	24
LOB	1			AA		
LOB	1			AA		
LOB	1			AA		
LOB	1			AA		

NOTE: The Specimen Trees need to be cruised to a Total Height, hm, because the Volumes in a Stump cruise must be run using profile functions. The specimen trees do not have to be equally spaced around the cruise plots. In fact, the specimen trees do not even have to be in the cruise plots, because anytime TCruise sees an hm in a Stump cruise, it knows that it is a specimen tree and will not include that tree in the volume estimation of the Stumps.

Stump Cruises

Step #4 – Printing the Report

There are no report specific settings for a Stump cruise. Simply import your .tce file(s) and Run by Groups.

J. Height Subsampling Cruises

Step #1 – Using Method #1

There are 2 primary ways to do a Height Subsample cruise in TCruise. In a plantation situation where you have one primary species, you may simply **measure one tree height per plot** and record hm as the height record top for that tree. Every tree needs to have species and dbh recorded. By the end of the cruise, Tcruise recommends that you have at least **20 trees** for the primary species group that are evenly distributed across dbh classes.

There are no special parameters to set up in the template or to collect in the field other than to make sure that you are using Profile Functions to calculate your volumes, and that you obtain a large enough sample. If enough of the right trees are measured, TCruise will calculate the dbh to height ratio for the measured trees, create a custom regression, and apply that equation to all of the dbh-only trees.

If you fail to collect at least 12 trees, Tcruise will calculate the volumes of the dhb-only trees using a default regression. Do not forget about the **o column** which allows you to make off-plot measurements. If you do not have enough trees across the represented dbh classes, you can collect a few off-plot trees to "beef up" the regression.

Height Subsampling Cruises

Using Method #2

The second method involves **measuring subsample trees on 1 out of every r plots/points**. For example, if 50 trees were to be measured for height and 200 plots/points are to be visited, sub-sample trees would be measured on only 1 out of every 4 plots.

To use this method, you need to set up your **Subsample Plot Cycle** and **columns** as detailed on the next slide.

As with Method #1 if enough of the right trees are measured, TCruise will calculate the dbh to height ratio for the measured trees, create a custom regression, and apply that equation to all of the dbh-only trees. If you fail to collect at least 12 trees, Tcruise will calculate the volumes of the dhb-only trees using a default regression. Towards the end of the cruise, for each species group, a minimum of **two to three sub-sample trees should have been measured for each encountered dbh class**. If this requirement is not met, the sub-sampling rate should be increased and as a last resort off-plot trees can be recorded in the **o column** to "beef up" the regression.

Height Subsampling Cruises

Step #2 - Setting the Columns and Plot Cycle for Method #2

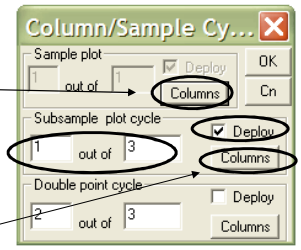
Dbh-Only Plots

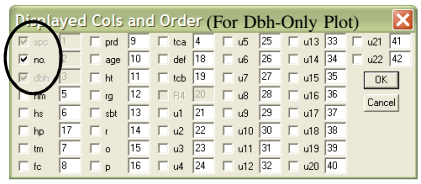
To set up the columns for the dbh-only plots, go to Set Display Columns and then go to the **Sample Plot Columns** and check the **Species, Number, and dbh** columns as shown below.

Height Subsample Plots

Because the data collected on the Height Subsample plots is basically the same as a "Normal" cruise (except that height will not be recorded for every tree in these plots), the columns for these plots are the same as the "Normal" Sample plot columns. To set these up go to the **Subsample plot Cycle Columns** and select the columns you normally use.

Be sure and click **Deploy** enter **how many plots out of how many should be Height Subsample** so that TCruise will automatically keep up with the type of plot (dbh-only or Height Subsample) you are on and displays the appropriate columns for that plot type.

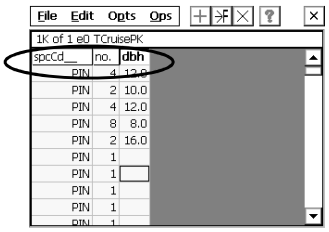




Height Subsampling Cruises

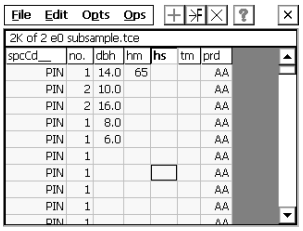
Step #3 – Entering Data for Method #2

On the dbh-only plots enter **Species, number** (if appropriate), and **dbh** as shown to the right.



On the Height Subsample plots, enter the correct number of subsample trees (usually one per plot), and then record species and dbh on everything else.

NOTE: If you come across a tree that has a merch ht that is less than the Sawlog top specified in the cruise specs (ie an hs tree), then you will need to enter an hm and an hs on that tree so that TCruise can draw the profile correctly. If you only enter an hs, then TCruise will assume that that height is at the given sawlog top.



Height Subsampling Cruises

Step #3 – Printing the Report

There are no report specific settings for a Height Subsample cruise. Simply import your .tce file(s) and Run by Groups. As long as you have enough subsample trees, TCruise will automatically perform the subsample calculation.

K. Audit and Remeasurement Cruises

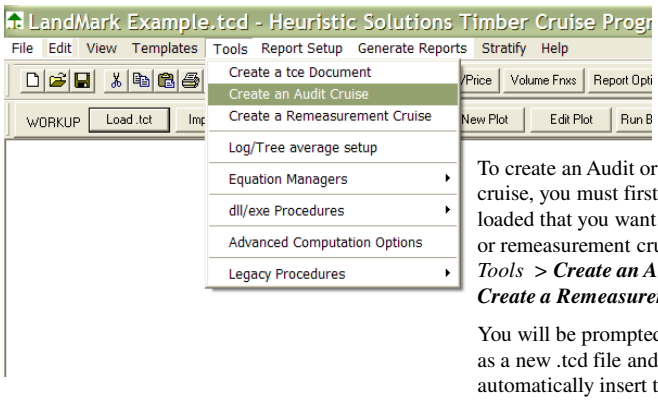
Step #1 – Audit verses Remeasurement

One feature that has made TCruise especially attractive to companies that have a lot of cruisers or that subcontract their cruises to other companies is the ability to create audit and remeasurement cruises. An audit cruise allows a cruiser to take a cruise that has already been run and create a field data file that contains all of the Tract, Plot, and Tree info that was entered in the field. Once he or she is on plot, the "Auditor" can then either verify that the correct data was entered or change the data to more accurately reflect the timber that was actually there.

A remeasurement cruise is similar to an audit cruise except that TCruise inserts a custom line between every line of data in the field data file. The custom line already has every parameter entered in the line above except for dbh. The "Remeasureer" can then enter his or her own dbh data for the trees on that plot and change any of the other records on the custom lines. The remeasured cruise is then saved and brought back to TCruise Office so that the "remeasured" field data can be run.

Audit and Remeasurement Cruises

Step #1 – Creating the Cruise

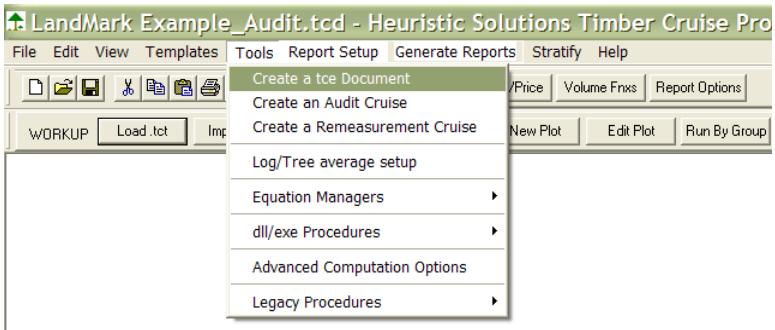


To create an Audit or Remeasurement cruise, you must first have the .tcd file loaded that you want to base your audit or remeasurement cruise on. Next, go to *Tools* > ***Create an Audit Cruise*** *or* ***Create a Remeasurement Cruise***.

You will be prompted to save the .tcd file as a new .tcd file and TCruise will automatically insert the suffix "_Audit" or "_Remeas" when it saves the file.

Audit and Remeasurement Cruises

Creating the Cruise



Next you need to save the .tcd as a .tce, or field data file. To do this go to Tools > Create a tce Document. You will then be prompted to enter a filename for the new .tce file.

You then need to transfer that .tce file to your handheld.

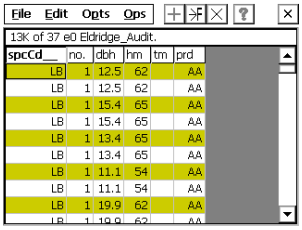
Audit and Remeasurement Cruises

Step #2 – Field Processes – No RTI

1. Open the Audit or Remeasurement .tce file (Open an Existing Cruise)
2. Set your columns to reflect the data that was collected
3. Located the plot in question
4. Open the corresponding plot data (Edit > Edit Plot or Edit Plot by ID)
5. Either verify the existing cruise data or enter your own data.

   Note: on a remeasurement cruise, a blank dbh indicates a dead tree.
6. Save that plot, if necessary, and continue the audit.

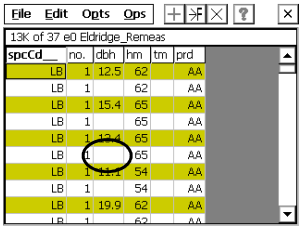
AUDIT



spcCd__	no.	dbh	hm	tm	prd
LB	1	12.5	62		AA
LB	1	12.5	62		AA
LB	1	15.4	65		AA
LB	1	15.4	65		AA
LB	1	13.4	65		AA
LB	1	13.4	65		AA
LB	1	11.1	54		AA
LB	1	11.1	54		AA
LB	1	19.9	62		AA

REMEASUREMENT

(Note: blank **dbh**)



spcCd__	no.	dbh	hm	tm	prd
LB	1	12.5	62		AA
LB	1		62		AA
LB	1	15.4	65		AA
LB	1		65		AA
LB	1	13.4	65		AA
LB	1		65		AA
LB	1	11.1	54		AA
LB	1		54		AA
LB	1	19.9	62		AA

Audit and Remeasurement Cruises

Step #3 – Running the Report

If you modified the Audit cruise, there are no report specific settings that need to be changed before you run your cruise. Simply import your modified .tce file and Run by Groups. To calculate the % Change between the original and audited cruises, you will need to subset the original cruise based on the plots that were audited. To do this, load the original .tcd file and then select the **Save By Plot** shortcut button on the Save Toolbar. Select the audited Plot Ids from the original Plot Ids and save it as its own .tcd and then Run by Groups.

Audit and Remeasurement Cruises

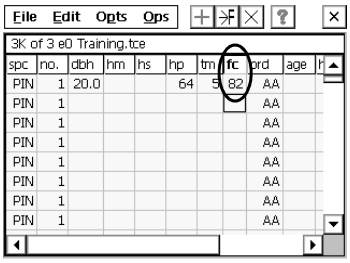
Running the Report

To run the Remeasurement Cruise you will need to load your template, import the .tce file and then subset the cruise so that you can split out the remeasured tree data. To do this, go to *File* > *Other Save Options* > *Save Audit Cruise by Measurer*. Select the remeasured plots from the original plots and save it as its own .tcd and then Run by Groups.

L. Custom Form Class Cruises

TCruise has a built in Custom Form Class calculator that allows a cruiser to enter FC in the field on a tree by tree basis if they so desire. Most cruisers that choose this option will enter one FC tree per plot. Like Height Subsampling, these FC trees need to be representative of the entire population and be across all cruised dbh classes. Back in the office, as long as more than **12 trees** had an FC value recorded, TCruise will calculate a custom FC regression for those trees and apply that regression to all trees in the cruise.

To use this option in TCruise, you only need to turn on the **FC column** and make sure you enter enough FC trees across the stand. You can make use of the **o** column if you want to enter some non-volume, off-plot trees.



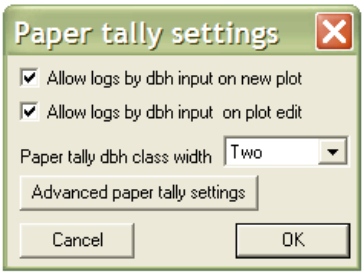
spc	no.	dbh	hm	hs	hp	tm	fc	grd	age
PIN	1	20.0			64	5	82	AA	
PIN	1							AA	
PIN	1							AA	
PIN	1							AA	
PIN	1							AA	
PIN	1							AA	
PIN	1							AA	
PIN	1							AA	

M. Entering Tally Card Data

Step #1 – Setting up the Data Entry Parameters

If you want to record your data in the field using Tally cards and then enter it in TCruise back in the office, TCruise has an Enter by Tally function. To enable this feature, go to *Templates* > *Entry Form Tally Settings* and check the **Allow logs by dbh input on new plot and plot edit**.

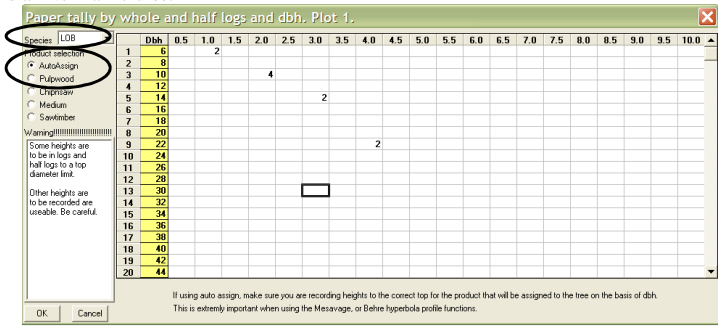
You can also specify the dbh class width settings. Click OK.



Entering Tally Card Data

Step #2 – Entering the Data

When you click NewPlot, you can number your plot if you have the Plot Info Prompt turned on and then you will see the following screen. This screen allows the data entry person to enter data on a Plot by Plot, **Species by Species**, **Tree by Tree** basis by **dbh** in **Whole or Half Logs**. You can auto assign your products based on threshold dbh, or you can enter them by **Product Selection** if you desire. When you have finished a plot, the normal field data entry sheet will appear with the Tally data entered. When you have entered all the plots, Run by Groups as you would a "Normal" cruise.

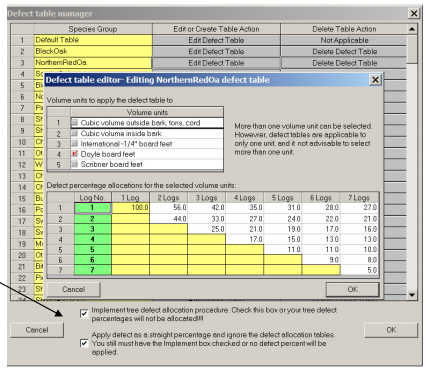


N. Tree Defects

Step #1 – Setting up Tree Defects

If you need to record tree defect and then have TCruise automatically apply that defect to the volume calculation, then you need to select Tools > Equation Managers > Edit Tree Defect Tables > By Species Group. Next you need to decide if you want to apply the defect using the defect allocation table or in a straight percentage across the entire length of the stem. If you want to build your own Allocation Tables, then select the correct Species Group and enter the values.

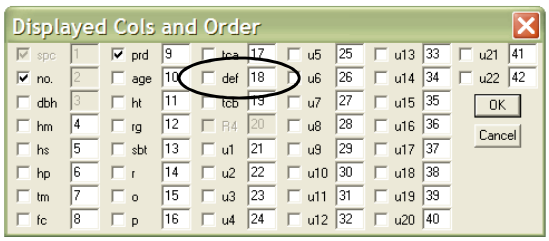
If you plan on entering defect % by Grade in the field, or want to apply a general stem length defect percentage, then you need to select the bottom check box. You must also implement the table as shown below.



Tree Defects

Step #2 – Turn on the Def Column

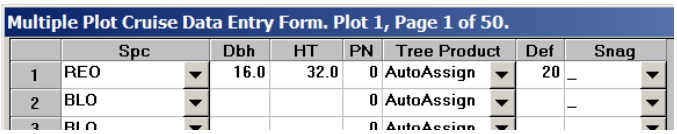
Before you go cruise a tract, you need to go to Templates > Entry Form Column Options > Hide/Order Cruise Columns and then select the first Columns and then be sure and turn on the Defect column by selecting the def column.



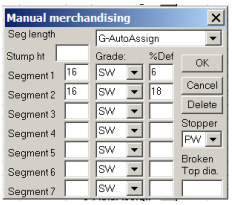
Tree Defects

Step #3 – Entering the Data

In the field, if you are going to use the allocation table or want to apply a straight stem length defect, then you need to enter a defect % in the def column for each stem.



If you are going to grade the stem then select GAA and then enter the defect by log segment. What you enter will be the percent volume that is subtracted from each grade.



Tree Defects

Step #4 – Reports

The only report specific setting is what was discussed in Step #1.