Help specific to

Fragstats 4.2 for

Understanding Landscape Metrics I

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***Learning Landscape Ecology*, 2nd Edition**

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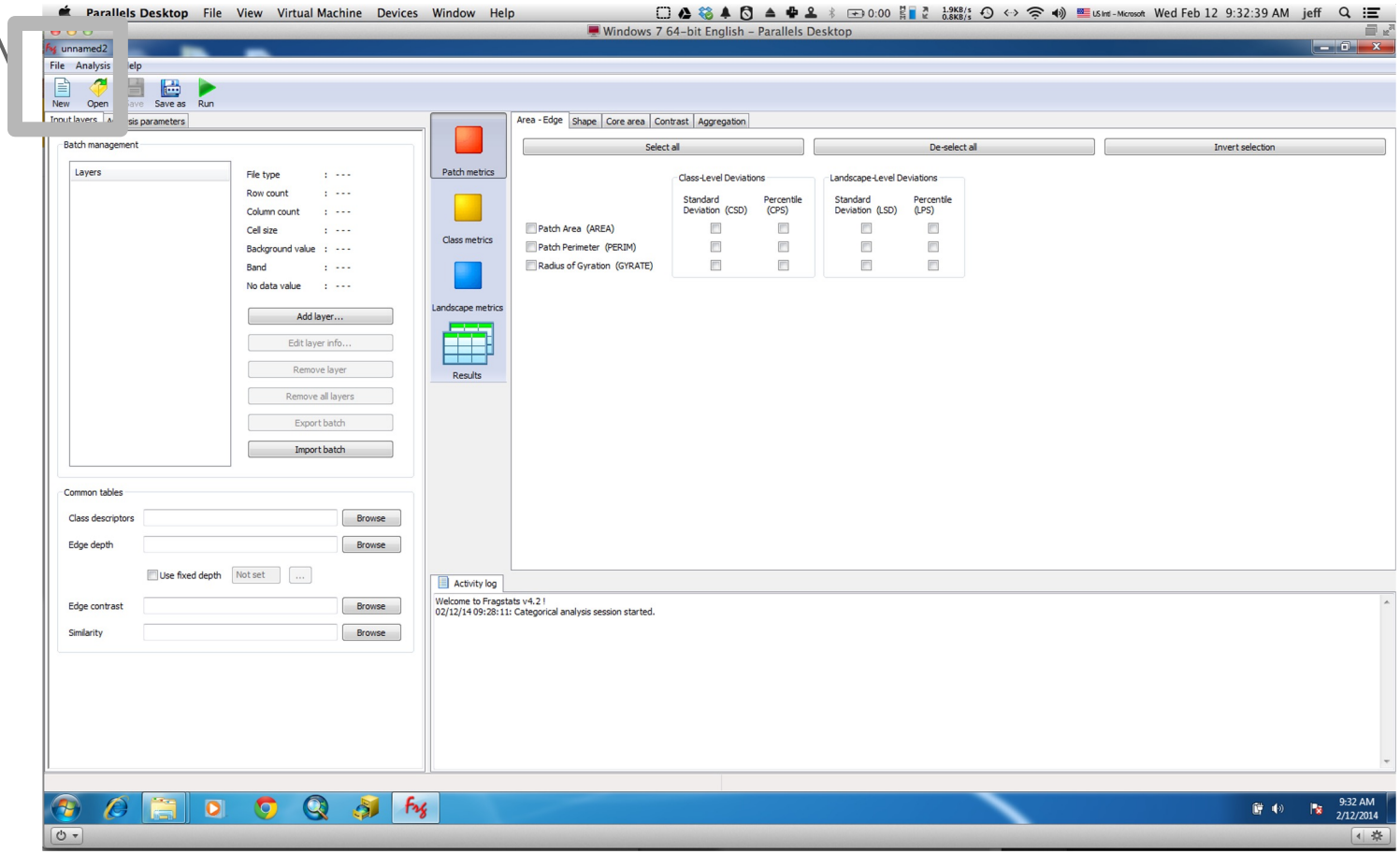
After downloading the zip file containing the data for this exercise, you must first extract the data from the archive before doing the following steps.

If the data is not extracted (also called ‘unzipped’) from the archive, the following steps may give unusual errors.

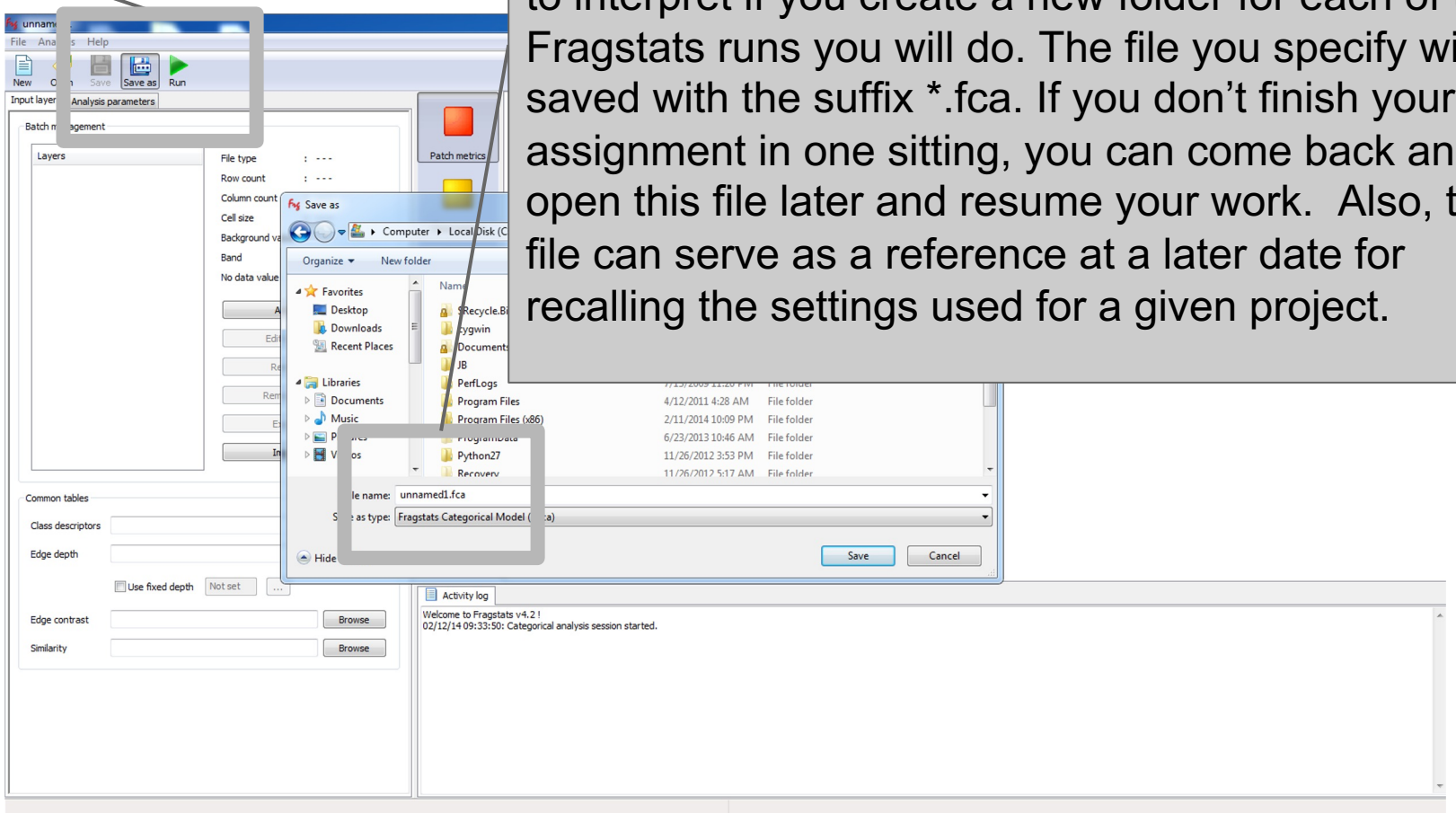
Opening a new session of landscapes and metric settings

Click ‘New’ to begin. The Fragstats data-input window opens.



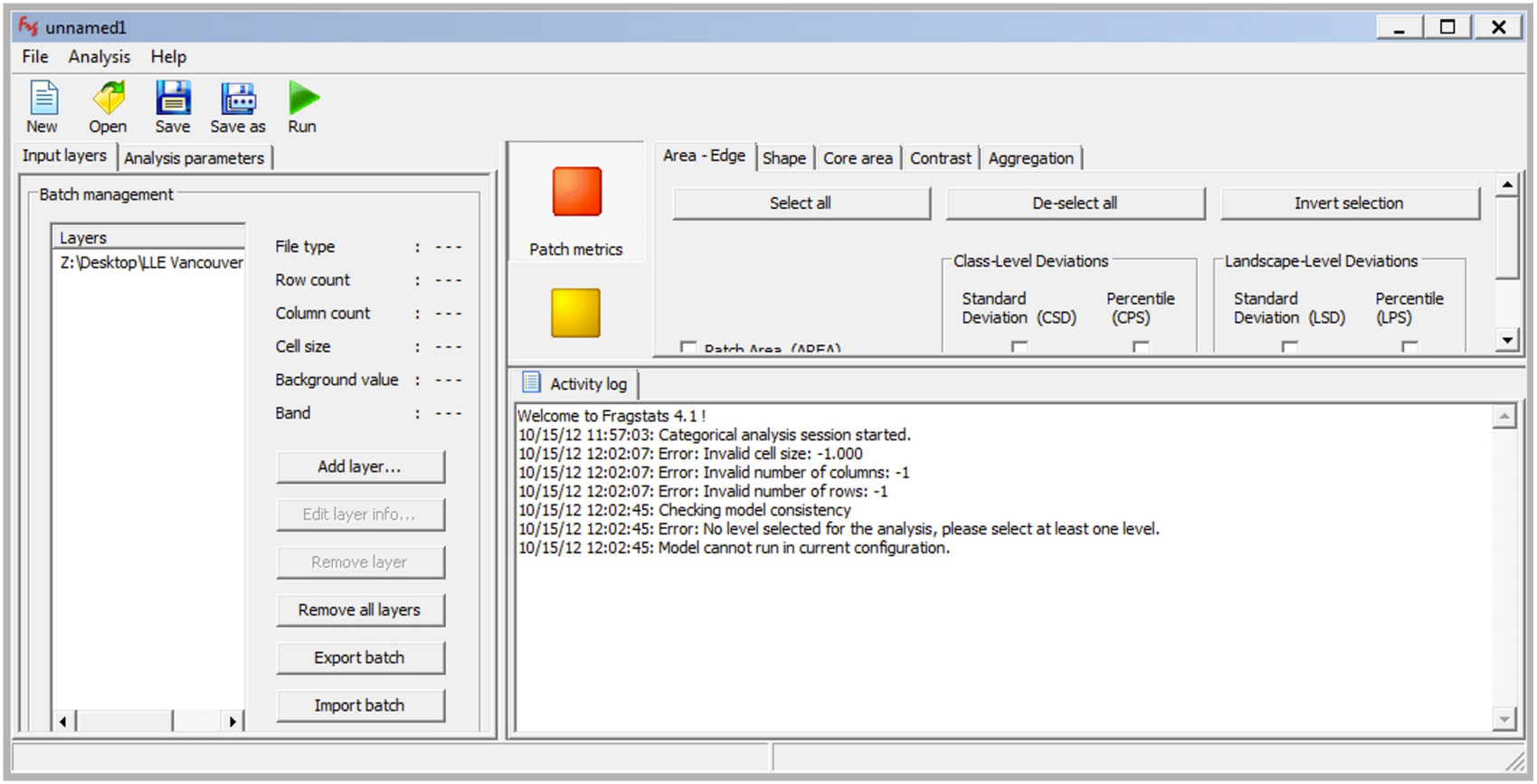
Save the Parameterization file

Click SaveAs to be able to store the parameterization settings you will specify.

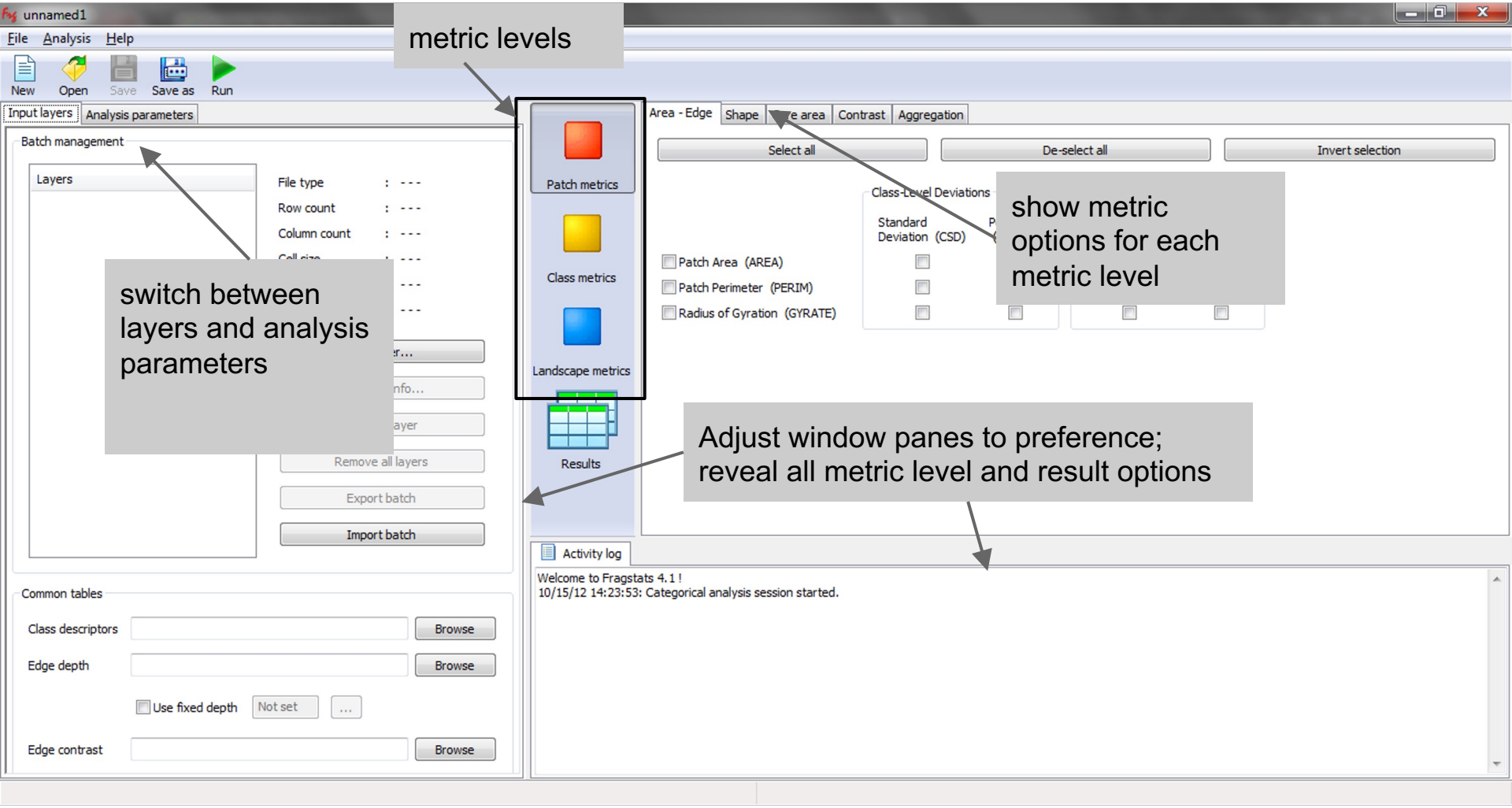


Type a name for the file that will hold the parameters for this particular run (e.g., “earlySettings1”) in the File Name box and direct it to the directory of your choosing. You may find that the results will be easier to interpret if you create a new folder for each of the Fragstats runs you will do. The file you specify will be saved with the suffix *.fca. If you don’t finish your assignment in one sitting, you can come back and open this file later and resume your work. Also, this file can serve as a reference at a later date for recalling the settings used for a given project.

Depending on your screen size, the Fragstats window may look like this when first opened. Note the vertical scroll bar in the upper-right panel. If your screen size is limited, you may see fewer than four colored icons. If so, you can use the scroll bar to access all of the checkboxes. If possible, adjust the window size to look like the next slide.



When enlarging the Fragstats window from its default size, adjust the window panes so you see something similar to what is shown below. Note the *four* colored icons for Patch, Class, Landscape metrics, and Results.

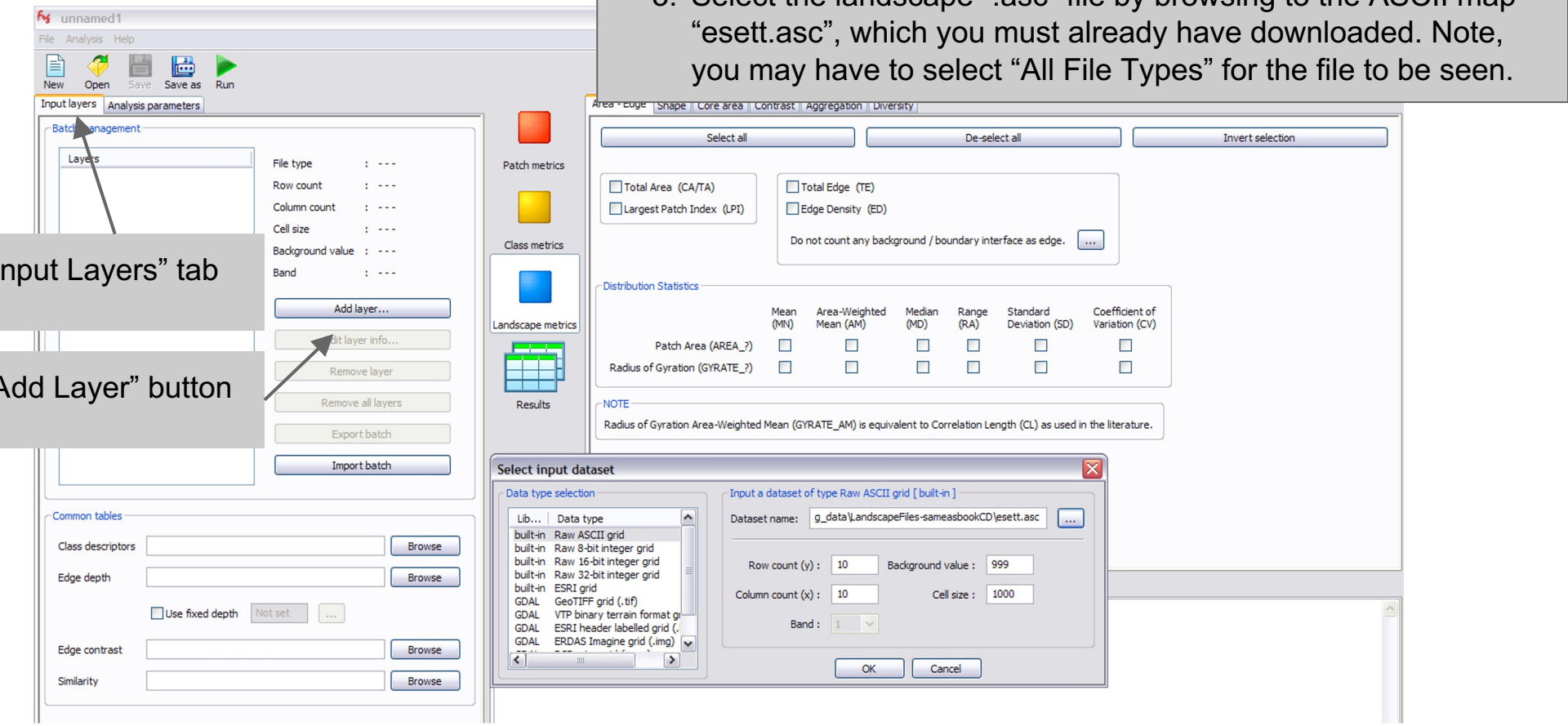


Landscape input

The cleanest way to add a landscape for analysis to FRAGSTATS is as a “Raw ASCII grid”. This is a text file containing numbers representing distinct land covers. However, the FRAGSTATS interface may give error/warning windows that can be confusing at first.

In the left panel, select “Input layers” and then “Add layer..”.

1. In the window that comes up, click on “Raw ASCII grid”.
2. Enter the correct Row Count, Column Count, and Cell Size. For the esett.asc landscape, these are 10, 10, and 1000.
3. Select the landscape “.asc” file by browsing to the ASCII map “esett.asc”, which you must already have downloaded. Note, you may have to select “All File Types” for the file to be seen.

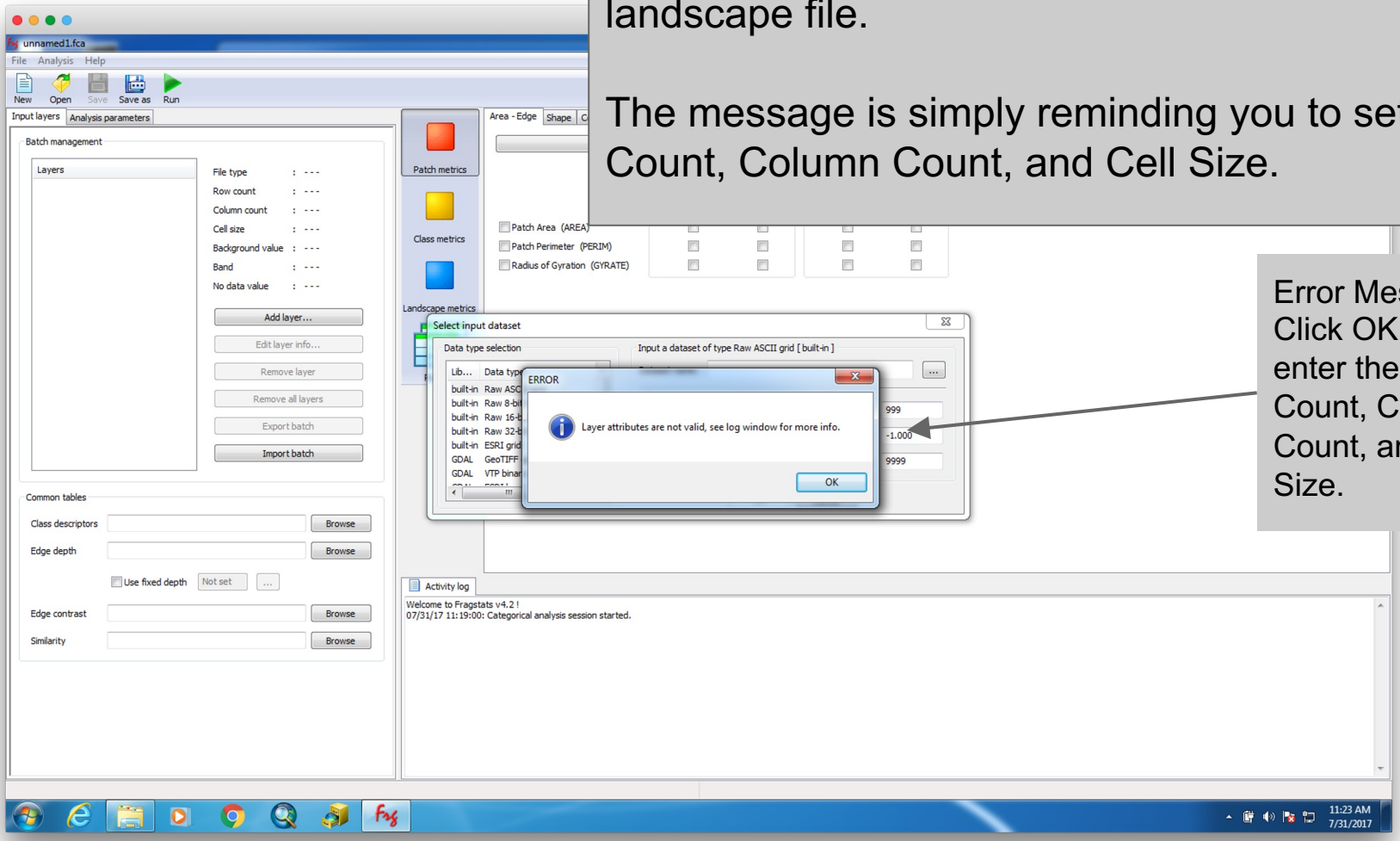


Potential Error Message #1

In some operating systems, you may immediately receive an error message that shows the message below.

This can happen if you don't enter the Row Count, Column Count, and Cell Size before selecting the landscape file.

The message is simply reminding you to set the Row Count, Column Count, and Cell Size.

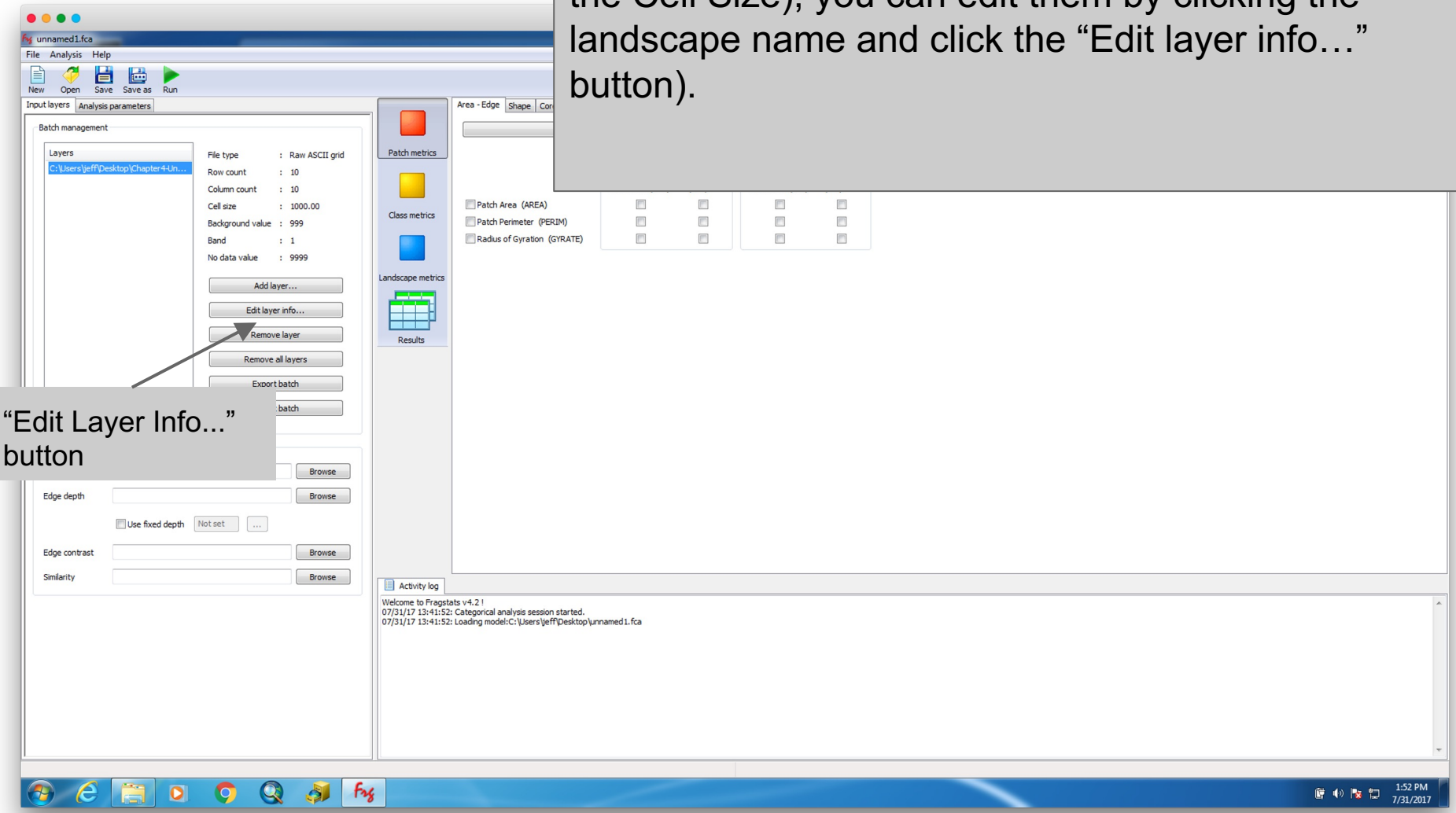


Error Message. Click OK, then enter the Row Count, Column Count, and Cell Size.

Landscape input

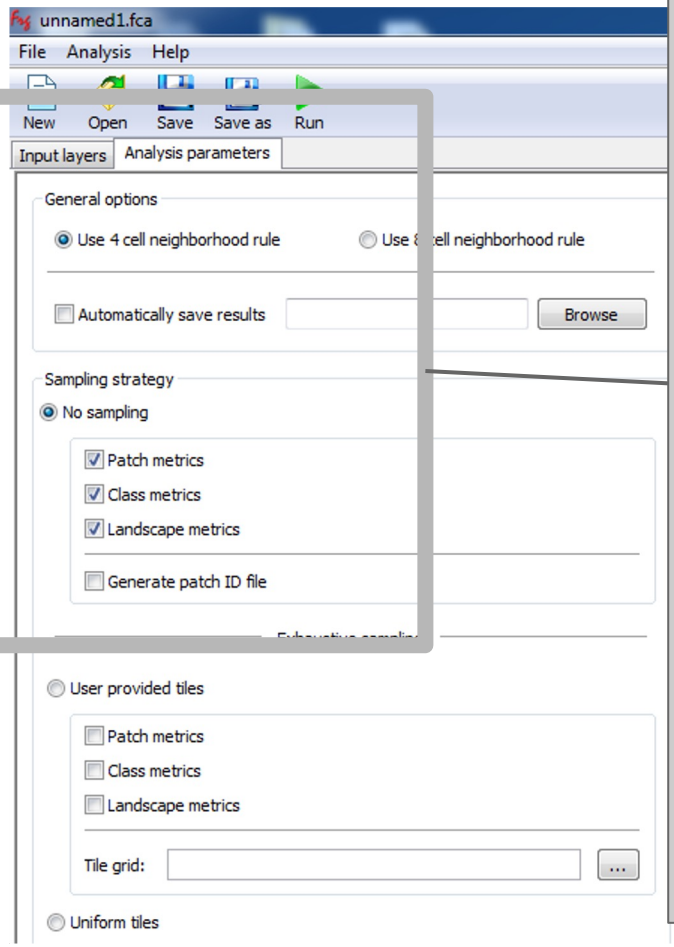
After you have entered the Row Count, Column Count, and Cell Size, and navigated to the selected file, the landscape will appear in the left panel.

If you need to later adjust the layer settings (such as the Cell Size), you can edit them by clicking the landscape name and click the “Edit layer info…” button).



“Edit Layer Info...” button

Landscape metrics - selecting levels



To set analysis “Levels”:

Click on the “Analysis Parameters” tab

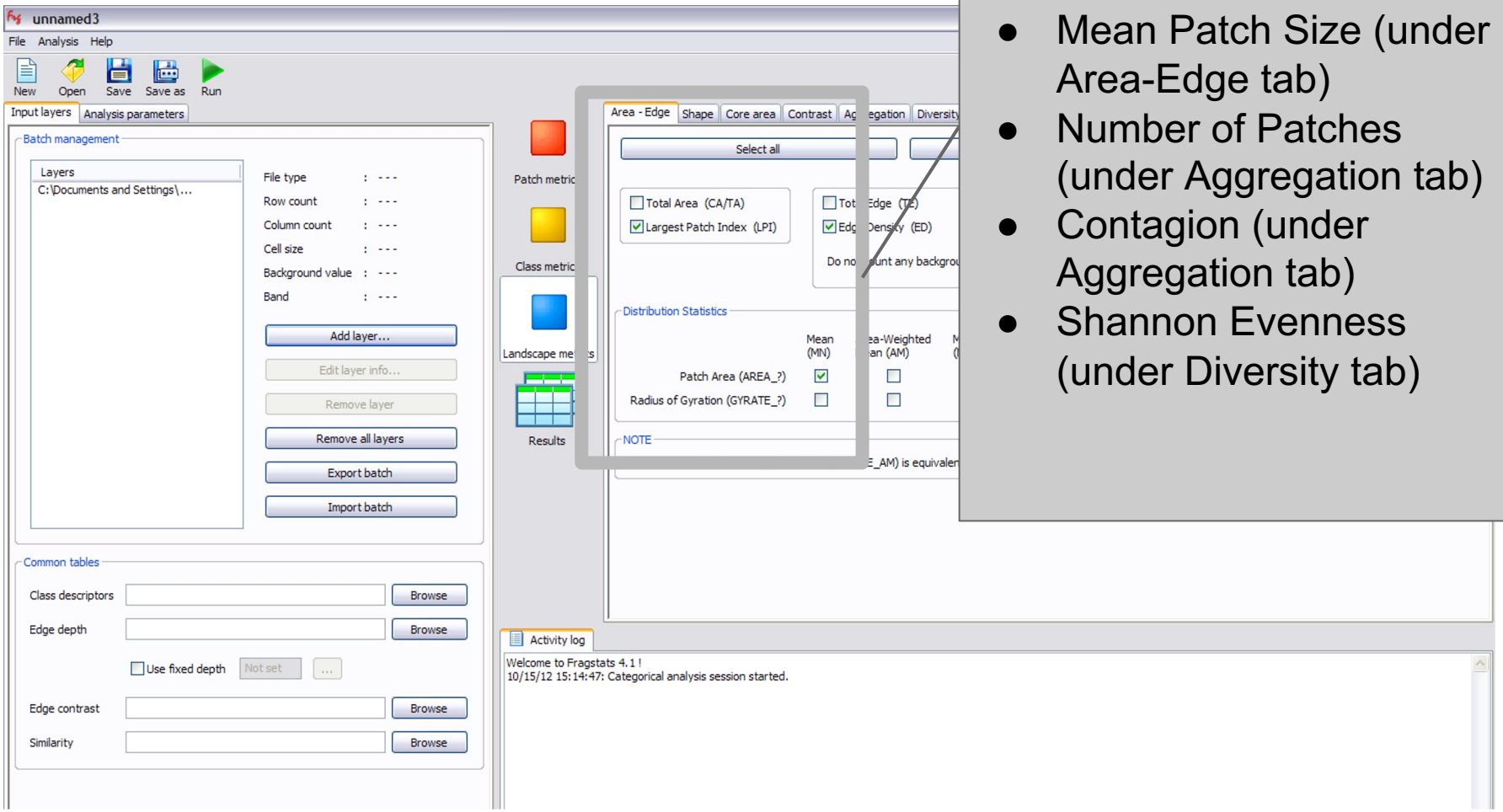
Select the 4-cell neighborhood rule in the General options category

Do not click on the “Automatically Save Results”. You will browse the results before saving (more details in the next slides).

Select the “No sampling” choice for the Sampling Strategy AND select the level of analysis (e.g., Landscape Metrics). Do not generate a patch ID file.

Choosing Landscape metrics

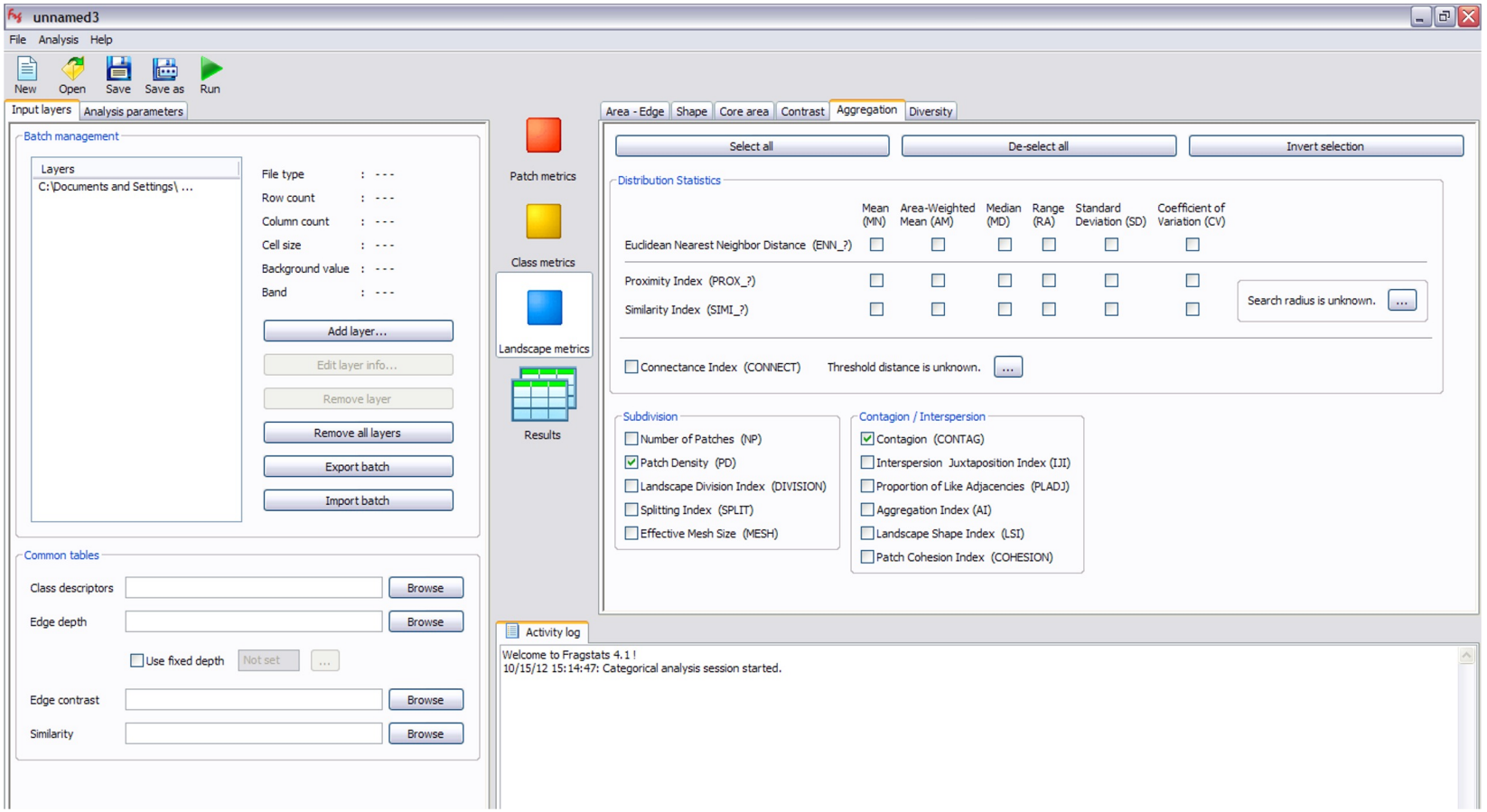
Note tabs at top of metric window



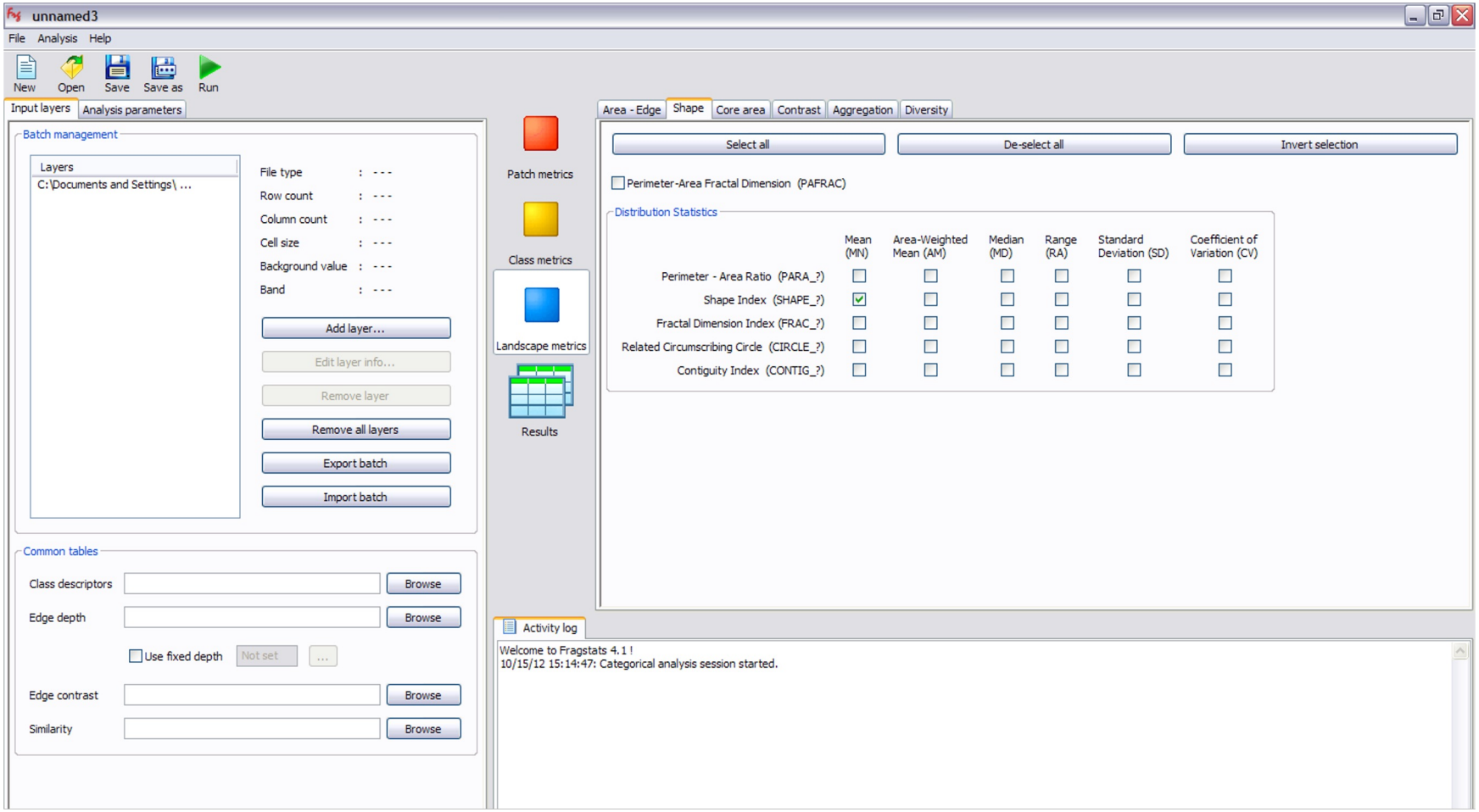
Select the landscape-level metrics you wish to analyze:

- Mean Patch Size (under Area-Edge tab)
- Number of Patches (under Aggregation tab)
- Contagion (under Aggregation tab)
- Shannon Evenness (under Diversity tab)

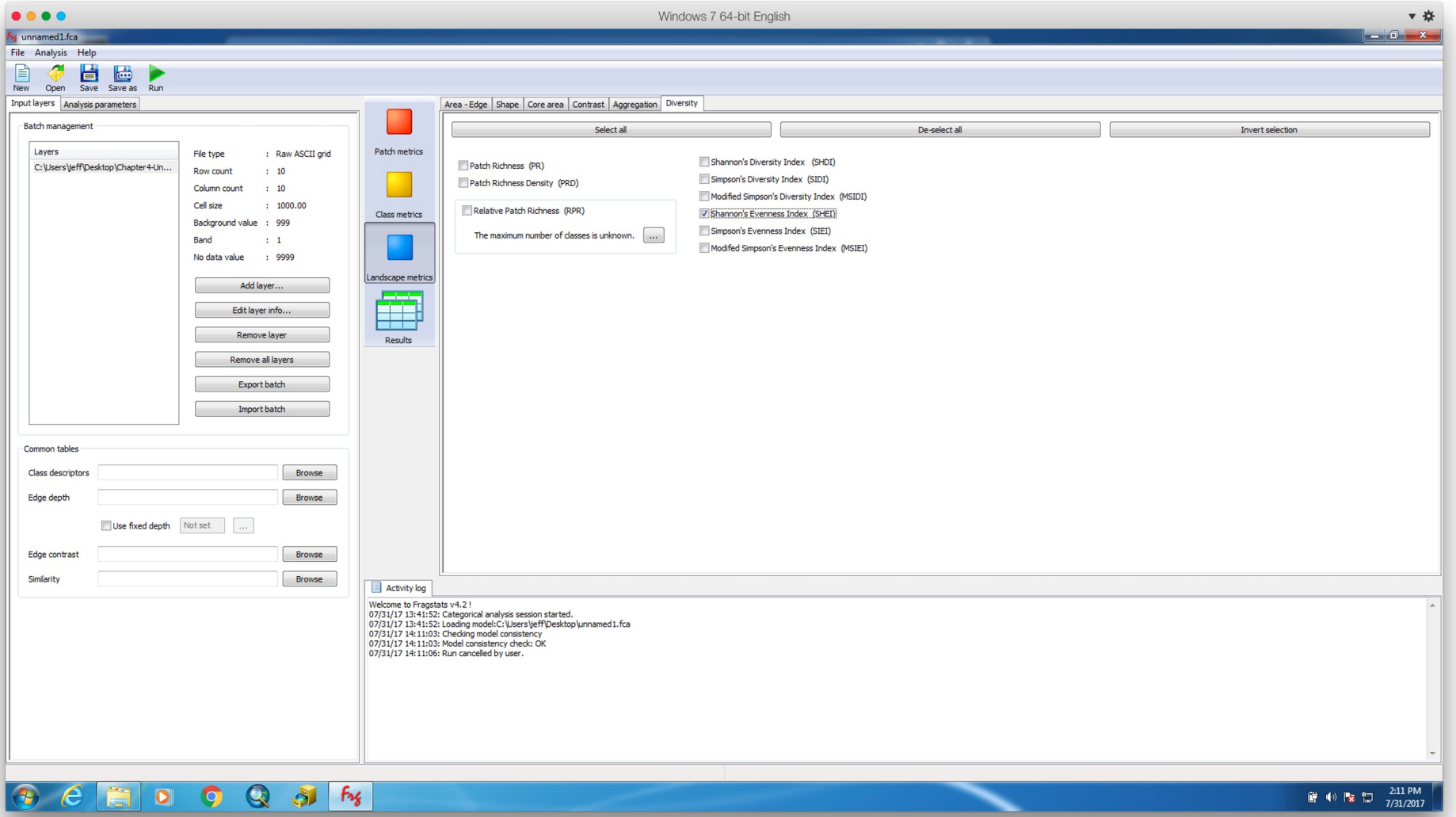
Choosing landscape Metrics - Aggregation tab



Choosing Landscape Metrics: Shape tab



Choosing Landscape Metrics: Diversity tab



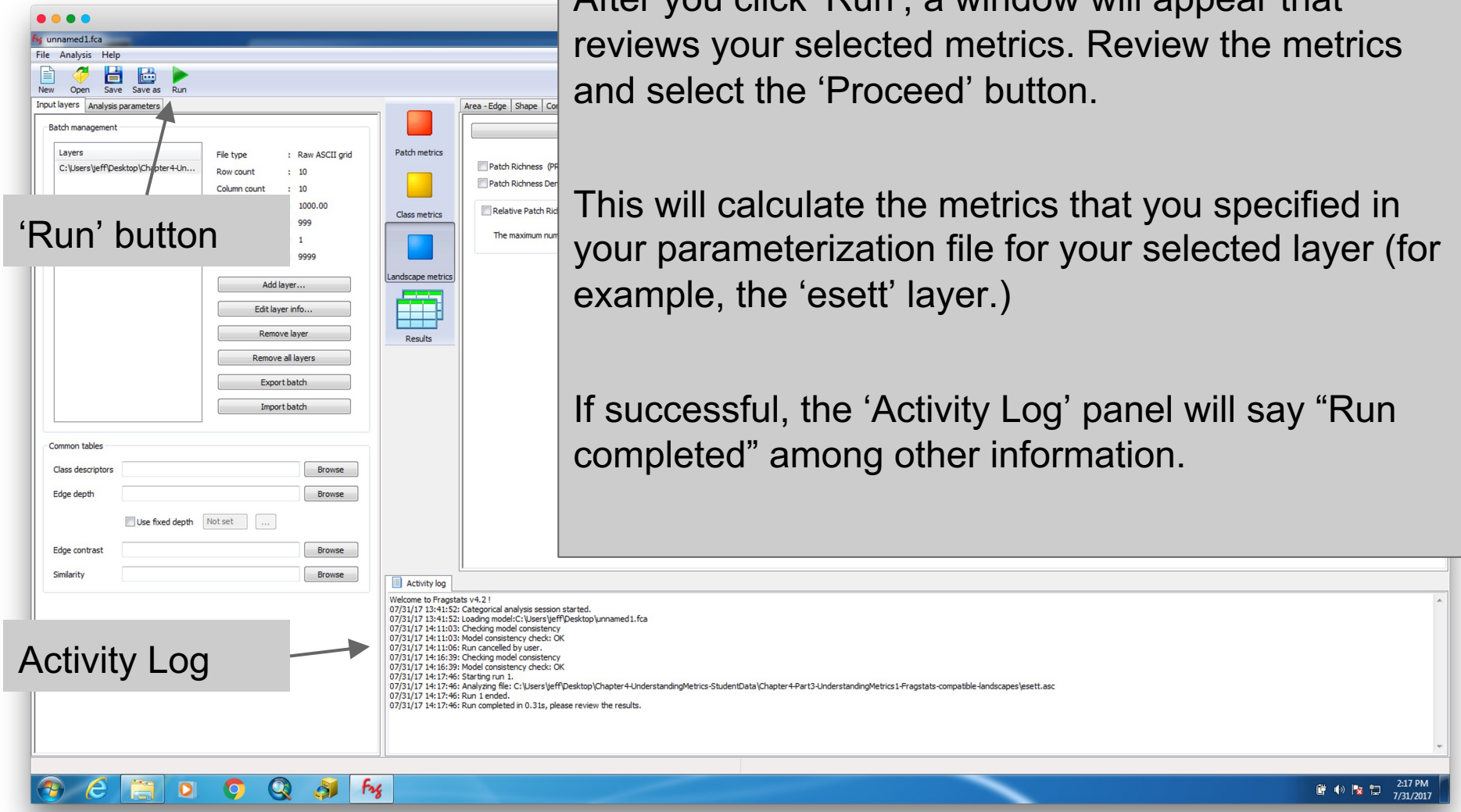
Selecting ‘Run’

When you have selected the metrics you want to calculate, you can click ‘Run’.

After you click ‘Run’, a window will appear that reviews your selected metrics. Review the metrics and select the ‘Proceed’ button.

This will calculate the metrics that you specified in your parameterization file for your selected layer (for example, the ‘esett’ layer.)

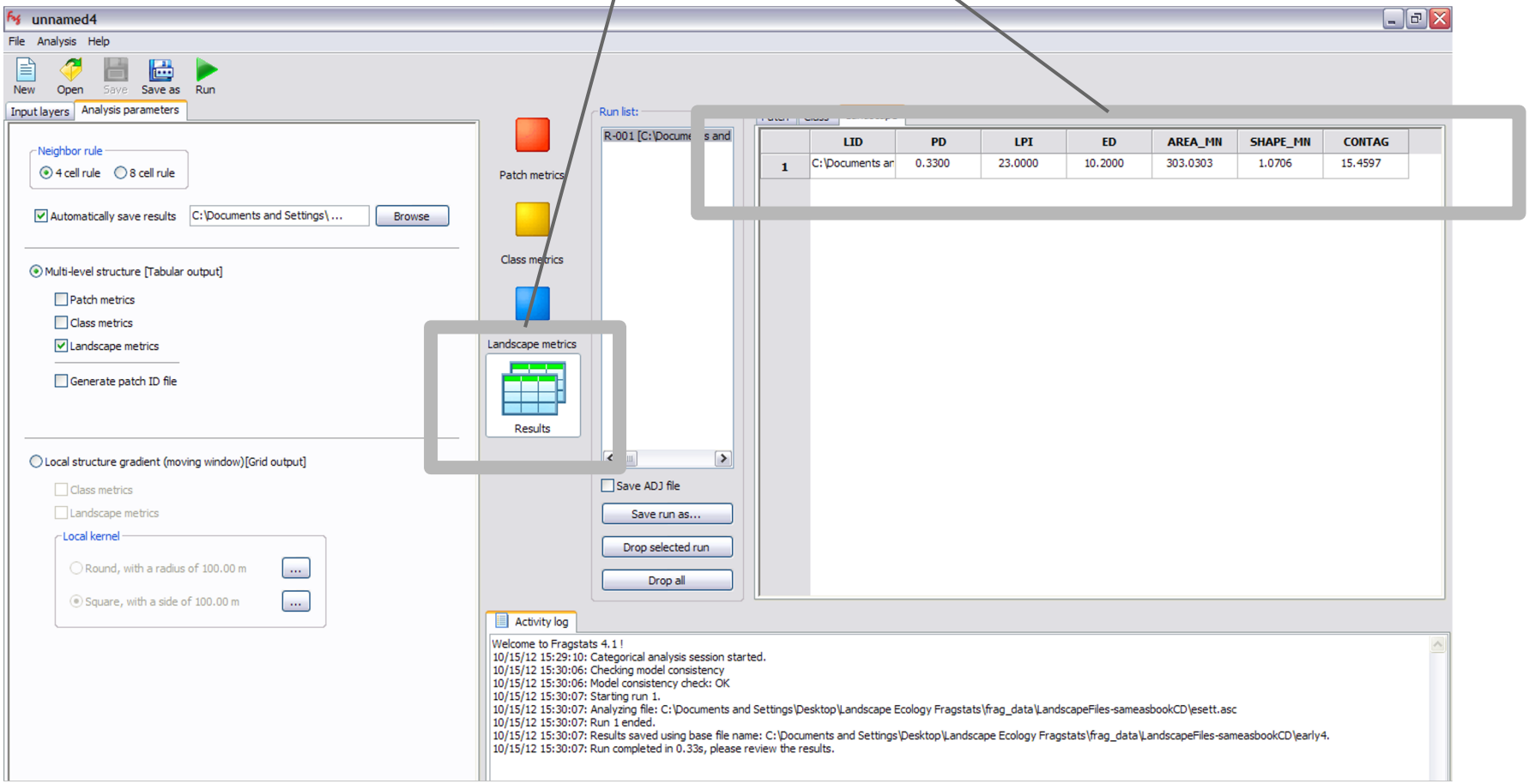
If successful, the ‘Activity Log’ panel will say “Run completed” among other information.



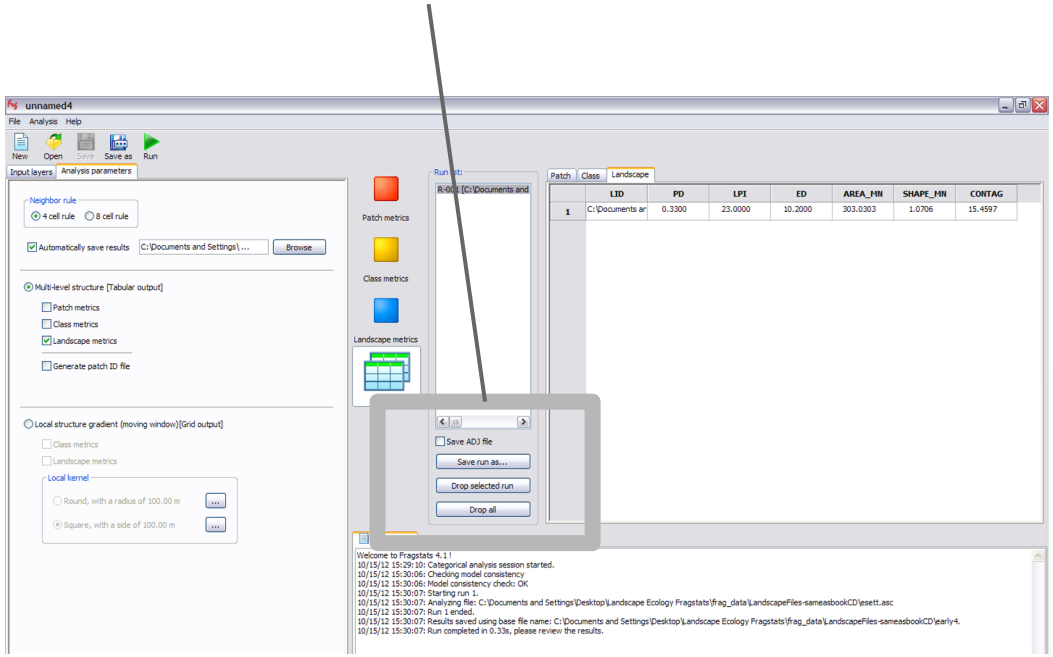
Landscape metrics - results

Click on the “Results” icon to view the results (click on the appropriate level tab). For example, “Patch” and “Class” will be empty because you did not request metrics at these levels. Scroll to the right to verify that all of the metrics that you wanted are present in the results.

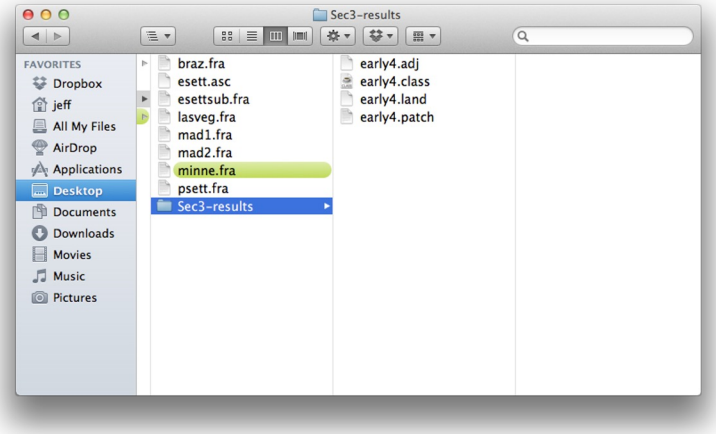
(If you are missing metrics, go back and adjust your metric selections. As before, unselect the “Save ADJ file” button.)



If all the metrics are complete and the numbers seem reasonable, click on “Save run as”. This will open up a window with your “early4” output file already in the file name box. Click on “Save”.



The metric results will be saved to your hard drive.



Use a spreadsheet program to open the “early4.land” file. This file contains your results, and the data will be in a comma-delimited format.

NOTE: Contagion in FRAGSTATS is reported as a percent (so it is scaled between 0-100, rather than between 0-1).