

SampleFreq

Software to measure vegetation frequency from digital images for ecological monitoring

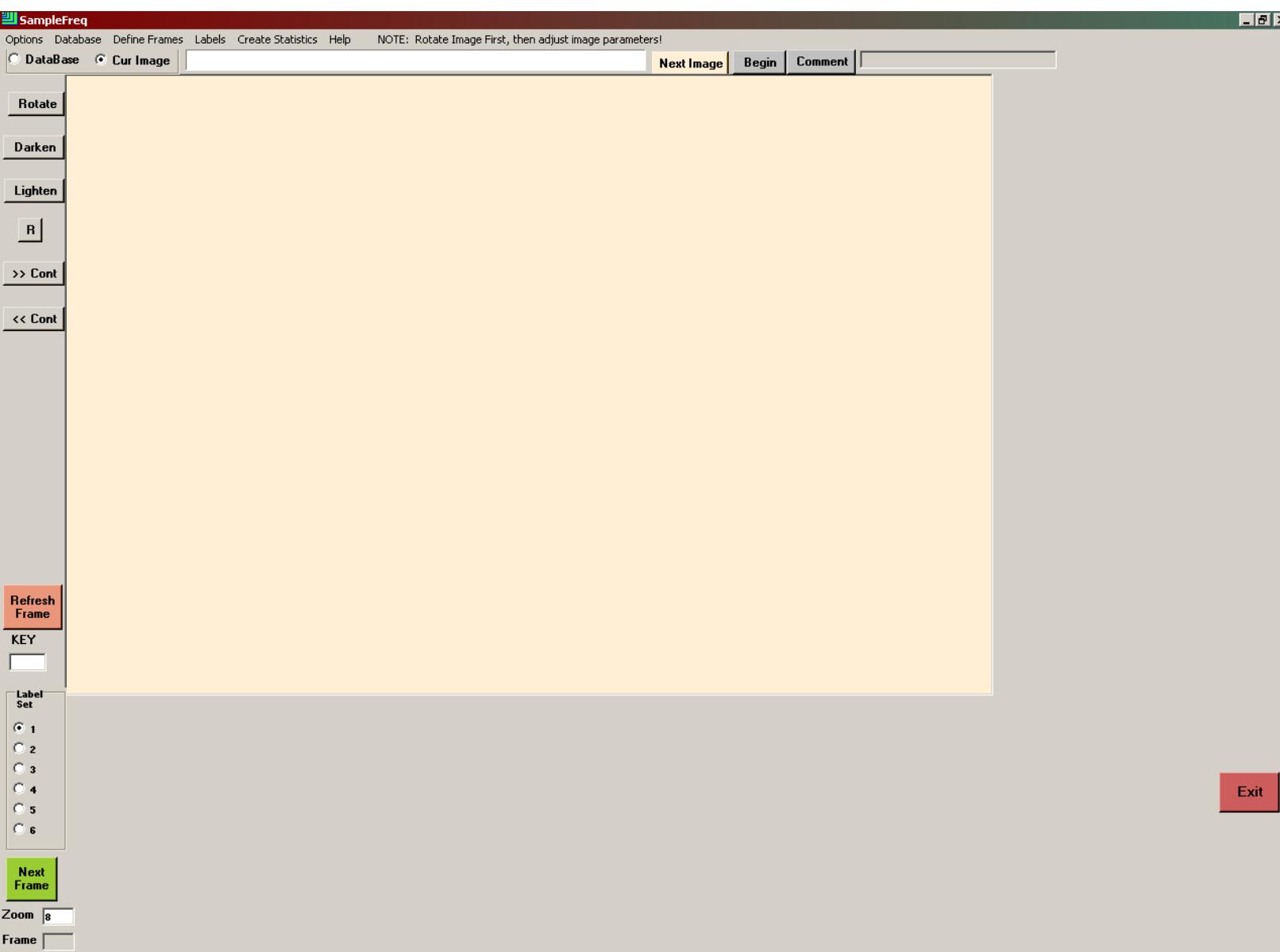
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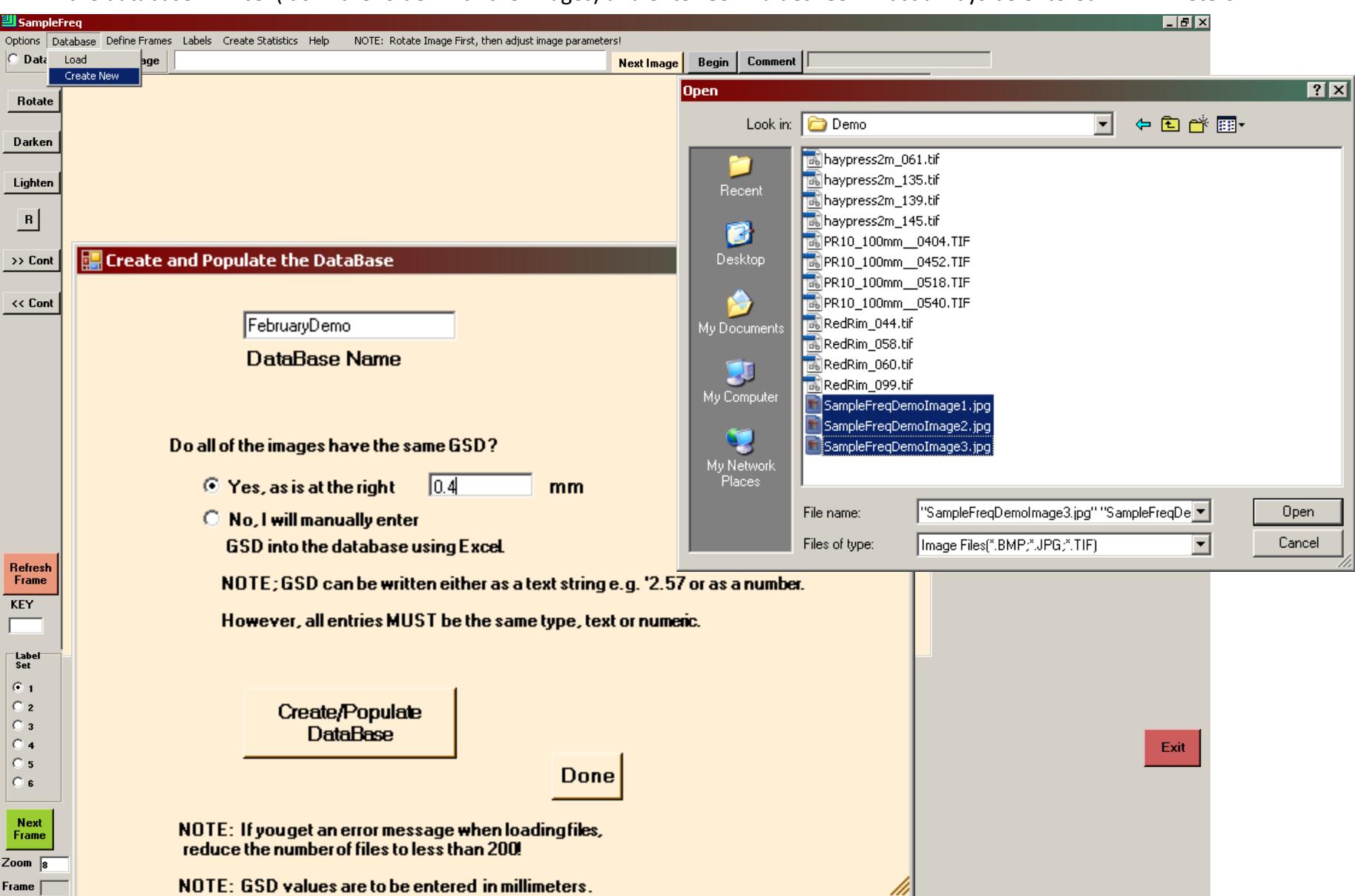
SampleFreq analysis steps

1. Open SampleFreq
2. Define images to analyze in a database
3. Open the database
4. Define the number and size of nested frames to use
5. Define the vegetation types to be analyzed
6. Analyze frequency, image by image, frame by frame
7. Create a frequency summary
8. Bask in the wonderfulness of your frequency data

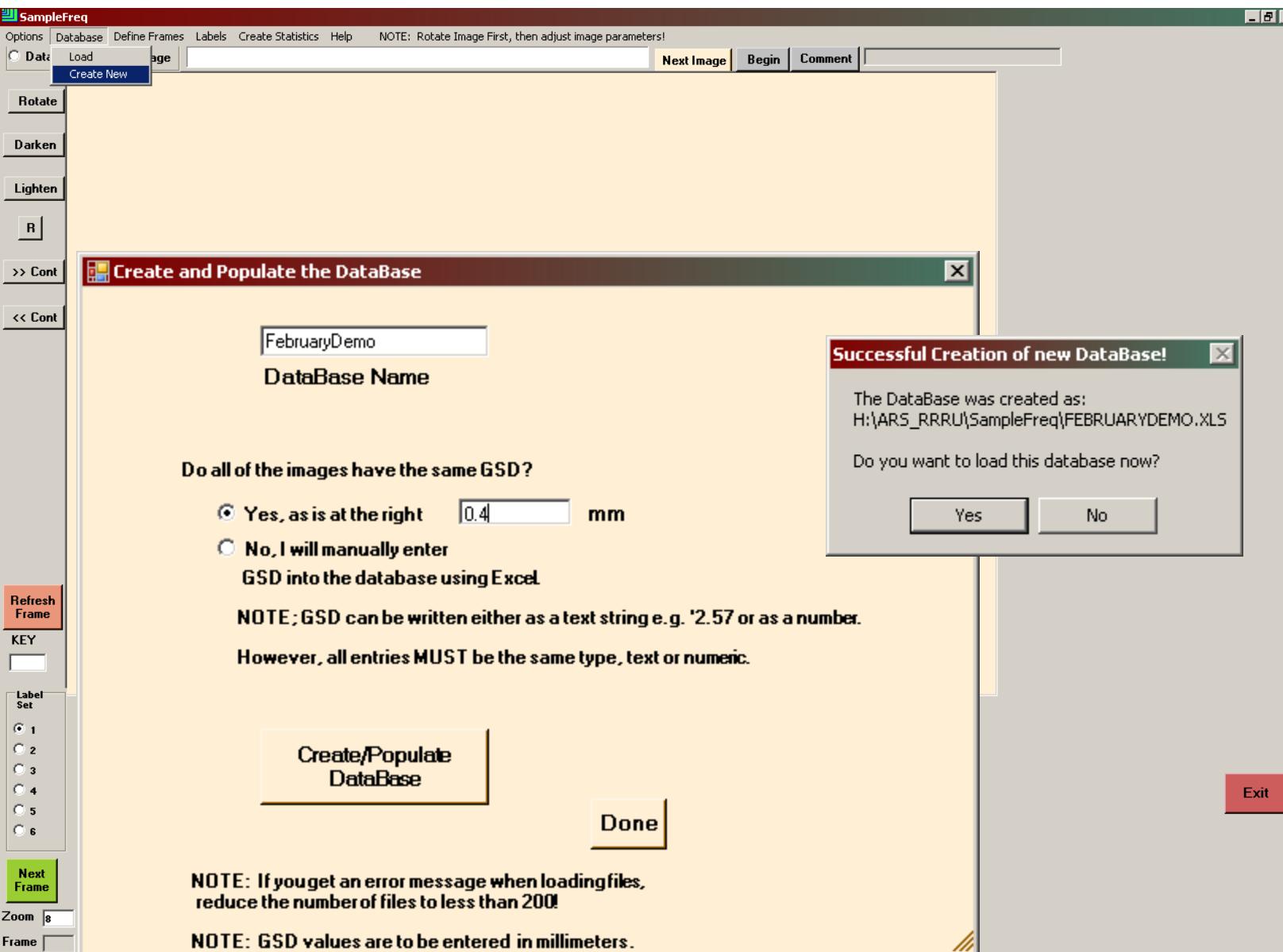
1. Open SampleFreq.



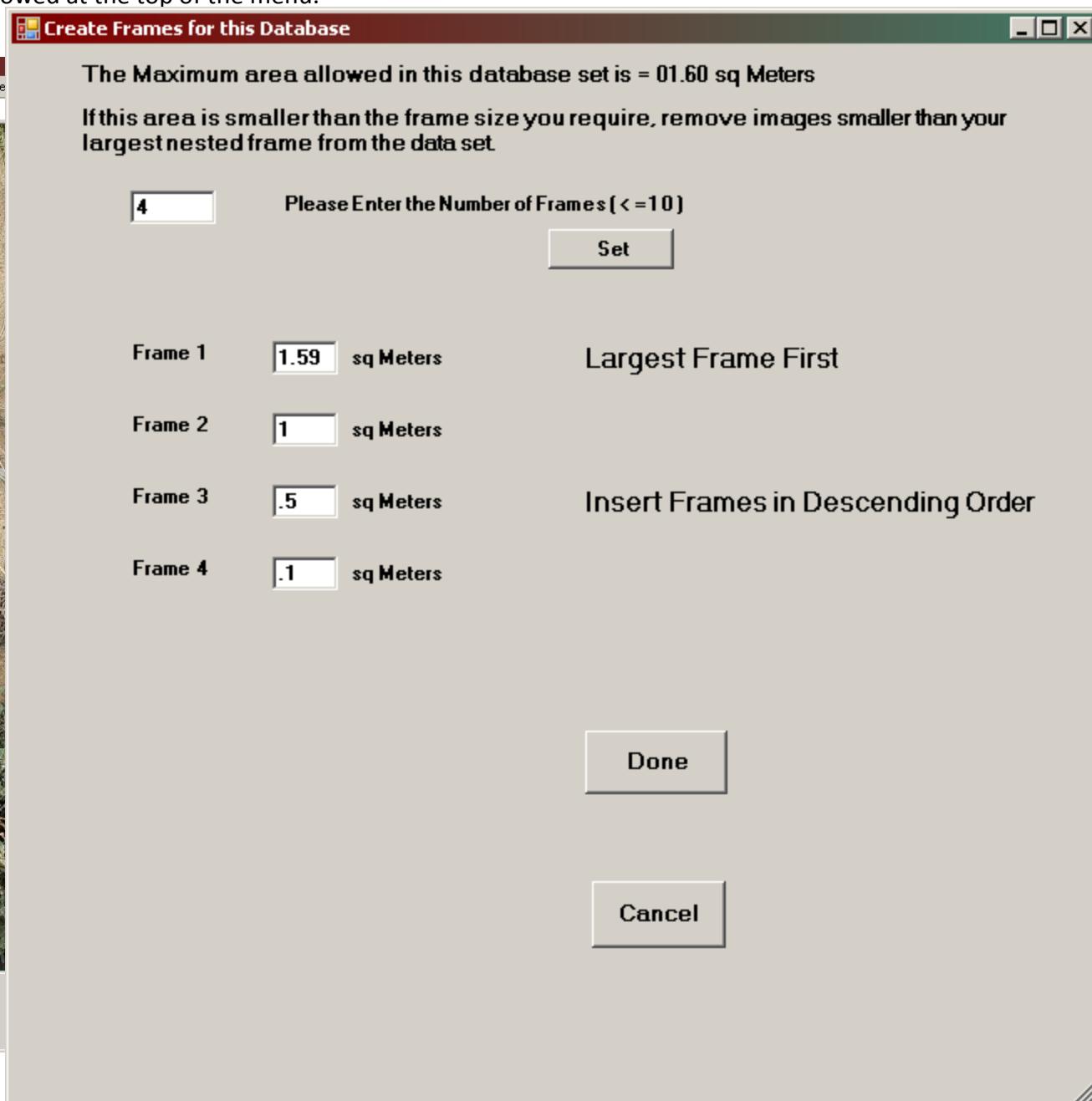
2. Define which images to analyze in a database. Click Database>Create New to open the database wizard. Title your database. Enter the image resolution in mm(GSD) if it's the same for all images. If GSD varies by image, check NO, and manually enter GSD after the database is created. Click Create/Populate database and select all images to analyze. Then click Done. To manually enter GSD, open the database in Excel (it's in the folder with the images) and enter GSD values. GSD must always be entered in millimeters.



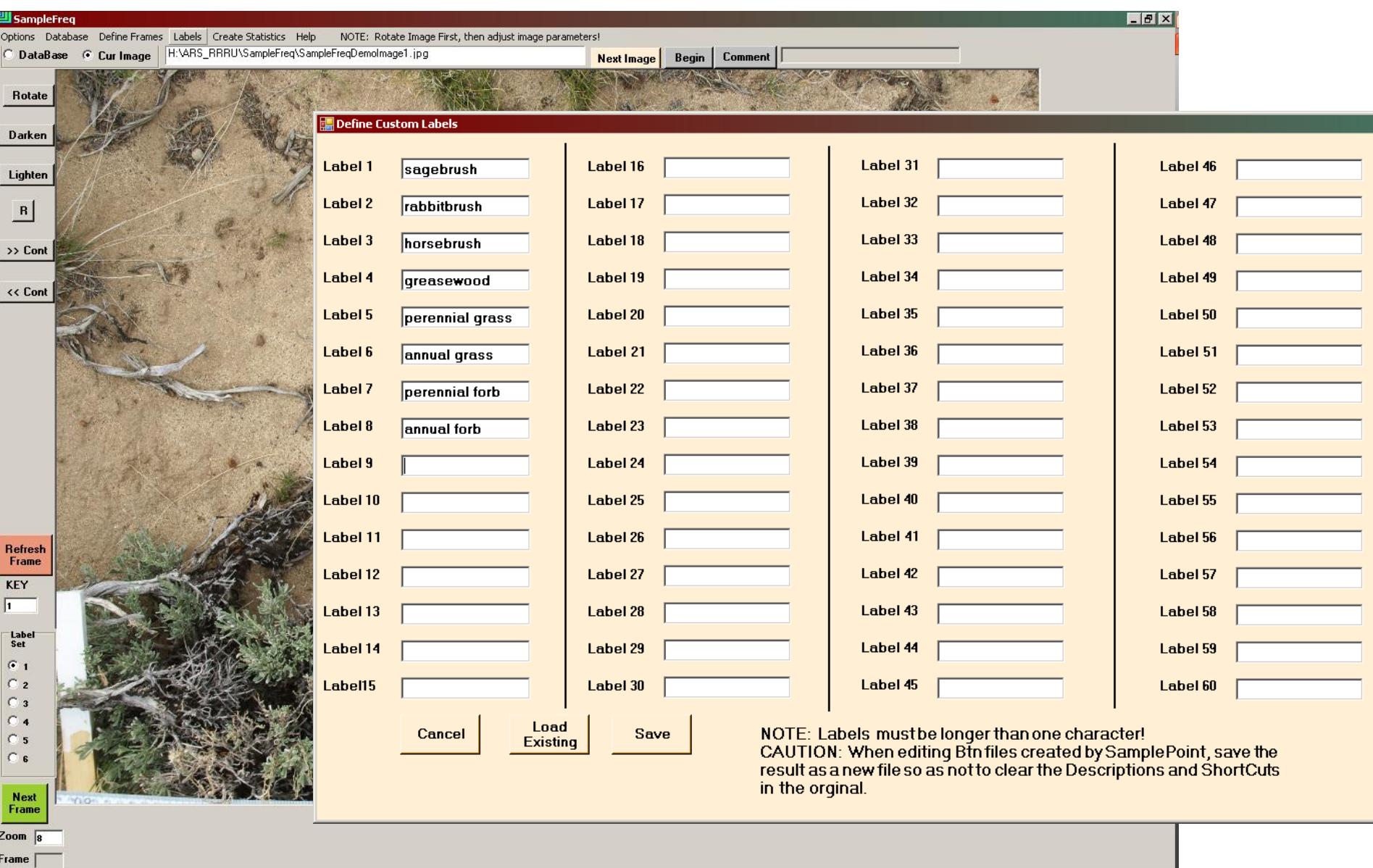
3. Save the database. Once the images are loaded, click Done and the blank database is saved. You will be asked if you want to open the database right away. Alternatively, to open a database not just created, click Database>Load and navigate to the database you want to load.



4. Define the number and size of nested frames to use. Click Define Frame s. Enter the number of nested frames you want, click SET, then enter their sizes in descending order in square meters. Note that the largest frame cannot be larger than the smallest image in the database, which is listed as the Maximum area allowed at the top of the menu.



5. Define the vegetation types to be analyzed. Click Labels>Create. Fill in the form to define up to 60 vegetation classes to analyze. Save the label file wherever you like. To load the label file, click Labels>Load, and load the file you just created. You can also load a SamplePoint button file.



Note that only 10 buttons are visible at once. To toggle between groups of 10, use the radio buttons in the Label Set panel, lower left corner.

Image brightness, contrast or rotation can be adjusted using buttons to the left of the image. The R button returns the image to the default state. Image adjustments made in SampleFreq do not alter the source file.



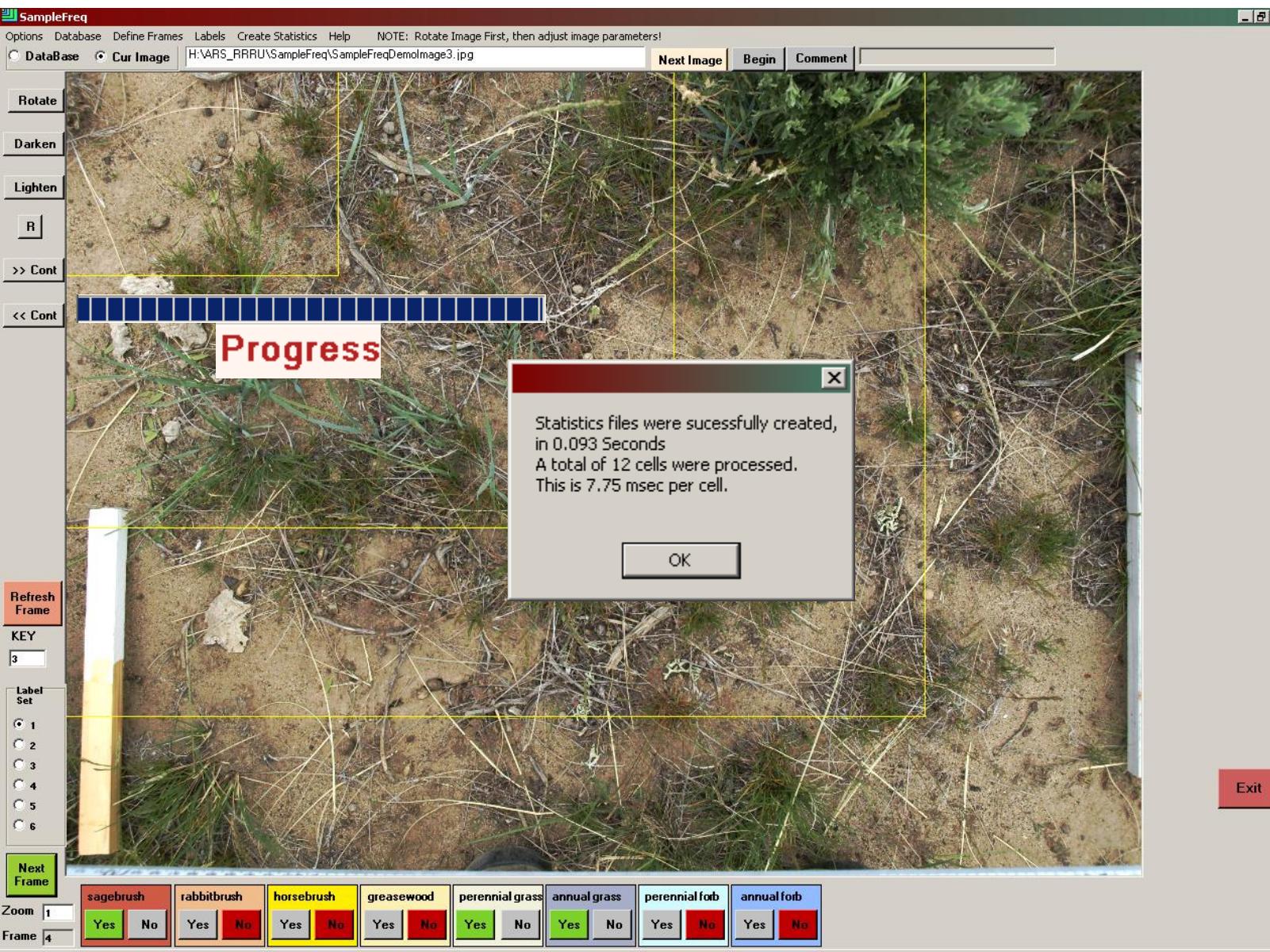
6. **Analyze frequency, image by image, frame by frame.** Click the Begin button, and all nested frames appear. The red frame is the first frame to analyze. The color of the active frame can be changed with Options>Change Active Frame Color. Zoom in or out incrementally with the mouse scroll wheel or up and down arrow keys, or toggle between 1X and 8X by right clicking at specific locations within the image. To record frequency data, click Yes or No to indicate presence/absence of each vegetation type within the first frame. When all vegetation types have been completed for the first frame, click Next Frame.



6. Analyze frequency, image by image, frame by frame (continued). In the second frame, you only need to define presence/absence for those vegetation types not present in smaller frames. Types already present remain present for the duration of the image (YES button remains green). As soon as vegetation types are present, the user is automatically taken to the next image, bypassing any larger frames . When all frames are complete, click NEXT IMAGE to advance to the next image in the database until all images are complete. If you need to stop analysis and return to a certain image later, click Options>Go To Image and enter the Image key (from the database) to return to the image.



7. Create a frequency summary. Once all images have been analyzed, click Create Statistics to create a frequency summary for the dataset. The summary file will be the name of the database, followed by "_SUMMARY.csv" and can be opened in Excel.



7. Create a frequency summary (continued). In Excel, the summary file shows the nested frame size across the top row, and the frequency hit data for each vegetation type. At the bottom, total hits and percent frequency for each nested frame size is shown. Frequency data is complete.

The screenshot shows a Microsoft Excel spreadsheet titled "FEBRUARYDEMO_Summary.csv - Microsoft Excel". The ribbon menu is visible at the top, with the "Home" tab selected. The main content area displays a table with data for "Button Lat Key" and "Image". The table includes columns for "GSD(mm)", "Frame Area (M^2)", and "Comment". Row 14 contains "Number of Hits" and row 15 contains "% Frequency". The bottom status bar indicates "Ready".

	A	B	C	D	E	F	G	H	I	J	K	L	M
7													
8	Button Lat Key	Image	GSD(mm)	Frame Area (M ²)					Comment				
9	sagebrush				0.1	0.5	1	1.59					
10		1 SampleFre		0.4	0	0	1	1					
11		2 SampleFre		0.4	0	0	1	1					
12		3 SampleFre		0.4	0	0	1	1					
13													
14			Number of Hits		0	0	3	3					
15			% Frequency		0.00%	0.00%	100.00%	100.00%					

More options:

- Toggle Information Window display between current image and current database with the radio buttons adjacent to each.
- Add comments by clicking on the Comment button and typing a comment. Comments are saved in the database beside the image name and are included in the frequency summary file.
- Turn on Frame Zoom, which automatically zooms into the active frame, with Options>Frame Zoom
- See what nested frame sizes are currently being analyzed in a database with Options>Show Frames Defined
- Advance quickly from nested frame to nested frame by using the N key for NEXT.
- Manually edit data with Options>Simple Data Editor

Updates are available, always for free, at www.samplepoint.org