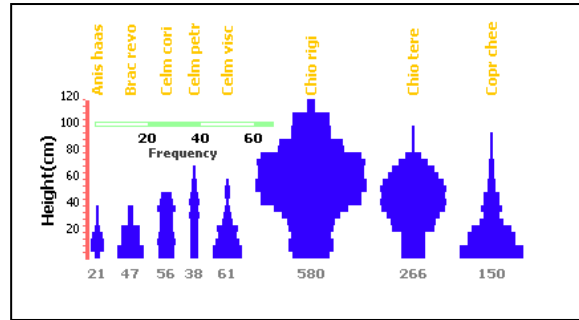# KiteDiagram V1.0 User Guide

Introduction

KiteDiagram V1.0 allows the user to produce height-frequency diagrams for a single transect measurement. The software allows the user to change position and format of most elements that make up a kite diagram and to save the final diagram as a .png file (a graphics file that can be loaded into most word processing and drawing packages).

KiteDiagram has been tested on Windows XP and Mac, but should also work on Linux systems, Windows 2000, and other machines with a compatible JRE.

Installation

KiteDiagram is written in Java, and requires the user to have the Java Runtime Environment (JRE) installed on their machine. The package was developed using the runtime library version **JRE 1.6**. If you have an earlier version of this installed the package may not work. The latest version of the JRE may be downloaded from the SUN Microsystems web site:

http://java.sun.com/javase/downloads/index.jsp

Assuming you have downloaded **kitediagram.zip,** extract this zip file at a location where you want to store the program. The extracted files will be stored in a folder (directory) **KiteDiagram/** under the folder that you have selected to extract the program.

PC Users: A **KiteDiagram.bat** file has been included with the distribution – to start *KiteDiagram* simply double-click on this file. The main window should now open. If there is an error please check your JRE version and ensure that it is at least 1.6 or greater.

Mac/Linux Users: Open the KiteDiagram.bat file and examine the contents. There is just a single line calling the Java virtual machine:

java -cp kite.jar ; fontchooser.jar windows.MainWin

Change this line by replacing the "；" with a "：" so that the call to Java is:

java -cp kite.jar : fontchooser.jar windows.MainWin

You can now either place this line in a shell script in the KiteDiagram folder to start KiteDiagram, or type this command from a shell in the KiteDiagram directory.

Height-Frequency File Formats

KiteDiagram **only reads comma-separated value files**, in one of two specific formats.

There are 4 example files with the distribution:

1. ranges.xls – an Excel spreadsheet created in Windows XP;
2. ranges.csv – the equivalent spreadsheet in comma separated format;
3. value.xls – an Excel spreadsheet created in Windows XP;
4. value.csv – the equivalent spreadsheet in a comma separated format.

Typically a user will enter and store the initial height-frequency data in a spreadsheet. Once data entry is complete the user needs to create a comma-separated value file for input to *KiteDiagram*. Of course you can always just create a .csv file without using a spreadsheet, but it may be difficult to get the formatting correct!

The height-frequency data must follow the following spreadsheet format:

The first line of the file must contain a title for the data (note that this can be changed while making the diagram). The next non-blank line must contain the height-frequency range data. This can be in one of two formats: as a set of specific ranges or as single values, where the range is then assumed to be based on the previous and current value. Note that a label is also required in the first column prior to the height-frequency range information. For example:

	A	B	C	D	E	F
1	Treeline South Site 10					
2						
3	Species	0-5	5 - 10.	10 - 15.	15 - 20	20-25

or

	A	B	C	D	E	F
1	KiteDiagram Example with single range values					
2						
3	Species	5	10	15	20	25

which are equivalent. Note that the second example assumes that the lowest value starts at zero, and then uses the previous value as the lower bound for the height range. Hence the first example potentially allows more flexibility – you can even exclude height ranges completely if you want. For example,

	A	B	C
1	Treeline South Site 10		
2			
3	Species	5 - 20.	30 - 40

would defined data where there are only two height-frequency ranges, one from 5-20, and the other from 30-40.

HINT: Examine the value and ranges files in the distribution to see examples of these formats.

Following the range definition each subsequent line has data for a species. Cells can be blank (indicating a zero). For example, the following figure shows that "Anis hass" does not contain any counts for the first 2 or the 6th height-frequency values:


Blank lines are acceptable between species, but each non-blank line must contain a string giving the species name, and zero or more values, one associated with each height-frequency range.

Once you have created your data, export the file to a comma-separated value format (a very common format allowed by most spreadsheet programs). Examine the **values.csv** and **ranges.csv** files in a text editor to see the final format accepted by *KiteDiagram*.

Loading the Height-Frequency Data to *KiteDiagram*

Start *KiteDiagram*. A window will appear that looks like:
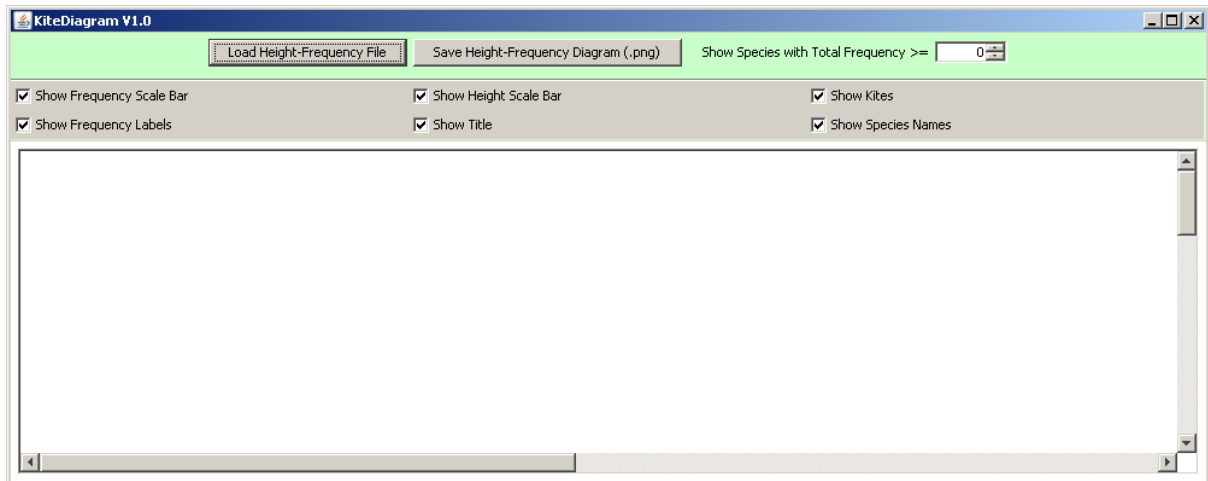
Clicking on the **Height-Frequency File button** will open a file opening window. Navigate to your .csv file and click on it to open. For example, if we opened **ranges.csv** the window should now look like the following figure:
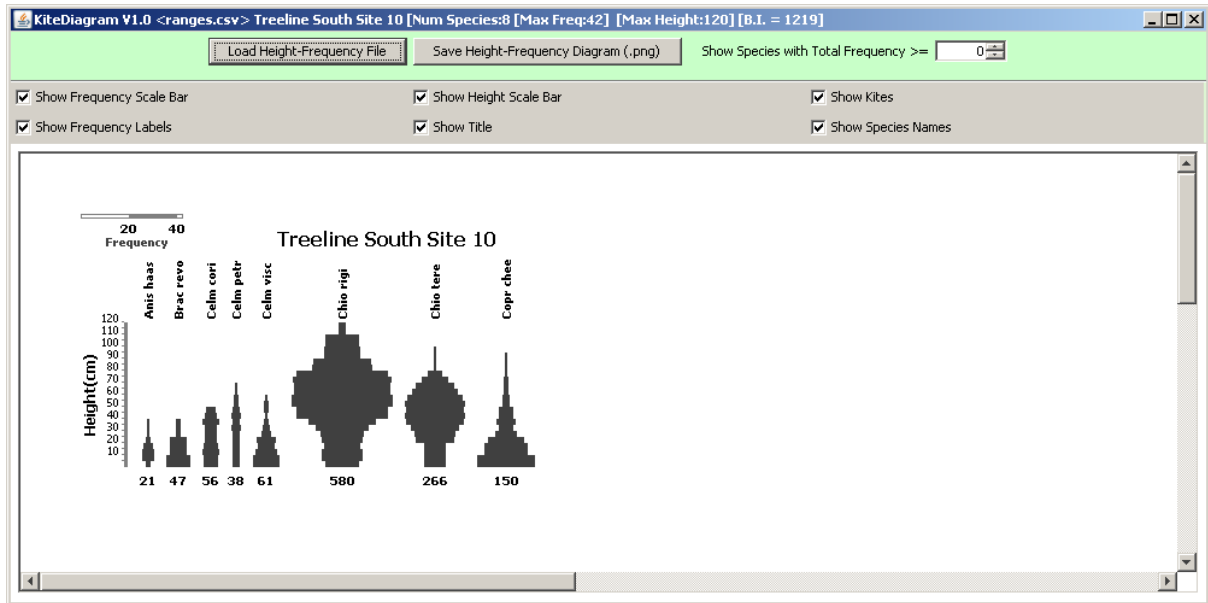
Note that on the top panel (in green) there is one option, which is to only show species with a total frequency >=0. This value can be changed so that low frequency count species can be omitted from the diagram. In addition, the top frame label gives information regarding the height-frequency data, including the **number of species**, **maximum frequency**, **maximum height** and the **Biomass Index** (i.e. the sum of all species frequency counts for those species with total frequency >= the selected value).

Modifying the diagram

The diagram is composed of a number of elements: The Title String (in the example above, this is "TreeLine South Site 10"), a frequency scale bar, a height scale bar, the Kites, the Kite species labels (for example, **Brac revo**), and the sum of the frequency count (centred below each kite). Each of these elements can be turned on/off using the check boxes in the green panel.

In addition, you can move elements around by dragging them with the mouse. If you try dragging the kites, then the height scale bar, species labels and frequency counts will also move in relation to the kites. However, you can also move each of these elements separately by dragging over the top of them. In addition, the properties of each element can be changed by clicking on the element – a window will open which gives options for font/colour changes, text values and scale ranges (depending on the element you select). Play around to get an idea of how to modify your diagram to suit your needs. Note that if you change the font for the species labels or frequency count they will be automatically repositioned close to the kites. Hence it is recommended that you first adjust the font sizes, etc. prior to fine tuning the positioning of each element in the diagram.

Saving the diagram as an image

Once you have designed your diagram, just click on the Save Height-Frequency Diagram (.png) button. A window will open to prompt you for a file name – if you do not include the .png extension

this will be automatically included.   Note that the window will be clipped to the bounding box surrounding the elements you have selected to display.

Recommended Steps in producing multiple Kite Diagrams

1. Edit your height-frequency data in a spreadsheet, and export to a comma-separated value file.
2. Load to *KiteDiagram*
3. Change the fonts/colours until you are happy with the relative sizes of each element in the diagram.
4. Finally, reposition each element until you are happy with the final design.
5. Save the diagram as a .png file.
6. Load in your next set of data – this will use the current settings of fonts/colours etc. and therefore you will be able to easily create a set of diagrams which are consistent.

Further Information

One method for collecting height frequency data has been described in Dickinson et al. (1992).

For further information, and to report bugs or recommended changes, please contact:

Assoc Prof. Peter A. Whigham

Dept. of Information Science, University of Otago, Dunedin, New Zealand

pwhigham@infoscience.otago.ac.nz

Thanks must go to Stephan Porter and Kim Harris for help with the design and testing of the initial versions of KiteDiagram.   However, I take full responsibility for the final design and any bugs/problems.

This software is distributed without any form of warrantee or associated liability from the author. Use as your own risk. However, if you find the software useful, please let me know. I am thinking of extensions that use more of the transect depth information, either through the use of colour, texture or a simple 3D image. Please let me know if you have any ideas for extensions to the current system.

REFERENCES

Dickinson KJM, Mark AF, Lee WG 1992. Long-term monitoring of non-forest communities for biological conservation. *New Zealand Journal of Botany* **30**: 163-179