

## **CFCread File Saving Limitations**

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In CFCread, there are three parameters which can be set from the Interpretation Options dialog when interpreting data. These are:

MaxTBC  
Min Line Length  
Smooth.

A bat call is recognised as such when it meets certain criteria. Firstly, the dots within the call must be smoothly connected, which means that each dot must be close to the average of the dots either side of it. How close is decided by the Smooth parameter. Normally, this would be set to 50. You could set it lower if you want only the best quality calls, or higher if you are willing to accept worse calls. But 50 seems a good compromise for most purposes.

A sequence of dots which are sufficiently smoothly connected will be considered a bat call if it has a length greater than the Min Line Length parameter. This parameter just specifies the number of dots which must be smoothly connected. 5 is usually a good choice, but if you are using a divratio of 8, you could go a bit larger. The problem is that smaller values make you more vulnerable to noise, but larger values increase the likelihood of missing some types of calls (eg Euderma).

A file will only be saved if at least two calls are detected within the time set by MaxTBC (in seconds). Usually 5 seconds is a good choice. If only one call is detected within MaxTBC, then no file will be saved. If 2+ calls are detected with MaxTBC, then a file will always be saved.

If a file is to be saved, the decision to save it is based on the following criteria.

If the buffer is filled, the file will be saved immediately. The buffer can hold up to 16384 data points, which is a fair bit, so this criteria is not commonly met. But noisy files, or files containing many bats could reach this limit. If files contain lots of data and are shorter than 15 seconds, it is likely to be for this reason. Files which have met this criterion will always be large - usually at least 16K.

If there has been NO data for MaxTBC seconds, then the file will be saved at this point. This criterion can result in files of short duration, potentially much shorter than 15 seconds.

Lastly, if the time since the first recognised bat call is greater than 15 seconds, the file will be saved at that point. This ensures a file can never be longer than 15 seconds.

There is actually another potential limit which rarely comes into play. The file length itself is limited to 32K bytes, and it is possible to have data which could contain less than 16384 points but which requires more than 32K to store. In this case, the file would probably be mostly noise, but it will be truncated when it gets to 32K bytes in size.