# CRU WG Threshold Detector

The text file "CRU_WG_dly_TD_ini.txt" is modified by the user to set the variable(s) and thresholds they wish to analyse (depending on the observed data available - not all those variables listed below may be available – see the selected station metadata tab on the Portal to find this information).

To speed up the analysis the user can set up to three thresholds (or pairs of thresholds), for e.g.

Tmax > 25;  Tmax > 28;  Tmax > 30

A second condition may be added if required:

Tmax > 25 AND Tmin >10

Any mix of variables may be used but they must make sense, the following of course cannot happen:

Tmax > 25 AND Tmax < 20

The variables are identified by the numbers 0-9 as listed here:

precip - total = 0
temp - min = 1
temp - max = 2
vapourpressure - mean = 3
relhum - mean = 4
wind speed = 5
sunshine hrs total = 6
diff radt - total = 7
dir radt - total = 8
pet - mean = 9

An example configuration is shown here with comments in italics:

CENT0130.101 *the input file name*
cntr            *control(cntr) or scenario(scen)? For embedding in the outfile name*
0               *variable ID number, in this case precip*
GT              *greater or less than the threshold*
50.0            *the threshold required*
FALSE           *second condition? NB must be capitals (TRUE or FALSE)*
1               *if above is TRUE set as required else leave alone*
LT
18.0
1               *second variable ID number*
GT
15.0
FALSE
1               *if above is TRUE set as required else leave alone*
LT
18.0
2               *third variable ID number*
GT
28.0
FALSE
1               *if above is TRUE set as required else leave alone*
LT
20.0

line No.
1       WG output file name
2       cntr or scen

3       choose your first variable 1a...0-6
4       GT or LT threshold_1a
5       value of threshold_1a

6       second variable condition required? TRUE or FALSE
7       choose your variable 1b...0-6
8       GT or LT threshold_1b
9       value of threshold_1b

10      choose your second variable 2a...0-6
11      GT or LT threshold_2a
12      value of threshold_2a

13      second variable condition required? TRUE or FALSE
14      choose your variable 2b...0-6
15      GT or LT threshold_2b
16      value of threshold_2b

| 17 | choose your third variable 3a...0-6 |
|----|-----------------------------------|
| 18 | GT or LT threshold_3a |
| 19 | value of threshold_3a |
| | |
| 20 | second variable condition required? TRUE or FALSE |
| 21 | choose your variable 3b...0-6 |
| 22 | GT or LT threshold_3b |
| 23 | value of threshold_3b |

## Output files

For easy identification the output file name will contain your settings embedded in the filename. There will be three files containing the counts over /under the threshold and three files containing the sum of the variable over/under the threshold which may be useful for e.g. temperature to produce heating/cooling or growing degree days (for some variables this output will not have any relevance and so can be ignored).

Column 1 of the output file is the WG run number 1...100 rows, followed by the months 1...12 which are numbered in row 1. The last two rows contain the means and SDs over the 100 runs.