The following examples illustrate available COASTER functionality

Key Points to Remember

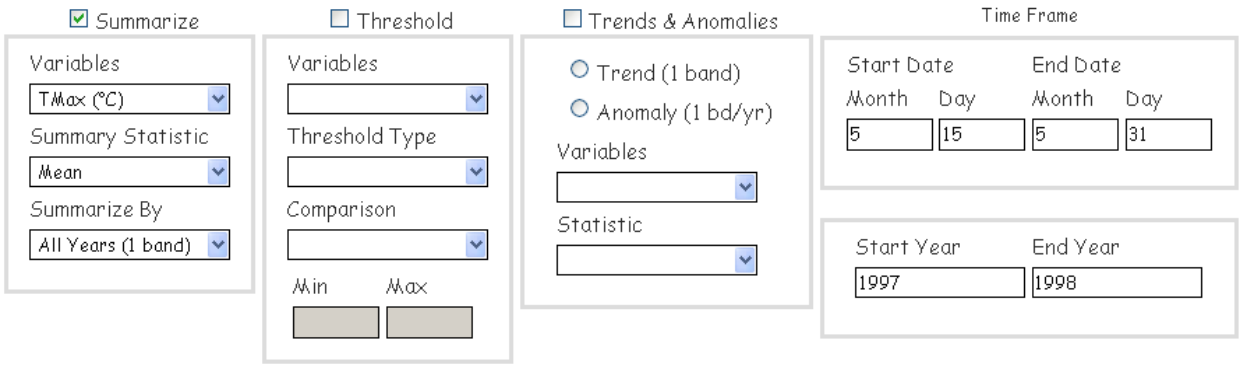
COASTER processes results on a **PER CELL/PIXEL** basis (i.e., each cell is treated as a unique spatial unit within which all calculations are performed). As such, the calculations/results for any cell do not affect and are not affected by the calculations/results in any other cells.

COASTER performs no spatial aggregation/summarization other than clipping the images to the user-defined area of interest. Clipping is accomplished with the upper left and lower right corner coordinate boxes.

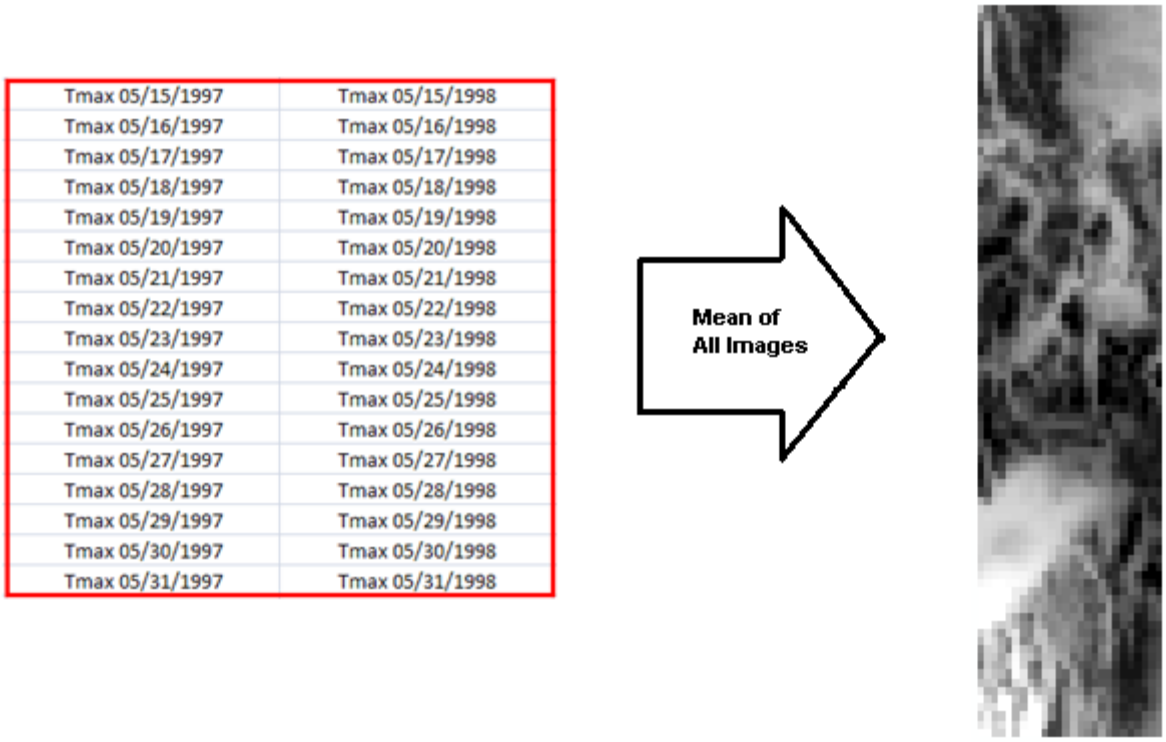
COASTER ignores February 29th, even during leap years when that date occurred.

EXAMPLE 1 - Summarize All Years

Online Form:



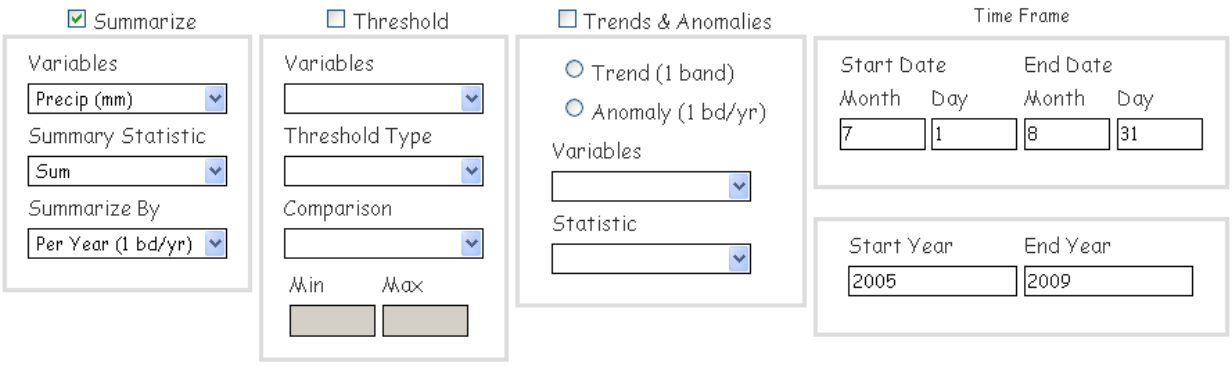
Behind the scenes:



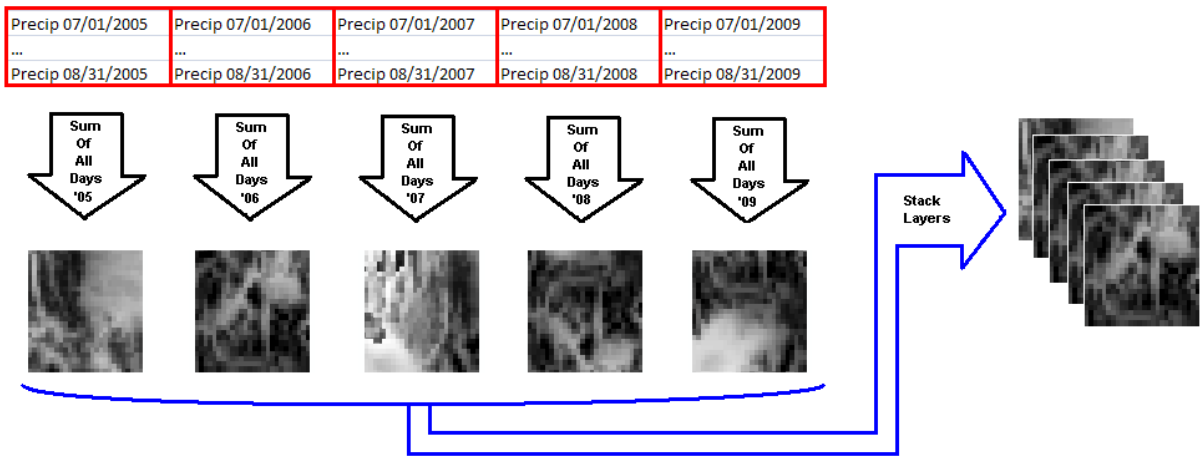
The output in this case is a single-banded raster (.tif) containing the mean daily maximum temperature (based on the user-selected arguments for “variable” and “summary statistic”) for the 34 day (i.e. the selected time frame containing 17 days for each of the 2 years).

EXAMPLE 2 - Summarize Per Year

Online Form:



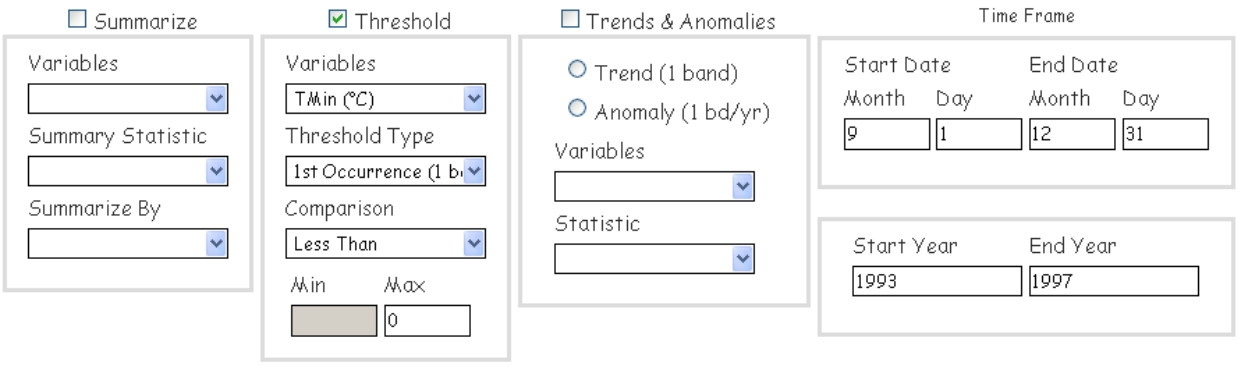
Behind the scenes:



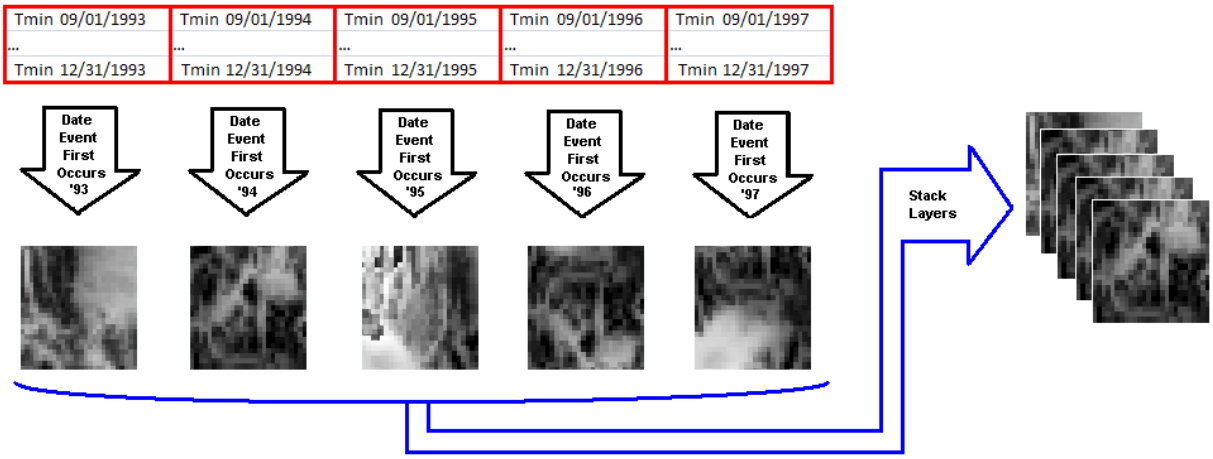
The output in this case is a five-banded raster (.tif) containing the total precipitation (based on the user-selected arguments for “variable” and “summary statistic”). Each band contains the per-year sum of all precipitation from within the 62 day time frame.

EXAMPLE 3 – Threshold First Occurrence

Online Form:



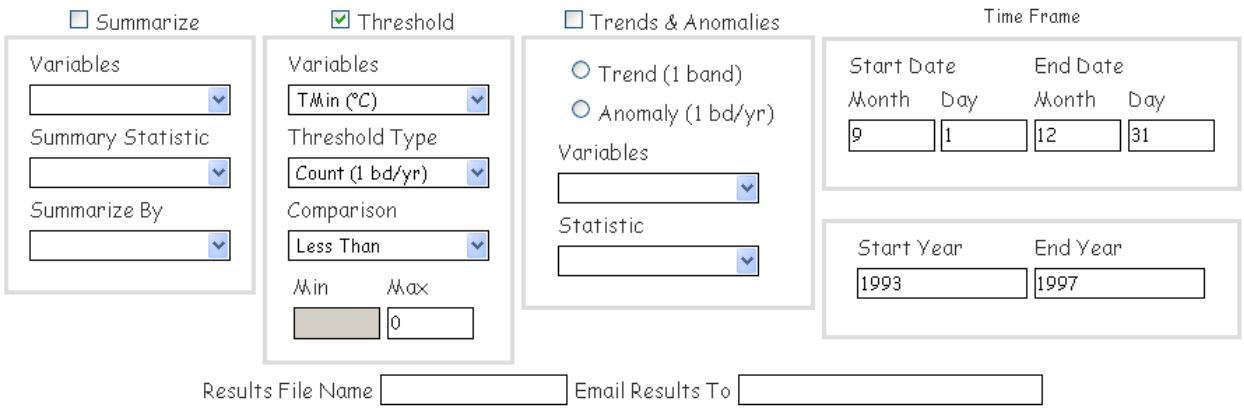
Behind the scenes:



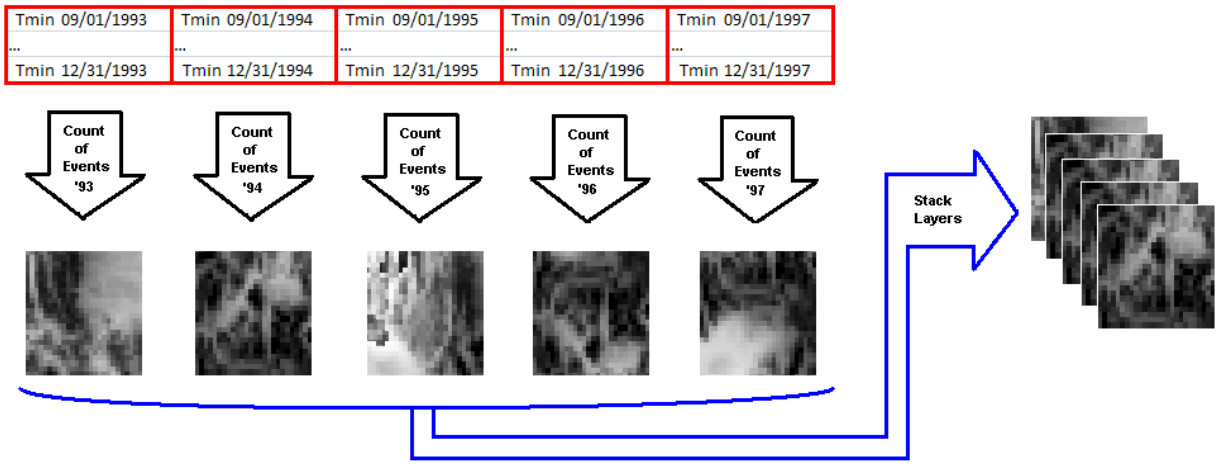
The output in this case is a five-banded raster (.tif) containing the date of the year that the minimum temperature first dipped below freezing. The cell values in this case will be an integer value representing a day of the year (e.g., September 1st would be day 244, September 2nd would be day 245, and so on).

EXAMPLE 4 – Threshold Count

Online Form:



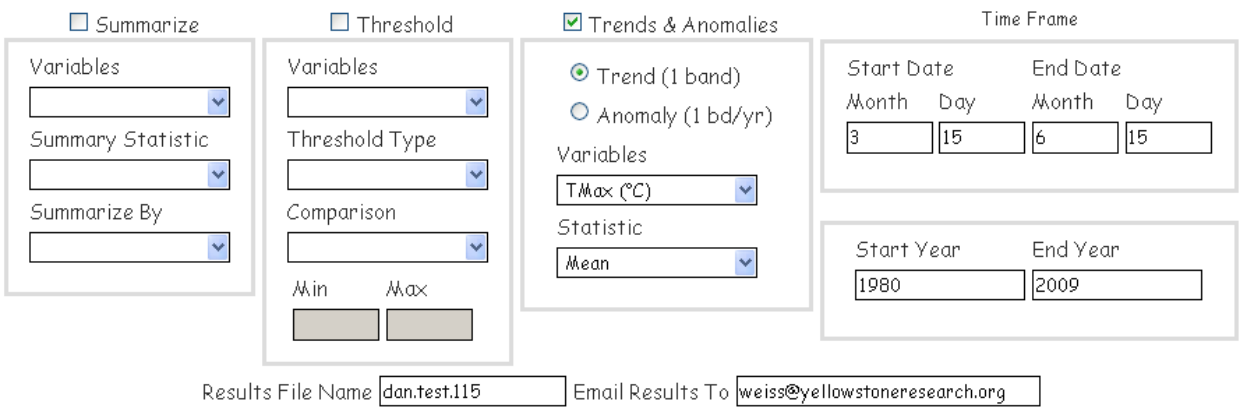
Behind the scenes:



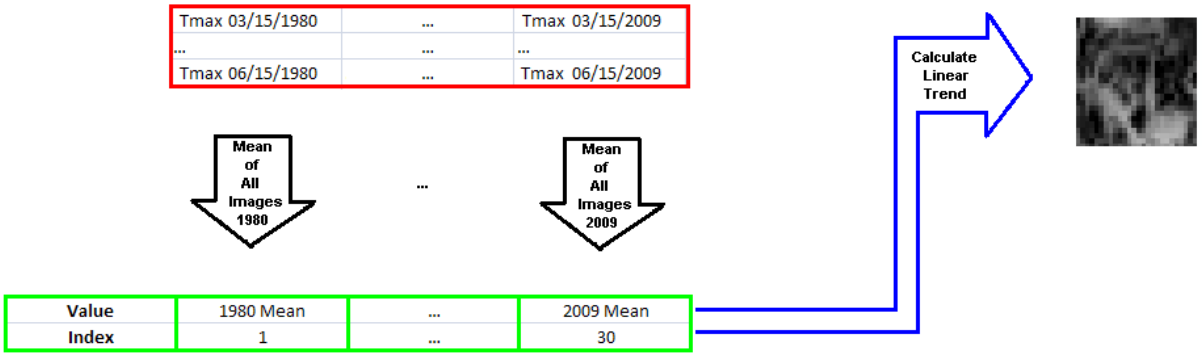
The output in this case is a five-banded raster (.tif) containing the number of days per-year within the user-defined time frame that the minimum temperature first dipped below freezing. The cell values in this case will be an integer value representing the annual count.

EXAMPLE 5 – Trend

Online Form:



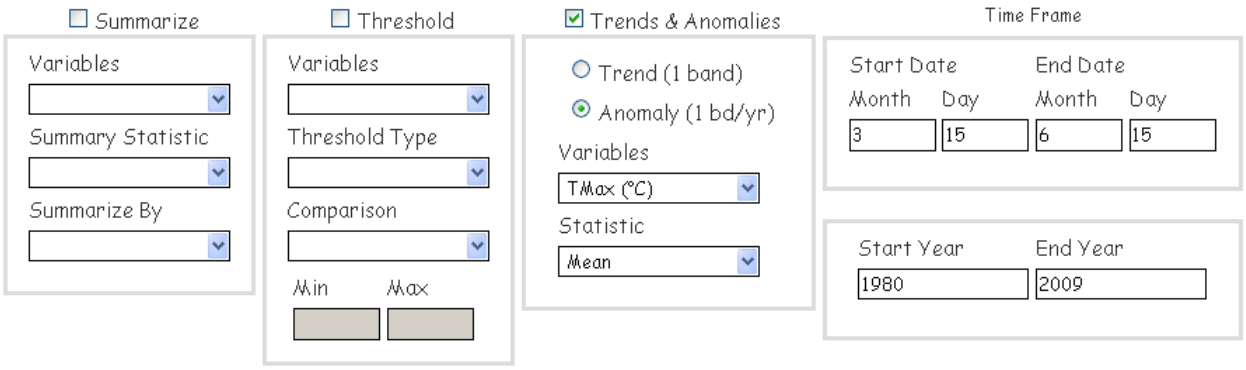
Behind the scenes:



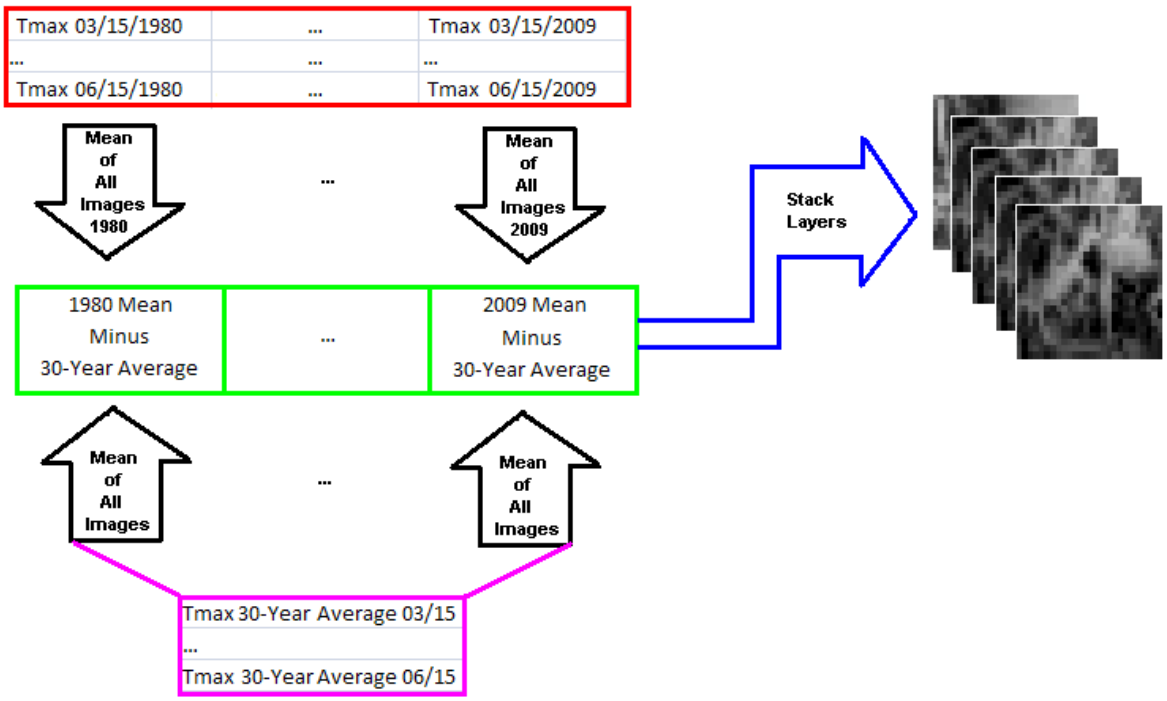
The output in this case is a one-banded raster (.tif) containing the slope of the linear relationship between the Value and Index numbers. The cell values in the resulting image are derived by extracting the slope coefficient from an OLS regression equation derived for each cell. Positive values indicate an increasing trend and vice-versa.

EXAMPLE 6 – Anomalies

Online Form:



Behind the scenes:



The output in this case is a thirty-banded raster (.tif) containing the per-year difference from "normal" for the 3-month time period. Positive values indicate that the mean 3-month max temperature for a given year is above the normal mean temperature for the same period. The normal values based upon 30-year mean daily values, from which a mean is calculated for the user-defined 3-month period.