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CHAPTER **7**

SWAT INPUT DATA: .TMP

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SWAT requires daily maximum and minimum air temperature. Temperature data may be read from records of observed data or they may be generated. This chapter reviews the file used to store measured temperature data.

Up to 18 temperature files may be utilized in a simulation. The temperature files are able to hold records for more than one gage, so there is not a limitation on the number of gages that can be used in a simulation.

As with the precipitation file, the record in the temperature input file does not have to begin with the first day of simulation. SWAT is able to search for the beginning date in the temperature file and all the comments made for this feature in the discussion of the precipitation file pertain to the temperature file as well.

Following is a brief description of the variables in the temperature input file. They are listed in the order they appear within the file.

Variable name	Definition
TITLE	The first line of the temperature file is reserved for comments. The title line is not processed by the model and may be left blank.
	Optional.
LATITUDE	Latitude of temperature recording gage location.
	This value is not used by the model and may be left blank.
	Optional.
LONGITUDE	Longitude of temperature recording gage location.
	This value is not used by the model and may be left blank.
	Optional.
ELEVATION	Elevation of temperature recording gage (m).
	The elevation of the recording gage is used to adjust temperature values for elevation in subbasins where elevation bands are defined.
	Required if elevation bands are modeled in watershed.
YEAR	Year (4-digit).
	Required.
DATE	Julian date.
	Required.
MAX TEMP	Daily maximum temperature (ºC).
	A negative 99.0 (-99.0) should be inserted for missing maximum temperatures. This value tells SWAT to generate the missing value(s).
	Required.
MIN TEMP	Daily minimum temperature (ºC).
	A negative 99.0 (-99.0) should be inserted for missing minimum temperatures. This value tells SWAT to generate the missing value(s).
	Required.

The format of the temperature file with one record is:

Variable name	Line #	Position	Format	F90 Format
TITLE	1	unrestricted	character	unrestricted
LATITUDE	2	space 8-17	free	
LONGITUDE	3	space 8-17	free	
ELEVATION	4	space 8-17	integer	i10
YEAR	5-END	space 1-4	4-digit integer	i4
DATE	5-END	space 5-7	3-digit integer	i3
MAX TEMP	5-END	space 8-12	decimal(xxx.x)	f5.1
MIN TEMP	5-END	space 13-17	decimal(xxx.x)	f5.1

To place more than one data record within the .tmp file, repeat the original formatting for the recorded data to the right of the existing data. Simulations have been run with 300 records placed in the temperature files.

For example, assume there are records for three different temperature gages stored in the .tmp. The formatting of the .tmp file is

Gage	Variable name	Line #	Position	Format	F90 Format
ALL	TITLE	1	unrestricted	character	unrestricted
1	LATITUDE	2	space 8-17	free	unrestricted
2	LATITUDE	2	space 18-27	free	unrestricted
3	LATITUDE	2	space 28-37	free	unrestricted
1	LONGITUDE	3	space 8-17	free	unrestricted
2	LONGITUDE	3	space 18-27	free	unrestricted
3	LONGITUDE	3	space 28-37	free	unrestricted
1	ELEVATION	4	space 8-17	integer	i10
2	ELEVATION	4	space 18-27	integer	i10
3	ELEVATION	4	space 28-37	integer	i10
ALL	YEAR	5-END	space 1-4	4-digit integer	i4
ALL	DATE	5-END	space 5-7	3-digit integer	i3
1	MAX TEMP	5-END	space 8-12	decimal(xxx.x)	f5.1
1	MIN TEMP	5-END	space 13-17	decimal(xxx.x)	f5.1
2	MAX TEMP	5-END	space 18-22	decimal(xxx.x)	f5.1
2	MIN TEMP	5-END	space 23-27	decimal(xxx.x)	f5.1
3	MAX TEMP	5-END	space 28-32	decimal(xxx.x)	f5.1
3	MIN TEMP	5-END	space 33-37	decimal(xxx.x)	f5.1