COOPERATIVE RESEARCH CENTRE FOR **CATCHMENT HYDROLOGY**

STOCHASTIC GENERATION OF CLIMATE DATA

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Report 03/12
November 2003

Ratnasingham Srikanthan / Senlin Zhou

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Stochastic Generation of Climate Data

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Preface

One of the goals of the Climate Variability Program in the Cooperative Research Centre (CRC) for Catchment Hydrology is to provide water managers and researchers with computer programs to generate stochastic climate data. The stochastic data are needed at time scales from less than one hour to a year and for point sites to large catchments like the Murrumbidgee and Fitzroy.

The first technical report in this series, 'Stochastic Generation of Climate data: A Review (CRC for Catchment Hydrology Technical Report 00/16), reviewed methods of stochastic generation of climate data and recommended the testing of a number of techniques. The second technical report, 'Stochastic Generation of Annual Rainfall Data' (CRC for Catchment Hydrology Technical Report 02/06), compared the first order autoregressive and hidden state Markov models for the generation of annual rainfall data. The third technical report, 'Stochastic Generation of Monthly Rainfall Data' (CRC for Catchment Hydrology Technical Report 02/08), evaluated the modified method of fragments and a nonparametric model for the generation of monthly rainfall data. The fourth technical report, 'Evaluation of Two Rainfall Data Generation Models' (CRC for Catchment Hydrology Technical Report 02/14), evaluated the transition probability matrix model with Boughton's adjustment for interannual variability and the simplified daily and monthly mixed model for the generation of daily rainfall data.

This report describes stochastic climate data generation models for the generation of annual, monthly and daily climate data (rainfall, potential evapotranspiration, maximum temperature and other variables) that preserves the correlation between the different variables. The performance of the models are evaluated using climate data from ten sites located in various parts of Australia.

Dr Francis Chiew
Program Leader – Climate Variability Program
CRC for Catchment Hydrology

Summary

The work reported here covers the final part of Project 5.2 of the Cooperative Research Centre (CRC) for Catchment Hydrology – 'National Data Bank of Stochastic Climate and Streamflow Models'. This report describes the generation of annual, monthly and daily climate data at a site. Climate data (rainfall, pan evaporation and maximum temperature) from ten sites located in various parts of Australia were used to evaluate the performance of the models.

A multivariate lag one autoregressive model with Wilson-Hilferty transformation is used to generate annual climate data. A number of annual statistics were used to evaluate the model and the results indicated satisfactory performance. To generate monthly climate data, a modifed method of fragments was used to disaggregate the annual climate data generated by the annual model. The model preserved the monthly parameters satisfactorily and this being a disaggregation model, the annual parameters were automatically preserved.

As daily rainfall data consists of zero and non-zero values, a different approach was used to generate daily climate data. Rainfall was considered as the primary variable and generated separately. Then daily climate data were generated using a multivariate lag one autoregressive model conditioned on the state of the day. As this model did not model the variability at the monthly and annual time interval, the model is nested in a monthly and an annual model. Comparison of the statistics at daily, monthly and annual time interval indicated satisfactory performance. The cross correlations at the monthly and annual level were not preserved well but this was not considered as a serious problem as these were preserved at the daily time interval.

Preface i

Summary iii

List of Tables iv

List of Figures v

1. Introduction 1

2. Climate Data 3

3. Generation of Annual Climate Data 5

3.1 Multivariate Model 5

3.2 Evaluation of Annual Climate Model 5

3.3 Discussion of Results 6

3.4 Conclusions 6

4. Generation of Monthly Climate Data 7

4.1 Modified Method of Fragments 7

4.2 Evaluation of Monthly Climate Model 7

4.3 Discussion of Results 7

4.4 Conclusions 8

5. Generation of Daily Climate Data 9

5.1 Multivariate Model Conditioned on the State of Day(s) 9

5.2 Evaluation of Daily Climate Model 12

5.3 Discussion of Results 12

5.3.1 Daily Parameters 12

5.3.2 Monthly Parameters 13

5.3.3 Annual Parameters 13

5.4 Conclusions 13

6. Conclusions 15

7. References 17

Appendix A – Annual Model Results 19

Appendix B – Monthly Model Results 27

Appendix C – Daily Model Results 49

List of Figures

Figure 1	**Locations of the climate stations**	**3**
Figure A1	**Comparison of historical and generated annual rainfall parameters**	**23**
Figure A2	**Comparison of historical and generated annual evaporation parameters**	**24**
Figure A3	**Comparison of historical and generated annual maximum temperature parameters**	**25**
Figure A4	**Comparison of cross correlation between annual rainfall, evaporation and maximum temperature**	**26**
Figure B1	**Comparison of historical and generated mean monthly rainfall**	**39**
Figure B2	**Comparison of historical and generated standard deviation of monthly rainfall**	**40**
Figure B3	**Comparison of historical and generated mean monthly evaporation**	**41**
Figure B4	**Comparison of historical and generated standard deviation of monthly evaporation**	**42**
Figure B5	**Comparison of historical and generated mean monthly maximum temperature**	**43**
Figure B6	**Comparison of historical and generated standard deviation of monthly maximum temperature**	**44**
Figure B7	**Comparison of cross correlation between monthly rainfall and evaporation**	**45**
Figure B8	**Comparison of cross correlation between monthly rainfall and maximum temperature**	**46**
Figure B9	**Comparison of cross correlation between monthly evaporation and maximum temperature**	**47**

List of Tables

Table 1	Details of the climate stations selected	4
Table 2	Comparison of historical and generated standard deviation of annual evaporationand maximum temperature	10
Table A1	Comparison of historical and generated annual rainfall parameters	19
Table A2	Comparison of historical and generated annual evaporation parameters	20
Table A3	Comparison of historical and generated parameters of annual maximum temperature	21
Table A4	Comparison of historical and generated cross correlations between rainfall (R), evaporation and mean maximum	22
Table B1	Comparison of historical and generated mean monthly rainfall	27
Table B2	Comparison of historical and generated standard deviation of monthly rainfall	27
Table B3	Comparison of historical and generated coefficient of skewness of monthly rainfall	28
Table B4	Comparison of historical and generated correlation between monthly rainfall	28
Table B5	Comparison of historical and generated maximum monthly rainfall	29
Table B6	Comparison of historical and generated minimum monthly rainfall	29
Table B7	Comparison of historical and generated proportion (%) of zero monthly rainfall	30
Table B8	Comparison of historical and generated mean monthly evaporation	31
Table B9	Comparison of historical and generated standard deviation of monthly evaporation	31
Table B10	Comparison of historical and generated coefficient of skewness of monthly evaporation	32
Table B11	Comparison of historical and generated correlation between monthly evaporation	32
Table B12	Comparison of historical and generated maximum monthly evaporation	33
Table B13	Comparison of historical and generated minimum monthly evaporation	33
Table B14	Comparison of historical and generated mean monthly maximum temperature	34
Table B15	Comparison of historical and generated standard deviation of monthly maximum temperature	34
Table B16	Comparison of historical and generated coefficient of skewness of monthly maximum temperature	35
Table B17	Comparison of historical and generated correlation between monthly maximum temperature	35
Table B18	Comparison of historical and generated maximum monthly maximum temperature	36
Table B19	Comparison of historical and generated minimum monthly maximum temperature	36
Table B20	Comparison of historical and generated cross correlation between monthly rainfall and evaporation	37
Table B21	Comparison of historical and generated cross correlation between monthly rainfall and maximum temperature	37
Table B22	Comparison of historical and generated cross correlation between monthly evaporation and maximum temperature	38
Table C1	Comparison of historical and generated mean daily rainfall	49
Table C2	Comparison of historical and generated standard deviation of daily rainfall	49
Table C3	Comparison of historical and generated skewness of daily rainfall	50
Table C4	Comparison of historical and generated number of wet days	50
Table C5	Comparison of historical and generated maximum daily rainfall	51
Table C6	Comparison of historical and generated cross correlation between daily evaporation and maximum temperature	51
Table C7	Comparison of historical and generated mean daily evaporation	52
Table C8	Comparison of historical and generated standard deviation of daily evaporation	52
Table C9	Comparison of historical and generated coefficient of skewness of daily evaporation	53
Table C10	Comparison of historical and generated correlation between daily evaporation	53
Table C11	Comparison of historical and generated maximum daily evaporation	54
Table C12	Comparison of historical and generated minimum daily evaporation	54
Table C13	Comparison of historical and generated mean maximum daily temperature	55
Table C14	Comparison of historical and generated standard deviation of daily maximum temperature	55
Table C15	Comparison of historical and generated coefficient of skewness of daily maximum temperature	56
Table C16	Comparison of historical and generated correlation between daily maximum temperature	56
Table C17	Comparison of historical and generated maximum daily maximum temperature	57
Table C18	Comparison of historical and generated minimum daily maximum temperature	57
Table C19	Comparison of historical and generated mean monthly rainfall	58

Table C20	**Comparison of historical and generated standard deviation of monthly rainfall**	**58**
Table C21	**Comparison of historical and generated coefficient of skewness of monthly rainfall**	**59**
Table C22	**Comparison of historical and generated correlation between monthly rainfall**	**59**
Table C23	**Comparison of historical and generated maximum monthly rainfall**	**60**
Table C24	**Comparison of historical and generated minimum monthly rainfall**	**60**
Table C25	**Comparison of historical and generated mean monthly evaporation**	**61**
Table C26	**Comparison of historical and generated standard deviation of monthly evaporation**	**61**
Table C27	**Comparison of historical and generated coefficient of skewness of monthly evaporation**	**62**
Table C28	**Comparison of historical and generated correlation between monthly evaporation**	**62**
Table C29	**Comparison of historical and generated maximum monthly evaporation**	**63**
Table C30	**Comparison of historical and generated minimum monthly evaporation**	**63**
Table C31	**Comparison of historical and generated mean monthly maximum temperature**	**64**
Table C32	**Comparison of historical and generated standard deviation of monthly maximum temperature**	**64**
Table C33	**Comparison of historical and generated coefficient of skewness of monthly maximum temperature**	**65**
Table C34	**Comparison of historical and generated correlation between monthly maximum temperature**	**65**
Table C35	**Comparison of historical and generated maximum monthly maximum temperature**	**66**
Table C36	**Comparison of historical and generated minimum monthly maximum temperature**	**66**
Table C37	**Comparison of historical and generated cross correlation between monthly rainfall and evaporation**	**67**
Table C38	**Comparison of historical and generated cross correlation between monthly rainfall and maximum temperature**	**67**
Table C39	**Comparison of historical and generated cross correlation between monthly evaporation and maximum temperature**	**68**
Table C40	**Comparison of historical and generated annual rainfall parameters**	**68**
Table C41	**Comparison of historical and generated annual evaporation parameters**	**69**
Table C42	**Comparison of historical and generated parameters of annual maximum temperature**	**69**
Table C43	**Comparison of historical and generated cross correlations between rainfall (R), evaporation and mean maximum temperature**	**70**

1. Introduction

One major use of climate data in conjunction with rainfall data is in computer simulation of rainfall-runoff processes, crop growth and water supply systems. Rainfall-runoff models require evaporation data along with rainfall as input. Crop growth models require, in addition to rainfall, net radiation or evaporation as a measure of energy input. In irrigation simulation studies, both rainfall and evaporation are required. In demand calculations for water supply systems, maximum temperature is generally used. Hence evaporation and maximum temperature data are required in addition to rainfall for water supply system simulation.

The length of historical climate data is usually not long enough to describe the variability that may be experienced during the life of a water resources or agricultural project. Using the statistical characteristics of the historical data, it is possible to generate many sequences of data that better represent the climate variability. Stochastically generated data have become an important tool to planners of a water resources or an agricultural system because when used with computer simulation, they allow planners to evaluate proposed system designs and changes to system more thoroughly and in a more statistically sophisticated manner than was possible with previously available methods. The generation of stochastic climate data does not add information to the historical record. But taking account of the stochastic nature of observed climate data is a more efficient use of the data than the traditional techniques based on historical data.

An essential feature of models for generating more than one climate variable is that the cross correlations between variables must be preserved. The models that are available to generate climate data have been reviewed in an earlier report (Srikanthan and McMahon, 2001) and recommendations were made for testing and adoption. This report deals essentially with testing/developing the identified stochastic data generation models for evaporation and temperature data at yearly, monthly and daily time scales. The models developed are applied to 10 sites located in various parts of Australia and the generated climate data is evaluated using a number of statistics.

The layout of the report is as follows. Section 2 describes the data used and the methods used for infilling missing data. The generation of annual, monthly and daily climate data is described in Sections 3, 4 and 5 respectively. The conclusions of the study are given in Section 6 followed by references and appendices giving detailed results.

2. Climate Data

Ten sites located in various parts of Australia with long daily climate data were selected (Figure 1). The details of the stations selected are given in Table 1. The climate data used in this study are pan evaporation and maximum temperature. The evaporation data was measured using a Class A pan fitted with a bird guard. Evaporation data measured with Australian sunken pan and Class A pan without a bird guard were not used for the sake of data homogeneity. The evaporation data was plotted as a time series and visually inspected for any inconsistency. The evaporation data for Brisbane and Melbourne showed some nonhomogeneity. For Brisbane, the first few years of data were discarded while for Melbourne the evaporation data were divided into two sets (A86071 and B86071). It was thought the first few years of the Brisbane data would have been measured without a bird guard. For Melbourne, a number of tall buildings were built in the 1980s and this would have affected the wind patterns and hence the evaporation. Daily rainfall and evaporation data are totals for the previous 24 hour period recorded at 9:00 AM whereas the maximum temperature is the maximum value recorded for the following 24 hour period. In order to make all the climate variables correspond to the same time period, the daily maximum temperature data was lagged by a day. The monthly and annual rainfall and evaporation data were obtained by summing the daily values while for the maximum temperature, the daily maximum temperature values were averaged over a month and year to obtain monthly and annual values respectively.

There is no missing maximum temperature data during the period listed in Table 1. There were a number of missing data for evaporation. In filling the missing daily evaporation data, the long-term mean evaporation was calculated for Julian (365) days. The data was then smoothed, and expressed as Fourier series. For a number of consecutive missing days, each value, $E_{i,j}$, was derived as follows:

$$E_{i,j} = \frac{1}{2}\left(\frac{\overline{E}_j}{\overline{E}_1} E_{i,1} + \frac{\overline{E}_j}{\overline{E}_2} E_{i,2} \right) \qquad (1)$$

where

$E_{i,1}$, $E_{i,2}$ — observed evaporation in year i, on previous day of the first missing day and next day of the last missing day, respectively.

$\overline{E}_1$, $\overline{E}_2$ — mean daily evaporation (expressed as Fourier series) on previous day of the first missing day and next day of the last missing day, respectively.

$\overline{E}_j$ — mean daily evaporation on day j.

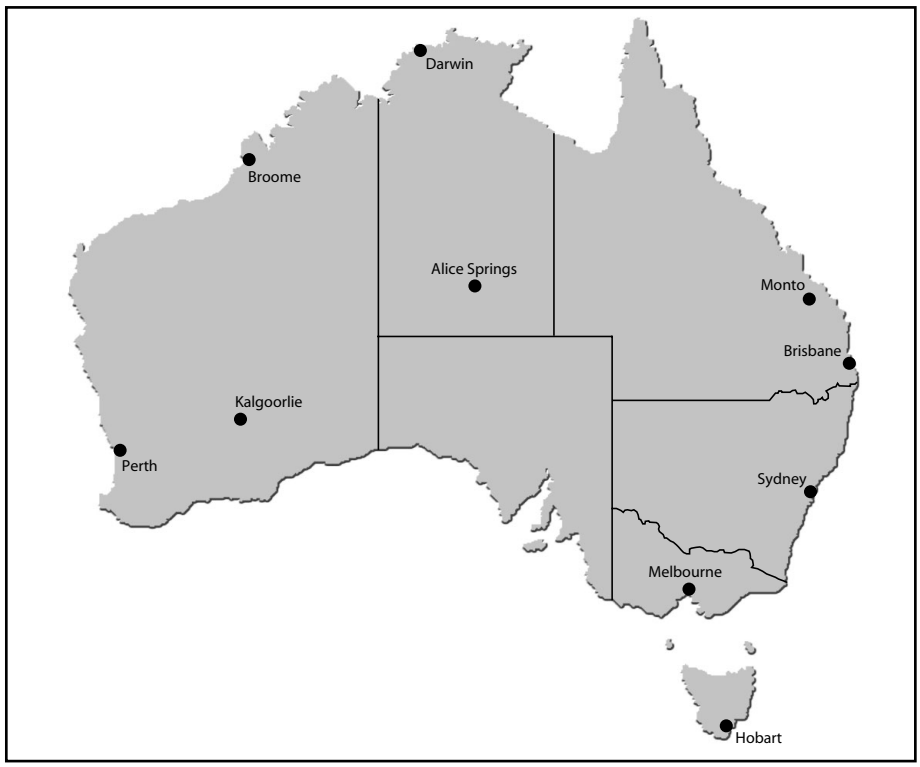

Figure 1. Locations of the climate stations.

Table 1. Details of the climate stations selected.

Station Number	Name	Latitude	Longitude	Start Year	End Year
003003	Broome	-17.95	122.23	1972	2001
009034	Perth	-31.95	115.87	1972	1991
012038	Kalgoorlie	-30.78	121.45	1972	2001
014015	Darwin	-12.42	130.89	1972	2001
015590	Alice Springs	-23.80	133.89	1972	2001
039104	Monto	-24.87	151.12	1972	1992
040214	Brisbane	-27.48	153.03	1976	1985
066037	Sydney	-33.94	151.17	1974	2001
A86071	Melbourne	-37.81	144.97	1972	1982
B86071	Melbourne	-37.81	144.97	1983	2001
094029	Hobart	-42.89	147.33	1972	1993

3. Generation of Annual Climate Data

Because the variability (C_v), skewness (C_s), and lag one autocorrelation (r1) of annual climate data are low (C_v < 0.5, C_s <1 and r_1 < 0.5) a first order autoregressive model with Wilson-Hilferty transformation (Wilson and Hilferty, 1931) is adequate for the generation of annual climate data. Since the climate data are cross correlated a first order autoregressive multivariate model needs to be used to generate annual climate data to preserve the cross and autocorrelations.

3.1 Multivariate Model

A multivariate model to generate annual climate data is of the form

$$\boldsymbol{X}_t = \boldsymbol{A}\boldsymbol{X}_{t-1} + \boldsymbol{B}\varepsilon_t \tag{2}$$

where

$\boldsymbol{X}_t$ (3x1) matrix of standardised climate data for year t,

$\boldsymbol{A}, \boldsymbol{B}$ (3x3) coefficient matrices to preserve the correlations, and

ε_t random component with zero mean and unit variance.

The matrices A and B are determined from the following (Matalas, 1967).

$$\boldsymbol{A} = \boldsymbol{M}_1\boldsymbol{M}_0^{-1} \tag{3}$$

$$\boldsymbol{B}\boldsymbol{B}^{\boldsymbol{T}} = \boldsymbol{M}_0 - \boldsymbol{M}_1\boldsymbol{M}_0^{-1}\boldsymbol{M}_1^{\boldsymbol{T}} \tag{4}$$

where $\boldsymbol{M}_0$ and $\boldsymbol{M}_1$ are the lag zero and lag one cross correlation matrices respectively. The elements of $\boldsymbol{M}_0$ and $\boldsymbol{M}_1$ corresponding to variables i and j are given by

$$m_0^{ij} = \frac{1}{n}\sum_{t=1}^{n} X_i X_j \tag{5}$$

$$m_1^{ij} = \frac{1}{n-1}\sum_{t=1}^{n-1} X_i X_{j-1} \tag{6}$$

The matrix $\boldsymbol{A}$ can be obtained from Equation 3. The matrix $\boldsymbol{B}\boldsymbol{B}^{\boldsymbol{T}}$ is symmetric and should be positive semi-definite for solving for $\boldsymbol{B}$. The matrix $\boldsymbol{B}$ can be obtained by the Cholesky decomposition where the matrix $\boldsymbol{B}$ is assumed to be lower triangular. The elements b_{ij} of $\boldsymbol{B}$ are obtained from the recursive relationships:

$$b_{ij} = 0, \qquad j > i \tag{7a}$$

$$b_{11} = \sqrt{c_{11}} \tag{7b}$$

where c_{ij} is the element of matrix $\boldsymbol{B} = \boldsymbol{B}\boldsymbol{B}^{\boldsymbol{T}}$. The remaining elements in the first column of $\boldsymbol{B}$ are given by:

$$b_{1j} = c_{1j} / b_{11} \tag{8}$$

For $j > 1$, the j^{th} diagonal element is obtained from

$$b_{jj} = \left[c_{jj} - \sum^{j-1} b_{jk}^2\right]^{1/2} \qquad j = 2, 3 \tag{9}$$

The solution is complete when $j = 3$. Otherwise, the other elements of column j of $\boldsymbol{B}$ are computed from:

$$b_{ij} = \frac{c_{ij} - \sum_{k=1}^{j-1} b_{ik} b_{jk}}{b_{jj}} \qquad j = 2 \tag{10}$$

Once matrices **A** and **B** are determined, standardised normally distributed values are generated using Equation 2. The skewness is then input to the generated values by the Wilson-Hilferty transformation, rescaled by the standard deviation and the mean added to obtain the generated annual climate data.

3.2 Evaluation of Annual Climate Model

The following parameters are used to evaluate the generated annual climate data:

- Mean ($\bar{x}$)
- Standard deviation (s)
- Coefficient of skewness (g)
- Lag one autocorrelation coefficient (r)
- Maximum
- Minimum
- Cross correlation between the climate variables

The above parameters are estimated from a number of replicates each of length equal to the historical record. For convenience, the maximum and minimum are

standardised by dividing by the historical mean annual value. The first four items for each climatic variable i are usually estimated from the following expressions.

$$\bar{x}^i = \frac{1}{n}\sum_{t=1}^{n} x_t^i \tag{11}$$

$$s^i = \sqrt{\frac{1}{(n-1)}\sum_{t=1}^{n}(x_t^i - \bar{x}^i)^2} \tag{12}$$

$$g^i = \frac{n}{(n-1)(n-2)s^{i3}}\sum_{t=1}^{n}(x_t^i - \bar{x}^i)^3 \tag{13}$$

$$r^i = \frac{1}{(n-1)s^{i2}}\sum_{t=1}^{n-1}(x_{t+1}^i - \bar{x}^i)(x_t^i - \bar{x}^i) \tag{14}$$

The cross correlation between the variables i and j are obtained from:

$$r^{ij} = \frac{1}{(n-1)s^i s^j}\sum(x_t^i - \bar{x}^i)(x_t^j - \bar{x}^j) \tag{15}$$

One hundred replicates, each of length equal to the length of historical data were generated. The above parameters were estimated from each replicate and from these values the 2.5, 25, 50, 75, 97.5 percentile values and the mean were calculated.

3.3 Discussion of Results

The averages of the parameters from the 100 replicates along with the historical values are presented in Table A1 – A4 in Appendix A. A comparison of the historical and generated annual rainfall parameters is presented in Table A1. For satisfactory model performance, the mean and standard deviation should be in general within ±5 % of the corresponding historical values. For coefficient of skewness and lag one autocorrelation coefficient, the differences should be within ±0.5 and +0.1 respectively. All the parameters except the standard deviation are preserved well. There is a slight underestimation (3 – 6%) of the standard deviation. A comparison of the historical and generated annual evaporation parameters is presented in Table A2. Here again, all the parameters except the standard deviation are preserved well. The standard deviation is underestimated slightly (2 – 11%). A comparison of the historical and generated annual mean maximum temperature parameters is presented in Table A3. This tables shows that all the annual parameters are satisfactorily preserved. The historical and generated cross correlations between annual rainfall, evaporation and maximum temperature presented in Table 4 show that these are satisfactorily preserved. The range of the parameters from the 100 replicates and historical value is shown in Figures A1 to A4. The historical value is close to the median for most of the cases and always within the inter-quartiles range. Hence the generated data can be considered similar to the statistical characteristics of the historical data.

3.4 Conclusions

A multivariate model with Wilson and Hilferty transformation was applied to generate annual climate data at 10 sites located in various parts of Australia. A comparison of the historical and generated parameters indicated that the model performed satisfactorily.

4. Generation of Monthly Climate Data

Monthly rainfall has been successfully generated by the modified method of fragments (Srikanthan *et al.,* 2002). It is proposed to assess whether this model is appropriate for generating monthly climate data.

4.1 Modified Method of Fragments

The observed monthly climate data are standardised year by year so that the sum of the monthly climate data in any year equals to unity. This is carried out by dividing the monthly climate data in a year by the corresponding annual climate data. In the case of maximum temperature, the mean annual maximum temperature was first multiplied by 12. By doing so, from a record of n years, one will have n sets of fragments of monthly climate data. The generated annual climate data are disaggregated by selecting a fragment whose annual climate data are closer to the generated annual climate data by using the following indices.

$$\alpha_i = \sum_{j=1}^{3} \left(\frac{x_k^j - x_i^j}{s_x^j} \right)^2 \qquad (16)$$

$$\beta_i = \sum_{j=1}^{3} \left(\frac{y_{k-1}^j - y_{i-1}^j}{s_y^j} \right)^2 \qquad (17)$$

where

x_k^j = generated annual climate data for variable *j* and year *k*

s_y^j = standard deviation of the observed annual climate data for variable *j*

y_{k-1}^j = disaggregated monthly climate data for variable *j* for the last month of year *k-1*

s_y^j = standard deviation of the observed monthly climate data for variable *j* for the last month of the year

A set of fragments are selected for which the sum (α_i + β_i) is minimum and multiplying the generated annual climate data by each set of the 12 fragments to give generated monthly climate data. The generated annual climate data is obtained by using the method described in Section 3.

4.2 Evaluation of Monthly Climate Model

In addition to the annual parameters listed in Section 3.2, the following monthly parameters are used to evaluate the generated monthly climate data:

- Mean
- Standard deviation
- Coefficient of skewness
- Correlation coefficient between successive months
- Proportion of months of no rainfall
- Maximum
- Minimum
- Cross correlation between the monthly climate variables

The maximum and minimum monthly rainfall values are standardised by dividing by the historical nonseasonal monthly mean.

4.3 Discussion of Results

Since the generated annual data in Section 3 was disaggregated into monthly data, the annual parameters are not discussed again. Only the monthly parameters are discussed here. The averages of the monthly parameters from the 100 replicates along with the historical values are presented in Tables B1 – B22 in Appendix B. The historical and generated monthly rainfall parameters are given in Tables B1 – B7. It can be seen from these tables that the monthly rainfall parameters are satisfactorily preserved for all of the 10 sites. The historical and generated monthly evaporation parameters are given in Tables B8 – B13. The monthly mean (Table B8), standard deviation (Table B9), maximum (Table B12) and minimum (Table B13) are preserved well for all the stations. The coefficient of skewness (Table B10) and correlation between monthly evaporation (Table B11) are

preserved for most of the months. Large differences are observed for only one or two months for each station and this is not considered to be a serious problem. The historical and generated monthly mean maximum temperature parameters are given in Tables BB14 – B19. It can be seen from these tables that the monthly rainfall parameters are satisfactorily preserved for all the 10 sites.

The monthly cross correlations between rainfall, evaporation and maximum temperature are presented in Tables B20 – B22. Except for a small number of cases, the cross correlations are satisfactorily preserved.

The range of the parameters from the 100 replicates for the monthly mean, standard deviation and cross correlation is shown in Figures B1 to B9 which show satisfactory preservation of these parameters.

4.4 Conclusions

Annual climate data generated by a multivariate model with Wilson and Hilferty transformation were disaggregated to obtain monthly climate data by the modified method of fragments for 10 sites located in various parts of Australia. A comparison of the historical and generated monthly parameters indicated that the model performed satisfactorily.

5. Generation of Daily Climate Data

Long sequences of daily climate data are required to evaluate the long-term effects of proposed changes in land-use and agricultural practices. These evaluations are often carried out using deterministic mathematical models, which require daily climate data for input. The climate data is found to depend on the state of the day (dry or wet) and multivariate models are usually used to generate climate data (Srikanthan, 1985; Richardson, 1981).

The rainfall is considered as the primary variable and is generated first using the transition probability matrix method with Boughton's adjustment (Zhou *et al.*, 2002). The stochastic generation of daily climate data is described in this section.

5.1 Multivariate Model Conditioned on the State of Day(s)

During preliminary studies, several models were developed to generate daily climatic data other than rainfall for the ten stations. The daily rainfall was generated by the transition probability matrix method with Boughton's adjustment. The models used to generate daily climate data are briefly described below:

Model 1

According to the states (dry or wet) of the present and previous days, daily evaporation and maximum temperature are divided into four groups:

(1) dry day preceded by a dry day;

(2) dry day preceded by a wet day;

(3) wet day preceded by a dry day;

(4) wet day preceded by a wet day.

A multivariate model (see Section 3) is used for each type, and the seasonality in the magnitude of daily climatic data is taken into account by considering each month separately.

Model 2

According to the states of the present day only, the daily evaporation and maximum temperature are divided into two groups (dry or wet). A multivariate model is used for each type, and the seasonality in the magnitude of daily climatic data is taken into account by considering each month separately.

Model 3

An autoregressive model, AR(1), is used to generate evaporation and maximum temperature data. The daily rainfall is included as a dependent variable on wet days. The model is expressed as:

On wet days:

$$E_t = a_1 + b_1 E_{t-1} + c_1 R_t + \varepsilon(0, \sigma_\varepsilon^2) \qquad (18)$$

$$T_t = a_2 + b_2 T_{t-1} + c_2 R_t + \varepsilon(0, \sigma_\varepsilon^2) \qquad (19)$$

and on dry days:

$$E_t = a_3 + b_3 E_{t-1} + \varepsilon(0, \sigma_\varepsilon^2) \qquad (20)$$

$$T_t = a_4 + b_4 T_{t-1} + \varepsilon(0, \sigma_\varepsilon^2) \qquad (21)$$

where

R_t = daily rainfall in mm

E_t = daily evaporation in mm

T_t = maximum daily temperature in *C*

a, b, c = model parameters

ε = random component with zero mean and variance σ_ε^2.

The seasonality in the magnitude of daily climatic data is taken into account by considering each month separately

Model 4

According to the state of present day (dry or wet) and the tercile of annual rainfall, daily evaporation and maximum temperature are divided into six groups:

(1) first tercile on dry day;

(2) first tercile on wet day;

(3) second tercile on dry day;

(4) second tercile on wet day;

(5) third tercile on dry day;

(6) third tercile on wet day.

A multivariate model is used for each type, and the seasonality in the magnitude of daily climatic data is taken into account by considering each month separately.

The above models were applied to the daily climatic data from the ten stations. Various parameters were estimated from the historical and simulated sequences. It was found from the previous studies (Srikanthan and McMahon, 1985) and the analyses here that the climate models underestimate the standard deviation of annual climatic variables. Thus, the improvement on this parameter was used as the criterion in model selection. Table 2 shows that Model 4 reproduced better results than other models. The results by Model 4 for Broome (003003) and Darwin (014015) were not included due to insufficient data for parameter estimation in some months. Based on the results, Model 4 was adopted for generating daily evaporation and maximum temperature.

However, because the annual variability is smaller than the corresponding historical values (Table 2), an adjustment is made similar to the one used in the daily rainfall model (Zhao *et al*., 2002). The modelled daily evaporation and maximum temperature in each year is multiplied by the following ratio:

$$Ratio_i = \{M + (T_i - M)F\}/T_i \qquad (22)$$

where

M = the mean annual data, and

T_i = the generated annual data for year i.

Since the slope of the frequency curve is proportional to the standard deviation, the adjustment factor (F) can be directly obtained as a ratio of the standard deviation of the observed and generated annual evaporation.

$$F = StDev_o / StDev_g \qquad (23)$$

Table 2. Comparison of historical and generated standard deviation of annual evaporation and maximum temperature.

Station	Pan Evaporation (mm)					Maximum Temperature (C)				
	Hist	Model1	Model2	Model3	Model4	Hist	Model1	Model2	Model3	Model4
003003	191.5	61.6	63.8	62.4		0.57	0.28	0.28	0.28	
009034	111.6	41.3	45.1	41.4	57.1	0.53	0.38	0.41	0.42	0.42
012038	211.8	83.2	85.2	83.8	155.6	0.73	0.45	0.45	0.46	0.61
014015	168.2	54.2	56.8	56.0		0.33	0.15	0.15	0.16	
015590	432.1	105.5	115.5	107.7	322.0	0.81	0.54	0.56	0.58	0.75
039104	97.9	44.4	44.4	42.0	82.3	0.68	0.33	0.32	0.34	0.65
040214	49.8	35.1	32.8	34.4	40.3	0.45	0.20	0.20	0.21	0.26
066037	98.7	49.2	48.0	49.6	63.5	0.43	0.26	0.27	0.28	0.33
A86071	88.7	43.8	45.8	44.5	51.5	0.45	0.35	0.38	0.41	0.45
B86071	67.7	37.5	38.7	38.5	51.6	0.56	0.35	0.37	0.39	0.38
094029	87.2	31.7	31.7	31.7	49.2	0.43	0.28	0.29	0.30	0.33

The standard deviation of the generated annual data is estimated from a number of replicates and averaged.

Model 4 with the above adjustment was applied to only 8 stations because singular matrices were encountered for two stations (Broome and Darwin). Hence, there was a need to develop another model for these two stations. Also, in Model 4 there are three categories of years and two types of days resulting in 6 groups. As a result, the data will be grouped into 6 groups for each month and there may not be enough data in every group to estimate the parameters satisfactorily.

The Model 4 was the best model but it cannot be used everywhere because of data problems. Therefore, an alternate model is developed and is described below.

Model 5

The model developed is a nested model in which the daily model is nested in a monthly model which in turn is nested in an annual model. This is an aggregation model in contrast to the disaggregation model used earlier to generate monthly climate data. The daily model is similar to the Model 2. According to the states of the present day, the daily evaporation and maximum temperature are divided into two groups. A multivariate model is used for each type, and the seasonality in the magnitude of daily climatic data is taken into account by considering each month separately. Once the daily climate data (Y_j^i) is generated for a month, the monthly climate data ($\widetilde{X}_j^i$) is obtained by summing the daily climate data. The generated monthly climate data is modified by using the Thomas-Fiering monthly model.

$$\frac{X_j^i - \mu(X_j^i)}{\sigma(X_j^i)} = \rho_{j,j-1}^i \frac{X_{j-1}^i - \mu(X_{j-1}^i)}{\sigma(X_{j-1}^i)} + (1-\rho_{j,j-1}^{i\ 2})^{1/2} \frac{\widetilde{X}_j^i - \mu'(X_j^i)}{\sigma'(X_j^i)} \qquad (24)$$

where

$\mu(X_j^i)$ = historical mean monthly value for climate variable *i* and month *j*,

$\mu'(X_j^i)$ = theoretical mean monthly value for climate variable *i* and month *j*,

$\sigma(X_j^i)$ = historical standard deviation of monthly climate data for climate variable *i* and month *j*,

$\sigma'(X_j^i)$ = theoretical standard deviation of monthly climate data for climate variable *i* and month *j,*

$\rho_{j,j-1}^i$ = historical correlation coefficient of monthly climate data for climate variable *i* between months *j* and *j-1*,

X_j^i = modified monthly climate data for climate variable *i* and month *j*.

The theoretical values of the mean and standard deviation are given by:

$$\mu'(X_j^i) = N_d(j)\mu_d(Y_j^i) + N_w(j)\mu_w(Y_j^i) \qquad (25)$$

$$\begin{aligned}\sigma'^2(X_j^i) \approx\ & \sigma_d^2(Y_j^i)\left\{N_d(j) + 2\rho(Y_j^i)[N_d(j)-1] + 2\rho^2(Y_j^i)[N_d(j)-2] + 2\rho^3(Y_j^i)[N_d(j)-3]\right\} + \\ & \sigma_w^2(Y_j^i)\left\{N_w(j) + 2\rho(Y_j^i)[N_w(j)-1] + 2\rho^2(Y_j^i)[N_w(j)-2] + 2\rho^3(Y_j^i)[N_w(j)-3]\right\} + \\ & 2\rho(Y_j^i)\sigma_d(Y_j^i)\sigma_w(Y_j^i)\end{aligned} \qquad (26)$$

where

$N_d(j)$ = number of dry days in month *j*,

$N_w(j)$ = number of wet days in month *j*,

$\mu_d(Y_j^i)$ = mean of daily climate data for climate variable *i* and month *j* for dry days,

$\mu_w(Y_j^i)$ = mean of daily climate data for climate variable *i* and month *j* for wet days,

$\sigma_d(Y_j^i)$ = standard deviation of daily climate data for climate variable *i* and month *j* for dry days,

$\sigma_w(Y_j^i)$ = standard deviation of daily climate data for climate variable *i* and month *j* for wet days,

$\rho(Y_j^i)$ = lag one autocorrelation coefficient of daily climate data for climate variable *i* and month *j*

The generated daily climate data is multiplied by the ratio $X_j^i \ \widetilde{X}_j^i$. Once the data for the twelve months of a year have been generated, the monthly climate data can be aggregated to obtain the annual value ($\widetilde{Z}_k^i$). The aggregated annual value is modified by using a lag one autoregressive model.

$$\frac{Z_k^i - \mu(Z^i)}{\sigma(Z^i)} = \rho(Z^i)\frac{Z_{k-1}^i - \mu(Z^i)}{\sigma(Z^i)} + [1-\rho^2(Z^i)]^{1/2}\frac{\widetilde{Z}_k^i - \mu'(Z^i)}{\sigma'(Z^i)} \quad (27)$$

where

$\mu(Z^i)$ = historical mean annual value for climate variable *i*,

$\mu'(Z^i)$ = theoretical mean annual value for climate variable *i* and month *j,*

$\sigma(Z^i)$ = historical standard deviation of annual climate data for climate variable *i*,

$\sigma'(Z^i)$ = theoretical standard deviation of annual climate data for climate variable *i j*,

$\rho(Z^i)$ = historical lag one autocorrelation coefficient of annual climate data for climate variable *i,*

Z_k^i = modified annual climate data for climate variable *i* and year *k*.

The theoretical values of the mean and standard deviation are given by:

$$\mu(Z^i) = \sum_{j=1}^{12}\mu(X_j^i) \quad (28)$$

$$\sigma^2(Z^i) \approx \sum_{j=1}^{12}\sigma^2(X_j^i) + 2\sum_{j=2}^{12}\sigma(X_j^i)\sigma(X_{j-1}^i)\rho_{j,j-1}^i + 2\sum_{j=3}^{12}\sigma(X_j^i)\sigma(X_{j-2}^i)\rho_{j,j-1}^i\rho_{j-1,j-2}^i + 2\sum_{j=4}^{12}\sigma(X_j^i)\sigma(X_{j-3}^i)\rho_{j,j-1}^i\rho_{j-1,j-2}^i\rho_{j-2,j-3}^i \quad (29)$$

The generated monthly climate data is multiplied by the ratio $Z_k^i / \widetilde{Z}_k^i$. This will preserve the annual characteristics. Rather than adjusting twice, the adjustment can be carried out in one step by multiplying the generated climate data for each month (*j*) by the ratio $X_j^i Z_k^i / \widetilde{X}_j^i \widetilde{Z}_k^i$.

The daily rainfall is generated by a two part model. The occurrence of the rainfall is modelled by a first order Markov chain. On rain days, the amount of rainfall is generated by using a gamma distribution. The generated daily rainfall is adjusted to match the monthly rainfalls as in Siriwardena *et al.,* (2002). The monthly rainfall data are aggregated to obtain the annual rainfall and this is modified using Equations 25 – 27. This is an improvement over the DMMs model described in Siriwardena *et al.,* (2002) as the annual parameters are modelled explicitly.

5.2 Evaluation of Daily Climate Model

In addition to the annual parameters listed in Section 3.2 and monthly parameters in Section 4.2, the following daily parameters are used to evaluate the generated daily climate data:

- Mean
- Standard deviation
- Coefficient of skewness
- Lag one autocorrelation coefficient
- Maximum
- Minimum
- Cross correlation between the climate variables

The daily climatic model (Model 5) in Section 5.1 was applied to daily climatic data for the ten stations. One hundred replicates each of length equal to the historical records were generated for each station. Tables C1 - C43 contain the daily, monthly and annual parameters for evaporation and temperature from the historical and generated data. The generated values are the average of the parameters from the 100 replicates.

5.3 Discussion of Results

5.3.1 Daily Parameters

The model preserved the mean, standard deviation and coefficient of skewness of daily rainfall for most of the months for all the ten stations (Tables C1 – C3). The number of wet days (Table C4) and maximum daily rainfall (Table C5) are satisfactorily preserved for all the stations. Table C6 shows that the cross correlation

between daily evaporation and maximum temperature is satisfactorily preserved.

The mean, standard deviation, coefficient of skewness and lag one autocorrelation coefficient of daily evaporation are preserved for most of the months for all the stations (Tables C7 – C10). The maximum and minimum daily evaporation are preserved except for a few cases (Tables C11 – C12). All the daily parameters of daily maximum temperature are satisfactorily preserved (Tables C13 – C18).

5.3.2 Monthly Parameters

The model preserved the mean and standard deviation of monthly rainfall for all the stations (Tables C19 and C20). The coefficients of skewness, correlations, maximum and minimum rainfalls are preserved for most of the months for all the stations (Tables C21 - C24). The mean (Table C25) and standard deviation (Table C26) of monthly evaporation are preserved for all the stations. The coefficient of skewness of monthly evaporation is not preserved for some months (Table C27). However, the skewness of monthly evaporation is small and this is not considered to be a serious problem. The correlations (Table C28), maximum (Table C29) and minimum (Table C30) monthly evaporation are preserved satisfactorily for all the stations. Except for the coefficient of skewness, all the other parameters are preserved for monthly mean maximum temperature (Tables C31, C32, C34 - C36). The coefficient of skewness of monthly mean maximum temperature is not preserved for a few cases and this is not considered to be a serious problem.

The cross correlations between monthly evaporation and maximum temperature (Table C39) are preserved while those between rainfall and evaporation (Table C37) and between rainfall and maximum temperature (Table C38) are not preserved well. This is to be expected as these correlations were not explicitly modelled in the model to generated daily climate data. On the model, the model is considered satisfactory as it preserved most of the monthly parameters.

5.3.3 Annual Parameters

The parameters of annual rainfall (Table C40), evaporation (Table C41) and maximum temperature (Table C42) are satisfactorily preserved. Regarding the cross correlations, only the cross correlation between evaporation and maximum temperature is preserved as in the case of the monthly parameters. The other two correlations (rainfall and evaporation, rainfall and maximum temperature) are not preserved well. One possible way to improve this is to nest the monthly model in a multivariate annual model instead of the individual autoregressive annual models. However, this deficiency was not considered a serious problem as the present model preserves all the parameters including the cross correlations at the daily level and most of the parameters at the monthly and annual levels.

5.4 Conclusions

A multivariate model conditioned on the state of the day is adequate to generate daily pan evaporation and maximum temperature series. Daily rainfall was considered as the primary variable and simulated using a two part model. Daily evaporation and maximum temperature were conditioned on the state of present day, and were simulated using a lag one multivariate model. The seasonality in the daily climatic data is taken into account by considering each month separately. The daily model was nested in a monthly model and the monthly model in turn was nested in an annual model. This ensured the preservation of the parameters at the monthly and annual scales.

The model was applied to daily climatic data for ten stations located in different parts of Australia. A comparison of the historical and generated parameters at the daily, monthly and annual time intervals showed that the model performed satisfactorily. The drawback with the model is its inability to preserve the cross correlations between rainfall and evaporation, and between rainfall and maximum temperature at the monthly and annual time intervals. This may be improved by nesting the monthly model in a multivariate annual model which will model these cross correlations explicitly at the annual level and indirectly improve the cross correlations at the monthly level.

6. Conclusions

Stochastic models were developed to generate annual, monthly and daily climate data. The climate data considered in this study were rainfall, evaporation and maximum temperature. The models were evaluated by applying them to climate data from 10 sites located in various parts of Australia. The results showed that the developed models satisfactorily generated climate data with similar statistical characteristics to that of the historical data.

The models recommended for the generation of climate data are:

Annual Climate Data

A first order autoregressive multivariate model with Wilson and Hilferty transformation.

Monthly Climate Data

Modified method of fragments to disaggregate the stochastically generated annual climate data.

Daily Climate Data

A first order autoregressive multivariate model with Wilson and Hilferty transformation conditioned on the state of the day and nested in a monthly and annual model.

7. References

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Appendix A – Annual Model Results

Table A1. Comparison of historical and generated annual rainfall parameters.

Station		Mean	Std dev	Skew	Lag 1 acc	Maximum*	Minimum*
003003	Hist	671.3	360.6	0.785	0.048	2.229	0.197
	Gen	668.9	346.8	0.519	0.022	2.222	0.128
009034	Hist	795.6	121.9	-0.410	-0.320	1.224	0.703
	Gen	796.1	115.9	-0.150	-0.314	1.264	0.708
012038	Hist	289.1	102.2	0.563	-0.007	1.836	0.452
	Gen	289.2	98.7	0.357	-0.023	1.773	0.381
014015	Hist	1823.4	408.2	0.571	0.005	1.523	0.657
	Gen	1823.6	394.0	0.403	-0.016	1.497	0.620
015590	Hist	340.1	176.5	0.656	0.276	2.301	0.251
	Gen	340.4	167.4	0.418	0.230	2.142	0.153
039104	Hist	693.9	152.3	0.154	0.002	1.371	0.662
	Gen	695.7	147.4	0.125	-0.041	1.426	0.606
040214	Hist	1088.3	255.5	-0.031	-0.078	1.353	0.606
	Gen	1083.4	241.8	0.049	-0.114	1.359	0.641
066037	Hist	1117.0	313.2	0.419	0.088	1.583	0.543
	Gen	1116.4	300.8	0.305	0.044	1.594	0.508
A86071	Hist	644.2	140.7	0.234	-0.005	1.346	0.655
	Gen	648.6	135.3	0.057	-0.054	1.361	0.665
B86071	Hist	648.5	127.3	-0.313	-0.040	1.302	0.555
	Gen	649.5	119.9	-0.170	-0.085	1.329	0.638
094029	Hist	566.8	109.2	0.401	0.261	1.460	0.688
	Gen	568.4	106.1	0.179	0.232	1.414	0.641

*Maximum and minimum annual rainfall is standardised by dividing by the observed mean annual rainfall.

Table A2. Comparison of historical and generated annual evaporation parameters.

Station		Mean	Std dev	Skew	Lag 1 acc	Maximum*	Minimum*
003003	Hist	2745.3	203.4	0.065	0.220	1.163	0.864
	Gen	2752.5	199.3	-0.119	0.176	1.146	0.849
009034	Hist	1700.7	131.2	-0.623	0.595	1.123	0.810
	Gen	1707.1	120.8	-0.276	0.449	1.121	0.860
012038	Hist	2603.6	227.1	-0.318	0.172	1.172	0.814
	Gen	2608.0	220.8	-0.187	0.139	1.165	0.820
014015	Hist	2612.0	185.0	-0.922	0.528	1.108	0.796
	Gen	2620.0	178.1	-0.403	0.464	1.121	0.847
015590	Hist	3001.5	446.0	-0.222	0.503	1.308	0.723
	Gen	3012.1	422.4	-0.184	0.424	1.269	0.702
039104	Hist	1584.9	117.9	-0.448	-0.051	1.156	0.807
	Gen	1587.7	115.4	-0.192	-0.074	1.130	0.856
040214	Hist	1396.5	72.1	-0.746	0.148	1.086	0.883
	Gen	1397.3	69.2	-0.128	-0.009	1.079	0.917
066037	Hist	1789.3	103.1	0.353	-0.023	1.142	0.877
	Gen	1792.5	102.9	0.166	-0.024	1.122	0.892
A86071	Hist	1396.1	88.7	0.869	0.494	1.140	0.899
	Gen	1397.9	78.7	0.203	0.238	1.098	0.916
B86071	Hist	1077.9	76.5	-0.554	0.359	1.098	0.860
	Gen	1081.1	71.7	-0.192	0.240	1.118	0.872
094029	Hist	975.1	88.7	-0.056	0.479	1.195	0.811
	Gen	976.3	87.2	-0.028	0.431	1.181	0.815

*Maximum and minimum annual evaporation is standardised by dividing by the observed mean annual evaporation.

Table A3. Comparison of historical and generated parameters of annual maximum temperature.

Station		Mean	Std dev	Skew	Lag 1 acc	Maximum*	Minimum*
003003	Hist	32.15	0.59	-0.236	0.030	1.036	0.964
	Gen	32.14	0.58	-0.236	-0.019	1.035	0.958
009034	Hist	24.09	0.53	0.164	-0.035	1.042	0.963
	Gen	24.08	0.53	0.068	-0.088	1.043	0.959
012038	Hist	25.16	0.74	-0.027	-0.116	1.061	0.938
	Gen	25.16	0.73	-0.145	-0.137	1.057	0.938
014015	Hist	32.08	0.33	-0.075	-0.222	1.022	0.979
	Gen	32.08	0.33	-0.084	-0.240	1.021	0.978
015590	Hist	28.76	0.83	-0.329	0.205	1.054	0.925
	Gen	28.76	0.81	-0.217	0.136	1.055	0.938
039104	Hist	27.24	0.68	0.281	-0.054	1.050	0.962
	Gen	27.23	0.68	-0.030	-0.108	1.048	0.951
040214	Hist	25.74	0.50	0.628	0.321	1.037	0.971
	Gen	25.73	0.48	0.024	0.134	1.031	0.969
066037	Hist	22.29	0.42	0.527	-0.162	1.050	0.969
	Gen	22.29	0.43	0.157	-0.175	1.041	0.964
A86071	Hist	19.94	0.45	-0.047	0.521	1.028	0.963
	Gen	19.90	0.41	0.135	0.265	1.032	0.967
B86071	Hist	20.11	0.56	0.025	0.375	1.044	0.955
	Gen	20.09	0.55	0.016	0.250	1.051	0.949
094029	Hist	17.21	0.42	-0.331	0.220	1.046	0.953
	Gen	17.20	0.42	-0.127	0.174	1.050	0.947

***** Maximum and minimum annual maximum temperature is standardised by dividing by the observed mean annual maximum temperature.

Table A4. Comparison of historical and generated cross correlations between rainfall (R), evaporation (E) and mean maximum temperature (T).

Station		R - E	R - T	E - T
003003	Hist	-0.672	-0.614	0.491
	Gen	-0.655	-0.607	0.492
009034	Hist	-0.231	-0.325	0.453
	Gen	-0.209	-0.299	0.443
012038	Hist	-0.712	-0.744	0.827
	Gen	-0.698	-0.736	0.824
014015	Hist	-0.297	-0.318	0.246
	Gen	-0.284	-0.329	0.241
015590	Hist	-0.815	-0.807	0.845
	Gen	-0.801	-0.791	0.836
039104	Hist	-0.579	-0.759	0.790
	Gen	-0.576	-0.751	0.792
040214	Hist	-0.338	-0.297	0.839
	Gen	-0.275	-0.252	0.821
066037	Hist	-0.465	-0.420	0.743
	Gen	-0.455	-0.427	0.742
A86071	Hist	-0.134	-0.625	0.136
	Gen	-0.242	-0.662	0.254
B86071	Hist	-0.421	-0.284	0.147
	Gen	-0.377	-0.299	0.217
094029	Hist	-0.332	-0.442	0.678
	Gen	-0.307	-0.428	0.659

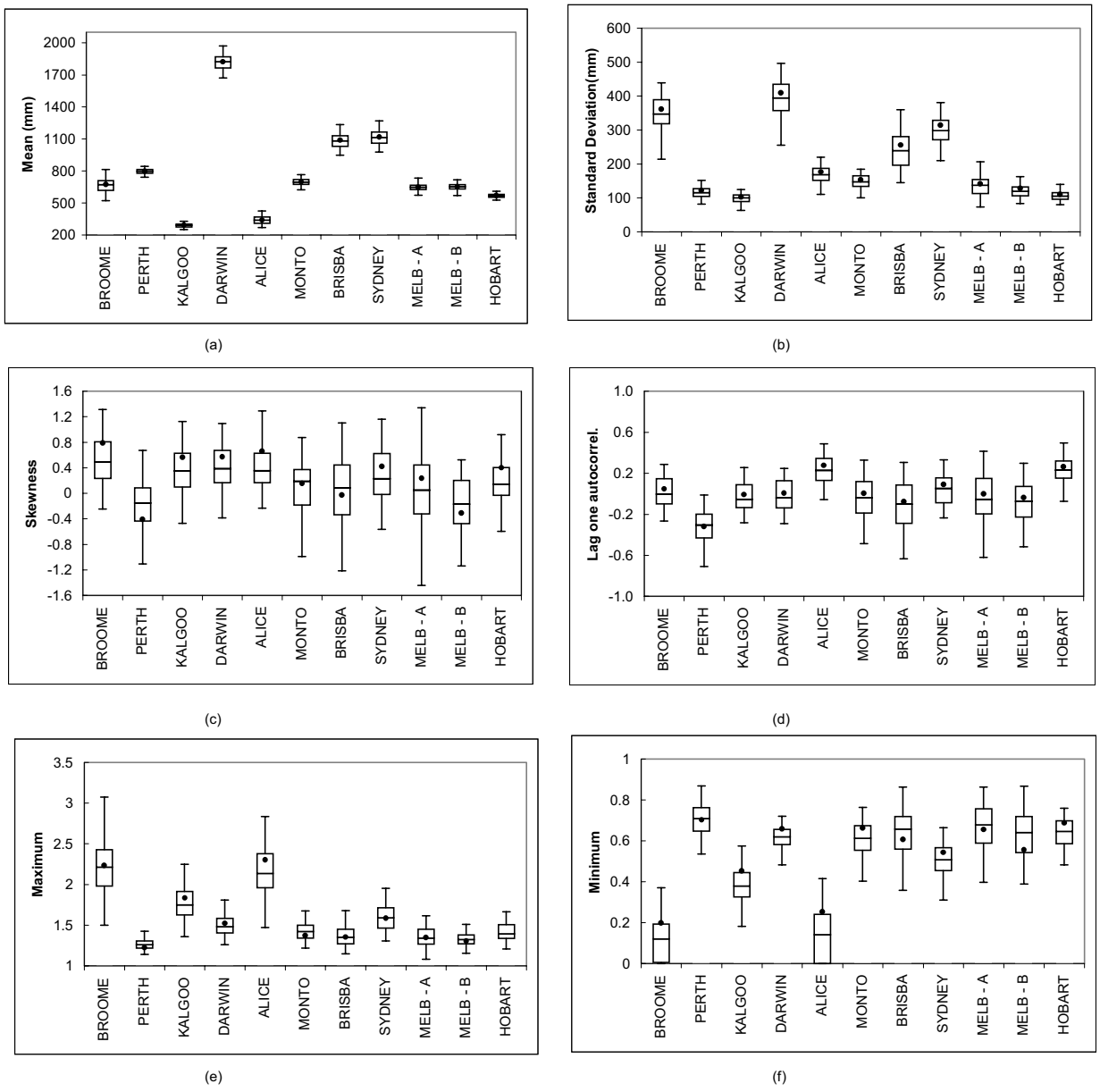


Figure A1. Comparison of historical and generated annual rainfall parameters.

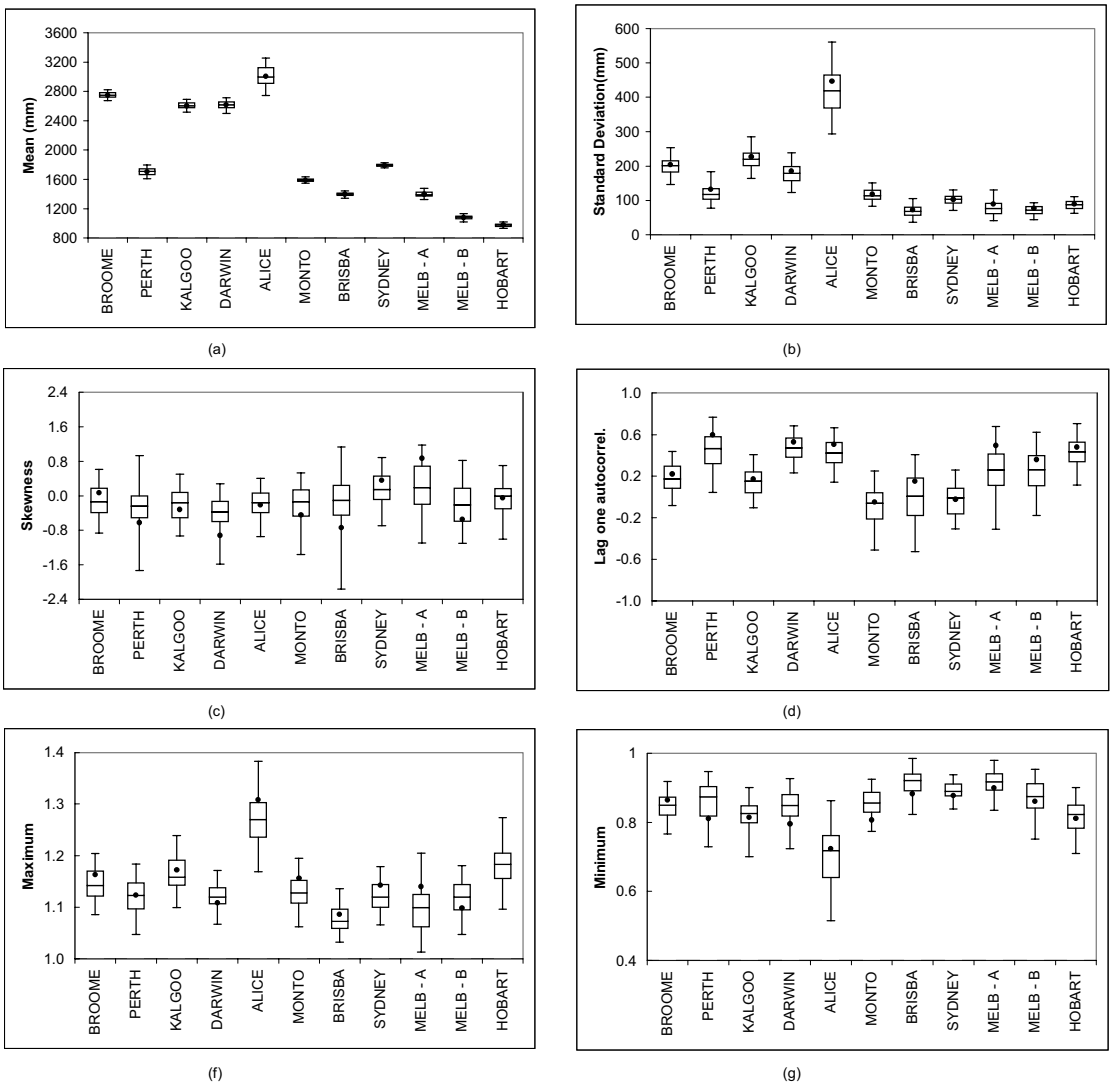


Figure A2. Comparison of historical and generated annual evaporation parameters.

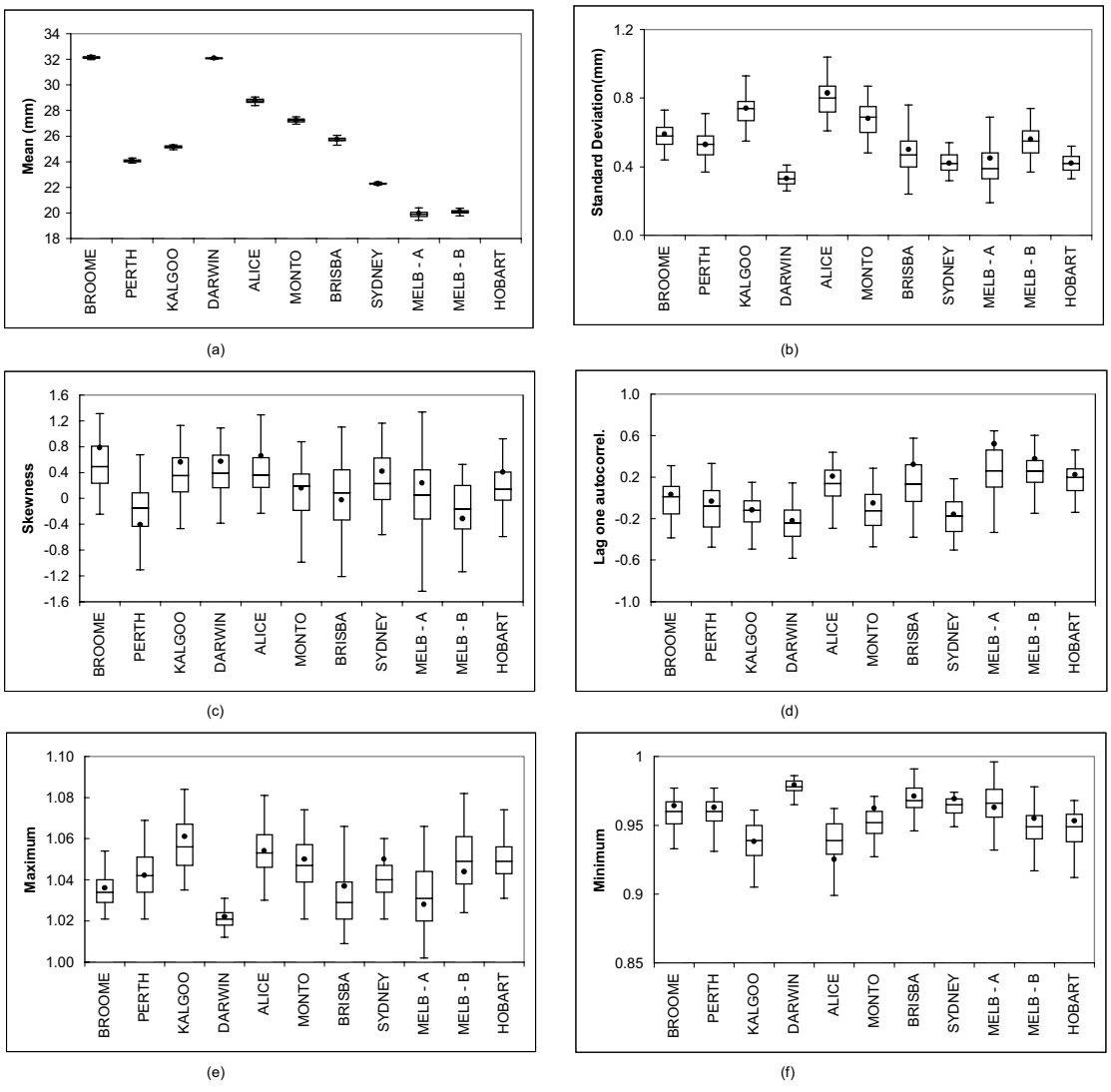
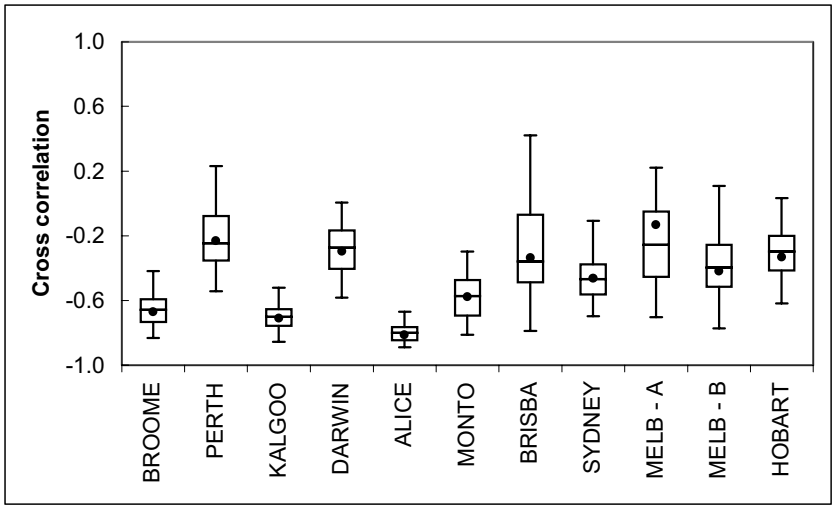
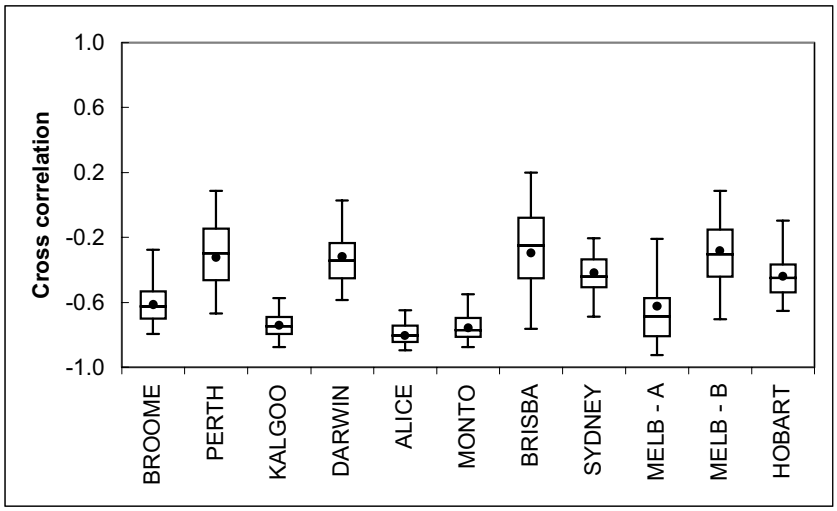


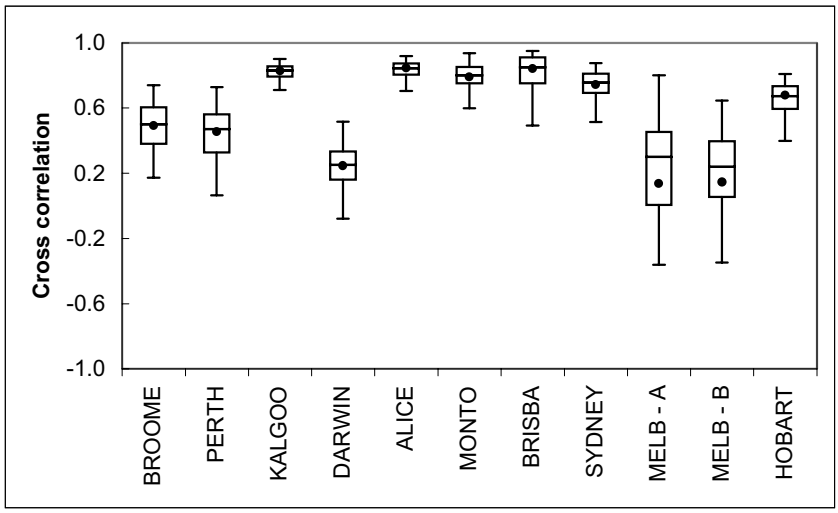
Figure A3. Comparison of historical and generated annual maximum temperature parameters.



(a) Rainfall and evaporation



(b) Rainfall and temperture



(c) Evaporation and temperture

Figure A4. Comparison of cross correlation between annual rainfall, evaporation and maximum temperature.

Appendix B – Monthly Model Results

Table B1. Comparison of historical and generated mean monthly rainfall.

Station		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
003003	Hist	221.6	196.6	105.9	29.5	21.9	13.8	7.2	1.8	1.8	1.5	8.4	61.7
	Gen	240.0	193.9	80.1	20.6	24.6	18.3	9.5	3.2	1.8	1.0	6.8	69.1
009034	Hist	11.9	16.8	11.4	43.2	109.0	160.7	170.6	113.3	73.3	50.9	26.1	10.0
	Gen	13.3	17.0	12.3	44.3	113.1	156.8	162.7	114.8	73.4	49.5	28.3	10.6
012038	Hist	19.7	30.0	30.7	24.7	31.1	28.4	25.5	25.1	14.8	18.5	20.9	19.7
	Gen	17.3	32.3	31.8	23.9	32.4	26.5	25.4	27.7	16.1	17.8	19.5	18.4
014015	Hist	495.6	340.6	370.3	99.8	22.5	1.6	1.4	8.0	14.8	74.9	133.1	266.8
	Gen	496.7	350.9	368.4	103.7	23.0	1.7	1.1	7.8	13.3	71.7	122.1	263.4
015590	Hist	49.7	48.7	51.7	23.6	20.7	15.7	15.1	8.8	11.2	24.5	31.0	45.5
	Gen	42.7	47.0	64.7	20.8	23.4	12.3	10.3	8.0	11.1	25.2	25.8	49.1
039104	Hist	105.8	75.2	72.6	55.9	57.7	28.9	34.6	24.6	27.3	54.1	72.0	86.7
	Gen	98.8	72.9	68.3	54.0	52.6	30.5	40.9	29.6	31.0	56.7	64.8	95.7
040214	Hist	135.0	136.1	98.2	87.1	110.3	60.0	54.2	26.7	34.3	80.7	142.9	130.7
	Gen	140.1	105.2	94.7	94.4	148.1	51.0	62.2	26.5	32.7	90.1	106.7	131.8
066037	Hist	105.6	109.2	136.5	111.9	107.1	119.5	70.2	75.3	64.7	69.8	84.7	63.6
	Gen	107.2	102.9	126.6	123.6	96.7	119.6	69.4	84.1	60.8	71.1	85.0	69.3
A86071	Hist	46.8	60.8	42.4	48.2	69.5	42.0	40.2	61.0	55.0	75.2	57.2	45.9
	Gen	50.6	26.0	40.0	52.3	76.0	50.8	43.9	63.5	61.5	77.5	56.6	49.9
B86071	Hist	51.5	37.5	41.8	58.4	50.1	52.9	47.1	51.8	61.0	65.3	64.8	69.0
	Gen	52.1	32.9	45.4	66.2	47.3	56.5	46.7	54.7	57.6	60.7	61.0	68.4
094029	Hist	43.1	29.8	44.3	40.2	39.5	40.1	59.3	60.9	48.6	59.7	50.9	59.6
	Gen	43.6	26.8	42.4	41.7	40.2	43.8	59.8	58.8	45.3	65.6	44.8	56.5

Table B2. Comparison of historical and generated standard deviation of monthly rainfall.

Station		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
003003	Hist	259.9	135.1	107.6	51.7	51.6	24.7	20.4	4.4	4.3	5.2	12.3	57.6
	Gen	262.0	137.0	78.2	31.0	39.6	28.8	23.4	6.4	3.4	2.5	10.8	71.8
009034	Hist	27.2	20.6	13.1	28.2	47.9	60.5	49.7	35.9	34.0	21.9	19.5	10.0
	Gen	26.9	19.3	13.6	28.7	40.8	60.2	43.9	32.3	31.0	20.7	19.2	8.8
012038	Hist	35.7	43.6	48.7	24.4	25.4	24.0	18.6	19.6	13.6	21.3	21.5	20.8
	Gen	29.3	36.0	47.9	24.6	25.3	24.7	19.5	20.3	12.9	18.1	17.5	20.1
014015	Hist	220.8	142.2	195.8	74.9	36.2	7.5	5.0	15.1	26.7	61.5	65.9	165.0
	Gen	213.3	148.7	205.8	79.0	36.9	5.9	3.4	14.9	24.0	60.3	64.4	170.5
015590	Hist	68.4	73.5	86.2	53.2	30.3	24.2	29.5	12.9	15.6	20.5	28.3	50.5
	Gen	55.9	69.5	100.5	36.4	32.4	20.5	16.5	11.0	14.7	20.2	23.1	48.5
039104	Hist	64.8	49.1	46.2	55.5	50.7	27.5	39.1	23.2	28.7	42.0	55.5	61.2
	Gen	57.1	45.7	48.6	48.6	49.5	24.9	36.7	26.4	29.0	42.2	45.3	61.5
040214	Hist	59.6	82.8	69.5	71.4	126.8	74.5	51.1	18.9	31.0	28.8	114.0	68.0
	Gen	51.3	50.7	73.0	71.2	152.2	62.2	53.5	16.8	27.5	26.1	79.6	64.8
066037	Hist	74.2	116.2	102.2	113.4	70.9	92.4	49.9	102.9	61.5	63.0	66.7	49.4
	Gen	74.6	107.1	93.4	114.5	57.1	93.5	48.6	112.3	56.1	62.0	63.3	48.8
A86071	Hist	18.0	79.7	22.8	29.6	36.8	31.4	23.3	26.6	25.9	36.2	31.8	30.5
	Gen	19.0	14.7	16.8	32.4	37.3	33.4	24.5	29.8	27.8	41.7	28.8	25.5
B86071	Hist	35.5	31.3	21.2	35.6	24.3	23.1	22.6	18.4	31.6	28.4	35.7	49.2
	Gen	37.3	29.2	22.3	37.6	25.9	24.3	21.8	14.8	26.3	24.6	36.1	42.8
094029	Hist	23.7	19.7	30.0	23.9	27.8	18.9	36.2	39.5	25.3	36.8	25.0	51.2
	Gen	24.7	15.3	22.5	25.4	27.8	19.2	39.1	38.3	17.2	36.0	23.1	42.4

Table B3. Comparison of historical and generated coefficient of skewness of monthly rainfall.

Station		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
003003	Hist	1.583	0.553	1.932	2.873	4.061	2.086	3.998	4.336	5.266	4.842	1.250	0.857
	Gen	1.429	0.618	1.420	1.727	2.076	1.843	3.435	2.992	3.113	3.147	1.695	0.897
009034	Hist	3.318	1.805	1.902	-0.058	0.180	-0.024	0.067	-0.820	0.733	0.622	1.363	1.159
	Gen	2.823	1.514	1.457	-0.136	0.208	0.046	-0.434	-0.282	0.786	0.716	1.226	1.107
012038	Hist	3.280	2.580	2.175	0.733	1.144	1.011	0.629	1.204	1.519	1.763	2.985	1.724
	Gen	3.008	1.746	1.988	0.835	1.449	1.150	0.754	0.966	1.335	1.487	1.328	1.813
014015	Hist	0.572	0.432	1.262	0.896	2.214	5.419	4.775	1.929	3.227	0.919	0.132	0.998
	Gen	0.579	0.471	1.260	0.778	2.375	3.852	3.825	2.184	2.741	0.900	0.310	0.904
015590	Hist	1.823	1.566	2.210	3.782	1.500	2.290	3.448	2.488	1.789	0.642	1.306	2.416
	Gen	1.808	1.608	1.943	2.672	1.434	2.286	2.280	1.965	1.512	0.589	1.522	1.840
039104	Hist	0.534	0.917	0.252	1.706	1.851	1.915	1.703	1.468	1.035	0.627	0.801	0.709
	Gen	0.633	1.010	0.441	1.893	1.369	1.202	1.148	1.168	0.901	0.486	0.320	0.605
040214	Hist	-0.171	1.430	0.235	1.540	1.836	2.764	1.460	0.105	0.356	-0.667	1.462	0.438
	Gen	-0.010	1.510	0.298	1.022	1.334	1.637	0.969	0.315	0.152	0.014	0.912	0.643
066037	Hist	0.802	2.815	0.871	1.729	1.161	1.562	0.566	2.332	1.381	1.581	2.765	1.033
	Gen	0.570	2.279	0.839	1.336	0.650	1.431	0.729	2.356	1.256	1.031	1.611	0.811
A86071	Hist	-0.034	1.879	0.802	1.068	0.428	1.271	0.549	0.375	0.172	0.651	1.215	0.688
	Gen	-0.295	0.127	0.581	0.662	0.542	0.783	0.457	0.075	-0.307	0.473	0.880	0.546
B86071	Hist	0.831	0.711	0.681	0.700	-0.135	1.358	0.011	0.065	1.115	0.347	1.731	0.957
	Gen	0.805	1.205	0.646	0.424	0.066	0.640	-0.023	0.480	1.156	0.526	1.495	0.759
094029	Hist	0.589	1.155	1.068	1.037	0.963	0.352	1.125	0.674	1.677	1.155	0.361	2.129
	Gen	0.397	0.803	0.832	0.978	1.019	0.289	1.138	0.772	0.898	0.846	0.572	2.032

Table B4. Comparison of historical and generated correlation between monthly rainfall.

Station		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
003003	Hist	0.14	0.10	0.05	0.70	-0.09	-0.09	0.19	0.06	-0.03	-0.10	0.14	-0.13
	Gen	-0.13	0.16	-0.06	0.50	0.13	0.05	-0.05	0.13	-0.13	-0.13	-0.11	-0.15
009034	Hist	-0.04	-0.08	0.12	0.04	0.19	0.01	0.29	-0.33	-0.41	-0.23	-0.46	0.59
	Gen	-0.08	-0.10	0.04	0.09	0.05	0.10	0.42	-0.35	-0.30	-0.19	-0.49	0.55
012038	Hist	-0.10	0.11	-0.12	0.14	0.25	0.30	0.30	-0.23	0.10	0.05	-0.16	-0.07
	Gen	-0.08	0.08	-0.17	0.19	0.33	0.43	0.40	-0.19	-0.05	0.03	-0.25	-0.15
014015	Hist	-0.03	0.05	0.08	0.15	-0.26	-0.04	-0.05	-0.10	0.69	0.00	0.43	0.05
	Gen	-0.10	0.20	0.03	0.18	-0.27	-0.06	0.04	-0.01	0.78	0.07	0.39	0.05
015590	Hist	0.02	0.13	-0.05	0.04	-0.10	-0.01	0.56	0.24	0.46	0.44	0.04	0.29
	Gen	-0.04	0.21	-0.10	0.32	-0.16	0.09	0.33	0.35	0.42	0.44	0.05	0.41
039104	Hist	-0.04	-0.20	0.05	0.24	0.52	-0.28	0.33	0.37	0.34	0.01	-0.11	-0.59
	Gen	-0.01	-0.15	0.01	0.20	0.47	-0.24	0.36	0.42	0.17	-0.08	-0.18	-0.60
040214	Hist	0.34	0.08	-0.09	-0.22	-0.15	0.32	0.07	0.30	0.49	0.32	-0.78	0.08
	Gen	0.27	0.15	0.20	-0.04	-0.42	-0.03	0.29	0.40	0.36	0.23	-0.52	-0.03
066037	Hist	-0.10	0.09	-0.04	-0.13	0.16	-0.08	-0.07	-0.06	-0.11	-0.05	0.12	0.21
	Gen	-0.05	0.12	-0.07	-0.16	0.23	0.12	-0.02	-0.07	-0.10	-0.06	0.22	0.15
A86071	Hist	-0.53	-0.10	0.10	-0.29	0.54	-0.09	0.09	0.33	0.19	0.38	0.18	0.64
	Gen	-0.38	0.36	-0.02	-0.33	0.52	-0.24	0.02	0.30	0.08	0.25	0.35	0.56
B86071	Hist	-0.35	0.07	-0.25	0.52	-0.36	-0.10	0.02	-0.02	0.15	0.23	-0.03	0.29
	Gen	-0.32	0.17	-0.14	0.59	-0.32	-0.12	0.00	-0.08	-0.12	-0.01	-0.18	0.27
094029	Hist	0.52	-0.13	-0.44	-0.21	-0.03	0.03	0.12	-0.03	-0.07	-0.20	0.30	0.12
	Gen	0.45	-0.32	-0.23	-0.25	0.05	-0.09	0.20	-0.06	-0.02	-0.49	0.25	0.27

Table B5. Comparison of historical and generated maximum monthly rainfall.

Station		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
003003	Hist	16.293	8.866	8.826	4.426	4.798	1.556	1.814	0.411	0.436	0.501	0.708	3.488
	Gen	16.367	8.712	5.612	2.097	2.972	1.669	1.799	0.451	0.292	0.210	0.651	4.113
009034	Hist	1.731	1.213	0.771	1.385	3.014	3.685	4.101	2.514	2.198	1.451	1.102	0.485
	Gen	1.521	1.030	0.684	1.333	2.839	3.791	3.607	2.537	2.112	1.391	1.103	0.469
012038	Hist	7.032	8.161	8.178	3.113	4.400	3.661	2.889	3.072	2.449	3.504	4.790	3.678
	Gen	5.522	6.005	7.379	3.200	4.488	3.572	2.950	3.014	2.221	2.883	3.057	3.378
014015	Hist	6.169	4.378	6.649	2.018	0.956	0.272	0.174	0.336	0.851	1.608	1.763	4.359
	Gen	6.239	4.356	6.318	1.928	0.946	0.178	0.102	0.323	0.675	1.408	1.688	4.343
015590	Hist	8.714	8.374	12.367	9.331	3.591	3.508	4.991	2.045	1.990	2.534	3.827	7.934
	Gen	7.542	7.748	12.301	5.562	3.696	2.894	2.558	1.574	1.802	2.380	3.234	6.978
039104	Hist	3.872	3.066	2.890	3.451	3.890	2.078	2.537	1.619	1.586	2.309	3.691	3.877
	Gen	3.722	3.023	2.831	3.298	3.247	1.668	2.167	1.615	1.546	2.234	2.429	3.772
040214	Hist	2.481	3.575	2.062	2.870	4.484	2.997	1.692	0.617	0.909	1.386	4.519	2.579
	Gen	2.410	2.493	2.261	2.559	4.830	2.174	1.711	0.597	0.819	1.493	3.035	2.706
066037	Hist	3.284	6.236	4.218	5.111	3.563	3.995	1.827	4.257	2.677	2.880	3.890	2.050
	Gen	2.904	5.141	3.690	4.544	2.565	3.927	1.887	4.605	2.227	2.474	3.087	1.968
A86071	Hist	1.405	4.437	1.546	2.131	2.522	2.031	1.613	2.038	1.837	2.798	2.385	2.057
	Gen	1.412	1.015	1.347	2.102	2.594	1.987	1.625	2.019	1.836	2.783	2.143	1.814
B86071	Hist	2.322	1.968	1.596	2.403	1.677	2.153	1.677	1.596	2.322	2.105	3.056	3.638
	Gen	2.278	1.914	1.607	2.434	1.701	2.024	1.562	1.547	2.218	1.973	2.819	3.074
094029	Hist	2.175	1.805	2.346	2.209	2.057	1.763	3.267	3.080	2.663	3.113	2.088	4.301
	Gen	2.023	1.210	2.063	2.080	2.041	1.741	3.168	2.935	1.750	3.025	1.939	3.806

Table B6. Comparison of historical and generated minimum monthly rainfall.

Station		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
003003	Hist	0.097	0.279	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Gen	0.068	0.250	0.020	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.011
009034	Hist	0.000	0.000	0.000	0.000	0.388	1.024	1.325	0.277	0.434	0.211	0.050	0.003
	Gen	0.000	0.000	0.002	0.004	0.654	1.008	1.221	0.691	0.468	0.294	0.078	0.008
012038	Hist	0.000	0.000	0.017	0.000	0.033	0.108	0.025	0.066	0.012	0.000	0.000	0.025
	Gen	0.007	0.005	0.016	0.001	0.069	0.104	0.033	0.106	0.026	0.012	0.003	0.036
014015	Hist	1.417	0.851	0.577	0.004	0.000	0.000	0.000	0.000	0.000	0.008	0.113	0.123
	Gen	1.402	0.830	0.607	0.026	0.000	0.000	0.000	0.000	0.000	0.018	0.150	0.169
015590	Hist	0.000	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.049
	Gen	0.012	0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.015	0.003	0.027
039104	Hist	0.300	0.155	0.000	0.031	0.010	0.007	0.000	0.000	0.000	0.045	0.079	0.022
	Gen	0.393	0.211	0.071	0.067	0.024	0.024	0.037	0.018	0.003	0.075	0.164	0.332
040214	Hist	0.271	0.622	0.057	0.188	0.061	0.031	0.070	0.000	0.002	0.217	0.096	0.420
	Gen	0.670	0.617	0.087	0.192	0.235	0.055	0.078	0.029	0.003	0.500	0.173	0.564
066037	Hist	0.069	0.077	0.140	0.086	0.144	0.045	0.062	0.002	0.017	0.000	0.152	0.052
	Gen	0.121	0.098	0.162	0.143	0.175	0.084	0.113	0.036	0.025	0.017	0.183	0.102
A86071	Hist	0.387	0.130	0.294	0.268	0.395	0.237	0.175	0.447	0.309	0.414	0.328	0.032
	Gen	0.420	0.143	0.327	0.299	0.516	0.271	0.220	0.432	0.345	0.433	0.398	0.336
B86071	Hist	0.070	0.011	0.136	0.188	0.188	0.439	0.221	0.420	0.505	0.505	0.468	0.133
	Gen	0.129	0.028	0.272	0.233	0.193	0.416	0.237	0.547	0.489	0.525	0.477	0.248
094029	Hist	0.175	0.133	0.096	0.213	0.100	0.038	0.246	0.188	0.292	0.179	0.354	0.242
	Gen	0.184	0.156	0.163	0.232	0.163	0.189	0.279	0.265	0.486	0.325	0.346	0.308

Table B7. Comparison of historical and generated proportion (%) of zero monthly rainfall.

Station		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
003003	Hist	0.0	0.0	3.3	16.7	40.0	33.3	40.0	20.0	6.7	66.7	36.7	3.3
	Gen	0.9	0.9	3.2	14.2	30.5	22.0	40.2	19.8	5.7	62.4	29.7	4.4
009034	Hist	15.0	20.0	5.0	10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Gen	18.0	13.9	4.0	12.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
012038	Hist	3.3	10.0	0.0	6.7	0.0	0.0	0.0	0.0	0.0	3.3	6.7	0.0
	Gen	2.2	8.6	0.0	13.2	0.0	0.0	0.0	0.0	0.0	4.8	10.7	0.0
014015	Hist	0.0	0.0	0.0	0.0	23.3	66.7	70.0	50.0	23.3	0.0	0.0	0.0
	Gen	0.0	0.0	0.0	0.0	19.2	62.9	70.6	56.4	23.3	0.0	0.0	0.0
015590	Hist	6.7	0.0	13.3	26.7	33.3	26.7	33.3	26.7	16.7	6.7	6.7	0.0
	Gen	5.4	1.0	16.6	24.0	35.6	30.1	24.9	25.6	15.0	2.1	9.0	1.0
039104	Hist	0.0	0.0	4.8	0.0	0.0	0.0	4.8	4.8	9.5	0.0	0.0	0.0
	Gen	0.0	0.0	5.9	0.0	0.0	0.0	0.0	6.0	7.7	0.0	0.0	0.0
040214	Hist	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.1	0.0	0.0	0.0	0.0
	Gen	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.3	0.0	0.0	0.0	0.0
066037	Hist	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.6	0.0	0.0
	Gen	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.9	0.0	0.0
A86071	Hist	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Gen	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
B86071	Hist	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Gen	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
094029	Hist	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Gen	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table B8. Comparison of historical and generated mean monthly evaporation.

Station		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
003003	Hist	251.7	198.9	220.0	221.4	209.5	180.4	193.3	215.2	235.3	270.4	280.8	278.5
	Gen	259.2	197.8	232.4	226.0	204.6	175.6	188.4	214.6	233.5	265.6	278.2	276.7
009034	Hist	246.3	212.6	188.6	120.3	81.0	61.0	62.0	78.2	103.4	148.9	185.1	223.4
	Gen	244.6	213.1	188.7	121.7	80.2	60.4	60.4	79.4	103.8	149.1	185.3	220.5
012038	Hist	394.6	306.6	264.1	170.7	108.3	75.1	83.5	113.3	172.3	252.8	303.3	369.6
	Gen	395.4	300.2	268.2	172.5	108.8	74.5	85.2	112.2	170.1	249.3	301.9	369.7
014015	Hist	202.5	173.1	188.4	205.0	226.8	215.3	225.3	236.7	240.2	256.5	230.8	218.0
	Gen	202.0	172.6	188.0	204.1	227.4	216.6	224.6	236.7	237.6	256.3	233.2	221.1
015590	Hist	388.2	318.7	307.1	211.7	143.2	105.9	120.2	168.5	231.0	301.2	339.1	375.0
	Gen	381.6	317.2	306.0	208.7	140.7	105.6	120.7	170.8	233.6	303.4	346.9	376.9
039104	Hist	194.1	154.1	144.0	112.4	79.0	64.2	67.1	94.0	132.8	169.5	180.9	202.8
	Gen	193.8	157.1	144.5	112.2	79.9	64.3	66.7	92.9	130.5	165.8	178.3	201.8
040214	Hist	167.4	135.3	130.7	102.1	75.5	60.1	64.7	92.2	121.3	139.1	148.8	175.8
	Gen	159.9	133.1	130.5	101.7	73.6	59.4	64.5	90.1	123.3	136.2	151.1	174.0
066037	Hist	218.6	181.9	164.6	123.8	88.7	75.6	82.6	115.4	142.0	179.2	194.2	230.9
	Gen	221.5	183.1	164.3	124.3	88.0	75.4	82.0	113.5	141.5	178.7	193.0	227.0
A86071	Hist	212.2	177.8	138.9	90.5	61.4	38.4	46.8	64.7	91.0	127.1	155.3	192.1
	Gen	214.7	179.0	140.5	88.2	60.9	38.7	48.2	68.1	88.5	128.1	157.5	185.5
B86071	Hist	162.5	144.7	109.5	67.3	42.6	31.0	33.6	48.6	68.9	101.7	125.3	148.8
	Gen	163.2	144.6	111.3	66.4	41.6	31.0	32.4	48.5	69.6	102.5	124.6	145.3
094029	Hist	149.1	127.8	96.5	62.7	37.5	23.0	27.6	43.9	65.9	95.1	114.3	138.1
	Gen	149.2	127.8	95.2	62.3	36.9	23.6	27.5	44.0	65.6	93.7	114.0	136.7

Table B9. Comparison of historical and generated standard deviation of monthly evaporation.

Station		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
003003	Hist	35.5	29.9	30.0	29.7	29.9	19.5	16.9	18.7	26.9	29.9	19.2	31.6
	Gen	35.5	26.7	35.3	32.0	30.9	23.3	21.3	21.2	22.6	31.0	26.1	31.1
009034	Hist	26.9	26.0	16.0	12.8	12.1	7.6	8.2	6.8	8.4	13.6	16.3	22.3
	Gen	26.4	25.5	17.0	14.4	10.5	7.1	7.5	8.2	10.1	15.5	18.0	20.9
012038	Hist	46.3	40.5	46.1	32.3	24.9	12.9	16.8	17.8	26.5	33.7	29.7	42.0
	Gen	43.0	39.4	42.8	31.4	24.4	13.3	19.4	20.3	28.3	31.4	35.1	43.4
014015	Hist	29.5	28.4	24.1	28.2	17.8	16.8	17.8	21.7	23.4	23.7	26.7	27.6
	Gen	28.1	28.3	26.5	25.9	22.3	22.0	19.1	20.7	20.0	22.2	27.5	28.7
015590	Hist	66.5	70.9	76.0	43.0	30.6	15.3	15.7	23.2	42.9	58.4	58.3	61.0
	Gen	64.2	67.9	66.7	43.4	29.9	18.6	18.5	28.6	39.0	57.7	59.2	68.6
039104	Hist	26.2	20.1	21.1	18.0	12.7	8.1	10.9	12.4	18.4	23.4	25.2	15.8
	Gen	26.7	19.0	20.2	14.3	11.8	8.8	9.6	15.0	17.0	22.8	24.2	22.5
040214	Hist	18.8	11.7	10.3	8.1	7.0	4.2	8.4	9.3	12.7	12.3	15.0	16.8
	Gen	15.8	11.9	11.6	8.5	6.0	4.7	7.4	10.8	13.1	12.1	14.6	16.0
066037	Hist	24.5	22.9	19.9	15.4	11.7	8.2	11.8	12.7	20.0	23.8	19.0	27.3
	Gen	23.9	21.2	19.9	13.7	12.8	8.4	11.1	11.4	18.6	23.3	20.4	26.7
A86071	Hist	26.3	18.9	17.2	14.1	6.9	5.0	8.0	12.0	14.5	16.2	17.3	27.9
	Gen	22.6	15.5	13.9	14.9	7.9	4.7	8.6	13.9	10.1	18.6	19.2	14.6
B86071	Hist	16.7	19.6	11.2	10.5	7.7	3.9	4.6	5.4	10.6	10.2	10.5	17.4
	Gen	17.6	16.4	11.3	9.7	7.2	3.9	4.7	6.2	9.3	10.8	11.5	16.8
094029	Hist	17.3	14.0	12.1	8.6	7.1	5.9	7.5	7.9	13.9	15.1	14.3	20.6
	Gen	17.9	15.1	12.1	9.3	6.6	4.8	7.3	7.8	11.2	14.5	16.0	17.8

Table B10. Comparison of historical and generated coefficient of skewness of monthly evaporation.

Station		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
003003	Hist	-0.03	0.31	1.19	0.59	0.05	1.00	0.44	0.43	0.54	0.45	0.59	-0.27
	Gen	-0.04	0.48	0.83	0.57	0.19	0.53	0.30	0.60	0.35	0.48	0.53	-0.13
009034	Hist	-0.68	-0.30	-0.51	0.51	1.25	0.67	0.20	0.09	0.34	-0.26	0.56	0.54
	Gen	0.14	-0.09	-0.07	-0.02	0.42	0.21	0.21	-0.15	0.31	-0.08	0.00	0.08
012038	Hist	1.11	0.03	-0.29	-0.63	0.38	0.03	0.92	0.28	-0.81	-0.34	-0.30	0.02
	Gen	0.19	0.17	-0.64	-0.45	0.22	0.08	0.53	0.62	-0.09	0.05	-0.44	0.37
014015	Hist	0.03	0.69	-0.08	-0.29	0.93	0.42	1.05	0.14	0.08	-0.12	0.27	-0.15
	Gen	0.19	0.39	-0.05	-0.10	-0.12	0.00	0.05	0.15	-0.01	-0.18	0.28	0.13
015590	Hist	-0.77	-0.18	-0.17	-0.37	0.17	0.36	0.22	-0.14	0.11	-0.10	0.46	-0.07
	Gen	-0.43	-0.27	-0.14	-0.40	0.14	-0.22	0.04	0.07	0.07	0.05	0.02	0.03
039104	Hist	-0.45	0.79	0.11	-0.11	-0.46	-0.67	0.43	0.15	0.87	0.11	0.42	0.27
	Gen	-0.13	0.36	0.26	-0.16	-0.15	-0.07	0.35	0.26	0.34	0.19	0.04	0.05
040214	Hist	0.66	-0.04	0.41	0.51	1.47	0.49	0.08	0.03	0.47	0.45	0.26	0.45
	Gen	0.57	0.23	-0.16	0.19	0.02	0.41	-0.08	0.75	0.15	0.33	-0.39	0.50
066037	Hist	0.14	0.28	0.43	-0.03	0.83	0.70	-0.27	0.94	1.24	-0.01	0.12	0.30
	Gen	0.27	0.30	0.38	-0.08	0.89	0.41	0.07	0.70	0.29	0.32	0.39	0.49
A86071	Hist	0.52	0.54	-0.04	-0.32	-0.36	0.10	1.49	0.71	1.17	0.02	2.03	1.66
	Gen	0.18	0.40	0.13	-0.31	0.34	0.17	0.75	0.39	0.74	0.18	1.18	0.14
B86071	Hist	0.77	0.38	0.03	0.31	0.06	1.10	-0.79	-0.13	-0.10	1.28	-0.17	0.60
	Gen	0.45	0.14	0.18	0.07	0.49	0.48	0.04	-0.13	0.40	0.29	-0.20	0.65
094029	Hist	0.38	-0.34	0.57	-0.17	0.13	0.16	0.19	0.77	0.40	-0.04	-0.03	-0.37
	Gen	0.11	-0.14	0.30	-0.22	0.38	0.30	0.05	0.45	0.11	0.13	0.28	0.07

Table B11. Comparison of historical and generated correlation between monthly evaporation.

Station		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
003003	Hist	0.31	0.60	0.18	0.72	0.28	0.38	0.15	-0.09	0.32	0.64	0.69	0.58
	Gen	0.09	0.58	0.11	0.79	0.25	0.57	0.41	0.40	0.37	0.63	0.71	0.65
009034	Hist	0.58	0.12	0.33	0.21	0.00	0.24	0.56	0.23	0.35	0.48	0.41	0.52
	Gen	0.19	0.13	0.33	0.39	0.01	0.02	0.46	0.41	0.65	0.67	0.48	0.64
012038	Hist	0.24	0.45	0.42	0.58	0.52	0.30	0.49	0.54	0.59	0.52	0.25	0.31
	Gen	0.15	0.36	0.37	0.58	0.48	0.26	0.49	0.62	0.69	0.49	0.42	0.50
014015	Hist	0.22	0.25	0.33	0.25	0.45	0.07	0.50	0.60	0.52	0.47	0.65	0.55
	Gen	0.16	0.14	0.35	0.26	0.36	0.42	0.62	0.60	0.52	0.34	0.58	0.52
015590	Hist	0.47	0.67	0.73	0.71	0.77	0.45	0.53	0.54	0.65	0.72	0.75	0.74
	Gen	0.39	0.62	0.67	0.58	0.73	0.58	0.69	0.77	0.71	0.72	0.72	0.79
039104	Hist	0.53	0.47	0.36	0.47	0.68	0.60	0.67	0.50	0.35	0.48	0.58	0.30
	Gen	0.20	0.63	0.42	0.37	0.56	0.66	0.69	0.59	0.56	0.48	0.62	0.50
040214	Hist	0.39	0.37	-0.28	0.06	-0.01	0.70	0.50	-0.58	0.32	0.06	0.39	0.23
	Gen	0.09	0.28	0.36	0.33	0.05	0.82	0.65	-0.52	0.59	-0.24	0.38	0.14
066037	Hist	0.27	0.43	0.09	0.54	0.10	0.19	0.38	0.09	0.38	0.32	0.08	0.09
	Gen	0.05	0.39	0.12	0.47	0.18	0.26	0.50	0.16	0.37	0.38	0.11	0.18
A86071	Hist	0.57	0.40	0.83	-0.29	0.41	-0.18	0.01	-0.26	0.31	0.43	0.12	-0.06
	Gen	0.16	0.54	0.82	-0.16	0.44	-0.13	-0.05	-0.21	0.46	0.34	0.25	0.08
B86071	Hist	0.20	0.32	0.49	0.27	0.27	0.43	-0.02	0.02	-0.05	0.23	0.61	0.14
	Gen	0.17	0.35	0.50	0.46	0.26	0.33	-0.06	-0.12	0.08	0.06	0.61	0.43
094029	Hist	0.68	0.45	0.36	0.16	0.43	0.38	0.48	-0.07	0.32	0.49	0.53	0.32
	Gen	0.39	0.55	0.50	0.26	0.43	0.41	0.52	-0.02	0.36	0.37	0.48	0.40

Table B12. Comparison of historical and generated maximum monthly evaporation.

Station		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
003003	Hist	1.383	1.170	1.416	1.319	1.169	1.003	0.993	1.132	1.342	1.466	1.444	1.453
	Gen	1.410	1.147	1.384	1.298	1.185	1.008	1.021	1.167	1.253	1.483	1.507	1.469
009034	Hist	1.970	1.797	1.486	1.054	0.812	0.566	0.546	0.650	0.819	1.223	1.549	1.860
	Gen	2.056	1.824	1.542	1.042	0.711	0.526	0.531	0.656	0.875	1.242	1.531	1.828
012038	Hist	2.515	1.743	1.572	1.012	0.739	0.459	0.579	0.688	1.026	1.440	1.672	2.095
	Gen	2.296	1.734	1.548	1.039	0.709	0.454	0.570	0.727	1.029	1.437	1.674	2.190
014015	Hist	1.170	1.124	1.067	1.162	1.278	1.140	1.265	1.284	1.339	1.380	1.308	1.190
	Gen	1.180	1.075	1.087	1.165	1.247	1.203	1.214	1.290	1.275	1.368	1.339	1.275
015590	Hist	1.950	1.704	1.663	1.081	0.798	0.603	0.617	0.832	1.322	1.617	1.958	1.963
	Gen	1.966	1.734	1.675	1.127	0.794	0.561	0.627	0.919	1.247	1.684	1.857	2.055
039104	Hist	1.814	1.496	1.346	1.135	0.762	0.581	0.685	0.856	1.365	1.618	1.734	1.744
	Gen	1.842	1.473	1.397	1.037	0.757	0.605	0.665	0.915	1.242	1.580	1.668	1.821
040214	Hist	1.710	1.285	1.264	1.002	0.780	0.576	0.661	0.897	1.245	1.383	1.440	1.748
	Gen	1.599	1.304	1.252	0.984	0.708	0.576	0.639	0.934	1.220	1.330	1.452	1.730
066037	Hist	1.807	1.598	1.369	1.020	0.798	0.642	0.700	0.996	1.378	1.564	1.509	1.955
	Gen	1.821	1.565	1.380	1.010	0.801	0.634	0.696	0.938	1.218	1.550	1.580	1.923
A86071	Hist	2.241	1.798	1.423	0.974	0.611	0.409	0.572	0.762	1.059	1.298	1.731	2.242
	Gen	2.187	1.771	1.403	0.954	0.648	0.401	0.559	0.786	0.927	1.347	1.714	1.804
B86071	Hist	2.266	2.083	1.454	0.988	0.627	0.447	0.436	0.633	0.963	1.425	1.636	2.063
	Gen	2.237	1.944	1.480	0.941	0.630	0.431	0.453	0.653	0.976	1.377	1.599	2.023
094029	Hist	2.344	1.827	1.519	0.938	0.628	0.423	0.548	0.782	1.174	1.487	1.817	2.179
	Gen	2.246	1.908	1.480	0.967	0.614	0.404	0.508	0.739	1.056	1.496	1.822	2.104

Table B13. Comparison of historical and generated minimum monthly evaporation.

Station		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
003003	Hist	0.806	0.601	0.705	0.733	0.641	0.691	0.731	0.770	0.821	0.960	1.100	0.869
	Gen	0.839	0.643	0.769	0.757	0.653	0.596	0.667	0.779	0.836	0.927	1.013	0.938
009034	Hist	1.328	1.150	1.085	0.709	0.469	0.338	0.351	0.466	0.637	0.866	1.075	1.344
	Gen	1.396	1.151	1.093	0.668	0.443	0.334	0.330	0.447	0.605	0.837	1.070	1.275
012038	Hist	1.389	0.980	0.740	0.444	0.313	0.219	0.255	0.341	0.432	0.784	1.118	1.239
	Gen	1.408	1.045	0.774	0.473	0.320	0.233	0.246	0.360	0.505	0.850	1.022	1.305
014015	Hist	0.700	0.618	0.618	0.623	0.921	0.834	0.915	0.880	0.851	0.958	0.840	0.779
	Gen	0.701	0.572	0.622	0.688	0.826	0.785	0.848	0.898	0.901	0.957	0.837	0.765
015590	Hist	0.911	0.721	0.658	0.500	0.344	0.281	0.359	0.485	0.553	0.782	0.988	0.994
	Gen	0.955	0.730	0.703	0.477	0.351	0.258	0.334	0.461	0.623	0.758	0.921	0.959
039104	Hist	0.994	0.926	0.810	0.584	0.373	0.339	0.375	0.576	0.800	0.970	1.084	1.334
	Gen	1.051	0.944	0.830	0.632	0.428	0.359	0.381	0.523	0.767	0.955	1.027	1.220
040214	Hist	1.238	1.012	0.983	0.758	0.591	0.469	0.450	0.656	0.880	1.017	1.101	1.299
	Gen	1.178	0.980	0.947	0.752	0.544	0.447	0.452	0.652	0.886	1.011	1.073	1.286
066037	Hist	1.153	0.959	0.895	0.624	0.463	0.424	0.358	0.660	0.752	0.865	1.079	1.223
	Gen	1.186	0.950	0.876	0.646	0.466	0.403	0.398	0.642	0.728	0.896	1.069	1.213
A86071	Hist	1.477	1.312	0.920	0.540	0.425	0.260	0.313	0.440	0.631	0.890	1.188	1.386
	Gen	1.539	1.355	1.024	0.536	0.425	0.270	0.322	0.424	0.651	0.877	1.168	1.405
B86071	Hist	1.516	1.242	1.004	0.529	0.328	0.288	0.259	0.445	0.533	0.985	1.131	1.361
	Gen	1.468	1.277	1.006	0.544	0.337	0.276	0.266	0.413	0.607	0.925	1.132	1.325
094029	Hist	1.421	1.220	0.976	0.583	0.318	0.152	0.179	0.391	0.555	0.790	0.968	1.086
	Gen	1.426	1.183	0.904	0.527	0.324	0.192	0.182	0.380	0.575	0.826	1.033	1.265

Table B14. Comparison of historical and generated mean monthly maximum temperature.

Station		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
003003	Hist	33.21	32.79	33.73	34.32	31.84	29.40	29.02	30.30	31.61	32.71	33.38	33.54
	Gen	33.32	32.68	33.94	34.59	31.79	29.21	28.83	30.36	31.50	32.49	33.49	33.50
009034	Hist	30.33	31.28	29.29	25.49	21.82	19.28	18.16	18.73	20.45	22.19	25.15	27.54
	Gen	30.13	31.28	29.14	25.54	21.76	19.25	18.16	18.73	20.52	22.16	25.16	27.14
012038	Hist	33.67	32.25	29.37	25.42	20.72	17.39	16.81	18.49	22.31	25.48	28.61	31.89
	Gen	33.93	31.91	29.59	25.52	20.74	17.33	16.88	18.42	22.07	25.17	28.67	31.66
014015	Hist	31.78	31.46	31.78	32.82	32.25	30.84	30.69	31.51	32.65	33.30	33.33	32.61
	Gen	31.79	31.43	31.77	32.80	32.29	30.80	30.60	31.48	32.59	33.30	33.40	32.68
015590	Hist	36.38	35.16	32.75	28.03	23.28	19.85	19.98	22.86	27.30	30.66	33.70	35.63
	Gen	36.18	35.08	32.68	27.92	23.15	19.70	19.82	22.84	27.48	30.70	33.88	35.65
039104	Hist	32.10	31.12	29.98	27.61	24.18	21.05	20.71	22.64	26.02	28.80	30.61	32.46
	Gen	32.10	31.27	30.09	27.65	24.23	21.12	20.73	22.45	25.78	28.59	30.46	32.36
040214	Hist	29.60	29.33	28.86	26.80	23.92	21.21	20.76	22.13	24.47	25.51	27.46	29.58
	Gen	29.66	29.25	28.75	26.63	23.80	21.23	20.49	22.03	24.63	25.39	27.45	29.41
066037	Hist	26.70	26.73	25.36	23.03	20.27	17.59	16.88	18.39	20.49	22.61	23.80	26.05
	Gen	26.81	26.71	25.33	22.99	20.28	17.52	16.83	18.28	20.44	22.67	23.75	25.84
A86071	Hist	26.10	26.34	23.83	20.26	17.49	14.15	13.76	15.16	17.28	19.55	21.66	24.22
	Gen	26.03	26.33	23.93	20.07	17.40	13.98	13.77	15.26	16.89	19.50	21.86	23.83
B86071	Hist	25.77	26.71	24.23	20.61	17.47	14.69	14.06	15.30	17.28	19.79	21.91	23.81
	Gen	25.89	26.46	24.37	20.54	17.45	14.76	13.96	15.20	17.29	19.85	21.89	23.48
094029	Hist	21.96	22.09	20.17	18.14	15.16	12.40	12.11	13.40	15.29	17.27	18.70	20.09
	Gen	22.15	21.87	20.22	18.20	15.05	12.38	12.15	13.28	15.20	17.19	18.63	20.11

Table B15. Comparison of historical and generated standard deviation of monthly maximum temperature.

Station		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
003003	Hist	0.89	1.14	0.96	1.30	1.25	1.05	1.14	0.96	1.14	1.44	0.97	0.94
	Gen	0.85	1.10	1.03	1.24	1.26	1.08	1.20	0.94	1.09	1.34	0.99	0.98
009034	Hist	1.79	2.17	1.39	1.29	0.95	0.94	0.81	0.80	0.92	1.09	1.43	1.52
	Gen	1.97	2.08	1.25	1.08	0.88	0.95	0.81	0.68	0.97	1.08	1.40	1.55
012038	Hist	1.48	2.11	2.03	1.89	1.65	1.32	1.48	1.43	1.74	1.64	1.58	1.90
	Gen	1.67	2.24	2.06	1.87	1.54	1.42	1.60	1.33	1.59	1.50	1.53	1.89
014015	Hist	0.64	0.84	0.78	0.65	0.65	0.83	0.76	0.60	0.59	0.42	0.53	0.77
	Gen	0.65	0.81	0.75	0.66	0.59	0.74	0.63	0.58	0.60	0.46	0.66	0.89
015590	Hist	2.09	2.08	2.30	1.67	1.67	1.53	1.51	1.47	2.03	1.85	1.71	1.55
	Gen	2.01	2.08	2.06	1.91	1.54	1.56	1.52	1.21	1.71	1.96	1.73	1.88
039104	Hist	1.57	1.45	0.99	1.09	0.99	1.17	0.81	1.08	1.61	2.02	1.58	1.26
	Gen	1.48	1.19	0.94	1.08	0.87	1.21	0.89	1.12	1.35	2.00	1.50	1.64
040214	Hist	0.92	0.85	0.48	0.81	0.60	0.73	0.66	0.76	1.21	0.82	0.91	1.21
	Gen	0.90	1.01	0.65	0.69	0.62	0.70	0.65	0.68	0.96	0.67	0.77	1.38
066037	Hist	1.30	1.26	0.90	0.98	0.60	0.76	0.79	0.91	1.34	1.42	1.18	1.47
	Gen	1.14	1.23	1.01	1.13	0.72	0.73	0.82	0.86	1.21	1.28	1.14	1.47
A86071	Hist	2.12	0.91	1.34	1.15	0.84	0.64	0.80	1.22	1.25	1.27	1.40	1.42
	Gen	2.06	1.26	1.26	1.08	0.71	0.60	0.87	1.30	1.02	1.32	1.23	1.21
B86071	Hist	1.87	1.93	1.28	1.38	0.66	0.71	0.81	0.85	1.21	0.95	1.00	1.58
	Gen	1.61	1.79	1.38	1.18	0.87	0.78	0.63	0.89	0.95	0.97	1.12	1.45
094029	Hist	1.53	1.14	0.89	0.94	0.69	1.01	0.79	1.14	1.18	1.07	1.09	0.96
	Gen	1.37	1.07	1.12	0.91	0.69	1.01	0.63	1.05	0.92	1.04	1.17	0.88

Table B16. Comparison of historical and generated coefficient of skewness of monthly maximum temperature.

Station		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
003003	Hist	-0.54	0.86	-0.48	-0.85	-1.00	0.06	-0.27	-0.50	-0.33	-0.53	-0.34	0.50
	Gen	-0.44	0.27	-0.13	0.02	-0.67	-0.07	-0.35	-0.48	0.06	0.33	-0.16	0.35
009034	Hist	-0.07	-0.17	-0.10	0.56	0.67	-1.05	0.49	-0.30	0.26	-0.72	0.19	0.13
	Gen	0.17	0.01	-0.38	0.06	-0.05	-0.55	0.29	0.03	0.09	-0.50	-0.01	0.30
012038	Hist	-0.43	-0.17	-0.27	-0.34	0.53	-0.08	0.10	0.20	-0.65	-0.39	0.08	0.03
	Gen	-0.15	-0.22	-0.44	-0.28	0.24	0.13	0.01	0.12	-0.21	0.02	-0.22	0.18
014015	Hist	-0.37	-0.10	-0.73	0.04	-0.26	-0.39	0.15	0.70	-1.20	0.51	0.11	-0.55
	Gen	-0.10	-0.04	-0.42	0.18	-0.39	-0.41	-0.08	0.12	-0.14	-0.11	-0.03	-0.41
015590	Hist	-1.34	-0.35	-0.32	-0.58	-0.10	0.16	-0.22	-0.42	-0.20	0.15	0.27	-0.49
	Gen	-0.63	0.10	-0.11	-0.83	-0.06	-0.17	-0.24	0.18	-0.25	0.36	0.01	-0.26
039104	Hist	-0.37	0.04	-0.11	0.04	0.67	0.09	-0.92	0.07	0.51	0.56	-0.01	-0.05
	Gen	-0.04	-0.01	0.17	0.26	-0.13	0.01	-0.22	0.24	0.25	0.73	0.04	-0.19
040214	Hist	0.67	-0.90	0.40	-0.07	0.67	0.41	-1.78	-0.30	1.04	0.17	0.55	0.11
	Gen	-0.04	-0.07	0.06	0.25	0.20	0.09	-0.30	0.21	0.61	0.15	-0.08	-0.26
066037	Hist	-0.02	0.54	-0.36	-0.05	-0.61	0.76	0.19	0.81	0.35	0.94	0.06	0.41
	Gen	-0.07	0.28	-0.17	0.07	-0.22	0.21	0.15	0.75	-0.15	0.54	-0.14	0.62
A86071	Hist	0.45	-0.38	0.55	0.46	0.29	0.89	1.64	0.98	-0.07	-0.84	0.77	-0.22
	Gen	-0.02	-0.16	0.37	0.40	0.45	0.78	1.12	0.62	-0.15	0.05	0.06	-0.01
B86071	Hist	0.02	0.47	-0.48	-0.17	0.39	0.06	0.06	0.52	0.19	-0.10	0.44	-0.13
	Gen	0.24	0.07	0.48	0.01	0.11	0.11	0.25	0.35	0.16	-0.30	0.06	-0.27
094029	Hist	-0.21	0.29	0.55	-0.18	0.44	0.16	0.62	0.20	-0.26	-1.13	-0.11	-0.57
	Gen	-0.77	-0.40	0.19	-0.23	0.51	0.09	-0.01	0.61	-0.31	-0.44	0.08	-0.29

Table B17. Comparison of historical and generated correlation between monthly maximum temperature.

Station		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
003003	Hist	-0.01	0.50	0.04	0.35	0.27	0.50	0.45	0.43	0.37	0.21	0.32	0.43
	Gen	0.00	0.52	0.13	0.52	0.36	0.52	0.60	0.51	0.40	0.02	0.23	0.50
009034	Hist	0.32	-0.55	0.20	0.20	-0.01	0.18	0.45	0.44	0.12	0.02	-0.05	0.09
	Gen	0.02	-0.53	0.12	-0.18	-0.16	0.07	0.44	0.48	0.13	0.20	-0.09	0.03
012038	Hist	0.24	0.22	0.21	0.35	0.33	0.24	0.44	0.33	0.37	0.27	-0.10	0.36
	Gen	0.08	0.17	0.28	0.29	0.38	0.20	0.49	0.35	0.38	0.02	0.06	0.43
014015	Hist	-0.03	0.61	0.07	0.28	0.43	0.47	0.46	0.57	0.46	0.28	0.22	0.15
	Gen	0.02	0.62	-0.09	0.24	0.44	0.39	0.30	0.43	0.47	0.33	0.43	0.32
015590	Hist	0.17	0.47	0.48	0.34	0.27	-0.02	0.14	0.16	0.15	0.28	0.23	0.47
	Gen	0.20	0.37	0.36	0.37	0.28	-0.02	0.08	0.23	-0.02	0.26	0.15	0.56
039104	Hist	0.49	0.52	0.37	0.59	0.51	0.49	0.44	0.45	0.48	0.52	0.56	0.23
	Gen	0.20	0.53	0.33	0.65	0.43	0.54	0.46	0.49	0.52	0.37	0.48	0.35
040214	Hist	0.87	0.37	0.35	0.60	0.12	0.17	0.12	0.18	0.45	0.60	0.70	0.09
	Gen	0.26	0.43	0.74	0.49	0.29	0.27	-0.06	-0.03	0.37	0.52	0.59	0.17
066037	Hist	0.47	0.53	0.24	0.02	-0.11	-0.51	0.21	-0.13	0.17	0.36	0.02	0.25
	Gen	0.18	0.50	0.24	0.16	0.18	-0.21	0.38	0.01	0.11	0.14	-0.08	0.39
A86071	Hist	0.11	0.10	-0.03	-0.20	-0.03	-0.04	0.29	-0.46	0.01	0.36	0.07	0.03
	Gen	0.02	0.09	0.16	-0.22	-0.12	0.05	0.41	-0.52	-0.22	0.02	0.22	0.41
B86071	Hist	0.36	0.36	-0.01	0.16	0.34	0.02	0.42	-0.10	0.35	0.17	0.20	0.31
	Gen	0.17	0.28	0.03	0.46	0.37	0.22	0.41	0.05	0.26	0.03	0.31	0.56
094029	Hist	0.16	0.09	-0.29	-0.13	0.53	0.09	0.48	-0.13	0.26	0.36	0.21	-0.18
	Gen	0.23	0.43	0.09	0.13	0.64	0.17	0.34	-0.19	0.25	0.22	0.24	0.09

Table B18. Comparison of historical and generated maximum monthly maximum temperature.

Station		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
003003	Hist	1.092	1.123	1.101	1.148	1.048	0.989	0.974	1.002	1.048	1.098	1.092	1.098
	Gen	1.084	1.089	1.118	1.156	1.051	0.974	0.964	0.997	1.052	1.106	1.100	1.110
009034	Hist	1.379	1.466	1.321	1.181	0.994	0.862	0.820	0.824	0.932	0.978	1.135	1.263
	Gen	1.395	1.459	1.289	1.139	0.965	0.860	0.820	0.827	0.930	0.986	1.149	1.259
012038	Hist	1.425	1.421	1.321	1.179	0.948	0.782	0.813	0.861	1.008	1.131	1.274	1.433
	Gen	1.473	1.420	1.306	1.164	0.932	0.792	0.782	0.833	0.992	1.118	1.251	1.426
014015	Hist	1.019	1.019	1.032	1.060	1.044	1.010	1.010	1.026	1.044	1.069	1.069	1.054
	Gen	1.030	1.027	1.032	1.066	1.039	0.999	0.995	1.019	1.053	1.066	1.081	1.065
015590	Hist	1.361	1.354	1.264	1.080	0.941	0.819	0.792	0.906	1.056	1.191	1.281	1.323
	Gen	1.371	1.349	1.265	1.076	0.914	0.802	0.783	0.885	1.051	1.211	1.289	1.356
039104	Hist	1.261	1.247	1.155	1.082	0.983	0.854	0.814	0.909	1.100	1.243	1.221	1.287
	Gen	1.268	1.233	1.169	1.091	0.948	0.855	0.823	0.906	1.045	1.212	1.209	1.290
040214	Hist	1.217	1.182	1.155	1.081	0.973	0.868	0.837	0.895	1.054	1.043	1.128	1.229
	Gen	1.204	1.197	1.156	1.080	0.964	0.866	0.830	0.898	1.021	1.029	1.111	1.219
066037	Hist	1.313	1.326	1.219	1.134	0.959	0.874	0.829	0.927	1.062	1.210	1.160	1.295
	Gen	1.303	1.308	1.222	1.142	0.972	0.854	0.829	0.917	1.022	1.155	1.161	1.295
A86071	Hist	1.496	1.376	1.321	1.116	0.936	0.781	0.791	0.886	0.961	1.056	1.236	1.311
	Gen	1.456	1.411	1.306	1.089	0.935	0.758	0.775	0.870	0.919	1.076	1.203	1.286
B86071	Hist	1.455	1.500	1.306	1.147	0.919	0.794	0.770	0.854	0.958	1.068	1.182	1.326
	Gen	1.439	1.481	1.351	1.130	0.950	0.802	0.757	0.848	0.947	1.069	1.190	1.298
094029	Hist	1.434	1.416	1.300	1.138	0.975	0.818	0.795	0.911	1.004	1.097	1.207	1.248
	Gen	1.391	1.373	1.306	1.146	0.965	0.818	0.775	0.905	0.970	1.098	1.213	1.253

Table B19. Comparison of historical and generated minimum monthly maximum temperature.

Station		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
003003	Hist	0.955	0.974	0.980	0.949	0.896	0.843	0.818	0.858	0.899	0.905	0.967	0.998
	Gen	0.974	0.953	0.991	0.991	0.897	0.838	0.815	0.877	0.910	0.935	0.979	0.985
009034	Hist	1.131	1.131	1.110	0.965	0.849	0.708	0.696	0.721	0.775	0.833	0.957	1.011
	Gen	1.123	1.136	1.109	0.978	0.836	0.716	0.693	0.727	0.774	0.829	0.935	1.013
012038	Hist	1.183	1.079	0.972	0.813	0.718	0.603	0.552	0.635	0.702	0.849	1.016	1.099
	Gen	1.195	1.097	0.988	0.840	0.723	0.593	0.547	0.641	0.740	0.876	1.008	1.108
014015	Hist	0.938	0.941	0.926	0.982	0.960	0.910	0.913	0.948	0.960	1.016	1.013	0.963
	Gen	0.949	0.933	0.937	0.984	0.966	0.912	0.913	0.945	0.976	1.008	1.000	0.956
015590	Hist	1.066	1.049	0.955	0.812	0.688	0.545	0.573	0.663	0.792	0.951	1.083	1.111
	Gen	1.093	1.084	0.978	0.803	0.692	0.557	0.587	0.713	0.834	0.939	1.068	1.097
039104	Hist	1.052	1.034	1.038	0.953	0.825	0.708	0.678	0.752	0.858	0.931	1.038	1.107
	Gen	1.079	1.065	1.044	0.949	0.825	0.694	0.692	0.755	0.862	0.941	1.028	1.078
040214	Hist	1.105	1.066	1.085	0.996	0.895	0.787	0.740	0.810	0.888	0.938	1.019	1.078
	Gen	1.094	1.070	1.074	0.992	0.886	0.782	0.751	0.815	0.906	0.944	1.013	1.053
066037	Hist	1.080	1.116	1.039	0.941	0.842	0.730	0.685	0.762	0.820	0.896	0.968	1.066
	Gen	1.097	1.100	1.039	0.930	0.837	0.726	0.690	0.757	0.806	0.915	0.958	1.063
A86071	Hist	1.171	1.246	1.086	0.941	0.831	0.661	0.641	0.686	0.761	0.846	0.996	1.081
	Gen	1.156	1.216	1.110	0.940	0.821	0.661	0.643	0.690	0.770	0.878	0.993	1.099
B86071	Hist	1.117	1.207	1.063	0.899	0.819	0.675	0.631	0.680	0.750	0.899	1.018	1.033
	Gen	1.154	1.158	1.103	0.914	0.786	0.666	0.640	0.679	0.776	0.886	0.986	1.024
094029	Hist	1.120	1.190	1.074	0.958	0.807	0.633	0.627	0.644	0.737	0.818	0.963	1.021
	Gen	1.126	1.140	1.057	0.959	0.805	0.621	0.636	0.671	0.775	0.863	0.957	1.061

Table B20. Comparison of historical and generated cross correlation between monthly rainfall and evaporation.

Station		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
003003	Hist	-0.52	-0.59	-0.47	-0.56	-0.53	-0.28	-0.33	-0.04	-0.19	0.30	-0.31	-0.44
	Gen	-0.53	-0.50	-0.47	-0.51	-0.67	-0.36	-0.23	-0.31	-0.28	-0.20	-0.09	-0.59
009034	Hist	-0.50	-0.61	-0.69	-0.44	-0.30	0.13	0.15	-0.17	-0.16	-0.24	-0.59	-0.46
	Gen	-0.35	-0.60	-0.41	-0.20	-0.09	0.09	-0.03	-0.06	-0.33	-0.26	-0.36	-0.27
012038	Hist	-0.39	-0.52	-0.56	-0.75	-0.59	-0.53	-0.58	-0.35	-0.60	-0.60	-0.58	-0.56
	Gen	-0.40	-0.56	-0.64	-0.65	-0.61	-0.65	-0.64	-0.35	-0.46	-0.44	-0.51	-0.49
014015	Hist	-0.23	-0.66	-0.51	-0.66	-0.21	-0.38	-0.16	-0.04	0.06	-0.49	-0.61	-0.53
	Gen	-0.18	-0.58	-0.52	-0.58	-0.24	-0.28	0.01	-0.11	-0.05	-0.45	-0.60	-0.46
015590	Hist	-0.59	-0.73	-0.43	-0.39	-0.28	-0.11	-0.53	-0.48	-0.64	-0.52	-0.51	-0.67
	Gen	-0.52	-0.72	-0.38	-0.50	-0.25	-0.31	-0.45	-0.48	-0.51	-0.50	-0.55	-0.63
039104	Hist	-0.53	-0.36	-0.78	-0.44	-0.39	-0.01	-0.28	-0.40	-0.68	-0.60	-0.43	-0.57
	Gen	-0.51	-0.30	-0.68	-0.36	-0.47	-0.12	-0.24	-0.53	-0.48	-0.43	-0.40	-0.42
040214	Hist	-0.27	-0.37	-0.76	-0.48	-0.37	-0.47	-0.16	-0.50	-0.78	-0.26	-0.24	-0.44
	Gen	-0.21	-0.22	-0.70	-0.35	-0.50	-0.35	-0.21	-0.26	-0.66	-0.27	-0.14	-0.41
066037	Hist	-0.26	-0.62	-0.44	-0.48	-0.25	0.27	-0.57	-0.32	-0.29	-0.64	-0.56	-0.54
	Gen	-0.26	-0.61	-0.41	-0.53	-0.33	0.15	-0.53	-0.35	-0.21	-0.60	-0.41	-0.50
A86071	Hist	0.16	0.37	-0.54	-0.56	-0.50	-0.08	0.01	-0.80	-0.56	-0.83	-0.34	-0.55
	Gen	0.01	-0.40	-0.08	-0.48	-0.50	0.00	-0.02	-0.81	-0.61	-0.74	-0.25	-0.07
B86071	Hist	-0.49	-0.55	-0.14	-0.53	0.03	-0.41	0.08	-0.12	-0.43	-0.66	-0.06	-0.37
	Gen	-0.33	-0.44	-0.17	-0.40	0.03	-0.34	0.07	-0.24	-0.35	-0.57	-0.22	-0.30
094029	Hist	-0.45	-0.27	-0.09	-0.18	-0.08	-0.08	0.29	-0.51	-0.42	-0.26	-0.57	-0.46
	Gen	-0.25	-0.27	-0.09	-0.19	-0.08	-0.23	0.15	-0.37	-0.48	-0.26	-0.48	-0.32

Table B21. Comparison of historical and generated cross correlation between monthly rainfall and maximum temperature.

Station		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
003003	Hist	-0.61	-0.63	-0.62	-0.68	-0.58	-0.06	-0.21	-0.33	-0.11	0.00	0.02	-0.16
	Gen	-0.35	-0.58	-0.58	-0.59	-0.68	-0.10	-0.16	-0.51	0.03	0.10	-0.19	-0.17
009034	Hist	-0.48	-0.52	-0.50	-0.15	-0.55	-0.18	-0.43	-0.36	-0.45	-0.44	-0.49	-0.19
	Gen	-0.37	-0.56	-0.38	-0.15	-0.18	-0.25	-0.32	-0.23	-0.47	-0.48	-0.45	-0.25
012038	Hist	-0.53	-0.42	-0.47	-0.63	-0.42	-0.50	-0.49	-0.38	-0.65	-0.50	-0.39	-0.38
	Gen	-0.50	-0.54	-0.51	-0.53	-0.44	-0.63	-0.56	-0.43	-0.51	-0.38	-0.33	-0.34
014015	Hist	-0.73	-0.53	-0.76	-0.75	-0.14	0.17	0.00	0.14	-0.03	-0.20	-0.66	-0.71
	Gen	-0.67	-0.49	-0.77	-0.56	-0.23	0.03	0.01	0.14	-0.06	-0.41	-0.65	-0.71
015590	Hist	-0.52	-0.71	-0.43	-0.47	-0.32	-0.19	-0.49	-0.37	-0.52	-0.55	-0.44	-0.70
	Gen	-0.53	-0.63	-0.40	-0.58	-0.31	-0.29	-0.29	-0.42	-0.47	-0.51	-0.51	-0.62
039104	Hist	-0.39	-0.28	-0.67	-0.58	-0.44	-0.17	-0.37	-0.50	-0.74	-0.34	-0.37	-0.51
	Gen	-0.26	-0.26	-0.53	-0.52	-0.56	-0.31	-0.41	-0.56	-0.69	-0.34	-0.39	-0.51
040214	Hist	-0.11	-0.12	-0.73	-0.41	0.05	-0.37	-0.65	-0.71	-0.76	-0.02	-0.09	-0.46
	Gen	0.08	-0.16	-0.07	-0.25	-0.28	-0.05	-0.25	-0.47	-0.66	-0.10	0.22	-0.64
066037	Hist	-0.32	-0.50	-0.07	-0.27	-0.42	0.09	-0.18	-0.34	-0.46	-0.60	-0.18	-0.56
	Gen	-0.34	-0.52	0.00	-0.36	-0.29	0.11	-0.10	-0.29	-0.44	-0.65	-0.17	-0.49
A86071	Hist	0.20	0.06	-0.39	-0.30	0.10	-0.62	-0.08	-0.84	-0.67	-0.36	-0.25	-0.50
	Gen	0.15	-0.14	-0.03	-0.37	-0.05	-0.58	-0.14	-0.91	-0.51	-0.58	-0.21	-0.14
B86071	Hist	0.08	-0.19	-0.17	-0.41	-0.24	0.28	-0.39	-0.21	-0.44	-0.54	-0.29	-0.13
	Gen	0.05	-0.18	-0.21	-0.32	-0.22	0.14	-0.18	-0.29	-0.41	-0.59	-0.35	-0.10
094029	Hist	-0.29	-0.17	-0.19	-0.14	-0.15	-0.17	-0.10	-0.76	-0.49	-0.38	-0.24	-0.35
	Gen	-0.17	-0.16	-0.25	-0.11	-0.19	-0.14	-0.19	-0.71	-0.47	-0.45	-0.45	-0.32

Table B22. Comparison of historical and generated cross correlation between monthly evaporation and maximum temperature.

Station		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
003003	Hist	0.62	0.71	0.56	0.70	0.52	0.19	0.23	0.25	0.26	0.32	0.10	0.44
	Gen	0.33	0.60	0.51	0.63	0.69	0.45	0.44	0.43	0.30	0.35	0.16	0.34
009034	Hist	0.74	0.71	0.56	0.76	0.66	-0.07	0.40	0.53	0.22	0.58	0.64	0.76
	Gen	0.70	0.68	0.53	0.52	0.63	0.18	0.47	0.54	0.51	0.48	0.50	0.57
012038	Hist	0.66	0.87	0.88	0.81	0.85	0.77	0.80	0.75	0.80	0.82	0.71	0.79
	Gen	0.66	0.80	0.83	0.84	0.85	0.84	0.86	0.72	0.78	0.74	0.62	0.73
014015	Hist	0.62	0.54	0.77	0.73	0.45	-0.16	-0.15	0.26	0.29	0.14	0.56	0.77
	Gen	0.40	0.35	0.68	0.66	0.37	-0.02	-0.04	0.31	0.40	0.36	0.59	0.58
015590	Hist	0.78	0.78	0.88	0.76	0.73	0.65	0.61	0.57	0.74	0.85	0.60	0.75
	Gen	0.79	0.77	0.85	0.80	0.77	0.58	0.56	0.66	0.59	0.80	0.69	0.80
039104	Hist	0.89	0.92	0.86	0.81	0.69	0.40	0.36	0.37	0.83	0.81	0.87	0.80
	Gen	0.83	0.80	0.72	0.73	0.67	0.56	0.56	0.56	0.75	0.76	0.83	0.80
040214	Hist	0.50	0.62	0.81	0.34	0.71	-0.25	0.31	0.53	0.73	0.63	0.72	0.82
	Gen	0.56	0.84	0.50	0.51	0.70	-0.03	0.63	0.64	0.71	0.48	0.61	0.79
066037	Hist	0.63	0.72	0.52	0.46	0.44	-0.05	0.09	0.30	0.73	0.85	0.70	0.66
	Gen	0.60	0.59	0.54	0.63	0.46	-0.20	0.18	0.34	0.71	0.77	0.58	0.62
A86071	Hist	0.57	0.20	0.67	0.63	0.24	0.36	0.80	0.82	0.75	0.50	0.50	0.62
	Gen	0.62	-0.02	0.55	0.65	0.49	0.47	0.65	0.85	0.58	0.62	0.60	0.60
B86071	Hist	0.33	0.60	0.53	0.53	0.56	0.38	0.28	0.33	0.84	0.45	0.39	0.72
	Gen	0.42	0.59	0.50	0.58	0.50	0.45	0.22	0.38	0.73	0.58	0.26	0.52
094029	Hist	0.63	0.58	0.58	0.60	0.51	0.63	0.58	0.70	0.85	0.82	0.61	0.78
	Gen	0.59	0.54	0.61	0.50	0.55	0.49	0.61	0.63	0.79	0.75	0.69	0.69

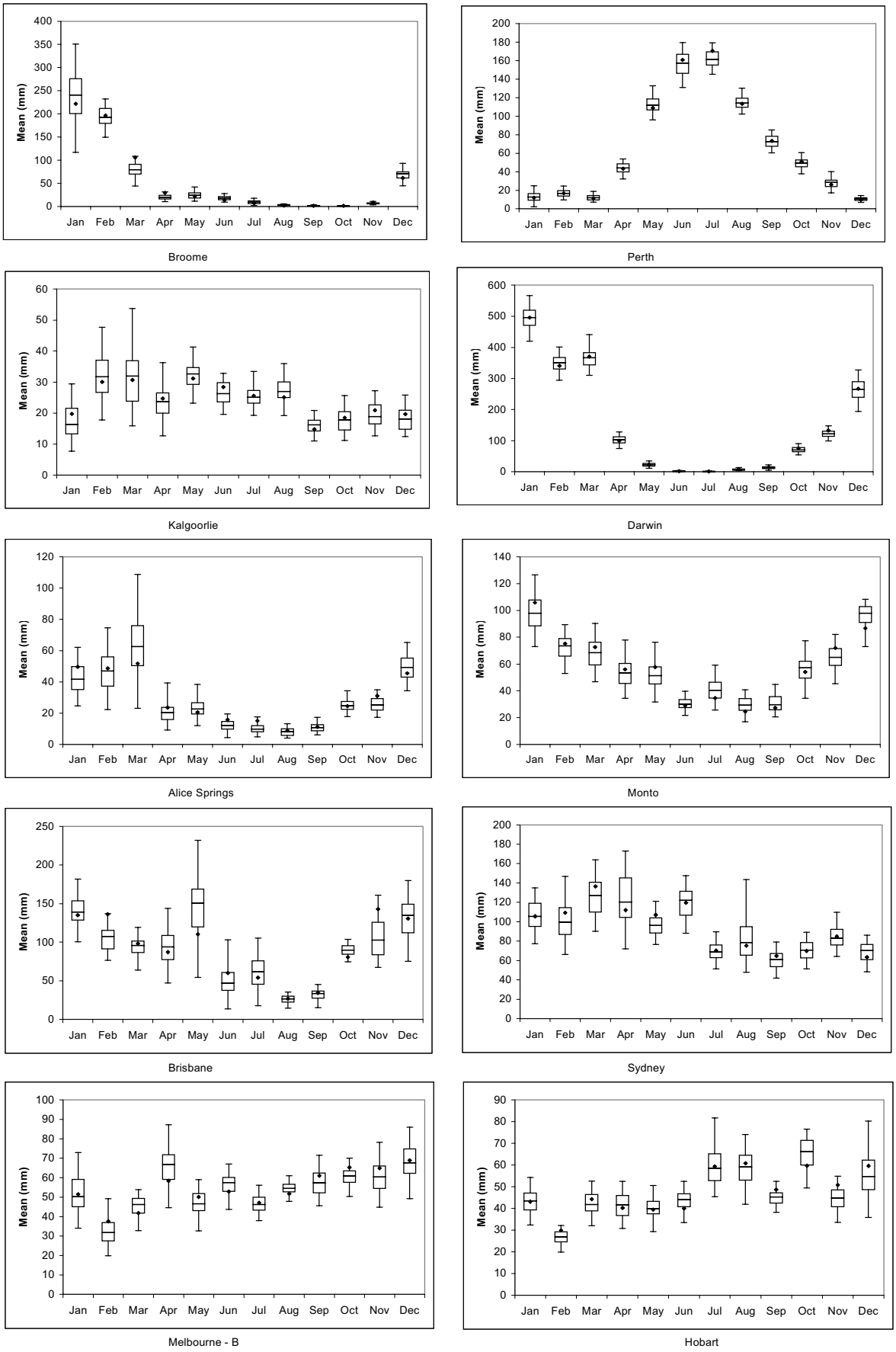


Figure B1. Comparison of historical and generated mean monthly rainfall.

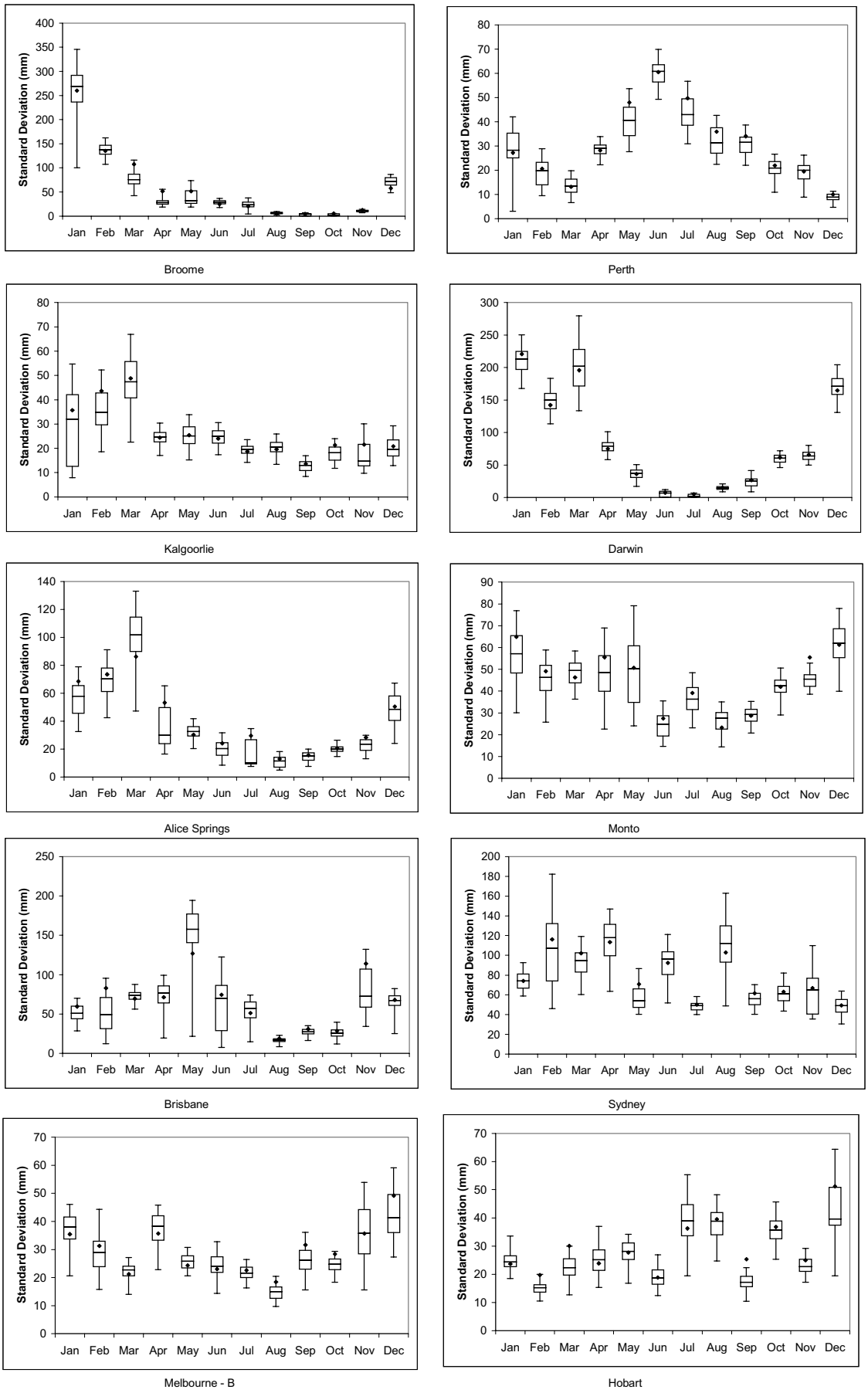


Figure B2. Comparison of historical and generated standard deviation of monthly rainfall.

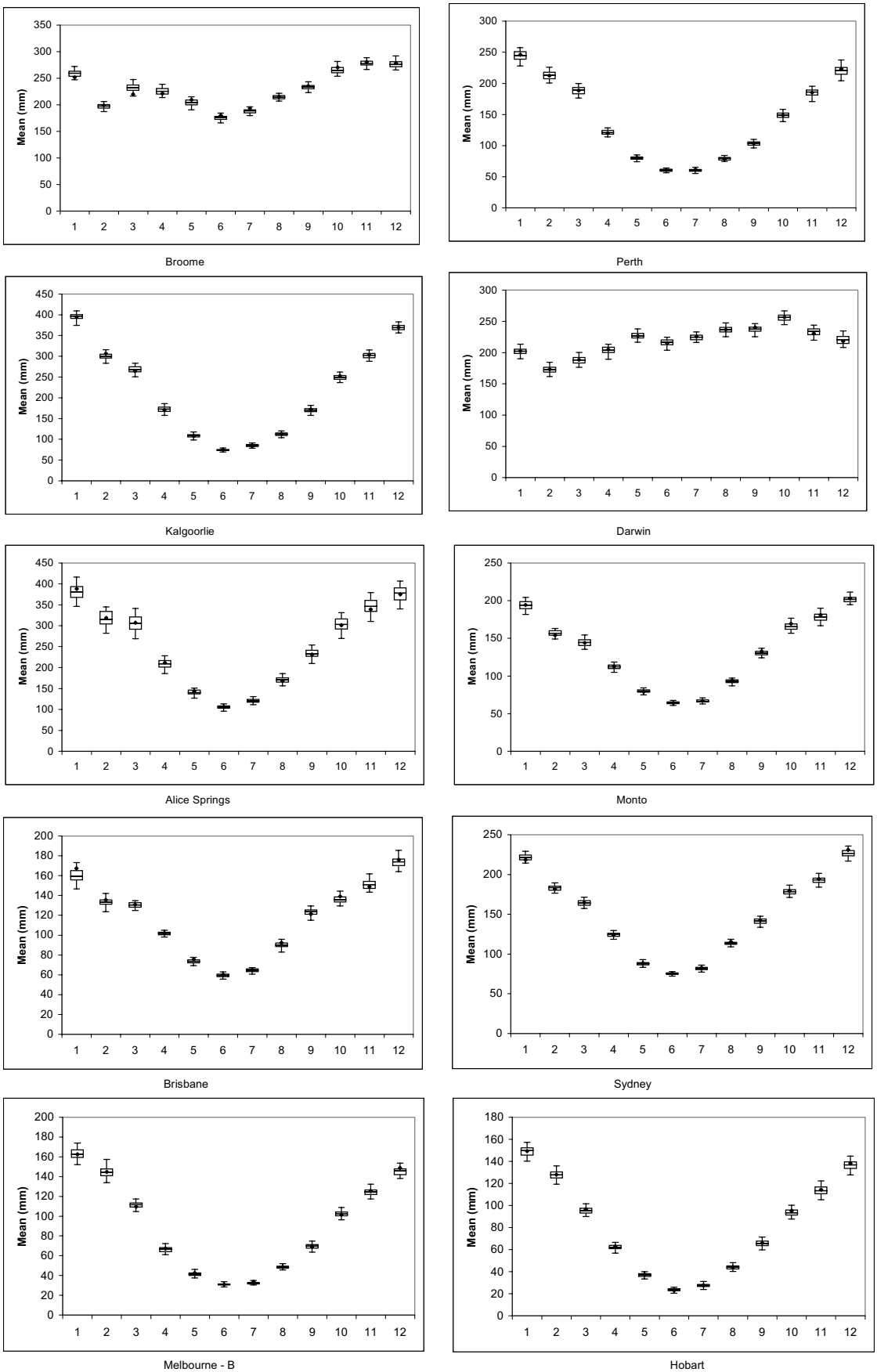


Figure B3. Comparison of historical and generated mean monthly evaporation.

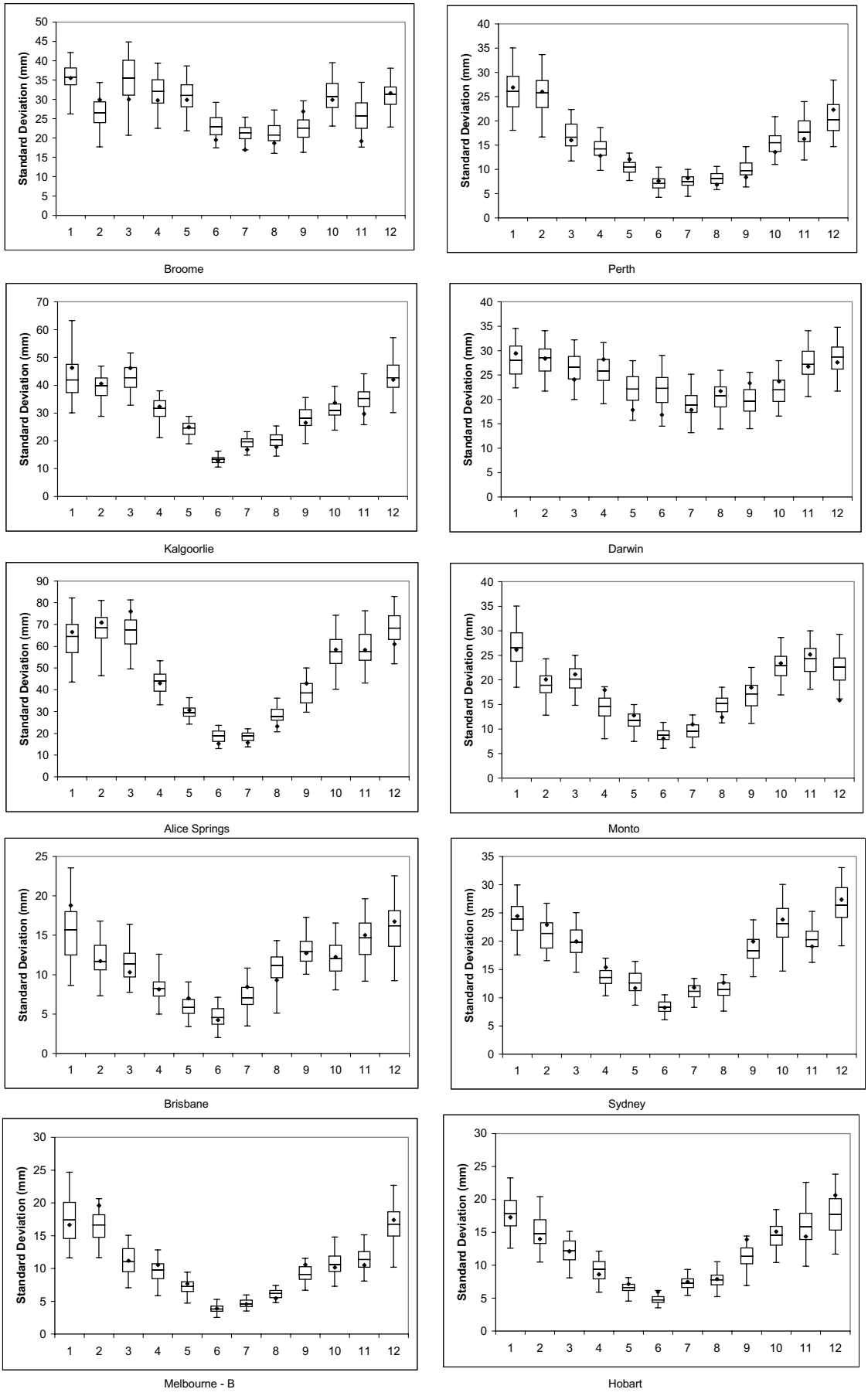


Figure B4. Comparison of historical and generated standard deviation of monthly evaporation.

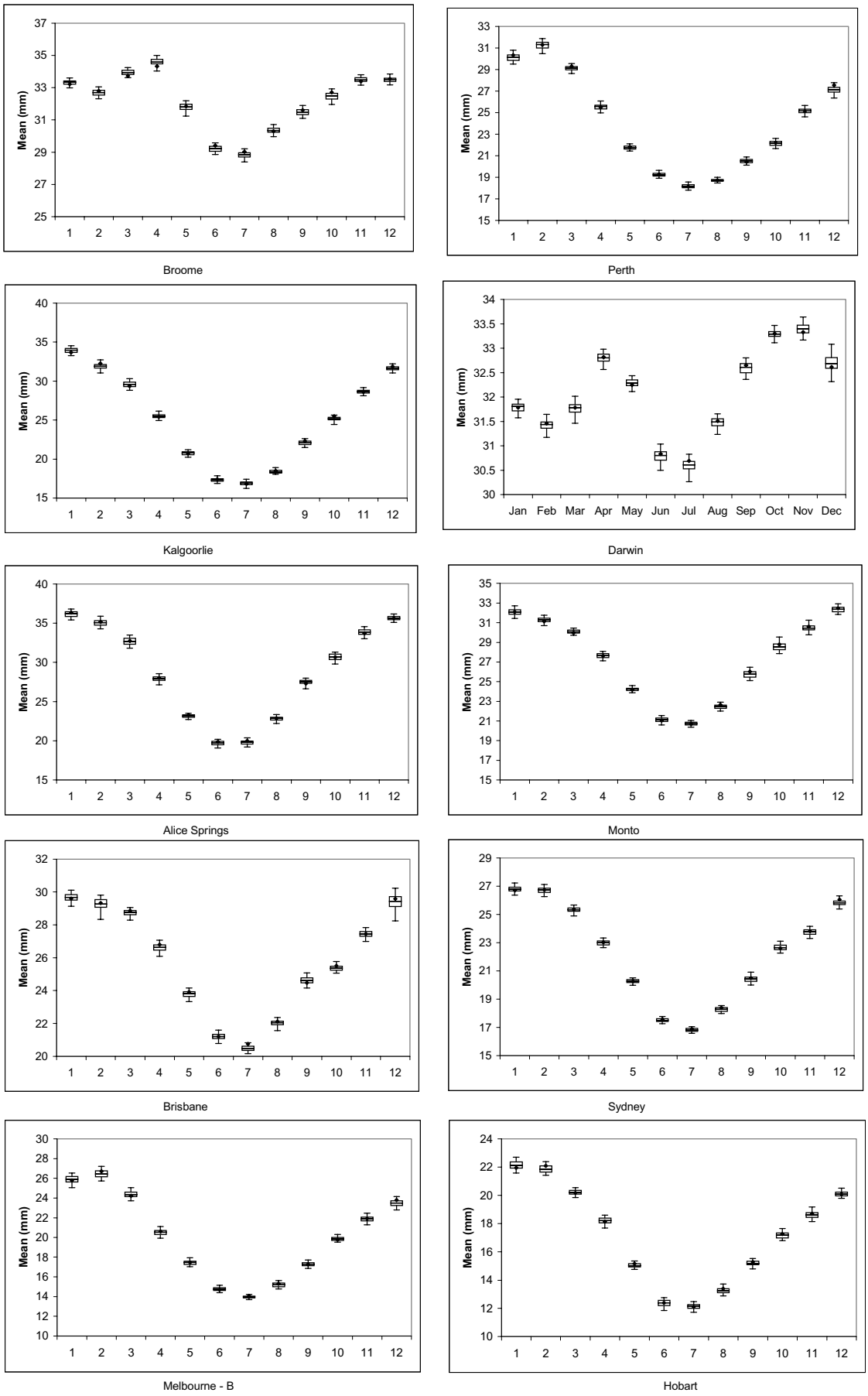


Figure B5. Comparison of historical and generated mean monthly maximum temperature.

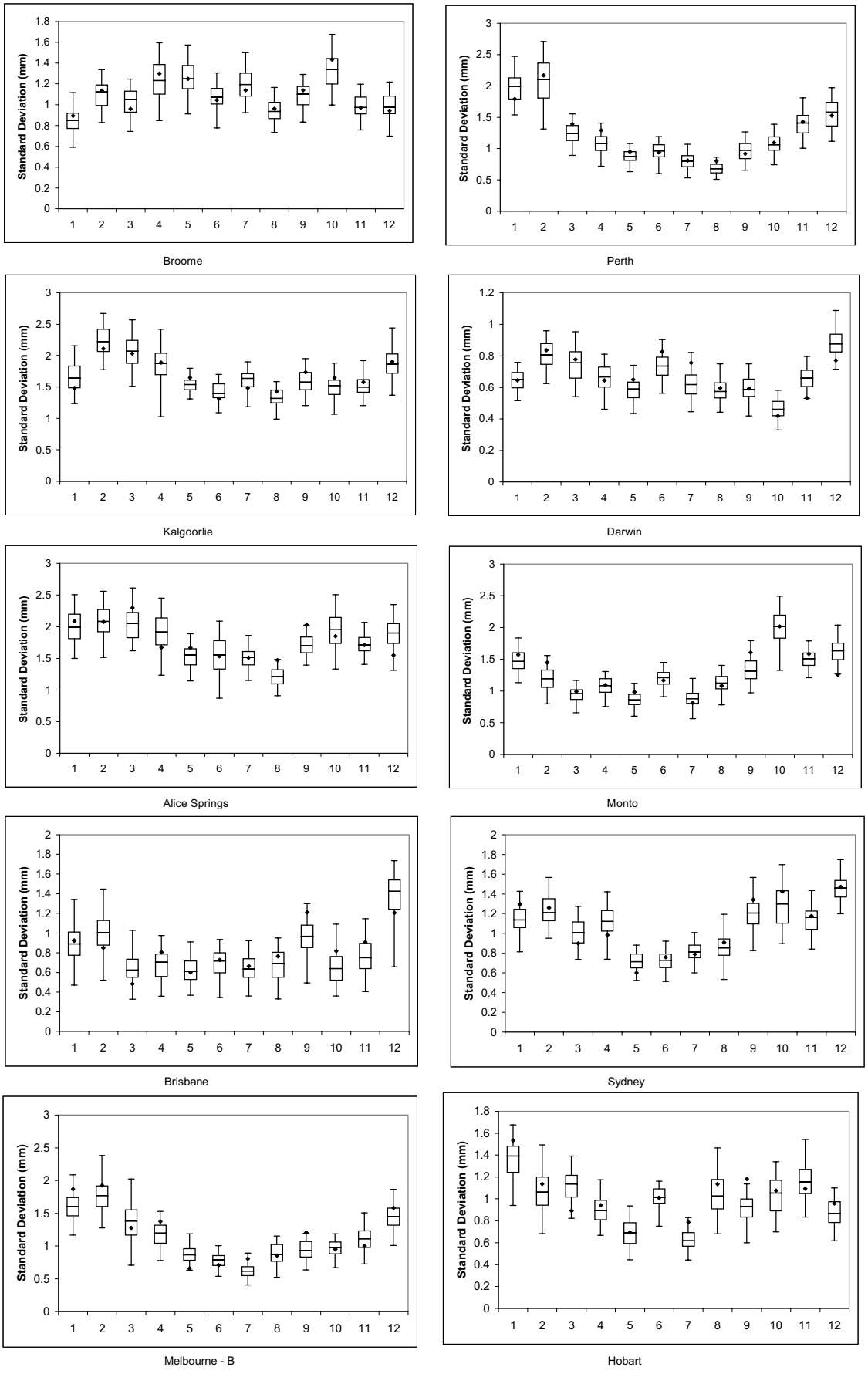


Figure B6. Comparison of historical and generated standard deviation of monthly maximum temperature.

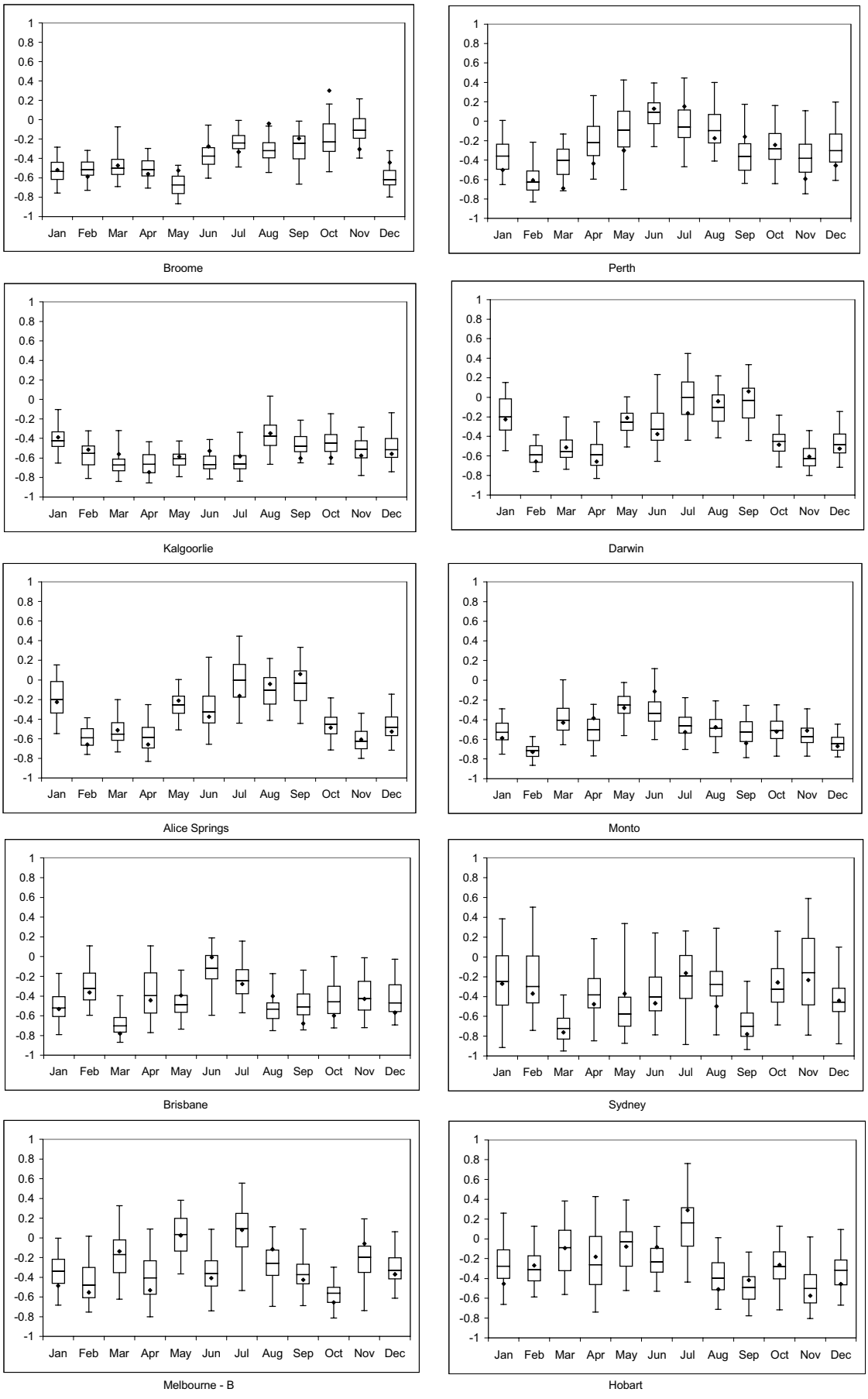


Figure B7. Comparison of cross correlation between monthly rainfall and evaporation.

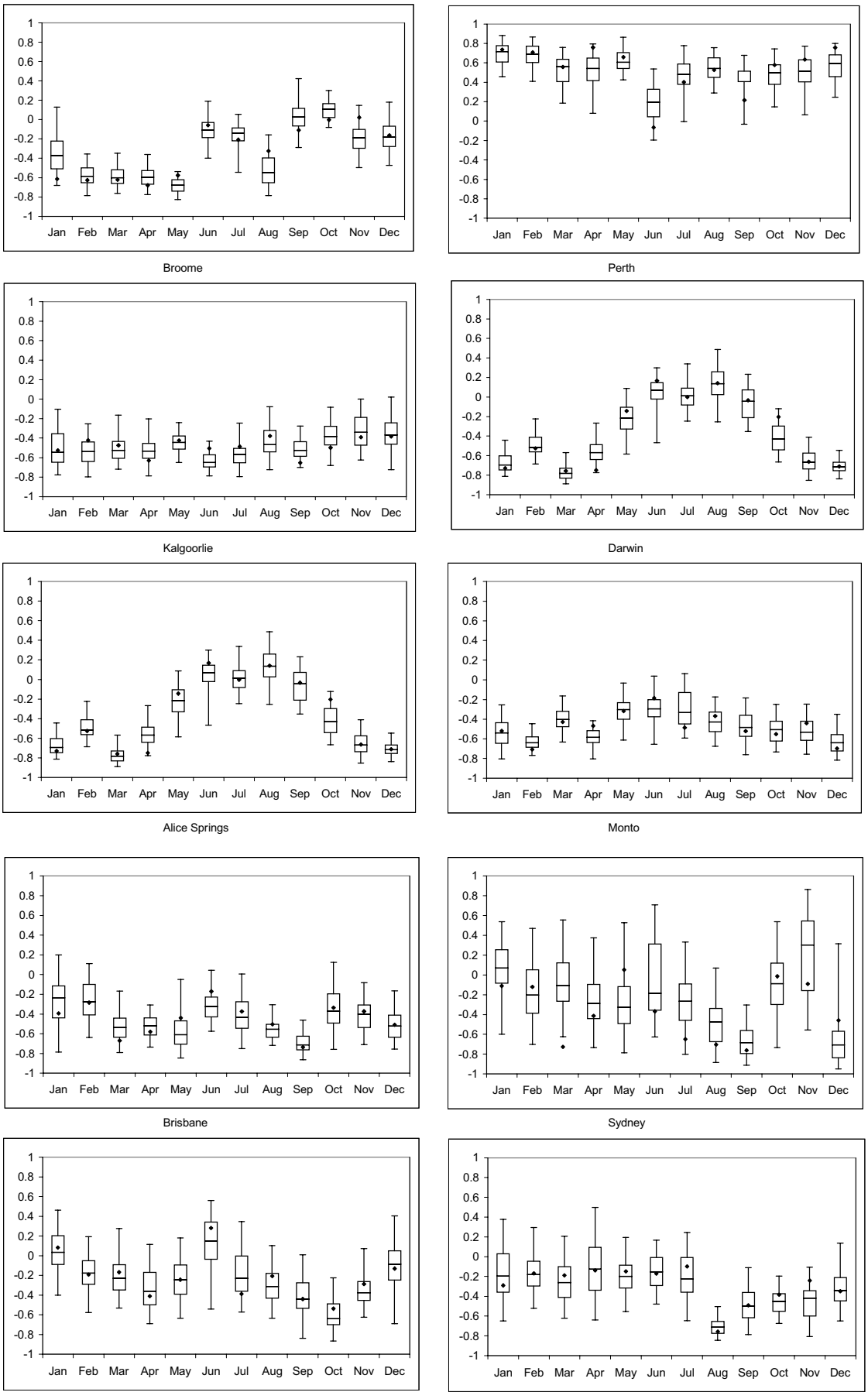


Figure B8. Comparison of cross correlation between monthly rainfall and maximum temperature.

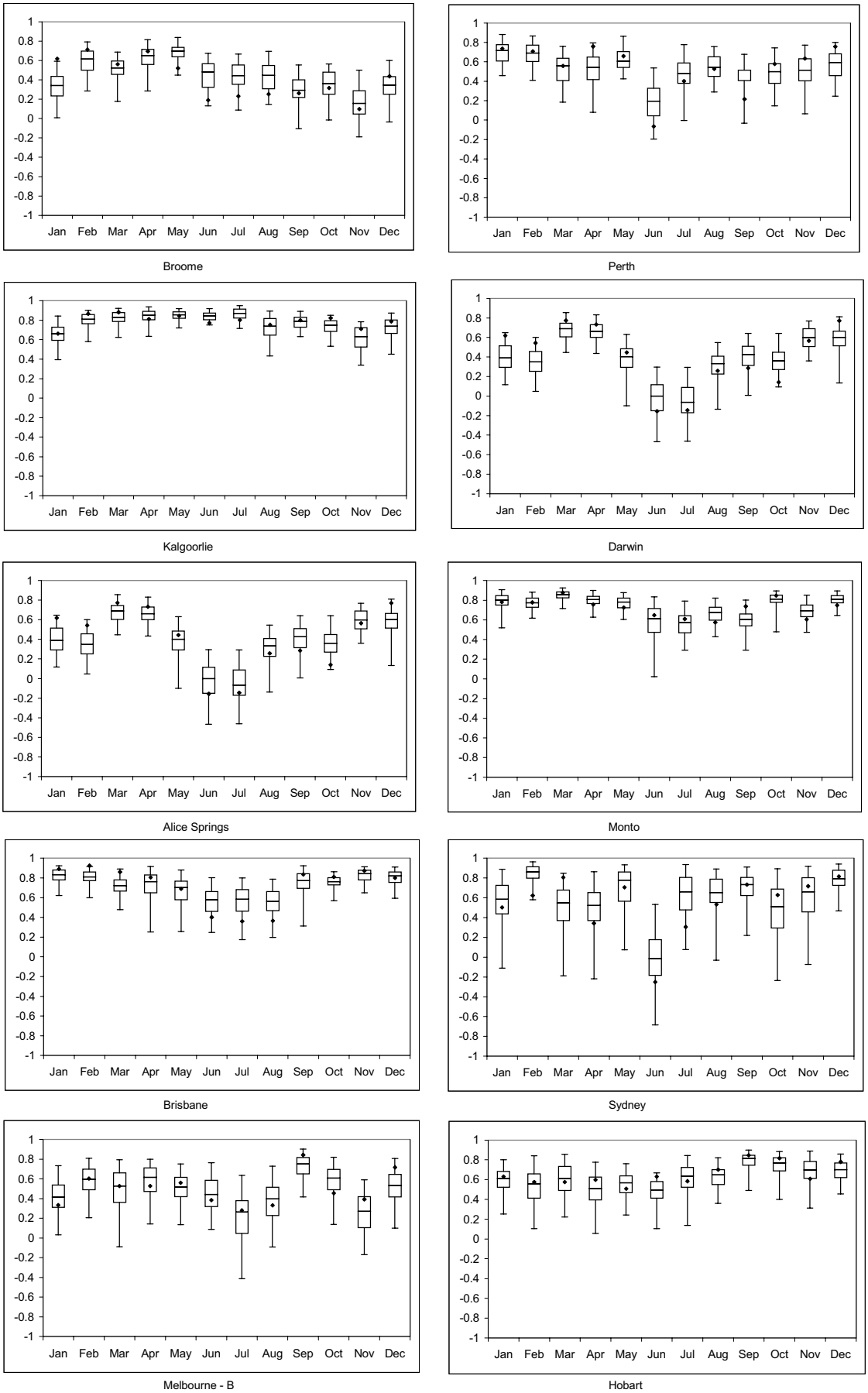


Figure B9. Comparison of cross correlation between monthly evaporation and maximum temperature.

Appendix C – Daily Model Results

Table C1. Comparison of historical and generated mean daily rainfall.

Station		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
003003	Hist	19.32	15.85	13.34	10.40	8.89	6.90	3.85	0.71	0.52	2.44	7.00	9.89
	Gen	24.43	16.40	14.97	16.03	13.51	8.19	6.14	1.23	1.04	3.45	6.72	10.25
009034	Hist	4.40	5.91	2.76	5.80	8.32	9.83	9.30	7.13	5.68	5.33	3.73	2.63
	Gen	7.78	5.81	3.07	5.79	8.22	9.64	9.28	7.21	5.74	5.26	3.99	3.00
012038	Hist	5.06	7.26	6.44	4.46	4.19	3.30	2.92	3.39	2.72	4.14	4.64	4.47
	Gen	7.29	8.69	9.12	4.93	4.29	3.55	3.04	3.56	2.94	4.72	4.72	5.03
014015	Hist	22.06	16.51	18.33	10.32	10.72	3.09	2.96	10.46	5.83	10.41	10.97	16.20
	Gen	22.17	16.47	18.59	10.94	13.79	5.06	3.95	9.90	8.48	10.66	11.00	16.60
015590	Hist	8.97	9.74	13.61	8.44	6.39	5.67	5.65	3.78	3.96	4.32	5.14	7.38
	Gen	11.71	12.83	17.57	13.56	7.67	6.87	9.03	4.44	4.99	4.81	5.63	8.77
039104	Hist	10.19	7.74	7.98	8.45	7.25	5.83	5.96	5.16	6.66	7.73	8.45	10.23
	Gen	10.19	7.68	8.12	9.21	8.01	5.93	6.88	5.55	7.56	7.89	8.73	11.08
040214	Hist	10.75	8.89	8.14	10.30	10.15	10.12	7.91	4.44	5.35	7.80	12.45	11.23
	Gen	10.60	9.27	8.69	10.58	11.92	13.19	8.27	4.64	6.25	7.81	14.42	11.17
066037	Hist	9.13	9.43	10.79	10.76	8.54	11.58	7.53	9.13	7.13	6.52	7.19	6.29
	Gen	9.36	11.75	11.09	12.88	8.81	12.08	7.67	12.49	8.16	7.31	7.58	6.69
B86071	Hist	5.47	5.70	4.48	5.23	3.92	3.66	3.06	3.29	4.14	4.51	5.48	6.65
	Gen	5.70	5.86	4.54	5.39	3.90	3.65	3.01	3.29	4.20	4.52	5.40	6.93
094029	Hist	4.14	3.79	3.66	3.40	3.17	3.07	3.91	4.12	3.35	4.14	3.81	4.65
	Gen	4.16	3.82	3.92	3.39	3.27	3.05	3.95	4.19	3.37	4.28	3.75	5.05

Table C2. Comparison of historical and generated standard deviation of daily rainfall.

Station		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
003003	Hist	42.53	23.59	21.31	20.53	19.53	12.02	13.92	1.76	1.44	3.83	9.27	14.2
	Gen	56.12	25.96	25.21	25.70	27.49	13.32	14.40	2.55	2.56	4.55	8.16	15.2
009034	Hist	10.82	10.33	4.71	8.58	9.69	10.87	11.23	8.01	7.08	7.28	4.89	4.1
	Gen	15.79	9.28	5.05	8.25	9.50	10.71	11.09	7.92	7.26	6.82	5.23	4.2
012038	Hist	12.97	13.05	11.07	6.30	6.55	4.86	4.56	5.92	3.79	6.58	8.37	6.0
	Gen	16.78	15.35	15.92	7.11	6.75	5.51	4.85	6.04	4.24	7.56	8.17	7.0
014015	Hist	29.72	20.31	27.45	17.88	17.22	7.47	5.29	15.71	8.84	16.10	14.79	28.2
	Gen	31.57	21.40	29.39	18.92	20.48	7.68	5.64	12.90	12.81	17.06	15.01	30.0
015590	Hist	14.85	17.11	29.99	14.77	9.18	10.97	11.32	5.18	5.21	6.66	7.70	14.3
	Gen	20.22	22.49	35.88	23.02	11.23	12.84	15.36	6.07	6.57	7.32	8.69	16.7
039104	Hist	14.34	12.13	13.83	11.62	11.57	12.10	9.77	8.72	8.68	9.63	10.89	14.9
	Gen	14.34	11.99	13.31	13.38	13.36	10.64	11.33	8.96	9.81	10.23	12.03	15.9
040214	Hist	18.10	14.93	11.65	22.60	21.17	17.91	16.05	4.98	6.70	12.56	24.54	14.5
	Gen	17.09	16.09	13.42	21.08	24.88	23.04	16.51	5.39	8.07	11.27	26.60	14.6
066037	Hist	15.92	22.13	19.66	16.97	13.16	16.85	11.39	21.53	13.89	11.81	12.78	8.9
	Gen	16.88	28.29	21.48	22.12	14.27	18.55	11.85	29.11	16.44	14.05	14.42	10.2
B86071	Hist	9.26	9.18	6.88	8.14	5.67	5.28	4.47	4.05	5.13	6.98	8.10	11.4
	Gen	9.47	9.56	6.55	8.60	5.68	5.23	4.45	4.03	5.41	6.91	7.97	12.1
094029	Hist	7.19	5.66	7.94	5.32	5.65	4.62	5.79	7.31	4.61	6.10	6.10	8.1
	Gen	7.00	5.72	8.10	5.37	6.19	4.52	6.24	7.64	4.80	6.63	6.01	9.3

Table C3. Comparison of historical and generated coefficient of skewness of daily rainfall.

Station		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
003003	Hist	6.33	3.02	3.00	5.37	4.30	3.61	5.85	5.14	6.10	2.41	1.52	2.37
	Gen	4.25	3.26	3.14	2.47	3.23	2.59	3.47	3.28	3.97	1.81	1.98	2.75
009034	Hist	3.64	3.85	3.11	2.43	2.11	1.91	2.96	2.19	2.99	3.06	2.17	3.39
	Gen	2.99	2.64	2.88	2.65	2.25	2.22	2.32	2.05	2.46	2.31	2.41	2.30
012038	Hist	5.20	4.26	2.96	2.06	3.22	2.96	2.85	4.05	2.67	3.30	5.49	2.08
	Gen	3.68	3.14	3.16	2.76	2.94	3.07	3.12	3.19	2.76	2.99	3.19	2.58
014015	Hist	3.30	2.11	3.55	3.79	2.69	3.46	2.58	1.63	2.86	2.60	2.42	4.63
	Gen	3.02	2.74	3.31	3.31	2.52	2.06	1.66	2.02	2.59	3.15	2.61	3.53
015590	Hist	3.06	3.51	3.91	3.38	2.96	4.11	4.55	3.46	2.35	2.85	2.81	5.02
	Gen	3.08	3.04	3.38	2.83	2.66	3.27	2.80	2.38	2.33	2.80	2.91	3.55
039104	Hist	2.82	2.70	4.13	2.25	2.74	6.02	2.79	4.74	1.67	1.89	2.47	2.54
	Gen	2.60	2.87	2.94	2.71	3.15	3.08	2.91	2.93	2.31	2.58	2.71	2.55
040214	Hist	2.81	2.99	2.23	4.51	4.38	3.01	4.52	1.19	2.05	2.52	3.69	2.55
	Gen	2.86	3.28	2.96	3.23	3.49	2.75	3.39	2.08	2.23	2.34	3.04	2.41
066037	Hist	3.94	5.57	4.50	4.38	3.81	3.45	3.07	5.22	4.46	3.93	5.71	2.43
	Gen	3.51	4.45	3.89	3.38	3.31	3.08	2.93	4.05	3.74	3.69	3.82	3.11
B86071	Hist	2.91	2.86	3.06	2.71	3.66	3.17	3.77	3.28	3.28	3.68	3.35	3.73
	Gen	3.12	2.97	2.54	3.15	2.91	2.73	2.93	2.37	2.59	2.95	2.74	3.34
094029	Hist	2.86	2.62	5.89	2.93	4.01	2.53	3.53	4.41	2.78	2.74	3.18	3.64
	Gen	3.15	2.80	3.75	3.09	3.80	2.82	3.23	3.57	2.92	3.08	3.17	3.54

Table C4. Comparison of historical and generated number of wet days.

Station		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
003003	Hist	11.5	12.4	7.9	2.8	2.5	2.0	1.9	2.6	3.4	0.6	1.2	6.2
	Gen	9.5	11.9	7.3	2.2	1.8	1.7	1.2	1.6	2.1	0.6	1.2	5.8
009034	Hist	2.7	2.9	4.2	7.5	13.1	16.4	18.4	15.9	12.9	9.6	7.0	3.8
	Gen	1.8	2.9	3.8	7.4	13.2	16.5	18.1	15.8	12.8	9.6	6.7	3.4
012038	Hist	3.9	4.1	4.8	5.5	7.4	8.6	8.7	7.4	5.4	4.5	4.5	4.4
	Gen	2.8	3.6	3.9	5.1	7.1	8.0	8.4	7.2	5.1	4.0	4.4	4.1
014015	Hist	22.5	20.6	20.2	9.7	2.1	0.5	0.5	0.8	2.5	7.2	12.1	16.5
	Gen	22.5	20.6	20.0	9.3	1.9	0.4	0.4	0.8	2.0	6.9	12.1	16.2
015590	Hist	5.5	5.0	3.8	2.8	3.2	2.8	2.7	2.3	2.8	5.7	6.0	6.2
	Gen	4.6	4.3	3.2	2.3	3.0	2.5	2.0	2.2	2.5	5.4	5.8	5.3
039104	Hist	10.4	9.7	9.1	6.6	8.0	5.0	5.8	4.8	4.1	7.0	8.5	8.5
	Gen	10.4	9.7	9.1	6.1	7.4	4.8	5.2	4.5	3.8	6.9	8.2	8.0
040214	Hist	11.9	15.0	12.3	9.1	11.9	5.9	7.3	5.8	5.7	10.1	11.9	10.7
	Gen	12.1	14.7	11.6	9.3	9.5	5.1	7.3	5.7	5.2	10.1	10.5	10.7
066037	Hist	11.6	11.6	12.6	10.4	12.5	10.3	9.3	8.3	9.1	10.7	11.8	10.1
	Gen	11.3	9.5	12.3	9.1	12.2	10.0	9.1	6.6	8.2	9.8	11.1	9.6
B86071	Hist	9.4	6.6	9.3	11.2	12.8	14.5	15.4	15.7	14.7	14.5	11.8	10.4
	Gen	9.2	6.5	9.3	10.9	12.6	14.6	15.3	15.8	14.7	14.5	11.9	9.7
094029	Hist	10.4	7.9	12.1	11.8	12.5	13.0	15.2	14.8	14.5	14.4	13.4	12.8
	Gen	10.3	7.9	11.3	11.7	12.2	12.9	14.7	14.4	14.4	13.9	13.4	11.5

Table C5. Comparison of historical and generated maximum daily rainfall.

Station		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
003003	Hist	477	182	132	164	126	74	96	12	12	15	33	97
	Gen	459	202	173	127	146	64	71	13	15	16	35	94
009034	Hist	55	65	28	47	54	77	95	50	52	55	25	26
	Gen	75	46	28	50	61	72	76	50	47	40	30	21
012038	Hist	89	105	70	32	45	34	29	50	23	46	77	28
	Gen	102	93	97	44	44	38	34	42	26	46	52	41
014015	Hist	290	114	241	141	90	30	19	51	54	85	97	277
	Gen	268	174	254	141	102	25	17	50	65	119	104	247
015590	Hist	100	112	205	86	57	71	77	34	29	39	46	136
	Gen	126	135	219	121	62	74	79	31	34	46	56	115
039104	Hist	102	77	120	64	67	107	55	68	33	52	71	92
	Gen	91	77	86	81	87	63	66	53	51	63	76	96
040214	Hist	95	84	57	156	149	94	109	19	30	61	169	88
	Gen	102	107	82	123	152	114	95	26	39	60	155	82
066037	Hist	133	216	202	174	116	151	81	207	115	90	132	55
	Gen	131	234	178	163	113	135	80	214	123	108	117	74
B86071	Hist	54	55	46	44	45	43	41	33	44	59	67	89
	Gen	64	58	39	60	39	36	32	26	37	49	52	84
094029	Hist	42	40	74	36	47	26	56	65	36	44	41	56
	Gen	49	36	61	38	49	31	48	60	35	49	44	69

Table C6. Comparison of historical and generated cross correlation between daily evaporation and maximum temperature.

Station		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
003003	Hist	0.46	0.45	0.46	0.48	0.31	0.11	0.07	0.38	0.50	0.52	0.42	0.32
	Gen	0.41	0.43	0.44	0.47	0.29	0.10	0.06	0.36	0.50	0.50	0.40	0.32
009034	Hist	0.54	0.60	0.54	0.49	0.43	0.30	0.23	0.25	0.48	0.58	0.64	0.63
	Gen	0.53	0.57	0.54	0.50	0.43	0.30	0.23	0.25	0.46	0.55	0.62	0.61
012038	Hist	0.66	0.73	0.73	0.70	0.63	0.53	0.58	0.64	0.71	0.74	0.73	0.72
	Gen	0.60	0.72	0.71	0.70	0.62	0.53	0.58	0.63	0.69	0.73	0.72	0.71
014015	Hist	0.35	0.38	0.49	0.48	0.21	-0.01	0.15	0.44	0.55	0.42	0.50	0.54
	Gen	0.34	0.35	0.47	0.45	0.18	0.00	0.13	0.40	0.52	0.40	0.48	0.52
015590	Hist	0.67	0.69	0.68	0.61	0.53	0.51	0.59	0.64	0.65	0.68	0.62	0.64
	Gen	0.61	0.64	0.63	0.58	0.48	0.48	0.55	0.60	0.59	0.62	0.56	0.57
039104	Hist	0.67	0.63	0.70	0.57	0.37	0.04	0.10	0.25	0.54	0.55	0.56	0.63
	Gen	0.68	0.66	0.68	0.57	0.39	0.04	0.09	0.23	0.53	0.55	0.58	0.62
040214	Hist	0.52	0.59	0.58	0.51	0.37	0.00	0.23	0.37	0.55	0.54	0.55	0.54
	Gen	0.48	0.59	0.53	0.46	0.36	-0.01	0.21	0.35	0.53	0.51	0.54	0.53
066037	Hist	0.57	0.53	0.49	0.38	0.23	0.11	0.27	0.34	0.48	0.54	0.49	0.53
	Gen	0.56	0.52	0.48	0.37	0.23	0.10	0.26	0.33	0.47	0.53	0.49	0.53
B86071	Hist	0.60	0.67	0.65	0.55	0.42	0.31	0.23	0.43	0.62	0.60	0.63	0.65
	Gen	0.59	0.66	0.63	0.53	0.41	0.31	0.23	0.43	0.59	0.58	0.61	0.63
094029	Hist	0.52	0.58	0.52	0.44	0.38	0.39	0.38	0.38	0.54	0.54	0.54	0.54
	Gen	0.49	0.57	0.51	0.43	0.37	0.38	0.36	0.38	0.53	0.54	0.52	0.51

Table C7. Comparison of historical and generated mean daily evaporation.

Station		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
003003	Hist	8.12	7.04	7.10	7.38	6.76	6.01	6.23	6.94	7.84	8.72	9.36	8.98
	Gen	8.11	7.05	7.08	7.33	6.74	6.01	6.23	6.93	7.83	8.71	9.33	8.99
009034	Hist	7.95	7.52	6.08	4.01	2.61	2.03	2.00	2.52	3.45	4.80	6.17	7.21
	Gen	7.94	7.47	6.08	4.00	2.61	2.03	1.99	2.52	3.45	4.80	6.18	7.20
012038	Hist	12.73	10.85	8.52	5.69	3.49	2.50	2.69	3.65	5.75	8.16	10.11	11.92
	Gen	12.67	10.82	8.46	5.67	3.47	2.49	2.66	3.62	5.71	8.13	10.09	11.91
014015	Hist	6.53	6.12	6.08	6.84	7.32	7.18	7.27	7.64	8.01	8.27	7.69	7.03
	Gen	6.45	6.06	6.05	6.81	7.27	7.13	7.22	7.57	7.94	8.23	7.66	6.99
015590	Hist	12.52	11.27	9.91	7.06	4.62	3.53	3.88	5.43	7.70	9.72	11.30	12.10
	Gen	12.39	11.12	9.75	6.94	4.55	3.49	3.82	5.35	7.60	9.58	11.11	11.95
039104	Hist	6.26	5.45	4.65	3.75	2.55	2.14	2.16	3.03	4.43	5.47	6.03	6.54
	Gen	6.25	5.44	4.62	3.73	2.53	2.13	2.14	3.01	4.42	5.48	6.04	6.53
040214	Hist	5.33	4.76	4.23	3.40	2.38	1.99	2.11	2.97	4.10	4.52	4.99	5.73
	Gen	5.33	4.75	4.23	3.39	2.39	1.99	2.11	2.96	4.09	4.52	4.98	5.75
066037	Hist	7.05	6.44	5.31	4.13	2.86	2.52	2.66	3.72	4.74	5.78	6.47	7.45
	Gen	7.07	6.44	5.30	4.11	2.86	2.51	2.66	3.72	4.73	5.81	6.46	7.45
B86071	Hist	5.24	5.12	3.53	2.24	1.38	1.03	1.08	1.57	2.30	3.28	4.18	4.80
	Gen	5.20	5.07	3.52	2.22	1.36	1.03	1.08	1.57	2.28	3.26	4.16	4.76
094029	Hist	4.81	4.52	3.11	2.09	1.21	0.77	0.89	1.42	2.20	3.07	3.81	4.46
	Gen	4.80	4.51	3.10	2.09	1.21	0.76	0.88	1.41	2.17	3.05	3.80	4.43

Table C8. Comparison of historical and generated standard deviation of daily evaporation.

Station		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
003003	Hist	2.54	2.24	2.11	2.02	2.15	1.86	1.95	2.08	2.29	2.20	1.82	2.10
	Gen	2.77	2.47	2.30	2.25	2.29	1.94	1.96	2.10	2.42	2.36	1.92	2.33
009034	Hist	2.02	1.99	1.78	1.47	1.26	1.10	1.06	1.05	1.27	1.51	1.79	1.80
	Gen	2.24	2.22	1.84	1.51	1.31	1.11	1.07	1.07	1.28	1.57	1.87	1.95
012038	Hist	3.91	3.60	3.22	2.41	1.77	1.25	1.37	1.70	2.41	2.97	3.28	3.45
	Gen	4.14	3.84	3.52	2.64	1.93	1.30	1.45	1.76	2.52	3.10	3.37	3.66
014015	Hist	2.62	2.60	2.24	2.04	2.02	1.81	1.74	1.79	1.77	1.90	2.14	2.39
	Gen	2.74	2.72	2.33	2.21	2.04	1.84	1.79	1.84	1.91	2.02	2.28	2.50
015590	Hist	4.08	4.03	3.48	2.47	1.89	1.34	1.49	2.00	2.70	3.48	3.67	3.80
	Gen	4.85	5.02	4.54	2.98	2.22	1.45	1.58	2.18	3.15	4.07	4.23	4.38
039104	Hist	2.05	1.87	1.57	1.34	1.04	0.92	0.83	1.07	1.45	1.74	2.00	1.99
	Gen	2.22	2.01	1.72	1.46	1.11	0.95	0.88	1.11	1.56	1.88	2.16	2.01
040214	Hist	1.87	1.74	1.37	1.34	0.96	0.82	0.98	1.09	1.41	1.63	1.80	1.85
	Gen	1.90	1.75	1.39	1.35	0.94	0.83	1.01	1.11	1.44	1.63	1.86	1.87
066037	Hist	2.68	2.41	2.09	1.79	1.42	1.32	1.35	1.70	1.99	2.30	2.43	2.66
	Gen	2.76	2.53	2.17	1.84	1.43	1.32	1.36	1.71	2.06	2.39	2.47	2.78
B86071	Hist	2.12	1.99	1.56	1.14	0.82	0.63	0.61	0.81	1.26	1.53	1.89	1.98
	Gen	2.13	2.07	1.57	1.16	0.84	0.62	0.61	0.81	1.28	1.54	1.88	2.00
094029	Hist	1.76	1.72	1.30	1.10	0.74	0.62	0.69	0.80	1.16	1.42	1.56	1.77
	Gen	1.87	1.79	1.34	1.11	0.76	0.64	0.72	0.82	1.23	1.50	1.60	1.88

Table C9. Comparison of historical and generated coefficient of skewness of daily evaporation.

Station		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
003003	Hist	-0.44	-0.31	0.00	0.39	0.44	0.14	0.29	0.46	0.81	1.14	1.02	-0.11
	Gen	-0.13	0.04	0.22	0.55	0.55	0.23	0.31	0.47	0.88	1.11	1.00	0.09
009034	Hist	0.14	-0.43	0.07	0.45	0.74	1.20	1.08	0.73	0.34	0.33	0.16	0.41
	Gen	0.32	-0.09	0.18	0.53	0.86	1.27	1.16	0.74	0.37	0.39	0.24	0.52
012038	Hist	1.20	-0.39	0.48	0.53	0.77	1.03	1.03	0.95	0.74	0.54	0.26	-0.05
	Gen	1.30	-0.15	0.68	0.73	1.00	1.15	1.18	1.05	0.84	0.65	0.33	0.12
014015	Hist	0.20	1.13	0.13	-0.17	1.35	0.37	0.36	0.27	0.12	-0.36	-0.03	0.04
	Gen	0.35	1.20	0.25	0.05	1.33	0.39	0.40	0.34	0.24	-0.13	0.13	0.19
015590	Hist	-0.39	-0.34	-0.21	0.06	0.92	0.60	0.92	0.89	0.56	0.40	0.50	-0.16
	Gen	0.15	0.29	0.46	0.50	1.19	0.80	1.08	1.02	0.85	0.72	0.73	0.26
039104	Hist	-0.39	-0.16	0.18	0.59	0.47	1.96	0.18	0.49	0.30	-0.05	-0.42	-0.39
	Gen	-0.15	0.01	0.36	0.75	0.63	1.95	0.39	0.60	0.44	0.18	-0.14	-0.33
040214	Hist	-0.46	-0.47	-0.29	0.05	-0.07	0.35	0.96	0.39	0.54	-0.17	-0.06	-0.22
	Gen	-0.28	-0.32	-0.19	0.07	-0.08	0.34	0.99	0.50	0.62	-0.07	0.02	-0.11
066037	Hist	0.11	0.03	0.29	0.55	0.67	0.82	0.70	1.09	0.60	0.39	0.31	0.29
	Gen	0.24	0.18	0.39	0.64	0.72	0.84	0.75	1.12	0.73	0.51	0.37	0.40
B86071	Hist	0.85	0.59	0.75	1.12	0.90	0.96	0.89	0.82	1.26	0.81	0.79	0.90
	Gen	0.89	0.69	0.78	1.18	1.01	0.98	0.90	0.82	1.29	0.85	0.78	0.97
094029	Hist	0.40	0.41	0.35	0.63	1.08	1.62	1.75	1.02	0.95	0.54	0.12	0.24
	Gen	0.56	0.53	0.47	0.73	1.21	1.75	1.86	1.12	1.16	0.72	0.31	0.42

Table C10. Comparison of historical and generated correlation between daily evaporation.

Station		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
003003	Hist	0.36	0.35	0.38	0.46	0.50	0.43	0.48	0.50	0.53	0.53	0.31	0.39
	Gen	0.38	0.39	0.42	0.49	0.49	0.41	0.43	0.45	0.51	0.57	0.35	0.44
009034	Hist	0.36	0.47	0.31	0.26	0.13	0.08	0.02	-0.04	0.17	0.31	0.44	0.39
	Gen	0.44	0.48	0.31	0.29	0.21	0.11	0.08	0.02	0.17	0.28	0.38	0.41
012038	Hist	0.45	0.52	0.57	0.46	0.41	0.26	0.29	0.28	0.35	0.40	0.43	0.45
	Gen	0.42	0.45	0.56	0.49	0.47	0.31	0.35	0.32	0.36	0.39	0.38	0.43
014015	Hist	0.26	0.32	0.25	0.42	0.40	0.46	0.40	0.50	0.41	0.23	0.31	0.27
	Gen	0.28	0.32	0.26	0.41	0.34	0.46	0.42	0.53	0.47	0.28	0.35	0.26
015590	Hist	0.64	0.71	0.70	0.62	0.51	0.39	0.36	0.39	0.43	0.49	0.56	0.55
	Gen	0.63	0.68	0.75	0.70	0.58	0.46	0.42	0.46	0.53	0.57	0.62	0.59
039104	Hist	0.47	0.34	0.44	0.47	0.34	0.16	0.29	0.30	0.41	0.34	0.35	0.36
	Gen	0.41	0.31	0.40	0.46	0.36	0.17	0.31	0.28	0.36	0.35	0.36	0.31
040214	Hist	0.33	0.26	0.14	0.20	0.21	0.00	0.15	0.19	0.27	0.25	0.20	0.27
	Gen	0.22	0.18	0.05	0.15	0.13	-0.01	0.14	0.17	0.16	0.19	0.15	0.22
066037	Hist	0.26	0.22	0.27	0.18	0.19	0.15	0.27	0.25	0.21	0.27	0.18	0.23
	Gen	0.22	0.22	0.24	0.20	0.19	0.14	0.26	0.23	0.22	0.21	0.12	0.21
B86071	Hist	0.31	0.24	0.28	0.21	0.13	0.04	0.13	0.14	0.28	0.17	0.25	0.42
	Gen	0.25	0.27	0.24	0.24	0.17	0.06	0.14	0.14	0.24	0.14	0.17	0.33
094029	Hist	0.19	0.24	0.28	0.25	0.25	0.23	0.34	0.22	0.27	0.23	0.30	0.29
	Gen	0.22	0.22	0.28	0.25	0.29	0.25	0.34	0.24	0.32	0.25	0.30	0.32

Table C11. Comparison of historical and generated maximum daily evaporation.

Station		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
003003	Hist	16.6	14.2	15.6	18.0	19.1	12.2	13.4	14.7	16.6	17.8	18.0	17.8
	Gen	18.0	15.7	16.0	17.2	16.4	13.1	13.7	15.1	19.0	20.6	19.0	17.9
009034	Hist	18.4	13.8	13.2	11.6	8.4	8.0	8.0	7.2	9.0	10.6	12.7	13.4
	Gen	16.5	14.4	12.5	11.1	8.6	7.8	7.5	7.7	8.4	10.6	12.7	15.1
012038	Hist	42.8	20.2	20.6	16.8	11.4	8.9	9.0	11.2	18.6	22.4	21.6	27.8
	Gen	37.4	23.0	24.2	17.6	13.0	9.3	10.4	12.4	17.7	22.1	23.4	25.1
014015	Hist	19.2	26.2	18.6	14.0	26.2	13.6	13.4	13.4	13.5	16.0	17.2	16.0
	Gen	17.5	20.8	15.6	14.3	19.3	14.2	14.4	14.5	14.9	15.1	16.2	17.0
015590	Hist	32.9	24.0	20.0	15.0	19.8	9.0	11.2	17.8	19.2	29.4	31.0	27.0
	Gen	28.9	29.0	27.1	19.1	16.8	10.3	12.3	16.5	22.8	28.2	30.9	28.4
039104	Hist	11.4	12.6	11.6	12.3	8.0	9.7	5.6	8.6	9.6	16.0	12.6	16.0
	Gen	13.0	12.0	11.2	10.2	7.1	8.7	5.5	7.6	10.5	12.3	13.0	12.1
040214	Hist	10.6	11.0	8.0	8.2	4.8	5.6	7.4	6.8	9.0	10.2	11.0	12.0
	Gen	10.3	9.4	8.4	7.7	5.0	4.8	6.5	7.2	9.5	9.5	10.4	11.2
066037	Hist	19.6	15.8	16.0	12.0	8.0	8.2	8.2	17.2	13.4	19.6	16.4	17.8
	Gen	17.7	15.6	14.1	12.2	9.3	8.8	8.8	13.6	14.3	15.8	16.1	18.5
B86071	Hist	16.0	13.2	10.0	7.6	4.6	3.8	3.6	4.6	8.8	9.8	12.2	15.0
	Gen	15.6	13.8	10.4	7.8	5.2	3.8	3.8	5.0	9.1	10.2	12.4	14.7
094029	Hist	12.0	11.8	7.8	7.6	4.4	4.4	5.1	6.0	8.0	8.4	9.8	11.0
	Gen	12.3	11.8	8.4	7.0	5.2	4.5	5.3	5.5	8.5	9.7	10.0	11.7

Table C12. Comparison of historical and generated minimum daily evaporation.

Station		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
003003	Hist	0.0	0.0	0.0	1.0	0.5	0.0	0.2	0.5	2.0	3.2	3.6	1.4
	Gen	0.0	0.0	0.1	0.4	0.2	0.2	0.4	1.8	2.9	4.2	4.9	1.2
009034	Hist	1.4	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.6	1.2
	Gen	0.9	0.2	0.4	0.8	0.0	0.0	0.0	0.2	0.1	0.8	1.2	2.2
012038	Hist	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.8
	Gen	1.2	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2
014015	Hist	0.0	0.0	0.0	0.0	0.0	1.8	0.8	3.0	1.4	0.0	0.0	0.0
	Gen	0.0	1.6	0.0	0.2	0.4	2.3	1.4	2.5	1.3	0.4	1.0	0.2
015590	Hist	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0
	Gen	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0
039104	Hist	0.4	0.2	0.2	0.6	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0
	Gen	0.1	0.1	0.4	0.2	0.2	0.8	0.0	0.1	0.7	0.0	0.0	0.1
040214	Hist	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.6
	Gen	0.0	0.0	0.1	0.1	0.0	0.1	0.0	0.1	0.6	0.0	0.2	0.2
066037	Hist	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.2
	Gen	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.1	0.2
B86071	Hist	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
	Gen	0.1	0.0	0.1	0.3	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.0
094029	Hist	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Gen	0.7	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table C13. Comparison of historical and generated mean maximum daily temperature.

Station		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
003003	Hist	33.2	32.8	33.7	34.3	31.8	29.4	29.0	30.3	31.6	32.7	33.4	33.5
	Gen	33.2	32.8	33.7	34.3	31.8	29.4	29.0	30.3	31.6	32.6	33.3	33.5
009034	Hist	30.3	31.3	29.3	25.5	21.8	19.3	18.1	18.7	20.4	22.2	25.1	27.5
	Gen	30.3	31.2	29.3	25.5	21.8	19.2	18.1	18.7	20.5	22.2	25.2	27.5
012038	Hist	33.7	32.2	29.4	25.4	20.7	17.4	16.8	18.5	22.3	25.5	28.6	31.9
	Gen	33.6	32.1	29.3	25.4	20.7	17.4	16.8	18.4	22.3	25.5	28.6	31.9
014015	Hist	31.8	31.5	31.8	32.8	32.2	30.8	30.7	31.5	32.6	33.3	33.3	32.6
	Gen	31.8	31.4	31.8	32.8	32.2	30.9	30.7	31.5	32.6	33.3	33.3	32.6
015590	Hist	36.4	35.2	32.7	28.0	23.3	19.8	20.0	22.9	27.3	30.7	33.7	35.6
	Gen	36.3	35.0	32.7	28.0	23.2	19.8	19.9	22.8	27.3	30.6	33.6	35.6
039104	Hist	32.1	31.1	30.0	27.6	24.2	21.1	20.7	22.6	26.0	28.8	30.6	32.5
	Gen	32.1	31.1	29.9	27.6	24.1	21.0	20.7	22.6	26.0	28.9	30.6	32.4
040214	Hist	29.6	29.4	28.9	26.8	23.8	21.2	20.7	22.1	24.6	25.5	27.5	29.7
	Gen	29.6	29.3	28.9	26.8	23.8	21.2	20.6	22.1	24.5	25.5	27.3	29.7
066037	Hist	26.7	26.7	25.4	23.0	20.3	17.6	16.9	18.4	20.5	22.6	23.8	26.0
	Gen	26.7	26.7	25.3	23.0	20.3	17.6	16.9	18.4	20.5	22.6	23.8	26.0
B86071	Hist	25.8	26.7	24.2	20.6	17.5	14.7	14.1	15.3	17.3	19.8	21.9	23.8
	Gen	25.6	26.5	24.2	20.6	17.4	14.6	14.0	15.3	17.3	19.7	21.9	23.7
094029	Hist	22.0	22.1	20.2	18.1	15.2	12.4	12.1	13.4	15.3	17.3	18.7	20.1
	Gen	21.9	22.1	20.2	18.1	15.1	12.4	12.1	13.4	15.3	17.2	18.7	20.1

Table C14. Comparison of historical and generated standard deviation of daily maximum temperature.

Station		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
003003	Hist	1.99	2.03	2.21	2.27	2.59	2.46	2.38	2.53	3.12	3.30	2.86	2.18
	Gen	2.10	2.25	2.34	2.56	2.75	2.53	2.55	2.61	3.17	3.37	2.81	2.24
009034	Hist	5.34	5.08	4.45	3.70	2.82	2.39	2.24	2.23	2.98	3.76	4.71	4.99
	Gen	5.29	5.21	4.46	3.74	2.86	2.47	2.29	2.29	3.03	3.78	4.69	4.93
012038	Hist	5.00	5.43	5.29	4.56	3.88	2.87	3.15	3.61	4.43	5.11	5.01	5.09
	Gen	4.93	5.53	5.35	4.69	3.98	3.01	3.30	3.72	4.55	5.16	5.01	5.19
014015	Hist	1.62	1.51	1.64	1.45	1.45	1.60	1.55	1.47	1.53	1.26	1.24	1.57
	Gen	1.70	1.70	1.79	1.55	1.49	1.64	1.63	1.50	1.57	1.30	1.32	1.71
015590	Hist	4.23	4.13	4.24	4.26	4.26	3.99	4.27	4.51	5.00	5.01	4.69	4.23
	Gen	4.48	4.46	4.62	4.26	4.16	3.91	4.23	4.47	5.14	5.09	4.68	4.25
039104	Hist	3.09	2.81	2.67	2.71	2.62	2.53	2.77	2.89	3.25	3.39	3.42	3.16
	Gen	3.39	3.08	2.74	2.81	2.66	2.65	2.75	2.92	3.46	3.81	3.59	3.22
040214	Hist	2.54	2.27	2.02	2.34	2.07	1.91	2.07	2.16	2.77	2.73	2.86	2.97
	Gen	2.60	2.35	2.06	2.40	2.04	1.98	2.10	2.24	2.89	2.77	2.89	3.02
066037	Hist	3.85	3.72	3.12	3.03	2.48	2.13	2.31	2.84	3.72	4.26	4.22	4.28
	Gen	3.93	3.83	3.17	3.08	2.43	2.15	2.32	2.87	3.84	4.36	4.23	4.41
B86071	Hist	5.83	5.93	5.11	3.82	2.77	2.06	1.99	2.44	3.39	4.27	5.02	5.29
	Gen	5.83	5.96	5.04	3.88	2.69	2.07	2.04	2.48	3.47	4.21	4.91	5.26
094029	Hist	4.38	4.46	3.94	3.64	2.79	2.62	2.48	2.71	3.33	3.75	4.29	3.99
	Gen	4.52	4.47	3.91	3.61	2.77	2.68	2.49	2.82	3.43	3.79	4.28	3.98

Table C15. Comparison of historical and generated coefficient of skewness of daily maximum temperature.

Station		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
003003	Hist	0.37	0.84	0.37	-0.39	-0.66	-0.44	-0.26	0.03	0.42	0.81	1.25	0.95
	Gen	0.38	0.74	0.36	-0.27	-0.54	-0.35	-0.20	0.06	0.41	0.72	1.07	0.86
009034	Hist	0.34	0.15	0.23	0.57	0.53	0.34	0.25	0.59	0.98	1.24	0.85	0.85
	Gen	0.22	0.11	0.22	0.56	0.54	0.34	0.26	0.58	0.98	1.23	0.77	0.75
012038	Hist	-0.16	-0.14	0.18	0.29	0.45	0.33	0.57	0.63	0.33	0.26	0.11	-0.30
	Gen	-0.26	-0.22	0.16	0.31	0.49	0.35	0.58	0.63	0.36	0.26	0.07	-0.27
014015	Hist	-0.74	-0.44	-0.69	-1.02	-0.95	-0.57	-0.39	-0.15	0.16	-0.11	-0.79	-1.23
	Gen	-0.65	-0.30	-0.61	-0.82	-0.84	-0.50	-0.31	-0.11	0.15	-0.11	-0.71	-1.08
015590	Hist	-0.77	-0.76	-0.85	-0.46	-0.08	0.31	0.25	0.12	-0.28	-0.36	-0.58	-0.78
	Gen	-0.68	-0.61	-0.59	-0.47	-0.06	0.29	0.24	0.13	-0.26	-0.33	-0.60	-0.76
039104	Hist	-0.26	-0.36	-0.38	-0.59	-0.51	-0.15	-0.21	-0.05	-0.06	-0.15	-0.13	-0.53
	Gen	-0.17	-0.25	-0.33	-0.49	-0.45	-0.07	-0.20	-0.01	-0.01	-0.02	-0.06	-0.48
040214	Hist	0.95	0.19	-0.23	-0.37	-0.13	-0.32	-0.06	-0.07	0.40	0.46	0.20	0.59
	Gen	0.84	0.20	-0.21	-0.29	-0.14	-0.28	-0.07	-0.07	0.38	0.43	0.16	0.57
066037	Hist	0.99	1.11	0.80	0.56	0.38	0.34	0.57	0.78	0.82	0.85	1.04	0.96
	Gen	0.92	1.05	0.78	0.56	0.37	0.33	0.58	0.78	0.85	0.84	1.01	0.92
B86071	Hist	0.79	0.60	0.70	0.72	0.69	0.36	0.18	0.68	0.80	0.93	0.78	0.90
	Gen	0.68	0.51	0.65	0.72	0.64	0.38	0.22	0.67	0.79	0.92	0.73	0.84
094029	Hist	1.12	1.00	0.77	0.55	0.44	0.01	0.20	0.15	0.73	0.62	1.15	1.03
	Gen	1.11	0.95	0.75	0.53	0.45	0.05	0.21	0.20	0.74	0.63	1.12	1.03

Table C16. Comparison of historical and generated correlation between daily maximum temperature.

Station		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
003003	Hist	0.62	0.62	0.64	0.68	0.75	0.70	0.65	0.59	0.62	0.63	0.59	0.64
	Gen	0.59	0.60	0.56	0.66	0.69	0.70	0.69	0.60	0.63	0.65	0.57	0.65
009034	Hist	0.58	0.63	0.61	0.63	0.61	0.56	0.54	0.52	0.53	0.56	0.63	0.56
	Gen	0.56	0.60	0.56	0.59	0.54	0.57	0.55	0.52	0.43	0.42	0.52	0.51
012038	Hist	0.53	0.56	0.65	0.64	0.65	0.62	0.63	0.55	0.55	0.53	0.56	0.56
	Gen	0.52	0.54	0.63	0.63	0.66	0.65	0.65	0.56	0.54	0.52	0.54	0.56
014015	Hist	0.63	0.61	0.67	0.61	0.71	0.77	0.67	0.66	0.58	0.43	0.47	0.62
	Gen	0.47	0.56	0.55	0.53	0.71	0.77	0.70	0.67	0.58	0.42	0.46	0.48
015590	Hist	0.74	0.78	0.76	0.77	0.75	0.73	0.69	0.64	0.61	0.60	0.67	0.68
	Gen	0.71	0.69	0.76	0.74	0.74	0.72	0.69	0.63	0.63	0.60	0.66	0.65
039104	Hist	0.68	0.66	0.66	0.66	0.63	0.60	0.60	0.58	0.67	0.65	0.66	0.68
	Gen	0.64	0.62	0.59	0.62	0.63	0.64	0.59	0.57	0.66	0.70	0.68	0.65
040214	Hist	0.47	0.53	0.46	0.63	0.55	0.44	0.55	0.48	0.52	0.40	0.59	0.47
	Gen	0.43	0.47	0.29	0.55	0.48	0.48	0.55	0.50	0.46	0.40	0.51	0.47
066037	Hist	0.38	0.31	0.37	0.46	0.57	0.55	0.56	0.50	0.43	0.38	0.38	0.33
	Gen	0.36	0.30	0.32	0.43	0.51	0.53	0.55	0.46	0.41	0.36	0.34	0.34
B86071	Hist	0.42	0.36	0.55	0.59	0.63	0.58	0.54	0.57	0.55	0.42	0.46	0.44
	Gen	0.42	0.38	0.48	0.53	0.58	0.57	0.55	0.47	0.49	0.36	0.39	0.41
094029	Hist	0.32	0.27	0.38	0.46	0.50	0.58	0.55	0.51	0.45	0.38	0.36	0.34
	Gen	0.32	0.24	0.33	0.43	0.48	0.60	0.53	0.50	0.41	0.35	0.33	0.29

Table C17. Comparison of historical and generated maximum daily maximum temperature.

Station		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
003003	Hist	41.9	42.3	42.0	41.2	38.7	36.1	36.0	37.8	39.9	42.2	43.6	42.4
	Gen	42.3	43.6	43.0	41.8	39.3	36.7	36.4	39.0	43.3	44.8	44.4	43.8
009034	Hist	44.7	46.2	42.3	36.0	31.8	28.1	26.3	26.9	32.3	37.1	40.1	42.0
	Gen	44.9	45.8	43.5	39.5	33.2	28.0	26.9	27.8	34.2	40.3	43.3	44.3
012038	Hist	46.5	44.8	44.5	37.7	32.5	26.3	28.7	30.0	36.8	40.9	42.9	43.4
	Gen	44.8	45.5	45.0	42.5	36.6	28.7	30.5	34.2	39.8	43.6	44.0	45.4
014015	Hist	35.6	36.0	35.7	36.5	35.3	34.5	34.8	36.0	37.7	38.9	37.1	37.0
	Gen	35.8	36.2	36.2	36.8	35.7	34.8	35.2	36.0	38.1	38.1	36.8	36.7
015590	Hist	44.7	44.7	41.2	37.3	33.2	31.6	31.6	33.5	37.7	41.4	42.9	44.2
	Gen	45.5	45.6	44.7	40.2	36.7	34.0	35.3	38.4	42.1	44.2	44.5	45.2
039104	Hist	40.2	38.1	37.2	34.7	31.4	28.1	28.0	30.7	35.0	39.0	41.7	41.1
	Gen	42.1	40.2	37.8	35.8	30.8	29.2	28.5	32.0	37.3	40.6	41.6	40.7
040214	Hist	39.1	36.8	35.6	35.7	30.5	26.4	27.8	28.5	33.9	35.9	36.9	41.2
	Gen	40.0	37.6	35.4	34.6	29.4	26.6	26.7	29.2	34.3	35.5	36.5	41.0
066037	Hist	42.6	42.6	41.2	35.7	29.1	25.6	26.7	30.9	35.6	38.1	43.4	43.2
	Gen	44.1	44.2	39.4	35.8	29.4	25.5	26.8	31.4	38.0	42.3	43.1	44.8
B86071	Hist	42.2	43.2	41.0	33.8	28.4	20.9	21.7	24.2	30.7	33.7	40.3	41.9
	Gen	45.5	45.5	43.1	36.2	28.4	22.2	21.7	25.5	32.4	38.6	41.5	44.5
094029	Hist	40.8	39.2	35.6	30.2	24.6	20.5	21.0	24.5	31.0	31.0	35.8	36.8
	Gen	43.5	42.0	37.5	32.7	25.6	20.9	20.7	23.4	30.4	33.3	39.4	39.4

Table C18. Comparison of historical and generated minimum daily maximum temperature.

Station		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
003003	Hist	25.4	26.4	26.9	23.6	19.8	17.5	19.4	20.4	23.2	27.4	28.8	26.7
	Gen	26.1	26.4	26.6	23.7	18.9	17.9	19.2	21.8	23.4	25.6	28.6	26.7
009034	Hist	20.7	20.0	18.6	15.4	14.8	12.1	11.4	12.8	14.6	15.0	15.9	19.9
	Gen	16.3	16.9	17.4	17.1	14.6	12.9	11.2	13.5	14.8	15.9	16.4	17.8
012038	Hist	16.8	16.4	14.1	15.5	10.5	10.3	9.7	9.6	11.3	12.1	14.8	15.9
	Gen	11.9	10.6	12.4	12.9	10.2	9.3	9.0	9.2	8.2	9.5	11.0	10.1
014015	Hist	25.7	26.3	25.8	24.8	22.7	25.4	23.4	25.3	27.6	24.7	26.2	24.1
	Gen	24.9	25.2	24.2	25.0	24.2	24.4	24.7	26.4	27.4	27.3	27.0	23.6
015590	Hist	19.2	18.8	14.9	11.8	10.5	10.4	9.2	8.8	11.7	15.0	12.8	19.2
	Gen	16.4	16.3	11.4	9.0	8.3	7.7	7.2	8.8	6.9	10.8	11.3	14.7
039104	Hist	21.5	19.0	19.6	14.1	14.2	13.0	12.2	14.1	12.4	17.2	20.1	21.0
	Gen	20.5	19.9	19.7	15.1	14.2	12.4	11.2	12.5	13.8	15.9	18.2	19.6
040214	Hist	23.7	22.1	22.4	16.3	17.5	15.1	13.1	13.9	17.2	17.9	19.7	21.4
	Gen	23.9	22.3	21.7	17.5	17.3	14.7	14.5	13.7	17.6	18.1	19.4	21.8
066037	Hist	18.7	18.9	18.4	16.2	12.7	11.3	9.7	11.2	12.9	14.3	13.1	17.3
	Gen	18.7	20.0	18.9	16.1	14.0	12.1	11.5	12.0	12.4	13.3	14.8	16.9
B86071	Hist	15.3	15.0	15.6	13.2	10.2	8.5	7.0	10.0	9.2	12.0	12.7	14.3
	Gen	12.9	11.9	13.6	12.6	11.0	9.1	7.7	9.7	9.7	11.8	11.8	12.7
094029	Hist	13.8	13.2	12.1	9.2	6.9	4.3	5.9	5.5	7.6	8.6	10.4	11.9
	Gen	13.8	11.7	11.3	9.5	8.1	4.3	5.3	5.3	8.2	7.8	10.6	13.0

Table C19. Comparison of historical and generated mean monthly rainfall.

Station		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
003003	Hist	222	197	106	29	22	14	7	2	2	1	8	62
	Gen	232	196	109	34	24	14	7	2	2	2	8	60
009034	Hist	12	17	11	43	109	161	171	113	73	51	26	10
	Gen	14	17	12	43	109	159	168	114	73	51	27	10
012038	Hist	20	30	31	25	31	28	26	25	15	19	21	20
	Gen	21	31	35	25	30	28	25	26	15	19	21	21
014015	Hist	496	341	370	100	23	2	1	8	15	75	133	267
	Gen	499	339	371	102	26	2	2	8	16	74	133	269
015590	Hist	50	49	52	24	21	16	15	9	11	24	31	46
	Gen	54	55	57	31	23	17	18	10	13	26	32	47
039104	Hist	106	75	73	56	58	29	35	25	27	54	72	87
	Gen	106	74	74	56	59	28	35	25	29	55	71	88
040214	Hist	128	133	100	94	121	60	58	26	31	79	148	120
	Gen	127	136	101	98	114	68	60	26	32	78	151	119
066037	Hist	106	109	136	112	107	120	70	75	65	70	85	64
	Gen	106	112	137	118	108	121	70	82	67	71	84	65
B86071	Hist	51	38	42	58	50	53	47	52	61	65	65	69
	Gen	53	38	42	59	49	53	46	52	62	66	64	67
094029	Hist	43	30	44	40	39	40	59	61	49	60	51	60
	Gen	43	30	44	40	40	39	58	60	49	59	50	59

Table C20. Comparison of historical and generated standard deviation of monthly rainfall.

Station		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
003003	Hist	260	135	108	52	52	25	20	4	4	5	12	58
	Gen	234	131	100	45	45	22	17	4	4	5	12	55
009034	Hist	27	21	13	28	48	60	50	36	34	22	19	10
	Gen	25	20	13	29	47	59	49	36	34	22	18	9
012038	Hist	36	44	49	24	25	24	19	20	14	21	22	21
	Gen	33	40	44	23	24	23	18	20	13	20	20	21
014015	Hist	221	142	196	75	36	8	5	15	27	62	66	165
	Gen	221	143	189	73	36	6	4	15	23	61	67	165
015590	Hist	68	73	86	53	30	24	30	13	16	20	28	50
	Gen	64	68	83	49	30	25	27	13	15	21	29	49
039104	Hist	65	49	46	56	51	27	39	23	29	42	55	61
	Gen	64	47	46	51	49	24	35	23	28	41	54	57
040214	Hist	58	87	73	72	129	79	52	20	30	30	119	62
	Gen	57	87	71	69	118	72	52	19	28	29	101	63
066037	Hist	74	116	102	113	71	92	50	103	62	63	67	49
	Gen	74	114	102	109	71	93	49	96	61	61	66	49
B86071	Hist	35	31	21	36	24	23	23	18	32	28	36	49
	Gen	35	31	21	36	24	23	22	19	32	29	35	47
094029	Hist	24	20	30	24	28	19	36	40	25	37	25	51
	Gen	24	19	29	23	28	18	35	38	25	36	25	46

Table C21. Comparison of historical and generated coefficient of skewness of monthly rainfall.

Station		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
003003	Hist	1.58	0.55	1.93	2.87	4.06	2.09	4.00	4.34	5.27	4.84	1.25	0.86
	Gen	1.16	0.73	1.04	1.51	2.52	2.13	3.22	2.47	2.75	2.98	2.00	1.12
009034	Hist	3.32	1.81	1.90	-0.06	0.18	-0.02	0.07	-0.82	0.73	0.62	1.36	1.16
	Gen	2.32	1.61	1.36	0.94	0.50	0.37	0.42	0.35	0.47	0.64	0.64	0.91
012038	Hist	3.28	2.58	2.18	0.73	1.14	1.01	0.63	1.20	1.52	1.76	2.99	1.72
	Gen	2.10	1.66	1.49	1.13	0.94	0.87	0.91	1.13	1.04	1.34	1.39	1.24
014015	Hist	0.57	0.43	1.26	0.90	2.21	5.42	4.78	1.93	3.23	0.92	0.13	1.00
	Gen	0.47	0.42	0.47	0.92	1.85	4.02	3.46	2.59	1.75	1.05	0.58	0.77
015590	Hist	1.82	1.57	2.21	3.78	1.50	2.29	3.45	2.49	1.79	0.64	1.31	2.42
	Gen	1.46	1.58	1.98	2.05	1.76	2.11	1.83	1.66	1.53	1.06	1.19	1.39
039104	Hist	0.53	0.92	0.25	1.71	1.85	1.92	1.70	1.47	1.04	0.63	0.80	0.71
	Gen	0.65	0.74	0.95	1.02	0.93	1.19	1.04	1.17	1.11	0.86	0.77	0.47
040214	Hist	-0.01	1.53	0.14	1.50	1.77	2.70	1.33	0.27	0.65	-0.49	1.32	0.63
	Gen	0.62	0.56	0.57	0.71	1.08	0.98	1.01	0.67	0.78	0.54	0.27	0.54
066037	Hist	0.80	2.82	0.87	1.73	1.16	1.56	0.57	2.33	1.38	1.58	2.77	1.03
	Gen	0.83	1.31	0.92	1.05	0.80	0.93	0.85	1.43	1.09	0.97	0.94	0.83
B86071	Hist	0.83	0.71	0.68	0.70	-0.14	1.36	0.01	0.07	1.12	0.35	1.73	0.96
	Gen	0.81	0.93	0.78	0.61	0.52	0.58	0.66	0.52	0.53	0.65	0.61	0.77
094029	Hist	0.59	1.16	1.07	1.04	0.96	0.35	1.13	0.67	1.68	1.16	0.36	2.13
	Gen	0.73	0.77	0.81	0.56	0.81	0.64	0.71	0.71	0.54	0.60	0.61	0.78

Table C22. Comparison of historical and generated correlation between monthly rainfall.

Station		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
003003	Hist	0.14	0.10	0.05	0.70	-0.09	-0.09	0.19	0.06	-0.03	-0.10	0.14	-0.13
	Gen	0.12	0.12	0.07	0.60	-0.04	-0.07	0.15	0.07	-0.03	-0.03	0.12	-0.11
009034	Hist	-0.04	-0.08	0.12	0.04	0.19	0.01	0.29	-0.33	-0.41	-0.23	-0.46	0.59
	Gen	-0.01	-0.09	0.09	0.10	0.17	0.02	0.34	-0.33	-0.38	-0.18	-0.41	0.54
012038	Hist	-0.10	0.11	-0.12	0.14	0.25	0.30	0.30	-0.23	0.10	0.05	-0.16	-0.07
	Gen	-0.06	0.07	-0.10	0.17	0.25	0.28	0.29	-0.20	0.07	0.02	-0.14	-0.03
014015	Hist	-0.03	0.05	0.08	0.15	-0.26	-0.04	-0.05	-0.10	0.69	0.00	0.43	0.05
	Gen	-0.06	0.04	0.06	0.16	-0.16	-0.01	-0.02	-0.03	0.56	-0.03	0.44	0.02
015590	Hist	0.02	0.13	-0.05	0.04	-0.10	-0.01	0.56	0.24	0.46	0.44	0.04	0.29
	Gen	0.06	0.12	-0.03	0.06	-0.05	0.00	0.47	0.19	0.38	0.40	0.08	0.29
039104	Hist	-0.04	-0.20	0.05	0.24	0.52	-0.28	0.33	0.37	0.34	0.01	-0.11	-0.59
	Gen	-0.04	-0.24	0.03	0.24	0.48	-0.27	0.26	0.35	0.32	0.03	-0.08	-0.57
040214	Hist	0.22	0.05	-0.08	-0.26	-0.25	0.34	0.07	0.35	0.47	0.26	-0.77	0.19
	Gen	0.18	0.04	-0.04	-0.23	-0.18	0.31	0.08	0.37	0.47	0.30	-0.74	0.19
066037	Hist	-0.10	0.09	-0.04	-0.13	0.16	-0.08	-0.07	-0.06	-0.11	-0.05	0.12	0.21
	Gen	-0.10	0.09	0.00	-0.10	0.21	-0.04	-0.05	-0.01	-0.10	-0.02	0.12	0.22
B86071	Hist	-0.35	0.07	-0.25	0.52	-0.36	-0.10	0.02	-0.02	0.15	0.23	-0.03	0.29
	Gen	-0.28	0.12	-0.21	0.55	-0.40	-0.06	-0.01	-0.01	0.16	0.24	-0.03	0.29
094029	Hist	0.52	-0.13	-0.44	-0.21	-0.03	0.03	0.12	-0.03	-0.07	-0.20	0.30	0.12
	Gen	0.50	-0.12	-0.42	-0.21	-0.02	0.02	0.11	-0.08	-0.07	-0.20	0.31	0.10

Table C23. Comparison of historical and generated maximum monthly rainfall.

Station		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
003003	Hist	911	496	493	247	268	87	101	23	24	28	40	195
	Gen	879	523	377	167	191	90	79	16	19	19	47	210
009034	Hist	115	81	51	92	200	245	272	167	146	96	73	32
	Gen	94	71	45	112	209	282	272	189	146	99	67	32
012038	Hist	169	197	197	75	106	88	70	74	59	84	115	89
	Gen	131	156	167	89	95	89	75	81	51	77	81	79
014015	Hist	940	667	1014	308	146	41	27	51	130	245	269	665
	Gen	1031	679	817	297	142	27	20	62	88	239	296	689
015590	Hist	251	242	357	269	104	101	144	59	57	73	110	229
	Gen	243	263	333	198	119	106	104	49	59	86	115	189
039104	Hist	224	178	168	200	225	120	147	94	92	134	214	225
	Gen	253	187	187	182	182	92	121	85	100	154	196	213
040214	Hist	227	327	188	262	410	274	155	56	83	127	413	228
	Gen	233	296	230	227	354	206	165	63	86	131	323	234
066037	Hist	306	581	393	476	332	372	170	397	249	268	362	191
	Gen	293	440	399	406	291	366	193	362	231	231	258	188
B86071	Hist	126	107	87	130	91	117	91	87	126	114	166	197
	Gen	133	111	92	139	102	104	97	93	131	131	139	174
094029	Hist	104	87	113	106	99	85	157	148	128	149	100	206
	Gen	100	76	116	91	106	81	141	148	105	143	107	167

Table C24. Comparison of historical and generated minimum monthly rainfall.

Station		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
003003	Hist	5.4	15.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Gen	0.0	6.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
009034	Hist	0.0	0.0	0.0	0.0	25.8	68.0	88.0	18.4	28.8	14.0	3.3	0.2
	Gen	0.0	0.0	0.0	6.4	35.2	62.1	89.0	54.2	18.5	18.3	1.2	0.1
012038	Hist	0.0	0.0	0.4	0.0	0.8	2.6	0.6	1.6	0.3	0.0	0.0	0.6
	Gen	0.0	0.0	0.0	0.0	0.2	0.0	0.3	0.8	0.0	0.0	0.0	0.0
014015	Hist	216.0	129.8	88.0	0.6	0.0	0.0	0.0	0.0	0.0	1.2	17.2	18.8
	Gen	116.7	84.9	55.1	3.1	0.0	0.0	0.0	0.0	0.0	1.0	22.2	21.1
015590	Hist	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4
	Gen	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
039104	Hist	17.4	9.0	0.0	1.8	0.6	0.4	0.0	0.0	0.0	2.6	4.6	1.3
	Gen	12.4	6.2	14.4	0.6	0.6	0.3	0.0	0.1	0.0	1.7	0.8	3.8
040214	Hist	24.8	56.8	5.2	17.2	6.4	2.8	6.4	0.0	0.2	19.8	8.8	38.4
	Gen	53.8	24.3	14.4	14.8	1.1	0.4	5.8	3.2	1.4	40.2	13.7	37.4
066037	Hist	6.4	7.2	13.0	8.0	13.4	4.2	5.8	0.2	1.6	0.0	14.2	4.8
	Gen	4.0	0.1	3.5	0.4	6.6	1.8	3.4	0.0	0.1	0.1	0.9	0.6
B86071	Hist	3.8	0.6	7.4	10.2	10.2	23.8	12.0	22.8	27.4	27.4	25.4	7.2
	Gen	5.4	1.4	12.0	7.0	10.9	18.6	13.2	23.1	11.9	22.3	13.7	4.9
094029	Hist	8.4	6.4	4.6	10.2	4.8	1.8	11.8	9.0	14.0	8.6	17.0	11.6
	Gen	7.9	2.9	2.9	4.5	2.6	11.6	5.5	5.3	8.4	4.7	13.2	0.9

Table C25. Comparison of historical and generated mean monthly evaporation.

Station		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
003003	Hist	252	199	220	221	209	180	193	215	235	270	281	278
	Gen	251	199	219	220	209	180	193	215	235	270	280	279
009034	Hist	246	213	189	120	81	61	62	78	103	149	185	223
	Gen	246	211	189	120	81	61	62	78	103	149	185	223
012038	Hist	395	307	264	171	108	75	83	113	172	253	303	370
	Gen	393	306	262	170	107	75	83	112	171	252	303	369
014015	Hist	203	173	188	205	227	215	225	237	240	256	231	218
	Gen	200	171	187	204	225	214	224	235	238	255	230	217
015590	Hist	388	319	307	212	143	106	120	168	231	301	339	375
	Gen	384	314	302	208	141	105	118	166	228	297	333	371
039104	Hist	194	154	144	112	79	64	67	94	133	169	181	203
	Gen	194	154	143	112	79	64	66	93	132	170	181	203
040214	Hist	165	135	131	102	74	60	66	92	123	140	150	178
	Gen	165	134	131	102	74	60	66	92	123	140	149	178
066037	Hist	219	182	165	124	89	76	83	115	142	179	194	231
	Gen	219	182	164	123	89	75	82	115	142	180	194	231
B86071	Hist	162	145	110	67	43	31	34	49	69	102	125	149
	Gen	161	143	109	67	42	31	33	49	68	101	125	148
094029	Hist	149	128	97	63	37	23	28	44	66	95	114	138
	Gen	149	128	96	63	37	23	27	44	65	95	114	137

Table C26. Comparison of historical and generated standard deviation of monthly evaporation.

Station		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
003003	Hist	36	30	30	30	30	20	17	19	27	30	19	32
	Gen	40	35	34	34	32	22	18	21	31	33	23	36
009034	Hist	27	26	16	13	12	8	8	7	8	14	16	22
	Gen	35	34	20	16	13	8	9	8	10	17	21	27
012038	Hist	46	41	46	32	25	13	17	18	26	34	30	42
	Gen	53	50	54	38	28	14	18	19	28	36	35	49
014015	Hist	29	28	24	28	18	17	18	22	23	24	27	28
	Gen	32	29	26	32	20	18	19	23	26	26	29	29
015590	Hist	67	71	76	43	31	15	16	23	43	58	58	61
	Gen	93	92	99	56	39	21	22	32	54	71	73	77
039104	Hist	26	20	21	18	13	8	11	12	18	23	25	16
	Gen	32	25	26	20	14	8	11	12	20	27	30	19
040214	Hist	18	12	11	9	5	4	8	10	12	13	16	16
	Gen	20	13	12	10	5	4	9	10	13	14	18	17
066037	Hist	24	23	20	15	12	8	12	13	20	24	19	27
	Gen	29	27	23	16	12	8	12	13	21	25	21	30
B86071	Hist	17	20	11	11	8	4	5	5	11	10	11	17
	Gen	18	21	13	11	8	4	5	6	11	12	13	19
094029	Hist	17	14	12	9	7	6	7	8	14	15	14	21
	Gen	22	18	14	9	7	6	8	8	15	18	17	24

Table C27. Comparison of historical and generated coefficient of skewness of monthly evaporation.

Station		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
003003	Hist	-0.03	0.31	1.19	0.59	0.05	1.00	0.44	0.43	0.54	0.45	0.59	-0.27
	Gen	-0.05	0.02	0.04	0.02	0.09	0.08	0.08	0.15	0.24	0.23	0.15	0.06
009034	Hist	-0.68	-0.30	-0.51	0.51	1.25	0.67	0.20	0.09	0.34	-0.26	0.56	0.54
	Gen	0.13	-0.03	0.00	0.16	0.14	0.25	0.20	0.17	0.10	0.06	0.01	0.13
012038	Hist	1.11	0.03	-0.29	-0.63	0.38	0.03	0.92	0.28	-0.81	-0.34	-0.30	0.02
	Gen	0.28	0.01	0.11	0.14	0.13	0.27	0.23	0.22	0.10	0.12	0.10	0.03
014015	Hist	0.03	0.69	-0.08	-0.29	0.93	0.42	1.05	0.14	0.08	-0.12	0.27	-0.15
	Gen	0.09	0.20	0.01	-0.04	0.19	0.11	0.11	0.11	0.05	0.03	0.09	0.00
015590	Hist	-0.77	-0.18	-0.17	-0.37	0.17	0.36	0.22	-0.14	0.11	-0.10	0.46	-0.07
	Gen	0.09	0.07	0.17	0.15	0.22	0.16	0.22	0.19	0.17	0.14	0.10	0.11
039104	Hist	-0.45	0.79	0.11	-0.11	-0.46	-0.67	0.43	0.15	0.87	0.11	0.42	0.27
	Gen	0.01	0.06	0.00	0.15	0.03	0.19	0.09	0.06	0.08	0.05	-0.05	0.02
040214	Hist	1.02	0.15	0.28	0.61	0.96	0.81	-0.15	0.07	0.55	0.26	0.10	0.34
	Gen	-0.09	-0.09	0.08	0.03	0.00	0.01	0.02	0.02	-0.04	0.01	0.01	-0.03
066037	Hist	0.14	0.28	0.43	-0.03	0.83	0.70	-0.27	0.94	1.24	-0.01	0.12	0.30
	Gen	0.03	-0.02	0.03	0.09	0.08	0.05	0.15	0.24	0.11	0.07	0.11	0.10
B86071	Hist	0.77	0.38	0.03	0.31	0.06	1.10	-0.79	-0.13	-0.10	1.28	-0.17	0.60
	Gen	0.14	0.16	0.17	0.28	0.11	0.18	0.14	0.16	0.16	0.13	0.11	0.21
094029	Hist	0.38	-0.34	0.57	-0.17	0.13	0.16	0.19	0.77	0.40	-0.04	-0.03	-0.37
	Gen	0.16	0.14	0.15	0.13	0.22	0.28	0.33	0.16	0.21	0.17	0.16	0.06

Table C28. Comparison of historical and generated correlation between monthly evaporation.

Station		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
003003	Hist	0.31	0.60	0.18	0.72	0.28	0.38	0.15	-0.09	0.32	0.64	0.69	0.58
	Gen	0.30	0.66	0.33	0.75	0.39	0.48	0.30	0.09	0.47	0.72	0.78	0.65
009034	Hist	0.58	0.12	0.33	0.21	0.00	0.24	0.56	0.23	0.35	0.48	0.41	0.52
	Gen	0.60	0.27	0.47	0.35	0.15	0.35	0.59	0.33	0.49	0.58	0.51	0.63
012038	Hist	0.24	0.45	0.42	0.58	0.52	0.30	0.49	0.54	0.59	0.52	0.25	0.31
	Gen	0.27	0.52	0.51	0.64	0.57	0.38	0.54	0.57	0.63	0.58	0.35	0.40
014015	Hist	0.22	0.25	0.33	0.25	0.45	0.07	0.50	0.60	0.52	0.47	0.65	0.55
	Gen	0.30	0.30	0.32	0.31	0.57	0.30	0.59	0.64	0.57	0.54	0.70	0.59
015590	Hist	0.47	0.67	0.73	0.71	0.77	0.45	0.53	0.54	0.65	0.72	0.75	0.74
	Gen	0.56	0.75	0.80	0.79	0.84	0.61	0.68	0.71	0.76	0.80	0.82	0.81
039104	Hist	0.53	0.47	0.36	0.47	0.68	0.60	0.67	0.50	0.35	0.48	0.58	0.30
	Gen	0.47	0.47	0.44	0.52	0.68	0.65	0.66	0.52	0.30	0.46	0.57	0.31
040214	Hist	0.31	0.33	-0.27	0.07	-0.13	0.64	0.74	-0.60	0.38	-0.06	0.36	0.18
	Gen	0.22	0.33	-0.18	0.04	-0.08	0.57	0.75	-0.55	0.30	-0.02	0.39	0.28
066037	Hist	0.27	0.43	0.09	0.54	0.10	0.19	0.38	0.09	0.38	0.32	0.08	0.09
	Gen	0.27	0.46	0.17	0.60	0.12	0.25	0.41	0.12	0.40	0.36	0.16	0.20
B86071	Hist	0.20	0.32	0.49	0.27	0.27	0.43	-0.02	0.02	-0.05	0.23	0.61	0.14
	Gen	0.30	0.41	0.55	0.36	0.29	0.45	0.03	0.06	0.08	0.29	0.62	0.23
094029	Hist	0.68	0.45	0.36	0.16	0.43	0.38	0.48	-0.07	0.32	0.49	0.53	0.32
	Gen	0.68	0.62	0.52	0.31	0.49	0.42	0.51	-0.02	0.38	0.55	0.62	0.46

Table C29. Comparison of historical and generated maximum monthly evaporation.

Station		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
003003	Hist	316	268	324	302	268	229	227	259	307	336	330	333
	Gen	332	272	291	292	275	226	232	261	303	344	330	355
009034	Hist	281	256	212	150	116	81	78	93	117	174	221	265
	Gen	315	275	227	151	107	77	79	94	124	182	226	277
012038	Hist	548	380	342	220	161	100	126	150	223	314	364	456
	Gen	512	410	380	252	167	107	123	155	232	332	377	472
014015	Hist	255	245	233	254	279	249	276	280	292	301	285	260
	Gen	267	236	240	270	268	252	263	284	293	309	290	275
015590	Hist	489	427	417	271	200	151	155	209	332	406	491	492
	Gen	581	509	519	334	226	149	167	236	345	449	487	533
039104	Hist	241	199	179	151	101	77	91	114	181	215	230	232
	Gen	255	203	192	152	105	81	88	117	173	222	237	239
040214	Hist	201	151	149	118	83	68	78	106	147	163	170	206
	Gen	195	155	150	118	82	67	80	107	144	161	179	206
066037	Hist	271	239	205	153	120	96	105	149	206	234	226	293
	Gen	279	236	211	157	113	92	108	144	184	231	238	295
B86071	Hist	205	188	131	89	57	40	39	57	87	129	148	186
	Gen	197	185	134	89	58	39	43	60	91	124	149	186
094029	Hist	192	149	124	77	51	35	45	64	96	122	149	178
	Gen	194	164	125	81	53	36	44	61	96	130	148	185

Table C30. Comparison of historical and generated minimum monthly evaporation.

Station		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
003003	Hist	184	138	161	168	147	158	167	176	188	220	252	199
	Gen	166	128	152	150	146	137	157	174	177	206	235	205
009034	Hist	189	164	155	101	67	48	50	66	91	123	153	192
	Gen	184	146	150	91	57	47	46	64	85	117	146	174
012038	Hist	303	213	161	97	68	48	56	74	94	171	244	270
	Gen	293	201	152	97	54	47	47	75	114	179	234	269
014015	Hist	153	135	135	136	201	182	200	192	186	209	183	170
	Gen	136	115	136	138	188	179	187	190	187	202	172	157
015590	Hist	228	181	165	125	86	71	90	122	139	196	248	249
	Gen	196	126	107	96	67	64	77	105	125	159	190	221
039104	Hist	132	123	108	78	50	45	50	77	106	129	144	177
	Gen	135	108	95	74	52	49	46	70	95	119	123	166
040214	Hist	146	119	116	89	70	55	53	77	106	120	130	153
	Gen	133	113	112	85	66	52	51	77	101	119	120	150
066037	Hist	173	144	134	94	69	64	54	99	113	130	162	183
	Gen	160	128	119	92	65	59	59	91	102	131	153	171
B86071	Hist	137	112	91	48	30	26	23	40	48	89	102	123
	Gen	128	106	87	48	28	24	25	38	48	80	103	114
094029	Hist	116	100	80	48	26	12	15	32	45	65	79	89
	Gen	108	95	70	45	24	12	14	28	38	63	83	93

Table C31. Comparison of historical and generated mean monthly maximum temperature.

Station		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
003003	Hist	33.2	32.8	33.7	34.3	31.8	29.4	29.0	30.3	31.6	32.7	33.4	33.5
	Gen	33.2	32.8	33.7	34.3	31.8	29.4	29.0	30.3	31.6	32.6	33.3	33.5
009034	Hist	30.3	31.3	29.3	25.5	21.8	19.3	18.1	18.7	20.4	22.2	25.1	27.5
	Gen	30.3	31.2	29.3	25.5	21.8	19.2	18.1	18.7	20.5	22.2	25.2	27.5
012038	Hist	33.7	32.2	29.4	25.4	20.7	17.4	16.8	18.5	22.3	25.5	28.6	31.9
	Gen	33.6	32.1	29.3	25.4	20.7	17.4	16.8	18.4	22.3	25.5	28.6	31.9
014015	Hist	31.8	31.5	31.8	32.8	32.2	30.8	30.7	31.5	32.6	33.3	33.3	32.6
	Gen	31.8	31.4	31.8	32.8	32.2	30.9	30.7	31.5	32.6	33.3	33.3	32.6
015590	Hist	36.4	35.2	32.7	28.0	23.3	19.8	20.0	22.9	27.3	30.7	33.7	35.6
	Gen	36.3	35.0	32.7	28.0	23.2	19.8	19.9	22.8	27.3	30.6	33.6	35.6
039104	Hist	32.1	31.1	30.0	27.6	24.2	21.1	20.7	22.6	26.0	28.8	30.6	32.5
	Gen	32.1	31.1	29.9	27.6	24.1	21.0	20.7	22.6	26.0	28.9	30.6	32.4
040214	Hist	29.6	29.4	28.9	26.8	23.8	21.2	20.7	22.1	24.6	25.5	27.5	29.7
	Gen	29.6	29.3	28.9	26.8	23.8	21.2	20.6	22.1	24.5	25.5	27.3	29.7
066037	Hist	26.7	26.7	25.4	23.0	20.3	17.6	16.9	18.4	20.5	22.6	23.8	26.0
	Gen	26.7	26.7	25.3	23.0	20.3	17.6	16.9	18.4	20.5	22.6	23.8	26.0
B86071	Hist	25.8	26.7	24.2	20.6	17.5	14.7	14.1	15.3	17.3	19.8	21.9	23.8
	Gen	25.6	26.5	24.2	20.6	17.4	14.6	14.0	15.3	17.3	19.7	21.9	23.7
094029	Hist	22.0	22.1	20.2	18.1	15.2	12.4	12.1	13.4	15.3	17.3	18.7	20.1
	Gen	21.9	22.1	20.2	18.1	15.1	12.4	12.1	13.4	15.3	17.2	18.7	20.1

Table C32. Comparison of historical and generated standard deviation of monthly maximum temperature.

Station		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
003003	Hist	0.90	1.13	0.96	1.30	1.25	1.05	1.14	0.96	1.13	1.44	0.97	0.94
	Gen	0.96	1.20	1.06	1.44	1.43	1.20	1.27	1.07	1.22	1.46	0.99	1.01
009034	Hist	1.78	2.16	1.39	1.29	0.95	0.94	0.82	0.80	0.91	1.09	1.43	1.53
	Gen	1.83	2.30	1.49	1.38	1.03	1.02	0.87	0.86	0.99	1.12	1.52	1.53
012038	Hist	1.49	2.11	2.02	1.88	1.65	1.32	1.48	1.43	1.73	1.64	1.58	1.91
	Gen	1.56	2.16	2.13	1.98	1.74	1.39	1.54	1.46	1.74	1.67	1.61	2.03
014015	Hist	0.65	0.83	0.78	0.65	0.65	0.82	0.76	0.60	0.58	0.42	0.53	0.77
	Gen	0.69	0.90	0.88	0.73	0.70	0.82	0.77	0.62	0.61	0.45	0.57	0.79
015590	Hist	2.09	2.09	2.30	1.67	1.67	1.53	1.51	1.48	2.03	1.85	1.71	1.55
	Gen	2.31	2.33	2.61	1.85	1.73	1.54	1.57	1.49	2.06	1.91	1.80	1.62
039104	Hist	1.58	1.44	1.00	1.09	0.98	1.16	0.81	1.08	1.61	2.02	1.58	1.25
	Gen	1.72	1.56	1.12	1.22	1.06	1.19	0.84	1.04	1.65	2.16	1.73	1.34
040214	Hist	0.95	0.85	0.50	0.84	0.48	0.77	0.63	0.79	1.17	0.86	0.97	1.16
	Gen	0.98	0.92	0.60	0.92	0.52	0.78	0.67	0.78	1.21	0.94	1.08	1.15
066037	Hist	1.29	1.25	0.89	0.98	0.59	0.76	0.78	0.91	1.34	1.42	1.17	1.47
	Gen	1.33	1.31	0.95	0.99	0.61	0.76	0.77	0.91	1.37	1.44	1.18	1.51
B86071	Hist	1.88	1.92	1.27	1.38	0.66	0.71	0.80	0.85	1.21	0.96	0.99	1.58
	Gen	1.93	1.95	1.32	1.42	0.73	0.74	0.82	0.86	1.31	0.98	1.05	1.61
094029	Hist	1.53	1.13	0.89	0.95	0.69	1.01	0.79	1.14	1.18	1.08	1.09	0.96
	Gen	1.51	1.17	0.90	0.97	0.74	1.05	0.85	1.17	1.22	1.14	1.13	0.97

Table C33. Comparison of historical and generated coefficient of skewness of monthly maximum temperature.

Station		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
003003	Hist	-0.55	0.85	-0.50	-0.85	-0.99	0.05	-0.29	-0.53	-0.30	-0.53	-0.29	0.49
	Gen	0.23	0.21	0.12	-0.09	-0.13	-0.03	-0.02	0.06	0.10	0.23	0.33	0.38
009034	Hist	-0.06	-0.14	-0.15	0.51	0.69	-1.02	0.49	-0.27	0.27	-0.71	0.16	0.12
	Gen	0.10	-0.04	0.03	0.17	0.14	0.06	0.03	0.14	0.25	0.30	0.18	0.33
012038	Hist	-0.44	-0.16	-0.27	-0.35	0.51	-0.07	0.11	0.21	-0.66	-0.38	0.08	0.03
	Gen	-0.08	-0.06	0.01	0.08	0.17	0.13	0.04	0.14	0.07	0.06	0.00	-0.07
014015	Hist	-0.33	-0.07	-0.77	0.04	-0.27	-0.37	0.14	0.72	-1.20	0.50	0.15	-0.53
	Gen	-0.06	-0.03	-0.21	-0.18	-0.18	-0.11	-0.11	-0.05	0.03	0.12	-0.17	-0.17
015590	Hist	-1.34	-0.35	-0.31	-0.59	-0.10	0.13	-0.21	-0.43	-0.19	0.17	0.27	-0.46
	Gen	-0.20	-0.24	-0.11	-0.04	-0.01	0.15	0.11	0.09	-0.02	-0.17	-0.11	-0.09
039104	Hist	-0.35	0.03	-0.08	0.03	0.67	0.08	-0.91	0.11	0.50	0.56	-0.02	-0.04
	Gen	-0.01	-0.01	-0.06	-0.03	-0.09	0.05	0.10	-0.03	0.00	0.06	0.07	0.00
040214	Hist	0.54	-1.30	0.13	-0.20	0.36	0.33	-2.07	-0.23	1.23	0.12	0.50	-0.01
	Gen	0.07	0.05	0.04	0.01	-0.08	-0.05	-0.05	-0.03	0.00	-0.04	0.01	0.12
066037	Hist	-0.02	0.55	-0.38	-0.06	-0.57	0.69	0.18	0.77	0.34	0.97	0.04	0.42
	Gen	0.18	0.10	0.08	0.06	0.06	0.04	0.21	0.20	0.20	0.18	0.28	0.18
B86071	Hist	0.01	0.48	-0.48	-0.20	0.42	0.03	0.10	0.59	0.16	-0.11	0.44	-0.12
	Gen	0.25	0.11	0.20	0.17	0.17	0.14	0.06	0.03	0.14	0.20	0.14	0.22
094029	Hist	-0.23	0.30	0.53	-0.18	0.46	0.14	0.61	0.19	-0.24	-1.13	-0.07	-0.60
	Gen	0.21	0.24	0.12	0.20	0.05	-0.02	0.02	0.10	0.17	0.07	0.15	0.25

Table C34. Comparison of historical and generated correlation between monthly maximum temperature.

Station		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
003003	Hist	-0.02	0.49	0.04	0.34	0.28	0.51	0.43	0.44	0.37	0.22	0.31	0.44
	Gen	0.01	0.54	0.12	0.42	0.36	0.61	0.53	0.54	0.48	0.31	0.41	0.51
009034	Hist	0.32	-0.55	0.20	0.19	-0.02	0.19	0.46	0.44	0.10	0.01	-0.06	0.10
	Gen	0.30	-0.41	0.29	0.30	0.11	0.27	0.52	0.55	0.21	0.09	0.05	0.22
012038	Hist	0.23	0.22	0.20	0.35	0.33	0.23	0.43	0.33	0.37	0.27	-0.10	0.36
	Gen	0.19	0.30	0.28	0.39	0.39	0.29	0.51	0.37	0.41	0.31	-0.02	0.41
014015	Hist	-0.02	0.60	0.06	0.29	0.41	0.47	0.46	0.55	0.46	0.29	0.22	0.15
	Gen	-0.04	0.62	0.13	0.36	0.50	0.56	0.53	0.61	0.49	0.34	0.31	0.20
015590	Hist	0.17	0.47	0.48	0.35	0.27	-0.02	0.15	0.16	0.16	0.27	0.23	0.47
	Gen	0.23	0.51	0.57	0.43	0.36	0.04	0.18	0.21	0.23	0.32	0.33	0.54
039104	Hist	0.49	0.52	0.35	0.60	0.51	0.49	0.44	0.44	0.50	0.52	0.55	0.23
	Gen	0.44	0.55	0.43	0.65	0.55	0.55	0.50	0.53	0.53	0.53	0.61	0.31
040214	Hist	0.80	0.37	0.32	0.57	0.32	0.23	0.13	0.16	0.53	0.61	0.71	0.11
	Gen	0.70	0.44	0.39	0.61	0.39	0.26	0.22	0.24	0.53	0.68	0.74	0.23
066037	Hist	0.47	0.53	0.25	0.02	-0.12	-0.51	0.22	-0.12	0.19	0.36	0.00	0.26
	Gen	0.42	0.56	0.30	0.09	-0.09	-0.47	0.24	-0.09	0.22	0.38	0.05	0.30
B86071	Hist	0.36	0.36	-0.01	0.16	0.35	0.03	0.40	-0.08	0.33	0.17	0.20	0.32
	Gen	0.35	0.44	0.13	0.27	0.41	0.12	0.46	0.03	0.38	0.25	0.31	0.41
094029	Hist	0.15	0.09	-0.28	-0.12	0.52	0.10	0.49	-0.14	0.25	0.36	0.21	-0.19
	Gen	0.16	0.18	-0.21	-0.05	0.55	0.20	0.53	-0.09	0.31	0.42	0.32	-0.08

Table C35. Comparison of historical and generated maximum monthly maximum temperature.

Station		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
003003	Hist	35.1	36.1	35.4	36.9	33.7	31.8	31.3	32.2	33.7	35.3	35.2	35.3
	Gen	35.3	35.4	36.0	37.2	34.7	31.8	31.6	32.5	34.2	35.9	35.6	35.8
009034	Hist	33.3	35.4	31.9	28.5	24.0	20.8	19.8	19.9	22.5	23.6	27.4	30.5
	Gen	33.8	35.5	32.2	28.2	23.9	21.2	19.8	20.4	22.5	24.5	28.1	30.6
012038	Hist	35.9	35.8	33.3	29.7	23.9	19.7	20.5	21.7	25.4	28.5	32.1	36.1
	Gen	36.8	36.5	33.8	29.6	24.5	20.4	19.9	21.6	26.1	29.0	31.9	36.0
014015	Hist	32.7	32.7	33.1	34.0	33.5	32.4	32.4	32.9	33.5	34.3	34.3	33.8
	Gen	33.2	33.3	33.5	34.2	33.6	32.4	32.2	32.8	33.9	34.2	34.4	34.2
015590	Hist	39.2	39.0	36.4	31.1	27.1	23.6	22.8	26.1	30.4	34.3	36.9	38.1
	Gen	40.7	39.4	37.8	31.8	26.7	23.1	23.2	26.1	31.4	34.3	37.2	38.9
039104	Hist	34.4	34.0	31.5	29.5	26.8	23.3	22.2	24.8	30.0	33.9	33.3	35.1
	Gen	35.3	34.1	32.0	29.9	26.1	23.4	22.3	24.7	29.3	33.0	33.9	35.0
040214	Hist	31.4	30.5	29.8	27.9	24.6	22.4	21.1	23.1	27.2	26.9	29.1	31.7
	Gen	31.2	30.8	29.8	28.3	24.5	22.4	21.7	23.3	26.5	26.9	29.1	31.6
066037	Hist	29.3	29.6	27.2	25.3	21.4	19.5	18.5	20.7	23.7	27.0	25.9	28.9
	Gen	29.5	29.5	27.3	25.0	21.5	19.2	18.6	20.4	23.5	25.7	26.4	29.3
B86071	Hist	29.3	30.2	26.3	23.1	18.5	16.0	15.5	17.2	19.3	21.5	23.8	26.7
	Gen	29.5	30.3	26.8	23.4	18.9	16.1	15.6	16.9	19.8	21.7	24.0	26.9
094029	Hist	24.7	24.4	22.4	19.6	16.8	14.1	13.7	15.7	17.3	18.9	20.8	21.5
	Gen	25.0	24.5	22.0	20.1	16.6	14.4	13.7	15.7	17.7	19.5	21.0	22.1

Table C36. Comparison of historical and generated minimum monthly maximum temperature.

Station		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
003003	Hist	30.7	31.3	31.5	30.5	28.8	27.2	26.3	27.6	28.9	29.1	31.1	32.1
	Gen	31.4	30.5	31.6	31.2	28.6	26.9	26.3	28.1	29.2	29.9	31.5	31.6
009034	Hist	27.3	27.3	26.8	23.3	20.5	17.1	16.8	17.4	18.7	20.1	23.1	24.4
	Gen	27.0	26.8	26.5	23.0	19.9	17.3	16.5	17.2	18.7	20.2	22.5	24.9
012038	Hist	29.8	27.2	24.5	20.5	18.1	15.2	13.9	16.0	17.7	21.4	25.6	27.7
	Gen	30.3	27.6	24.9	21.4	17.3	14.6	13.7	15.6	18.7	22.1	25.3	27.6
014015	Hist	30.1	30.2	29.7	31.5	30.8	29.2	29.3	30.4	30.8	32.6	32.5	30.9
	Gen	30.3	29.5	29.9	31.2	30.7	29.1	29.1	30.2	31.4	32.4	32.1	30.9
015590	Hist	30.7	30.2	27.5	23.4	19.8	15.7	16.5	19.1	22.8	27.4	31.2	32.0
	Gen	31.3	29.9	27.1	24.0	19.7	16.9	16.7	19.8	23.0	26.4	29.7	32.2
039104	Hist	28.7	28.2	28.3	26.0	22.5	19.3	18.5	20.5	23.4	25.4	28.3	30.2
	Gen	28.9	28.1	27.7	25.2	22.0	18.8	19.1	20.6	22.9	24.9	27.5	29.9
040214	Hist	28.5	27.5	28.0	25.7	23.1	20.3	19.1	20.9	23.2	24.2	26.3	27.8
	Gen	28.1	27.9	27.9	25.3	22.9	20.0	19.6	20.8	22.6	24.0	25.6	27.9
066037	Hist	24.1	24.9	23.2	21.0	18.8	16.3	15.3	17.0	18.3	20.0	21.6	23.8
	Gen	24.2	24.1	23.5	21.1	19.1	16.1	15.4	16.6	17.8	19.9	21.6	23.1
B86071	Hist	22.5	24.3	21.4	18.1	16.5	13.6	12.7	13.7	15.1	18.1	20.5	20.8
	Gen	22.2	23.0	21.9	18.0	16.1	13.3	12.5	13.7	15.0	18.0	20.0	20.9
094029	Hist	19.3	20.5	18.5	16.5	13.9	10.9	10.8	11.1	12.7	14.1	16.6	17.6
	Gen	19.3	20.0	18.5	16.3	13.8	10.3	10.5	11.2	13.0	15.1	16.6	18.3

Table C37. Comparison of historical and generated cross correlation between monthly rainfall and evaporation.

Station		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
003003	Hist	-0.52	-0.59	-0.47	-0.56	-0.53	-0.28	-0.33	-0.04	-0.19	0.30	-0.31	-0.44
	Gen	-0.16	-0.12	-0.17	-0.15	-0.15	-0.13	-0.08	-0.09	-0.06	-0.02	-0.07	-0.13
009034	Hist	-0.50	-0.61	-0.69	-0.44	-0.30	0.13	0.15	-0.17	-0.16	-0.24	-0.59	-0.46
	Gen	-0.07	-0.24	-0.15	-0.24	-0.16	-0.04	-0.09	-0.07	-0.17	-0.18	-0.14	-0.11
012038	Hist	-0.39	-0.52	-0.56	-0.75	-0.59	-0.53	-0.58	-0.35	-0.60	-0.60	-0.58	-0.56
	Gen	-0.10	-0.24	-0.15	-0.12	-0.13	-0.06	-0.03	-0.01	-0.05	-0.08	-0.16	-0.14
014015	Hist	-0.23	-0.66	-0.51	-0.66	-0.21	-0.38	-0.16	-0.04	0.06	-0.49	-0.61	-0.53
	Gen	-0.09	-0.07	-0.10	-0.22	-0.08	-0.08	-0.07	-0.04	-0.10	-0.11	-0.13	-0.06
015590	Hist	-0.59	-0.73	-0.43	-0.39	-0.28	-0.11	-0.53	-0.48	-0.64	-0.52	-0.51	-0.67
	Gen	-0.26	-0.19	-0.16	-0.14	-0.12	-0.12	-0.13	-0.14	-0.17	-0.15	-0.10	-0.14
039104	Hist	-0.53	-0.36	-0.78	-0.44	-0.39	-0.01	-0.28	-0.40	-0.68	-0.60	-0.43	-0.57
	Gen	-0.24	-0.15	-0.23	-0.25	-0.21	0.00	-0.14	-0.20	-0.26	-0.21	-0.18	-0.16
040214	Hist	-0.49	-0.40	-0.78	-0.47	-0.26	-0.53	-0.26	-0.51	-0.73	-0.22	-0.27	-0.31
	Gen	-0.21	-0.14	-0.30	-0.25	-0.24	-0.26	-0.14	-0.15	-0.30	-0.24	-0.06	-0.19
066037	Hist	-0.26	-0.62	-0.44	-0.48	-0.25	0.27	-0.57	-0.32	-0.29	-0.64	-0.56	-0.54
	Gen	-0.22	-0.15	-0.21	-0.13	-0.16	-0.11	-0.18	-0.10	-0.11	-0.14	-0.18	-0.22
B86071	Hist	-0.49	-0.55	-0.14	-0.53	0.03	-0.41	0.08	-0.12	-0.43	-0.66	-0.06	-0.37
	Gen	-0.14	-0.14	-0.12	-0.09	-0.01	-0.05	-0.07	-0.10	-0.14	-0.17	-0.17	-0.19
094029	Hist	-0.45	-0.27	-0.09	-0.18	-0.08	-0.08	0.29	-0.51	-0.42	-0.26	-0.57	-0.46
	Gen	-0.19	-0.10	-0.08	-0.09	-0.07	0.01	0.02	-0.02	-0.08	-0.13	-0.10	-0.14

Table C38. Comparison of historical and generated cross correlation between monthly rainfall and maximum temperature.

Station		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
003003	Hist	-0.61	-0.63	-0.63	-0.68	-0.58	-0.06	-0.21	-0.33	-0.12	0.00	0.03	-0.16
	Gen	-0.08	-0.11	-0.16	-0.13	-0.14	-0.04	-0.04	-0.04	-0.02	0.00	0.01	0.00
009034	Hist	-0.48	-0.52	-0.51	-0.15	-0.55	-0.18	-0.43	-0.36	-0.45	-0.44	-0.50	-0.19
	Gen	-0.04	-0.10	-0.07	-0.13	-0.13	-0.09	-0.03	-0.08	-0.10	-0.14	-0.11	-0.02
012038	Hist	-0.53	-0.42	-0.48	-0.63	-0.42	-0.50	-0.49	-0.37	-0.65	-0.50	-0.39	-0.38
	Gen	-0.05	-0.13	-0.07	-0.09	-0.08	-0.04	-0.01	-0.04	-0.04	-0.01	-0.07	-0.01
014015	Hist	-0.73	-0.52	-0.76	-0.74	-0.15	0.18	-0.01	0.14	-0.03	-0.21	-0.65	-0.71
	Gen	-0.10	-0.07	-0.16	-0.21	-0.03	-0.01	-0.01	-0.06	-0.08	-0.07	-0.11	-0.11
015590	Hist	-0.52	-0.71	-0.43	-0.47	-0.31	-0.18	-0.49	-0.37	-0.52	-0.55	-0.44	-0.70
	Gen	-0.19	-0.17	-0.14	-0.11	-0.04	-0.04	-0.06	-0.07	-0.07	-0.05	0.00	-0.08
039104	Hist	-0.39	-0.29	-0.67	-0.58	-0.45	-0.18	-0.37	-0.50	-0.74	-0.34	-0.38	-0.50
	Gen	-0.13	-0.11	-0.14	-0.16	-0.14	0.01	-0.06	-0.07	-0.08	-0.06	-0.01	-0.09
040214	Hist	-0.09	-0.11	-0.75	-0.48	0.33	-0.38	-0.63	-0.71	-0.71	0.00	-0.10	-0.32
	Gen	-0.02	-0.05	-0.25	-0.10	-0.11	-0.08	-0.10	-0.07	-0.18	-0.16	0.03	-0.02
066037	Hist	-0.32	-0.50	-0.07	-0.27	-0.42	0.10	-0.19	-0.34	-0.46	-0.60	-0.18	-0.56
	Gen	-0.10	-0.06	-0.16	-0.12	-0.09	-0.13	-0.09	-0.06	-0.10	-0.07	-0.06	-0.08
B86071	Hist	0.09	-0.20	-0.17	-0.41	-0.24	0.28	-0.38	-0.21	-0.45	-0.53	-0.28	-0.14
	Gen	0.01	-0.04	-0.07	-0.05	-0.02	-0.04	-0.04	-0.11	-0.09	-0.07	-0.08	-0.07
094029	Hist	-0.28	-0.16	-0.18	-0.13	-0.17	-0.17	-0.10	-0.76	-0.49	-0.38	-0.23	-0.34
	Gen	-0.07	-0.02	-0.03	-0.04	-0.07	-0.02	-0.07	-0.05	-0.08	-0.03	0.01	-0.02

Table C39. Comparison of historical and generated cross correlation between monthly evaporation and maximum temperature.

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Station		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
003003	Hist	0.61	0.72	0.56	0.70	0.52	0.20	0.23	0.26	0.27	0.31	0.09	0.44
	Gen	0.42	0.45	0.46	0.52	0.20	-0.04	-0.05	0.36	0.62	0.51	0.46	0.42
009034	Hist	0.73	0.71	0.56	0.76	0.66	-0.06	0.41	0.53	0.22	0.58	0.64	0.76
	Gen	0.64	0.58	0.61	0.63	0.57	0.31	0.32	0.38	0.48	0.58	0.65	0.62
012038	Hist	0.66	0.87	0.88	0.81	0.85	0.78	0.80	0.75	0.80	0.82	0.71	0.79
	Gen	0.72	0.77	0.80	0.78	0.76	0.71	0.75	0.75	0.75	0.76	0.76	0.80
014015	Hist	0.63	0.54	0.77	0.73	0.45	-0.15	-0.15	0.25	0.27	0.15	0.56	0.77
	Gen	0.32	0.30	0.52	0.44	0.20	-0.10	-0.06	0.30	0.50	0.36	0.44	0.45
015590	Hist	0.78	0.78	0.88	0.76	0.73	0.64	0.61	0.58	0.74	0.84	0.60	0.75
	Gen	0.62	0.65	0.68	0.64	0.53	0.55	0.61	0.63	0.60	0.59	0.53	0.56
039104	Hist	0.89	0.93	0.86	0.81	0.69	0.39	0.35	0.36	0.83	0.81	0.87	0.80
	Gen	0.78	0.75	0.78	0.72	0.57	0.16	0.12	0.18	0.61	0.66	0.73	0.77
040214	Hist	0.60	0.73	0.80	0.36	0.40	-0.26	0.53	0.54	0.67	0.61	0.72	0.78
	Gen	0.40	0.55	0.46	0.49	0.29	-0.19	0.10	0.25	0.48	0.38	0.57	0.58
066037	Hist	0.63	0.72	0.52	0.46	0.44	-0.04	0.08	0.30	0.73	0.86	0.70	0.66
	Gen	0.58	0.52	0.51	0.32	0.14	0.05	0.19	0.39	0.54	0.54	0.53	0.56
B86071	Hist	0.33	0.60	0.53	0.52	0.56	0.40	0.29	0.35	0.84	0.46	0.40	0.72
	Gen	0.62	0.69	0.63	0.67	0.63	0.41	0.30	0.60	0.69	0.67	0.69	0.74
094029	Hist	0.63	0.58	0.58	0.60	0.51	0.63	0.58	0.70	0.85	0.81	0.61	0.78
	Gen	0.44	0.57	0.45	0.51	0.55	0.58	0.60	0.54	0.68	0.65	0.60	0.54

Table C40. Comparison of historical and generated annual rainfall parameters.

Station		Mean (mm)	Stdev (mm)	Skew	Corr	Max (mm)	Min (mm)
003003	Hist	672	361	0.78	0.05	1497	132
	Gen	690	332	0.66	0.03	1502	167
009034	Hist	797	124	-0.38	-0.31	974	560
	Gen	795	123	0.19	-0.29	1037	583
012038	Hist	289	102	0.56	-0.01	531	131
	Gen	298	98	0.54	-0.08	534	136
014015	Hist	1829	401	0.63	0.02	2777	1197
	Gen	1841	398	0.21	-0.01	2732	1090
015590	Hist	346	187	0.75	0.31	783	85
	Gen	382	174	0.63	0.24	816	98
039104	Hist	695	152	0.12	-0.01	951	459
	Gen	700	150	0.24	-0.09	1005	441
040214	Hist	1097	269	-0.15	-0.08	1473	660
	Gen	1112	255	0.33	-0.12	1551	753
066037	Hist	1118	313	0.41	0.08	1768	606
	Gen	1140	309	0.38	0.08	1836	592
B86071	Hist	651	126	-0.37	-0.05	844	360
	Gen	651	121	0.19	-0.14	891	438
094029	Hist	576	107	0.24	0.24	828	390
	Gen	571	102	0.17	0.19	775	385

Table C41. Comparison of historical and generated annual evaporation parameters.

Station		Mean (mm)	Stdev (mm)	Skew	Corr	Max (mm)	Min (mm)
003003	Hist	2755	191	0.18	0.19	3191	2374
	Gen	2751	204	0.01	0.17	3177	2335
009034	Hist	1711	112	0.02	0.63	1910	1473
	Gen	1707	122	-0.01	0.52	1929	1487
012038	Hist	2614	212	-0.18	0.14	3051	2118
	Gen	2603	234	0.07	0.12	3098	2137
014015	Hist	2619	168	-0.48	0.56	2895	2273
	Gen	2601	164	0.03	0.49	2927	2279
015590	Hist	3010	432	-0.13	0.52	3925	2206
	Gen	2968	526	-0.07	0.49	3997	1880
039104	Hist	1595	98	0.52	-0.03	1832	1424
	Gen	1591	117	0.04	-0.03	1816	1368
040214	Hist	1414	50	0.99	-0.09	1516	1352
	Gen	1414	53	-0.04	-0.13	1498	1327
066037	Hist	1798	99	0.33	-0.01	2043	1569
	Gen	1797	106	0.02	0.01	2018	1582
B86071	Hist	1084	68	-0.44	0.53	1183	941
	Gen	1077	68	0.08	0.40	1205	955
094029	Hist	982	87	-0.24	0.44	1166	791
	Gen	977	93	0.02	0.38	1152	805

Table C42. Comparison of historical and generated parameters of annual maximum temperature.

Station		Mean (°C)	Stdev (°C)	Skew	Corr	Max (°C)	Min (°C)
003003	Hist	32.2	0.57	-0.29	0.03	33.3	31.0
	Gen	32.1	0.61	0.09	-0.01	33.4	30.9
009034	Hist	24.1	0.53	0.03	-0.08	25.1	23.2
	Gen	24.1	0.54	0.00	-0.07	25.2	23.1
012038	Hist	25.2	0.73	-0.09	-0.14	26.7	23.6
	Gen	25.2	0.76	0.01	-0.16	26.7	23.6
014015	Hist	32.1	0.33	-0.05	-0.23	32.8	31.4
	Gen	32.1	0.35	-0.04	-0.22	32.8	31.4
015590	Hist	28.8	0.81	-0.33	0.19	30.3	26.6
	Gen	28.7	0.86	-0.05	0.15	30.5	26.9
039104	Hist	27.3	0.68	0.20	-0.01	28.6	26.2
	Gen	27.3	0.72	0.10	0.02	28.7	25.9
040214	Hist	25.8	0.45	0.84	0.25	26.7	25.3
	Gen	25.8	0.44	-0.09	0.14	26.5	25.1
066037	Hist	22.3	0.43	0.38	-0.10	23.4	21.7
	Gen	22.3	0.44	0.09	-0.07	23.2	21.4
B86071	Hist	20.1	0.56	0.05	0.40	21.0	19.3
	Gen	20.1	0.56	0.09	0.31	21.2	19.1
094029	Hist	17.2	0.43	-0.30	0.16	18.0	16.4
	Gen	17.2	0.43	0.06	0.08	18.1	16.4

Table C43. Comparison of historical and generated cross correlations between rainfall (R), evaporation (E) and mean maximum temperature (T).

Station		R-E	R-T	E-T
003003	Hist	-0.71	-0.62	0.46
	Gen	-0.71	-0.62	0.46
009034	Hist	-0.19	-0.28	0.44
	Gen	-0.19	-0.28	0.44
012038	Hist	-0.80	-0.76	0.84
	Gen	-0.80	-0.76	0.84
014015	Hist	-0.42	-0.32	0.26
	Gen	-0.42	-0.32	0.26
015590	Hist	-0.82	-0.78	0.83
	Gen	-0.82	-0.78	0.83
039104	Hist	-0.73	-0.77	0.85
	Gen	-0.73	-0.77	0.85
040214	Hist	-0.57	-0.37	0.79
	Gen	-0.57	-0.37	0.79
066037	Hist	-0.49	-0.43	0.80
	Gen	-0.49	-0.43	0.80
B86071	Hist	-0.57	-0.27	0.25
	Gen	-0.57	-0.27	0.25
094029	Hist	-0.38	-0.33	0.77
	Gen	-0.38	-0.33	0.77

CENTRE OFFICE

Department of Civil Engineering Building 60 Monash University VIC 3800 Australia
Telephone +61 3 9905 2704 Facsimile +61 3 9905 5033 Email crcch@eng.monash.edu.au www.catchment.crc.org.au

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